Traffic Consulting Group

Estudio de Tránsito
Salinas Development
Salinas, PR

Preparado para:
Integra Group
Enero 2004

201 ARTERIAL HOSTOS SUITE 808 • SAN JUAN, PR 00918-1412

Tabla de Contenido

1 Introducción 1

2 Localización y descripción de la acción propuesta 2

3 Metodología para la evaluación del impacto en el tránsito debido a la acción propuesta 3

4 Teoría 4

4.1 Evaluación sobre el Nivel de Servicio (LOS) para una intersección: 4
4.2 Relación entre demoras y Nivel de Servicio 5

5 Análisis de Tránsito 6

5.1 Afluencia vehicular 6
5.2 Crecimiento Anual 7
5.3 Generación de Viajes 8
5.4 Distribución de Viajes 9
5.5 Tránsito Futuro 10
5.6 Modelación de Tránsito 11
5.6.1 Intersección PR-3 y PR-180 11
5.6.2 Intersección PR-3 y PR-706 12
5.6.3 Intersección PR-3 y Acceso Residencial (futura entrada al proyecto) .. 13
5.6.4 Intersección PR-3 y Acceso Comercial 14

Conclusiones y Recomendaciones 16

6 Certificación 17

7 Referencias 18

8 Apéndices 19

Lista de Tablas

Tabla 1 Criterio del Nivel de Servicio para intersecciones 5
Tabla 2 Flujos PR-3 y PR-180 (Condición Presente) 7
Tabla 3 Flujos PR-3 y PR-706 (Condición Presente) 7
Tabla 4 Flujos PR-3 y Desarrollo Adyacente (Condición Presente) 7
Tabla 5 Generación de Viajes Área Residencial 8
Tabla 6 Generación de Viajes Área Comercial 8
Tabla 7 Flujos PR-3 y PR-180 (Condición Futura) 10
Tabla 8 Flujos PR-3 y PR-706 (Condición Futura) 10
Tabla 9 Flujos PR-3 y Acceso Comercial (Condición Futura) 10
Tabla 10 Flujos PR-3 y Acceso Residencial (Condición Futura) 11
Tabla 11 Resultados modelación aaSIDRA PR-3 y PR-180 12
Tabla 12 Resultados modelación aaSIDRA PR-3 y PR-706 13
Tabla 13 Resultados modelación aaSIDRA PR-3 y Acceso Residencial 14
Tabla 14 Resultados modelación aaSIDRA PR-3 y Acceso Comercial 14

1 INTRODUCCIÓN

El siguiente informe presenta un estudio de tránsito en el área destinada para la construcción de un proyecto residencial y comercial en el sector Aguirre del municipio de Salinas. Este informe evalúa las condiciones presentes del área y el impacto que tendrá la acción propuesta. Se modelará el funcionamiento de las intersecciones afectadas por el nuevo desarrollo mediante el uso del programa de computadoras para el análisis de intersecciones "**S**ignalised & unsignalised **I**ntersection **D**esign & **R**esearch **A**id", con el fin de determinar el efecto final del mismo en las intersecciones de interés. También se evaluará el efecto de las mejoras geométricas que sean necesarias para mitigar el efecto del proyecto.

2 LOCALIZACIÓN Y DESCRIPCIÓN DE LA ACCIÓN PROPUESTA

El proyecto propuesto estará localizado en el lado norte del kilómetro 152.7 de la carretera PR-3 en el sector Aguirre del municipio de Salinas. El desarrollo propuesto consta de 850 unidades de vivienda unifamiliares, un área comercial de 46,000 pies cuadrados, un local para restaurante de comida rápida de 6,000 pies cuadrados y un local para un banco de 4,000 pies cuadrados.

3 METODOLOGÍA PARA LA EVALUACIÓN DEL IMPACTO EN EL TRÁNSITO DEBIDO A LA ACCIÓN PROPUESTA

1. El martes 9 de diciembre de 2003 se realizaron conteos de vehículos en el área de estudio durante las 12 horas de mayor afluencia vehicular. Los horarios de conteos fueron realizados de 6:00 AM a 6:00 PM. Este conteo se hizo para determinar el número de vehículos usuarios de las vías de tránsito cercanas al área del proyecto. Las intersecciones medidas fueron la de la PR-3 con la PR-180, la PR-3 con la PR-706 y la de la PR-3 con el desarrollo existente adyacente al nuevo desarrollo.

2. Dado que el proyecto no estará completado hasta aproximadamente el año 2009, los flujos del año 2003 fueron expandidos a ese año usando un factor de crecimiento anual de 1.5%.

3. Utilizando como referencia el Manual de Generación de Viajes del ITE se estimó el número de viajes que se generarían desde y hacia el proyecto propuesto.

4. Con toda la data recopilada se procedió a analizar las intersecciones en cuestión. Para realizar este análisis se utilizó el programa de computadoras aaSIDRA 2.0. Las situaciones estudiadas fueron los períodos pico de la mañana y de la tarde con los flujos existentes, y las mismas situaciones al añadirse el crecimiento anual esperado y los flujos generados por el proyecto. Las intersecciones bajo estudio son las que se mencionaron anteriormente. Para este escenario futuro también se modelo la intersección que se crearía en el acceso del proyecto.

4 TEORÍA

4.1 Evaluación sobre el Nivel de Servicio (LOS) para una intersección:

El nivel de servicio es la metodología más conocida utilizada para la evaluación de una facilidad. El nivel de servicio representa las condiciones de operación de las intersecciones: el nivel de servicio "A" representa las condiciones excelentes de tránsito y el nivel "F", las peores condiciones. Tanto las intersecciones semaforizadas como las no semaforizadas pueden ser categorizadas utilizando esta metodología. Estos niveles de servicio a su vez se encuentran basados en las demoras promedio que tienen los vehículos en las intersecciones. A continuación se definen las categorías para cada nivel de servicio.

LOS A: Excelente

Esta es una condición de flujo libre, acompañada por bajos volúmenes de tránsito y altas velocidades. Hay poca o ninguna restricción en maniobrabilidad del conductor y los conductores pueden mantener sus deseadas velocidades con poco o ningún retraso.

LOS B: Muy Buena

En esta condición, las velocidades de operación comienzan a estar restringidas un tanto por las condiciones del tránsito. Los conductores aún tienen una libertad considerable para seleccionar su velocidad y carril de operación.

LOS C: Buena

Las velocidades y maniobrabilidad se vuelven más controladas por volúmenes de tránsito más altos. La mayoría de los conductores están restringidos en su libertad para seleccionar su propia velocidad, cambiar de carril o pasar.

LOS D: Aceptable

Este nivel de servicio se acerca a un flujo inestable, con velocidades operacionales tolerables siendo mantenidas, aunque considerablemente afectadas por los cambios en las condiciones operacionales. Los conductores tienen poca libertad para maniobrar y la comodidad y conveniencia son bajas.

LOS E: Capacidad

El flujo de tránsito se vuelve inestable y podría haber paradas momentáneas.

LOS F: Mala

En esta condición, la velocidad operacional podría bajar a cero y resultar en colas de tránsito.

4.2 Relación entre demoras y Nivel de Servicio

La tabla #1, muestra las diferentes relaciones entre el nivel de servicio y las demoras promedio por cada vehículo en las intersecciones controladas ya sea por semáforo, señales de PARE o CEDA, o en rotondas. (Manual de aaSIDRA 2.0). Estas demoras tienen como componentes la demora de viajar a través de la intersección mas la demora de la detención como consecuencia de la intersección.

Tabla 1 Criterio del Nivel de Servicio para intersecciones

NIVEL DE SERVICIO	DEMORA DE VEHÍCULOS (SEG.)	
	Semáforo y Rotonda	PARE y CEDA
A	$d \leq 10$	$d \leq 10$
B	$10 < d \leq 20$	$10 < d \leq 15$
C	$20 < d \leq 35$	$15 < d \leq 25$
D	$35 < d \leq 55$	$25 < d \leq 35$
E	$55 < d \leq 80$	$35 < d \leq 50$
F	$80 < d$	$50 < d$

5 ANÁLISIS DE TRÁNSITO

5.1 Afluencia vehicular

A modo de determinar el patrón de viajes actuales del sector se realizó un conteo manual en las intersecciones de la carretera PR-3 y PR-180, PR-3 y PR-706 y en la intersección de la PR-3 con el desarrollo adyacente al propuesto. Dichos conteos se realizaron en los periodos de 6:00 AM a 6:00 PM. Estas intersecciones son las críticas alrededor del proyecto.

Las tablas en el apéndice 1 ilustran el flujo vehicular obtenido mediante dichos conteos manuales. Para determinar la hora pico se buscaron los cuatro períodos consecutivos de 15 minutos con más flujo. Una vez se encontraba esta hora en los períodos AM y PM, se buscaba el período de 15 minutos con mayor flujo, y este valor multiplicado por cuatro era el que se utilizaba para la modelación. Dado que ya se está usando el valor del período de 15 minutos mas alto, el factor de hora pico a utilizarse es 1.0.

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

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

Tabla 2 Flujos PR-3 y PR-180 (Condición Presente)

2003	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	328	256	68	88	316	852	1908
Pico PM	344	252	160	80	264	436	1536

Tabla 3 Flujos PR-3 y PR-706 (Condición Presente)

2003	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	256	32	56	352	340	236	1272
Pico PM	388	64	64	292	152	248	1208

Tabla 4 Flujos PR-3 y Desarrollo Adyacente (Condición Presente)

2003	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	308	20	60	60	16	932	1396
Pico PM	592	52	36	16	32	372	1100

5.2 Crecimiento Anual

Los flujos obtenidos en el año 2003 fueron expandidos al año 2009, cuando entendemos que el proyecto estará operando. Los flujos de la zona fueron expandidos utilizando un factor de 1.5% de crecimiento anual. Para este cómputo se utilizó la siguiente ecuación:

$$F= P(1+i)^n$$

Donde:
F= Valor de flujo futuro
P= Valor de flujo presente
i= Razón de crecimiento anual. (En nuestro caso 1.5%)
n= Número de años (En nuestro caso 6 años)

El factor $(1+i)^n$ se utilizó para multiplicar los valores de cada celda de las tablas mostradas anteriormente y así encontrar el flujo que se espera exista en el área de estudio al año de comienzo de operaciones, pero sin incluir el flujo que generaría el proyecto.

5.3 Generación de Viajes

El proyecto consiste de 850 unidades residenciales unifamiliares, un local para un establecimiento de comida rápida de 6,000 pies cuadrados, un local para un banco de 4,000 pies cuadrados y un área comercial de 46,000 pies cuadrados. Para realizar el cómputo de la cantidad de viajes que generaría este proyecto, se utilizó el Manual de Generación de Viajes de ITE. Se utilizaron las categorías 210, 820, 834 y 912 correspondientes a residencias, centro comercial, restaurante de comida rápida con servi-carro y banco con servi-carro respectivamente como usos de terreno, y como variable independiente se utilizó el número de unidades y de pies cuadrados según aplicara. Las siguientes tablas muestran los resultados de este análisis.

Tabla 5 Generación de Viajes Área Residencial

Uso	Categoría	Unidades	ADT			Pico AM			Pico PM		
			Total	In	Out	Total	In	Out	Total	In	Out
Residencias	210	850	7,425	3,713	3,713	604	151	453	738	473	266

Tabla 6 Generación de Viajes Área Comercial

Uso	Categoría	Unidades	ADT			Pico AM			Pico PM		
			Total	In	Out	Total	In	Out	Total	In	Out
Centro Comercial	820	46	4,137	2,069	2,069	101	61	39	376	181	196
Fast Food con SC	834	6	2,977	1,488	1,488	299	153	147	201	104	96
Banco con SC	912	4	997	498	498	44	25	19	192	96	96
Total			8,111	4,055	4,055	444	239	205	769	381	388

5.4 Distribución de Viajes

Para la distribución de los viajes desde y hacia el nuevo desarrollo se siguió el patrón observado en el desarrollo adyacente al propuesto y que compartirá el acceso en el futuro. En las intersecciones que se estudiaron (PR-180 y PR-706) se utilizó también las mismas proporciones que se observaron durante los conteos.

En el futuro el desarrollo contará con dos accesos, uno de ellos será exclusivamente para el área residencial y el otro será compartido entre el área comercial y el área residencial. Asignamos 80% de los viajes generados por el área residencial a su acceso exclusivo y 20% al acceso compartido con el área comercial. Dichos viajes generados en el área residencial fueron distribuidos en 50% hacia el este y 50% hacia el oeste. La totalidad de los viajes generados por el área comercial fueron asignados a su acceso y su distribución también fue de 50% hacia el este y 50% hacia el oeste.

Los viajes generados en el proyecto una vez llegan a la intersección de la PR-3 con la PR-706 se distribuyeron en un 60% siguiendo en dirección este y un 40% doblando a la izquierda en dirección norte. En la intersección de la PR-3 con la PR-180 los viajes se distribuyeron en un 60% continuando en dirección oeste y un 40% doblando a la derecha en dirección norte. La intersección de la PR-3 con la PR-180 está siendo reconstruida actualmente, convirtiendo la PR-180 en un desvío del pueblo de Salinas, añadiéndole a la misma un acceso en su lado sur, por tal razón en la modelación concerniente al futuro se redistribuyó tanto el tránsito actual como el que se generara por nuestro proyecto. Para dicha condición se asumió que el 25% de los viajes que transitan de este a oeste se desviaran a la izquierda en dirección al nuevo acceso sur.

Es importante mencionar que para los viajes del área comercial se tomó en consideración el efecto de los llamados viajes "*pass-by*". Los centros comerciales tienen como parte de su clientela viajes que ya ocurren en el área, y que aprovechan el que están en el área para hacer las compras. El Manual de Generación de viajes estima que de un 40% a un 60% de los viajes que entran a áreas comerciales, son viajes que ya transitan en el área.. Para nuestros cómputos usamos un valor conservador de 40%.

5.5 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 mas el crecimiento anual esperado. Las siguientes tablas muestran los flujos modelados.

Tabla 7 Flujos PR-3 y PR-180 (Condición Futura)

2003	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	10	87	248	119	356	453	162	24	72	260	743	10	2542
Pico PM	10	72	154	119	357	426	385	22	65	217	463	10	2299

Tabla 8 Flujos PR-3 y PR-706 (Condición Futura)

2003	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	339	35	61	473	545	374	1827
Pico PM	565	70	70	530	316	371	1922

Tabla 9 Flujos PR-3 y Acceso Comercial (Condición Futura)

2009	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	466	87	107	107	87	1275	2128
Pico PM	879	162	143	143	162	557	2045

Tabla 10 Flujos PR-3 y Acceso Residencial (Condición Futura)

2009	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	4	0	9	26	444	82	247	0	247	78	1106	206	2449
Pico PM	39	0	4	4	790	246	146	0	124	224	568	9	2155

5.6 Modelación de Tránsito

Para la evaluación de las intersecciones afectadas se utilizó el programa aaSIDRA 2.0. Este modelo permite la evaluación de intersecciones semaforizadas y de prioridad, además de la optimización de las de semáforo, 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.

5.6.1 Intersección PR-3 y PR-180

Esta intersección es una de tipo semaforizada. La carretera PR-3 es una vía principal que corre de este a oeste y la PR-180 es una vía que da acceso a la PR-52. En la actualidad esta intersección no cuenta con un acceso en su lado sur, pero en el momento de finalizado el nuevo desarrollo dicho acceso existirá por lo que dicha condición fue debidamente adicionada a nuestra modelación.

La siguiente tabla muestra los resultados obtenidos para las distintas situaciones modeladas.

Tabla 11 Resultados modelación aaSIDRA PR-3 y PR-180

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	Acceso Sur PR-180	Acceso Este PR-3	Acceso Norte PR-180	Acceso Oeste PR-3	Total Int.
Base 2003					
AM	N/A	44.8 D	34.2 C	32.7 C	36.6 D
PM	N/A	34.0 C	20.9 C	29.5 C	29.9 C
Futuro 2009					
AM	55.5 E	45.1 D	22.3 C	40.6 D	42.4 D
PM	28.7 C	24.3 C	16.8 B	27.1 C	24.1 C

Como se puede notar, esta intersección podrá manejar el tránsito que generará el proyecto sin ningún problema.

5.6.2 Intersección PR-3 y PR-706

Esta intersección es de tipo semaforizada. La PR-706 es una vía de acceso a la PR-52.

La siguiente tabla muestra los resultados obtenidos para las distintas situaciones modeladas.

Tabla 12 Resultados modelación aaSIDRA PR-3 y PR-706

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	Acceso Sur N/A	Acceso Este PR- 3	Acceso Norte PR- 706	Acceso Oeste PR- 3	Total Int.
Base 2003					
AM	N/A	18.7 B	10.3 B	10.2 B	12.2 B
PM	N/A	8.2 A	10.5 B	8.0 A	8.8 A
Futuro 2009					
AM	N/A	27.0 C	11.4 B	17.0 B	17.4 B
PM	N/A	19.2 B	14.0 B	18.4 B	17.3 B

Esta intersección cuenta con capacidad suficiente para manejar el tránsito que generará el proyecto propuesto.

5.6.3 Intersección PR-3 y Acceso Residencial (futura entrada al proyecto)

Esta intersección es de tipo no semaforizada controlada por PARE. En la actualidad existe un acceso provisional al desarrollo existente que será cerrado y procederá a operar un nuevo acceso que servirá tanto al desarrollo existente como al futuro y que se alineará frente con frente a un acceso existente en el lado sur. Para el análisis de la situación base se modeló el acceso provisional. Para la condición futura se modeló la nueva intersección integrando el acceso sur.

La siguiente tabla muestra los resultados obtenidos para las distintas situaciones modeladas.

Tabla 13 Resultados modelación aaSIDRA PR-3 y Acceso Residencial

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	Acceso Sur	Acceso Este PR-3	Acceso Norte Proyecto	Acceso Oeste PR-3	Total Int.
Base 2003					
AM	N/A	0.5 A	16.6 C	2.7 A	3.4 A
PM	N/A	0.7 A	16.0 C	4.0 A	2.7 A
Futuro 2009					
AM	22.0 C	25.6 D	46.8 E	14.6 B	23.6 C
PM	24.1 C	9.1 A	24.9 C	29.4 D	18.9 C

Esta intersección operará sin ningún problema, una vez entre en operación el proyecto propuesto.

5.6.4 Intersección PR-3 y Acceso Comercial

Esta intersección será de tipo no semaforizada controlada por PARE.

La siguiente tabla muestra los resultados obtenidos para las distintas situaciones modeladas.

Tabla 14 Resultados modelación aaSIDRA PR-3 y Acceso Comercial

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	Acceso Sur N/A	Acceso Este PR-3	Acceso Norte Proyecto	Acceso Oeste PR-3	Total Int.
Futuro 2009					
AM	N/A	1.4 A	30.2 D	10.4 B	10.0 B
PM	N/A	1.4 A	27.3 D	14.1 B	9.5 A

Esta intersección puede ser creada sin que se creen problemas en el tránsito del área.

CONCLUSIONES Y RECOMENDACIONES

De los análisis realizados en este estudio se desprende que las intersecciones bajo estudio poseen la capacidad para manejar el tránsito futuro que se habrá de generar en el área como consecuencia del desarrollo propuesto. Cabe señalar que el factor de crecimiento de 1.5% recoge el crecimiento esperado en el área bajo estudio que producirán otros posibles desarrollos en el área.

Los nuevos accesos en la PR-3, tanto para el área comercial como para la residencial, no representan un problema para la carretera PR-3. Recomendamos que el acceso residencial conste de dos carriles para salir a la PR-3 y uno para entrar. En el caso del acceso comercial se recomienda que el acceso conste de dos accesos en ambas direcciones.

Podemos concluir que desde el punto de vista de Ingeniería de Tránsito el proyecto es uno viable en el área donde se propone su desarrollo.

6 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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7 REFERENCIAS

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8 APÉNDICES

APÉNDICE 1:

Flujos Obtenidos Mediante Conteos

Conteos PR-199 y PR-845

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	71	29	20	74	126	43	146	56	11	42	155	11	784
6:15	81	34	24	84	173	67	131	26	18	40	230	11	919
6:30	98	52	37	101	220	99	123	23	15	43	226	9	1046
6:45	94	62	31	46	209	140	133	15	18	62	302	5	1117
7:00	85	47	43	45	205	146	106	17	38	67	209	16	1024
7:15	65	43	30	40	200	66	94	9	16	30	196	7	796
7:30	60	52	32	26	267	118	76	18	16	57	208	11	941
7:45	41	34	27	31	226	178	78	11	13	56	157	10	862
8:00	36	53	27	27	188	82	74	23	22	61	189	7	789
8:15	47	36	32	32	182	82	67	27	20	46	155	9	735
8:30	21	34	39	53	240	92	88	21	22	29	177	19	835
8:45	33	33	13	26	193	90	68	23	12	25	136	15	667
9:00	25	34	13	31	164	69	95	30	14	33	116	7	631
9:15	47	23	15	27	199	55	51	9	18	35	114	11	604
9:30	21	17	21	31	186	83	66	15	9	27	94	8	578
9:45	21	25	16	34	179	78	39	7	12	15	59	7	492
10:00	20	35	21	23	202	66	75	18	27	38	106	11	642
10:15	38	28	37	19	171	88	102	25	21	23	128	10	690
10:30	43	24	19	33	175	63	95	25	26	32	174	4	713
10:45	38	26	19	30	124	64	102	23	29	30	240	13	738
11:00	23	39	17	22	100	47	100	34	21	26	150	17	596
11:15	20	21	11	23	161	60	76	18	11	28	149	8	586
11:30	12	40	13	31	105	83	70	42	20	15	156	14	601
11:45	7	11	17	23	105	97	62	44	30	18	142	5	561
12:00	10	11	11	22	114	103	89	60	20	20	120	10	590
12:15	10	12	10	30	128	120	82	43	10	23	178	7	653
12:30	11	2	11	34	143	110	87	31	22	25	200	16	692
12:45	19	15	25	48	174	102	90	34	24	40	199	17	787
13:00	30	17	16	32	182	125	106	39	32	39	189	10	817
13:15	20	21	22	29	197	123	113	46	31	44	216	17	879
13:30	13	27	20	42	165	88	98	45	37	44	203	25	807
13:45	12	22	13	41	190	66	137	61	30	44	177	20	813
14:00	15	20	21	33	156	59	136	54	30	26	220	26	796
14:15	14	27	22	37	191	46	129	77	24	26	205	20	818
14:30	10	15	15	48	161	74	54	26	15	28	119	8	573
14:45	18	15	19	32	124	44	144	52	34	35	206	23	746
15:00	17	27	24	31	85	28	129	54	33	35	200	17	680
15:15	18	31	16	48	205	60	126	67	35	39	198	18	861
15:30	17	32	23	54	198	65	142	51	28	36	256	23	925
15:45	13	21	17	49	211	70	149	58	32	39	244	18	921
16:00	23	16	16	55	183	65	145	70	25	40	215	27	880
16:15	22	25	13	65	209	67	157	79	23	26	229	29	944
16:30	15	20	23	64	214	81	132	63	21	16	194	23	866
16:45	12	30	20	58	229	76	120	72	30	17	180	20	864
17:00	29	11	19	55	190	70	198	58	40	48	230	15	963
17:15	24	9	19	95	189	87	96	62	34	40	199	12	866
17:30	38	9	22	83	211	51	124	57	30	29	211	10	875
17:45	24	13	13	72	139	55	97	72	22	38	155	14	714

Conteo PR-199 y PR-176

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	109	79	20	19	173	16	52	28	126	47	163	20	852
6:15	120	138	30	10	236	47	82	89	138	50	112	38	1090
6:30	105	69	20	1	306	38	17	26	163	73	138	42	998
6:45	178	49	15	1	278	92	59	49	218	75	105	57	1176
7:00	125	88	18	12	226	30	62	66	125	136	149	68	1105
7:15	152	53	17	3	315	41	38	20	117	120	157	54	1087
7:30	156	70	21	4	300	23	59	34	107	112	164	38	1088
7:45	165	111	13	13	251	34	34	24	60	133	163	56	1057
8:00	172	85	14	15	288	52	35	51	92	131	144	24	1103
8:15	107	41	17	6	314	21	52	26	71	80	113	20	868
8:30	121	79	13	9	230	26	56	22	81	90	122	27	876
8:45	89	47	12	4	284	40	72	25	59	100	122	24	878
9:00	71	42	13	9	297	24	30	39	67	64	102	33	791
9:15	63	36	15	5	247	25	67	41	40	67	137	19	762
9:30	91	29	16	10	242	38	47	33	58	68	132	24	788
9:45	61	38	15	8	278	36	44	29	50	79	93	44	775
10:00	48	33	13	2	176	29	38	16	44	38	76	10	523
10:15	56	23	20	14	100	30	46	34	52	69	122	14	580
10:30	55	23	22	7	214	31	47	24	55	50	127	23	678
10:45	40	28	22	20	146	33	32	30	65	47	100	20	583
11:00	22	38	26	14	166	43	26	23	70	62	103	19	612
11:15	18	36	40	29	171	38	42	32	135	62	130	25	758
11:30	19	64	34	10	143	50	61	36	103	69	153	29	771
11:45	22	83	60	10	125	46	39	18	95	95	127	20	740
12:00	24	22	44	6	165	30	50	20	117	84	128	21	711
12:15	22	28	40	8	187	37	51	39	93	83	116	20	724
12:30	25	55	46	6	174	43	61	30	124	97	170	28	859
12:45	24	33	53	19	189	59	46	43	121	90	164	51	892
13:00	29	34	53	19	200	51	78	42	116	97	149	61	929
13:15	10	82	44	15	187	54	58	61	167	128	215	51	1072
13:30	27	55	57	24	178	56	62	46	120	111	185	57	978
13:45	26	64	50	13	226	57	80	89	162	110	182	61	1120
14:00	28	63	75	24	197	52	93	83	182	149	244	44	1234
14:15	26	58	71	11	219	41	92	91	158	113	214	59	1153
14:30	26	48	73	9	220	37	60	56	131	138	206	62	1066
14:45	23	62	53	11	202	48	66	50	129	108	220	71	1043
15:00	28	46	51	20	203	47	61	56	133	136	214	60	1055
15:15	27	42	62	14	189	32	65	59	120	106	235	93	1044
15:30	25	33	54	18	201	38	56	58	114	98	222	83	1000
15:45	15	38	59	20	217	64	60	64	115	97	228	86	1063
16:00	20	41	47	14	218	46	25	75	96	79	187	75	923
16:15	26	53	45	11	223	42	53	61	109	86	203	84	996
16:30	16	57	47	17	189	61	34	73	124	111	201	80	1010
16:45	24	37	64	13	235	51	39	48	153	97	234	78	1073
17:00	25	27	54	14	226	49	34	62	152	93	200	41	977
17:15	27	29	53	19	230	56	35	54	146	86	187	40	962
17:30	26	32	62	12	217	47	29	59	147	78	197	53	959
17:45	25	28	51	17	178	43	26	49	130	92	168	42	849

Conteo PR-176 y PR-177

Beginning	Movement						
of Period	S-L	S-T	N-T	N-R	W-L	W-R	Total
6:00	80	164	95	30	78	15	462
6:15	89	175	98	39	85	14	500
6:30	105	189	100	45	99	17	555
6:45	102	228	127	49	109	19	634
7:00	129	242	137	84	142	28	762
7:15	96	265	147	103	135	60	806
7:30	83	211	192	77	144	72	779
7:45	105	172	99	78	113	65	632
8:00	100	145	91	108	112	73	629
8:15	117	141	110	59	121	47	595
8:30	54	128	132	68	99	38	519
8:45	61	126	118	61	89	20	475
9:00	60	127	53	68	80	21	409
9:15	64	110	64	60	89	20	407
9:30	63	109	58	80	89	27	426
9:45	58	104	71	36	72	22	363
10:00	73	100	57	63	93	28	414
10:15	76	98	84	44	78	21	401
10:30	62	96	93	39	87	19	396
10:45	54	95	106	67	86	33	441
11:00	53	107	67	46	98	32	403
11:15	58	110	65	43	74	20	370
11:30	51	128	80	39	70	30	398
11:45	54	105	70	40	69	24	362
12:00	53	90	65	42	80	26	356
12:15	51	90	90	41	85	29	386
12:30	51	101	73	33	93	34	385
12:45	66	123	91	35	95	39	449
13:00	38	113	122	43	85	38	439
13:15	60	97	103	42	122	23	447
13:30	55	122	137	45	85	36	480
13:45	76	123	132	29	129	33	522
14:00	41	174	204	42	98	25	584
14:15	39	108	138	29	111	23	448
14:30	78	182	221	63	148	91	783
14:45	74	129	255	47	149	52	706
15:00	52	139	165	38	112	40	546
15:15	60	132	218	30	87	31	558
15:30	75	102	150	46	71	47	491
15:45	47	95	102	11	138	41	434
16:00	57	132	132	27	99	21	468
16:15	52	85	137	28	81	31	414
16:30	64	82	154	34	102	32	468
16:45	63	96	243	35	153	76	666
17:00	61	85	173	23	139	61	542
17:15	74	115	195	33	127	25	569
17:30	59	80	222	24	176	36	597
17:45	45	82	200	20	151	30	528

Conteo PR-176 y PR-845

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	100	60	85	8	202	73	49	8	46	5	17	655
6:15	1	129	59	98	9	270	105	76	10	79	9	9	854
6:30	1	145	78	109	5	298	77	80	10	45	20	19	887
6:45	2	200	81	124	11	300	104	58	6	37	17	6	946
7:00	1	232	94	164	10	315	46	25	4	15	5	6	917
7:15	6	190	91	173	0	319	76	56	8	16	5	7	947
7:30	4	216	90	153	6	284	89	77	13	6	7	4	949
7:45	1	185	87	154	5	257	57	82	1	11	5	4	849
8:00	5	190	106	180	20	287	87	89	7	7	6	1	985
8:15	0	143	73	117	14	203	92	51	6	13	4	5	721
8:30	4	112	89	100	5	154	104	43	2	10	5	2	630
8:45	0	135	103	113	4	174	79	63	5	9	7	2	694
9:00	4	100	97	116	16	178	84	24	8	3	3	1	634
9:15	1	131	73	119	3	206	115	73	0	6	6	4	737
9:30	0	116	82	111	0	153	98	81	4	7	4	4	660
9:45	2	51	34	56	2	97	130	80	7	4	3	5	471
10:00	0	76	46	40	1	48	155	62	3	7	1	4	443
10:15	3	65	39	55	0	101	120	45	1	9	2	1	441
10:30	3	54	42	47	0	86	136	51	1	3	1	0	424
10:45	3	81	57	85	0	126	174	90	3	6	4	7	636
11:00	1	82	61	95	5	148	250	140	12	9	10	2	815
11:15	0	62	47	103	4	142	297	160	15	7	12	6	855
11:30	8	96	53	99	0	171	215	154	8	6	6	3	819
11:45	2	72	70	60	0	114	278	120	13	8	5	1	743
12:00	5	72	89	81	1	184	213	103	7	9	7	11	782
12:15	4	96	90	96	3	190	246	83	5	6	8	6	833
12:30	4	85	96	66	1	182	260	134	6	11	4	2	851
12:45	4	101	104	63	0	152	257	102	8	12	12	6	821
13:00	6	123	122	77	2	168	274	136	12	13	14	5	952
13:15	2	117	102	91	0	206	304	167	14	12	23	7	1045
13:30	3	183	115	121	1	182	316	177	22	11	9	4	1144
13:45	2	148	145	90	0	181	335	199	20	9	17	9	1155
14:00	2	113	114	116	5	103	275	165	15	9	23	12	952
14:15	1	76	137	79	1	150	354	191	21	10	21	5	1046
14:30	2	124	142	129	0	157	338	210	34	16	25	12	1189
14:45	4	136	189	71	4	118	338	195	31	17	49	8	1160
15:00	3	128	145	86	7	132	372	221	28	12	32	4	1170
15:15	3	150	183	123	1	156	336	134	31	3	26	0	1146
15:30	3	136	114	95	1	198	316	156	35	3	49	0	1106
15:45	3	121	164	134	3	235	310	152	34	8	28	2	1194
16:00	0	153	218	145	4	220	350	231	31	7	24	4	1387
16:15	5	90	215	123	1	230	420	218	40	3	30	14	1389
16:30	0	38	172	98	3	265	446	183	27	3	27	10	1272
16:45	0	86	168	111	1	190	442	193	17	10	32	12	1262
17:00	2	125	210	121	0	163	354	156	20	8	20	10	1189
17:15	5	117	157	118	3	139	335	165	24	9	25	8	1105
17:30	13	136	204	128	3	152	316	177	21	11	30	11	1202
17:45	10	110	199	98	2	130	324	152	20	7	21	10	1083

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

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 11:40 AM, 27 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\01_PR-3 y PR-706_BA.OUT

Int PR-3 y PR-706
ico AM Base
ntersection ID: 1

UN 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 = 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-706
Pico AM Base
ntersection ID: 1

)EFAULT 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.

---

nt PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

able 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								
East: PR-3 E								
4	0	0	256	0	0	0	1.00	1.00
6	0	0	0	0	32	0	1.00	1.00
North: PR-706 N								
7	56	0	0	0	0	0	1.00	1.00
9	0	0	0	0	352	0	1.00	1.00
West: PR-3 W								
10	340	0	0	0	0	0	1.00	1.00
11	0	0	236	0	0	0	1.00	1.00

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

---

nt PR-3 y PR-706
Pico AM Base
Intersection ID: 1
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	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
East: PR-3 E									
4 T		*D A		4		13.3		15	
6 R	(Und)	A D	D A	4	4	33.0	12.0Min	37	15
North: PR-706 N									
7 L	(Und)	A B		4		10.0Min		9	
9 R	(Un2)	*A B	B A R	4	10	10.0Min	22.0Min	9	37
West: PR-3 W									
10 L		*B D	D A L	4	10	20.7	13.3	24	9
11 T		B A		4		30.5		43	

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

ovement 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-706
Pico AM Base
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 60

able 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
ast: PR-3 E										
4 T	256	1830		0.140		457	0.90	61	100	0.560*
6 R	32	33	147	0.435	0.120	57	0.90	61	100	0.560*
orth: PR-706 N										
7 L	56	1143		0.049		171	0.90	176	100	0.327
9 R	352	1426	1400	0.247	0.000	1077	0.90	175	100	0.327
est: PR-3 W										
10 L	340	1157	997	0.251	0.050	612	0.90	62	100	0.555
11 T	236	593		0.398		425	0.90	62	100	0.555

Int PR-3 y PR-706
ico AM Base
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 60

able 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
9	N_R	1st	A	B	10	-	-	10.0Min
10	W_L	1st	B	D	4	0.251	0.279	20.7
4	E_T		D	A	4	0.140	0.155	13.3
				Total:	18	0.391	0.434	44.1

- 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
32	150	32	60

(Variable cycle times: Program-determined)

Intersection Level of Service = B
Worst movement Level of Service = C

Average intersection delay (s)	=	12.2
Largest average movement delay (s)	=	26.4
Largest back of queue, 95% (m)	=	61
Performance Index	=	32.38
Degree of saturation (highest)	=	0.560
Practical Spare Capacity (lowest)	=	61 %
Total vehicle capacity, all lanes (veh/h)	=	2800
Total vehicle flow (veh/h)	=	1272
Total person flow (pers/h)	=	1908
Total vehicle delay (veh-h/h)	=	4.30
Total person delay (pers-h/h)	=	6.45
Total effective vehicle stops (veh/h)	=	915
Total effective person stops (pers/h)	=	1373
Total vehicle travel (veh-km/h)	=	768.7
Total cost ($/h)	=	415.43
Total fuel (L/h)	=	87.2
Total CO2 (kg/h)	=	218.03

---

nt PR-3 y PR-706
ico AM Base
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	9	13	0.217
B	13	17	24	28	0.467
D	41	45	15	19	0.317

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

---

nt PR-3 y PR-706
Pico AM Base
Intersection ID: 1
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)	(m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	1.26	1.89	17.7	0.91	0.72	8.5	60	8.60	40.0
6 R	0.23	0.35	26.4	0.91	0.82	8.5	60	1.17	34.6
North: PR-706 N									
7 L	0.17	0.25	10.7	0.35	0.78	3.8	27	1.20	46.2
9 R	1.00	1.50	10.2	0.35	0.73	3.8	27	7.40	46.6
West: PR-3 W									
10 L	1.32	1.98	14.0	0.66	0.83	8.8	61	8.86	43.2
11 T	0.32	0.48	4.8	0.66	0.51	8.8	61	5.14	51.8

Int PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

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)
ast: PR-3 E									
288	0.560	1.49	2.24	18.7	0.912	0.73	60	9.77	39.3
orth: PR-706 N									
408	0.327	1.17	1.75	10.3	0.352	0.74	27	8.60	46.6
West: PR-3 W									
576	0.555	1.64	2.46	10.2	0.665	0.70	61	14.01	46.4
INTERSECTION (persons):									
1908	0.560		6.45	12.2	0.620	0.72		32.38	44.6

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

---

nt PR-3 y PR-706
ico AM Base
Intersection ID: 1
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)	(m)	Shrt Lane (m)
East: PR-3 E													
1 TR	4, 6	4	1	40	15	288	515	0.559	18.7	0.73	8.5	60	
North: PR-706 N													
1 LR	7, 9	5	9	10	36	408	1249	0.327	10.3	0.74	3.8	27	
West: PR-3 W													
1 LT	10, 11	17	26	8	9	576	1037	0.555	10.2	0.70	8.8	61	

---

nt PR-3 y PR-706
Pico AM Base
Intersection ID: 1
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 %
East: PR-3 E													
1 TR	4, 6	0	256	32	288	3.30	1950	1800	1939	0	515	0.559	100
North: PR-706 N													
1 LR	7, 9	56	0	352	408	3.30	1950	1857	1617	60	1249	0.327	100
West: PR-3 W													
1 LT	10,	340	236	0	576	3.30	1950	1844	1587	103	1037	0.555	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.

nt PR-3 y PR-706
ico AM Base
ntersection ID: 1
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
East: PR-3 E											
4 T		256	457	100	0.560*	15*		17.7	0.72	8.5	8.60
6 R	(Und)	32	57	100	0.560*	37	15	26.4	0.82	8.5	1.17
North: PR-706 N											
7 L	(Und)	56	171	100	0.327	9		10.7	0.78	3.8	1.20
9 R	(Un2)	352	1077	100	0.327	9*	37	10.2	0.73	3.8	7.40
West: PR-3 W											
10 L		340	612	100	0.555	24*	9	14.0	0.83	8.8	8.86
11 T		236	425	100	0.555	43		4.8	0.51	8.8	5.14

* Maximum degree of saturation, or critical green periods

nt PR-3 y PR-706
Pico AM Base
ntersection ID: 1
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)
East: PR-3 E												
1 TR		256	32	288	0	1950	1	15	0.559	18.7	60	
	0	256	32	288	0				0.559	18.7	60	
North: PR-706 N												
LR	56		352	408	0	1950	9	36	0.327	10.3	27	
	56	0	352	408	0				0.327	10.3	27	
West: PR-3 W												
1 LT	340	236		576	0	1950	26	9	0.555	10.2	61	
	340	236	0	576	0				0.555	10.2	61	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	1272	0	60	0.560	12.2	61

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

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

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

---

nt PR-3 y PR-706
ico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
East: PR-3 E								
4 T		0.250*		256	457	0.560*	17.7	B
6 R	(Und)	0.617	0.250	32	57	0.560*	26.4	C
				288	515	0.560	18.7	B
North: PR-706 N								
7 L	(Und)	0.150		56	171	0.327	10.7	B
9 R	(Un2)	0.150*	0.617	352	1077	0.327	10.2	B
				408	1249	0.327	10.3	B
West: PR-3 W								
10 L		0.400*	0.150	340	612	0.555	14.0	B
11 T		0.717		236	425	0.555	4.8	A
				576	1037	0.555	10.2	B
ALL VEHICLES:				1272	2800	0.560	12.2	B
INTERSECTION (persons):				1908	2800	0.560	12.2	

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the
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-706
ico AM Base
ntersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.478	100
Average Delay	12.2	60
Stop Rate	0.69	100
Max. Queue for Any Movement	8.8	60
Perf. Index	32.4	60
Cost	415.4	60

Performance	Largest	Cycle

Measure	Value	Time
Total Vehicle Cap.	2968	100
Prac. Spare Cap.	88	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.

---

nt PR-3 y PR-706
ico AM Base
Intersection ID: 1
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)
East: PR-3 E						
	North	15.0	22.6	23.6	500	104
	West	S	60.0	10.0	500	106
North: PR-706 N						
	East	6.6	15.0	10.4	500	101
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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.

---

nt PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
		Deg.	Stop-line	Delay		Acc.	Queuing		Stopd		
Lane No.	Mov No.	Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.559	17.7	0.0	17.7	7.4	10.8	0.0	10.8	0.0 8.7	18.7
North: PR-706 N											
1 LR	7, 9	0.327	1.5	0.0	1.5	1.5	0.2	0.0	0.2	9.2 8.7	10.3
West: PR-3 W											
1 LT	10, 11	0.555	4.8	0.0	4.8	3.6	1.6	0.0	1.6	9.2 0.0	10.2

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

nt PR-3 y PR-706
ico AM Base
Intersection ID: 1
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
East: PR-3 E											
1 TR	0.559	0.0	4.2	0.0	4.2	5.2	6.4	7.2	8.5	9.9	0.12
North: PR-706 N											
1 LR	0.327	0.0	1.6	0.0	1.6	2.1	2.7	3.1	3.8	4.6	0.05
West: PR-3 W											
1 LT	0.555	0.0	4.3	0.0	4.3	5.4	6.6	7.4	8.8	10.1	0.12

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

Int PR-3 y PR-706
ico AM Base
ntersection ID: 1

able 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	2800	0.560	61	12.2	0.72	8.8	32.4	415.4
70	2869	0.551	63	12.8	0.71	9.7	33.6	419.9
80	2918	0.505	78	13.1	0.70	10.4	34.2	420.8
90	2933	0.497	81	13.9	0.70	11.5	35.6	426.9
100	2968	0.478	88	14.1	0.69	12.2	36.4	428.1
110	2607	0.713	26	22.5	0.80	18.8	48.6	493.5
120	2587	0.715	26	24.2	0.80	20.2	51.3	506.1
130	2569	0.717	26	25.7	0.80	21.6	53.7	518.1
140	2566	0.719	25	27.0	0.80	22.6	55.8	527.6
150	2552	0.699	29	28.1	0.80	23.6	57.6	535.9

--- 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 11:50 AM, 27 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\01_PR-3 y PR-706_BP.OUT

Int PR-3 y PR-706
ico PM Base
ntersection ID: 1

UN 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 = 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.

---

nt PR-3 y PR-706
Pico PM Base
ntersection ID: 1

EFAULT 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.

---

nt PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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
EHICLES	Demand flows in veh/hour as used by the program							
East: PR-3 E								
4	0	0	388	0	0	0	1.00	1.00
6	0	0	0	0	64	0	1.00	1.00
North: PR-706 N								
7	64	0	0	0	0	0	1.00	1.00
9	0	0	0	0	292	0	1.00	1.00
West: PR-3 W								
10	152	0	0	0	0	0	1.00	1.00
11	0	0	248	0	0	0	1.00	1.00

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

---

nt PR-3 y PR-706
ico PM Base
ntersection ID: 1
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	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
East: PR-3 E									
4 T		*D A		4		19.0		31	
6 R	(Und)	A D	D A	4	4	25.3	14.3	21	31
North: PR-706 N									
7 L	(Und)	A B		4		10.0Min		10	
9 R	(Un2)	*A B	B A R	4	10	10.3	22.0Min	10	36
West: PR-3 W									
10 L		*B D	D A L	4	10	10.0Min	18.6	7	25
11 T		B A		4		24.3		42	

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

ovement 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-706
Pico PM Base
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 60

able 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
ast: PR-3 E										
4 T	388	1728		0.225		893	0.90	107	100	0.435*
6 R	64	92	223	0.320	0.155	147	0.90	107	100	0.434
orth: PR-706 N										
7 L	64	1017		0.063		170	0.90	138	100	0.378
9 R	292	1328	920	0.220	0.000	773	0.90	138	100	0.378
est: PR-3 W										
10 L	152	806	614	0.090	0.129	350	0.90	107	100	0.434
11 T	248	816		0.304		571	0.90	107	100	0.434

Int PR-3 y PR-706
ico PM Base
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 60

able 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
9	N_R	1st	A	B	4	0.095	0.106	10.3
10	W_L	1st	B	D	10	-	-	10.0Min
4	E_T		D	A	4	0.225	0.249	19.0
				Total:	18	0.320	0.355	39.3

- 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	32	60

(Variable cycle times: Program-determined)

Intersection Level of Service = A
Worst movement Level of Service = B

Average intersection delay (s)	=	8.8
Largest average movement delay (s)	=	15.7
Largest back of queue, 95% (m)	=	60
Performance Index	=	28.05
Degree of saturation (highest)	=	0.435
Practical Spare Capacity (lowest)	=	107 %
Total vehicle capacity, all lanes (veh/h)	=	2904
Total vehicle flow (veh/h)	=	1208
Total person flow (pers/h)	=	1812
Total vehicle delay (veh-h/h)	=	2.96
Total person delay (pers-h/h)	=	4.43
Total effective vehicle stops (veh/h)	=	745
Total effective person stops (pers/h)	=	1117
Total vehicle travel (veh-km/h)	=	730.8
Total cost ($/h)	=	368.65
Total fuel (L/h)	=	78.0
Total CO2 (kg/h)	=	195.04

Int PR-3 y PR-706
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	10	14	0.233
B	14	18	7	11	0.183
D	25	29	31	35	0.583

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

Int PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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)	(m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.75	1.12	7.0	0.64	0.52	8.6	60	9.41	49.8
6 R	0.28	0.42	15.7	0.64	0.80	8.6	60	1.80	41.8
North: PR-706 N									
7 L	0.19	0.29	10.8	0.37	0.79	3.8	27	1.41	46.1
9 R	0.84	1.26	10.4	0.37	0.74	3.8	27	6.32	46.5
West: PR-3 W									
10 L	0.58	0.87	13.7	0.57	0.81	6.3	44	3.89	43.5
11 T	0.31	0.47	4.6	0.57	0.42	6.3	44	5.20	52.2

Int PR-3 y PR-706
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

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)
ast: PR-3 E									
452	0.435	1.03	1.54	8.2	0.644	0.56	60	11.22	48.5
orth: PR-706 N									
356	0.378	1.03	1.55	10.5	0.375	0.75	27	7.73	46.4
West: PR-3 W									
400	0.434	0.89	1.34	8.0	0.576	0.56	44	9.10	48.5
INTERSECTION (persons):									
1812	0.435		4.43	8.8	0.542	0.62		28.05	47.9

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

nt PR-3 y PR-706
ico PM Base
Intersection ID: 1
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)	(m)	Shrt Lane (m)
East: PR-3 E													
1 TR	4, 6	4	2	23	31	452	1040	0.435	8.2	0.56	8.6	60	
North: PR-706 N													
1 LR	7, 9	5	10	10	35	356	943	0.378	10.5	0.75	3.8	27	
West: PR-3 W													
1 LT	10, 11	18	10	7	25	400	921	0.434	8.0	0.56	6.3	44	

nt PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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 %
East: PR-3 E													
1 TR	4, 6	0	388	64	452	3.30	1950	1188	1936	0	1040	0.435	100
North: PR-706 N													
1 LR	7, 9	64	0	292	356	3.30	1950	1857	1085	60	943	0.378	100
West: PR-3 W													
1 LT	10,	152	248	0	400	3.30	1950	1883	1458	87	921	0.434	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.

nt PR-3 y PR-706
ico PM Base
ntersection ID: 1
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
ast: PR-3 E											
4	T	388	893	100	0.435*	31*		7.0	0.52	8.6	9.41
6	R (Und)	64	147	100	0.434	21	31	15.7	0.80	8.6	1.80
orth: PR-706 N											
7	L (Und)	64	170	100	0.378	10		10.8	0.79	3.8	1.41
9	R (Un2)	292	773	100	0.378	10*	36	10.4	0.74	3.8	6.32
West: PR-3 W											
10	L	152	350	100	0.434	7*	25	13.7	0.81	6.3	3.89
11	T	248	571	100	0.434	42		4.6	0.42	6.3	5.20

* Maximum degree of saturation, or critical green periods

nt PR-3 y PR-706
Pico PM Base
ntersection ID: 1
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)
East: PR-3 E												
1 TR		388	64	452	0	1950	2	31	0.435	8.2	60	
	0	388	64	452	0				0.435	8.2	60	
North: PR-706 N												
LR	64		292	356	0	1950	10	35	0.378	10.5	27	
	64	0	292	356	0				0.378	10.5	27	
West: PR-3 W												
1 LT	152	248		400	0	1950	10	25	0.434	8.0	44	
	152	248	0	400	0				0.434	8.0	44	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	1208	0	60	0.435	8.8	60

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

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

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

---

nt PR-3 y PR-706
ico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
East: PR-3 E								
4	T	0.517*		388	893	0.435*	7.0	A
6	R (Und)	0.350	0.517	64	147	0.434	15.7	B
				452	1040	0.435	8.2	A
orth: PR-706 N								
7	L (Und)	0.167		64	170	0.378	10.8	B
9	R (Un2)	0.167*	0.600	292	773	0.378	10.4	B
				356	943	0.378	10.5	B
est: PR-3 W								
10	L	0.117*	0.417	152	350	0.434	13.7	B
11	T	0.700		248	571	0.434	4.6	A
				400	921	0.434	8.0	A
ALL VEHICLES:				1208	2904	0.435	8.8	A
INTERSECTION (persons):				1812	2904	0.435	8.8	

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.
* Maximum v/c ratio, or critical green periods

Int PR-3 y PR-706
ico PM Base
ntersection ID: 1

able S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.399	80
Average Delay	8.8	60
Stop Rate	0.58	80
Max. Queue for Any Movement	8.6	60
Perf. Index	28.0	60
Cost	367.3	80

Performance	Largest	Cycle

Measure	Value	Time
Total Vehicle Cap.	3074	80
Prac. Spare Cap.	126	80

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.

---

nt PR-3 y PR-706
ico PM Base
Intersection ID: 1
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)
East: PR-3 E						
	North	15.0	22.6	23.6	500	104
	West	S	60.0	10.0	500	106
North: PR-706 N						
	East	6.6	15.0	10.4	500	101
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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.

---

nt PR-3 y PR-706
ico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
			Stop-line			Acc.	Queuing		Stopd		
Lane No.	Mov No.	Deg. Satn x	1st d1	2nd d2	Delay Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.435	7.0	0.0	7.0	5.1	2.2	0.0	2.2	0.0 8.7	8.2
North: PR-706 N											
1 LR	7, 9	0.378	1.7	0.0	1.7	1.6	0.3	0.0	0.3	9.2 8.7	10.5
West: PR-3 W											
1 LT	10, 11	0.434	4.6	0.0	4.6	3.8	1.3	0.0	1.3	9.2 0.0	8.0

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

nt PR-3 y PR-706
ico PM Base
Intersection ID: 1
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
East: PR-3 E											
1 TR	0.435	0.0	4.2	0.0	4.2	5.2	6.5	7.2	8.6	9.9	0.12
North: PR-706 N											
1 LR	0.378	0.0	1.6	0.0	1.6	2.1	2.6	3.0	3.8	4.5	0.05
West: PR-3 W											
1 LT	0.434	0.0	2.9	0.0	2.9	3.7	4.6	5.2	6.3	7.4	0.09

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

Int PR-3 y PR-706
ico PM Base
ntersection ID: 1

able 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	2904	0.435	107	8.8	0.62	8.6	28.0	368.6
70	2975	0.422	113	9.0	0.60	9.4	28.8	369.0
80	3074	0.399	126	8.8	0.58	9.9	29.1	367.3
90	2598	0.632	42	17.3	0.75	16.4	40.6	431.3
100	2593	0.645	40	19.3	0.75	18.2	43.5	445.0
110	2602	0.625	44	20.1	0.75	19.4	45.2	450.6
120	2606	0.620	45	21.4	0.75	20.9	47.4	459.6
130	2613	0.616	46	22.7	0.75	22.4	49.6	469.0
140	2608	0.614	47	24.0	0.75	23.9	51.8	478.6
150	2592	0.623	44	25.8	0.75	25.7	54.5	491.7

--- 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 11:37 AM, 27 Jan 2004

'ilename: C:\My Documents\aaSIDRA Projects\Salinas\01_PR-3 y PR-706_FA.OUT

Int PR-3 y PR-706
'ico AM Futuro
ntersection ID: 1

:UN INFORMATION

Variable cycle time run: "Optimum" cycle time = 70 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 = 5
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.

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

Int PR-3 y PR-706
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.

---

nt PR-3 y PR-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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
EHICLES	Demand flows in veh/hour as used by the program							
East: PR-3 E								
4	0	0	339	0	0	0	1.00	1.00
6	0	0	0	0	35	0	1.00	1.00
North: PR-706 N								
7	61	0	0	0	0	0	1.00	1.00
9	0	0	0	0	473	0	1.00	1.00
West: PR-3 W								
10	545	0	0	0	0	0	1.00	1.00
11	0	0	374	0	0	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-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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
East: PR-3 E															
4	T	*D	A							4		18.3		17	
6	R (Und)	A	D			D	A			4	4	48.0	17.4	45	17
North: PR-706 N															
7	L (Und)	A	B							4		10.0Min		6	
9	R (Un2)	*A	B			B	A	R		4	14	20.9	22.0Min	6	46

West: PR-3 W

10	L	*B	D	D	A	L	4	14	37.0	18.3	35	7
11	T	B	A				4		54.2		56	

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

ovement 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

nt PR-3 y PR-706
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

able 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
East: PR-3 E										
4 T	339	1839		0.184		447	0.90	19	100	0.759
6 R	35	23	128	0.565	0.172	46	0.90	18	100	0.763
North: PR-706 N										
7 L	61	1643		0.037		141	0.90	108	100	0.433
9 R	473	1479	1469	0.320	0.000	1092	0.90	108	100	0.433
West: PR-3 W										
10 L	545	1153	995	0.425	0.056	676	0.90	12	100	0.806*
11 T	374	580		0.645		464	0.90	12	100	0.806*

int PR-3 y PR-706
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

able 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
9	N_R	1st	A	B	4	0.218	0.242	20.9
10	W_L	1st	B	D	4	0.425	0.472	37.0
4	E_T		D	A	4	0.184	0.205	18.3
				Total:	12	0.827	0.918	76.3

Cycle Time:

Minimum	Maximum	Practical	Chosen
32	150	147	70

(Variable cycle times: Program-determined)

Intersection Level of Service = B
Worst movement Level of Service = C

Average intersection delay (s)	=	17.4
Largest average movement delay (s)	=	34.9
Largest back of queue, 95% (m)	=	151
Performance Index	=	59.61
Degree of saturation (highest)	=	0.806
Practical Spare Capacity (lowest)	=	12 %
Total vehicle capacity, all lanes (veh/h)	=	2866
Total vehicle flow (veh/h)	=	1827
Total person flow (pers/h)	=	2741
Total vehicle delay (veh-h/h)	=	8.84
Total person delay (pers-h/h)	=	13.26
Total effective vehicle stops (veh/h)	=	1576
Total effective person stops (pers/h)	=	2364
Total vehicle travel (veh-km/h)	=	1103.9
Total cost ($/h)	=	654.54
Total fuel (L/h)	=	131.8
Total CO2 (kg/h)	=	329.46

Int PR-3 y PR-706
ico AM Futuro
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 70

able S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	6	10	0.143
B	10	14	35	39	0.557
D	49	53	17	21	0.300

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

---

nt PR-3 y PR-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
ast: PR-3 E									
4 T	2.46	3.69	26.1	0.98	0.90	13.6	95	14.33	34.8
6 R	0.34	0.51	34.9	0.98	0.92	13.6	95	1.57	30.6
orth: PR-706 N									
7 L	0.20	0.30	11.8	0.44	0.80	6.9	48	1.45	45.2
9 R	1.49	2.23	11.3	0.44	0.76	6.9	48	11.13	45.6
est: PR-3 W									
10 L	3.14	4.72	20.8	0.82	0.96	21.6	151	19.16	38.1
11 T	1.21	1.81	11.6	0.82	0.83	21.6	151	11.96	45.5

---

nt PR-3 y PR-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
East: PR-3 E									
374	0.763	2.80	4.20	27.0	0.982	0.90	95	15.90	34.4
North: PR-706 N									
534	0.433	1.69	2.53	11.4	0.440	0.76	48	12.59	45.5
West: PR-3 W									
919	0.806	4.35	6.53	17.0	0.825	0.91	151	31.13	40.8
INTERSECTION (persons):									
2741	0.806		13.26	17.4	0.745	0.86		59.61	40.5

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

---

nt PR-3 y PR-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
East: PR-3 E													
1 TR	4, 6	4	1	48	17	374	493	0.759	27.0	0.90	13.6	95	
North: PR-706 N													
1 LR	7, 9	6	6	14	44	534	1233	0.433	11.4	0.76	6.9	48	
West: PR-3 W													
1 LT	10, 11	14	37	12	7	919	1140	0.806	17.0	0.91	21.6	151	

---

nt PR-3 y PR-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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 %
East: PR-3 E													
1 TR	4, 6	0	339	35	374	3.30	1950	1487	1941	0	493	0.759	100
North: PR-706 N													
1 LR	7, 9	61	0	473	534	3.30	1950	1857	1709	51	1233	0.433	100
West: PR-3 W													
1 LT	10,	545	374	0	919	3.30	1950	1858	1576	88	1140	0.806	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.

nt PR-3 y PR-706
ico AM Futuro
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 70

able 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
ast: PR-3 E											
4	T	339	447	100	0.759	17*		26.1	0.90	13.6	14.33
6	R (Und)	35	46	100	0.763	45	17	34.9	0.92	13.6	1.57
orth: PR-706 N											
7	L (Und)	61	141	100	0.433	6		11.8	0.80	6.9	1.45
9	R (Un2)	473	1092	100	0.433	6*	46	11.3	0.76	6.9	11.13
est: PR-3 W											
10	L	545	676	100	0.806*	35*	7	20.8	0.96	21.6	19.16
11	T	374	464	100	0.806*	56		11.6	0.83	21.6	11.96

* Maximum degree of saturation, or critical green periods

nt PR-3 y PR-706
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
East: PR-3 E												
1 TR		339	35	374	0	1950	1	17	0.759	27.0	95	
	0	339	35	374	0				0.759	27.0	95	
North: PR-706 N												
LR	61		473	534	0	1950	6	44	0.433	11.4	48	
	61	0	473	534	0				0.433	11.4	48	
West: PR-3 W												
LT	545	374		919	0	1950	37	7	0.806	17.0	151	
	545	374	0	919	0				0.806	17.0	151	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	1827	0	70	0.806	17.4	151

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

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

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

---

nt PR-3 y PR-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
East: PR-3 E								
4	T	0.243*		339	447	0.759	26.1	C
6	R (Und)	0.643	0.243	35	46	0.763	34.9	C
				374	492	0.763	27.0	C
North: PR-706 N								
7	L (Und)	0.086		61	141	0.433	11.8	B
9	R (Un2)	0.086*	0.657	473	1092	0.433	11.3	B
				534	1233	0.433	11.4	B
West: PR-3 W								
10	L	0.500*	0.100	545	676	0.806*	20.8	C
11	T	0.800		374	464	0.806*	11.6	B
				919	1140	0.806	17.0	B
ALL VEHICLES:				1827	2866	0.806	17.4	B
INTERSECTION (persons):				2741	2866	0.806	17.4	

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

---

nt PR-3 y PR-706
ico AM Futuro
ntersection ID: 1

able S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.806	70
Average Delay	17.4	70
Stop Rate	0.86	70
Max. Queue for Any Movement	21.6	70
Perf. Index	59.6	70
Cost	654.5	70

Performance	Largest	Cycle

Measure	Value	Time
Total Vehicle Cap.	3101	110
Prac. Spare Cap.	12	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.

---

nt PR-3 y PR-706
ico AM Futuro
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
East: PR-3 E						
	North	15.0	22.6	23.6	500	104
	West	S	60.0	10.0	500	106
North: PR-706 N						
	East	6.6	15.0	10.4	500	101
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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.

---

nt PR-3 y PR-706
ico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
			Stop-line			Acc.	Queuing		Stopd		
Lane No.	Mov No.	Deg. Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.759	23.9	2.3	26.1	8.0	18.2	0.9	17.3	0.0 8.7	27.0
North: PR-706 N											
1 LR	7, 9	0.433	2.6	0.0	2.6	1.9	0.8	0.0	0.8	9.2 8.7	11.4
West: PR-3 W											
1 LT	10, 11	0.806	8.8	2.8	11.6	4.5	7.2	1.1	6.1	9.2 0.0	17.0

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

---

ıt PR-3 y PR-706
.co AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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
East: PR-3 E											
1 TR	0.759	0.3	7.0	0.4	7.4	9.1	10.9	12.0	13.6	15.2	0.19
North: PR-706 N											
1 LR	0.433	0.0	3.3	0.0	3.3	4.1	5.1	5.7	6.9	8.1	0.10
West: PR-3 W											
1 LT	0.806	0.8	11.5	1.4	12.9	15.6	18.4	19.9	21.6	23.4	0.30

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

Int PR-3 y PR-706
ico AM Futuro
ntersection ID: 1

able 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	2786	0.851	6	19.9	0.93	24.1	62.6	683.9
70	2866	0.806	12	17.4	0.86	21.6	59.6	654.5
90	2620	1.025	-12	48.9	1.09	52.6	104.3	1009.0
120	2593	1.047	-14	61.8	1.09	66.8	125.4	1151.7
130	2573	1.041	-14	62.4	1.08	69.6	128.7	1157.3
140	2570	1.035	-13	63.1	1.07	72.4	132.2	1164.3
150	2565	1.031	-13	63.8	1.05	75.2	135.7	1168.6

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 12:23 PM, 27 Jan 2004

ılename: C:\My Documents\aaSIDRA Projects\Salinas\01_PR-3 y PR-706_FP.OUT

Int PR-3 y PR-706
ıco PM Futuro
ıtersection ID: 1

JN 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 = 4
Comparison of last two iterations:
Difference in intersection degree of satn = 0.0 %
Difference in total vehicle capacity = 0.0 %
Largest difference in eff. green times = 0 secs
(max. value for stopping = 0 secs)

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.

ınt PR-3 y PR-706
Pico PM Futuro
ıntersection 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

	L E F T		THROUGH		R I G H T	
	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.

---

nt PR-3 y PR-706
ico PM Futuro
Intersection ID: 1
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
EHICLES	Demand flows in veh/hour as used by the program							
East: PR-3 E								
4	0	0	565	0	0	0	1.00	1.00
6	0	0	0	0	70	0	1.00	1.00
North: PR-706 N								
7	70	0	0	0	0	0	1.00	1.00
9	0	0	0	0	530	0	1.00	1.00
West: PR-3 W								
10	316	0	0	0	0	0	1.00	1.00
11	0	0	371	0	0	0	1.00	1.00

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

Int PR-3 y PR-706
'ico PM Futuro
Intersection ID: 1
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
East: PR-3 E															
4 T		*D	A							4		25.0		24	
6 R	(Und)	A	D			D	A			4	4	35.8	22.9	28	24
North: PR-706 N															
7 L	(Und)	A	B							4		10.0Min		7	
9 R	(Un2)	*A	B			B	A	R		4	18	24.2	22.0Min	7	31

```
West: PR-3 W
  10 L       *B  D          D  A  L        4   18   20.8      25.0      17   10
  11 T        B  A                          4        44.6                45
-----------------------------------------------------------------------------
 Current Phase Sequence No.: 1
  Input phase sequence: A  B  D
  Output phase sequence: A  B  D
-----------------------------------------------------------------------------

 ovement 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
```

```
 nt PR-3 y PR-706
Pico PM Futuro
Intersection ID:      1
            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
East: PR-3 E										
4 T	565	1792		0.315		717	0.90	14	100	0.788
6 R	70	49	165	0.476	0.283	89	0.90	14	100	0.788
North: PR-706 N										
7 L	70	978		0.072		114	0.90	47	100	0.613
9 R	530	1488	1336	0.356	0.000	864	0.90	47	100	0.614
West: PR-3 W										
10 L	316	956	711	0.252	0.105	389	0.90	11	100	0.812*
11 T	371	609		0.609		457	0.90	11	100	0.812*

```
Int PR-3 y PR-706
Pico PM Futuro
Intersection ID:      1
            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
9	N_R	1st	A	B	4	0.302	0.336	24.2
10	W_L	1st	B	D	4	0.252	0.280	20.8
4	E_T		D	A	4	0.315	0.350	25.0
				Total:	12	0.870	0.966	70.0

```
  Cycle Time:
    Minimum   Maximum   Practical   Chosen
       32       150        150        60
    (Variable cycle times: Program-determined)

  Intersection Level of Service              =          B
  Worst movement Level of Service            =          C
```

Average intersection delay (s)	=	17.3
Largest average movement delay (s)	=	27.0
Largest back of queue, 95% (m)	=	127
Performance Index	=	62.44
Degree of saturation (highest)	=	0.812
Practical Spare Capacity (lowest)	=	11 %
Total vehicle capacity, all lanes (veh/h)	=	2630
Total vehicle flow (veh/h)	=	1922
Total person flow (pers/h)	=	2883
Total vehicle delay (veh-h/h)	=	9.23
Total person delay (pers-h/h)	=	13.85
Total effective vehicle stops (veh/h)	=	1714
Total effective person stops (pers/h)	=	2571
Total vehicle travel (veh-km/h)	=	1162.5
Total cost ($/h)	=	688.29
Total fuel (L/h)	=	139.3
Total CO2 (kg/h)	=	348.24

---

nt PR-3 y PR-706
ico PM Futuro
ntersection ID: 1
Fixed-Time Signals, Cycle Time = 60

able S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	7	11	0.183
B	11	15	17	21	0.350
D	32	36	24	28	0.467

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

---

nt PR-3 y PR-706
ico PM Futuro
Intersection ID: 1
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)	(m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	2.86	4.30	18.3	0.93	0.90	18.2	127	20.79	40.0
6 R	0.52	0.79	27.0	0.93	0.95	18.2	127	2.76	34.4
North: PR-706 N									
7 L	0.28	0.42	14.4	0.64	0.84	10.8	75	1.96	42.8
9 R	2.06	3.08	14.0	0.64	0.81	10.8	75	14.70	43.1
West: PR-3 W									
10 L	2.05	3.07	23.3	0.92	0.98	14.7	103	10.70	36.4
11 T	1.46	2.19	14.2	0.92	0.92	14.7	103	11.53	43.2

Int PR-3 y PR-706
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

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)
East: PR-3 E									
635	0.788	3.39	5.08	19.2	0.931	0.91	127	23.55	39.3
North: PR-706 N									
600	0.614	2.34	3.50	14.0	0.649	0.81	75	16.66	43.1
West: PR-3 W									
687	0.812	3.51	5.26	18.4	0.922	0.95	103	22.23	39.8
INTERSECTION (persons):									
2883	0.812		13.85	17.3	0.840	0.89		62.44	40.6

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

---

nt PR-3 y PR-706
ico PM Futuro
Intersection ID: 1
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)	(m)	Shrt Lane (m)
East: PR-3 E													
1 TR	4, 6	4	1	31	24	635	805	0.788	19.2	0.91	18.2	127	
North: PR-706 N													
1 LR	7, 9	4	7	18	31	600	978	0.613	14.0	0.81	10.8	75	
West: PR-3 W													
1 LT	10, 11	15	20	15	10	687	846	0.812	18.4	0.95	14.7	103	

---

nt PR-3 y PR-706
Pico PM Futuro
Intersection ID: 1
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 %
East: PR-3 E													
1 TR	4, 6	0	565	70	635	3.30	1950	1784	1939	0	805	0.788	100
North: PR-706 N													
1 LR	7, 9	70	0	530	600	3.30	1950	1857	1474	60	978	0.613	100
West: PR-3 W													
1 LT	10,	316	371	0	687	3.30	1950	1831	1416	93	846	0.812	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.

ıt PR-3 y PR-706
.co PM Futuro
Intersection ID: 1
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
East: PR-3 E											
4	T	565	717	100	0.788	24*		18.3	0.90	18.2	20.79
6	R (Und)	70	89	100	0.788	28	24	27.0	0.95	18.2	2.76
North: PR-706 N											
7	L (Und)	70	114	100	0.613	7		14.4	0.84	10.8	1.96
9	R (Un2)	530	864	100	0.614	7*	31	14.0	0.81	10.8	14.70
West: PR-3 W											
10	L	316	389	100	0.812*	17*	10	23.3	0.98	14.7	10.70
11	T	371	457	100	0.812*	45		14.2	0.92	14.7	11.53

* Maximum degree of saturation, or critical green periods

Int PR-3 y PR-706
Pico PM Futuro
Intersection ID: 1
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)
East: PR-3 E												
1 TR	565	70		635	0	1950	1	24	0.788	19.2	127	
	0	565	70	635	0				0.788	19.2	127	
North: PR-706 N												
1 LR	70		530	600	0	1950	7	31	0.613	14.0	75	
	70	0	530	600	0				0.613	14.0	75	
West: PR-3 W												
1 LT	316	371		687	0	1950	20	10	0.812	18.4	103	
	316	371	0	687	0				0.812	18.4	103	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	1922	0	60	0.812	17.3	127

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.

---

nt PR-3 y PR-706
ico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
East: PR-3 E								
4	T	0.400*		565	717	0.788	18.3	B
6	R (Und)	0.467	0.400	70	89	0.788	27.0	C
				635	806	0.788	19.2	B
North: PR-706 N								
7	L (Und)	0.117		70	114	0.613	14.4	B
9	R (Un2)	0.117*	0.517	530	864	0.614	14.0	B
				600	978	0.614	14.0	B
West: PR-3 W								
10	L	0.283*	0.167	316	389	0.812*	23.3	C
11	T	0.750		371	457	0.812*	14.2	B
				687	846	0.812	18.4	B
ALL VEHICLES:				1922	2630	0.812	17.3	B
INTERSECTION (persons):				2883	2630	0.812	17.3	

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.
* Maximum v/c ratio, or critical green periods

Int PR-3 y PR-706
Pico PM Futuro
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.812	60
Average Delay	17.3	60
Stop Rate	0.89	60
Max. Queue for Any Movement	18.2	60
Perf. Index	62.4	60
Cost	688.3	60

Performance	Largest	Cycle

Measure	Value	Time
Total Vehicle Cap.	2630	60
Prac. Spare Cap.	11	60

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.

---

nt PR-3 y PR-706
ico PM Futuro
Intersection ID: 1
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)
East: PR-3 E						
	North	15.0	22.6	23.6	500	104
	West	S	60.0	10.0	500	106
North: PR-706 N						
	East	6.6	15.0	10.4	500	101
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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-706
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
			Stop-line			Acc.	Queuing		Stopd		
Lane No.	Mov No.	Deg. Satn x	1st d1	2nd d2	Delay Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.788	15.2	3.0	18.3	7.6	10.7	0.9	9.8	0.0 8.7	19.2
North: PR-706 N											
1 LR	7, 9	0.613	5.3	0.0	5.3	2.8	2.7	0.0	2.7	9.2 8.7	14.0
West: PR-3 W											
1 LT	10, 11	0.812	9.6	4.6	14.2	5.6	8.5	1.5	7.0	9.2 0.0	18.4

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

---

nt PR-3 y PR-706
'ico PM Futuro
Intersection ID: 1
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
East: PR-3 E											
1 TR	0.788	0.6	9.6	1.0	10.6	12.8	15.2	16.5	18.2	19.9	0.25
North: PR-706 N											
1 LR	0.613	0.0	5.6	0.0	5.6	6.9	8.4	9.3	10.8	12.2	0.15
West: PR-3 W											
1 LT	0.812	1.0	6.6	1.6	8.2	10.0	11.9	13.1	14.7	16.3	0.21

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

Int PR-3 y PR-706
Pico PM Futuro
ntersection ID: 1

'able 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	2630	0.812	11	17.3	0.89	18.2	62.4	688.3
70	2346	1.135	-21	70.1	1.26	40.5	125.5	1311.3
80	2380	1.099	-18	62.2	1.18	39.8	120.9	1217.8
90	2399	1.092	-18	64.3	1.16	42.3	126.1	1242.0
110	2426	1.076	-16	67.8	1.13	49.2	135.8	1281.6

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 12:30 PM, 28 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\02a_PR-3 y SiteRes_BA.OUT

Int PR-3 y Site
ico AM Base
ntersection ID: 2

UN INFORMATION

Basic Parameters:
Intersection Type: Unsignalised - Two-Way Stop Control
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
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

---

nt PR-3 y Site
rico 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 (Two-Way Stop Control)

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

4. Cruise speed= 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

int PR-3 y Site
Pico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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							
ast: PR-3 E								
4	0	0	308	0	0	0	1.00	1.00
6	0	0	0	0	20	0	1.00	1.00
orth: Site N								
7	60	0	0	0	0	0	1.00	1.00
9	0	0	0	0	60	0	1.00	1.00
est: PR-3 W								
10	16	0	0	0	0	0	1.00	1.00
11	0	0	932	0	0	0	1.00	1.00

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

nt PR-3 y Site
ico AM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
East: PR-3 E									
4 T	308	0			1826	0.80	374	100	0.169
6 R	20	0			119	0.80	376	100	0.168
North: Site N									
7 L	60	1256	0.0	1256	277	0.80	269	100	0.217
9 R	60	308	0.0	308	277	0.80	269	100	0.217
West: PR-3 W									
10 L	16	308	0.0	308	33	0.80	65	100	0.485
11 T	932	0			1899	0.80	63	100	0.491*

nt PR-3 y Site
Pico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	C
Average intersection delay (s)	=	3.4

Largest average movement delay (s)	=	16.8
Largest back of queue, 95% (m)	=	55
Performance Index	=	19.12
Degree of saturation (highest)	=	0.491
Practical Spare Capacity (lowest)	=	63 %
Total vehicle capacity, all lanes (veh/h)	=	4430
Total vehicle flow (veh/h)	=	1396
Total person flow (pers/h)	=	2094
Total vehicle delay (veh-h/h)	=	1.33
Total person delay (pers-h/h)	=	1.99
Total effective vehicle stops (veh/h)	=	139
Total effective person stops (pers/h)	=	208
Total vehicle travel (veh-km/h)	=	845.9
Total cost ($/h)	=	385.89
Total fuel (L/h)	=	79.5
Total CO2 (kg/h)	=	198.86

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int PR-3 y Site
Pico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	3.11	60.0
6 R	0.05	0.08	9.0	0.00	0.70	0.0	0	0.33	48.0
North: Site N									
7 L	0.27	0.41	16.5	0.54	1.00	1.0	7	1.37	41.9
9 R	0.28	0.42	16.8	0.54	0.86	1.0	7	1.33	41.8
West: PR-3 W									
10 L	0.05	0.08	11.7	0.59	0.81	7.8	55	0.33	45.3
11 T	0.67	1.01	2.6	0.59	0.00	7.8	55	12.65	52.6

---

int PR-3 y Site
Pico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E									
328	0.169	0.05	0.08	0.5	0.000	0.04	0	3.44	59.1
orth: Site N									
120	0.217	0.55	0.83	16.6	0.542	0.93	7	2.70	41.9
est: PR-3 W									
948	0.491	0.72	1.09	2.7	0.598	0.01	55	12.98	52.5
NTERSECTION (persons):									
2094	0.491		1.99	3.4	0.453	0.10		19.12	52.7

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

---

nt PR-3 y Site
ico AM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (m)	Short Lane (m)
East: PR-3 E									
1 TR	4, 6	328	1944	0.169	0.5	0.04	0.0	0	
North: Site N									
1 LR	7, 9	120	554	0.216	16.6	0.93	1.0	7	
West: PR-3 W									
1 LT	10, 11	948	1931	0.491	2.7	0.01	7.8	55	

nt PR-3 y Site
ico AM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 TR	4, 6	0	308	20	328	328	1944	0.169	100
North: Site N									
1 LR	7, 9	60	0	60	120	120	554	0.216	100
West: PR-3 W									
1 LT	10, 11	16	932	0	948	948	1931	0.491	100

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

nt PR-3 y Site
Pico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh	Total Cap. (veh	Lane Util	Deg. Satn	Aver. Delay	Eff. Stop Rate	95% Back of Queue	Perf. Index

	/h)	/h)	(%)	x	(sec)		(veh)	
ast: PR-3 E								
4 T	308	1826	100	0.169	0.0	0.00	0.0	3.11
6 R	20	119	100	0.168	9.0	0.70	0.0	0.33
orth: Site N								
7 L	60	277	100	0.217	16.5	1.00	1.0	1.37
9 R	60	277	100	0.217	16.8	0.86	1.0	1.33
est: PR-3 W								
10 L	16	33	100	0.485	11.7	0.81	7.8	0.33
11 T	932	1899	100	0.491*	2.6	0.00	7.8	12.65

* Maximum degree of saturation

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int PR-3 y Site
Pico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E												
TR		308	20	328	0				0.169	0.5	0	
	0	308	20	328	0				0.169	0.5		
North: Site N												
LR	60		60	120	0				0.216	16.6	7	
	60	0	60	120	0				0.216	16.6	7	
West: PR-3 W												
1 LT	16	932		948	0				0.491	2.7	55	
	16	932	0	948	0				0.491	2.7	55	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1396	0	0.491	3.4	55

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

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

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

Int PR-3 y Site
ico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS

East: PR-3 E					
4 T	308	1826	0.169	0.0	A
6 R	20	119	0.168	9.0	A
	328	1945	0.169	0.5	A
orth: Site N					
7 L	60	277	0.217	16.5	C
9 R	60	277	0.217	16.8	C
	120	554	0.217	16.6	C
est: PR-3 W					
10 L	16	33	0.485	11.7	B
11 T	932	1899	0.491*	2.6	A
	948	1932	0.491	2.7	A
ALL VEHICLES:	1396	4430	0.491	3.4	A

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

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nt PR-3 y Site
ico AM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
East: PR-3 E						
	North	10.0	18.5	15.7	500	102
	West	S	60.0	10.0	500	106
North: Site N						
	East	6.6	15.0	10.4	500	101
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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.

---

nt PR-3 y Site
Pico AM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able D.1 - LANE DELAYS

			Delay (seconds/veh)							
		Deg.	Stop-line Delay			Acc.	Queuing		Stopd	
Lane	Mov	Satn	1st	2nd	Total	Dec.	Total	MvUp	(Idle)	Geom Control

No.	No.	x	d1	d2	dSL	dn	dq	dqm	di	dig	dic
East: PR-3 E											
1 TR	4, 6	0.169	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 9.0	0.5
North: Site N											
1 LR	7, 9	0.216	5.6	0.0	5.6	1.0	4.7	0.0	4.7	10.8 11.1	16.6
West: PR-3 W											
1 LT	10, 11	0.491	2.2	0.4	2.6	5.1	0.0	0.0	0.0	9.2 0.0	2.7

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

nt PR-3 y Site
ico AM Base
Intersection ID: 2
Stop Sign Controlled Intersection

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
East: PR-3 E											
1 TR	0.169	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
North: Site N											
1 LR	0.216	0.0	0.3	0.0	0.3	0.6	0.7	0.8	1.0	1.2	0.01
West: PR-3 W											
1 LT	0.491	0.2	2.0	0.6	2.6	4.4	5.5	6.3	7.8	9.1	0.11

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

--- 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 12:31 PM, 28 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\02a_PR-3 y SiteRes_BP.OUT

Int PR-3 y Site
ico PM Base
ntersection ID: 2

UN INFORMATION

Basic Parameters:
Intersection Type: Unsignalised - Two-Way Stop Control
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
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

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nt PR-3 y Site
ico 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 (Two-Way Stop Control)

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

4. Cruise speed= 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

Int PR-3 y Site
Pico PM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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							
ast: PR-3 E								
4	0	0	592	0	0	0	1.00	1.00
6	0	0	0	0	52	0	1.00	1.00
orth: Site N								
7	36	0	0	0	0	0	1.00	1.00
9	0	0	0	0	16	0	1.00	1.00
est: PR-3 W								
10	32	0	0	0	0	0	1.00	1.00
11	0	0	372	0	0	0	1.00	1.00

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

nt PR-3 y Site
ico PM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
East: PR-3 E									
4 T	592	0			1785	0.80	141	100	0.332*
6 R	52	0			157	0.80	142	100	0.331
North: Site N									
7 L	36	996	0.0	996	396	0.80	780	100	0.091
9 R	16	592	0.0	592	176	0.80	780	100	0.091
West: PR-3 W									
10 L	32	592	0.0	592	142	0.80	255	100	0.225
11 T	372	0			1647	0.80	254	100	0.226

nt PR-3 y Site
Pico PM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	C
Average intersection delay (s)	=	2.7

Largest average movement delay (s)	=	16.3
Largest back of queue, 95% (m)	=	18
Performance Index	=	13.51
Degree of saturation (highest)	=	0.332
Practical Spare Capacity (lowest)	=	141 %
Total vehicle capacity, all lanes (veh/h)	=	4302
Total vehicle flow (veh/h)	=	1100
Total person flow (pers/h)	=	1650
Total vehicle delay (veh-h/h)	=	0.82
Total person delay (pers-h/h)	=	1.22
Total effective vehicle stops (veh/h)	=	115
Total effective person stops (pers/h)	=	172
Total vehicle travel (veh-km/h)	=	666.5
Total cost ($/h)	=	289.31
Total fuel (L/h)	=	57.2
Total CO2 (kg/h)	=	143.08

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int PR-3 y Site
Pico PM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	5.98	60.0
6 R	0.13	0.20	9.0	0.00	0.70	0.0	0	0.86	48.0
North: Site N									
7 L	0.16	0.24	16.0	0.61	1.00	0.4	3	0.81	42.4
9 R	0.07	0.11	16.3	0.61	0.93	0.4	3	0.36	42.3
West: PR-3 W									
10 L	0.11	0.17	12.5	0.61	0.85	2.6	18	0.65	44.6
11 T	0.34	0.51	3.3	0.61	0.00	2.6	18	4.86	52.4

---

nt PR-3 y Site
Pico PM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E									
644	0.332	0.13	0.20	0.7	0.000	0.06	0	6.84	58.8
orth: Site N									
52	0.091	0.23	0.35	16.0	0.613	0.98	3	1.17	42.4
est: PR-3 W									
404	0.226	0.45	0.68	4.0	0.616	0.07	18	5.51	51.7
NTERSECTION (persons):									
1650	0.332		1.22	2.7	0.255	0.10		13.51	55.0

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

---

nt PR-3 y Site
ico PM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (m)	Short Lane (m)
East: PR-3 E									
1 TR	4, 6	644	1942	0.332	0.7	0.06	0.0	0	
North: Site N									
1 LR	7, 9	52	572	0.091	16.0	0.98	0.4	3	
West: PR-3 W									
1 LT	10, 11	404	1789	0.226	4.0	0.07	2.6	18	

nt PR-3 y Site
ico PM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 TR	4, 6	0	592	52	644	644	1942	0.332	100
North: Site N									
1 LR	7, 9	36	0	16	52	52	572	0.091	100
West: PR-3 W									
1 LT	10, 11	32	372	0	404	404	1789	0.226	100

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

nt PR-3 y Site
Pico PM Base
Intersection ID: 2
Stop Sign Controlled Intersection

able S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh	Total Cap. (veh	Lane Util	Deg. Satn	Aver. Delay	Eff. Stop Rate	95% Back of Queue	Perf. Index

	/h)	/h)	(%)	x	(sec)		(veh)	
ast: PR-3 E								
4 T	592	1785	100	0.332*	0.0	0.00	0.0	5.98
6 R	52	157	100	0.331	9.0	0.70	0.0	0.86
orth: Site N								
7 L	36	396	100	0.091	16.0	1.00	0.4	0.81
9 R	16	176	100	0.091	16.3	0.93	0.4	0.36
est: PR-3 W								
10 L	32	142	100	0.225	12.5	0.85	2.6	0.65
11 T	372	1647	100	0.226	3.3	0.00	2.6	4.86

* Maximum degree of saturation

ınt PR-3 y Site
Pico PM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E												
TR	592	52		644	0				0.332	0.7	0	
	0	592	52	644	0				0.332	0.7		
North: Site N												
LR	36		16	52	0				0.091	16.0	3	
	36	0	16	52	0				0.091	16.0	3	
West: PR-3 W												
1 LT	32	372		404	0				0.226	4.0	18	
	32	372	0	404	0				0.226	4.0	18	
ALL VEHICLES				Total Flow 1100	% HV 0				Max X 0.332	Aver. Delay 2.7	Max Queue 18	

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

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

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

Int PR-3 y Site
ico PM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS

East: PR-3 E					
4 T	592	1785	0.332*	0.0	A
6 R	52	157	0.331	9.0	A
	644	1942	0.332	0.7	A
orth: Site N					
7 L	36	396	0.091	16.0	C
9 R	16	176	0.091	16.3	C
	52	572	0.091	16.0	C
est: PR-3 W					
10 L	32	142	0.225	12.5	B
11 T	372	1647	0.226	3.3	A
	404	1789	0.226	4.0	A
ALL VEHICLES:	1100	4302	0.332	2.7	A

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

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nt PR-3 y Site
ico PM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
East: PR-3 E						
	North	10.0	18.5	15.7	500	102
	West	S	60.0	10.0	500	106
North: Site N						
	East	6.6	15.0	10.4	500	101
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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.

---

nt PR-3 y Site
Pico PM Base
ntersection ID: 2
Stop Sign Controlled Intersection

able D.1 - LANE DELAYS

			Delay (seconds/veh)							
		Deg.	Stop-line Delay			Acc.	Queuing		Stopd	
Lane	Mov	Satn	1st	2nd	Total	Dec.	Total	MvUp	(Idle)	Geom Control

No.	No.	x	d1	d2	dSL	dn	dq	dqm	di	dig	dic
East: PR-3 E											
1 TR	4, 6	0.332	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 9.0	0.7
North: Site N											
1 LR	7, 9	0.091	5.1	0.0	5.1	1.1	4.0	0.0	4.0	10.8 11.1	16.0
West: PR-3 W											
1 LT	10, 11	0.226	3.3	0.0	3.3	5.0	0.1	0.0	0.1	9.2 0.0	4.0

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

nt PR-3 y Site
rico PM Base
Intersection ID: 2
Stop Sign Controlled Intersection

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
East: PR-3 E											
1 TR	0.332	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
North: Site N											
1 LR	0.091	0.0	0.1	0.0	0.1	0.3	0.3	0.3	0.4	0.5	0.01
West: PR-3 W											
1 LT	0.226	0.0	0.8	0.0	0.8	1.5	1.8	2.1	2.6	3.0	0.04

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

--- 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 9:58 AM, 28 Jan 2004

'ilename: C:\My Documents\aaSIDRA Projects\Salinas\02a_PR-3 y SiteRes_FA.OUT

Int PR-3 y Site Residencial
'ico AM Futuro
ntersection ID: 2b

UN INFORMATION

* Basic Parameters:
Intersection Type: Unsignalised - Two-Way Stop Control
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
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

---

nt PR-3 y Site Residencial
'ico AM Futuro
Intersection ID: 2b

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

	L E F T		THROUGH		R I G H T	
	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 (Two-Way Stop Control)

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

4. Cruise speed= 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

Int PR-3 y Site Residencial
Pico AM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able 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								
outh: Acceso Sur								
1	4	0	0	0	0	0	1.00	1.00
3	0	0	0	0	9	0	1.00	1.00
ast: PR-3 E								
4	26	0	444	0	0	0	1.00	1.00
6	0	0	0	0	82	0	1.00	1.00
orth: Site Residencial N								
7	247	0	0	0	0	0	1.00	1.00
9	0	0	0	0	247	0	1.00	1.00
est: PR-3 W								
10	78	0	1106	0	0	0	1.00	1.00
12	0	0	0	0	206	0	1.00	1.00

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

nt PR-3 y Site Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

able S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur									
1 L	4	1901	0.0	1901	80	0.80	1500	100	0.050
3 R	9	1106	0.0	1106	181	0.80	1509	100	0.050
East: PR-3 E									
4 LT	470	1312	0.0	1312	1276	0.80	117	100	0.368
6 R	82	0			223	0.80	118	100	0.368
orth: Site Residencial N									
7 L	247	1663	0.0	1663	244	0.80	-21	100	1.012*
9 R	247	444	0.0	444	914	0.80	196	100	0.270
est: PR-3 W									
10 LT	1184	526	0.0	526	1563	0.80	6	100	0.758
12 R	206	0			272	0.80	6	100	0.757

Int PR-3 y Site Residencial
Pico AM Futuro
ntersection ID: 2b

Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	C
Worst movement Level of Service	=	F
Average intersection delay (s)	=	23.6
Largest average movement delay (s)	=	79.9
Largest back of queue, 95% (m)	=	184
Performance Index	=	63.42
Degree of saturation (highest)	=	1.012
Practical Spare Capacity (lowest)	=	-21 %
Total vehicle capacity, all lanes (veh/h)	=	4753
Total vehicle flow (veh/h)	=	2449
Total person flow (pers/h)	=	3674
Total vehicle delay (veh-h/h)	=	16.06
Total person delay (pers-h/h)	=	24.10
Total effective vehicle stops (veh/h)	=	811
Total effective person stops (pers/h)	=	1216
Total vehicle travel (veh-km/h)	=	1481.4
Total cost ($/h)	=	966.09
Total fuel (L/h)	=	185.3
Total CO2 (kg/h)	=	463.25

Int PR-3 y Site Residencial
ico AM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able 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% (vehs)	Back (m)	Perf. Index	Aver. Speed (km/h)
South: Acceso Sur									
1 L	0.02	0.04	22.3	0.82	0.95	0.2	1	0.11	37.1
3 R	0.05	0.08	21.8	0.82	0.94	0.2	1	0.24	37.5
East: PR-3 E									
4 LT	3.18	4.77	24.4	1.00	0.06	10.4	73	11.09	35.9
6 R	0.75	1.12	32.9	1.00	0.00	10.4	73	2.10	31.4
orth: Site Residencial N									
7 L	5.48	8.22	79.9	1.00	1.73	12.8	89	14.72	19.0
9 R	0.94	1.40	13.6	0.51	0.94	1.5	10	5.18	44.4
est: PR-3 W									
10 LT	4.39	6.59	13.4	1.00	0.09	26.3	184	25.24	43.9
12 R	1.24	1.87	21.8	1.00	0.00	26.3	184	4.75	37.5

Int PR-3 y Site Residencial
ico AM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able 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: Acceso Sur									
13	0.050	0.08	0.12	22.0	0.822	0.94	1	0.34	37.3

ast: PR-3 E									
552	0.368	3.93	5.90	25.6	1.000	0.05	73	13.19	35.2
North: Site Residencial N									
494	1.012	6.42	9.63	46.8	0.755	1.33	89	19.90	26.6
West: PR-3 W									
1390	0.758	5.64	8.45	14.6	1.000	0.08	184	30.00	42.8
NTERSECTION (persons):									
3674	1.012		24.10	23.6	0.950	0.33		63.42	36.5

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

nt PR-3 y Site Residencial
ico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (m)	Short Lane (m)
South: Acceso Sur									
1 LR	1, 3	13	261	0.050	22.0	0.94	0.2	1	
East: PR-3 E									
1 LTR	4, 6	552	1499	0.368	25.6	0.05	10.4	73	
North: Site Residencial N									
1 L	7	247	244	1.012	79.9	1.73	12.8	89	
2 R	9	247	914	0.270	13.6	0.94	1.5	10	
West: PR-3 W									
1 LTR	10, 12	1390	1835	0.757	14.6	0.08	26.3	184	

nt PR-3 y Site Residencial
ico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LR	1, 3	4	0	9	13	13	261	0.050	100
East: PR-3 E									
1 LTR	4, 6	26	444	82	552	489	1499	0.368	100
North: Site Residencial N									
1 L	7	247	0	0	247	120	244	1.012	100

2 R	9	0	0	247	247	120	914	0.270	100
West: PR-3 W									
1 LTR	10, 12	78	1106	206	1390	474	1835	0.757	100

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

---

nt PR-3 y Site Residencial
ico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Acceso Sur									
1	L	4	80	100	0.050	22.3	0.95	0.2	0.11
3	R	9	181	100	0.050	21.8	0.94	0.2	0.24
East: PR-3 E									
4	LT	470	1276	100	0.368	24.4	0.06	10.4	11.09
6	R	82	223	100	0.368	32.9	0.00	10.4	2.10
North: Site Residencial N									
7	L	247	244	100	1.012*	79.9	1.73	12.8	14.72
9	R	247	914	100	0.270	13.6	0.94	1.5	5.18
West: PR-3 W									
10	LT	1184	1563	100	0.758	13.4	0.09	26.3	25.24
12	R	206	272	100	0.757	21.8	0.00	26.3	4.75

* Maximum degree of saturation

Int PR-3 y Site Residencial
ico AM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able 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: Acceso Sur												
LR	4		9	13	0				0.050	22.0	1	
	4	0	9	13	0				0.050	22.0	1	
East: PR-3 E												
1 LTR	26	444	82	552	0				0.368	25.6	73	
	26	444	82	552	0				0.368	25.6	73	
North: Site Residencial N												
L	247			247	0				1.012	79.9	89	
R			247	247	0				0.270	13.6	10	

	247	0	247	494	0	1.012	46.8	89
West: PR-3 W								
LTR	78	1106	206	1390	0	0.757	14.6	184
	78	1106	206	1390	0	0.757	14.6	184

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2449	0	1.012	23.6	184

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

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

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

---

nt PR-3 y Site Residencial
ico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
South: Acceso Sur						
1	L	4	80	0.050	22.3	C
3	R	9	181	0.050	21.8	C
		13	261	0.050	22.0	C
ast: PR-3 E						
4	LT	470	1276	0.368	24.4	C
6	R	82	223	0.368	32.9	D
		552	1499	0.368	25.6	D
North: Site Residencial N						
7	L	247	244	1.012*	79.9	F
9	R	247	914	0.270	13.6	B
		494	1158	1.012	46.8	E
est: PR-3 W						
10	LT	1184	1563	0.758	13.4	B
12	R	206	272	0.757	21.8	C
		1390	1835	0.758	14.6	B
ALL VEHICLES:		2449	4753	1.012	23.6	C

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 Site Residencial
ico AM Futuro
ntersection ID: 2b

Stop Sign Controlled Intersection

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: Acceso Sur						
	East	15.0	22.6	23.6	500	104
	West	6.6	15.0	10.4	500	101
East: PR-3 E						
	South	6.6	15.0	10.4	500	101
	North	10.0	18.5	15.7	500	102
	West	S	60.0	16.5	500	106
North: Site Residencial N						
	East	8.4	16.9	13.2	500	102
	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	16.5	500	106
	North	8.4	16.9	13.2	500	102

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.

---

nt PR-3 y Site Residencial
ico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
			Delay (seconds/veh)								
South: Acceso Sur											
1 LR	1, 3	0.050	13.1	0.0	13.1	3.4	9.8	0.0	9.8	9.2 8.7	22.0
East: PR-3 E											
1 LTR	4, 6	0.368	22.6	1.3	23.9	7.6	16.3	0.1	16.2	0.5 9.0	25.6
North: Site Residencial N											
1 L	7	1.012	18.5	50.4	68.9	1.8	67.1	13.2	53.9	11.0	79.9
2 R	9	0.270	2.5	0.0	2.5	1.0	1.5	0.0	1.5	11.1	13.6
West: PR-3 W											
1 LTR	10, 12	0.757	9.5	3.2	12.8	7.6	5.2	0.4	4.8	0.6 9.0	14.6

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

---

int PR-3 y Site Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur											
1 LR	0.050	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.00
East: PR-3 E											
1 LTR	0.368	0.6	2.8	0.7	3.5	5.8	7.2	8.3	10.4	12.2	0.15
North: Site Residencial N											
1 L	1.012	3.1	1.5	2.9	4.4	7.0	8.8	10.1	12.8	15.0	0.18
2 R	0.270	0.0	0.5	0.0	0.5	0.9	1.1	1.2	1.5	1.7	0.02
West: PR-3 W											
1 LTR	0.757	1.7	4.6	5.1	9.7	13.7	17.6	20.5	26.3	31.2	0.37

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

--- 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 10:04 AM, 28 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\02a_PR-3 y SiteRes_FP.OUT

Tnt PR-3 y Site Residencial
ico PM Futuro
ntersection ID: 2b

UN INFORMATION
---
* Basic Parameters:
Intersection Type: Unsignalised - Two-Way Stop Control
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
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

---

nt PR-3 y Site Residencial
Pico PM Futuro
ntersection ID: 2b

EFAULT 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

	L E F T		THROUGH		R I G H T	
	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 (Two-Way Stop Control)

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

4. Cruise speed= 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

Int PR-3 y Site Residencial
ico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
EHICLES Demand flows in veh/hour as used by the program								
outh: Acceso Sur								
1	39	0	0	0	0	0	1.00	1.00
3	0	0	0	0	4	0	1.00	1.00
ast: PR-3 E								
4	4	0	790	0	0	0	1.00	1.00
6	0	0	0	0	246	0	1.00	1.00
orth: Site Residencial N								
7	146	0	0	0	0	0	1.00	1.00
9	0	0	0	0	124	0	1.00	1.00
est: PR-3 W								
10	224	0	568	0	0	0	1.00	1.00
12	0	0	0	0	9	0	1.00	1.00

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

int PR-3 y Site Residencial
Pico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
outh: Acceso Sur									
1 L	39	1710	0.0	1710	223	0.80	357	100	0.175
3 R	4	568	0.0	568	23	0.80	360	100	0.174
ast: PR-3 E									
4 LT	794	577	0.0	577	1465	0.80	48	100	0.542
6 R	246	0			454	0.80	48	100	0.542
orth: Site Residencial N									
7 L	146	1590	0.0	1590	267	0.80	46	100	0.547
9 R	124	790	0.0	790	577	0.80	272	100	0.215
est: PR-3 W									
10 LT	792	1036	0.0	1036	1040	0.80	5	100	0.762*
12 R	9	0			12	0.80	7	100	0.750

Int PR-3 y Site Residencial
ico PM Futuro
ntersection ID: 2b

Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	18.9
Largest average movement delay (s)	=	35.8
Largest back of queue, 95% (m)	=	100
Performance Index	=	47.74
Degree of saturation (highest)	=	0.762
Practical Spare Capacity (lowest)	=	5 %
Total vehicle capacity, all lanes (veh/h)	=	4061
Total vehicle flow (veh/h)	=	2154
Total person flow (pers/h)	=	3231
Total vehicle delay (veh-h/h)	=	11.33
Total person delay (pers-h/h)	=	17.00
Total effective vehicle stops (veh/h)	=	639
Total effective person stops (pers/h)	=	959
Total vehicle travel (veh-km/h)	=	1302.9
Total cost ($/h)	=	797.52
Total fuel (L/h)	=	159.4
Total CO2 (kg/h)	=	398.47

Int PR-3 y Site Residencial
ico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able 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)
outh: Acceso Sur									
1 L	0.26	0.39	24.1	0.84	0.96	0.7	5	1.07	36.0
3 R	0.03	0.04	23.7	0.84	0.89	0.7	5	0.11	36.3
ast: PR-3 E									
4 LT	1.54	2.31	7.0	1.00	0.01	14.3	100	13.40	48.5
6 R	1.09	1.63	15.9	1.00	0.00	14.3	100	4.74	41.6
orth: Site Residencial N									
7 L	1.30	1.94	32.0	0.90	1.12	3.0	21	4.64	32.6
9 R	0.57	0.86	16.7	0.65	1.00	1.1	7	2.85	42.1
est: PR-3 W									
10 LT	6.46	9.69	29.4	1.00	0.39	13.3	93	20.71	33.2
12 R	0.09	0.13	35.8	1.00	0.00	13.3	93	0.23	30.1

Int PR-3 y Site Residencial
ico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able 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)
outh: Acceso Sur									
43	0.175	0.29	0.43	24.1	0.842	0.96	5	1.18	36.0

ast: PR-3 E									
1040	0.542	2.63	3.94	9.1	1.000	0.00	100	18.14	46.7
orth: Site Residencial N									
270	0.547	1.87	2.81	24.9	0.791	1.06	21	7.49	36.4
West: PR-3 W									
801	0.762	6.55	9.83	29.4	1.000	0.38	93	20.94	33.1
INTERSECTION (persons):									
3231	0.762		17.00	18.9	0.971	0.30		47.74	39.1

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

---

nt PR-3 y Site Residencial
ico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (m)	Short Lane (m)
South: Acceso Sur									
1 LR	1, 3	43	246	0.175	24.1	0.96	0.7	5	
East: PR-3 E									
1 LTR	4, 6	1040	1919	0.542	9.1	0.00	14.3	100	
North: Site Residencial N									
1 L	7	146	267	0.546	32.0	1.12	3.0	21	
2 R	9	124	577	0.215	16.7	1.00	1.1	7	
West: PR-3 W									
1 LTR	10, 12	801	1052	0.761	29.4	0.38	13.3	93	

---

nt PR-3 y Site Residencial
Pico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

able S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LR	1, 3	39	0	4	43	43	246	0.175	100
East: PR-3 E									
1 LTR	4, 6	4	790	246	1040	418	1919	0.542	100
North: Site Residencial N									
1 L	7	146	0	0	146	120	267	0.546	100

2 R	9	0	0	124	124	120	577	0.215	100
West: PR-3 W									
1 LTR	10, 12	224	568	9	801	359	1052	0.761	100

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

---

nt PR-3 y Site Residencial
ico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Acceso Sur									
1	L	39	223	100	0.175	24.1	0.96	0.7	1.07
3	R	4	23	100	0.174	23.7	0.89	0.7	0.11
East: PR-3 E									
4	LT	794	1465	100	0.542	7.0	0.01	14.3	13.40
6	R	246	454	100	0.542	15.9	0.00	14.3	4.74
North: Site Residencial N									
7	L	146	267	100	0.547	32.0	1.12	3.0	4.64
9	R	124	577	100	0.215	16.7	1.00	1.1	2.85
West: PR-3 W									
10	LT	792	1040	100	0.762*	29.4	0.39	13.3	20.71
12	R	9	12	100	0.750	35.8	0.00	13.3	0.23

* Maximum degree of saturation

---

nt PR-3 y Site Residencial
ico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Acceso Sur												
LR	39		4	43	0				0.175	24.1	5	
	39	0	4	43	0				0.175	24.1	5	
East: PR-3 E												
1 LTR	4	790	246	1040	0				0.542	9.1	100	
	4	790	246	1040	0				0.542	9.1	100	
North: Site Residencial N												
L	146			146	0				0.546	32.0	21	
R			124	124	0				0.215	16.7	7	

	146	0	124	270	0	0.546	24.9	21
West: PR-3 W								
LTR	224	568	9	801	0	0.761	29.4	93
	224	568	9	801	0	0.761	29.4	93

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2154	0	0.762	18.9	100

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

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

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

---

nt PR-3 y Site Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
South: Acceso Sur						
1	L	39	223	0.175	24.1	C
3	R	4	23	0.174	23.7	C
		43	246	0.175	24.1	C
ast: PR-3 E						
4	LT	794	1465	0.542	7.0	A
6	R	246	454	0.542	15.9	C
		1040	1919	0.542	9.1	A
orth: Site Residencial N						
7	L	146	267	0.547	32.0	D
9	R	124	577	0.215	16.7	C
		270	844	0.547	24.9	C
West: PR-3 W						
10	LT	792	1040	0.762*	29.4	D
12	R	9	12	0.750	35.8	E
		801	1052	0.762	29.4	D
ALL VEHICLES:		2154	4061	0.762	18.9	C

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 Site Residencial
Pico PM Futuro
Intersection ID: 2b

Stop Sign Controlled Intersection

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: Acceso Sur						
	East	15.0	22.6	23.6	500	104
	West	6.6	15.0	10.4	500	101
East: PR-3 E						
	South	6.6	15.0	10.4	500	101
	North	10.0	18.5	15.7	500	102
	West	S	60.0	16.5	500	106
North: Site Residencial N						
	East	8.4	16.9	13.2	500	102
	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	16.5	500	106
	North	8.4	16.9	13.2	500	102

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.

---

nt PR-3 y Site Residencial
ico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
		Deg.	Stop-line Delay			Acc.	Queuing		Stopd		
Lane No.	Mov No.	Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
South: Acceso Sur											
1 LR	1, 3	0.175	14.8	0.2	14.9	2.8	12.1	0.1	12.1	9.2 8.7	24.1
East: PR-3 E											
1 LTR	4, 6	0.542	5.6	1.3	6.9	7.4	0.8	0.0	0.7	0.0 9.0	9.1
North: Site Residencial N											
1 L	7	0.546	15.1	5.8	20.9	1.6	19.3	2.1	17.2	11.0	32.0
2 R	9	0.215	5.5	0.1	5.5	1.3	4.3	0.1	4.2	11.1	16.7
West: PR-3 W											
1 LTR	10, 12	0.761	23.8	3.0	26.8	7.1	19.7	1.8	17.9	2.6 9.0	29.4

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

---

int PR-3 y Site Residencial
Pico PM Futuro
ntersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur											
1 LR	0.175	0.0	0.2	0.0	0.2	0.4	0.5	0.6	0.7	0.9	0.01
East: PR-3 E											
1 LTR	0.542	0.6	3.2	1.8	5.0	7.9	9.9	11.4	14.3	16.8	0.20
North: Site Residencial N											
1 L	0.546	0.3	0.8	0.2	1.0	1.8	2.2	2.5	3.0	3.5	0.04
2 R	0.215	0.0	0.3	0.0	0.3	0.6	0.8	0.9	1.1	1.2	0.01
West: PR-3 W											
1 LTR	0.761	1.3	2.8	1.8	4.6	7.3	9.2	10.6	13.3	15.6	0.19

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

--- 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 10:19 AM, 28 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\02b_PR-3 y SiteCom_FA.OUT

Tnt PR-3 y Site Comercial
ico AM Futuro
ntersection ID: 2

JN INFORMATION
---
* Basic Parameters:
Intersection Type: Unsignalised - Two-Way Stop Control
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
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

---

nt PR-3 y Site Comercial
Pico AM Futuro
ntersection ID: 2

EFAULT 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

	L E F T		THROUGH		R I G H T	
	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 (Two-Way Stop Control)

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

4. Cruise speed= 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 Site Comercial
ico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
EHICLES Demand flows in veh/hour as used by the program								
ast: PR-3 E								
4	0	0	466	0	0	0	1.00	1.00
6	0	0	0	0	87	0	1.00	1.00
orth: Site Comercial N								
7	107	0	0	0	0	0	1.00	1.00
9	0	0	0	0	107	0	1.00	1.00
est: PR-3 W								
10	87	0	0	0	0	0	1.00	1.00
11	0	0	1275	0	0	0	1.00	1.00

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

nt PR-3 y Site Comercial
Pico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
ast: PR-3 E									
4 T	466	0			1630	0.80	180	100	0.286
6 R	87	0			304	0.80	180	100	0.286
orth: Site Comercial N									
7 L	107	1828	0.0	1828	171	0.80	28	100	0.626
9 R	107	466	0.0	466	891	0.80	566	100	0.120
est: PR-3 W									
10 L	87	466	0.0	466	118	0.80	9	100	0.737*
11 T	1275	0			1731	0.80	9	100	0.737*

Int PR-3 y Site Comercial
Pico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	B
Worst movement Level of Service	=	E
Average intersection delay (s)	=	10.0

Largest average movement delay (s)	=	47.0
Largest back of queue, 95% (m)	=	163
Performance Index	=	39.31
Degree of saturation (highest)	=	0.737
Practical Spare Capacity (lowest)	=	9 %
Total vehicle capacity, all lanes (veh/h)	=	4846
Total vehicle flow (veh/h)	=	2129
Total person flow (pers/h)	=	3194
Total vehicle delay (veh-h/h)	=	5.94
Total person delay (pers-h/h)	=	8.91
Total effective vehicle stops (veh/h)	=	390
Total effective person stops (pers/h)	=	584
Total vehicle travel (veh-km/h)	=	1289.4
Total cost ($/h)	=	660.23
Total fuel (L/h)	=	138.8
Total CO2 (kg/h)	=	347.01

Int PR-3 y Site Comercial
ico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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% (vehs)	Back (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	4.71	60.0
6 R	0.22	0.33	9.0	0.00	0.70	0.0	0	1.43	48.0
orth: Site Comercial N									
7 L	1.40	2.09	47.0	0.95	1.12	3.2	23	4.17	26.6
9 R	0.40	0.60	13.5	0.48	0.92	0.6	4	2.21	44.5
est: PR-3 W									
10 L	0.46	0.68	18.9	1.00	1.27	23.3	163	2.48	39.4
11 T	3.47	5.20	9.8	1.00	0.00	23.3	163	24.30	47.3

Int PR-3 y Site Comercial
Rico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E									
553	0.286	0.22	0.33	1.4	0.000	0.11	0	6.14	57.7
North: Site Comercial N									
214	0.626	1.80	2.69	30.2	0.719	1.02	23	6.38	33.3
est: PR-3 W									
1362	0.737	3.92	5.89	10.4	1.000	0.08	163	26.79	46.7
NTERSECTION (persons):									
3194	0.737		8.91	10.0	0.712	0.18		39.31	47.1

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

nt PR-3 y Site Comercial
ico AM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (m)	Short Lane (m)
East: PR-3 E									
1 TR	4, 6	553	1935	0.286	1.4	0.11	0.0	0	
North: Site Comercial N									
1 L	7	107	171	0.626	47.0	1.12	3.2	23	
2 R	9	107	891	0.120	13.5	0.92	0.6	4	
West: PR-3 W									
1 LT	10, 11	1362	1849	0.737	10.4	0.08	23.3	163	

nt PR-3 y Site Comercial
Pico AM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 TR	4, 6	0	466	87	553	553	1935	0.286	100
North: Site Comercial N									
1 L	7	107	0	0	107	107	171	0.626	100
2 R	9	0	0	107	107	107	891	0.120	100
West: PR-3 W									
1 LT	10, 11	87	1275	0	1362	988	1849	0.737	100

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

Int PR-3 y Site Comercial
Pico AM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh	Total Cap. (veh	Lane Util	Deg. Satn	Aver. Delay	Eff. Stop Rate	95% Back of Queue	Perf. Index

	/h)	/h)	(%)	x	(sec)		(veh)	
ast: PR-3 E								
4 T	466	1630	100	0.286	0.0	0.00	0.0	4.71
6 R	87	304	100	0.286	9.0	0.70	0.0	1.43
orth: Site Comercial N								
7 L	107	171	100	0.626	47.0	1.12	3.2	4.17
9 R	107	891	100	0.120	13.5	0.92	0.6	2.21
est: PR-3 W								
10 L	87	118	100	0.737*	18.9	1.27	23.3	2.48
11 T	1275	1731	100	0.737*	9.8	0.00	23.3	24.30

* Maximum degree of saturation

Int PR-3 y Site Comercial
Pico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E												
TR		466	87	553	0				0.286	1.4	0	
	0	466	87	553	0				0.286	1.4		
North: Site Comercial N												
L	107			107	0				0.626	47.0	23	
2 R			107	107	0				0.120	13.5	4	
	107	0	107	214	0				0.626	30.2	23	
West: PR-3 W												
LT	87	1275		1362	0				0.737	10.4	163	
	87	1275	0	1362	0				0.737	10.4	163	
ALL VEHICLES				Total Flow 2129	% HV 0				Max X 0.737	Aver. Delay 10.0	Max Queue 163	

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

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

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

---

nt PR-3 y Site Comercial
ico AM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS

ast: PR-3 E					
4 T	466	1630	0.286	0.0	A
6 R	87	304	0.286	9.0	A
	553	1934	0.286	1.4	A
North: Site Comercial N					
7 L	107	171	0.626	47.0	E
9 R	107	891	0.120	13.5	B
	214	1062	0.626	30.2	D
est: PR-3 W					
10 L	87	118	0.737*	18.9	C
11 T	1275	1731	0.737*	9.8	A
	1362	1849	0.737	10.4	B
ALL VEHICLES:	2129	4846	0.737	10.0	B

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 Site Comercial
Pico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E						
	North	10.0	18.5	15.7	500	102
	West	S	60.0	13.2	500	106
North: Site Comercial N						
	East	6.6	15.0	10.4	500	101
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	East	S	60.0	13.2	500	106
	North	8.4	16.9	13.2	500	102

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 Site Comercial
ico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able D.1 - LANE DELAYS

	Delay (seconds/veh)			
Deg.	Stop-line Delay	Acc.	Queuing	Stopd

Lane No.	Mov No.	Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.286	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 9.0	1.4
North: Site Comercial N											
1 L	7	0.626	23.5	12.6	36.1	1.6	34.5	2.2	32.3	10.8	47.0
2 R	9	0.120	2.3	0.0	2.3	0.9	1.4	0.0	1.4	11.1	13.5
West: PR-3 W											
1 LT	10, 11	0.737	7.4	2.4	9.8	8.2	1.5	0.3	1.2	9.1 0.0	10.4

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

Int PR-3 y Site Comercial
Pico AM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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
East: PR-3 E											
1 TR	0.286	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
North: Site Comercial N											
1 L	0.626	0.4	0.8	0.2	1.0	1.9	2.3	2.6	3.2	3.7	0.05
2 R	0.120	0.0	0.2	0.0	0.2	0.4	0.4	0.5	0.6	0.7	0.01
West: PR-3 W											
1 LT	0.737	1.2	4.8	3.7	8.5	12.2	15.6	18.2	23.3	27.5	0.33

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

--- 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 10:21 AM, 28 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\02b_PR-3 y SiteCom_FP.OUT

Int PR-3 y Site Comercial
ico PM Futuro
ntersection ID: 2

UN INFORMATION

* Basic Parameters:
Intersection Type: Unsignalised - Two-Way Stop Control
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
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

---

nt PR-3 y Site Comercial
Pico PM Futuro
Intersection ID: 2

EFAULT 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

	L E F T		THROUGH		R I G H T	
	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 (Two-Way Stop Control)

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

4. Cruise speed= 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 Site Comercial
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
East: PR-3 E								
4	0	0	879	0	0	0	1.00	1.00
6	0	0	0	0	162	0	1.00	1.00
North: Site Comercial N								
7	143	0	0	0	0	0	1.00	1.00
9	0	0	0	0	143	0	1.00	1.00
West: PR-3 W								
10	162	0	0	0	0	0	1.00	1.00
11	0	0	557	0	0	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 Site Comercial
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
East: PR-3 E									
4 T	879	0			1634	0.80	49	100	0.538
6 R	162	0			301	0.80	49	100	0.538
North: Site Comercial N									
7 L	143	1598	0.0	1598	238	0.80	33	100	0.601*
9 R	143	879	0.0	879	500	0.80	180	100	0.286
West: PR-3 W									
10 L	162	879	0.0	879	297	0.80	47	100	0.545
11 T	557	0			1020	0.80	46	100	0.546

Int PR-3 y Site Comercial
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	E
Average intersection delay (s)	=	9.5

Largest average movement delay (s)	=	36.0
Largest back of queue, 95% (m)	=	66
Performance Index	=	34.18
Degree of saturation (highest)	=	0.601
Practical Spare Capacity (lowest)	=	33 %
Total vehicle capacity, all lanes (veh/h)	=	3990
Total vehicle flow (veh/h)	=	2046
Total person flow (pers/h)	=	3069
Total vehicle delay (veh-h/h)	=	5.40
Total person delay (pers-h/h)	=	8.09
Total effective vehicle stops (veh/h)	=	615
Total effective person stops (pers/h)	=	923
Total vehicle travel (veh-km/h)	=	1238.1
Total cost ($/h)	=	619.54
Total fuel (L/h)	=	122.6
Total CO2 (kg/h)	=	306.49

Int PR-3 y Site Comercial
Pico PM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	8.88	60.0
6 R	0.41	0.61	9.0	0.00	0.70	0.0	0	2.66	48.0
North: Site Comercial N									
7 L	1.43	2.14	36.0	0.92	1.13	3.4	23	4.84	30.7
9 R	0.74	1.11	18.7	0.72	1.03	1.5	11	3.48	40.6
West: PR-3 W									
10 L	0.95	1.43	21.2	1.00	1.18	9.4	66	4.36	37.8
11 T	1.87	2.80	12.1	1.00	0.00	9.4	66	9.96	45.0

Int PR-3 y Site Comercial
Pico PM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E									
1041	0.538	0.41	0.61	1.4	0.000	0.11	0	11.55	57.8
North: Site Comercial N									
286	0.601	2.17	3.25	27.3	0.826	1.08	23	8.31	35.0
West: PR-3 W									
719	0.546	2.82	4.23	14.1	1.000	0.27	66	14.32	43.2
INTERSECTION (persons):									
3069	0.601		8.09	9.5	0.467	0.30		34.18	47.8

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

nt PR-3 y Site Comercial
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (m)	Short Lane (m)
East: PR-3 E									
1 TR	4, 6	1041	1935	0.538	1.4	0.11	0.0	0	
North: Site Comercial N									
1 L	7	143	238	0.601	36.0	1.13	3.4	23	
2 R	9	143	500	0.286	18.7	1.03	1.5	11	
West: PR-3 W									
1 LT	10, 11	719	1317	0.546	14.1	0.27	9.4	66	

nt PR-3 y Site Comercial
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 TR	4, 6	0	879	162	1041	1041	1935	0.538	100
North: Site Comercial N									
1 L	7	143	0	0	143	120	238	0.601	100
2 R	9	0	0	143	143	120	500	0.286	100
West: PR-3 W									
1 LT	10, 11	162	557	0	719	440	1317	0.546	100

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

Int PR-3 y Site Comercial
Pico PM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

'able S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh	Total Cap. (veh	Lane Util	Deg. Satn	Aver. Delay	Eff. Stop Rate	95% Back of Queue	Perf. Index

	/h)	/h)	(%)	x	(sec)		(veh)	
East: PR-3 E								
4 T	879	1634	100	0.538	0.0	0.00	0.0	8.88
6 R	162	301	100	0.538	9.0	0.70	0.0	2.66
North: Site Comercial N								
7 L	143	238	100	0.601*	36.0	1.13	3.4	4.84
9 R	143	500	100	0.286	18.7	1.03	1.5	3.48
West: PR-3 W								
10 L	162	297	100	0.545	21.2	1.18	9.4	4.36
11 T	557	1020	100	0.546	12.1	0.00	9.4	9.96

* Maximum degree of saturation

Int PR-3 y Site Comercial
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E												
TR	879	162		1041	0				0.538	1.4	0	
	0	879	162	1041	0				0.538	1.4		
North: Site Comercial N												
L	143			143	0				0.601	36.0	23	
2 R			143	143	0				0.286	18.7	11	
	143	0	143	286	0				0.601	27.3	23	
West: PR-3 W												
LT	162	557		719	0				0.546	14.1	66	
	162	557	0	719	0				0.546	14.1	66	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2046	0	0.601	9.5	66

'otal flow period = 60 minutes. Peak flow period = 15 minutes.

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

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

Int PR-3 y Site Comercial
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS

ast: PR-3 E					
4 T	879	1634	0.538	0.0	A
6 R	162	301	0.538	9.0	A
	1041	1935	0.538	1.4	A
North: Site Comercial N					
7 L	143	238	0.601*	36.0	E
9 R	143	500	0.286	18.7	C
	286	738	0.601	27.3	D
est: PR-3 W					
10 L	162	297	0.545	21.2	C
11 T	557	1020	0.546	12.1	B
	719	1317	0.546	14.1	B
ALL VEHICLES:	2046	3990	0.601	9.5	A

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 Site Comercial
Rico PM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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)
East: PR-3 E						
	North	10.0	18.5	15.7	500	102
	West	S	60.0	13.2	500	106
North: Site Comercial N						
	East	6.6	15.0	10.4	500	101
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	East	S	60.0	13.2	500	106
	North	8.4	16.9	13.2	500	102

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 Site Comercial
Rico PM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able D.1 - LANE DELAYS

	Delay (seconds/veh)			
Deg.	Stop-line Delay	Acc.	Queuing	Stopd

Lane No.	Mov No.	Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.538	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 9.0	1.4
North: Site Comercial N											
1 L	7	0.601	17.1	8.0	25.1	1.5	23.6	2.4	21.2	10.8	36.0
2 R	9	0.286	6.9	0.6	7.5	1.4	6.1	0.6	5.5	11.1	18.7
West: PR-3 W											
1 LT	10, 11	0.546	10.9	1.2	12.1	7.4	4.6	0.7	3.9	9.1 0.0	14.1

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

Int PR-3 y Site Comercial
ico PM Futuro
ntersection ID: 2
Stop Sign Controlled Intersection

able 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
East: PR-3 E											
1 TR	0.538	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
North: Site Comercial N											
1 L	0.601	0.3	0.8	0.2	1.1	2.0	2.4	2.7	3.4	3.9	0.05
2 R	0.286	0.1	0.4	0.0	0.5	0.9	1.1	1.2	1.5	1.7	0.02
West: PR-3 W											
1 LT	0.546	0.5	2.4	0.8	3.2	5.3	6.6	7.5	9.4	11.0	0.13

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

--- 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 12:36 PM, 27 Jan 2004

'ilename: C:\My Documents\aaSIDRA Projects\Salinas\03_PR-3 y PR-180_BA.OUT

Int PR-3 y PR-180
ico AM Base
ntersection ID: 3

UN 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 PR-180
Pico AM Base
ntersection ID: 3

)EFAULT PARAMETERS

)efault 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

	L E F T		THROUGH		R I G H T	
	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.

---

nt PR-3 y PR-180
Pico AM Base
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								
East: PR-3 E								
4	0	0	328	0	0	0	1.00	1.00
6	0	0	0	0	256	0	1.00	1.00
North: PR-180 N								
7	68	0	0	0	0	0	1.00	1.00
9	0	0	0	0	88	0	1.00	1.00
West: PR-3 W								
10	316	0	0	0	0	0	1.00	1.00
11	0	0	852	0	0	0	1.00	1.00

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

---

nt PR-3 y PR-180
Pico AM Base
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
East: PR-3 E									
4 T		*D A		4		31.7		28	
6 R	(Un1)	B D R	D B	13	4	10.0Min	45.6	35	38
North: PR-180 N									
7 L	(Und)	A B		4		10.0Min		6	
9 R	(Un2)	*A B	B A R	4	17	13.9	26.8	6	63
West: PR-3 W									
10 L		B D		4		41.9		44	
11 T		*B D		4		47.7		44	

Current Phase Sequence No.: 1
Input phase sequence: A B D
Output phase sequence: A B 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-180
Pico AM Base
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
East: PR-3 E										
4 T	328	1184		0.277		368	0.90	1	100	0.890
6 R	256	71	615	0.000	0.416	287	0.90	1	100	0.891
North: PR-180 N										
7 L	68	1825		0.037		122	0.90	61	100	0.559
9 R	88	733	155	0.099	0.098	157	0.90	61	100	0.559
West: PR-3 W										
10 L	316	834<		0.379		408	0.90	16	100	0.775
11 T	852	1950		0.437		953	0.90	1	100	0.894*

< Reduced saturation flow due to a short lane effect

Int PR-3 y PR-180
Pico AM Base
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
9	N_R	1st	A	B	4	0.099	0.110	13.9
11	W_T		B	D	4	0.437	0.485	47.7
4	E_T		D	A	4	0.277	0.308	31.7
				Total:	12	0.813	0.904	93.3

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	150	124	90

(Variable cycle times: Program-determined)

Intersection Level of Service	=	D
Worst movement Level of Service	=	D
Average intersection delay (s)	=	36.6
Largest average movement delay (s)	=	49.9

Largest back of queue, 95% (m)	=	280
Performance Index	=	100.78
Degree of saturation (highest)	=	0.894
Practical Spare Capacity (lowest)	=	1 %
Total vehicle capacity, all lanes (veh/h)	=	2296
Total vehicle flow (veh/h)	=	1908
Total person flow (pers/h)	=	2862
Total vehicle delay (veh-h/h)	=	19.37
Total person delay (pers-h/h)	=	29.06
Total effective vehicle stops (veh/h)	=	1931
Total effective person stops (pers/h)	=	2896
Total vehicle travel (veh-km/h)	=	1154.0
Total cost ($/h)	=	908.31
Total fuel (L/h)	=	156.7
Total CO2 (kg/h)	=	391.64

---

nt PR-3 y PR-180
Pico AM Base
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	Prop.
A	0	4	6	10	0.111
B	10	14	44	48	0.533
D	58	62	28	32	0.356

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

Int PR-3 y PR-180
Pico AM Base
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)	(m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	3.73	5.59	40.9	1.00	1.09	28.0	196	18.68	28.2
6 R	3.55	5.32	49.9	1.00	1.09	28.0	196	15.20	25.2
North: PR-180 N									
7 L	0.65	0.98	34.5	0.94	0.79	6.8	47	3.02	30.7
9 R	0.83	1.25	34.0	0.94	0.79	6.8	47	3.90	31.0
West: PR-3 W									
10 L	2.81	4.22	32.0	0.72	0.90	11.7	82	13.74	31.8
11 T	7.81	11.71	33.0	0.98	1.04	40.0	280	46.25	31.5

Int PR-3 y PR-180
Pico AM Base
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)
East: PR-3 E									
584	0.891	7.27	10.91	44.8	1.000	1.09	196	33.88	26.8
North: PR-180 N									
156	0.559	1.48	2.22	34.2	0.948	0.79	47	6.91	30.8
West: PR-3 W									
1168	0.894	10.62	15.93	32.7	0.913	1.00	280	59.99	31.6
INTERSECTION (persons):									
2862	0.894		29.06	36.6	0.942	1.01		100.78	29.9

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

Int PR-3 y PR-180
Pico AM Base
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)	(m)	Shrt Lane (m)
East: PR-3 E													
1 TR	4, 6	21	4	35	30	584	656	0.891	44.8	1.09	28.0	196	
North: PR-180 N													
1 LR	7, 9	57	6	17	10	156	279	0.559	34.2	0.79	6.8	47	
West: PR-3 W													
1 L	10	46	44	0	0	316	408	0.775	32.0	0.90	11.7*	82	50
2 T	11	46	44	0	0	852	953	0.894	33.0	1.04	40.0	280	

* 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-180
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lane 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 %
East: PR-3 E													
1 TR	4, 6	0	328	256	584	3.30	1950	701	1873	40	656	0.891	100
North: PR-180 N													
1 LR	7, 9	68	0	88	156	3.30	1950	1857	1398	40	279	0.559	100

West: PR-3 W													
1 L	10	316	0	0	316	3.30	1950	834<	0	0	408	0.775	100
2 T	11	0	852	0	852	3.30	1950	1950	0	0	953	0.894	100

< 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-180
Pico AM Base
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
East: PR-3 E											
4 T		328	368	100	0.890	28*		40.9	1.09	28.0	18.68
6 R	(Un1)	256	287	100	0.891	35	38	49.9	1.09	28.0	15.20
North: PR-180 N											
7 L	(Und)	68	122	100	0.559	6		34.5	0.79	6.8	3.02
9 R	(Un2)	88	157	100	0.559	6*	63	34.0	0.79	6.8	3.90
West: PR-3 W											
10 L		316	408<	100	0.775	44		32.0	0.90	11.7	13.74
11 T		852	953	100	0.894*	44*		33.0	1.04	40.0	46.25

< Reduced capacity due to a short lane effect
* Maximum degree of saturation, or critical green periods

Int PR-3 y PR-180
Pico AM Base
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)
East: PR-3 E												
TR		328	256	584	0	1950	4	30	0.891	44.8	196	
	0	328	256	584	0				0.891	44.8	196	
North: PR-180 N												
LR	68		88	156	0	1950	6	10	0.559	34.2	47	
	68	0	88	156	0				0.559	34.2	47	
West: PR-3 W												
1 L	316			316	0	1950	44		0.775	32.0	82*	50
2 T		852		852	0	1950	44		0.894	33.0	280	
	316	852	0	1168	0				0.894	32.7	280	

ALL VEHICLES	Total	%	Cycle	Max	Aver.	Max

Flow	HV	Time	X	Delay	Queue
1908	0	90	0.894	36.6	280

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

ueue 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-180
ico AM Base
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 90

able S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
East: PR-3 E								
4	T	0.311*		328	368	0.890	40.9	D
6	R (Un1)	0.389	0.422	256	287	0.891	49.9	D
				584	656	0.891	44.8	D
orth: PR-180 N								
7	L (Und)	0.067		68	122	0.559	34.5	C
9	R (Un2)	0.067*	0.700	88	157	0.559	34.0	C
				156	279	0.559	34.2	C
West: PR-3 W								
10	L	0.489		316	408<	0.775	32.0	C
11	T	0.489*		852	953	0.894*	33.0	C
				1168	1361	0.894	32.7	C
ALL VEHICLES:				1908	2296	0.894	36.6	D
INTERSECTION (persons):				2862	2296	0.894	36.6	

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

Int PR-3 y PR-180
ico AM Base
ntersection ID: 3

able S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time

Degree of Satn	0.875	110
Average Delay	36.6	90
Stop Rate	0.95	110
Max. Queue for Any Movement	40.0	90
Perf. Index	100.8	90
Cost	908.3	90

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	2369	60
Prac. Spare Cap.	3	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.

---

nt PR-3 y PR-180
ico AM Base
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)
East: PR-3 E						
	North	10.0	18.5	15.7	500	102
	West	S	60.0	10.0	500	106
North: PR-180 N						
	East	6.6	15.0	10.4	500	101
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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.

---

nt PR-3 y PR-180
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
			Stop-line Delay			Acc.	Queuing		Stopd		
Lane No.	Mov No.	Deg. Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.891	29.2	11.7	40.9	6.5	34.4	2.7	31.8	0.0 9.0	44.8

North: PR-180 N											
1 LR	7, 9	0.559	25.3	0.0	25.3	3.7	21.6	0.0	21.6	9.2 8.7	34.2
West: PR-3 W											
1 L	10	0.775	16.8	6.1	22.9	2.3	20.5	1.2	19.4	9.2	32.0
2 T	11	0.894	22.5	10.5	33.0	8.4	24.6	1.2	23.3	0.0	33.0

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

---

nt PR-3 y PR-180
ico AM Base
Intersection ID: 3
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
East: PR-3 E											
1 TR	0.891	2.0	14.2	3.0	17.2	20.7	24.2	26.1	28.0	30.0	0.39
North: PR-180 N											
1 LR	0.559	0.0	3.2	0.0	3.2	4.0	4.9	5.6	6.8	7.9	0.09
West: PR-3 W											
1 L	0.775	0.6	5.2	1.0	6.2	7.6*	9.2*	10.1*	11.7*	13.2*	1.63
2 T	0.894	2.6	20.8	4.1	24.9	29.9	34.9	37.5	40.0	42.6	0.56

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-180
ico AM Base
ntersection ID: 3

able 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	2369	1.008	-11	45.2	1.21	41.0	102.5	1015.1
70	2331	0.987	-9	46.3	1.17	43.0	107.1	1026.0
80	2299	0.971	-7	45.2	1.13	45.3	109.2	1012.6
90	2296	0.894	1	36.6	1.01	40.0	100.8	908.3
100	2276	0.877	3	37.5	0.98	41.1	104.2	918.3
110	2257	0.875	3	38.1	0.95	42.4	106.5	922.9
120	2223	0.965	-7	47.4	1.00	49.3	121.4	1032.1
130	2219	0.996	-10	50.7	0.97	46.7	126.1	1068.5
140	2205	0.999	-10	52.9	0.97	50.0	131.6	1093.7
150	2192	1.001	-10	55.3	0.96	53.9	137.4	1120.4

--- 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   12:38 PM, 27 Jan 2004

 ilename: C:\My Documents\aaSIDRA Projects\Salinas\03_PR-3 y PR-180_BP.OUT

Int PR-3 y PR-180
 ico PM Base
 ntersection ID:     3


 UN 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 =  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.

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

```
nt PR-3 y PR-180
Pico PM Base
ntersection ID:     3


EFAULT 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.

---

nt PR-3 y PR-180
ico PM Base
Intersection ID: 3
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
EHICLES	Demand flows in veh/hour as used by the program							
East: PR-3 E								
4	0	0	344	0	0	0	1.00	1.00
6	0	0	0	0	252	0	1.00	1.00
North: PR-180 N								
7	160	0	0	0	0	0	1.00	1.00
9	0	0	0	0	80	0	1.00	1.00
West: PR-3 W								
10	264	0	0	0	0	0	1.00	1.00
11	0	0	436	0	0	0	1.00	1.00

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

---

nt PR-3 y PR-180
ico PM Base
ntersection ID: 3
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
East: PR-3 E															
4	T		D	A						4		22.3		19	
6	R (Un1)	B	D	R		*D	B			11	4	18.9	39.1	9	36
North: PR-180 N															
7	L (Und)	A	B							4		11.0		13	
9	R (Un2)	A	B			B	A	R		4	13	13.7	20.0Min	13	30

```
West: PR-3 W
  10 L        B  D                          4        15.5              16
  11 T       *B  D                          4        18.9              16
-----------------------------------------------------------------------------
 Current Phase Sequence No.: 1
  Input phase sequence: A  B  D
  Output phase sequence: A  B  D
-----------------------------------------------------------------------------

 ovement 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
```

```
.nt PR-3 y PR-180
Pico PM Base
Intersection ID:      3
            Fixed-Time Signals, Cycle Time =  60
```

```
able 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
-----------------------------------------------------------------------------
East: PR-3 E
   4 T     344    1252           0.275          396   0.90     4    100  0.868
   6 R     252     218    429    0.119  0.527   290   0.90     4    100  0.869*
-----------------------------------------------------------------------------
North: PR-180 N
   7 L     160    1515           0.106          328   0.90    85    100  0.487
   9 R      80     453    132    0.177  0.000   164   0.90    85    100  0.487
-----------------------------------------------------------------------------
West: PR-3 W
  10 L     264    1533<          0.172          409   0.90    39    100  0.646
  11 T     436    1950           0.224          520   0.90     7    100  0.838
-----------------------------------------------------------------------------
 <  Reduced saturation flow due to a short lane effect
```

```
Int PR-3 y PR-180
ico PM Base
ntersection ID:      3
            Fixed-Time Signals, Cycle Time =  60
```

```
able 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
-----------------------------------------------------------------------------
   11  W_T           B   D      4         0.224       0.248      18.9
    6  E_R    2nd    D   B      4         0.527       0.586      39.1
                                ----      ------      ------     ------
                        Total:   8        0.751       0.834      58.0
-----------------------------------------------------------------------------

  Cycle Time:
    Minimum   Maximum   Practical   Chosen
       30       150        48         60
    (Variable cycle times: Program-determined)

  Intersection Level of Service              =        C
  Worst movement Level of Service            =        D
```

Average intersection delay (s)	=	29.9
Largest average movement delay (s)	=	39.2
Largest back of queue, 95% (m)	=	140
Performance Index	=	64.15
Degree of saturation (highest)	=	0.869
Practical Spare Capacity (lowest)	=	4 %
Total vehicle capacity, all lanes (veh/h)	=	2108
Total vehicle flow (veh/h)	=	1536
Total person flow (pers/h)	=	2304
Total vehicle delay (veh-h/h)	=	12.75
Total person delay (pers-h/h)	=	19.12
Total effective vehicle stops (veh/h)	=	1527
Total effective person stops (pers/h)	=	2290
Total vehicle travel (veh-km/h)	=	928.2
Total cost ($/h)	=	668.09
Total fuel (L/h)	=	121.2
Total CO2 (kg/h)	=	302.96

Int PR-3 y PR-180
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	13	17	0.283
B	17	21	16	20	0.333
D	37	41	19	23	0.383

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

Int PR-3 y PR-180
Pico PM Base
Intersection ID: 3
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)	(m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	2.88	4.33	30.2	0.99	1.12	20.1	140	15.34	32.8
6 R	2.74	4.11	39.2	0.99	1.12	20.1	140	11.85	28.8
North: PR-180 N									
7 L	0.93	1.40	21.0	0.88	0.81	5.7	40	4.99	37.9
9 R	0.46	0.69	20.6	0.88	0.81	5.7	40	2.48	38.3
West: PR-3 W									
10 L	2.25	3.38	30.7	0.90	0.85	8.7	61	10.42	32.4
11 T	3.48	5.22	28.7	1.00	1.01	15.5	109	19.07	33.5

Int PR-3 y PR-180
Pico PM Base
Intersection ID: 3
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)
ast: PR-3 E									
596	0.869	5.63	8.44	34.0	0.993	1.12	140	27.19	31.0
orth: PR-180 N									
240	0.487	1.39	2.09	20.9	0.884	0.81	40	7.47	38.0
West: PR-3 W									
700	0.838	5.73	8.59	29.5	0.964	0.95	109	29.49	33.1
INTERSECTION (persons):									
2304	0.869		19.12	29.9	0.963	0.99		64.15	32.9

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

---

nt PR-3 y PR-180
Pico PM Base
Intersection ID: 3
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)	(m)	Shrt Lane (m)
East: PR-3 E													
1 TR	4, 6	26	3	10	21	596	687	0.868	34.0	1.12	20.1	140	
North: PR-180 N													
1 LR	7, 9	30	13	13	4	240	492	0.487	20.9	0.81	5.7	40	
West: PR-3 W													
1 L	10	44	16	0	0	264	409	0.646	30.7	0.85	8.7*	61	50
2 T	11	44	16	0	0	436	520	0.838	28.7	1.01	15.5	109	

* 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.

---

nt PR-3 y PR-180
Pico PM Base
Intersection ID: 3
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 %
East: PR-3 E													
1 TR	4, 6	0	344	252	596	3.30	1950	761	1853	60	687	0.868	100
North: PR-180 N													
1 LR	7, 9	160	0	80	240	3.30	1950	1857	1350	60	492	0.487	100

West: PR-3 W													
1 L	10	264	0	0	264	3.30	1950	1533<	0	0	409	0.646	100
2 T	11	0	436	0	436	3.30	1950	1950	0	0	520	0.838	100

< 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.

---

nt PR-3 y PR-180
ico PM Base
Intersection ID: 3
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
East: PR-3 E											
4 T		344	396	100	0.868	19		30.2	1.12	20.1	15.34
6 R	(Un1)	252	290	100	0.869*	9	36*	39.2	1.12	20.1	11.85
North: PR-180 N											
7 L	(Und)	160	328	100	0.487	13		21.0	0.81	5.7	4.99
9 R	(Un2)	80	164	100	0.487	13	30	20.6	0.81	5.7	2.48
West: PR-3 W											
10 L		264	409<	100	0.646	16		30.7	0.85	8.7	10.42
11 T		436	520	100	0.838	16*		28.7	1.01	15.5	19.07

< Reduced capacity due to a short lane effect
* Maximum degree of saturation, or critical green periods

Int PR-3 y PR-180
ico PM Base
Intersection ID: 3
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)
East: PR-3 E												
1 TR		344	252	596	0	1950	3	21	0.868	34.0	140	
	0	344	252	596	0				0.868	34.0	140	
North: PR-180 N												
1 LR	160		80	240	0	1950	13	4	0.487	20.9	40	
	160	0	80	240	0				0.487	20.9	40	
West: PR-3 W												
1 L	264			264	0	1950	16		0.646	30.7	61*	50
2 T		436		436	0	1950	16		0.838	28.7	109	
	264	436	0	700	0				0.838	29.5	109	

ALL VEHICLES	Total	%	Cycle	Max	Aver.	Max

Flow	HV	Time	X	Delay	Queue
1536	0	60	0.869	29.9	140

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

ueue 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-180
ico PM Base
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 60

able 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
East: PR-3 E									
4	T	0.317			344	396	0.868	30.2	C
6	R (Un1)	0.150	0.600*		252	290	0.869*	39.2	D
					596	687	0.869	34.0	C
lorth: PR-180 N									
7	L (Und)	0.217			160	328	0.487	21.0	C
9	R (Un2)	0.217	0.500		80	164	0.487	20.6	C
					240	492	0.487	20.9	C
West: PR-3 W									
10	L	0.267			264	409<	0.646	30.7	C
11	T	0.267*			436	520	0.838	28.7	C
					700	929	0.838	29.5	C
ALL VEHICLES:					1536	2108	0.869	29.9	C
INTERSECTION (persons):					2304	2108	0.869	29.9	

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.
< Reduced capacity due to a short lane effect
* Maximum v/c ratio, or critical green periods

Int PR-3 y PR-180
ico PM Base
ntersection ID: 3

able S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time

Degree of Satn	0.813	80
Average Delay	29.9	60
Stop Rate	0.92	100
Max. Queue for Any Movement	20.1	60
Perf. Index	64.1	60
Cost	668.1	60

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	2108	60
Prac. Spare Cap.	11	80

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.

---

nt PR-3 y PR-180
ico PM Base
ntersection ID: 3
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)
East: PR-3 E						
	North	10.0	18.5	15.7	500	102
	West	S	60.0	10.0	500	106
North: PR-180 N						
	East	6.6	15.0	10.4	500	101
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	East	S	60.0	10.0	500	106
	North	6.6	15.0	10.4	500	101

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.

---

nt PR-3 y PR-180
ico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
		Deg.	Stop-line Delay			Acc.	Queuing		Stopd		
Lane No.	Mov No.	Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di	Geom dig	Control dic
East: PR-3 E											
1 TR	4, 6	0.868	21.3	8.9	30.2	6.5	23.7	3.7	20.0	0.0 9.0	34.0

North: PR-180 N											
1 LR	7, 9	0.487	11.9	0.0	11.9	3.2	8.7	0.0	8.7	9.2 8.7	20.9
West: PR-3 W											
1 L	10	0.646	21.0	0.6	21.5	2.9	18.6	0.4	18.2	9.2	30.7
2 T	11	0.838	23.2	5.5	28.7	8.6	20.1	2.1	18.1	0.0	28.7

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

---

nt PR-3 y PR-180
ico PM Base
Intersection ID: 3
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
East: PR-3 E											
1 TR	0.868	1.6	9.5	2.3	11.8	14.3	16.9	18.3	20.1	21.8	0.28
North: PR-180 N											
1 LR	0.487	0.0	2.6	0.0	2.6	3.3	4.1	4.6	5.7	6.7	0.08
West: PR-3 W											
1 L	0.646	0.1	4.2	0.1	4.3	5.3	6.5	7.3*	8.7*	10.0*	1.21
2 T	0.838	0.7	7.7	1.1	8.7	10.6	12.7	13.9	15.5	17.1	0.22

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-180
ico PM Base
ntersection ID: 3

able 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	2108	0.869	4	29.9	0.99	20.1	64.1	668.1
70	2097	0.824	9	30.9	0.96	20.5	67.1	677.1
80	2086	0.813	11	33.0	0.94	21.4	71.0	695.7
90	2092	0.834	8	35.0	0.92	24.4	74.8	713.0
100	2098	0.861	5	38.4	0.92	28.7	80.3	744.4
110	2101	0.890	1	42.5	0.92	33.3	86.3	782.5
120	2102	0.920	-2	47.1	0.92	38.3	92.6	824.8
130	2102	0.950	-5	52.2	0.93	43.4	99.3	872.3

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    3:21 PM, 27 Jan 2004

 ilename: C:\My Documents\aaSIDRA Projects\Salinas\03_PR-3 y PR-180_FA.OUT

Int PR-3 y PR-180
 ico AM Futuro
 ntersection ID:     3


 UN 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      =  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.

  Opposed turn in movement   12 has high x.
  Its capacity is mainly due to end departures. Consider increasing
  the number of end departures, and/or specifying this as an undetected
  movement, since it may be affecting the timing results adversely.
```

```
Int PR-3 y PR-180
?ico 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

	L E F T		THROUGH		R I G H T	
	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-180
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: PR-180 S								
1	10	0	0	0	0	0	1.00	1.00
2	0	0	87	0	0	0	1.00	1.00
3	0	0	0	0	248	0	1.00	1.00
East: PR-3 E								
4	119	0	356	0	0	0	1.00	1.00
6	0	0	0	0	453	0	1.00	1.00
North: PR-180 N								
7	162	0	0	0	0	0	1.00	1.00
8	0	0	24	0	0	0	1.00	1.00
9	0	0	0	0	72	0	1.00	1.00
West: PR-3 W								
10	260	0	0	0	0	0	1.00	1.00
11	0	0	743	0	0	0	1.00	1.00
12	0	0	0	0	10	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-180
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	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

outh: PR-180 S														
1	L		D	E		E	A	L	4	6	10.0Min	12.0Min	6	22
2	T		*E	A					4		28.3		24	
3	R	(Und)	A	E	R	E	A	R	43	6	75.0	27.4	29	22
East: PR-3 E														
4	LT		*A	B		B	D	L	4	6	19.6	42.1	12	40
6	R	(Und)	A	B		B	A	R	4	8	40.7	34.0Min	12	76
North: PR-180 N														
7	L		*D	E		E	B	L	4	8	10.0Min	22.0Min	6	36
8	T		E	A					4		12.0Min		24	
9	R	(Und)	B	E	R	E	B		15	4	22.0Min	22.0Min	41	40
West: PR-3 W														
10	L		A	B		B	D	L	4	17	19.6	12.0Min	12	29
11	T		*B	D					4		47.1		42	
12	R	(Und)	B	D	R	D	B	R	5	6	47.3	58.9	41	48

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

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-180
Pico AM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 100

'able 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
'outh: PR-180 S										
1 L	10	1857	1117<	0.005	0.000	357	0.90	3114	100	0.028
2 T	87	397		0.219		95	0.90	-1	100	0.913
3 R	248	310	825	0.288	0.192	271	0.90	-2	100	0.914
East: PR-3 E										
4 LT	475	1542	797	0.140	0.325	504	0.90	-5	40	0.943*
6 R	453	1039	468	0.436	0.000	480	0.90	-5	100	0.943*
North: PR-180 N										
7 L	162	1857	922<	0.087	0.000	443	0.90	146	100	0.365
8 T	24	678		0.035		163	0.90	510	100	0.147
9 R	72	225	990	0.000	0.073	488	0.90	510	100	0.147
West: PR-3 W										
10 L	260	1857	874<	0.140	0.000	476	0.90	65	100	0.546
11 T	743	1914		0.388		804	0.90	-3	100	0.924
12 R	10	25	0	0.381	0.476	11	0.90	-3	100	0.932

< Reduced saturation flow due to a short lane effect

Opposed turn in movement 12 has high x.
Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected

movement, since it may be affecting the timing results adversely.

Int PR-3 y PR-180
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_LT	1st	A	B	4	0.140	0.156	19.6
11	W_T		B	D	4	0.388	0.431	47.1
7	N_L	1st	D	E	10	-	-	10.0Min
2	S_T		E	A	4	0.219	0.243	28.3
				Total:	22	0.747	0.830	105.0

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

Cycle Time:

Minimum	Maximum	Practical	Chosen
44	150	130	100

(Variable cycle times: Program-determined)

Intersection Level of Service	=	D
Worst movement Level of Service	=	E
Average intersection delay (s)	=	42.4
Largest average movement delay (s)	=	58.4
Largest back of queue, 95% (m)	=	297
Performance Index	=	139.52
Degree of saturation (highest)	=	0.943
Practical Spare Capacity (lowest)	=	-5 %
Total vehicle capacity, all lanes (veh/h)	=	4286
Total vehicle flow (veh/h)	=	2544
Total person flow (pers/h)	=	3816
Total vehicle delay (veh-h/h)	=	29.96
Total person delay (pers-h/h)	=	44.94
Total effective vehicle stops (veh/h)	=	2670
Total effective person stops (pers/h)	=	4005
Total vehicle travel (veh-km/h)	=	1539.4
Total cost ($/h)	=	1302.23
Total fuel (L/h)	=	215.1
Total CO2 (kg/h)	=	537.81

Int PR-3 y PR-180
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+Int Secs	grn Prop.
A	0	4	12	16	0.160
B	16	22	40	46	0.460
D	62	66	6	10	0.100
E	72	78	22	28	0.280

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

Output phase sequence: A B D E

Int PR-3 y PR-180
ico AM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 100

able 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% (vehs)	Queue Back (m)	Perf. Index	Aver. Speed (km/h)
South: PR-180 S										
1	L	0.09	0.14	33.9	0.74	0.68	0.5	4	0.44	30.9
2	T	1.20	1.80	49.7	1.00	1.12	16.9	118	5.13	25.4
3	R	4.02	6.04	58.4	1.00	1.12	16.9	118	15.21	23.0
ast: PR-3 E										
4	LT	5.18	7.78	39.3	0.97	1.09	37.3	261	24.75	28.8
6	R	6.44	9.66	51.2	0.99	1.20	37.3	261	26.98	24.9
orth: PR-180 N										
7	L	1.14	1.72	25.4	0.66	0.76	6.3	44	6.36	35.2
8	T	0.07	0.10	10.4	0.66	0.53	2.4	17	0.63	46.7
9	R	0.38	0.57	19.1	0.66	0.75	2.4	17	2.16	39.3
West: PR-3 W										
10	L	1.63	2.45	22.6	0.75	0.80	8.2	57	9.39	36.9
11	T	9.64	14.46	46.7	1.00	1.10	42.5	297	47.79	26.3
12	R	0.15	0.23	55.4	1.00	1.10	42.5	297	0.67	23.7

nt PR-3 y PR-180
Pico AM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 100

able 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-180 S									
345	0.914	5.32	7.98	55.5	0.993	1.11	118	20.79	23.7
ast: PR-3 E									
928	0.943	11.62	17.44	45.1	0.988	1.15	261	51.73	26.8
orth: PR-180 N									
258	0.365	1.59	2.39	22.3	0.666	0.74	44	9.15	37.2
West: PR-3 W									
1013	0.932	11.42	17.13	40.6	0.936	1.02	297	57.85	28.3
INTERSECTION (persons):									
3816	0.943		44.94	42.4	0.935	1.05		139.52	27.7

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

Int PR-3 y PR-180
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: PR-180 S													
1 L	1	66	6	6	22	10	357	0.028	33.9	0.68	0.5	4	50
2 TR	2, 3	43	9	25	23	335	366	0.914	56.2	1.12	16.9	118	
East: PR-3 E													
1 L	4	42	12	40	6	119	319	0.372	29.7	0.78	3.9	27	50
2 TR	4, 6	38	12	7	43	809	858	0.943	47.4	1.20	37.3	261	
North: PR-180 N													
1 L	7	50	6	8	36	162	443	0.365	25.4	0.76	6.3	44	50
2 TR	8, 9	25	12	33	30	96	651	0.148	16.9	0.70	2.4	17	
West: PR-3 W													
1 L	10	42	12	17	29	260	476	0.546	22.6	0.80	8.2*	57	50
2 TR	11, 12	51	42	6	1	753	815	0.924	46.8	1.10	42.5	297	

* 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-180
ico 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: PR-180 S													
1 L	1	10	0	0	10	3.30	1950	1857	1117<	79	357	0.028	100
2 TR	2, 3	0	87	248	335	3.30	1950	1064	1177	72	366	0.914	100
East: PR-3 E													
1 L	4	119	0	0	119	3.30	1950	1857	1610	79	319	0.372	40P
2 TR	4, 6	0	356	453	809	3.30	1950	1897	1467	36	858	0.943	100
North: PR-180 N													
1 L	7	162	0	0	162	3.30	1950	1857	922<	79	443	0.365	100
2 TR	8, 9	0	24	72	96	3.30	1950	846	1830	36	651	0.148	100
West: PR-3 W													
1 L	10	260	0	0	260	3.30	1950	1857	874<	79	476	0.546	100
2 TR	11, 12	0	743	10	753	3.30	1950	1938	48	72	815	0.924	100

< 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.

---

nt PR-3 y PR-180
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: PR-180 S											
1	L	10	357<	100	0.028	6	22	33.9	0.68	0.5	0.44
2	T	87	95	100	0.913	24*		49.7	1.12	16.9	5.13
3	R (Und)	248	271	100	0.914	29	22	58.4	1.12	16.9	15.21
ast: PR-3 E											
4	LT	475	504	40	0.943*	12*	40	39.3	1.09	37.3	24.75
6	R (Und)	453	480	100	0.943*	12	76	51.2	1.20	37.3	26.98
orth: PR-180 N											
7	L	162	443<	100	0.365	6*	36	25.4	0.76	6.3	6.36
8	T	24	163	100	0.147	24		10.4	0.53	2.4	0.63
9	R (Und)	72	488	100	0.147	41	40	19.1	0.75	2.4	2.16
est: PR-3 W											
10	L	260	476<	100	0.546	12	29	22.6	0.80	8.2	9.39
11	T	743	804	100	0.924	42*		46.7	1.10	42.5	47.79
12	R (Und)	10	11	100	0.932	41	48	55.4	1.10	42.5	0.67

< Reduced capacity due to a short lane effect
* Maximum degree of saturation, or critical green periods

Int PR-3 y PR-180
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: PR-180 S												
1 L	10			10	0	1950	6	22	0.028	33.9	4	50
2 TR		87	248	335	0	1950	9	23	0.914	56.2	118	
	10	87	248	345	0				0.914	55.5	118	
East: PR-3 E												
1 L	119			119	0	1950	12	6	0.372	29.7	27	50
2 TR		356	453	809	0	1950	12	43	0.943	47.4	261	
	119	356	453	928	0				0.943	45.1	261	
North: PR-180 N												
1 L	162			162	0	1950	6	36	0.365	25.4	44	50
2 TR		24	72	96	0	1950	12	30	0.148	16.9	17	
	162	24	72	258	0				0.365	22.3	44	

West: PR-3 W												
L	260			260	0	1950	12	29	0.546	22.6	57*	50
2 TR		743	10	753	0	1950	42	1	0.924	46.8	297	
	260	743	10	1013	0				0.924	40.6	297	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2544	0	100	0.943	42.4	297

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

ueue 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.

---

nt PR-3 y PR-180
ico AM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 100

able 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: PR-180 S									
1	L	0.060	0.220		10	357<	0.028	33.9	C
2	T	0.240*			87	95	0.913	49.7	D
3	R (Und)	0.290	0.220		248	271	0.914	58.4	E
					345	724	0.914	55.5	E
East: PR-3 E									
4	LT	0.120*	0.400		475	504	0.943*	39.3	D
6	R (Und)	0.120	0.760		453	480	0.943*	51.2	D
					928	984	0.943	45.1	D
North: PR-180 N									
7	L	0.060*	0.360		162	443<	0.365	25.4	C
8	T	0.240			24	163	0.147	10.4	B
9	R (Und)	0.410	0.400		72	488	0.147	19.1	B
					258	1094	0.365	22.3	C
West: PR-3 W									
10	L	0.120	0.290		260	476<	0.546	22.6	C
11	T	0.420*			743	804	0.924	46.7	D
12	R (Und)	0.410	0.480		10	11	0.932	55.4	E
					1013	1291	0.932	40.6	D
ALL VEHICLES:					2544	4286	0.943	42.4	D
INTERSECTION (persons):					3816	4286	0.943	42.4	

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.
< Reduced capacity due to a short lane effect
* Maximum v/c ratio, or critical green periods

Int PR-3 y PR-180
ico AM Futuro
ntersection ID: 3

able S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.897	150
Average Delay	42.4	100
Stop Rate	0.97	150
Max. Queue for Any Movement	37.3	80
Perf. Index	134.4	80
Cost	1302.2	100

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	4354	80
Prac. Spare Cap.	0	150

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.

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nt PR-3 y PR-180
Pico AM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 100

able 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-180 S						
	East	15.0	22.6	23.6	500	104
	North	S	60.0	18.5	500	106
	West	11.9	20.2	18.7	500	103
East: PR-3 E						
	South	11.9	20.2	18.7	500	103
	North	15.0	22.6	23.6	500	104
	West	S	60.0	18.5	500	106
North: PR-180 N						
	South	S	60.0	18.5	500	106
	East	11.9	20.2	18.7	500	103
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	South	15.0	22.6	23.6	500	104
	East	S	60.0	18.5	500	106

North	11.9	20.2	18.7	500	103

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

ıt PR-3 y PR-180
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: PR-180 S											
1 L	1	0.028	25.0	0.0	25.0	3.0	22.1	0.0	22.1	8.9	33.9
2 TR	2, 3	0.914	30.3	19.4	49.7	5.5	44.2	4.0	40.2	0.0 8.7	56.2
East: PR-3 E											
1 L	4	0.372	20.8	0.0	20.8	3.8	17.1	0.0	17.1	8.9	29.7
2 TR	4, 6	0.943	19.9	22.6	42.5	6.3	36.2	3.7	32.5	0.0 8.7	47.4
North: PR-180 N											
1 L	7	0.365	16.5	0.0	16.5	2.7	13.8	0.0	13.8	8.9	25.4
2 TR	8, 9	0.148	10.4	0.0	10.4	3.6	6.8	0.0	6.8	0.0 8.7	16.9
West: PR-3 W											
1 L	10	0.546	13.7	0.0	13.7	3.1	10.6	0.0	10.6	8.9	22.6
2 TR	11, 12	0.924	30.6	16.1	46.7	8.5	38.2	1.8	36.4	0.0 8.7	46.8

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

---

Int PR-3 y PR-180
'ico AM Futuro
ntersection 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: PR-180 S											
1 L	0.028	0.0	0.2	0.0	0.2	0.3	0.4	0.4	0.5	0.7	0.07
2 TR	0.914	1.8	7.1	2.5	9.7	11.7	13.9	15.2	16.9	18.5	0.24
East: PR-3 E											
1 L	0.372	0.0	1.7	0.0	1.7	2.2	2.7	3.1	3.9	4.7	0.55
2 TR	0.943	5.0	15.8	7.4	23.1	27.8	32.5	34.8	37.3	39.7	0.52
North: PR-180 N											
1 L	0.365	0.0	2.9	0.0	2.9	3.6	4.6	5.2	6.3	7.4*	0.88
2 TR	0.148	0.0	1.0	0.0	1.0	1.3	1.6	1.9	2.4	2.9	0.03
West: PR-3 W											

1	L	0.546	0.0	4.0	0.0	4.0	5.0	6.1	6.9	8.2*	9.5*	1.15
2	TR	0.924	3.4	21.3	5.1	26.5	31.8	37.1	39.8	42.5	45.2	0.59

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-180
Pico AM Futuro
ntersection ID: 3

able 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	4272	1.057	-15	51.2	1.22	38.2	138.5	1443.9
70	4280	0.996	-10	46.2	1.15	38.0	136.3	1364.6
80	4354	0.966	-7	43.0	1.10	37.3	134.4	1313.3
90	4315	0.957	-6	43.6	1.08	41.1	138.8	1322.7
100	4286	0.943	-5	42.4	1.05	42.5	139.5	1302.2
110	4155	0.934	-4	42.9	1.03	46.2	142.3	1309.5
120	4090	0.931	-3	44.1	1.02	47.7	147.9	1326.5
130	4030	0.911	-1	43.0	0.99	49.4	147.6	1308.2
140	3967	0.910	-1	44.9	0.99	53.0	154.2	1338.3
150	3918	0.897	0	44.5	0.97	54.7	156.4	1328.7

--- 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 3:24 PM, 27 Jan 2004

ilename: C:\My Documents\aaSIDRA Projects\Salinas\03_PR-3 y PR-180_FP.OUT

Int PR-3 y PR-180
ico PM Futuro
ntersection ID: 3

UN 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 = 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.

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

Int PR-3 y PR-180
Pico PM Futuro
ntersection ID: 3

EFAULT 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.

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nt PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
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-180 S								
1	10	0	0	0	0	0	1.00	1.00
2	0	0	72	0	0	0	1.00	1.00
3	0	0	0	0	154	0	1.00	1.00
East: PR-3 E								
4	119	0	357	0	0	0	1.00	1.00
6	0	0	0	0	426	0	1.00	1.00
North: PR-180 N								
7	385	0	0	0	0	0	1.00	1.00
8	0	0	22	0	0	0	1.00	1.00
9	0	0	0	0	65	0	1.00	1.00
West: PR-3 W								
10	217	0	0	0	0	0	1.00	1.00
11	0	0	463	0	0	0	1.00	1.00
12	0	0	0	0	10	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-180
Pico PM Futuro
Intersection ID: 3
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-180 S															

1	L		D	E		E	A	L	4	6	10.0Min	12.0Min	6	6
2	T		*E	A					4		12.0Min		8	
3	R	(Und)	A	E	R	E	A	R	20	7	46.1	12.0Min	28	5
ast: PR-3 E														
4	LT		*A	B		B	D	L	4	6	17.0	20.3	13	15
6	R	(Und)	A	B		B	A	R	4	5	20.5	34.0Min	13	38
orth: PR-180 N														
7	L		*D	E		E	B	L	4	7	10.0Min	22.0Min	6	22
8	T		E	A					4		12.0Min		8	
9	R	(Und)	B	E	R	E	B		7	4	22.0Min	22.0Min	24	25
est: PR-3 W														
10	L		A	B		B	D	L	4	8	10.0Min	12.0Min	13	13
11	T		*B	D					4		20.3		17	
12	R	(Und)	B	D	R	D	B	R	4	6	20.2	40.0	17	33

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

ovement 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

nt PR-3 y PR-180
ico PM Futuro
Intersection ID: 3
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-180 S											
1	L	10	1857	1999	0.000	0.005	386	0.90	3370	100	0.026
2	T	72	626		0.115		83	0.90	4	100	0.863
3	R	154	233	836	0.392	0.075	178	0.90	4	100	0.863
East: PR-3 E											
4	LT	476	1327	1007	0.196	0.215	539	0.90	2	25	0.883*
6	R	426	956	435	0.446	0.000	483	0.90	2	100	0.883*
North: PR-180 N											
7	L	385	1857	1345<	0.207	0.000	679	0.90	59	100	0.567
8	T	22	1060		0.021		141	0.90	478	100	0.156
9	R	65	305	709	0.000	0.092	417	0.90	478	100	0.156
West: PR-3 W											
10	L	217	1857	1326	0.117	0.000	690	0.90	186	100	0.315
11	T	463	1891		0.245		536	0.90	4	100	0.864
12	R	10	37	2	0.243	0.509	12	0.90	4	100	0.863

< Reduced saturation flow due to a short lane effect

Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
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_LT	1st	A	B	4	0.196	0.217	17.0
11	W_T		B	D	4	0.245	0.272	20.3
7	N_L	1st	D	E	10	-	-	10.0Min
2	S_T		E	A	12	-	-	12.0Min
				Total:	30	0.441	0.489	59.4

- 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
44	150	59	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	D
Average intersection delay (s)	=	24.1
Largest average movement delay (s)	=	40.4
Largest back of queue, 95% (m)	=	148
Performance Index	=	83.93
Degree of saturation (highest)	=	0.883
Practical Spare Capacity (lowest)	=	2 %
Total vehicle capacity, all lanes (veh/h)	=	4551
Total vehicle flow (veh/h)	=	2300
Total person flow (pers/h)	=	3450
Total vehicle delay (veh-h/h)	=	15.39
Total person delay (pers-h/h)	=	23.08
Total effective vehicle stops (veh/h)	=	2149
Total effective person stops (pers/h)	=	3223
Total vehicle travel (veh-km/h)	=	1391.1
Total cost ($/h)	=	918.82
Total fuel (L/h)	=	174.3
Total CO2 (kg/h)	=	435.63

Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	13	17	0.283
B	17	23	15	21	0.350
D	38	42	6	10	0.167
E	48	54	6	12	0.200

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

Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

ıable 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)
outh: PR-180 S										
1	L	0.07	0.11	26.0	0.82	0.67	0.3	2	0.34	34.9
2	T	0.46	0.69	22.9	1.00	0.98	6.9	48	2.61	36.8
3	R	1.35	2.03	31.6	1.00	0.98	6.9	48	5.95	32.0
ast: PR-3 E										
4	LT	2.65	3.97	20.0	0.87	0.92	21.1	148	16.65	38.7
6	R	3.45	5.18	29.2	0.90	1.04	21.1	148	17.05	33.3
ıorth: PR-180 N										
7	L	1.89	2.83	17.7	0.71	0.81	8.1	57	11.45	40.3
8	T	0.04	0.06	6.8	0.68	0.54	1.5	10	0.48	50.6
9	R	0.28	0.42	15.5	0.68	0.75	1.5	10	1.64	42.0
West: PR-3 W										
10	L	1.01	1.52	16.8	0.68	0.78	4.5	32	6.13	41.0
11	T	4.07	6.11	31.7	1.00	1.05	17.2	120	21.14	32.1
12	R	0.11	0.17	40.4	1.00	1.05	17.2	120	0.48	28.4

Int PR-3 y PR-180
Pico PM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 60

'able 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-180 S									
236	0.863	1.88	2.83	28.7	0.993	0.96	48	8.91	33.5
East: PR-3 E									
902	0.883	6.10	9.15	24.3	0.886	0.98	148	33.71	35.9
ıorth: PR-180 N									
472	0.567	2.21	3.31	16.8	0.707	0.79	57	13.57	40.9
ıest: PR-3 W									
690	0.864	5.20	7.79	27.1	0.901	0.96	120	27.75	34.4
NTERSECTION (persons):									
3450	0.883		23.08	24.1	0.865	0.93		83.93	36.1

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

Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.7 - LANE PERFORMANCE

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

No.	No.	R1	G1	R2	G2	/h)	/h)	x	(sec)	Rate	(vehs)	(m)	(m)
South: PR-180 S													
1 L	1	42	6	6	6	10	386	0.026	26.0	0.67	0.3	2	50
2 TR	2, 3	20	7	27	6	226	262	0.862	28.9	0.98	6.9	48	
East: PR-3 E													
1 L	4	26	13	17	4	119	542	0.220	18.7	0.76	2.5	17	50
2 TR	4, 6	22	13	5	20	783	887	0.883	25.2	1.01	21.1	148	
North: PR-180 N													
1 L	7	25	6	7	22	385	679	0.567	17.7	0.81	8.1*	57	50
2 TR	8, 9	18	10	18	14	87	559	0.156	13.3	0.69	1.5	10	
West: PR-3 W													
1 L	10	26	13	8	13	217	690	0.315	16.8	0.78	4.5	32	50
2 TR	11, 12	36	17	6	1	473	547	0.864	31.8	1.05	17.2	120	

* 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.

nt PR-3 y PR-180
ico PM Futuro
Intersection ID: 3
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-180 S													
1 L	1	10	0	0	10	3.30	1950	1857	1999	132*	386	0.026	100
2 TR	2, 3	0	72	154	226	3.30	1950	1054	1391	120	262	0.862	100
East: PR-3 E													
1 L	4	119	0	0	119	3.30	1950	1857	2093	132*	542	0.220	25P
2 TR	4, 6	0	357	426	783	3.30	1950	1898	1427	60	887	0.883	100
North: PR-180 N													
1 L	7	385	0	0	385	3.30	1950	1857	1345<	132	679	0.567	100
2 TR	8, 9	0	22	65	87	3.30	1950	868	1775	60	559	0.156	100
West: PR-3 W													
1 L	10	217	0	0	217	3.30	1950	1857	1326	132	690	0.315	100
2 TR	11, 12	0	463	10	473	3.30	1950	1928	78	120	547	0.864	100

< Reduced saturation flow due to a short lane effect
* Large end capacity has resulted in a saturation flow which is larger than the full unopposed saturation flow
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.

ico PM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 60

able 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
outh: PR-180 S											
1	L	10	386	100	0.026	6	6	26.0	0.67	0.3	0.34
2	T	72	83	100	0.863	8*		22.9	0.98	6.9	2.61
3	R (Und)	154	178	100	0.863	28	5	31.6	0.98	6.9	5.95
ast: PR-3 E											
4	LT	476	539	25	0.883*	13*	15	20.0	0.92	21.1	16.65
6	R (Und)	426	483	100	0.883*	13	38	29.2	1.04	21.1	17.05
orth: PR-180 N											
7	L	385	679<	100	0.567	6*	22	17.7	0.81	8.1	11.45
8	T	22	141	100	0.156	8		6.8	0.54	1.5	0.48
9	R (Und)	65	417	100	0.156	24	25	15.5	0.75	1.5	1.64
West: PR-3 W											
10	L	217	690	100	0.315	13	13	16.8	0.78	4.5	6.13
11	T	463	536	100	0.864	17*		31.7	1.05	17.2	21.14
12	R (Und)	10	12	100	0.863	17	33	40.4	1.05	17.2	0.48

< Reduced capacity due to a short lane effect
* Maximum degree of saturation, or critical green periods

---

nt PR-3 y PR-180
ico PM Futuro
Intersection ID: 3
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-180 S												
1 L	10			10	0	1950	6	6	0.026	26.0	2	50
2 TR		72	154	226	0	1950	7	6	0.862	28.9	48	
	10	72	154	236	0				0.862	28.7	48	
East: PR-3 E												
1 L	119			119	0	1950	13	4	0.220	18.7	17	50
2 TR		357	426	783	0	1950	13	20	0.883	25.2	148	
	119	357	426	902	0				0.883	24.3	148	
North: PR-180 N												
1 L	385			385	0	1950	6	22	0.567	17.7	57*	50
2 TR		22	65	87	0	1950	10	14	0.156	13.3	10	
	385	22	65	472	0				0.567	16.8	57	
West: PR-3 W												
1 L	217			217	0	1950	13	13	0.315	16.8	32	50
2 TR		463	10	473	0	1950	17	1	0.864	31.8	120	
	217	463	10	690	0				0.864	27.1	120	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2300	0	60	0.883	24.1	148

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

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

ote: 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.

---

nt PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio 1st grn	Time (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
South: PR-180 S								
1	L	0.100	0.100	10	386	0.026	26.0	C
2	T	0.133*		72	83	0.863	22.9	C
3	R (Und)	0.467	0.083	154	178	0.863	31.6	C
				236	647	0.863	28.7	C
East: PR-3 E								
4	LT	0.217*	0.250	476	539	0.883*	20.0	C
6	R (Und)	0.217	0.633	426	483	0.883*	29.2	C
				902	1022	0.883	24.3	C
North: PR-180 N								
7	L	0.100*	0.367	385	679<	0.567	17.7	B
8	T	0.133		22	141	0.156	6.8	A
9	R (Und)	0.400	0.417	65	417	0.156	15.5	B
				472	1238	0.567	16.8	B
West: PR-3 W								
10	L	0.217	0.217	217	690	0.315	16.8	B
11	T	0.283*		463	536	0.864	31.7	C
12	R (Und)	0.283	0.550	10	12	0.863	40.4	D
				690	1237	0.864	27.1	C
ALL VEHICLES:				2300	4551	0.883	24.1	C
INTERSECTION (persons):				3450	4551	0.883	24.1	

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the
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

nt PR-3 y PR-180
ico PM Futuro
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.825	120
Average Delay	24.1	60
Stop Rate	0.84	120
Max. Queue for Any Movement	21.1	60
Perf. Index	83.9	60
Cost	918.8	60

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	4551	60
Prac. Spare Cap.	9	120

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-180
ico PM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 60

able 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-180 S						
	East	15.0	22.6	23.6	500	104
	North	S	60.0	18.5	500	106
	West	11.9	20.2	18.7	500	103
East: PR-3 E						
	South	11.9	20.2	18.7	500	103
	North	15.0	22.6	23.6	500	104
	West	S	60.0	18.5	500	106
North: PR-180 N						
	South	S	60.0	18.5	500	106
	East	11.9	20.2	18.7	500	103
	West	15.0	22.6	23.6	500	104
West: PR-3 W						
	South	15.0	22.6	23.6	500	104
	East	S	60.0	18.5	500	106
	North	11.9	20.2	18.7	500	103

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

applies for both stopped and unstopped vehicles.

Int PR-3 y PR-180
ico PM Futuro
ntersection ID: 3
Fixed-Time Signals, Cycle Time = 60

able D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: PR-180 S											
1 L	1	0.026	17.1	0.0	17.1	3.4	13.8	0.0	13.8	8.9	26.0
2 TR	2, 3	0.862	14.1	8.8	22.9	5.8	17.2	2.6	14.6	0.0	28.9
										8.7	
East: PR-3 E											
1 L	4	0.220	9.8	0.0	9.8	3.3	6.5	0.0	6.5	8.9	18.7
2 TR	4, 6	0.883	9.1	11.3	20.5	5.7	14.8	2.5	12.3	0.0	25.2
										8.7	
North: PR-180 N											
1 L	7	0.567	8.8	0.0	8.8	2.9	5.8	0.2	5.6	8.9	17.7
2 TR	8, 9	0.156	6.8	0.0	6.8	3.7	3.0	0.0	3.0	0.0	13.3
										8.7	
West: PR-3 W											
1 L	10	0.315	7.9	0.0	7.9	2.8	5.1	0.0	5.1	8.9	16.8
2 TR	11, 12	0.864	23.9	7.8	31.7	8.5	23.2	2.6	20.6	0.0	31.8
										8.7	

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

nt PR-3 y PR-180
ico PM Futuro
Intersection ID: 3
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-180 S											
1 L	0.026	0.0	0.1	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.05
2 TR	0.862	0.6	2.5	0.8	3.2	4.1	5.1	5.7	6.9	8.1	0.10
East: PR-3 E											
1 L	0.220	0.0	1.0	0.0	1.0	1.3	1.7	2.0	2.5	3.0	0.35
2 TR	0.883	2.6	8.7	3.9	12.6	15.2	17.9	19.4	21.1	22.9	0.30
North: PR-180 N											
1 L	0.567	0.0	4.0	0.0	4.0	4.9	6.1	6.8	8.1*	9.4*	1.14
2 TR	0.156	0.0	0.6	0.0	0.6	0.8	1.0	1.1	1.5	1.8	0.02
West: PR-3 W											
1 L	0.315	0.0	2.0	0.0	2.0	2.5	3.2	3.7	4.5	5.4	0.63
2 TR	0.864	1.1	8.3	1.6	9.9	12.0	14.3	15.5	17.2	18.9	0.24

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a

Traffic Consulting Group

Estudio de Tránsito
Paseo Costa del Sur
Salinas, PR

Preparado para:
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Abril 2006

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Tabla de Contenido

1 Introducción 4

2 Localización y descripción de la acción propuesta 5

3 Metodología para la evaluación del impacto en el tránsito debido a la acción propuesta 6

4 Teoría 7

4.1 Evaluación de Nivel de Servicio (LOS) para una intersección 7
4.2 Relación entre demoras y Nivel de Servicio 8
4.3 Glosario 8

5 Análisis de Tránsito 11

5.1 Afluencia vehicular 11
5.2 Crecimiento Anual 12
5.3 Generación de Viajes 12
5.4 Distribución de Viajes 13
5.5 Tránsito Futuro 14
5.6 Modelación de Tránsito 16
5.6.1 Intersección PR-3 y PR-706 16
5.6.2 Intersección PR-3 y Acceso Comercial Proyecto 18
5.6.3 Intersección PR-3 y Acceso Residencial Proyecto 20
5.6.4 Intersección PR-3 y PR-180 23

6 Conclusiones y Recomendaciones 26

7 Certificación 27

8 Referencias 28

9 Apéndices 29

9.1 Apéndice 1: Flujos Obtenidos Mediante Conteos 29
9.2 Apéndice 2: Listado de Archivos de Modelaciones 33
9.3 Apéndice 3: Resultados modelaciones 34

Lista de Tablas

Tabla 1 Criterio del Nivel de Servicio para intersecciones 8
Tabla 2 Flujos Int. PR-3 y PR-706 (Condición Presente) 11
Tabla 3 Flujos Int. PR-3 y Acceso Residencial Proyecto (Condición Presente) 12
Tabla 4 Flujos Int. PR-3 y PR-180 (Condición Presente) 12
Tabla 5 Generación de Viajes Área Residencial 13
Tabla 6 Generación de Viajes Área Comercial 13
Tabla 7 Flujos Int. PR-3 y PR-706 (Condición Futuro) 14
Tabla 8 Flujos Int. PR-3 y Acceso Comercial Proyecto (Condición Futuro) 15
Tabla 9 Flujos Int. PR-3 y Acceso Residencial Proyecto (Condición Futuro) 15
Tabla 10 Flujos Int. PR-3 y PR-180 (Condición Futuro) 15
Tabla 11 Flujos Int. PR-3 y PR-706 (Condición Futuro + 5 años) 15
Tabla 12 Flujos Int. PR-3 y Acceso Comercial Proyecto (Condición Futuro + 5 Años) 15
Tabla 13 Flujos Int. PR-3 y Acceso Residencial Proyecto (Condición Futuro + 5 Años) 16
Tabla 14 Flujos Int. PR-3 y PR-180 (Condición Futuro + 5 Años) 16
Tabla 15 Resultados modelación Int. PR-3 y PR-706 18
Tabla 16 Resultados modelación Int. PR-3 y Acceso Comercial Proyecto 20
Tabla 17 Resultados modelación Int. PR-3 y Acceso Residencial Proyecto 23
Tabla 18 Resultados modelación Int. PR-3 y PR-180 25

Lista de Figuras

Figura 1 Mapa de Localización 5
Figura 2 Int. PR-3 y PR-706 17
Figura 3 Int. PR-3 y Acceso Comercial del Proyecto 19
Figura 4 Int. PR-3 y Acceso Residencial Proyecto (Geometría Presente) 21
Figura 5 Int. PR-3 y Acceso Residencial Proyecto (Geometría Futuro) 22
Figura 6 Int. PR-3 y PR-180 24

1 INTRODUCCIÓN

El siguiente informe presenta un estudio de tránsito en el área destinada para la construcción de un proyecto residencial y comercial en el sector Aguirre del municipio de Salinas. Este informe evalúa las condiciones presentes del área y el impacto que tendrá la acción propuesta. Se modelará el funcionamiento de las intersecciones afectadas por el nuevo desarrollo mediante el uso del programa de computadoras para el análisis de intersecciones "**S**ignalised & unsignalised **I**ntersection **D**esign & **R**esearch **A**id", con el fin de determinar el efecto final del mismo en las intersecciones de interés. También se evaluará el efecto de las mejoras geométricas que sean necesarias para mitigar el efecto del proyecto.

2 LOCALIZACIÓN Y DESCRIPCIÓN DE LA ACCIÓN PROPUESTA

El proyecto propuesto estará localizado en el lado norte del kilómetro 152.7 de la carretera PR-3 en el sector Aguirre del municipio de Salinas. El desarrollo propuesto consta de 850 unidades de vivienda unifamiliares, y un centro comercial de 94,050 pies cuadrados. La siguiente figura muestra un mapa de localización del proyecto.

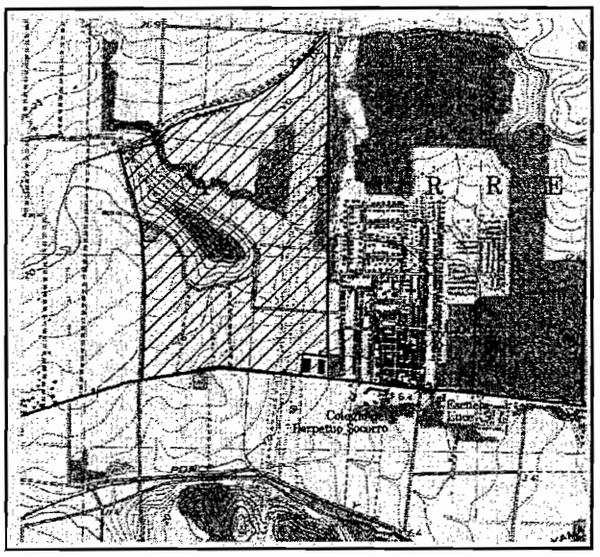

Figura 1 Mapa de Localización

3 METODOLOGÍA PARA LA EVALUACIÓN DEL IMPACTO EN EL TRÁNSITO DEBIDO A LA ACCIÓN PROPUESTA

1. El miércoles 5 de abril de 2006 se realizaron conteos de vehículos en el área de estudio durante las 12 horas de mayor afluencia vehicular. Los horarios de conteos fueron realizados de 6:00 AM a 6:00 PM. Este conteo se hizo para determinar el número de vehículos usuarios de las vías de tránsito cercanas al área del proyecto. Las intersecciones medidas fueron las siguientes:

    a. Int. PR-3 y PR-706
    b. Int. PR-3 y acceso área residencial Paseo Costa del Sur
    c. Int. PR-3 y PR-180

2. Dado que el proyecto no estará completado hasta aproximadamente el año 2012, los flujos del año 2006 fueron expandidos a ese año usando un factor de crecimiento anual.

3. Utilizando como referencia el Manual de Generación de Viajes del ITE se estimó el número de viajes que se generarían desde y hacia el proyecto propuesto.

4. Con toda la data recopilada se procedió a analizar las intersecciones en cuestión. Para realizar este análisis se utilizó el programa de computadoras aaSIDRA 2.0. Las situaciones estudiadas fueron los períodos pico de la mañana y de la tarde con los flujos existentes, y las mismas situaciones al añadirse el crecimiento anual esperado y los flujos generados por el proyecto. Las intersecciones bajo estudio son las que se mencionaron anteriormente.

4 TEORÍA

4.1 Evaluación de Nivel de Servicio (LOS) para una intersección

El nivel de servicio es la metodología más conocida utilizada para la evaluación de una facilidad. El nivel de servicio representa las condiciones de operación de las intersecciones: el nivel de servicio "A" representa las condiciones excelentes de tránsito y el nivel "F", las peores condiciones. Tanto las intersecciones semaforizadas como las no semaforizadas pueden ser categorizadas utilizando esta metodología. Estos niveles de servicio a su vez se encuentran basados en las demoras promedio que tienen los vehículos en las intersecciones. A continuación se definen las categorías para cada nivel de servicio.

LOS A: Excelente

Esta es una condición de flujo libre, acompañada por bajos volúmenes de tránsito y altas velocidades. Hay poca o ninguna restricción en maniobrabilidad del conductor y los conductores pueden mantener sus deseadas velocidades con poco o ningún retraso.

LOS B: Muy Buena

En esta condición, las velocidades de operación comienzan a estar restringidas un tanto por las condiciones del tránsito. Los conductores aún tienen una libertad considerable para seleccionar su velocidad y carril de operación.

LOS C: Buena

Las velocidades y maniobrabilidad se vuelven más controladas por volúmenes de tránsito más altos. La mayoría de los conductores están restringidos en su libertad para seleccionar su propia velocidad, cambiar de carril o pasar.

LOS D: Aceptable

Este nivel de servicio se acerca a un flujo inestable, con velocidades operacionales tolerables siendo mantenidas, aunque considerablemente

afectadas por los cambios en las condiciones operacionales. Los conductores tienen poca libertad para maniobrar y la comodidad y conveniencia son bajas.

LOS E: Capacidad

El flujo de tránsito se vuelve inestable y podría haber paradas momentáneas.

LOS F: Mala

En esta condición, la velocidad operacional podría bajar a cero y resultar en colas de tránsito.

4.2 Relación entre demoras y Nivel de Servicio

La Tabla 1, muestra las diferentes relaciones entre el nivel de servicio y las demoras promedio por cada vehículo en las intersecciones controladas ya sea por semáforo, señales de PARE o CEDA, o en rotondas. (Manual de aaSIDRA 2.1. Estas demoras tienen como componentes la demora de viajar a través de la intersección más la demora de la detención como consecuencia de la intersección.

Tabla 1 Criterio del Nivel de Servicio para intersecciones

Nivel de Servicio	Demora de vehículos (segs.)	
	Semáforo y Rotonda	PARE y CEDA
A	$d \leq 10$	$d \leq 10$
B	$10 < d \leq 20$	$10 < d \leq 15$
C	$20 < d \leq 35$	$15 < d \leq 25$
D	$35 < d \leq 55$	$25 < d \leq 35$
E	$55 < d \leq 80$	$35 < d \leq 50$
F	$80 < d$	$50 < d$

4.3 Glosario

A continuación se presenta una lista de términos comunes en la práctica de la ingeniería de tránsito, según definidos por la Autoridad de Carreteras y Transportación.

1. **Acceso (intersección)** – está caracterizado por un grupo de carriles en una dirección de la intersección, incluyendo los movimientos a la izquierda, recto y a la derecha.

2. **ADT** – "Average Daily Traffic", tránsito promedio diario en una facilidad de una carretera.
3. **Área de estudio** – área geográfica que contiene las intersecciones y segmentos más críticos de una carretera, los cuales se esperan sean afectados por el tránsito a ser generado por el desarrollo.
4. **Ciclo** – el período de tiempo requerido para una secuencia completa de indicaciones del semáforo.
5. **Desarrollo** – proyectos residenciales, comerciales, de oficinas, de hospederías e industriales, entre otros, que serán construidos en un predio de terreno sin desarrollar o que forman parte de una reconstrucción o expansión de una edificación existente.
6. **Día típico** – un martes, miércoles o jueves durante los días de clase entre los meses de enero a mayo y de agosto a diciembre. Para los usos comerciales, el sábado podrá incluirse entre los días típicos.
7. **Estudio operacional** – el análisis del impacto potencial al tránsito causado por un desarrollo propuesto. Este tipo de estudio dependerá del tipo y tamaño del proyecto. Para propósitos de este documento, un estudio operacional consistirá de un estudio de accesos o un estudio de tránsito.
8. **Factor de hora pico** – una medida de la fluctuación en la demanda vehicular dentro de la hora pico.
9. **Fase** – una parte del ciclo asignado a un movimiento de tránsito que tenga el derecho de paso o a una combinación de movimientos de tránsito que tengan simultáneamente el derecho de paso durante uno o más intervalos.
10. **Hora pico** – un período de una hora durante la mañana (AM) o durante la tarde (PM) que representa el volumen de tránsito más alto en el sistema, resultado de la suma de los volúmenes de cuatro (4) períodos de quince (15) minutos consecutivos.
11. **Modelos de micro-simulación** – modelos que simulan el movimiento individual de vehículos, basados en teorías de cambio de carril, dirección de los vehículos y forma de conducir.
12. **Nivel de servicio ("Level of Service" - LOS)** – una medida cualitativa que describe las condiciones operacionales de un componente del sistema de transportación. Generalmente descrito por los siguientes factores: velocidad, tiempo de viaje, demora, interrupciones en el tránsito y seguridad.
13. **Semáforo actuado** – un tipo de sistema de semáforos mediante el cual se varían los intervalos de tiempo de acuerdo con las demandas del tránsito registradas por la actuación de los detectores localizados en el pavimento de rodaje.
14. **Semáforo semi-actuado** – un tipo de sistema de semáforos donde los detectores son colocados en los accesos de menor flujo vehicular para permitirle prioridad de verde a los accesos principales.

15. **Semáforo de tiempo fijo** – un tipo de sistema de semáforos que opera con programas predeterminados de ciclos en intervalos.
16. **Volumen** – el número de personas o vehículos pasando por un punto de un carril o un segmento de carretera durante cierto intervalo de

5 ANÁLISIS DE TRÁNSITO

5.1 Afluencia vehicular

A modo de determinar el patrón de viajes actuales del sector se realizó un conteo manual en las intersecciones mencionadas anteriormente. Dichos conteos se realizaron en los periodos de 6:00 AM a 6:00 PM. Estas intersecciones son las críticas alrededor del proyecto.

Las tablas en el apéndice 1 ilustran el flujo vehicular obtenido mediante dichos conteos manuales. Para determinar la hora pico se buscaron los cuatro períodos consecutivos de 15 minutos con más flujo. Una vez se encontraba esta hora en los períodos AM y PM, se buscaba el período de 15 minutos con mayor flujo, y este valor multiplicado por cuatro era el que se utilizaba para la modelación. Dado que ya se está usando el valor del período de 15 minutos mas alto, el factor de hora pico a utilizarse es 1.0.

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

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

Tabla 2 Flujos Int. PR-3 y PR-706 (Condición Presente)

2006	PR-3		PR-706		PR-3		
	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	264	36	40	324	408	464	1536
Pico PM	460	64	72	324	272	312	1504

Tabla 3 Flujos Int. PR-3 y Acceso Residencial Proyecto (Condición Presente)

2006	Acceso Canto Alegre			PR-3			Acceso Proyecto			PR-3			
	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	40	0	12	40	428	4	68	0	68	20	864	92	1636
Pico PM	36	4	12	12	748	52	28	0	16	52	516	16	1492

Tabla 4 Flujos Int. PR-3 y PR-180 (Condición Presente)

2006	PR-180			PR-3			PR-180			PR-3			
	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	0	60	196	48	352	240	320	76	112	312	900	0	2616
Pico PM	0	96	60	124	420	244	304	100	56	304	424	0	2132

5.2 Crecimiento Anual

Los flujos obtenidos en el año 2006 fueron expandidos al año 2012, cuando entendemos que el proyecto estará operando. Los flujos de la zona fueron expandidos utilizando un factor de 1.5% de crecimiento anual. En adición, dado que el proyecto es uno de tamaño mediano de acuerdo a las Guías de la Autoridad de Carreteras y Transportación, también se expandieron los datos a 5 años después de la fecha de operación.

5.3 Generación de Viajes

El proyecto consiste de 850 unidades residenciales unifamiliares y un centro comercial de 94,050 pies cuadrados. Para realizar el cómputo de la cantidad de viajes que generaría este proyecto, se utilizó el Manual de Generación de Viajes de ITE. Se utilizaron las categorías 210 y 820 correspondientes a residencias y centro comercial, respectivamente, como usos de terreno, Las siguientes tablas muestran los resultados de este análisis.

Tabla 5 Generación de Viajes Área Residencial

				ADT			Pico AM			Pico PM		
Uso	Categoria	Tamaño	Unidad	Total	In	Out	Total	In	Out	Total	In	Out
Res Unifamiliar	210	850	Viviendas	7,447	3,724	3,724	604	151	453	736	463	272

Tabla 6 Generación de Viajes Área Comercial

				ADT			Pico AM			Pico PM		
Uso	Categoria	Tamaño	Unidad	Total	In	Out	Total	In	Out	Total	In	Out
Centro Comercial	820	94.050	X 1000 pc	6,526	3,263	3,263	151	92	59	601	289	313

5.4 Distribución de Viajes

Para la distribución de los viajes desde y hacia el nuevo desarrollo se siguió el patrón observado en el desarrollo adyacente al propuesto y que compartirá el acceso en el futuro. En las intersecciones a lo largo de la PR-3 que se estudiaron (PR-180 y PR-706) se utilizó también las mismas proporciones que se observaron durante los conteos.

En el futuro el desarrollo contará con dos accesos, uno de ellos será exclusivamente para el área residencial y el otro será compartido entre el área comercial y el área residencial. Asignamos 80% de los viajes generados por el área residencial a su acceso exclusivo y 20% al acceso compartido con el área comercial. Dichos viajes generados en el área residencial fueron distribuidos en 50% hacia el este y 50% hacia el oeste. La totalidad de los viajes generados por el área comercial fueron asignados a su acceso y su distribución también fue de 50% hacia el este y 50% hacia el oeste.

Los viajes generados en el proyecto una vez llegan a la intersección de la PR-3 con la PR-706 se distribuyeron en un 40% siguiendo en dirección este y un 60% doblando a la izquierda en dirección norte. En la intersección de la PR-3 con la PR-180 los viajes se distribuyeron en un 40% continuando en dirección oeste y un 60% doblando a la derecha en dirección norte.

Es importante mencionar que para los viajes del área comercial se tomó en consideración el efecto de los llamados viajes "*pass-by*". Los centros comerciales tienen como parte de su clientela viajes que ya ocurren en el área, y que aprovechan el que están en el área para hacer las compras. El Manual de Generación de viajes estima que de un 40% a un 60% de los viajes que entran a áreas comerciales, son viajes que ya transitan en el área. Para nuestros cómputos usamos un valor de 50%.

5.5 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 más el crecimiento anual esperado. Las siguientes tablas muestran los flujos modelados.

Tabla 7 Flujos Int. PR-3 y PR-706 (Condición Futuro)

2012+P	PR-3		PR-706		PR-3		
	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	328	39	44	413	591	604	2019
Pico PM	625	70	79	536	426	426	2162

Tabla 8 Flujos Int. PR-3 y Acceso Comercial Proyecto (Condición Futuro)

2012 + P	PR-3		Acceso Comercial		PR-3		
	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	493	61	104	104	61	1009	1832
Pico PM	816	190	340	340	190	536	2412

Tabla 9 Flujos Int. PR-3 y Acceso Residencial Proyecto (Condición Futuro)

2012 + P	Acceso Canto Alegre			PR-3			Acceso Proyecto						
	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	44	0	13	44	468	64	255	0	255	82	945	101	2271
Pico PM	39	4	13	13	818	242	140	0	126	242	564	17	2218

Tabla 10 Flujos Int. PR-3 y PR-180 (Condición Futuro)

2012 + P	PR-180			PR-3			PR-180			PR-3			
	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	0	66	214	52	482	407	409	83	122	341	1023	0	3199
Pico PM	0	105	66	136	544	396	514	109	61	332	586	0	2849

Tabla 11 Flujos Int. PR-3 y PR-706 (Condición Futuro + 5 años)

2017 + P	PR-3		PR-706		PR-3		
	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	350	42	47	441	626	644	2150
Pico PM	664	75	85	564	449	453	2290

Tabla 12 Flujos Int. PR-3 y Acceso Comercial Proyecto (Condición Futuro + 5 Años)

2017 + P	PR-3		Acceso Comercial		PR-3		
	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	533	61	104	104	61	1089	1952
Pico PM	884	190	340	340	190	727	2671

Tabla 13 Flujos Int. PR-3 y Acceso Residencial Proyecto (Condición Futuro + 5 Años)

2017 + P	Acceso Canto Alegre			PR-3			Acceso Proyecto						
	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	47	0	14	47	504	65	261	0	261	84	1018	108	2409
Pico PM	42	5	14	14	881	246	142	0	128	246	608	19	2345

Tabla 14 Flujos Int. PR-3 y PR-180 (Condición Futuro + 5 Años)

2017 + P	PR-180			PR-3			PR-180			PR-3			
	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	0	71	231	57	512	428	436	90	132	368	1099	0	3424
Pico PM	0	113	71	146	580	416	540	118	66	358	621	0	3029

5.6 Modelación de Tránsito

Para la evaluación de las intersecciones afectadas se utilizó el programa aaSIDRA 2.1. Este modelo permite la evaluación de intersecciones semaforizadas y de prioridad, además de la optimización de las de semáforo, 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.

5.6.1 Intersección PR-3 y PR-706

Esta intersección es controlada por un semáforo, con una geometría en forma de "T". La carretera PR-706 compone el acceso norte de la intersección. Los accesos este y oeste es la carretera PR-3. Esta intersección está localizada al este del proyecto. Hay que mencionar que al momento del estudio, el semáforo estaba operando de forma intermitente, operación que llevaba un tiempo ocurriendo, según fuimos informados.

Cada acceso cuenta con un carril por dirección. La calzada norte tiene un ancho de 8.2 metros, la este y la oeste miden 8.0 metros. La siguiente figura muestra un croquis de esta intersección, seguida por una tabla que muestra los resultados obtenidos para las distintas situaciones modeladas.

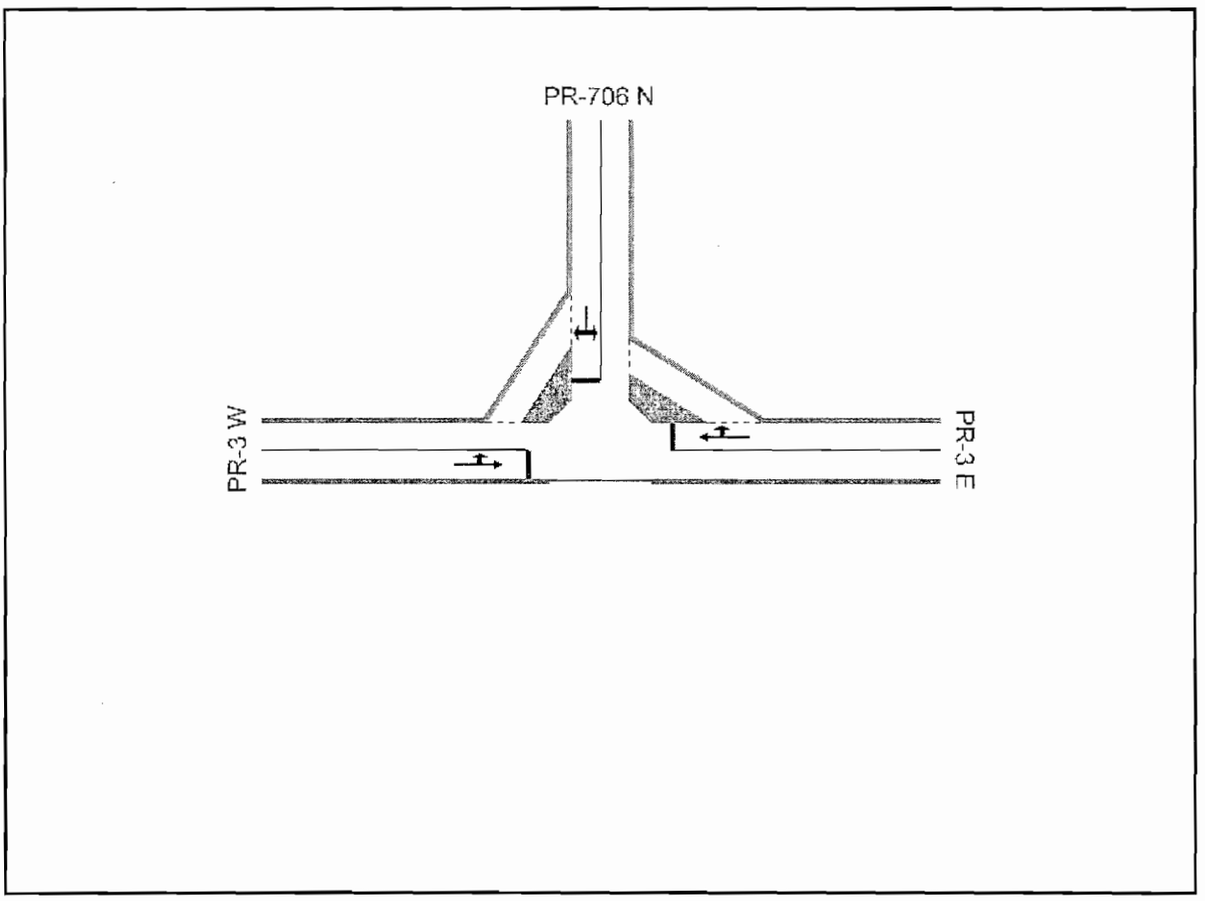

Figura 2 Int. PR-3 y PR-706

Tabla 15 Resultados modelación Int. PR-3 y PR-706

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	COLA PROMEDIO [METROS]				
	Acceso Sur N/A	Acceso Este PR-3	Acceso Norte PR-706	Acceso Oeste PR-3	Total Int.
Base 2007					
AM	N/A	2.1 A	8.8 A	9.1 A	7.6 A
		1	1	5	
PM	N/A	6.7 A	10.8 B	23.0 C	14.1 B
		6	2	22	
Futuro 2012					
AM	N/A	55.4 E	12.8 B	12.1 B	20.1 C
		39	4	16	
PM	N/A	14.7 B	19.6 B	11.3 B	14.7 B
		19	14	9	
Futuro 2017					
AM	N/A	50.4 D	13.5 B	11.5 B	19.1 B
		38	5	16	
PM	N/A	19.3 B	23.3 C	13.4 B	18.1 B
		27	19	14	

Para obtener los resultados mostrados en el escenario futuro, se requeriría la construcción de un carril corto de viraje a la izquierda en el acceso oeste.

5.6.2 Intersección PR-3 y Acceso Comercial Proyecto

Esta intersección es la que se creará en el acceso comercial del proyecto. La misma será controlada por prioridad, en una configuración de "T". La carretera PR-3 corre en el eje este-oeste, y el acceso comercial del proyecto corre en el acceso norte. La carretera PR-3 tiene un ancho de 6.7, pero como parte del proyecto entendemos que se hará un ensanche de la media sección de la carretera, en la que se tendrían dos carriles en la dirección de este a oeste. También se debe construir

un carril corto de viraje a la izquierda en el acceso oeste. La siguiente figura muestra un croquis de cómo sería esta intersección.

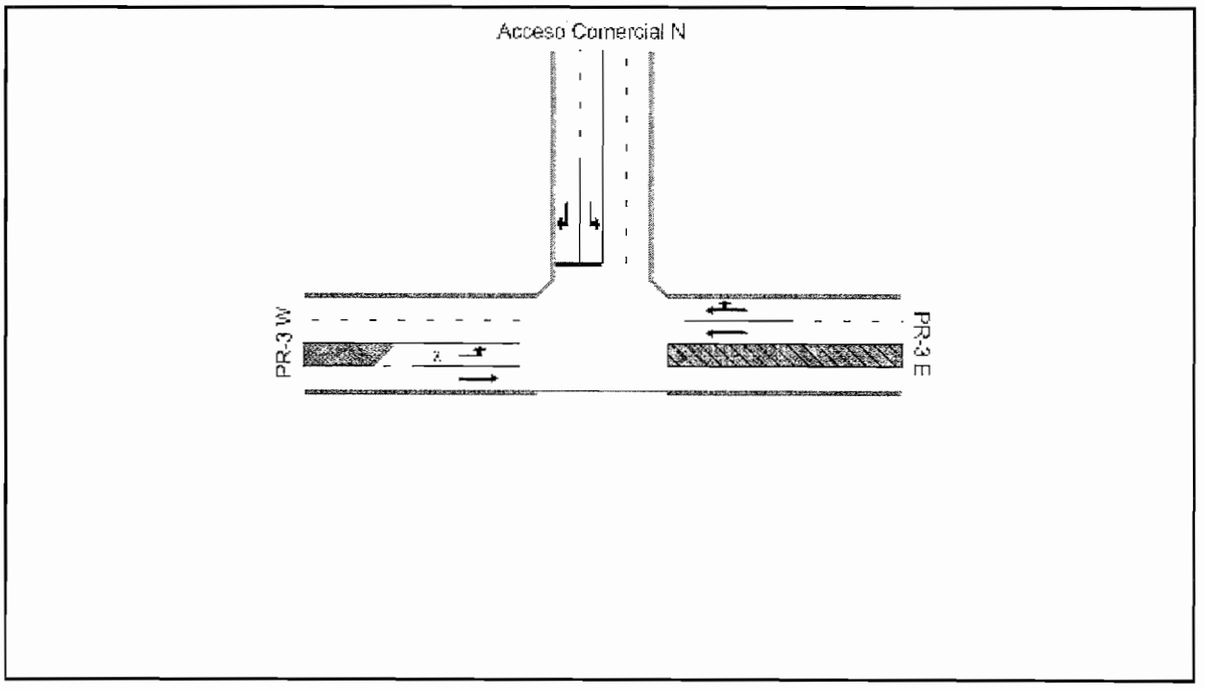

Figura 3 Int. PR-3 y Acceso Comercial del Proyecto

La siguiente tabla muestra los resultados obtenidos para las distintas situaciones modeladas.

Tabla 16 Resultados modelación Int. PR-3 y Acceso Comercial Proyecto

	Demora Promedio por Vehículo [seg.] y Nivel de Servicio (LOS)				
	Cola Promedio [metros]				
	Acceso Sur N/A	Acceso Este PR-3	Acceso Norte Acceso Comercial	Acceso Oeste PR-3	Total Int.
Futuro 2012					
AM	N/A	0.9 A	23.4 C	0.6 A	2.5
		0	3	0	
PM	N/A	1.5 A	32.8 D	3.8 A	7.8
		0	8	2	
Futuro 2017					
AM	N/A	0.8 A	25.8 D	0.6 A	2.6
		0	4	0	
PM	N/A	1.4 A	65.4 F	3.3 A	12.1
		0	21	3	

Como podemos notar, esta intersección operará sin problema al momento de comienzo de operaciones. En el escenario de 5 años después de comenzar operaciones observaríamos una demora en la salida del proyecto, pero esta situación no afectaría la operación de la carretera PR-3.

5.6.3 Intersección PR-3 y Acceso Residencial Proyecto

Esta intersección es controlada por prioridad, en una configuración de cruz. La carretera PR-3 corre en el eje este-oeste, y el acceso del proyecto esta en el lado norte de la carretera. En el lado sur se encuentra el acceso de Canto Alegre. La carretera PR-3 cuenta con un ancho de 6.7 metros con un carril por dirección. Los accesos norte y sur también cuentan con un carril por dirección. El acceso norte es utilizado por una fase previa de Paseo Costa del Sur, pero como parte del proyecto sería expandido a dos carriles por dirección. En la carretera PR-3 se harían mejoras similares a las discutidas en la intersección de la carretera PR-3 y el acceso comercial

del proyecto. La siguiente figura muestra un croquis de esta intersección en la actualidad, seguida por un croquis de la geometría propuesta.

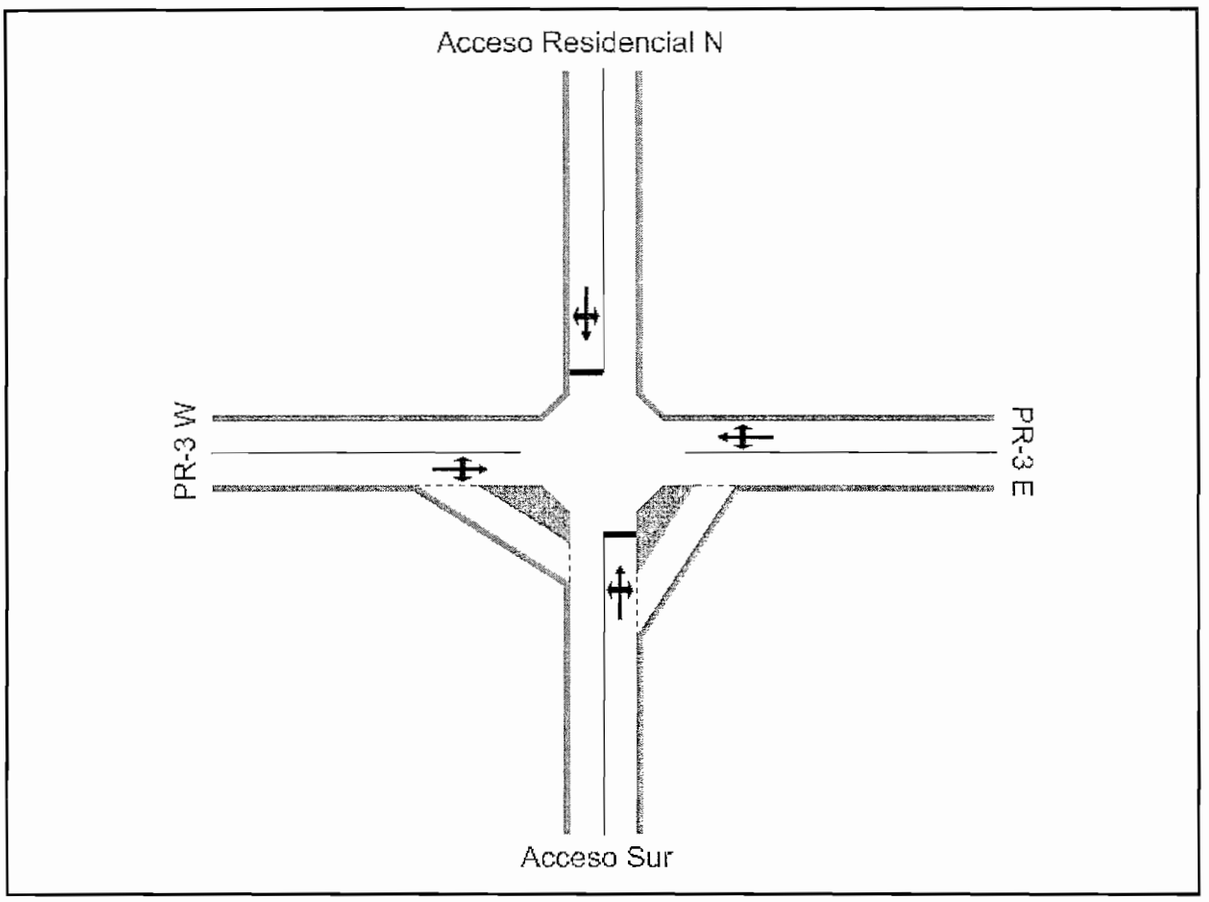

Figura 4 Int. PR-3 y Acceso Residencial Proyecto (Geometría Presente)

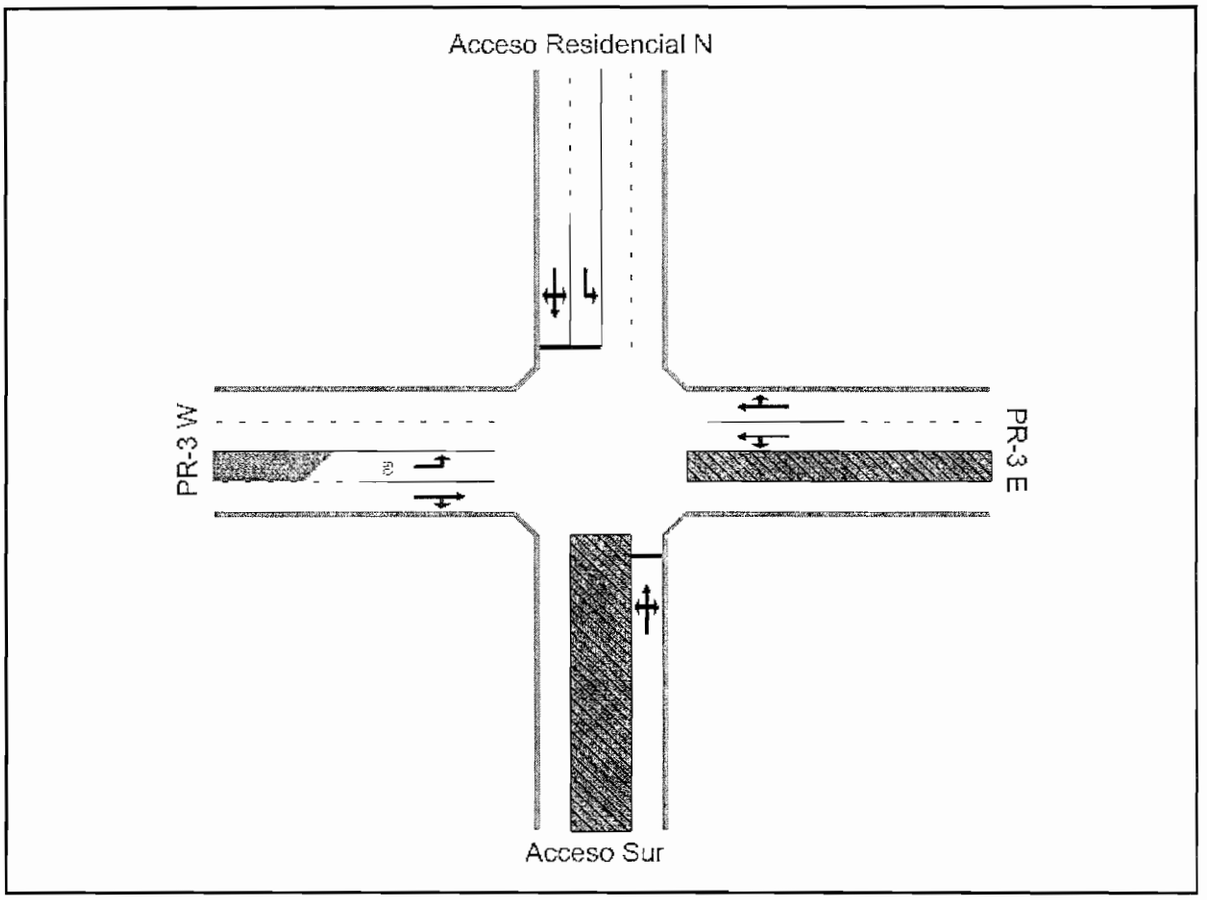

Figura 5 Int. PR-3 y Acceso Residencial Proyecto (Geometría Futuro)

La siguiente tabla muestra los resultados obtenidos para las distintas situaciones modeladas.

Tabla 17 Resultados modelación Int. PR-3 y Acceso Residencial Proyecto

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	COLA PROMEDIO [METROS]				
	Acceso Sur Canto Alegre	Acceso Este PR-3	Acceso Norte Acceso Residencial Proyecto	Acceso Oeste PR-3	Total Int.
Base 2006					
AM	23.7 C	15.8 C	19.3 C	6.5 A	10.8
	1	14	2	11	
PM	20.5 C	6.6 A	20.2 C	11.8 B	9.5
	1	9	1	12	
Futuro 2012					
AM	38.1 E	5.8 A	33.5 D	1.5 A	10.7
	3	5	12	0	
PM	32.5 D	4.3 A	35.3 E	6.8 A	9.7
	2	5	6	7	
Futuro 2017					
AM	48.5 E	5.8 A	50.0 F	1.5 A	14.4
	5	5	22	0	
PM	40.0 E	4.7 A	45.6 E	7.6 A	11.5
	3	6	9	9	

Como podemos notar, esta intersección no tendrá problemas una vez comience la operación del proyecto propuesto.

5.6.4 Intersección PR-3 y PR-180

Esta intersección es controlada por semáforo con una configuración de cruz. Cada acceso cuenta con un carril por dirección, mas un carril corto de viraje a la izquierda. Esta intersección está localizada al oeste del proyecto. La siguiente figura muestra un croquis de la geometría de esta intersección.

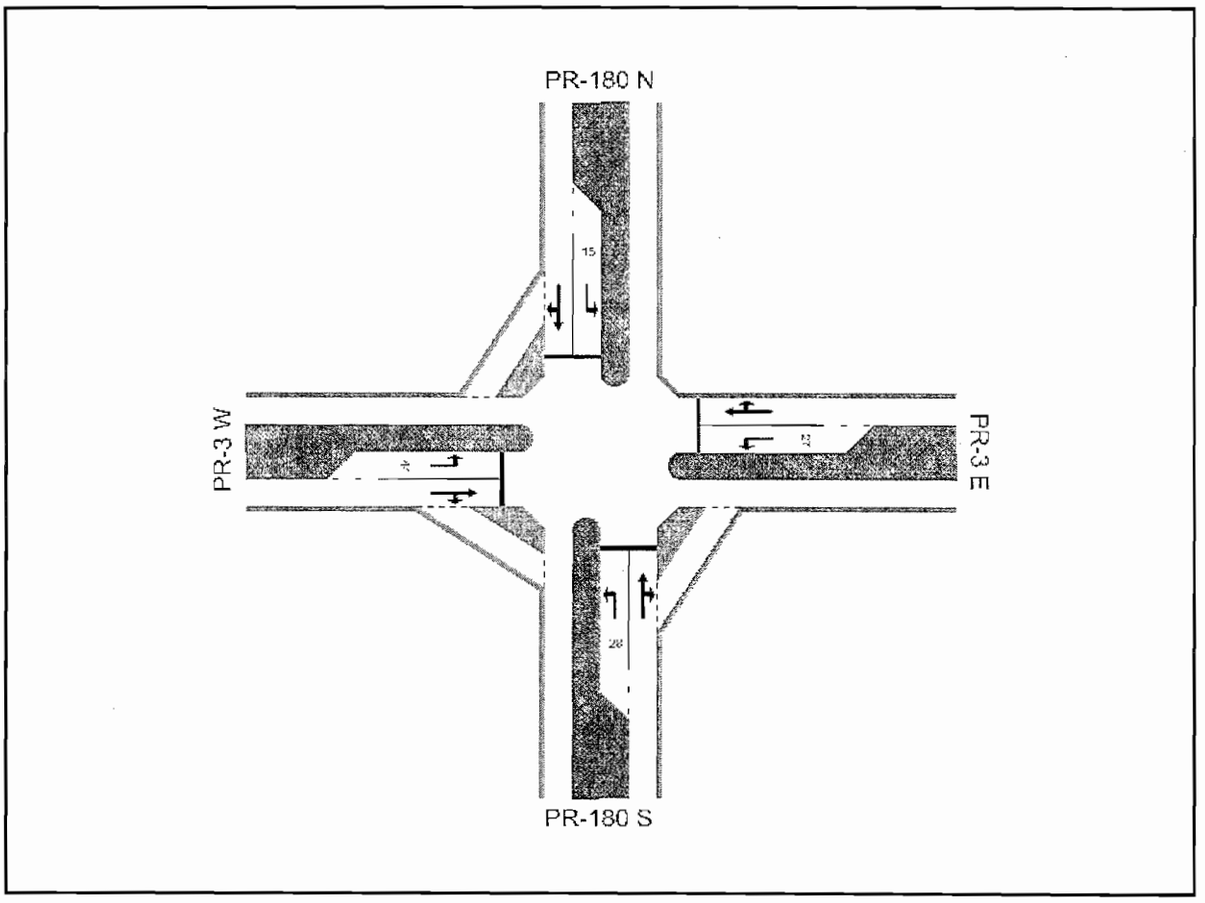

Figura 6 Int. PR-3 y PR-180

La siguiente tabla muestra los resultados obtenidos para las distintas situaciones modeladas.

Tabla 18 Resultados modelación Int. PR-3 y PR-180

	Demora Promedio por Vehículo [seg.] y Nivel de Servicio (LOS)				
	Cola Promedio [metros]				
	Acceso Sur PR-180	Acceso Este PR-3	Acceso Norte PR-180	Acceso Oeste PR-3	Total Int.
Base 2006					
AM	25.2 C	19.9 B	67.2 E	80.6 F	57.7 E
	10	16	57	166	
PM	28.0 C	58.4 E	38.1 D	37.9 D	44.8 D
	8	74	25	32	
Futuro 2012					
AM	27.0 C	18.0 B	23.7 C	68.3 E	41.3 D
	11	23	18	155	
PM	16.9 E	57.1 E	37.7 D	30.6 C	41.5 D
	5	104	41	28	
Futuro 2017					
AM	40.8 D	18.4 B	67.7 E	67.5 E	50.9 D
	20	23	77	167	
PM	16.0 B	54.0 D	50.7 D	32.7 C	44.0 D
	5	103	62	34	

La situación base en esta intersección fue modelada utilizando los tiempos actuales del semáforo. Para los escenarios futuros se realizó optimización de los tiempos del semáforo, logrando una operación similar a la presente luego de incorporar los aumentos en los flujos.

En el Apéndice 3 presentamos las corridas del programa SIDRA para las intersecciones discutidas anteriormente.

6 CONCLUSIONES Y RECOMENDACIONES

Luego de analizar los resultados de las modelaciones incluidas en este estudio podemos concluir que el proyecto bajo consideración es uno viable en el área donde se pretende su construcción. Sin embargo, es importante señalar unas mejoras que deben ser realizadas para la operación eficiente del tránsito del área.

1. En la intersección de la carretera PR-3 con la carretera PR-706 se debe añadir un carril corto de viraje a la izquierda en el acceso oeste. Además los tiempos del semáforo deben ser optimizados, de acuerdo a los patrones diarios del flujo.
2. Tanto en el acceso residencial del proyecto, como en el comercial se deben construir también un carril corto de viraje a la izquierda en el acceso oeste.
3. Se debe optimizar los tiempos del semáforo en la intersección de las carreteras PR-3 y PR-180.

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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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 2.1 User Manual
4. Guías para la Preparación de Estudios Operacionales de Accesos y de Tránsito para Puerto Rico, Autoridad de Carretera y Transportación, 2004

9 APÉNDICES

9.1 Apéndice 1: Flujos Obtenidos Mediante Conteos

Conteo PR-3 y PR-706

Beginning of Period	E-T	E-R	N-L	N-R	W-L	W-T	Total
6:00	38	7	2	16	24	40	127
6:15	49	13	2	18	38	55	175
6:30	51	7	7	30	49	42	186
6:45	64	5	8	51	65	47	240
7:00	71	9	7	83	94	65	329
7:15	72	9	16	100	99	65	361
7:30	**66**	**9**	**10**	**81**	**102**	**116**	**384**
7:45	67	4	18	73	96	84	342
8:00	55	17	8	58	92	53	283
8:15	59	13	9	48	80	51	260
8:30	61	6	8	45	58	64	242
8:45	58	16	9	43	53	54	233
9:00	54	6	7	44	45	42	198
9:15	51	11	8	45	70	40	225
9:30	52	9	9	38	43	41	192
9:45	46	8	8	41	36	51	190
10:00	41	7	9	39	33	46	175
10:15	47	13	11	39	41	55	206
10:30	52	7	10	33	34	48	184
10:45	44	8	12	33	32	55	184
11:00	41	9	14	37	34	64	199
11:15	65	10	11	42	31	80	239
11:30	69	14	17	47	24	65	236
11:45	71	11	14	45	40	73	254
12:00	65	11	17	62	26	94	275
12:15	95	17	8	63	29	101	313
12:30	61	12	11	54	44	60	242
12:45	86	11	14	42	32	72	257
13:00	78	14	15	44	33	73	257
13:15	63	14	17	37	32	51	214
13:30	72	16	14	32	31	57	222
13:45	81	12	14	35	39	56	237
14:00	77	14	11	31	42	60	235
14:15	84	11	12	32	45	68	252
14:30	84	12	13	39	32	63	243
14:45	81	12	20	42	42	52	249
15:00	88	18	14	51	51	67	289
15:15	91	11	11	70	63	68	314
15:30	93	13	17	72	61	93	349
15:45	100	16	18	65	64	62	325
16:00	117	18	16	83	57	74	365
16:15	110	23	19	93	52	61	358
16:30	104	25	23	84	57	73	366
16:45	**115**	**16**	**18**	**81**	**68**	**78**	**376**
17:00	109	24	20	78	65	68	364
17:15	100	22	17	67	64	80	350
17:30	89	20	21	60	59	75	324
17:45	93	14	17	43	43	71	281

Conteo PR-3 y Acceso Residencial Paseo Costa del Sur

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	0	3	11	54	1	3	0	8	6	57	13	158
6:15	4	0	8	13	75	1	8	0	9	7	63	14	202
6:30	6	0	7	19	99	0	11	0	18	7	77	17	261
6:45	9	0	4	17	96	1	6	0	13	4	104	15	269
7:00	14	0	2	11	97	1	23	0	17	6	149	21	341
7:15	**10**	**0**	**3**	**10**	**107**	**1**	**17**	**0**	**17**	**5**	**216**	**23**	**409**
7:30	9	0	8	8	122	1	15	0	24	7	168	15	377
7:45	8	0	8	6	124	6	8	0	21	3	120	14	318
8:00	10	0	7	5	108	2	4	0	13	4	92	13	258
8:15	8	0	7	7	97	6	5	0	7	6	80	11	234
8:30	14	0	6	6	99	6	8	0	9	6	84	8	246
8:45	9	0	6	3	89	2	8	0	6	5	71	11	210
9:00	8	0	8	5	74	7	5	0	9	8	75	12	211
9:15	7	1	3	6	75	6	4	0	8	9	62	11	192
9:30	6	0	5	3	74	3	7	0	12	6	78	12	206
9:45	5	0	7	7	78	3	8	0	9	7	68	12	204
10:00	4	0	4	4	84	4	9	0	7	9	67	17	209
10:15	9	0	3	6	78	2	6	0	5	6	63	9	187
10:30	11	1	5	3	97	8	6	0	6	7	66	8	218
10:45	4	0	9	9	111	8	5	0	3	7	72	7	235
11:00	9	0	11	4	85	1	5	0	9	8	71	7	210
11:15	5	0	10	5	84	7	5	0	8	10	99	7	240
11:30	4	0	8	5	83	2	7	0	10	8	89	11	227
11:45	10	0	9	5	73	5	6	0	6	3	105	22	244
12:00	5	0	8	10	48	3	5	0	5	7	117	30	238
12:15	8	1	7	9	78	3	11	0	7	7	118	25	274
12:30	13	0	7	10	93	2	6	0	18	6	98	13	266
12:45	15	0	8	5	96	3	5	0	7	5	80	9	233
13:00	11	0	6	4	103	3	4	0	5	6	96	5	243
13:15	19	0	6	3	101	4	3	0	7	3	84	6	236
13:30	10	0	7	4	103	6	6	0	8	4	87	7	242
13:45	14	1	5	3	108	5	4	0	9	9	95	5	258
14:00	19	0	6	3	105	4	4	0	6	8	105	4	264
14:15	13	0	4	2	118	11	3	0	9	7	86	3	256
14:30	19	0	4	4	124	8	3	0	7	10	82	8	269
14:45	22	0	5	2	125	3	5	0	3	9	88	9	271
15:00	23	0	3	3	134	13	7	0	6	10	108	11	318
15:15	26	0	14	5	143	9	6	0	9	10	105	6	333
15:30	40	1	5	6	135	4	4	0	8	9	97	12	321
15:45	35	0	9	4	155	12	3	0	6	8	103	3	338
16:00	33	0	5	2	160	8	4	0	6	14	108	5	345
16:15	25	0	8	3	175	15	5	0	6	17	107	6	367
16:30	19	0	9	5	159	5	3	0	7	16	105	8	336
16:45	12	0	7	3	143	13	7	0	6	10	132	5	338
17:00	10	0	8	2	180	15	11	0	5	9	123	3	366
17:15	**9**	1	**3**	**3**	**187**	**13**	7	**0**	**4**	**13**	**129**	**4**	**373**
17:30	8	0	4	2	175	12	5	0	3	12	115	5	341
17:45	8	0	3	2	164	9	6	0	3	12	104	3	314

Conteo PR-3 y PR-180

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	0	10	11	2	42	23	33	6	8	34	63	0	232
6:15	0	13	13	2	66	45	54	10	12	45	62	1	323
6:30	0	22	25	12	73	52	74	12	17	52	80	0	419
6:45	0	12	22	20	83	92	90	16	8	60	94	0	497
7:00	1	19	26	14	94	61	83	14	7	63	165	1	548
7:15	**0**	**15**	**49**	**12**	**88**	**60**	**80**	**19**	**28**	**78**	**225**	**0**	**654**
7:30	0	17	14	30	109	77	73	10	19	69	127	0	545
7:45	0	20	19	31	119	62	84	14	26	54	96	0	525
8:00	1	25	30	15	98	64	52	22	33	86	96	0	522
8:15	0	18	14	10	53	40	33	13	21	46	73	0	321
8:30	0	17	15	21	49	32	34	16	21	30	73	1	309
8:45	0	12	15	11	54	25	24	14	21	54	83	1	314
9:00	0	14	11	12	67	26	34	14	14	32	78	0	302
9:15	0	7	20	11	74	31	40	9	16	42	69	1	320
9:30	0	12	14	18	76	30	42	18	16	40	68	2	336
9:45	4	9	8	21	79	32	40	21	13	50	73	1	351
10:00	0	11	18	9	84	29	42	16	16	24	60	1	310
10:15	0	12	14	12	79	29	34	12	13	24	59	0	288
10:30	0	15	10	16	92	34	36	16	12	44	69	0	344
10:45	0	24	13	25	98	43	28	24	22	42	73	1	393
11:00	3	9	16	11	46	36	49	23	24	50	74	1	342
11:15	0	10	16	27	46	38	34	19	14	38	93	0	335
11:30	0	31	13	14	59	51	41	15	29	92	85	1	431
11:45	0	3	17	19	37	33	39	17	24	50	85	0	324
12:00	0	19	14	2	57	12	60	10	20	100	90	6	390
12:15	2	78	46	0	39	11	67	18	28	78	78	2	447
12:30	1	76	34	1	51	21	59	20	28	74	79	5	449
12:45	2	49	47	0	68	17	32	15	29	70	66	0	395
13:00	3	28	19	2	78	22	47	29	31	40	78	0	377
13:15	0	18	20	8	74	25	52	20	28	68	79	1	393
13:30	0	23	21	18	69	41	48	21	18	54	92	2	407
13:45	0	20	20	14	66	38	53	21	24	56	94	2	408
14:00	0	19	14	21	59	40	69	15	19	64	80	5	405
14:15	0	22	11	21	71	68	51	17	16	58	90	1	426
14:30	0	20	10	27	78	66	50	28	22	50	84	2	437
14:45	0	28	17	40	76	72	64	27	19	62	105	0	510
15:00	0	25	21	27	89	39	47	28	23	120	96	0	515
15:15	0	18	14	31	91	76	65	30	20	80	104	1	530
15:30	0	24	16	27	89	50	40	37	8	48	93	1	433
15:45	0	32	8	27	93	40	57	34	17	54	98	0	460
16:00	0	38	11	31	79	57	52	34	20	58	108	0	488
16:15	0	10	26	14	99	48	50	11	7	78	109	0	452
16:30	0	29	18	21	78	75	34	30	19	66	89	4	463
16:45	1	21	12	25	73	64	48	31	20	36	96	1	428
17:00	**0**	**24**	**15**	**31**	**105**	**61**	**76**	**25**	**14**	**76**	**106**	**0**	**533**
17:15	0	20	22	21	106	64	71	31	7	46	94	2	484
17:30	0	38	14	39	107	55	56	22	10	68	89	2	500
17:45	0	28	19	30	95	52	73	31	25	38	87	0	478

9.2 Apéndice 2: Listado de Archivos de Modelaciones

Archivo	Lugar	Periodo
01_PR-3 y PR-706_BA.OUT	01 Int. PR-3 y PR-706	Pico AM Base
01_PR-3 y PR-706_BP.OUT	01 Int. PR-3 y PR-706	Pico PM Base
01_PR-3 y PR-706_FA.OUT	01 Int. PR-3 y PR-706	Pico AM Futuro
01_PR-3 y PR-706_FA+5.OUT	01 Int. PR-3 y PR-706	Pico AM Futuro + 5 yrs.
01_PR-3 y PR-706_FP.OUT	01 Int. PR-3 y PR-706	Pico PM Futuro
01_PR-3 y PR-706_FP+5.OUT	01 Int. PR-3 y PR-706	Pico PM Futuro + 5 yrs.
02a_PR-3 y Acceso Comercial_FA.OUT	02a Int. PR-3 y Acceso Comercial	Pico AM Futuro
02a_PR-3 y Acceso Comercial_FA+5.OUT	02a Int. PR-3 y Acceso Comercial	Pico AM Futuro + 5 yrs
02a_PR-3 y Acceso Comercial_FP.OUT	02a Int. PR-3 y Acceso Comercial	Pico PM Futuro
02a_PR-3 y Acceso Comercial_FP+5.OUT	02a Int. PR-3 y Acceso Comercial	Pico PM Futuro + 5 yrs
02b_PR-3 y Acceso Residencial_BA.OUT	02b Int. PR-3 y Acceso Residencial	Pico AM Base
02b_PR-3 y Acceso Residencial_BP.OUT	02b Int. PR-3 y Acceso Residencial	Pico PM Base
02b_PR-3 y Acceso Residencial_FA.OUT	02b Int. PR-3 y Acceso Residencial	Pico AM Futuro
02b_PR-3 y Acceso Residencial_FA+5.OUT	02b Int. PR-3 y Acceso Residencial	Pico AM Futuro + 5 yrs
02b_PR-3 y Acceso Residencial_FP.OUT	02b Int. PR-3 y Acceso Residencial	Pico PM Futuro
02b_PR-3 y Acceso Residencial_FP+5.OUT	02b Int. PR-3 y Acceso Residencial	Pico PM Futuro + 5 yrs
03_PR-3 y PR-180_BA.OUT	03 Int PR-3 y PR-180	Pico AM Base
03_PR-3 y PR-180_FA.OUT	03 Int PR-3 y PR-180	Pico AM Futuro
03_PR-3 y PR-180_FA+5.OUT	03 Int PR-3 y PR-180	Pico AM Futuro + 5 yrs
03_PR-3 y PR-180_FP.OUT	03 Int PR-3 y PR-180	Pico PM Futuro
03_PR-3 y PR-180_FP+5.OUT	03 Int PR-3 y PR-180	Pico PM Futuro + 5 yrs.

9.3 Apéndice 3: Resultados modelaciones

```
                 Akcelik & Associates Pty Ltd - aaSIDRA 2.1.3.356
                 ------------------------------------------------
                 Traffic Consulting Group
                 Carlos M. Contreras                User ID: M0276
                 Licence Type: Multi Computer

                 Time and Date of Analysis   10:14 AM, 19 Apr 2006

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\Salinas Rev06\01_PR-3 y PR-706_BA.OUT

 01 Int. PR-3 y PR-706
 Pico AM Base
 Intersection ID:     1


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  70 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: Cycle average queue, Average

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

 * 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.
```

```
 01 Int. PR-3 y PR-706
 Pico AM Base
 Intersection ID:     1
             Fixed-Time Signals, Cycle Time =  70


 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.

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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							
East: PR-3 E								
4	0	0	264	0	0	0	1.00	1.00
6	0	0	0	0	36	0	1.00	1.00
North: PR-706 N								
7	40	0	0	0	0	0	1.00	1.00
9	0	0	0	0	324	0	1.00	1.00
West: PR-3 W								
10	408	0	0	0	0	0	1.00	1.00
11	0	0	464	0	0	0	1.00	1.00

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

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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
East: PR-3 E															
4	T	B	A							4		15.6		55	
6	R (Und)	A	B			B	A			4	4	11.0	10.7	7	55
North: PR-706 N															
7	L (Und)	A	B							4		10.0Min		7	
9	R (Un2)	*A	B			B	A	R		4	5	17.7	10.0Min	7	54
West: PR-3 W															
10	L	*B	A	L						5		50.7		54	
11	T	B	A							4		50.6		55	

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

* Critical Movement/Green Period

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

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 9(1st), 10

L= 9 Y= 0.764 U= 0.849 T= 68.5

Cycle Time:

Minimum	Maximum	Practical	Chosen
20	150	60	70

(Variable cycle times: Program-determined)

Intersection Level of Service	=	A
Worst movement Level of Service	=	B
Average intersection delay (s)	=	7.6
Largest average movement delay (s)	=	13.6
Largest cycle-average queue, mean (m)	=	9
Performance Index	=	25.26
Degree of saturation (highest)	=	0.762
Practical Spare Capacity (lowest)	=	18 %
Effective intersection capacity, (veh/h)	=	2016
Total vehicle flow (veh/h)	=	1536
Total person flow (pers/h)	=	2304
Total vehicle delay (veh-h/h)	=	3.26
Total person delay (pers-h/h)	=	4.89
Total effective vehicle stops (veh/h)	=	912
Total effective person stops (pers/h)	=	1368
Total vehicle travel (veh-km/h)	=	930.2
Total cost ($/h)	=	588.63
Total fuel (L/h)	=	96.0
Total CO2 (kg/h)	=	240.10

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 11
Phase Green Times: 7, 55

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

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.08	0.12	1.1	0.25	0.13	0.1	1	3.02	56.6
6 R	0.09	0.13	9.0	0.25	0.69	0.1	1	0.60	48.0
North: PR-706 N									
7 L	0.10	0.15	9.3	0.27	0.74	0.1	1	0.68	47.6
9 R	0.78	1.18	8.7	0.27	0.69	0.1	1	5.39	48.1

West: PR-3 W									
10 L	1.54	2.31	13.6	0.58	0.84	1.2	9	8.12	43.6
11 T	0.66	1.00	5.2	0.58	0.55	1.2	9	7.44	52.6

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
Pedestrians:									
872	0.762	2.20	3.30	9.1	0.58	0.69	9	15.57	48.0
ALL VEHICLES:									
1536	0.762	3.26	4.89	7.6	0.44	0.59	9	25.26	49.3
INTERSECTION (persons):									
2304	0.762		4.89	7.6	0.44	0.59		25.26	49.3

Queue values in this table are mean cycle-average queue (metres).

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
East: PR-3 E												
1 TR		264	36	300	0	1990	1	55	0.190	2.1	1	
	0	264	36	300	0				0.190	2.1	1	
North: PR-706 N												
1 LR	40		324	364	0	2030	7	51	0.457	8.8	1	
	40	0	324	364	0				0.457	8.8	1	
West: PR-3 W												
1 LT	408	464		872	0	2050	55		0.762	9.1	9	
	408	464	0	872	0				0.762	9.1	9	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	1536	0	70	0.762	7.6	9

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

Queue values in this table are mean cycle-average queue (metres).

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

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E										
4	T	0.786		264	1387	0.190	1.1	A	0.1	1
6	R (Und)	0.100	0.786	36	189	0.190	9.0	A	0.1	1
				300		0.190	2.1	A	0.1	1
North: PR-706 N										
7	L (Und)	0.100		40	88	0.457	9.3	A	0.1	1
9	R (Un2)	0.100*	0.771	324	710	0.457	8.7	A	0.1	1
				364		0.457	8.8	A	0.1	1
West: PR-3 W										
10	L	0.771*		408	535	0.762*	13.6	B	1.2	9
11	T	0.786		464	609	0.762*	5.2	A	1.2	9
				872		0.762	9.1	A	1.2	9
ALL VEHICLES:				1536		0.762	7.6	A	1.2	9
INTERSECTION (persons):				2304			7.6		1.2	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

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.762	70
Average Delay	7.6	70
Stop Rate	0.59	70
Max. Queue for Any Movement	1.2	70
Perf. Index	25.3	70
Cost	588.6	70

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	2016	70
Prac. Spare Cap.	18	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.

---

01 Int. PR-3 y PR-706
Pico AM Base
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	1929	0.796	13	9.7	0.66	2.1	27.5	615.1	
70	2016	0.762	18	7.6	0.59	1.2	25.3	588.6	
80	1705	0.901	0	20.6	0.83	6.6	38.4	743.9	
90	1735	0.885	2	19.2	0.80	5.9	36.9	726.0	
100	1728	0.889	1	20.4	0.80	6.4	37.8	738.3	
110	1750	0.878	3	19.2	0.77	5.8	36.6	723.5	
120	1768	0.869	4	18.2	0.75	5.4	35.6	711.8	
130	1759	0.873	3	19.3	0.75	5.7	36.5	722.2	
140	1773	0.866	4	18.3	0.73	5.3	35.5	710.5	
150	1769	0.868	4	18.9	0.73	5.4	36.0	716.8	

--- End of aaSIDRA Output ---

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01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID:     1


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: Cycle average queue, Average

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

* 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.
```

```
01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID:     1
            Fixed-Time Signals, Cycle Time =  60


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.

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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								
East: PR-3 E								
4	0	0	460	0	0	0	1.00	1.00
6	0	0	0	0	64	0	1.00	1.00
North: PR-706 N								
7	72	0	0	0	0	0	1.00	1.00
9	0	0	0	0	324	0	1.00	1.00
West: PR-3 W								
10	272	0	0	0	0	0	1.00	1.00
11	0	0	312	0	0	0	1.00	1.00

Based on unit time = 60 minutes.

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

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
East: PR-3 E															
4	T	B	A							4		21.3		36	
6	R (Und)	A	B			B	A			4	4	26.3	15.6	16	36
North: PR-706 N															
7	L (Und)	A	B							4		12.5		16	
9	R (Un2)	*A	B			B	A	R		4	10	18.8	10.0Min	16	30
West: PR-3 W															
10	L	*B	A	L						10		37.2		30	
11	T	B	A							4		36.7		36	

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

* Critical Movement/Green Period

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

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 9(1st), 10

L= 14 Y= 0.630 U= 0.700 T= 56.0

Cycle Time:

Minimum	Maximum	Practical	Chosen
20	150	47	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	C
Average intersection delay (s)	=	14.1
Largest average movement delay (s)	=	27.5
Largest cycle-average queue, mean (m)	=	22
Performance Index	=	31.68
Degree of saturation (highest)	=	0.817
Practical Spare Capacity (lowest)	=	10 %
Effective intersection capacity, (veh/h)	=	1841
Total vehicle flow (veh/h)	=	1504
Total person flow (pers/h)	=	2256
Total vehicle delay (veh-h/h)	=	5.89
Total person delay (pers-h/h)	=	8.83
Total effective vehicle stops (veh/h)	=	1145
Total effective person stops (pers/h)	=	1718
Total vehicle travel (veh-km/h)	=	911.5
Total cost ($/h)	=	652.37
Total fuel (L/h)	=	102.3
Total CO2 (kg/h)	=	255.78

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 20
Phase Green Times: 16, 36

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

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.73	1.09	5.7	0.56	0.49	0.8	6	7.37	51.7
6 R	0.24	0.36	13.6	0.56	0.78	0.8	6	1.27	43.8
North: PR-706 N									
7 L	0.23	0.34	11.3	0.58	0.81	0.3	2	1.33	45.5

9 R	0.97	1.45	10.7	0.58	0.78	0.3	2	5.92	46.2
West: PR-3 W									
10 L	2.07	3.11	27.5	0.89	1.00	3.1	22	7.74	34.1
11 T	1.65	2.48	19.0	0.89	0.92	3.1	22	8.05	39.4

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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)
Pedestrians:									
584	0.817	3.73	5.59	23.0	0.89	0.95	22	15.79	36.7
ALL VEHICLES:									
1504	0.817	5.89	8.83	14.1	0.70	0.76	22	31.68	43.2
INTERSECTION (persons):									
2256	0.817		8.83	14.1	0.70	0.76		31.68	43.2

Queue values in this table are mean cycle-average queue (metres).

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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)
East: PR-3 E												
1 TR		460	64	524	0	1990	1	36	0.432	6.7	6	
	0	460	64	524	0				0.432	6.7	6	
North: PR-706 N												
1 LR	72		324	396	0	2030	16	30	0.479	10.8	2	
	72	0	324	396	0				0.479	10.8	2	
West: PR-3 W												
1 LT	272	312		584	0	2050	32		0.816	23.0	22	

272	312	0	584	0		0.816	23.0	22

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	1504	0	60	0.817	14.1	22

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

Queue values in this table are mean cycle-average queue (metres).

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

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1
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	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E										
4 T		0.600		460	1064	0.432	5.7	A	0.8	6
6 R	(Und)	0.267	0.600	64	148	0.433	13.6	B	0.8	6
				524		0.433	6.7	A	0.8	6
North: PR-706 N										
7 L	(Und)	0.267		72	150	0.480	11.3	B	0.3	2
9 R	(Un2)	0.267*	0.500	324	676	0.479	10.7	B	0.3	2
				396		0.480	10.8	B	0.3	2
West: PR-3 W										
10 L		0.500*		272	333	0.817*	27.5	C	3.1	22
11 T		0.600		312	382	0.816	19.0	B	3.1	22
				584		0.817	23.0	C	3.1	22
ALL VEHICLES:				1504		0.817	14.1	B	3.1	22
INTERSECTION (persons):				2256			14.1		3.1	22

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

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.781	120
Average Delay	14.1	60
Stop Rate	0.69	150
Max. Queue for Any Movement	3.1	60
Perf. Index	31.7	60
Cost	652.4	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	1926	120
Prac. Spare Cap.	15	120

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.

---

01 Int. PR-3 y PR-706
Pico PM Base
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	1841	0.817	10	14.1	0.76	3.1	31.7	652.4	
70	1857	0.810	11	14.7	0.75	3.2	32.1	658.0	
80	1867	0.806	12	15.3	0.74	3.4	32.5	664.2	
90	1875	0.802	12	16.0	0.73	3.6	33.0	670.6	
100	1878	0.801	12	16.6	0.72	3.7	33.5	677.1	
110	1882	0.799	13	17.3	0.72	3.9	34.0	683.9	
120	1926	0.781	15	16.6	0.70	3.5	33.2	675.5	*
130	1926	0.781	15	17.3	0.69	3.7	33.8	682.9	
140	1924	0.782	15	18.1	0.69	3.8	34.4	691.2	
150	1924	0.782	15	18.9	0.69	4.0	35.1	700.0	

* UNSETTLED RESULTS - Solution for this case has some uncertainty.
Refer to the HELP system or the User Guide for further information.

--- End of aaSIDRA Output ---

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Time and Date of Analysis 1:51 PM, 20 Apr 2006

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\Salinas Rev06\01_PR-3 y PR-706_FA.OUT

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1

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: Cycle average queue, Average

* No. of Main (Timing-Capacity) Iterations = 4
  Comparison of last two iterations:
  Difference in intersection degree of satn = 0.0 %
  Largest difference in eff. green times = 0 secs
  (max. value for stopping = 0 secs)

* 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.

* Opposed turn in movement 6 has high x.
  Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1

Fixed-Time Signals, Cycle Time = 60

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

	L E F T		THROUGH		R I G H T	
	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.

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1
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							
East: PR-3 E								
4	0	0	328	0	0	0	1.00	1.00
6	0	0	0	0	39	0	1.00	1.00
North: PR-706 N								
7	44	0	0	0	0	0	1.00	1.00
9	0	0	0	0	413	0	1.00	1.00

```
West: PR-3 W
        10            591      0       0      0       0      0   1.00   1.00
        11              0      0     604      0       0      0   1.00   1.00
-----------------------------------------------------------------------------
Based on unit time =  60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.
```

```
01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID:     1
            Fixed-Time Signals, Cycle Time =  60


Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS
-----------------------------------------------------------------------------
 Mov     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time     Eff. Grn
 No.     Typ  First Green  Second Green   --------  ------------     --------
              ------------ ------------   1st  2nd  1st      2nd     1st  2nd
              Fr To Op Pr  Fr To Op Pr    Grn  Grn  Grn      Grn     Grn  Grn
-----------------------------------------------------------------------------
East: PR-3 E
   4 T       *D  A                         4        14.9              10
   6 R  (Und) B  D  R       D  B          16    4   10.0Min  32.9     21   19
-----------------------------------------------------------------------------
North: PR-706 N
   7 L       *A  B                         4         9.0Min            5
   9 R  (Un2) A  D          D  A  R        4   11   23.1     11.7     42    3
-----------------------------------------------------------------------------
West: PR-3 W
  10 L       *B  D                         4        40.4              33
  11 T        B  A                         4        24.6              47
-----------------------------------------------------------------------------
  Current Phase Sequence No.: 1
  Input phase sequence: A  B  D
  Output phase sequence: A  B  D
-----------------------------------------------------------------------------
  *  Critical Movement/Green Period

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
```

```
01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID:     1
            Fixed-Time Signals, Cycle Time =  60


Table S.3 - INTERSECTION PARAMETERS
-------------------------------------------------------
   Critical Movements: 7, 10, 4
```

L= 17 Y= 0.709 U= 0.788 T= 64.3

Cycle Time:

Minimum	Maximum	Practical	Chosen
29	150	80	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	20.1
Largest average movement delay (s)	=	62.4
Largest cycle-average queue, mean (m)	=	39
Performance Index	=	48.76
Degree of saturation (highest)	=	0.992
Practical Spare Capacity (lowest)	=	-9 %
Effective intersection capacity, (veh/h)	=	2035
Total vehicle flow (veh/h)	=	2019
Total person flow (pers/h)	=	3029
Total vehicle delay (veh-h/h)	=	11.28
Total person delay (pers-h/h)	=	16.92
Total effective vehicle stops (veh/h)	=	1495
Total effective person stops (pers/h)	=	2242
Total vehicle travel (veh-km/h)	=	1222.4
Total cost ($/h)	=	962.95
Total fuel (L/h)	=	140.0
Total CO2 (kg/h)	=	350.10

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times:	0,	9,	46
Phase Green Times:	5,	33,	10

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

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1
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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									

4	T	4.97	7.46	54.6	1.00	1.26	5.6	39	15.54	24.0
6	R	0.68	1.01	62.4	1.00	1.26	5.6	39	1.94	22.2
North: PR-706 N										
7	L	0.16	0.24	13.3	0.48	0.82	0.6	4	0.86	43.8
9	R	1.46	2.20	12.8	0.48	0.78	0.6	4	8.02	44.4
West: PR-3 W										
10	L	3.64	5.46	22.2	0.98	0.88	2.3	16	14.71	37.2
11	T	0.37	0.55	2.2	0.34	0.26	0.4	3	7.69	55.6

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1
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)
Pedestrians:									
1195	0.992	4.00	6.01	12.1	0.65	0.56	16	22.40	44.7
ALL VEHICLES:									
2019	0.992	11.28	16.92	20.1	0.68	0.74	39	48.76	38.5
INTERSECTION (persons):									
3029	0.992		16.92	20.1	0.68	0.74		48.76	38.5

Queue values in this table are mean cycle-average queue (metres).

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1
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)
East: PR-3 E												
1 TR		328	39	367	0	1990	3	11	0.982	55.4	39	
	0	328	39	367	0				0.982	55.4	39	
North: PR-706 N												
1 LR	44		413	457	0	2030	3	38	0.381	12.8	4	

	44	0	413	457	0			0.381	12.8	4	
West: PR-3 W											
1 L	591			591	0	1949	33	0.992	22.2r	16	50
2 T		604		604	0	1949	47	0.395	2.2	3	
	591	604	0	1195	0			0.992	12.1	16	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2019	0	60	0.992	20.1	39

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

Queue values in this table are mean cycle-average queue (metres).

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

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.

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01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Cycle (vehs)	Queue Aver. (m)
East: PR-3 E										
4 T		0.167*		328	334	0.982	54.6	D	5.6	39
6 R	(Und)	0.350	0.317	39	40	0.982	62.4	E	5.6	39
				367		0.982	55.4	E	5.6	39
North: PR-706 N										
7 L		0.083*		44	115	0.381	13.3	B	0.6	4
9 R	(Un2)	0.700	0.050	413	1083	0.381	12.8	B	0.6	4
				457		0.381	12.8	B	0.6	4
West: PR-3 W										
10 L		0.550*		591	596<	0.992*	22.2	C	2.3	16
11 T		0.783		604	1528	0.395	2.2	A	0.4	3
				1195		0.992	12.1	B	2.3	16

ALL VEHICLES:	2019	0.992	20.1	C	5.6	39
INTERSECTION (persons):	3029		20.1		5.6	39

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the
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

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.992	60
Average Delay	20.1	60
Stop Rate	0.64	150
Max. Queue for Any Movement	5.6	60
Perf. Index	48.8	60
Cost	963.0	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	2035	60
Prac. Spare Cap.	-9	60

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.

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett

60	2035	0.992	-9	20.1	0.74	5.6	48.8	963.0	
70	2020	1.000	-10	21.0	0.72	5.9	49.6	974.3	
80	2020	1.000	-10	22.2	0.71	6.1	50.9	991.2	
90	2020	1.000	-10	23.6	0.69	6.5	52.3	1010.3	
100	2019	1.000	-10	25.0	0.68	6.8	53.8	1029.9	
110	2020	1.000	-10	26.8	0.67	7.2	55.8	1055.8	
120	2014	1.003	-10	30.7	0.68	8.7	60.2	1112.6	*
130	2020	0.999	-10	30.6	0.66	7.9	59.9	1109.4	*
140	2020	0.999	-10	32.5	0.65	8.3	62.0	1136.4	*
150	2020	0.999	-10	34.3	0.64	8.6	64.0	1163.0	*

* UNSETTLED RESULTS - Solution for this case has some uncertainty.
Refer to the HELP system or the User Guide for further information.

--- End of aaSIDRA Output ---

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01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1

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: Cycle average queue, Average

* No. of Main (Timing-Capacity) Iterations = 4
  Comparison of last two iterations:
  Difference in intersection degree of satn = 0.0 %
  Largest difference in eff. green times = 0 secs
  (max. value for stopping = 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.

* Opposed turn in movement 6 has high x.
  Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

* Movement 10 has large x because of short lanes.
  The degree of saturation of adjacent movement 11 is less than xp, hence this solution may be satisfactory.
  See Table S.7 for queue length, delay etc.

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

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.

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
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							
East: PR-3 E								
4	0	0	350	0	0	0	1.00	1.00
6	0	0	0	0	42	0	1.00	1.00

North: PR-706 N								
7	47	0	0	0	0	0	1.00	1.00
9	0	0	0	0	441	0	1.00	1.00
West: PR-3 W								
10	626	0	0	0	0	0	1.00	1.00
11	0	0	644	0	0	0	1.00	1.00

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

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
East: PR-3 E															
4 T		*D	A							4		15.8		11	
6 R	(Und)	B	D	R		D	B			16	4	10.0Min	33.5	20	20
North: PR-706 N															
7 L		*A	B							4		9.0Min		5	
9 R	(Un2)	A	D			D	A	R		4	12	24.0	12.7	41	3
West: PR-3 W															
10 L		*B	D							4		39.6		32	
11 LT		B	A							4		27.6		47	

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

* Critical Movement/Green Period

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

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 7, 10, 4

L= 17 Y= 0.710 U= 0.789 T= 64.3

Cycle Time:

Minimum	Maximum	Practical	Chosen
29	150	80	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	E
Average intersection delay (s)	=	19.1
Largest average movement delay (s)	=	57.5
Largest cycle-average queue, mean (m)	=	38
Performance Index	=	50.70
Degree of saturation (highest)	=	1.000
Practical Spare Capacity (lowest)	=	-10 %
Effective intersection capacity, (veh/h)	=	2149
Total vehicle flow (veh/h)	=	2150
Total person flow (pers/h)	=	3225
Total vehicle delay (veh-h/h)	=	11.40
Total person delay (pers-h/h)	=	17.10
Total effective vehicle stops (veh/h)	=	1571
Total effective person stops (pers/h)	=	2356
Total vehicle travel (veh-km/h)	=	1302.0
Total cost ($/h)	=	1009.35
Total fuel (L/h)	=	148.0
Total CO2 (kg/h)	=	370.05

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 9, 45
Phase Green Times: 5, 32, 11

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

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
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 Cycle (vehs)	Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	4.83	7.24	49.7	1.00	1.23	5.4	38	15.59	25.4
6 R	0.67	1.01	57.5	1.00	1.23	5.4	38	1.96	23.3
North: PR-706 N									
7 L	0.18	0.28	14.1	0.51	0.83	0.8	5	0.95	43.2
9 R	1.65	2.48	13.5	0.51	0.80	0.8	5	8.78	43.8
West: PR-3 W									
10 L	3.61	5.42	22.4	0.99	0.88	2.3	16	14.51	37.0
11 LT	0.45	0.67	2.3	0.36	0.27	0.4	3	8.91	55.3

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
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)
Pedestrians:									
1270	1.000	4.06	6.09	11.5	0.65	0.55	16	23.42	45.1
ALL VEHICLES:									
2150	1.000	11.40	17.10	19.1	0.68	0.73	38	50.70	39.2
INTERSECTION (persons):									
3225	1.000		17.10	19.1	0.68	0.73		50.70	39.2

Queue values in this table are mean cycle-average queue (metres).

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01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
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)
East: PR-3 E												
1 TR		350	42	392	0	1990	3	12	0.962	50.5	38	

	0	350	42	392	0				0.962	50.5	38	
North: PR-706 N												
1 LR	47		441	488	0	2030	3	37	0.409	13.5	5	
	47	0	441	488	0				0.409	13.5	5	
West: PR-3 W												
1 L	580			580	0	1949	32		1.000	22.4r	16	50
2 LT	46	644		690	0	1949	47		0.453	2.3	3	
	626	644	0	1270	0				1.000	11.5	16	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2150	0	60	1.000	19.1	38

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

Queue values in this table are mean cycle-average queue (metres).

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

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.

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
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	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E										
4 T		0.183*		350	364	0.962	49.7	D	5.4	38
6 R	(Und)	0.333	0.333	42	44	0.962	57.5	E	5.4	38
				392		0.962	50.5	D	5.4	38
North: PR-706 N										
7 L		0.083*		47	115	0.409	14.1	B	0.8	5
9 R	(Un2)	0.683	0.050	441	1080	0.408	13.5	B	0.8	5
				488		0.409	13.5	B	0.8	5

West: PR-3 W

10 L	0.533*	580	580<	1.000*	22.4	C	2.3	16
11 LT	0.783	690E	1523	0.453	2.3	A	0.4	3
		1270		1.000	11.5	B	2.3	16
ALL VEHICLES:		2150		1.000	19.1	B	5.4	38
INTERSECTION (persons):		3225			19.1		5.4	38

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

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.999	130
Average Delay	19.1	60
Stop Rate	0.64	140
Max. Queue for Any Movement	5.4	60
Perf. Index	50.7	60
Cost	1009.4	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	2152	130
Prac. Spare Cap.	-10	130

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.

---

01 Int. PR-3 y PR-706
Pico AM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	2149	1.000	-10	19.1	0.73	5.4	50.7	1009.4	
70	2149	1.000	-10	20.5	0.71	6.0	52.3	1030.7	
80	2151	1.000	-10	22.2	0.70	6.6	54.2	1055.2	
90	2149	1.000	-10	23.7	0.69	7.1	55.9	1077.4	
100	2150	1.000	-10	25.6	0.68	7.6	58.1	1105.9	
110	2149	1.000	-10	27.5	0.67	8.1	60.3	1134.7	*
120	2151	0.999	-10	29.4	0.66	8.6	62.5	1163.7	*
130	2152	0.999	-10	29.7	0.65	8.1	62.8	1168.1	*
140	2151	0.999	-10	31.8	0.64	8.5	65.2	1199.2	*
150	2151	1.000	-10	34.0	0.64	9.1	67.9	1233.8	*

* UNSETTLED RESULTS - Solution for this case has some uncertainty.
Refer to the HELP system or the User Guide for further information.

--- End of aaSIDRA Output ---

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                 Traffic Consulting Group
                 Carlos M. Contreras                User ID: M0276
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                 Time and Date of Analysis    2:07 PM, 20 Apr 2006

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 01 Int. PR-3 y PR-706
 Pico PM Futuro + Carril Corto
 Intersection ID:     1


 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: Cycle average queue, Average

 * No. of Main (Timing-Capacity) Iterations =  7
   Comparison of last two iterations:
     Difference in intersection degree of satn =  0.0 %
     Largest difference in eff. green times =  0 secs
     (max. value for stopping = 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.
 ____________________________________________________________________________

 01 Int. PR-3 y PR-706
 Pico PM Futuro + Carril Corto
 Intersection ID:     1
             Fixed-Time Signals, Cycle Time =  60


 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

	L E F T		THROUGH		R I G H T	
	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.

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
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								
East: PR-3 E								
4	0	0	625	0	0	0	1.00	1.00
6	0	0	0	0	70	0	1.00	1.00
North: PR-706 N								
7	79	0	0	0	0	0	1.00	1.00
9	0	0	0	0	536	0	1.00	1.00
West: PR-3 W								
10	426	0	0	0	0	0	1.00	1.00
11	0	0	426	0	0	0	1.00	1.00

Based on unit time = 60 minutes.

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
East: PR-3 E															
4 T		*D	A							4		26.3		29	
6 R	(Und)	B	D	R		D	B			9	4	10.8	40.2	5	42
North: PR-706 N															
7 L		*A	B							4		10.9		9	
9 R	(Un2)	A	D			D	A	R		4	17	25.8	12.0Min	23	16
West: PR-3 W															
10 L		*B	D			D	A	L		4	17	15.0	24.9	10	16
11 T		B	A							4		22.0Min		43	

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

* Critical Movement/Green Period

Movement Types:
- Ped Pedestrian
- Dum Dummy
- Und Undetected in both green periods
- Unl 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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 7, 10(1st), 4

L= 12 Y= 0.602 U= 0.669 T= 52.2

Cycle Time:

Minimum	Maximum	Practical	Chosen
31	150	36	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	C
Average intersection delay (s)	=	14.7
Largest average movement delay (s)	=	21.8
Largest cycle-average queue, mean (m)	=	19
Performance Index	=	46.29
Degree of saturation (highest)	=	0.735
Practical Spare Capacity (lowest)	=	22 %
Effective intersection capacity, (veh/h)	=	2940
Total vehicle flow (veh/h)	=	2162
Total person flow (pers/h)	=	3243
Total vehicle delay (veh-h/h)	=	8.86
Total person delay (pers-h/h)	=	13.29
Total effective vehicle stops (veh/h)	=	1663
Total effective person stops (pers/h)	=	2494
Total vehicle travel (veh-km/h)	=	1310.4
Total cost ($/h)	=	944.32
Total fuel (L/h)	=	146.3
Total CO2 (kg/h)	=	365.80

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 13, 27
Phase Green Times: 9, 10, 29

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	2.42	3.63	13.9	0.81	0.78	2.7	19	13.86	43.4
6 R	0.42	0.64	21.8	0.81	0.90	2.7	19	1.76	37.6
North: PR-706 N									
7 L	0.44	0.66	20.1	0.84	0.96	2.0	14	1.91	38.5

9 R	2.91	4.36	19.5	0.84	0.95	2.0	14	12.92	39.1
West: PR-3 W									
10 L	2.28	3.41	19.2	0.91	0.90	1.3	9	9.95	39.1
11 T	0.39	0.59	3.3	0.39	0.34	0.4	3	5.89	55.0

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
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)
Pedestrians:									
852	0.735	2.67	4.00	11.3	0.65	0.62	9	15.84	45.8
ALL VEHICLES:									
2162	0.735	8.86	13.29	14.7	0.76	0.77	19	46.29	42.7
INTERSECTION (persons):									
3243	0.735		13.29	14.7	0.76	0.77		46.29	42.7

Queue values in this table are mean cycle-average queue (metres).

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
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)
East: PR-3 E												
1 TR		625	70	695	0	1990	2	30	0.693	14.7	19	
	0	625	70	695	0				0.693	14.7	19	
North: PR-706 N												
1 LR	79		536	615	0	2030	23	16	0.685	19.6	14	
	79	0	536	615	0				0.685	19.6	14	
West: PR-3 W												
1 L	426			426	0	1949	10	16	0.735	19.2	9	50
2 T		426		426	0	1949	43		0.305	3.3	3	

426	426	0	852	0	0.735	11.3	9

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2162	0	60	0.735	14.7	19

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

Queue values in this table are mean cycle-average queue (metres).

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1
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	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E										
4	T	0.483*		625	902	0.693	13.9	B	2.7	19
6	R (Und)	0.083	0.700	70	101	0.692	21.8	C	2.7	19
				695		0.693	14.7	B	2.7	19
North: PR-706 N										
7	L	0.150*		79	115	0.686	20.1	C	2.0	14
9	R (Un2)	0.383	0.267	536	782	0.685	19.5	B	2.0	14
				615		0.686	19.6	B	2.0	14
West: PR-3 W										
10	L	0.167*	0.267	426	579	0.735*	19.2	B	1.3	9
11	T	0.717		426	1398	0.305	3.3	A	0.4	3
				852		0.735	11.3	B	1.3	9
ALL VEHICLES:				2162		0.735	14.7	B	2.7	19
INTERSECTION (persons):				3243			14.7		2.7	19

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

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.723	70
Average Delay	14.7	60
Stop Rate	0.75	70
Max. Queue for Any Movement	2.6	70
Perf. Index	46.3	70
Cost	944.3	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	2990	70
Prac. Spare Cap.	24	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.

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	2940	0.735	22	14.7	0.77	2.7	46.3	944.3	
70	2990	0.723	24	14.9	0.75	2.6	46.3	945.6	*
80	2945	0.734	23	17.1	0.76	3.5	48.9	979.8	
90	2735	0.790	14	21.2	0.79	4.7	54.3	1046.9	
100	2663	0.812	11	21.9	0.77	4.8	54.9	1056.4	
110	2471	0.875	3	30.4	0.84	8.0	65.9	1194.6	
120	2164	0.999	-10	33.2	0.85	9.6	69.5	1240.5	*

* UNSETTLED RESULTS - Solution for this case has some uncertainty.
Refer to the HELP system or the User Guide for further information.

--- End of aaSIDRA Output ---

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01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID:     1


RUN INFORMATION
---------------
Variable cycle time run: "Optimum" cycle time =  70 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: Cycle average queue, Average

* No. of Main (Timing-Capacity) Iterations =  6
  Comparison of last two iterations:
    Difference in intersection degree of satn =  2.8 %
    Largest difference in eff. green times =  1 secs
    (max. value for stopping = 1 secs)
  Information on Previous Iteration:
    Cycle Time =  70
    Phase Times: 0,  14,  34
    Critical Movements: 7, 10(1st), 4

* 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.
```

```
01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID:     1
            Fixed-Time Signals, Cycle Time =  70
```

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.

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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							
East: PR-3 E								
4	0	0	664	0	0	0	1.00	1.00
6	0	0	0	0	75	0	1.00	1.00
North: PR-706 N								
7	85	0	0	0	0	0	1.00	1.00
9	0	0	0	0	564	0	1.00	1.00
West: PR-3 W								

10	449	0	0	0	0	0	1.00	1.00
11	0	0	453	0	0	0	1.00	1.00

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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
East: PR-3 E															
4	T	*D	A							4		31.9		33	
6	R (Und)	B	D	R		D	B			10	4	10.0Min	49.9	10	46
North: PR-706 N															
7	L	*A	B							4		11.2		9	
9	R (Un2)	A	D			D	A	R		4	22	31.8	12.0Min	29	15
West: PR-3 W															
10	L	*B	D			D	A	L		4	22	20.6	30.7	16	15
11	T	B	A							4		22.1		53	

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

* Critical Movement/Green Period

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 7, 10(1st), 4

L= 12 Y= 0.665 U= 0.739 T= 63.7

Cycle Time:

Minimum	Maximum	Practical	Chosen
31	150	46	70

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	C
Average intersection delay (s)	=	18.1
Largest average movement delay (s)	=	26.4
Largest cycle-average queue, mean (m)	=	27
Performance Index	=	53.69
Degree of saturation (highest)	=	0.779
Practical Spare Capacity (lowest)	=	15 %
Effective intersection capacity, (veh/h)	=	2938
Total vehicle flow (veh/h)	=	2290
Total person flow (pers/h)	=	3435
Total vehicle delay (veh-h/h)	=	11.51
Total person delay (pers-h/h)	=	17.27
Total effective vehicle stops (veh/h)	=	1832
Total effective person stops (pers/h)	=	2748
Total vehicle travel (veh-km/h)	=	1387.9
Total cost ($/h)	=	1057.85
Total fuel (L/h)	=	158.8
Total CO2 (kg/h)	=	397.06

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 13, 33
Phase Green Times: 9, 16, 33

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	3.42	5.12	18.5	0.87	0.86	3.8	27	16.70	39.8

6 R	0.55	0.82	26.4	0.87	0.94	3.8	27	2.09	34.9
North: PR-706 N									
7 L	0.56	0.84	23.8	0.86	0.99	2.8	19	2.24	36.2
9 R	3.64	5.45	23.2	0.86	0.98	2.8	19	14.84	36.7
West: PR-3 W									
10 L	2.99	4.48	24.0	0.92	0.94	1.9	14	11.76	36.1
11 T	0.36	0.54	2.9	0.34	0.30	0.4	3	6.05	55.6

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
Pedestrians:									
902	0.779	3.35	5.02	13.4	0.63	0.62	14	17.82	43.8
ALL VEHICLES:									
2290	0.779	11.51	17.27	18.1	0.77	0.80	27	53.69	40.1
INTERSECTION (persons):									
3435	0.779		17.27	18.1	0.77	0.80		53.69	40.1

Queue values in this table are mean cycle-average queue (metres).

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

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)
East: PR-3 E												
1 TR		664	75	739	0	1990	2	34	0.761	19.3	27	
	0	664	75	739	0				0.761	19.3	27	
North: PR-706 N												
1 LR	85		564	649	0	2030	28	15	0.720	23.3	19	
	85	0	564	649	0				0.720	23.3	19	

West: PR-3 W												
1 L	449			449	0	1949	16	15	0.779	24.0	14	50
2 T		453		453	0	1949	53		0.307	2.9	3	
	449	453	0	902	0				0.779	13.4	14	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2290	0	70	0.779	18.1	27

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

Queue values in this table are mean cycle-average queue (metres).

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 70

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E										
4 T		0.471*		664	873	0.761	18.5	B	3.8	27
6 R	(Und)	0.143	0.657	75	99	0.758	26.4	C	3.8	27
				739		0.761	19.3	B	3.8	27
North: PR-706 N										
7 L		0.129*		85	118	0.719	23.8	C	2.8	19
9 R	(Un2)	0.414	0.214	564	784	0.720	23.2	C	2.8	19
				649		0.720	23.3	C	2.8	19
West: PR-3 W										
10 L		0.229*	0.214	449	576<	0.779*	24.0	C	1.9	14
11 T		0.757		453	1476	0.307	2.9	A	0.4	3
				902		0.779	13.4	B	1.9	14
ALL VEHICLES:				2290		0.779	18.1	B	3.8	27
INTERSECTION (persons):				3435			18.1		3.8	27

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

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.779	70
Average Delay	18.1	70
Stop Rate	0.80	70
Max. Queue for Any Movement	3.8	70
Perf. Index	53.7	70
Cost	1057.8	70

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	2938	70
Prac. Spare Cap.	15	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.

---

01 Int. PR-3 y PR-706
Pico PM Futuro + Carril Corto + 5 yrs.
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	2788	0.821	10	18.2	0.84	4.5	54.3	1063.2	
70	2938	0.779	15	18.1	0.80	3.8	53.7	1057.8	
80	2720	0.842	7	22.6	0.83	5.6	59.8	1134.5	
90	2628	0.872	3	25.5	0.84	6.8	63.6	1184.5	
100	2290	1.000	-10	27.7	0.85	7.9	66.6	1222.2	*

110	2289	1.000	-10	29.7	0.85	8.6	69.1	1254.4	*
120	2290	1.000	-10	31.7	0.84	9.2	71.7	1287.9	*

* UNSETTLED RESULTS - Solution for this case has some uncertainty.
Refer to the HELP system or the User Guide for further information.

--- End of aaSIDRA Output ---

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02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
East: PR-3 E								
4	0	0	493	0	0	0	1.00	1.00
6	0	0	0	0	61	0	1.00	1.00
North: Acceso Comercial N								
7	74	0	0	0	0	0	1.00	1.00
9	0	0	0	0	74	0	1.00	1.00
West: PR-3 W								
10	61	0	0	0	0	0	1.00	1.00
11	0	0	1009	0	0	0	1.00	1.00

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Frac. Deg. Satn xp	Frac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
East: PR-3 E										
4 T	493	0.0	0			3452	0.80	460	100	0.143
6 R	61	0.0	0			427	0.80	460	100	0.143
North: Acceso Comercial N										
7 L	74	0.0	1594+	0.0	1594	213	0.80	130	100	0.347
9 R	74	0.0	524+	0.0	524	839	0.80	807	100	0.088
West: PR-3 W										
10 L	61	0.0	493	0.0	493	869	0.80	1040	100	0.070
11 T	1009	0.0	0			1950	0.80	55	100	0.517*

\+ Percentage of exiting flow included in total opposing flow

---

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	D
Average intersection delay (s)	=	2.5
Largest average movement delay (s)	=	31.7
Largest cycle-average queue, mean (m)	=	3
Performance Index	=	20.95
Degree of saturation (highest)	=	0.517
Practical Spare Capacity (lowest)	=	55 %
Effective intersection capacity, (veh/h)	=	3425
Total vehicle flow (veh/h)	=	1772
Total person flow (pers/h)	=	2658
Total vehicle delay (veh-h/h)	=	1.24
Total person delay (pers-h/h)	=	1.86
Total effective vehicle stops (veh/h)	=	231
Total effective person stops (pers/h)	=	346
Total vehicle travel (veh-km/h)	=	1074.1
Total cost ($/h)	=	577.05
Total fuel (L/h)	=	84.0
Total CO2 (kg/h)	=	209.97

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

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 Cycle (vehs)	Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	4.98	60.0
6 R	0.14	0.21	8.2	0.00	0.67	0.0	0	0.98	49.0
North: Acceso Comercial N									

7 L	0.65	0.98	31.7	0.90	1.05	0.4	3	2.26	32.9
9 R	0.27	0.41	13.2	0.51	0.92	0.1	0	1.45	44.9
West: PR-3 W									
10 L	0.18	0.27	10.5	0.49	0.73	0.0	0	1.08	46.5
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	10.20	60.0

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

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)
East: PR-3 E									
554	0.143	0.14	0.21	0.9	0.00	0.07	0	5.96	58.5
North: Acceso Comercial N									
148	0.347	0.92	1.38	22.4	0.70	0.98	3	3.71	38.0
West: PR-3 W									
1070	0.517	0.18	0.27	0.6	0.03	0.04	0	11.28	59.0
ALL VEHICLES:									
1772	0.517	1.24	1.86	2.5	0.08	0.13	3	20.95	56.3
INTERSECTION (persons):									
2658	0.517		1.86	2.5	0.08	0.13		20.95	56.3

Queue values in this table are mean cycle-average queue (metres).

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
East: PR-3 E									
1 T	4	279	1950	0.143	0.0	0.00	0.0	0	
2 TR	4, 6	275	1929	0.143	1.8	0.15	0.0	0	
North: Acceso Comercial N									
1 L	7	74	213	0.347	31.7	1.05	0.4	3	
2 R	9	74	839	0.088	13.2	0.92	0.1	0	
West: PR-3 W									
1 L	10	61	869	0.070	10.5	0.73	0.0	0	50
2 T	11	1009	1950	0.517	0.0	0.00	0.0	0	

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a

Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 T	4	0	279	0	279	279	1950	0.143	100
2 TR	4, 6	0	214	61	275	275	1929	0.143	100
North: Acceso Comercial N									
1 L	7	74	0	0	74	74	213	0.347	100
2 R	9	0	0	74	74	74	839	0.088	100
West: PR-3 W									
1 L	10	61	0	0	61	61	869	0.070	100
2 T	11	0	1009	0	1009	1009	1950	0.517	100

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
East: PR-3 E						
4 T	21.3	149.79	0.073	1.53	0.097	53.2
6 R	4.1	23.77	0.017	0.83	0.025	10.1
	25.3	173.56	0.091	2.37	0.121	63.3
North: Acceso Comercial N						
7 L	5.7	40.76	0.026	1.12	0.033	14.3
9 R	5.2	31.26	0.023	1.10	0.032	13.1
	11.0	72.02	0.049	2.22	0.064	27.4
West: PR-3 W						
10 L	4.2	24.90	0.018	0.87	0.025	10.4
11 T	43.5	306.57	0.150	3.14	0.198	108.8
	47.7	331.46	0.168	4.01	0.223	119.2
INTERSECTION:	84.0	577.05	0.308	8.60	0.408	210.0

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00

Time value factor	=	0.00
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
East: PR-3 E												
1 T		279		279	0				0.143	0.0	0	
2 TR		214	61	275	0				0.143	1.8	0	
	0	493	61	554	0				0.143	0.9		
North: Acceso Comercial N												
1 L	74			74	0				0.347	31.7	3	
2 R			74	74	0				0.088	13.2	0	
	74	0	74	148	0				0.347	22.4	3	
West: PR-3 W												
1 L	61			61	0				0.070	10.5	0	50
2 T		1009		1009	0				0.517	0.0	0	
	61	1009	0	1070	0				0.517	0.6	0	
ALL VEHICLES				Total Flow 1772	% HV 0				Max X 0.517	Aver. Delay 2.5	Max Queue 3	

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

Queue values in this table are mean cycle-average queue (metres).

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E								
4	T	493	3452	0.143	0.0	A	0.0	0
6	R	61	427	0.143	8.2	A	0.0	0

	554		0.143	0.9	A	0.0	0
North: Acceso Comercial N							
7 L	74	213	0.347	31.7	D	0.4	3
9 R	74	839	0.088	13.2	B	0.1	0
	148		0.347	22.4	C	0.4	3
West: PR-3 W							
10 L	61	869	0.070	10.5	B	0.0	0
11 T	1009	1950	0.517*	0.0	A	0.0	0
	1070		0.517	0.6	A	0.0	0
ALL VEHICLES:	1772		0.517	2.5	NA	0.4	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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
East: PR-3 E								
4	0	0	816	0	0	0	1.00	1.00
6	0	0	0	0	190	0	1.00	1.00
North: Acceso Comercial N								
7	183	0	0	0	0	0	1.00	1.00
9	0	0	0	0	183	0	1.00	1.00
West: PR-3 W								
10	190	0	0	0	0	0	1.00	1.00
11	0	0	536	0	0	0	1.00	1.00

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Util (%)	Satn x
East: PR-3 E										
4 T	816	0.0	0			3134	0.80	207	100	0.260
6 R	190	0.0	0			730	0.80	207	100	0.260
North: Acceso Comercial N										
7 L	183	0.0	1637+	0.0	1637	286	0.80	25	100	0.640*
9 R	183	0.0	911+	0.0	911	286	0.80	25	100	0.640*
West: PR-3 W										
10 L	190	0.0	816	0.0	816	579	0.80	144	100	0.328
11 T	536	0.0	0			1950	0.80	191	100	0.275

\+ Percentage of exiting flow included in total opposing flow

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02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	E
Average intersection delay (s)	=	7.8
Largest average movement delay (s)	=	37.9
Largest cycle-average queue, mean (m)	=	8
Performance Index	=	32.42
Degree of saturation (highest)	=	0.640
Practical Spare Capacity (lowest)	=	25 %
Effective intersection capacity, (veh/h)	=	3279
Total vehicle flow (veh/h)	=	2098
Total person flow (pers/h)	=	3147
Total vehicle delay (veh-h/h)	=	4.54
Total person delay (pers-h/h)	=	6.82
Total effective vehicle stops (veh/h)	=	738
Total effective person stops (pers/h)	=	1107
Total vehicle travel (veh-km/h)	=	1270.8
Total cost ($/h)	=	773.69
Total fuel (L/h)	=	113.1
Total CO2 (kg/h)	=	282.78

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

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 Cycle Aver. (vehs)	Longest Queue Cycle Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	8.25	60.0
6 R	0.43	0.65	8.2	0.00	0.67	0.0	0	3.05	49.0
North: Acceso Comercial N									

7 L	1.93	2.89	37.9	0.92	1.15	1.1	8	6.33	30.1
9 R	1.41	2.11	27.7	0.86	1.21	1.1	8	5.35	35.0
West: PR-3 W									
10 L	0.77	1.16	14.7	0.69	0.94	0.3	2	4.03	42.7
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	5.42	60.0

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

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)
East: PR-3 E									
1006	0.260	0.43	0.65	1.5	0.00	0.13	0	11.30	57.6
North: Acceso Comercial N									
366	0.640	3.34	5.01	32.8	0.89	1.18	8	11.68	32.4
West: PR-3 W									
726	0.328	0.77	1.16	3.8	0.18	0.25	2	9.45	54.3
ALL VEHICLES:									
2098	0.640	4.54	6.82	7.8	0.22	0.35	8	32.42	49.8
INTERSECTION (persons):									
3147	0.640		6.82	7.8	0.22	0.35		32.42	49.8

Queue values in this table are mean cycle-average queue (metres).

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
East: PR-3 E									
1 T	4	508	1950	0.260	0.0	0.00	0.0	0	
2 TR	4, 6	498	1914	0.260	3.1	0.25	0.0	0	
North: Acceso Comercial N									
1 L	7	127	199	0.640	42.4	1.14	1.1	8	
2 LR	7, 9	239	373	0.640	27.7	1.20	1.1	8	
West: PR-3 W									
1 L	10	190	579	0.328	14.7	0.94	0.3	2	50
2 T	11	536	1950	0.275	0.0	0.00	0.0	0	

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro

Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 T	4	0	508	0	508	508	1950	0.260	100
2 TR	4, 6	0	308	190	498	286	1914	0.260	100
North: Acceso Comercial N									
1 L	7	127	0	0	127	120	199	0.640	100
2 LR	7, 9	56	0	183	239	120	373	0.640	100
West: PR-3 W									
1 L	10	190	0	0	190	120	579	0.328	100
2 T	11	0	536	0	536	536	1950	0.275	100

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
East: PR-3 E						
4 T	35.2	247.93	0.121	2.54	0.160	88.0
6 R	12.6	74.05	0.054	2.59	0.076	31.6
	47.8	321.98	0.176	5.13	0.236	119.6
North: Acceso Comercial N						
7 L	14.7	109.26	0.067	2.82	0.082	36.7
9 R	14.0	96.05	0.063	2.83	0.081	35.1
	28.7	205.31	0.130	5.65	0.163	71.8
West: PR-3 W						
10 L	13.4	83.55	0.059	2.77	0.081	33.6
11 T	23.1	162.85	0.080	1.67	0.105	57.8
	36.6	246.41	0.139	4.44	0.185	91.4
INTERSECTION:	113.1	773.69	0.445	15.23	0.585	282.8

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L) = 0.900
Fuel resource cost factor = 0.50

Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
East: PR-3 E												
1 T		508		508	0				0.260	0.0	0	
2 TR		308	190	498	0				0.260	3.1	0	
	0	816	190	1006	0				0.260	1.5		
North: Acceso Comercial N												
1 L	127			127	0				0.640	42.4	8	
2 LR	56		183	239	0				0.640	27.7	8	
	183	0	183	366	0				0.640	32.8	8	
West: PR-3 W												
1 L	190			190	0				0.328	14.7	2	50
2 T		536		536	0				0.275	0.0	0	
	190	536	0	726	0				0.328	3.8	2	
ALL VEHICLES				Total Flow 2098	% HV 0				Max X 0.640	Aver. Delay 7.8	Max Queue 8	

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

Queue values in this table are mean cycle-average queue (metres).

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E								
4	T	816	3134	0.260	0.0	A	0.0	0

6 R	190	730	0.260	8.2	A	0.0	0
	1006		0.260	1.5	A	0.0	0
North: Acceso Comercial N							
7 L	183	286	0.640*	37.9	E	1.1	8
9 R	183	286	0.640*	27.7	D	1.1	8
	366		0.640	32.8	D	1.1	8
West: PR-3 W							
10 L	190	579	0.328	14.7	B	0.3	2
11 T	536	1950	0.275	0.0	A	0.0	0
	726		0.328	3.8	A	0.3	2
ALL VEHICLES:	2098		0.640	7.8	NA	1.1	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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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\02a_PR-3 y Acceso Comercial_FP.OUT
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02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
East: PR-3 E								
4	0	0	533	0	0	0	1.00	1.00
6	0	0	0	0	61	0	1.00	1.00
North: Acceso Comercial N								
7	74	0	0	0	0	0	1.00	1.00
9	0	0	0	0	74	0	1.00	1.00
West: PR-3 W								
10	61	0	0	0	0	0	1.00	1.00
11	0	0	1089	0	0	0	1.00	1.00

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prob. Deg. Satn xp	Prob. Spare Cap. (%)	Util (%)	Satn x
East: PR-3 E										
4 T	533	0.0	0			3482	0.80	423	100	0.153
6 R	61	0.0	0			398	0.80	422	100	0.153
North: Acceso Comercial N										
7 L	74	0.0	1714+	0.0	1714	176	0.80	90	100	0.420
9 R	74	0.0	564+	0.0	564	800	0.80	765	100	0.093
West: PR-3 W										
10 L	61	0.0	533	0.0	533	830	0.80	989	100	0.073
11 T	1089	0.0	0			1950	0.80	43	100	0.558*

+ Percentage of exiting flow included in total opposing flow

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	E
Average intersection delay (s)	=	2.6
Largest average movement delay (s)	=	38.1
Largest cycle-average queue, mean (m)	=	4
Performance Index	=	22.46
Degree of saturation (highest)	=	0.558
Practical Spare Capacity (lowest)	=	43 %
Effective intersection capacity, (veh/h)	=	3388
Total vehicle flow (veh/h)	=	1892
Total person flow (pers/h)	=	2838
Total vehicle delay (veh-h/h)	=	1.38
Total person delay (pers-h/h)	=	2.07
Total effective vehicle stops (veh/h)	=	233
Total effective person stops (pers/h)	=	350
Total vehicle travel (veh-km/h)	=	1146.8
Total cost ($/h)	=	617.18
Total fuel (L/h)	=	89.4
Total CO2 (kg/h)	=	223.39

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	5.39	60.0
6 R	0.14	0.21	8.2	0.00	0.67	0.0	0	0.98	49.0
North: Acceso Comercial N									

7 L	0.78	1.17	38.1	0.93	1.06	0.6	4	2.53	30.0
9 R	0.28	0.42	13.5	0.52	0.93	0.1	0	1.46	44.7
West: PR-3 W									
10 L	0.18	0.27	10.8	0.51	0.75	0.0	0	1.09	46.3
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	11.01	60.0

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

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)
East: PR-3 E									
594	0.153	0.14	0.21	0.8	0.00	0.07	0	6.37	58.6
North: Acceso Comercial N									
148	0.420	1.06	1.59	25.8	0.72	0.99	4	3.99	35.9
West: PR-3 W									
1150	0.558	0.18	0.27	0.6	0.03	0.04	0	12.10	59.1
ALL VEHICLES:									
1892	0.558	1.38	2.07	2.6	0.07	0.12	4	22.46	56.1
INTERSECTION (persons):									
2838	0.558		2.07	2.6	0.07	0.12		22.46	56.1

Queue values in this table are mean cycle-average queue (metres).

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
East: PR-3 E									
1 T	4	299	1950	0.153	0.0	0.00	0.0	0	
2 TR	4, 6	295	1930	0.153	1.7	0.14	0.0	0	
North: Acceso Comercial N									
1 L	7	74	176	0.420	38.1	1.06	0.6	4	
2 R	9	74	800	0.092	13.5	0.93	0.1	0	
West: PR-3 W									
1 L	10	61	830	0.074	10.8	0.75	0.0	0	50
2 T	11	1089	1950	0.558	0.0	0.00	0.0	0	

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a

Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 T	4	0	299	0	299	299	1950	0.153	100
2 TR	4, 6	0	234	61	295	295	1930	0.153	100
North: Acceso Comercial N									
1 L	7	74	0	0	74	74	176	0.420	100
2 R	9	0	0	74	74	74	800	0.092	100
West: PR-3 W									
1 L	10	61	0	0	61	61	830	0.074	100
2 T	11	0	1089	0	1089	1089	1950	0.558	100

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
East: PR-3 E						
4 T	23.0	161.94	0.079	1.66	0.104	57.5
6 R	4.1	23.77	0.017	0.83	0.025	10.1
	27.0	185.72	0.097	2.49	0.129	67.6
North: Acceso Comercial N						
7 L	5.9	44.17	0.027	1.13	0.033	14.8
9 R	5.2	31.39	0.023	1.10	0.032	13.1
	11.2	75.57	0.050	2.23	0.065	27.9
West: PR-3 W						
10 L	4.2	25.02	0.018	0.87	0.025	10.5
11 T	47.0	330.87	0.162	3.39	0.213	117.4
	51.2	355.89	0.180	4.26	0.239	127.9
INTERSECTION:	89.4	617.18	0.327	8.98	0.432	223.4

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00

Time value factor	=	0.00
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
East: PR-3 E												
1 T		299		299	0				0.153	0.0	0	
2 TR		234	61	295	0				0.153	1.7	0	
	0	533	61	594	0				0.153	0.8		
North: Acceso Comercial N												
1 L	74			74	0				0.420	38.1	4	
2 R			74	74	0				0.092	13.5	0	
	74	0	74	148	0				0.420	25.8	4	
West: PR-3 W												
1 L	61			61	0				0.074	10.8	0	50
2 T		1089		1089	0				0.558	0.0	0	
	61	1089	0	1150	0				0.558	0.6	0	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1892	0	0.558	2.6	4

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

Queue values in this table are mean cycle-average queue (metres).

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

02a Int. PR-3 y Acceso Comercial
Pico AM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E								
4	T	533	3482	0.153	0.0	A	0.0	0
6	R	61	398	0.153	8.2	A	0.0	0

	594		0.155	0.0	A	0.0	0
North: Acceso Comercial N							
7 L	74	176	0.420	38.1	E	0.6	4
9 R	74	800	0.093	13.5	B	0.1	0
	148		0.420	25.8	D	0.6	4
West: PR-3 W							
10 L	61	830	0.073	10.8	B	0.0	0
11 T	1089	1950	0.558*	0.0	A	0.0	0
	1150		0.558	0.6	A	0.0	0
ALL VEHICLES:	1892		0.558	2.6	NA	0.6	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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
East: PR-3 E								
4	0	0	884	0	0	0	1.00	1.00
6	0	0	0	0	190	0	1.00	1.00
North: Acceso Comercial N								
7	183	0	0	0	0	0	1.00	1.00
9	0	0	0	0	183	0	1.00	1.00
West: PR-3 W								
10	190	0	0	0	0	0	1.00	1.00
11	0	0	727	0	0	0	1.00	1.00

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
East: PR-3 E										
4 T	884	0.0	0			3182	0.80	188	100	0.278
6 R	190	0.0	0			684	0.80	188	100	0.278
North: Acceso Comercial N										
7 L	183	0.0	1896+	0.0	1896	203	0.80	-11	100	0.901*
9 R	183	0.0	979+	0.0	979	203	0.80	-11	100	0.901*
West: PR-3 W										
10 L	190	0.0	884	0.0	884	526	0.80	121	100	0.361
11 T	727	0.0	0			1950	0.80	115	100	0.373

+ Percentage of exiting flow included in total opposing flow

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	F
Average intersection delay (s)	=	12.1
Largest average movement delay (s)	=	76.5
Largest cycle-average queue, mean (m)	=	21
Performance Index	=	42.40
Degree of saturation (highest)	=	0.901
Practical Spare Capacity (lowest)	=	-11 %
Effective intersection capacity, (veh/h)	=	2615
Total vehicle flow (veh/h)	=	2357
Total person flow (pers/h)	=	3536
Total vehicle delay (veh-h/h)	=	7.92
Total person delay (pers-h/h)	=	11.88
Total effective vehicle stops (veh/h)	=	848
Total effective person stops (pers/h)	=	1271
Total vehicle travel (veh-km/h)	=	1427.8
Total cost ($/h)	=	941.39
Total fuel (L/h)	=	129.2
Total CO2 (kg/h)	=	323.01

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
East: PR-3 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	8.93	60.0
6 R	0.43	0.65	8.2	0.00	0.67	0.0	0	3.05	49.0
North: Acceso Comercial N									

7 L	3.89	5.83	70.5	0.90	1.50	5.0	21	10.47	19.0
9 R	2.76	4.14	54.3	0.95	1.56	3.0	21	8.42	24.6
West: PR-3 W									
10 L	0.84	1.26	15.9	0.73	0.97	0.4	3	4.19	41.7
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	7.35	60.0

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

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)
East: PR-3 E									
1074	0.278	0.43	0.65	1.4	0.00	0.12	0	11.98	57.7
North: Acceso Comercial N									
366	0.901	6.65	9.98	65.4	0.96	1.46	21	18.88	21.8
West: PR-3 W									
917	0.373	0.84	1.26	3.3	0.15	0.20	3	11.53	55.0
ALL VEHICLES:									
2357	0.901	7.92	11.88	12.1	0.21	0.36	21	42.40	45.3
INTERSECTION (persons):									
3536	0.901		11.88	12.1	0.21	0.36		42.40	45.3

Queue values in this table are mean cycle-average queue (metres).

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
East: PR-3 E									
1 T	4	542	1950	0.278	0.0	0.00	0.0	0	
2 TR	4, 6	532	1916	0.278	2.9	0.24	0.0	0	
North: Acceso Comercial N									
1 L	7	117	130	0.903	88.9	1.31	2.6	18	
2 LR	7, 9	249	275	0.903	54.3	1.54	3.0	21	
West: PR-3 W									
1 L	10	190	526	0.361	15.9	0.97	0.4	3	50
2 T	11	727	1950	0.373	0.0	0.00	0.0	0	

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs

Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
East: PR-3 E									
1 T	4	0	542	0	542	542	1950	0.278	100
2 TR	4, 6	0	342	190	532	303	1916	0.278	100
North: Acceso Comercial N									
1 L	7	117	0	0	117	118	130	0.903	100
2 LR	7, 9	66	0	183	249	120	275	0.903	100
West: PR-3 W									
1 L	10	190	0	0	190	120	526	0.361	100
2 T	11	0	727	0	727	727	1950	0.373	100

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
East: PR-3 E						
4 T	38.1	268.59	0.131	2.75	0.173	95.3
6 R	12.6	74.05	0.054	2.59	0.076	31.6
	50.8	342.64	0.186	5.35	0.249	126.9
North: Acceso Comercial N						
7 L	17.4	160.64	0.083	2.97	0.087	43.6
9 R	16.1	131.92	0.075	3.02	0.086	40.3
	33.5	292.56	0.158	5.99	0.173	83.8
West: PR-3 W						
10 L	13.6	85.30	0.060	2.79	0.081	33.9
11 T	31.4	220.89	0.108	2.26	0.142	78.4
	44.9	306.18	0.168	5.05	0.223	112.3
INTERSECTION:	129.2	941.39	0.512	16.39	0.646	323.0

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L) = 0.900
Fuel resource cost factor = 0.50

Ratio of running cost to fuel cost		[illegible]
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

)2a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
East: PR-3 E												
1 T		542		542	0				0.278	0.0	0	
2 TR		342	190	532	0				0.278	2.9	0	
	0	884	190	1074	0				0.278	1.4		
North: Acceso Comercial N												
1 L	117			117	0				0.903	88.9	18	
2 LR	66		183	249	0				0.903	54.3	21	
	183	0	183	366	0				0.903	65.4	21	
West: PR-3 W												
1 L	190			190	0				0.361	15.9	3	50
2 T		727		727	0				0.373	0.0	0	
	190	727	0	917	0				0.373	3.3	3	
ALL VEHICLES				Total Flow 2357	% HV 0				Max X 0.901	Aver. Delay 12.1	Max Queue 21	

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

Queue values in this table are mean cycle-average queue (metres).

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

02a Int. PR-3 y Acceso Comercial
Pico PM Futuro + 5 yrs
Intersection ID: 2a
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
East: PR-3 E								
4	T	884	3182	0.278	0.0	A	0.0	0

6 R	190	684	0.278	8.2	A	0.0	0
	1074		0.278	1.4	A	0.0	0
North: Acceso Comercial N							
7 L	183	203	0.901*	76.5	F	3.0	21
9 R	183	203	0.901*	54.3	F	3.0	21
	366		0.901	65.4	F	3.0	21
West: PR-3 W							
10 L	190	526	0.361	15.9	C	0.4	3
11 T	727	1950	0.373	0.0	A	0.0	0
	917		0.373	3.3	A	0.4	3
ALL VEHICLES:	2357		0.901	12.1	NA	3.0	21

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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Acceso Sur								
1	40	0	1	0	0	0	1.00	1.00
3	0	0	0	0	12	0	1.00	1.00
East: PR-3 E								
4	40	0	428	0	0	0	1.00	1.00
6	0	0	0	0	4	0	1.00	1.00
North: Acceso Residencial N								

7	68	0	1	0	0	0	1.00	1.00
9	0	0	0	0	68	0	1.00	1.00
West: PR-3 W								
10	20	0	864	0	0	0	1.00	1.00
12	0	0	0	0	92	0	1.00	1.00

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

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur										
1 LT	41	0.0	DIFF			217	0.80	323	100	0.189
3 R	12	0.0	910+	0.0	910	63	0.80	320	100	0.190
East: PR-3 E										
4 LT	468	0.0	956	0.0	956	1409	0.80	141	100	0.332
6 R	4	0.0	0			12	0.80	140	100	0.333
North: Acceso Residencial N										
7 LT	69	0.0	DIFF			224	0.80	160	100	0.308
9 R	68	0.0	430+	0.0	430	221	0.80	160	100	0.308
West: PR-3 W										
10 LT	884	0.0	432	0.0	432	1717	0.80	55	100	0.515*
12 R	92	0.0	0			179	0.80	56	100	0.514

DIFF Opposing flow was not printed as there was more than one opposed turn in this movement with differing opposing flows
\+ Percentage of exiting flow included in total opposing flow

---

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s)	=	10.8
Largest average movement delay (s)	=	24.0

Largest cycle-average queue, mean (m)	=	14
Performance Index	=	26.94
Degree of saturation (highest)	=	0.515
Practical Spare Capacity (lowest)	=	55 %
Effective intersection capacity, (veh/h)	=	3181
Total vehicle flow (veh/h)	=	1638
Total person flow (pers/h)	=	2457
Total vehicle delay (veh-h/h)	=	4.92
Total person delay (pers-h/h)	=	7.38
Total effective vehicle stops (veh/h)	=	263
Total effective person stops (pers/h)	=	394
Total vehicle travel (veh-km/h)	=	992.5
Total cost ($/h)	=	686.80
Total fuel (L/h)	=	114.3
Total CO2 (kg/h)	=	285.84

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

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: Acceso Sur									
1 LT	0.27	0.40	23.6	0.83	1.01	0.2	1	1.06	37.2
3 R	0.08	0.12	24.0	0.83	1.01	0.2	1	0.31	37.4
East: PR-3 E									
4 LT	2.04	3.06	15.7	1.00	0.09	2.0	14	8.96	41.9
6 R	0.03	0.04	23.2	1.00	0.00	2.0	14	0.08	36.6
North: Acceso Residencial N									
7 LT	0.37	0.55	19.2	0.68	1.04	0.3	2	1.62	40.0
9 R	0.37	0.55	19.4	0.68	0.99	0.3	2	1.59	40.1
West: PR-3 W									
10 LT	1.43	2.14	5.8	0.91	0.02	1.5	11	11.86	49.3
12 R	0.34	0.52	13.5	0.91	0.06	1.5	11	1.45	43.8

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur									
53	0.190	0.35	0.52	23.7	0.83	1.01	1	1.37	37.3
East: PR-3 E									
472	0.333	2.07	3.10	15.8	1.00	0.09	14	9.04	41.9
North: Acceso Residencial N									
137	0.308	0.74	1.10	19.3	0.68	1.01	2	3.22	40.1
West: PR-3 W									
976	0.515	1.77	2.66	6.5	0.91	0.03	11	13.31	48.7
ALL VEHICLES:									
1638	0.515	4.92	7.38	10.8	0.91	0.16	14	26.94	45.3
INTERSECTION (persons):									
2457	0.515		7.38	10.8	0.91	0.16		26.94	45.3

Queue values in this table are mean cycle-average queue (metres).

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: Acceso Sur									
1 LTR	1, 3	53	280	0.189	23.7	1.01	0.2	1	
East: PR-3 E									
1 LTR	4, 6	472	1421	0.332	15.8	0.09	2.0	14	
North: Acceso Residencial N									
1 LTR	7, 9	137	445	0.308	19.3	1.01	0.3	2	
West: PR-3 W									
1 LTR	10, 12	976	1896	0.515	6.5	0.03	1.5	11	

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LTR	1, 3	40	1	12	53	53	280	0.189	100
East: PR-3 E									
1 LTR	4, 6	40	428	4	472	120	1421	0.332	100
North: Acceso Residencial N									
1 LTR	7, 9	68	1	68	137	120	445	0.308	100
West: PR-3 W									
1 LTR	10, 12	20	864	92	976	120	1896	0.515	100

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

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						
1 LT	3.1	20.20	0.014	0.62	0.018	7.6
3 R	0.9	5.96	0.004	0.18	0.005	2.2
	4.0	26.16	0.018	0.80	0.023	9.9
East: PR-3 E						
4 LT	33.9	210.26	0.150	7.04	0.203	84.8
6 R	0.3	2.01	0.001	0.06	0.002	0.7

	34.2	212.26	0.152	7.10	0.205	85.5
North: Acceso Residencial N						
7 LT	5.0	31.98	0.023	1.05	0.030	12.6
9 R	5.0	31.67	0.022	1.03	0.030	12.5
	10.0	63.66	0.045	2.07	0.060	25.1
West: PR-3 W						
10 LT	59.7	344.88	0.258	12.26	0.361	149.1
12 R	6.5	39.84	0.028	1.33	0.039	16.2
	66.1	384.72	0.286	13.60	0.400	165.3
INTERSECTION:	114.3	686.80	0.500	23.57	0.688	285.8

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Acceso Sur												
1 LTR	40	1	12	53	0				0.189	23.7	1	
	40	1	12	53	0				0.189	23.7	1	
East: PR-3 E												
1 LTR	40	428	4	472	0				0.332	15.8	14	

	40	428	4	472	0		0.332	15.8	14
North: Acceso Residencial N									
1 LTR	68	1	68	137	0		0.308	19.3	2
	68	1	68	137	0		0.308	19.3	2
West: PR-3 W									
1 LTR	20	864	92	976	0		0.515	6.5	11
	20	864	92	976	0		0.515	6.5	11

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1638	0	0.515	10.8	14

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

Queue values in this table are mean cycle-average queue (metres).

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

02b Int. PR-3 y Acceso Residencial
Pico AM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Longest Queue Aver. (m)
South: Acceso Sur								
1	LT	41	217	0.189	23.6	C	0.2	1
3	R	12	63	0.190	24.0	C	0.2	1
		53		0.190	23.7	C	0.2	1
East: PR-3 E								
4	LT	468	1409	0.332	15.7	C	2.0	14
6	R	4	12	0.333	23.2	C	2.0	14
		472		0.333	15.8	C	2.0	14
North: Acceso Residencial N								
7	LT	69	224	0.308	19.2	C	0.3	2
9	R	68	221	0.308	19.4	C	0.3	2
		137		0.308	19.3	C	0.3	2
West: PR-3 W								
10	LT	884	1717	0.515*	5.8	A	1.5	11

12	R	92	179	0.514	13.5	B	1.5	11
		976		0.515	6.5	A	1.5	11
ALL VEHICLES:		1638		0.515	10.8	NA	2.0	14

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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Acceso Sur								
1	36	0	4	0	0	0	1.00	1.00
3	0	0	0	0	12	0	1.00	1.00
East: PR-3 E								
4	12	0	748	0	0	0	1.00	1.00
6	0	0	0	0	52	0	1.00	1.00
North: Acceso Residencial N								

7	28	0	1	0	0	0	1.00	1.00
9	0	0	0	0	16	0	1.00	1.00
West: PR-3 W								
10	52	0	516	0	0	0	1.00	1.00
12	0	0	0	0	16	0	1.00	1.00

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

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur										
1 LT	40	0.0	DIFF			266	0.80	432	100	0.150
3 R	12	0.0	524+	0.0	524	80	0.80	433	100	0.150
East: PR-3 E										
4 LT	760	0.0	532	0.0	532	1780	0.80	87	100	0.427*
6 R	52	0.0	0			122	0.80	88	100	0.426
North: Acceso Residencial N										
7 LT	29	0.0	1370+	0.0	1370	226	0.80	523	100	0.128
9 R	16	0.0	774+	0.0	774	124	0.80	520	100	0.129
West: PR-3 W										
10 LT	568	0.0	800	0.0	800	1509	0.80	113	100	0.376
12 R	16	0.0	0			42	0.80	110	100	0.381

DIFF Opposing flow was not printed as there was more than one opposed turn in this movement with differing opposing flows
\+ Percentage of exiting flow included in total opposing flow

---

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s)	=	9.5
Largest average movement delay (s)	=	20.8

Largest cycle-average queue, mean (m)	=	12
Performance Index	=	23.33
Degree of saturation (highest)	=	0.427
Practical Spare Capacity (lowest)	=	87 %
Effective intersection capacity, (veh/h)	=	3497
Total vehicle flow (veh/h)	=	1493
Total person flow (pers/h)	=	2240
Total vehicle delay (veh-h/h)	=	3.94
Total person delay (pers-h/h)	=	5.92
Total effective vehicle stops (veh/h)	=	171
Total effective person stops (pers/h)	=	256
Total vehicle travel (veh-km/h)	=	904.6
Total cost ($/h)	=	608.69
Total fuel (L/h)	=	103.1
Total CO2 (kg/h)	=	257.63

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

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: Acceso Sur									
1 LT	0.23	0.34	20.4	0.76	1.00	0.1	1	0.96	39.3
3 R	0.07	0.10	20.8	0.76	0.94	0.1	1	0.29	39.5
East: PR-3 E									
4 LT	1.28	1.92	6.1	0.88	0.02	1.3	9	10.29	49.5
6 R	0.20	0.31	14.1	0.88	0.08	1.3	9	0.84	43.2
North: Acceso Residencial N									
7 LT	0.16	0.24	20.2	0.77	1.00	0.1	1	0.69	39.5
9 R	0.09	0.14	20.4	0.77	1.00	0.1	1	0.38	39.5
West: PR-3 W									
10 LT	1.83	2.74	11.6	1.00	0.10	1.8	12	9.59	45.5
12 R	0.08	0.12	18.7	1.00	0.00	1.8	12	0.29	39.7

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur									
52	0.150	0.30	0.44	20.5	0.76	0.99	1	1.25	39.3
East: PR-3 E									
812	0.427	1.49	2.23	6.6	0.88	0.02	9	11.12	49.1
North: Acceso Residencial N									
45	0.129	0.25	0.38	20.2	0.77	1.00	1	1.08	39.5
West: PR-3 W									
584	0.381	1.91	2.86	11.8	1.00	0.10	12	9.88	45.3
ALL VEHICLES:									
1493	0.427	3.94	5.92	9.5	0.92	0.11	12	23.33	46.8
INTERSECTION (persons):									
2240	0.427		5.92	9.5	0.92	0.11		23.33	46.8

Queue values in this table are mean cycle-average queue (metres).

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: Acceso Sur									
1 LTR	1, 3	52	345	0.151	20.5	0.99	0.1	1	
East: PR-3 E									
1 LTR	4, 6	812	1902	0.427	6.6	0.02	1.3	9	
North: Acceso Residencial N									
1 LTR	7, 9	45	350	0.129	20.2	1.00	0.1	1	
West: PR-3 W									
1 LTR	10, 12	584	1551	0.376	11.8	0.10	1.8	12	

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LTR	1, 3	36	4	12	52	52	345	0.151	100
East: PR-3 E									
1 LTR	4, 6	12	748	52	812	120	1902	0.427	100
North: Acceso Residencial N									
1 LTR	7, 9	28	1	16	45	45	350	0.129	100
West: PR-3 W									
1 LTR	10, 12	52	516	16	584	120	1551	0.376	100

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

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						
1 LT	2.9	18.82	0.013	0.61	0.017	7.3
3 R	0.9	5.70	0.004	0.18	0.005	2.2
	3.8	24.51	0.017	0.78	0.023	9.5
East: PR-3 E						
4 LT	50.8	294.65	0.219	10.33	0.306	127.0
6 R	3.7	22.66	0.016	0.77	0.022	9.2

	54.5	317.30	0.235	11.10	0.329	136.2
North: Acceso Residencial N						
7 LT	2.1	13.59	0.009	0.44	0.013	5.3
9 R	1.2	7.53	0.005	0.24	0.007	2.9
	3.3	21.12	0.015	0.68	0.019	8.2
West: PR-3 W						
10 LT	40.3	238.22	0.177	8.52	0.245	100.7
12 R	1.2	7.54	0.005	0.24	0.007	2.9
	41.5	245.75	0.182	8.75	0.252	103.7
INTERSECTION:	103.1	608.69	0.449	21.31	0.623	257.6

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Acceso Sur												
1 LTR	36	4	12	52	0				0.151	20.5	1	
	36	4	12	52	0				0.151	20.5	1	
East: PR-3 E												
1 LTR	12	748	52	812	0				0.427	6.6	9	

	12	748	52	812	0	0.427	6.6	9
North: Acceso Residencial N								
1 LTR	28	1	16	45	0	0.129	20.2	1
	28	1	16	45	0	0.129	20.2	1
West: PR-3 W								
1 LTR	52	516	16	584	0	0.376	11.8	12
	52	516	16	584	0	0.376	11.8	12

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1493	0	0.427	9.5	12

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

Queue values in this table are mean cycle-average queue (metres).

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

02b Int. PR-3 y Acceso Residencial
Pico PM Base
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
South: Acceso Sur								
1	LT	40	266	0.150	20.4	C	0.1	1
3	R	12	80	0.150	20.8	C	0.1	1
		52		0.150	20.5	C	0.1	1
East: PR-3 E								
4	LT	760	1780	0.427*	6.1	A	1.3	9
6	R	52	122	0.426	14.1	B	1.3	9
		812		0.427	6.6	A	1.3	9
North: Acceso Residencial N								
7	LT	29	226	0.128	20.2	C	0.1	1
9	R	16	124	0.129	20.4	C	0.1	1
		45		0.129	20.2	C	0.1	1
West: PR-3 W								
10	LT	568	1509	0.376	11.6	B	1.8	12

12 R	16	42	0.381	18.7	C	1.8	12
	584		0.381	11.8	B	1.8	12
ALL VEHICLES:	1493		0.427	9.5	NA	1.8	12

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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Acceso Sur								
1	44	0	1	0	0	0	1.00	1.00
3	0	0	0	0	13	0	1.00	1.00
East: PR-3 E								
4	44	0	0	0	0	0	1.00	1.00
5	0	0	468	0	0	0	1.00	1.00
6	0	0	0	0	64	0	1.00	1.00

North: Acceso Residencial N								
7	255	0	1	0	0	0	1.00	1.00
9	0	0	0	0	255	0	1.00	1.00
West: PR-3 W								
10	82	0	0	0	0	0	1.00	1.00
11	0	0	945	0	0	0	1.00	1.00
12	0	0	0	0	101	0	1.00	1.00

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur										
1 LT	45	0.0	DIFF			127	0.80	126	100	0.354
3 R	13	0.0	996+	0.0	996	37	0.80	128	100	0.351
East: PR-3 E										
4 L	44	0.0	1046	0.0	1046	206	0.80	275	100	0.214
5 T	468	0.0	0			2196	0.80	275	100	0.213
6 R	64	0.0	0			300	0.80	275	100	0.213
North: Acceso Residencial N										
7 LT	256	0.0	DIFF			345	0.80	8	100	0.742*
9 R	255	0.0	500+	0.0	500	344	0.80	8	100	0.741
West: PR-3 W										
10 L	82	0.0	532	0.0	532	831	0.80	711	100	0.099
11 T	945	0.0	0			1753	0.80	48	100	0.539
12 R	101	0.0	0			187	0.80	48	100	0.540

DIFF Opposing flow was not printed as there was more than one opposed turn in this movement with differing opposing flows
\+ Percentage of exiting flow included in total opposing flow

---

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	E
Average intersection delay (s)	=	10.7
Largest average movement delay (s)	=	39.0
Largest cycle-average queue, mean (m)	=	12
Performance Index	=	39.46
Degree of saturation (highest)	=	0.742
Practical Spare Capacity (lowest)	=	8 %
Effective intersection capacity, (veh/h)	=	3063
Total vehicle flow (veh/h)	=	2273
Total person flow (pers/h)	=	3410
Total vehicle delay (veh-h/h)	=	6.79
Total person delay (pers-h/h)	=	10.18
Total effective vehicle stops (veh/h)	=	953
Total effective person stops (pers/h)	=	1430
Total vehicle travel (veh-km/h)	=	1376.4
Total cost ($/h)	=	892.14
Total fuel (L/h)	=	129.6
Total CO2 (kg/h)	=	324.05

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: Acceso Sur									
1 LT	0.48	0.71	38.1	0.92	1.04	0.4	3	1.53	30.0
3 R	0.14	0.21	38.1	0.92	1.05	0.4	3	0.44	30.0
East: PR-3 E									
4 L	0.29	0.43	23.6	0.98	1.02	0.7	5	1.16	36.3
5 T	0.50	0.75	3.9	0.25	0.00	0.7	5	5.73	54.2
6 R	0.15	0.22	8.2	0.00	0.67	0.0	0	1.03	49.0
North: Acceso Residencial N									
7 LT	2.77	4.16	39.0	0.88	1.24	1.7	12	9.12	29.6
9 R	1.99	2.99	28.1	0.75	1.41	1.7	12	7.79	34.6
West: PR-3 W									
10 L	0.25	0.37	10.8	0.51	0.76	0.1	0	1.48	46.2
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	9.55	60.0
12 R	0.23	0.34	8.2	0.00	0.67	0.0	0	1.62	49.0

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur									
58	0.354	0.61	0.92	38.1	0.92	1.04	3	1.98	30.0
East: PR-3 E									
576	0.214	0.94	1.40	5.8	0.28	0.15	5	7.93	51.7
North: Acceso Residencial N									
511	0.742	4.76	7.14	33.5	0.82	1.32	12	16.91	31.9
West: PR-3 W									
1128	0.540	0.48	0.71	1.5	0.04	0.12	0	12.65	57.6
ALL VEHICLES:									
2273	0.742	6.79	10.18	10.7	0.30	0.42	12	39.46	46.7
INTERSECTION (persons):									
3410	0.742		10.18	10.7	0.30	0.42		39.46	46.7

Queue values in this table are mean cycle-average queue (metres).

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: Acceso Sur									
1 LTR	1, 3	58	163	0.355	38.1	1.04	0.4	3	
East: PR-3 E									
1 LT	4, 5	164	767	0.213	17.4	0.28	0.7	5	
2 TR	5, 6	412	1935	0.213	1.3	0.10	0.0	0	
North: Acceso Residencial N									

1 L	7	160	216	0.741	45.5	1.22	1.5	11	
2 LTR	7, 9	351	473	0.741	28.1	1.37	1.7	12	
West: PR-3 W									
1 L	10	82	831	0.099	10.8	0.76	0.1	0	50
2 TR	11, 12	1046	1941	0.539	0.8	0.06	0.0	0	

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LTR	1, 3	44	1	13	58	58	163	0.355	100
East: PR-3 E									
1 LT	4, 5	44	120	0	164	120	767	0.213	100
2 TR	5, 6	0	348	64	412	120	1935	0.213	100
North: Acceso Residencial N									
1 L	7	160	0	0	160	120	216	0.741	100
2 LTR	7, 9	95	1	255	351	120	473	0.741	100
West: PR-3 W									
1 L	10	82	0	0	82	82	831	0.099	100
2 TR	11, 12	0	945	101	1046	120	1941	0.539	100

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						
1 LT	3.6	26.86	0.016	0.69	0.020	9.0
3 R	1.0	7.77	0.005	0.20	0.006	2.6
	4.6	34.62	0.021	0.89	0.026	11.6
East: PR-3 E						
4 L	3.3	22.16	0.015	0.67	0.019	8.2
5 T	23.6	159.03	0.090	2.85	0.120	59.0
6 R	4.3	24.94	0.018	0.87	0.026	10.6
	31.2	206.13	0.123	4.40	0.164	77.9
North: Acceso Residencial N						
7 LT	20.7	155.13	0.095	3.99	0.115	51.8
9 R	20.0	136.10	0.091	4.12	0.117	50.0
	40.7	291.23	0.185	8.11	0.232	101.8
West: PR-3 W						
10 L	5.6	33.67	0.025	1.17	0.034	14.1
11 T	40.8	287.12	0.141	2.94	0.185	101.9
12 R	6.7	39.36	0.029	1.38	0.041	16.8
	53.1	360.15	0.194	5.49	0.260	132.8
INTERSECTION:	129.6	892.14	0.523	18.89	0.682	324.1

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Acceso Sur												
1 LTR	44	1	13	58	0				0.355	38.1	3	
	44	1	13	58	0				0.355	38.1	3	
East: PR-3 E												
1 LT	44	120		164	0				0.213	17.4	5	
2 TR		348	64	412	0				0.213	1.3	0	
	44	468	64	576	0				0.213	5.8	5	
North: Acceso Residencial N												
1 L	160			160	0				0.741	45.5	11	
2 LTR	95	1	255	351	0				0.741	28.1	12	
	255	1	255	511	0				0.741	33.5	12	
West: PR-3 W												
1 L	82			82	0				0.099	10.8	0	50
2 TR		945	101	1046	0				0.539	0.8	0	
	82	945	101	1128	0				0.539	1.5	0	
ALL VEHICLES				Total Flow 2273	% HV 0				Max X 0.742	Aver. Delay 10.7	Max Queue 12	

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

Queue values in this table are mean cycle-average queue (metres).

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
South: Acceso Sur								

1 LT	45	127	0.354	38.1	E	0.4	3
3 R	13	37	0.351	38.1	E	0.4	3
	58		0.354	38.1	E	0.4	3
East: PR-3 E							
4 L	44	206	0.214	23.6	C	0.7	5
5 T	468	2196	0.213	3.9	A	0.7	5
6 R	64	300	0.213	8.2	A	0.0	0
	576		0.214	5.8	A	0.7	5
North: Acceso Residencial N							
7 LT	256	345	0.742*	39.0	E	1.7	12
9 R	255	344	0.741	28.1	D	1.7	12
	511		0.742	33.5	D	1.7	12
West: PR-3 W							
10 L	82	831	0.099	10.8	B	0.1	0
11 T	945	1753	0.539	0.0	A	0.0	0
12 R	101	187	0.540	8.2	A	0.0	0
	1128		0.540	1.5	A	0.1	0
ALL VEHICLES:	2273		0.742	10.7	NA	1.7	12

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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Acceso Sur								
1	47	0	1	0	0	0	1.00	1.00
3	0	0	0	0	14	0	1.00	1.00
East: PR-3 E								
4	47	0	0	0	0	0	1.00	1.00
5	0	0	504	0	0	0	1.00	1.00
6	0	0	0	0	65	0	1.00	1.00

North: Acceso Residencial N								
7	261	0	1	0	0	0	1.00	1.00
9	0	0	0	0	261	0	1.00	1.00
West: PR-3 W								
10	84	0	0	0	0	0	1.00	1.00
11	0	0	1017	0	0	0	1.00	1.00
12	0	0	0	0	108	0	1.00	1.00

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur											
1	LT	48	0.0	DIFF			103	0.80	72	100	0.466
3	R	14	0.0	1071+	0.0	1071	30	0.80	71	100	0.467
East: PR-3 E											
4	L	47	0.0	1125	0.0	1125	190	0.80	223	100	0.247
5	T	504	0.0	0			2034	0.80	223	100	0.248
6	R	65	0.0	0			262	0.80	222	100	0.248
North: Acceso Residencial N											
7	LT	262	0.0	DIFF			296	0.80	-10	100	0.885*
9	R	261	0.0	537+	0.0	537	295	0.80	-10	100	0.885*
West: PR-3 W											
10	L	84	0.0	569	0.0	569	795	0.80	657	100	0.106
11	T	1017	0.0	0			1754	0.80	38	100	0.580
12	R	108	0.0	0			186	0.80	38	100	0.581

DIFF Opposing flow was not printed as there was more than one opposed turn in this movement with differing opposing flows
\+ Percentage of exiting flow included in total opposing flow

---

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	F
Average intersection delay (s)	=	14.4
Largest average movement delay (s)	=	57.9
Largest cycle-average queue, mean (m)	=	22
Performance Index	=	47.33
Degree of saturation (highest)	=	0.885
Practical Spare Capacity (lowest)	=	-10 %
Effective intersection capacity, (veh/h)	=	2723
Total vehicle flow (veh/h)	=	2410
Total person flow (pers/h)	=	3615
Total vehicle delay (veh-h/h)	=	9.61
Total person delay (pers-h/h)	=	14.41
Total effective vehicle stops (veh/h)	=	1120
Total effective person stops (pers/h)	=	1680
Total vehicle travel (veh-km/h)	=	1459.4
Total cost ($/h)	=	1008.65
Total fuel (L/h)	=	139.9
Total CO2 (kg/h)	=	349.74

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: Acceso Sur									
1 LT	0.65	0.97	48.5	0.95	1.06	0.7	5	1.92	26.2
3 R	0.19	0.28	48.6	0.95	1.06	0.7	5	0.56	26.3
East: PR-3 E									
4 L	0.37	0.55	28.0	1.00	1.03	0.7	5	1.36	33.8
5 T	0.48	0.72	3.5	0.18	0.00	0.7	5	6.06	54.8
6 R	0.15	0.22	8.2	0.00	0.67	0.0	0	1.04	49.0
North: Acceso Residencial N									
7 LT	4.21	6.32	57.9	0.92	1.41	3.2	22	12.34	23.6
9 R	3.06	4.59	42.2	0.82	1.74	3.2	22	10.50	28.3
West: PR-3 W									
10 L	0.26	0.39	11.1	0.53	0.78	0.1	0	1.54	46.0
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	10.28	60.0
12 R	0.25	0.37	8.2	0.00	0.67	0.0	0	1.73	49.0

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur									
62	0.467	0.84	1.25	48.5	0.95	1.06	5	2.48	26.2
East: PR-3 E									
616	0.248	1.00	1.49	5.8	0.22	0.15	5	8.46	51.7
North: Acceso Residencial N									
523	0.885	7.27	10.91	50.0	0.87	1.58	22	22.84	25.7
West: PR-3 W									
1209	0.581	0.50	0.76	1.5	0.04	0.11	0	13.55	57.6
ALL VEHICLES:									
2410	0.885	9.61	14.41	14.4	0.29	0.46	22	47.33	43.4
INTERSECTION (persons):									
3615	0.885		14.41	14.4	0.29	0.46		47.33	43.4

Queue values in this table are mean cycle-average queue (metres).

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: Acceso Sur									
1 LTR	1, 3	62	133	0.468	48.5	1.06	0.7	5	
East: PR-3 E									
1 LT	4, 5	136	549	0.248	22.5	0.36	0.7	5	
2 TR	5, 6	480	1937	0.248	1.1	0.09	0.0	0	
North: Acceso Residencial N									

1 L	7	160	180	0.885	67.9	1.35	2.5	18	
2 LTR	7, 9	363	411	0.885	42.2	1.67	3.2	22	
West: PR-3 W									
1 L	10	84	795	0.106	11.1	0.78	0.1	0	50
2 TR	11, 12	1125	1941	0.580	0.8	0.06	0.0	0	

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LTR	1, 3	47	1	14	62	62	133	0.468	100
East: PR-3 E									
1 LT	4, 5	47	89	0	136	120	549	0.248	100
2 TR	5, 6	0	415	65	480	120	1937	0.248	100
North: Acceso Residencial N									
1 L	7	160	0	0	160	120	180	0.885	100
2 LTR	7, 9	101	1	261	363	120	411	0.885	100
West: PR-3 W									
1 L	10	84	0	0	84	84	795	0.106	100
2 TR	11, 12	0	1017	108	1125	120	1941	0.580	100

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						
1 LT	4.0	32.27	0.019	0.74	0.022	10.1
3 R	1.2	9.42	0.005	0.22	0.006	2.9
	5.2	41.69	0.024	0.96	0.028	13.0
East: PR-3 E						
4 L	3.6	25.18	0.016	0.72	0.021	9.0
5 T	24.5	168.57	0.091	2.63	0.120	61.2
6 R	4.3	25.33	0.019	0.89	0.026	10.8
	32.4	219.09	0.126	4.24	0.167	81.0
North: Acceso Residencial N						
7 LT	23.2	194.91	0.109	4.22	0.122	57.9
9 R	22.3	167.20	0.103	4.49	0.126	55.7
	45.5	362.11	0.212	8.71	0.247	113.7
West: PR-3 W						
10 L	5.8	34.66	0.025	1.20	0.035	14.5
11 T	43.9	309.00	0.151	3.17	0.199	109.7
12 R	7.2	42.09	0.031	1.47	0.043	17.9
	56.8	385.75	0.207	5.84	0.277	142.1
INTERSECTION:	139.9	1008.65	0.570	19.75	0.720	349.7

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Acceso Sur												
1 LTR	47	1	14	62	0				0.468	48.5	5	
	47	1	14	62	0				0.468	48.5	5	
East: PR-3 E												
1 LT	47	89		136	0				0.248	22.5	5	
2 TR		415	65	480	0				0.248	1.1	0	
	47	504	65	616	0				0.248	5.8	5	
North: Acceso Residencial N												
1 L	160			160	0				0.885	67.9	18	
2 LTR	101	1	261	363	0				0.885	42.2	22	
	261	1	261	523	0				0.885	50.0	22	
West: PR-3 W												
1 L	84			84	0				0.106	11.1	0	50
2 TR		1017	108	1125	0				0.580	0.8	0	
	84	1017	108	1209	0				0.580	1.5	0	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2410	0	0.885	14.4	22

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

Queue values in this table are mean cycle-average queue (metres).

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

02b Int. PR-3 y Acceso Residencial
Pico AM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)

South: Acceso Sur

1 LT	48	103	0.466	48.5	E	0.7	5
3 R	14	30	0.467	48.6	E	0.7	5
	62		0.467	48.5	E	0.7	5
East: PR-3 E							
4 L	47	190	0.247	28.0	D	0.7	5
5 T	504	2034	0.248	3.5	A	0.7	5
6 R	65	262	0.248	8.2	A	0.0	0
	616		0.248	5.8	A	0.7	5
North: Acceso Residencial N							
7 LT	262	296	0.885*	57.9	F	3.2	22
9 R	261	295	0.885*	42.2	E	3.2	22
	523		0.885	50.0	F	3.2	22
West: PR-3 W							
10 L	84	795	0.106	11.1	B	0.1	0
11 T	1017	1754	0.580	0.0	A	0.0	0
12 R	108	186	0.581	8.2	A	0.0	0
	1209		0.581	1.5	A	0.1	0
ALL VEHICLES:	2410		0.885	14.4	NA	3.2	22

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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

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02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Acceso Sur								
1	39	0	4	0	0	0	1.00	1.00
3	0	0	0	0	13	0	1.00	1.00
East: PR-3 E								
4	13	0	0	0	0	0	1.00	1.00
5	0	0	818	0	0	0	1.00	1.00
6	0	0	0	0	242	0	1.00	1.00

North: Acceso Residencial N								
7	140	0	1	0	0	0	1.00	1.00
9	0	0	0	0	126	0	1.00	1.00
West: PR-3 W								
10	242	0	0	0	0	0	1.00	1.00
11	0	0	564	0	0	0	1.00	1.00
12	0	0	0	0	17	0	1.00	1.00

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur										
1 LT	43	0.0	DIFF			148	0.80	175	100	0.291
3 R	13	0.0	573+	0.0	573	45	0.80	177	100	0.289
East: PR-3 E										
4 L	13	0.0	581	0.0	581	46	0.80	183	100	0.283
5 T	818	0.0	0			2882	0.80	182	100	0.284
6 R	242	0.0	0			853	0.80	182	100	0.284
North: Acceso Residencial N										
7 LT	141	0.0	1775+	0.0	1775	246	0.80	40	100	0.573
9 R	126	0.0	939+	0.0	939	220	0.80	40	100	0.573
West: PR-3 W										
10 L	242	0.0	1060	0.0	1060	404	0.80	34	100	0.599*
11 T	564	0.0	0			1890	0.80	168	100	0.298
12 R	17	0.0	0			57	0.80	168	100	0.298

DIFF Opposing flow was not printed as there was more than one opposed turn in this movement with differing opposing flows
\+ Percentage of exiting flow included in total opposing flow

---

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	E
Average intersection delay (s)	=	9.7
Largest average movement delay (s)	=	40.6
Largest cycle-average queue, mean (m)	=	7
Performance Index	=	36.76
Degree of saturation (highest)	=	0.599
Practical Spare Capacity (lowest)	=	34 %
Effective intersection capacity, (veh/h)	=	3704
Total vehicle flow (veh/h)	=	2219
Total person flow (pers/h)	=	3329
Total vehicle delay (veh-h/h)	=	5.98
Total person delay (pers-h/h)	=	8.96
Total effective vehicle stops (veh/h)	=	816
Total effective person stops (pers/h)	=	1224
Total vehicle travel (veh-km/h)	=	1343.9
Total cost ($/h)	=	869.74
Total fuel (L/h)	=	131.8
Total CO2 (kg/h)	=	329.50

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

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 Cycle (vehs)	Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: Acceso Sur									
1 LT	0.39	0.58	32.5	0.88	1.03	0.3	2	1.33	32.4
3 R	0.12	0.18	32.5	0.88	1.04	0.3	2	0.40	32.5
East: PR-3 E									
4 L	0.05	0.07	13.3	0.76	0.94	0.7	5	0.26	43.9
5 T	0.69	1.04	3.1	0.48	0.00	0.7	5	9.66	53.9
6 R	0.55	0.83	8.2	0.00	0.67	0.0	0	3.88	49.0
North: Acceso Residencial N									
7 LT	1.59	2.38	40.6	0.92	1.11	0.9	6	5.05	29.0
9 R	1.03	1.55	29.5	0.87	1.16	0.9	6	3.77	34.0
West: PR-3 W									
10 L	1.52	2.28	22.6	0.86	1.12	1.0	7	6.44	37.0
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	5.70	60.0
12 R	0.04	0.06	8.2	0.00	0.67	0.0	0	0.27	49.0

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur									
56	0.291	0.51	0.76	32.5	0.88	1.03	2	1.73	32.4
East: PR-3 E									
1073	0.284	1.29	1.94	4.3	0.38	0.16	5	13.81	52.6
North: Acceso Residencial N									
267	0.573	2.62	3.93	35.3	0.90	1.13	6	8.82	31.2
West: PR-3 W									
823	0.599	1.56	2.34	6.8	0.25	0.34	7	12.41	50.5
ALL VEHICLES:									
2219	0.599	5.98	8.96	9.7	0.41	0.37	7	36.76	47.2
INTERSECTION (persons):									
3329	0.599		8.96	9.7	0.41	0.37		36.76	47.2

Queue values in this table are mean cycle-average queue (metres).

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: Acceso Sur									
1 LTR	1, 3	56	192	0.291	32.5	1.03	0.3	2	
East: PR-3 E									
1 LT	4, 5	532	1874	0.284	5.0	0.02	0.7	5	
2 TR	5, 6	541	1907	0.284	3.7	0.30	0.0	0	
North: Acceso Residencial N									

1 L	7	91	159	0.572	46.6	1.10	0.9	6	
2 LTR	7, 9	176	307	0.572	29.5	1.15	0.9	6	
West: PR-3 W									
1 L	10	242	404	0.598	22.6	1.12	1.0	7	50
2 TR	11, 12	581	1947	0.298	0.2	0.02	0.0	0	

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LTR	1, 3	39	4	13	56	56	192	0.291	100
East: PR-3 E									
1 LT	4, 5	13	519	0	532	120	1874	0.284	100
2 TR	5, 6	0	299	242	541	120	1907	0.284	100
North: Acceso Residencial N									
1 L	7	91	0	0	91	91	159	0.572	100
2 LTR	7, 9	49	1	126	176	120	307	0.572	100
West: PR-3 W									
1 L	10	242	0	0	242	120	404	0.598	100
2 TR	11, 12	0	564	17	581	120	1947	0.298	100

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						
1 LT	3.3	23.94	0.015	0.66	0.019	8.4
3 R	1.0	7.25	0.005	0.20	0.006	2.5
	4.4	31.19	0.020	0.85	0.025	10.9
East: PR-3 E						
4 L	0.9	5.57	0.004	0.19	0.006	2.3
5 T	45.8	285.45	0.183	7.19	0.252	114.5
6 R	16.1	94.32	0.069	3.30	0.097	40.2
	62.8	385.33	0.257	10.69	0.355	157.0
North: Acceso Residencial N						
7 LT	11.4	86.79	0.052	2.17	0.063	28.6
9 R	9.7	67.62	0.044	1.94	0.056	24.3
	21.2	154.41	0.096	4.10	0.119	52.9
West: PR-3 W						
10 L	18.0	120.81	0.081	3.66	0.106	45.1
11 T	24.3	171.36	0.084	1.76	0.110	60.8
12 R	1.1	6.63	0.005	0.23	0.007	2.8
	43.5	298.80	0.170	5.65	0.223	108.8
INTERSECTION:	131.8	869.74	0.542	21.29	0.721	329.5

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Acceso Sur												
1 LTR	39	4	13	56	0				0.291	32.5	2	
	39	4	13	56	0				0.291	32.5	2	
East: PR-3 E												
1 LT	13	519		532	0				0.284	5.0	5	
2 TR		299	242	541	0				0.284	3.7	0	
	13	818	242	1073	0				0.284	4.3	5	
North: Acceso Residencial N												
1 L	91			91	0				0.572	46.6	6	
2 LTR	49	1	126	176	0				0.572	29.5	6	
	140	1	126	267	0				0.572	35.3	6	
West: PR-3 W												
1 L	242			242	0				0.598	22.6	7	50
2 TR		564	17	581	0				0.298	0.2	0	
	242	564	17	823	0				0.598	6.8	7	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2219	0	0.599	9.7	7

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

Queue values in this table are mean cycle-average queue (metres).

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
South: Acceso Sur								

1 LT	43	148	0.291	32.5	D	0.3	2
3 R	13	45	0.289	32.5	D	0.3	2
	56		0.291	32.5	D	0.3	2
East: PR-3 E							
4 L	13	46	0.283	13.3	B	0.7	5
5 T	818	2882	0.284	3.1	A	0.7	5
6 R	242	853	0.284	8.2	A	0.0	0
	1073		0.284	4.3	A	0.7	5
North: Acceso Residencial N							
7 LT	141	246	0.573	40.6	E	0.9	6
9 R	126	220	0.573	29.5	D	0.9	6
	267		0.573	35.3	E	0.9	6
West: PR-3 W							
10 L	242	404	0.599*	22.6	C	1.0	7
11 T	564	1890	0.298	0.0	A	0.0	0
12 R	17	57	0.298	8.2	A	0.0	0
	823		0.599	6.8	A	1.0	7
ALL VEHICLES:	2219		0.599	9.7	NA	1.0	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.

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

* Maximum v/c ratio, or critical green periods

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02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Acceso Sur								
1	42	0	5	0	0	0	1.00	1.00
3	0	0	0	0	14	0	1.00	1.00
East: PR-3 E								
4	14	0	0	0	0	0	1.00	1.00
5	0	0	881	0	0	0	1.00	1.00
6	0	0	0	0	246	0	1.00	1.00

North: Acceso Residencial N								
7	142	0	1	0	0	0	1.00	1.00
9	0	0	0	0	128	0	1.00	1.00
West: PR-3 W								
10	246	0	0	0	0	0	1.00	1.00
11	0	0	608	0	0	0	1.00	1.00
12	0	0	0	0	19	0	1.00	1.00

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur											
1	LT	47	0.0	DIFF			122	0.80	108	100	0.385
3	R	14	0.0	618+	0.0	618	36	0.80	106	100	0.389
East: PR-3 E											
4	L	14	0.0	627	0.0	627	46	0.80	163	100	0.304
5	T	881	0.0	0			2913	0.80	165	100	0.302
6	R	246	0.0	0			813	0.80	164	100	0.303
North: Acceso Residencial N											
7	LT	143	0.0	1891+	0.0	1891	207	0.80	16	100	0.691
9	R	128	0.0	1004+	0.0	1004	185	0.80	16	100	0.692*
West: PR-3 W											
10	L	246	0.0	1127	0.0	1127	363	0.80	18	100	0.678
11	T	608	0.0	0			1888	0.80	148	100	0.322
12	R	19	0.0	0			59	0.80	148	100	0.322

DIFF Opposing flow was not printed as there was more than one opposed turn in this movement with differing opposing flows
\+ Percentage of exiting flow included in total opposing flow

---

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	F
Average intersection delay (s)	=	11.5
Largest average movement delay (s)	=	53.0
Largest cycle-average queue, mean (m)	=	9
Performance Index	=	41.26
Degree of saturation (highest)	=	0.692
Practical Spare Capacity (lowest)	=	16 %
Effective intersection capacity, (veh/h)	=	3391
Total vehicle flow (veh/h)	=	2346
Total person flow (pers/h)	=	3519
Total vehicle delay (veh-h/h)	=	7.46
Total person delay (pers-h/h)	=	11.20
Total effective vehicle stops (veh/h)	=	868
Total effective person stops (pers/h)	=	1301
Total vehicle travel (veh-km/h)	=	1420.8
Total cost ($/h)	=	947.38
Total fuel (L/h)	=	140.8
Total CO2 (kg/h)	=	352.12

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

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 Cycle (vehs)	Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: Acceso Sur									
1 LT	0.52	0.78	40.0	0.91	1.05	0.5	3	1.65	29.2
3 R	0.16	0.23	40.1	0.91	1.07	0.5	3	0.49	29.2
East: PR-3 E									
4 L	0.06	0.08	14.2	0.80	0.98	0.9	6	0.29	43.0
5 T	0.88	1.32	3.6	0.50	0.00	0.9	6	10.67	53.7
6 R	0.56	0.84	8.2	0.00	0.67	0.0	0	3.95	49.0
North: Acceso Residencial N									
7 LT	2.10	3.16	53.0	0.95	1.15	1.3	9	6.14	24.9
9 R	1.33	2.00	37.5	0.91	1.23	1.3	9	4.45	30.3
West: PR-3 W									
10 L	1.81	2.71	26.5	0.90	1.18	1.3	9	7.16	34.7
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	6.15	60.0
12 R	0.04	0.06	8.2	0.00	0.67	0.0	0	0.30	49.0

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

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: Acceso Sur									
61	0.389	0.68	1.02	40.0	0.91	1.05	3	2.15	29.2
East: PR-3 E									
1141	0.304	1.50	2.25	4.7	0.40	0.16	6	14.91	52.4
North: Acceso Residencial N									
271	0.692	3.44	5.15	45.6	0.93	1.19	9	10.59	27.2
West: PR-3 W									
873	0.678	1.85	2.78	7.6	0.25	0.35	9	13.61	49.6
ALL VEHICLES:									
2346	0.692	7.46	11.20	11.5	0.42	0.37	9	41.26	45.6
INTERSECTION (persons):									
3519	0.692		11.20	11.5	0.42	0.37		41.26	45.6

Queue values in this table are mean cycle-average queue (metres).

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: Acceso Sur									
1 LTR	1, 3	61	158	0.385	40.0	1.05	0.5	3	
East: PR-3 E									
1 LT	4, 5	564	1864	0.302	6.0	0.02	0.9	6	
2 TR	5, 6	577	1909	0.302	3.5	0.28	0.0	0	
North: Acceso Residencial N									

1 L	7	91	131	0.691	62.0	1.13	1.3	9	
2 LTR	7, 9	180	261	0.691	37.5	1.22	1.3	9	
West: PR-3 W									
1 L	10	246	363	0.677	26.5	1.18	1.3	9	50
2 TR	11, 12	627	1947	0.322	0.2	0.02	0.0	0	

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur									
1 LTR	1, 3	42	5	14	61	61	158	0.385	100
East: PR-3 E									
1 LT	4, 5	14	550	0	564	120	1864	0.302	100
2 TR	5, 6	0	331	246	577	120	1909	0.302	100
North: Acceso Residencial N									
1 L	7	91	0	0	91	90	131	0.691	100
2 LTR	7, 9	51	1	128	180	120	261	0.691	100
West: PR-3 W									
1 L	10	246	0	0	246	120	363	0.677	100
2 TR	11, 12	0	608	19	627	120	1947	0.322	100

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						
1 LT	3.8	28.73	0.017	0.72	0.021	9.5
3 R	1.1	8.57	0.005	0.22	0.006	2.8
	4.9	37.30	0.023	0.94	0.027	12.3
East: PR-3 E						
4 L	1.0	6.10	0.004	0.21	0.006	2.5
5 T	49.8	309.03	0.200	7.95	0.275	124.4
6 R	16.4	95.88	0.071	3.36	0.099	40.9
	67.1	411.01	0.275	11.51	0.380	167.8
North: Acceso Residencial N						
7 LT	12.3	100.91	0.057	2.23	0.065	30.7
9 R	10.3	76.14	0.047	2.00	0.058	25.7
	22.6	177.05	0.104	4.23	0.123	56.4
West: PR-3 W						
10 L	18.8	129.89	0.085	3.76	0.108	46.9
11 T	26.2	184.73	0.090	1.89	0.119	65.6
12 R	1.3	7.41	0.005	0.26	0.008	3.2
	46.2	322.02	0.181	5.91	0.235	115.6
INTERSECTION:	140.8	947.38	0.582	22.60	0.765	352.1

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Acceso Sur												
1 LTR	42	5	14	61	0				0.385	40.0	3	
	42	5	14	61	0				0.385	40.0	3	
East: PR-3 E												
1 LT	14	550		564	0				0.302	6.0	6	
2 TR		331	246	577	0				0.302	3.5	0	
	14	881	246	1141	0				0.302	4.7	6	
North: Acceso Residencial N												
1 L	91			91	0				0.691	62.0	9	
2 LTR	51	1	128	180	0				0.691	37.5	9	
	142	1	128	271	0				0.691	45.6	9	
West: PR-3 W												
1 L	246			246	0				0.677	26.5	9	50
2 TR		608	19	627	0				0.322	0.2	0	
	246	608	19	873	0				0.677	7.6	9	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2346	0	0.692	11.5	9

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

Queue values in this table are mean cycle-average queue (metres).

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

02b Int. PR-3 y Acceso Residencial
Pico PM Futuro + 5 yrs
Intersection ID: 2b
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle Aver. (vehs)	(m)
South: Acceso Sur								

1 LT	47	122	0.385	40.0	E	0.5	3
3 R	14	36	0.389	40.1	E	0.5	3
	61		0.389	40.0	E	0.5	3
East: PR-3 E							
4 L	14	46	0.304	14.2	B	0.9	6
5 T	881	2913	0.302	3.6	A	0.9	6
6 R	246	813	0.303	8.2	A	0.0	0
	1141		0.304	4.7	A	0.9	6
North: Acceso Residencial N							
7 LT	143	207	0.691	53.0	F	1.3	9
9 R	128	185	0.692*	37.5	E	1.3	9
	271		0.692	45.6	E	1.3	9
West: PR-3 W							
10 L	246	363	0.678	26.5	D	1.3	9
11 T	608	1888	0.322	0.0	A	0.0	0
12 R	19	59	0.322	8.2	A	0.0	0
	873		0.678	7.6	A	1.3	9
ALL VEHICLES:	2346		0.692	11.5	NA	1.3	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.

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

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\Salinas Rev06\02b_PR-3 y Acceso Residencial_FP+5.OUT
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03 Int PR-3 y PR-180
Pico AM Base
Intersection ID: 3

RUN INFORMATION

* 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)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Cycle average queue, Average

* No. of Main (Timing-Capacity) Iterations = 3
  Comparison of last two iterations:
    Difference in intersection degree of satn = 0.3 %
    Largest difference in eff. green times = 1 secs
    (max. value for stopping = 1 secs)
  Information on Previous Iteration:
    Cycle Time = 90
    Phase Times: 0, 15, 61, 80
    Phase Reduction in Phase: 4
    Critical Movements: 10, 11, 8, 2

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

---

03 Int PR-3 y PR-180
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.0 - TRAFFIC FLOW DATA

Mov	Left	Through	Right	Flow	Peak

No.	LV	HV	LV	HV	LV	HV	Scale	Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-180 S								
1	1	0	0	0	0	0	1.00	1.00
2	0	0	60	0	0	0	1.00	1.00
3	0	0	0	0	196	0	1.00	1.00
East: PR-3 E								
4	48	0	0	0	0	0	1.00	1.00
5	0	0	352	0	0	0	1.00	1.00
6	0	0	0	0	240	0	1.00	1.00
North: PR-180 N								
7	320	0	0	0	0	0	1.00	1.00
8	0	0	76	0	0	0	1.00	1.00
9	0	0	0	0	112	0	1.00	1.00
West: PR-3 W								
10	312	0	0	0	0	0	1.00	1.00
11	0	0	900	0	0	0	1.00	1.00
12	0	0	0	0	1	0	1.00	1.00

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

---

03 Int PR-3 y PR-180
Pico AM Base
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	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-180 S															
1	L	E	A							4		10.0Min		6	
2	T	*E	A							4		10.0Min		6	
3	R (Und)	B	E	R		E	B			46	4	20.0Min	20.0Min	20	20
East: PR-3 E															
4	L	A	B							4		10.0Min		10	
5	T	B	C							4		33.5		43	
6	R (Un2)	B	C			C	B	R		4	11	34.1	30.0Min	43	32
North: PR-180 N															
7	L	C	E							4		20.7		15	
8	LT	*C	E							4		21.3		15	
9	R (Und)	C	E			E	C	R		4	14	87.1	79.4	15	57
West: PR-3 W															

10	L		*A	B				4		15.1		10	
11	LT		*B	C				4		55.6		43	
12	R	(Und)	B	C	C	B	R	4	7	42.5	30.0Min	43	36

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

* Critical Movement/Green Period

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 D deleted)
See phase matrix above

---

03 Int PR-3 y PR-180
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	HV (%)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-180 S											
1 L	1	0.0	1876		0.001		125	0.90	****	100	0.008
2 T	60	0.0	2073		0.029		138	0.90	107	100	0.434
3 R	196	0.0	747	1285	0.000	0.153	452	0.90	107	100	0.434
East: PR-3 E											
4 L	48	0.0	1283<		0.037		143	0.90	167	100	0.337
5 T	352	0.0	1193		0.295		570	0.90	46	100	0.618
6 R	240	0.0	708	142	0.339	0.000	389	0.90	46	100	0.617
North: PR-180 N											
7 L	88	0.0	530<		0.167		88	0.90	-10	100	1.000
8 LT	308E	0.0	1777		0.173		296	0.90	-13	100	1.039
9 R	112	0.0	0	170	0.831	0.654	108	0.90	-13	100	1.039
West: PR-3 W											
10 L	206	0.0	1857		0.111		206	0.90	-10	100	1.000
11 LT	1006E	0.0	1948		0.516		931	0.90	-17	100	1.081*
12 R	1	0.0	2	0	0.500	0.000	1	0.90	22	100	0.738

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

03 Int PR-3 y PR-180
Pico AM Base
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
10	W_L		A	B	4	0.111	0.123	15.1
11	W_LT		B	C	4	0.516	0.574	55.6
8	N_LT		C	E	4	0.173	0.192	21.3
2	S_T		E	A	10	-	-	10.0Min
				Total:	22	0.800	0.889	102.0

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

Cycle Time:

Minimum	Maximum	Practical	Chosen
40	150	150	90

(Cycle time specified by the user)

Intersection Level of Service	=	E
Worst movement Level of Service	=	F
Average intersection delay (s)	=	57.7
Largest average movement delay (s)	=	92.7
Largest cycle-average queue, mean (m)	=	166
Performance Index	=	124.65
Degree of saturation (highest)	=	1.081
Practical Spare Capacity (lowest)	=	-17 %
Effective intersection capacity, (veh/h)	=	2423
Total vehicle flow (veh/h)	=	2618
Total person flow (pers/h)	=	3927
Total vehicle delay (veh-h/h)	=	41.99
Total person delay (pers-h/h)	=	62.98
Total effective vehicle stops (veh/h)	=	2919
Total effective person stops (pers/h)	=	4378
Total vehicle travel (veh-km/h)	=	1587.5
Total cost ($/h)	=	1996.73
Total fuel (L/h)	=	239.3
Total CO2 (kg/h)	=	598.27

---

03 Int PR-3 y PR-180
Pico AM Base
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	Prop.
A	0	4	10	14	0.156
B	14	18	43	47	0.522
C	61	65	15	19	0.211
E	80	84	6	10	0.111

Phasing reduced by aaSIDRA (phase D deleted)
See phase matrix (Table S.1)
Current Phase Sequence No.: 1
Input phase sequence: A B C D E
Output phase sequence: A B C E

---

03 Int PR-3 y PR-180
Pico AM Base
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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-180 S									
1 L	0.01	0.02	51.6	0.95	0.59	0.0	0	0.04	24.8
2 T	0.32	0.48	19.1	0.82	0.66	1.4	10	1.46	39.0
3 R	1.47	2.20	27.0	0.82	0.81	1.4	10	5.39	34.5
East: PR-3 E									
4 L	0.66	0.98	49.1	0.95	0.74	0.5	4	1.88	25.5
5 T	1.39	2.09	14.2	0.77	0.71	2.3	16	7.73	43.1
6 R	1.49	2.24	22.4	0.77	0.86	2.3	16	6.01	37.1
North: PR-180 N									
7 L	1.12	1.68	45.7	0.95	0.76	0.9	6	3.30	26.6
8 LT	5.95	8.93	69.7	1.00	1.20	8.1	57	17.06	20.6
9 R	2.41	3.62	77.5	1.00	1.20	8.1	57	6.46	19.2
West: PR-3 W									
10 L	3.44	5.16	60.0	1.00	0.89	3.0	21	9.50	22.6
11 LT	23.70	35.55	84.8	1.00	1.47	23.7	166	65.74	18.0
12 R	0.03	0.04	92.7	1.00	1.47	0.0	0	0.07	17.0

---

03 Int PR-3 y PR-180
Pico AM Base
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: PR-180 S									
257	0.434	1.80	2.70	25.2	0.82	0.78	10	6.89	35.4
East: PR-3 E									
640	0.618	3.54	5.31	19.9	0.78	0.77	16	15.62	38.8
North: PR-180 N									
508	1.039	9.49	14.23	67.2	0.99	1.12	57	26.83	21.1
West: PR-3 W									
1213	1.081	27.16	40.74	80.6	1.00	1.37	166	75.31	18.7
ALL VEHICLES:									
2618	1.081	41.99	62.98	57.7	0.93	1.11	166	124.65	23.2
INTERSECTION (persons):									
3927	1.081		62.98	57.7	0.93	1.11		124.65	23.2

Queue values in this table are mean cycle-average queue (metres).

---

03 Int PR-3 y PR-180
Pico AM Base
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 Cycle (vehs)	Queue Aver. (m)	Shrt Lane (m)
South: PR-180 S													
1 L	1	84	6	0	0	1	125	0.008	51.6	0.59	0.0	0	28
2 TR	2, 3	47	18	6	19	256	590	0.434	25.1	0.78	1.4	10	
East: PR-3 E													
1 L	4	80	10	0	0	48	143	0.337	49.1	0.74	0.5	4	27
2 TR	5, 6	31	43	11	5	592	958	0.618	17.6	0.77	2.3	16	
North: PR-180 N													
1 L	7	75	15	0	0	88	88	1.000	45.7r	0.76	0.9	6<	15
2 LTR	8, 9	14	15	46	15	420	404	1.039	71.8	1.06	8.1	57	
West: PR-3 W													
1 L	10	80	10	0	0	206	206	1.000	60.0r	0.89	3.0	21<	44

2 LTR	11, 12	39	43	7	1	1007	932	1.080	84.8	1.36	23.7	166

< Short lane capacity is reached and there is excess flow into an adjacent lane

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.

---

03 Int PR-3 y PR-180
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane 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-180 S													
1 L	1	1	0	0	1	3.50	1970	1876	0	0	125	0.008	100
2 TR	2, 3	0	60	196	256	3.70	1990	1028	1819	40	590	0.434	100
East: PR-3 E													
1 L	4	48	0	0	48	3.10	1930	1283<	0	0	143	0.337	100
2 TR	5, 6	0	352	240	592	3.10	1930	1892	985	40	958	0.618	100
North: PR-180 N													
1 L	7	88	0	0	88	2.90	1910	530<	0	0	88	1.000	100
2 LTR	8, 9	232	76	112	420	2.90	1910	1064	1359	40	404	1.039	100
West: PR-3 W													
1 L	10	206	0	0	206	3.30	1950	1857	0	0	206	1.000	100
2 LTR	11, 12	106	900	1	1007	3.30	1950	1950	12	40*	932	1.080	100

< Reduced saturation flow due to a short lane effect

* Large end capacity has resulted in a saturation flow which is larger than the full unopposed saturation flow

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.

---

03 Int PR-3 y PR-180
Pico AM Base
Intersection ID: 3

Fixed-Time Signals, Cycle Time = 90

Table S.8B - SCATS MF PARAMETER

Lane No.	Mov No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
South: PR-180 S							
1 L	1	1	125	1876	1126	0.008	100
2 TR	2, 3	256	590	1917	NA	0.434	100
East: PR-3 E							
1 L	4	48	143	1838	1313	0.337	100
2 TR	5, 6	592	958	1892	NA	0.618	100
North: PR-180 N							
1 L	7	88	88	1819	1436	1.000	100
2 LTR	8, 9	404	404	1835	NA	1.039	100
West: PR-3 W							
1 L	10	206	206	1857	1327	1.000	100
2 LTR	11, 12	932	932	1940	NA	1.080	100

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

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

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

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

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

---

03 Int PR-3 y PR-180
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: PR-180 S						
1 L	0.1	0.71	0.000	0.02	0.000	0.2
2 T	4.2	28.30	0.018	0.78	0.024	10.5
3 R	14.8	104.15	0.066	2.85	0.084	36.9
	19.0	133.17	0.085	3.64	0.108	47.6
East: PR-3 E						
4 L	4.0	33.13	0.019	0.73	0.021	10.1
5 T	23.5	152.00	0.101	4.35	0.134	58.7
6 R	17.7	118.98	0.079	3.54	0.103	44.2
	45.2	304.11	0.199	8.63	0.259	113.0
North: PR-180 N						
7 L	7.3	58.76	0.034	1.35	0.039	18.3
8 LT	29.3	260.95	0.140	5.23	0.150	73.3
9 R	10.9	101.41	0.052	1.88	0.054	27.2
	47.5	421.12	0.226	8.46	0.243	118.8
West: PR-3 W						
10 L	18.3	158.96	0.086	3.25	0.095	45.8
11 LT	109.2	979.38	0.537	21.09	0.570	273.1
12 R	0.0	0.00	0.000	0.00	0.000	0.0
	127.6	1138.34	0.624	24.34	0.665	318.9
INTERSECTION:	239.3	1996.73	1.133	45.07	1.275	598.3

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

---

03 Int PR-3 y PR-180
Pico AM Base
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: PR-180 S												
1 L	1			1	0	1970	6		0.008	51.6	0	28
2 TR		60	196	256	0	1990	18	19	0.434	25.1	10	
	1	60	196	257	0				0.434	25.2	10	
East: PR-3 E												
1 L	48			48	0	1929	10		0.337	49.1	4	27
2 TR		352	240	592	0	1930	43	5	0.618	17.6	16	
	48	352	240	640	0				0.618	19.9	16	
North: PR-180 N												
1 L	88			88	0	1909	15		1.000	45.7r	6	15
2 LTR	232	76	112	420	0	1910	15	15	1.039	71.8	57	
	320	76	112	508	0				1.039	67.2	57	
West: PR-3 W												
1 L	206			206	0	1949	10		1.000	60.0r	21	44
2 LTR	106	900	1	1007	0	1950	43	1	1.080	84.8	166	
	312	900	1	1213	0				1.080	80.6	166	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2618	0	90	1.081	57.7	166

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

Queue values in this table are mean cycle-average queue (metres).

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

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.

---

03 Int PR-3 y PR-180
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Longest Queue Aver. (m)
South: PR-180 S										
1 L		0.067		1	125	0.008	51.6	D	0.0	0
2 T		0.067*		60	138	0.434	19.1	B	1.4	10
3 R	(Und)	0.222	0.222	196	452	0.434	27.0	C	1.4	10
				257		0.434	25.2	C	1.4	10
East: PR-3 E										
4 L		0.111		48	143<	0.337	49.1	D	0.5	4
5 T		0.478		352	570	0.618	14.2	B	2.3	16
6 R	(Un2)	0.478	0.356	240	389	0.617	22.4	C	2.3	16
				640		0.618	19.9	B	2.3	16
North: PR-180 N										
7 L		0.167		88	88<	1.000	45.7	D	0.9	6
8 LT		0.167*		308E	296	1.039	69.7	E	8.1	57
9 R	(Und)	0.167	0.633	112E	108	1.039	77.5	E	8.1	57
				508		1.039	67.2	E	8.1	57
West: PR-3 W										
10 L		0.111*		206	206	1.000	60.0	E	3.0	21
11 LT		0.478*		1006E	931	1.081*	84.8	F	23.7	166
12 R	(Und)	0.478	0.400	1E	1	0.738	92.7	F	0.0	0
				1213		1.081	80.6	F	23.7	166
ALL VEHICLES:				2618		1.081	57.7	E	23.7	166
INTERSECTION (persons):				3927			57.7		23.7	166

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\Salinas Rev06\03_PR-3 y PR-180_BA.OUT
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Documents\aaTraffic\aaSIDRA Projects\Salinas Rev06\03_PR-3 y PR-180_FA.OUT

 03 Int PR-3 y PR-180
 Pico AM Futuro
 Intersection ID:     3


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  70 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: Cycle average queue, Average

 * No. of Main (Timing-Capacity) Iterations =  3
   Comparison of last two iterations:
     Difference in intersection degree of satn =  0.0 %
     Largest difference in eff. green times =  1 secs
     (max. value for stopping = 1 secs)
   Information on Previous Iteration:
     Cycle Time =  70
     Phase Times: 0,  13,  54
     Critical Movements: 10, 11, 7

 * 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   12  is
   greater than the critical movement degrees of saturation
   because movement is specified as Undetected or Continuous type.

 * Movement    7 has large x because of short lanes.
```

The degree of saturation of adjacent movement 8 is less than xp,
hence this solution may be satisfactory.
See Table S.7 for queue length, delay etc.

* Opposed turn in movement 12 has high x.
Its capacity is mainly due to end departures. Consider increasing
the number of end departures, and/or specifying this as an undetected
movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

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-180 S								
1	1	0	0	0	0	0	1.00	1.00
2	0	0	66	0	0	0	1.00	1.00
3	0	0	0	0	214	0	1.00	1.00
East: PR-3 E								
4	52	0	0	0	0	0	1.00	1.00
5	0	0	482	0	0	0	1.00	1.00
6	0	0	0	0	407	0	1.00	1.00
North: PR-180 N								
7	409	0	0	0	0	0	1.00	1.00
8	0	0	83	0	0	0	1.00	1.00
9	0	0	0	0	122	0	1.00	1.00
West: PR-3 W								
10	341	0	0	0	0	0	1.00	1.00
11	0	0	1023	0	0	0	1.00	1.00
12	0	0	0	0	1	0	1.00	1.00

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

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	P H A S E M A T R I X First Green	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-180 S															
1 L		F	A	L						5		10.0Min		10	
2 T		F	A							4		10.0Min		11	
3 R	(Und)	B	F	R		F	B			38	4	10.0Min	19.0Min	4	24
East: PR-3 E															
4 L		A	B							4		9.0Min		9	
5 T		B	F							4		37.7		38	
6 R	(Un2)	B	F			F	B	R		4	11	40.7	19.0Min	38	17
North: PR-180 N															
7 L		*F	A	L						5		16.1		10	
8 LT		F	A							4		13.2		11	
9 R	(Und)	B	F	R		F	B			15	4	10.0Min	36.9	27	24
West: PR-3 W															
10 L		*A	B							4		14.0		9	
11 LT		*B	F							4		48.9		38	
12 R	(Und)	B	F			F	B	R		4	5	67.8	19.0Min	38	23

Current Phase Sequence No.: 2
Input phase sequence: A B F
Output phase sequence: A B F

* Critical Movement/Green Period

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

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	HV (%)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-180 S											
1 L	1	0.0	1356<		0.001		194	0.90	****	100	0.005
2 T	66	0.0	981		0.067		154	0.90	110	100	0.428
3 R	214	0.0	794	1325	0.000	0.162	500	0.90	110	100	0.428
East: PR-3 E											
4 L	52	0.0	1411<		0.037		181	0.90	214	100	0.287

5	T	482	0.0	1113		0.433		604	0.90	13	100	0.798
6	R	407	0.0	788	339	0.516	0.000	510	0.90	13	100	0.798
North: PR-180 N												
7	L	106	0.0	739<		0.143		106	0.90	-10	100	0.999
8	LT	386E	0.0	3258		0.119		512	0.90	19	100	0.755
9	R	122	0.0	163	288	0.000	0.424	162	0.90	19	100	0.755
West: PR-3 W												
10	L	239	0.0	1857		0.129		239	0.90	-10	100	1.000
11	LT	1125E	0.0	1948		0.578		1057	0.90	-15	100	1.064
12	R	1	0.0	0	0	1.000	0.000	1	0.90	-22	100	1.148*

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

Degree of saturation of non-critical movement 12 is greater than the critical movement degrees of saturation because movement is specified as Undetected or Continuous type.

Movement 7 has large x because of short lanes.
The degree of saturation of adjacent movement 8 is less than xp, hence this solution may be satisfactory.
See Table S.7 for queue length, delay etc.

Opposed turn in movement 12 has high x.
Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

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	0.129	0.143	14.0
11	W_LT		B	F	4	0.578	0.642	48.9
7	N_L		F	A	5	0.143	0.159	16.1
				Total:	13	0.849	0.943	79.0

Cycle Time:

Minimum	Maximum	Practical	Chosen
29	150	150	70

(Variable cycle times: Program-determined)

Intersection Level of Service = D
Worst movement Level of Service = E

Average intersection delay (s)	=	41.3
Largest average movement delay (s)	=	78.8
Largest cycle-average queue, mean (m)	=	155
Performance Index	=	123.21
Degree of saturation (highest)	=	1.148
Practical Spare Capacity (lowest)	=	-22 %
Effective intersection capacity, (veh/h)	=	2789
Total vehicle flow (veh/h)	=	3201
Total person flow (pers/h)	=	4802
Total vehicle delay (veh-h/h)	=	36.75
Total person delay (pers-h/h)	=	55.13
Total effective vehicle stops (veh/h)	=	3587
Total effective person stops (pers/h)	=	5381
Total vehicle travel (veh-km/h)	=	1940.6
Total cost ($/h)	=	2058.83
Total fuel (L/h)	=	271.8
Total CO2 (kg/h)	=	679.58

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	9	13	0.186
B	13	17	38	42	0.600
F	55	59	11	15	0.214

Current Phase Sequence No.: 2
Input phase sequence: A B F
Output phase sequence: A B F

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-180 S									
1 L	0.01	0.02	36.2	0.87	0.60	0.0	0	0.03	30.0
2 T	0.38	0.58	20.9	0.80	0.69	1.6	11	1.69	37.1
3 R	1.71	2.57	28.8	0.80	0.90	1.6	11	6.20	33.6

East: PR-3 E

4 L	0.56	0.85	39.1	0.93	0.74	0.4	3	1.75	28.9
5 T	1.75	2.62	13.1	0.84	0.84	3.2	23	10.63	44.1
6 R	2.40	3.60	21.3	0.84	0.95	3.2	23	10.13	37.8
North: PR-180 N									
7 L	1.16	1.74	39.5	0.96	0.77	0.9	6	3.59	28.7
8 LT	1.99	2.98	18.5	0.94	0.96	2.6	18	9.94	39.8
9 R	0.89	1.34	26.4	0.94	1.00	2.6	18	3.44	34.9
West: PR-3 W									
10 L	3.71	5.57	55.9	1.00	0.99	3.2	22	10.59	23.6
11 LT	22.16	33.24	70.9	1.00	1.51	22.2	155	65.17	20.3
12 R	0.02	0.03	78.8	1.00	1.51	0.0	0	0.06	19.0

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

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-180 S									
281	0.428	2.10	3.16	27.0	0.80	0.85	11	7.92	34.3
East: PR-3 E									
941	0.798	4.72	7.07	18.0	0.84	0.88	23	22.51	40.1
North: PR-180 N									
614	0.999	4.04	6.05	23.7	0.94	0.94	18	16.97	36.4
West: PR-3 W									
1365	1.148	25.89	38.84	68.3	1.00	1.42	155	75.82	20.8
ALL VEHICLES:									
3201	1.148	36.75	55.13	41.3	0.92	1.12	155	123.21	28.1
INTERSECTION (persons):									
4802	1.148		55.13	41.3	0.92	1.12		123.21	28.1

Queue values in this table are mean cycle-average queue (metres).

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

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 Cycle Aver. (vehs)	(m)	Shrt Lane (m)
South: PR-180 S													
1 L	1	60	10	0	0	1	194	0.005	36.2	0.60	0.0	0	28
2 TR	2, 3	39	4	4	23	280	654	0.428	26.9	0.85	1.6	11	
East: PR-3 E													
1 L	4	61	9	0	0	52	181	0.287	39.1	0.74	0.4	3	27
2 TR	5, 6	15	38	11	6	889	1115	0.798	16.8	0.89	3.2	23	
North: PR-180 N													
1 L	7	60	10	0	0	106	106	1.000	39.5r	0.77	0.9	6<	15
2 LTR	8, 9	20	20	11	19	508	674	0.755	20.4	0.91	2.6	18	
West: PR-3 W													
1 L	10	61	9	0	0	239	239	1.000	55.9r	0.99	3.2	22<	44
2 LTR	11, 12	26	38	5	1	1126	1059	1.064	70.9	1.42	22.2	155	

< Short lane capacity is reached and there is excess flow into an adjacent lane

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.

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane 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-180 S													
1 L	1	1	0	0	1	3.50	1970	1356<	0	113	194	0.005	100
2 TR	2, 3	0	66	214	280	3.70	1990	926	1829	51	654	0.428	100
East: PR-3 E													
1 L	4	52	0	0	52	3.10	1930	1411<	0	0	181	0.287	100
2 TR	5, 6	0	482	407	889	3.10	1930	1887	1054	51	1115	0.798	100

North: PR-180 N													
1 L	7	106	0	0	106	2.90	1910	739<	0	113	106	1.000	100
2 LTR	8, 9	303	83	122	508	2.90	1910	615	1835	51*	674	0.755	100
West: PR-3 W													
1 L	10	239	0	0	239	3.30	1950	1857	0	0	239	1.000	100
2 LTR	11, 12	102	1023	1	1126	3.30	1950	1950	11	51*	1059	1.064	100

< Reduced saturation flow due to a short lane effect
* Large end capacity has resulted in a saturation flow which is larger than the full unopposed saturation flow

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.

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

Table S.8B - SCATS MF PARAMETER

Lane No.	Mov No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
South: PR-180 S							
1 L	1	1	194	1876	1251	0.005	100
2 TR	2, 3	280	654	1917	NA	0.428	100
East: PR-3 E							
1 L	4	52	181	1838	1272	0.287	100
2 TR	5, 6	889	1115	1887	NA	0.798	100
North: PR-180 N							
1 L	7	106	106	1819	1213	1.000	100
2 LTR	8, 9	508	674	1833	NA	0.755	100
West: PR-3 W							
1 L	10	239	239	1857	1286	1.000	100
2 LTR	11, 12	1059	1059	1941	NA	1.064	100

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

STOPLINE FLOW: Departure flow rate in veh/h as measured at the stop line.

This cannot exceed capacity.

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

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

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

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: PR-180 S						
1 L	0.1	0.60	0.000	0.02	0.000	0.2
2 T	4.7	32.57	0.021	0.86	0.026	11.7
3 R	16.3	116.52	0.073	3.14	0.092	40.7
	21.0	149.68	0.094	4.01	0.119	52.6
East: PR-3 E						
4 L	4.2	32.09	0.019	0.78	0.023	10.4
5 T	33.0	205.89	0.143	6.49	0.194	82.5
6 R	30.2	199.13	0.135	6.18	0.178	75.5
	67.4	437.11	0.298	13.45	0.394	168.4
North: PR-180 N						
7 L	8.5	65.44	0.039	1.60	0.047	21.2
8 LT	28.2	181.82	0.125	5.72	0.166	70.5
9 R	9.3	64.57	0.042	1.85	0.054	23.3
	46.0	311.83	0.206	9.17	0.266	115.1
West: PR-3 W						
10 L	21.0	177.42	0.099	3.83	0.111	52.5
11 LT	116.4	982.79	0.567	23.42	0.629	290.9
12 R	0.0	0.00	0.000	0.00	0.000	0.0
	137.4	1160.21	0.665	27.25	0.740	343.5
INTERSECTION:	271.8	2058.83	1.263	53.88	1.520	679.6

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

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-180 S												
1 L	1			1	0	1970	10		0.005	36.2	0	28
2 TR		66	214	280	0	1990	4	23	0.428	26.9	11	
	1	66	214	281	0				0.428	27.0	11	
East: PR-3 E												
1 L	52			52	0	1929	9		0.287	39.1	3	27
2 TR		482	407	889	0	1930	38	6	0.798	16.8	23	
	52	482	407	941	0				0.798	18.0	23	
North: PR-180 N												
1 L	106			106	0	1909	10		1.000	39.5r	6	15
2 LTR	303	83	122	508	0	1910	20	19	0.755	20.4	18	
	409	83	122	614	0				1.000	23.7	18	
West: PR-3 W												
1 L	239			239	0	1949	9		1.000	55.9r	22	44
2 LTR	102	1023	1	1126	0	1950	38	1	1.064	70.9	155	
	341	1023	1	1365	0				1.064	68.3	155	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue

	3201	0	70	1.148	41.3	155

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

Queue values in this table are mean cycle-average queue (metres).

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

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.

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 70

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Longest Queue Aver. (m)
South: PR-180 S										
1 L		0.143		1	194<	0.005	36.2	D	0.0	0
2 T		0.157		66	154	0.428	20.9	C	1.6	11
3 R	(Und)	0.057	0.343	214	500	0.428	28.8	C	1.6	11
				281		0.428	27.0	C	1.6	11
East: PR-3 E										
4 L		0.129		52	181<	0.287	39.1	D	0.4	3
5 T		0.543		482	604	0.798	13.1	B	3.2	23
6 R	(Un2)	0.543	0.243	407	510	0.798	21.3	C	3.2	23
				941		0.798	18.0	B	3.2	23
North: PR-180 N										
7 L		0.143*		106	106<	0.999	39.5	D	0.9	6
8 LT		0.157		386E	512	0.755	18.5	B	2.6	18
9 R	(Und)	0.386	0.343	122E	162	0.755	26.4	C	2.6	18
				614		0.999	23.7	C	2.6	18
West: PR-3 W										
10 L		0.129*		239	239	1.000	55.9	E	3.2	22
11 LT		0.543*		1125E	1057	1.064	70.9	E	22.2	155
12 R	(Und)	0.543	0.329	1E	1	1.148*	78.8	E	0.0	0
				1365		1.148	68.3	E	22.2	155

ALL VEHICLES:	3201	1.148	41.3	D	22.2	155
INTERSECTION (persons):	4802		41.3		22.2	155

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

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	1.023	100
Average Delay	41.3	70
Stop Rate	1.02	140
Max. Queue for Any Movement	14.5	80
Perf. Index	123.2	70
Cost	2058.8	70

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	3130	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.

---

03 Int PR-3 y PR-180
Pico AM Futuro
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle	Eff.	Intersn	Prac.	Aver.	Stop	Longest	Perf.	Cost	Unsett

Time (sec)	Int. Cap.	Deg. of Satn	Spare Cap.	Delay (sec)	Rate	Queue (veh)	Index	Total $/h
60	2721	1.176	-24	45.1	1.19	26.1	131.3	2153.5
70	2789	1.148	-22	41.3	1.12	22.2	123.2	2058.8
80	2801	1.143	-21	43.5	1.14	14.5	127.6	2110.8
90	3052	1.049	-14	44.0	1.08	22.1	127.2	2117.6
100	3130	1.023	-12	43.0	1.05	19.8	125.1	2091.4
110	3095	1.034	-13	47.9	1.06	22.2	134.1	2199.7
120	3114	1.028	-12	51.8	1.06	22.1	140.9	2288.7
130	3089	1.036	-13	56.6	1.07	23.8	149.7	2402.0
140	2949	1.085	-17	54.3	1.02	22.4	144.8	2343.0
150	3030	1.056	-15	60.4	1.04	26.4	156.0	2487.3

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\Salinas Rev06\03_PR-3 y PR-180_FA.OUT
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 03 Int PR-3 y PR-180
 Pico AM Futuro + 5 yrs
 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: Cycle average queue, Average

 * No. of Main (Timing-Capacity) Iterations =  4
   Comparison of last two iterations:
     Difference in intersection degree of satn =  0.0 %
     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,  81
     Critical Movements: 10, 11, 7

 * 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   12  is
   greater than the critical movement degrees of saturation
   because movement is specified as Undetected or Continuous type.

 * Opposed turn in movement   12 has high x.
```

Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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: PR-180 S								
1	1	0	0	0	0	0	1.00	1.00
2	0	0	71	0	0	0	1.00	1.00
3	0	0	0	0	231	0	1.00	1.00
East: PR-3 E								
4	57	0	0	0	0	0	1.00	1.00
5	0	0	512	0	0	0	1.00	1.00
6	0	0	0	0	428	0	1.00	1.00
North: PR-180 N								
7	436	0	0	0	0	0	1.00	1.00
8	0	0	90	0	0	0	1.00	1.00
9	0	0	0	0	132	0	1.00	1.00
West: PR-3 W								
10	368	0	0	0	0	0	1.00	1.00
11	0	0	1099	0	0	0	1.00	1.00
12	0	0	0	0	1	0	1.00	1.00

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

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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	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-180 S									
1	L	F A L		7		10.0Min		12	

```
   2 T         F  A                          4        12.6                15
   3 R  (Und) B  F  R       F  B            57    4   10.0Min  23.5       8   31
-----------------------------------------------------------------------------------
East: PR-3 E
   4 L         A  B                          4         9.8                12
   5 T         B  F                          4        56.5                61
   6 R  (Un2) B  F          F  B  R         4   15   61.3     19.0Min   61   20
-----------------------------------------------------------------------------------
North: PR-180 N
   7 L        *F  A  L                       6        20.4                13
   8 LT        F  A                          4        20.4                15
   9 R  (Und) B  F  R       F  B            21    4   10.0Min  61.7      44   31
-----------------------------------------------------------------------------------
West: PR-3 W
  10 L        *A  B                          4        17.3                12
  11 LT       *B  F                          4        74.9                61
  12 R  (Und) B  F          F  B  R         4    6  102.1     19.0Min   61   29
-----------------------------------------------------------------------------------
  Current Phase Sequence No.: 2
  Input phase sequence: A  B  F
  Output phase sequence: A  B  F
-----------------------------------------------------------------------------------
  *  Critical Movement/Green Period

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
```

```
03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
Intersection ID:     3
            Fixed-Time Signals, Cycle Time = 100
```

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	HV (%)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-180 S											
1 L	1	0.0	1148<		0.001		138	0.90	****	100	0.007
2 T	71	0.0	915		0.078		137	0.90	74	100	0.517
3 R	231	0.0	493	1313	0.000	0.176	446	0.90	74	100	0.517
East: PR-3 E											
4 L	57	0.0	1096<		0.052		132	0.90	108	100	0.433
5 T	512	0.0	1084		0.472		661	0.90	16	100	0.774
6 R	428	0.0	809	295	0.529	0.000	552	0.90	16	100	0.775
North: PR-180 N											
7 L	75	0.0	578<		0.130		75	0.90	-10	100	1.000

8	LT	451E	0.0	3051		0.148		458	0.90	-9	100	0.985
9	R	132	0.0	125	254	0.000	0.520	134	0.90	-9	100	0.987
West: PR-3 W												
10	L	223	0.0	1857		0.120		223	0.90	-10	100	1.000
11	LT	1244E	0.0	1949		0.638		1189	0.90	-14	100	1.046
12	R	1	0.0	0	0	1.000	0.000	1	0.90	-19	100	1.111*

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

Degree of saturation of non-critical movement 12 is greater than the critical movement degrees of saturation because movement is specified as Undetected or Continuous type.

Opposed turn in movement 12 has high x.
Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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
10	W_L		A	B	4	0.120	0.133	17.3
11	W_LT		B	F	4	0.638	0.709	74.9
7	N_L		F	A	6	0.130	0.144	20.4
				Total:	14	0.888	0.987	112.7

Cycle Time:

Minimum	Maximum	Practical	Chosen
29	150	150	100

(Variable cycle times: Program-determined)

Intersection Level of Service	=	D
Worst movement Level of Service	=	E
Average intersection delay (s)	=	50.9
Largest average movement delay (s)	=	77.0
Largest cycle-average queue, mean (m)	=	167
Performance Index	=	150.07
Degree of saturation (highest)	=	1.111
Practical Spare Capacity (lowest)	=	-19 %
Effective intersection capacity, (veh/h)	=	3083
Total vehicle flow (veh/h)	=	3426
Total person flow (pers/h)	=	5139
Total vehicle delay (veh-h/h)	=	48.42

Total person delay (pers-h/h)	=	72.63
Total effective vehicle stops (veh/h)	=	3814
Total effective person stops (pers/h)	=	5720
Total vehicle travel (veh-km/h)	=	2077.2
Total cost ($/h)	=	2442.24
Total fuel (L/h)	=	305.0
Total CO2 (kg/h)	=	762.45

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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	Prop.
A	0	4	12	16	0.160
B	16	20	61	65	0.650
F	81	85	15	19	0.190

Current Phase Sequence No.: 2
Input phase sequence: A B F
Output phase sequence: A B F

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-180 S									
1 L	0.01	0.02	50.1	0.90	0.60	0.0	0	0.04	25.2
2 T	0.69	1.03	34.8	0.87	0.88	2.9	20	2.43	30.5
3 R	2.74	4.10	42.6	0.87	0.96	2.9	20	8.54	27.7
East: PR-3 E									
4 L	0.83	1.25	52.7	0.95	0.75	0.7	5	2.35	24.5
5 T	1.80	2.69	12.6	0.77	0.75	3.3	23	10.91	44.5
6 R	2.47	3.71	20.8	0.77	0.91	3.3	23	10.44	38.1
North: PR-180 N									
7 L	1.10	1.65	52.8	0.96	0.76	0.9	7	3.11	24.4
8 LT	8.49	12.74	67.8	1.00	1.28	11.0	77	24.75	20.9
9 R	2.78	4.16	75.7	1.00	1.28	11.0	77	7.54	19.6
West: PR-3 W									

10 L	3.58	5.38	57.9	1.00	0.82	3.1	22	9.92	23.1
11 LT	23.90	35.85	69.2	1.00	1.39	23.9	167	69.97	20.7
12 R	0.02	0.03	77.0	1.00	1.39	0.0	0	0.06	19.3

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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: PR-180 S									
303	0.517	3.43	5.15	40.8	0.87	0.94	20	11.01	28.3
East: PR-3 E									
997	0.775	5.10	7.65	18.4	0.78	0.82	23	23.70	39.8
North: PR-180 N									
658	1.000	12.37	18.56	67.7	0.99	1.22	77	35.40	21.0
West: PR-3 W									
1468	1.111	27.51	41.26	67.5	1.00	1.30	167	79.95	21.0
ALL VEHICLES:									
3426	1.111	48.42	72.63	50.9	0.92	1.11	167	150.07	25.0
INTERSECTION (persons):									
5139	1.111		72.63	50.9	0.92	1.11		150.07	25.0

Queue values in this table are mean cycle-average queue (metres).

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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 Cycle (vehs)	Queue Aver. (m)	Shrt Lane (m)
South: PR-180 S													
1 L	1	88	12	0	0	1	138	0.007	50.1	0.60	0.0	0	28
2 TR	2, 3	59	8	4	29	302	584	0.517	40.8	0.94	2.9	20	

East: PR-3 E													
1 L	4	88	12	0	0	57	131	0.433	52.7	0.75	0.7	5	27
2 TR	5, 6	18	61	15	6	940	1214	0.775	16.3	0.82	3.3	23	
North: PR-180 N													
1 L	7	87	13	0	0	75	75	1.000	52.8r	0.76	0.9	7<	15
2 LTR	8, 9	28	27	21	24	583	592	0.985	69.6	1.15	11.0	77	
West: PR-3 W													
1 L	10	88	12	0	0	223	223	1.000	57.9r	0.82	3.1	22<	44
2 LTR	11, 12	32	61	6	1	1245	1190	1.047	69.2	1.29	23.9	167	

< Short lane capacity is reached and there is excess flow into an adjacent lane

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.

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane 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-180 S													
1 L	1	1	0	0	1	3.50	1970	1148<	0	79	138	0.007	100
2 TR	2, 3	0	71	231	302	3.70	1990	570	1856	36	584	0.517	100
East: PR-3 E													
1 L	4	57	0	0	57	3.10	1930	1096<	0	0	131	0.433	100
2 TR	5, 6	0	512	428	940	3.10	1930	1887	1042	36	1214	0.775	100
North: PR-180 N													
1 L	7	75	0	0	75	2.90	1910	578<	0	79	75	1.000	100
2 LTR	8, 9	361	90	132	583	2.90	1910	575	1819	36	592	0.985	100
West: PR-3 W													
1 L	10	223	0	0	223	3.30	1950	1857	0	0	223	1.000	100
2 LTR	11, 12	145	1099	1	1245	3.30	1950	1950	10	36*	1190	1.047	100

< Reduced saturation flow due to a short lane effect
* Large end capacity has resulted in a saturation flow which is larger than the full unopposed saturation flow

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.

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.8B - SCATS MF PARAMETER

Lane No.	Mov No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
South: PR-180 S							
1 L	1	1	138	1876	1185	0.007	100
2 TR	2, 3	302	584	1917	NA	0.517	100
East: PR-3 E							
1 L	4	57	131	1838	1379	0.433	100
2 TR	5, 6	940	1214	1887	NA	0.775	100
North: PR-180 N							
1 L	7	75	75	1819	1244	1.000	100
2 LTR	8, 9	583	592	1832	NA	0.985	100
West: PR-3 W							
1 L	10	223	223	1857	1393	1.000	100
2 LTR	11, 12	1190	1190	1939	NA	1.047	100

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

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

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

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

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

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: PR-180 S						
1 L	0.1	0.70	0.000	0.02	0.000	0.2
2 T	5.5	41.76	0.025	0.99	0.030	13.7
3 R	18.9	149.15	0.086	3.47	0.102	47.2
	24.4	191.61	0.112	4.48	0.133	61.1
East: PR-3 E						
4 L	4.9	40.80	0.023	0.87	0.026	12.2
5 T	33.9	215.25	0.145	6.34	0.195	84.7
6 R	31.3	207.30	0.140	6.33	0.184	78.4
	70.1	463.35	0.308	13.54	0.404	175.2
North: PR-180 N						
7 L	6.4	53.86	0.030	1.15	0.034	16.1
8 LT	43.2	377.81	0.207	7.96	0.224	108.1
9 R	12.9	118.15	0.062	2.30	0.066	32.3
	62.6	549.81	0.299	11.41	0.324	156.5
West: PR-3 W						
10 L	19.5	167.99	0.092	3.45	0.101	48.8
11 LT	128.4	1069.47	0.624	25.95	0.700	320.9
12 R	0.0	0.00	0.000	0.00	0.000	0.0
	147.9	1237.46	0.716	29.40	0.802	369.7
INTERSECTION:	305.0	2442.24	1.434	58.84	1.662	762.5

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5

Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
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: PR-180 S												
1 L	1			1	0	1970	12		0.007	50.1	0	28
2 TR		71	231	302	0	1990	8	29	0.517	40.8	20	
	1	71	231	303	0				0.517	40.8	20	
East: PR-3 E												
1 L	57			57	0	1929	12		0.433	52.7	5	27
2 TR		512	428	940	0	1930	61	6	0.775	16.3	23	
	57	512	428	997	0				0.775	18.4	23	
North: PR-180 N												
1 L	75			75	0	1909	13		1.000	52.8r	7	15
2 LTR	361	90	132	583	0	1910	27	24	0.985	69.6	77	
	436	90	132	658	0				1.000	67.7	77	
West: PR-3 W												
1 L	223			223	0	1949	12		1.000	57.9r	22	44
2 LTR	145	1099	1	1245	0	1950	61	1	1.047	69.2	167	
	368	1099	1	1468	0				1.047	67.5	167	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	3426	0	100	1.111	50.9	167

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

Queue values in this table are mean cycle-average queue (metres).

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

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.

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-180 S										
1 L		0.120		1	138<	0.007	50.1	D	0.0	0
2 T		0.150		71	137	0.517	34.8	C	2.9	20
3 R	(Und)	0.080	0.310	231	446	0.517	42.6	D	2.9	20
				303		0.517	40.8	D	2.9	20
East: PR-3 E										
4 L		0.120		57	132<	0.433	52.7	D	0.7	5
5 T		0.610		512	661	0.774	12.6	B	3.3	23
6 R	(Un2)	0.610	0.200	428	552	0.775	20.8	C	3.3	23
				997		0.775	18.4	B	3.3	23
North: PR-180 N										
7 L		0.130*		75	75<	1.000	52.8	D	0.9	7
8 LT		0.150		451E	458	0.985	67.8	E	11.0	77
9 R	(Und)	0.440	0.310	132E	134	0.987	75.7	E	11.0	77
				658		1.000	67.7	E	11.0	77
West: PR-3 W										
10 L		0.120*		223	223	1.000	57.9	E	3.1	22
11 LT		0.610*		1244E	1189	1.046	69.2	E	23.9	167
12 R	(Und)	0.610	0.290	1E	1	1.111*	77.0	E	0.0	0
				1468		1.111	67.5	E	23.9	167
ALL VEHICLES:				3426		1.111	50.9	D	23.9	167
INTERSECTION (persons):				5139			50.9		23.9	167

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

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	1.086	140
Average Delay	50.9	100
Stop Rate	1.10	140
Max. Queue for Any Movement	19.9	90
Perf. Index	150.1	100
Cost	2442.2	100

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	3154	140
Prac. Spare Cap.	-17	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.

---

03 Int PR-3 y PR-180
Pico AM Futuro + 5 yrs
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	2912	1.176	-24	54.0	1.34	25.4	160.3	2540.1	
70	2937	1.167	-23	51.0	1.26	20.2	153.0	2457.6	
80	2998	1.143	-21	63.1	1.30	26.6	176.9	2767.7	
90	3045	1.125	-20	55.9	1.21	19.9	161.5	2577.2	
100	3083	1.111	-19	50.9	1.11	23.9	150.1	2442.2	
110	3083	1.111	-19	56.0	1.10	27.2	159.8	2559.0	
120	3112	1.101	-18	59.4	1.10	30.3	166.3	2643.2	

130	3136	1.092	-18	65.2	1.11	32.9	177.4	2787.1
140	3154	1.086	-17	68.2	1.10	33.7	183.0	2861.5
150	3098	1.106	-19	73.4	1.10	35.8	192.9	2990.3

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\Salinas Rev06\03_PR-3 y PR-180_FA+5.OUT
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03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3

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: Cycle average queue, Average

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

* 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.

* Opposed turn in movement 9 has high x.
  Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3

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-180 S								
1	1	0	0	0	0	0	1.00	1.00
2	0	0	105	0	0	0	1.00	1.00
3	0	0	0	0	66	0	1.00	1.00
East: PR-3 E								
4	136	0	0	0	0	0	1.00	1.00
5	0	0	544	0	0	0	1.00	1.00
6	0	0	0	0	396	0	1.00	1.00
North: PR-180 N								
7	514	0	0	0	0	0	1.00	1.00
8	0	0	109	0	0	0	1.00	1.00
9	0	0	0	0	61	0	1.00	1.00
West: PR-3 W								
10	332	0	0	0	0	0	1.00	1.00
11	0	0	586	0	0	0	1.00	1.00
12	0	0	0	0	1	0	1.00	1.00

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

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-180 S															
1 L		F	A	L						6		10.0Min		11	
2 T		F	A							4		10.0Min		13	
3 R	(Und)	B	F	R		F	B			19	4	10.0Min	19.0Min	11	26
East: PR-3 E															
4 L		A	B							4		10.5		9	
5 T		B	F							4		33.9		26	
6 R	(Un2)*	B	F			F	B	R		4	10	34.1	32.4	26	20

```
North: PR-180 N
   7 L       *F  A  L                        4        18.4                13
   8 LT       F  A                           4        17.2                13
   9 R  (Und) B  F  R       F  B            18    4   21.5     42.7       12   26
-------------------------------------------------------------------------------
West: PR-3 W
  10 L       *A  B                           4        14.0                 9
  11 LT       B  F                           4        25.9                26
  12 R  (Und) B  F          F  B  R         4    8   31.8     19.0Min    26   22
-------------------------------------------------------------------------------
  Current Phase Sequence No.: 2
  Input phase sequence: A  B  F
  Output phase sequence: A  B  F
-------------------------------------------------------------------------------
  *  Critical Movement/Green Period

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
```

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	HV (%)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-180 S											
1 L	1	0.0	1255<		0.001		230	0.90	****	100	0.004
2 T	105	0.0	1735		0.061		376	0.90	222	100	0.279
3 R	66	0.0	278	427	0.000	0.155	236	0.90	222	100	0.280
East: PR-3 E											
4 L	136	0.0	1405<		0.097		211	0.90	39	100	0.645
5 T	544	0.0	1211		0.449		525	0.90	-13	100	1.037*
6 R	396	0.0	703	233	0.452	0.337	382	0.90	-13	100	1.036
North: PR-180 N											
7 L	132	0.0	608<		0.217		132	0.90	-10	100	1.000
8 LT	491E	0.0	2478		0.198		537	0.90	-2	100	0.915
9 R	61	0.0	131	93	0.053	0.581	67	0.90	-2	100	0.917
West: PR-3 W											
10 L	279	0.0	1857		0.150		279	0.90	-10	100	1.000
11 LT	639E	0.0	1947		0.328		844	0.90	19	100	0.758
12 R	1	0.0	2	0	0.500	0.000	1	0.90	11	100	0.811

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

Opposed turn in movement 9 has high x.
Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
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
10	W_L		A	B	4	0.150	0.167	14.0
6	E_R	1st	B	F	4	0.452	0.502	34.1
7	N_L		F	A	4	0.217	0.241	18.4
				Total:	12	0.818	0.909	66.6

Cycle Time:

Minimum	Maximum	Practical	Chosen
29	150	132	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	D
Worst movement Level of Service	=	E
Average intersection delay (s)	=	41.5
Largest average movement delay (s)	=	64.9
Largest cycle-average queue, mean (m)	=	104
Performance Index	=	109.43
Degree of saturation (highest)	=	1.037
Practical Spare Capacity (lowest)	=	-13 %
Effective intersection capacity, (veh/h)	=	2750
Total vehicle flow (veh/h)	=	2851
Total person flow (pers/h)	=	4277
Total vehicle delay (veh-h/h)	=	32.83
Total person delay (pers-h/h)	=	49.24
Total effective vehicle stops (veh/h)	=	3134
Total effective person stops (pers/h)	=	4701
Total vehicle travel (veh-km/h)	=	1727.5
Total cost ($/h)	=	1829.90
Total fuel (L/h)	=	239.0
Total CO2 (kg/h)	=	597.60

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03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3

Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	9	13	0.217
B	13	17	26	30	0.500
F	43	47	13	17	0.283

Current Phase Sequence No.: 2
Input phase sequence: A B F
Output phase sequence: A B F

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-180 S									
1 L	0.01	0.01	29.9	0.83	0.61	0.0	0	0.03	32.9
2 T	0.40	0.60	13.8	0.78	0.66	0.7	5	2.25	42.9
3 R	0.40	0.59	21.6	0.78	0.83	0.7	5	1.62	37.7
East: PR-3 E									
4 L	1.35	2.03	35.8	0.96	0.83	1.0	7	4.40	30.2
5 T	8.57	12.85	56.7	1.00	1.38	14.8	104	26.80	23.5
6 R	7.14	10.70	64.9	1.00	1.38	14.8	104	20.39	21.5
North: PR-180 N									
7 L	1.16	1.74	31.7	0.93	0.78	0.9	6	3.92	32.0
8 LT	5.22	7.83	38.2	1.00	1.22	5.9	41	18.75	29.3
9 R	0.78	1.17	46.1	1.00	1.22	5.9	41	2.46	26.5
West: PR-3 W									
10 L	3.74	5.61	48.3	1.00	0.98	3.1	22	11.17	25.7
11 LT	4.06	6.09	22.9	0.91	0.86	4.1	28	17.62	36.8
12 R	0.01	0.01	30.7	0.91	0.92	4.1	28	0.03	32.6

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
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-180 S									
172	0.280	0.81	1.21	16.9	0.79	0.72	5	3.90	40.7
East: PR-3 E									
1076	1.037	17.05	25.58	57.1	1.00	1.31	104	51.58	23.3
North: PR-180 N									
684	1.000	7.16	10.74	37.7	0.99	1.14	41	25.13	29.5
West: PR-3 W									
919	1.000	7.81	11.71	30.6	0.93	0.89	28	28.83	32.6
ALL VEHICLES:									
2851	1.037	32.83	49.24	41.5	0.96	1.10	104	109.43	28.0
INTERSECTION (persons):									
4277	1.037		49.24	41.5	0.96	1.10		109.43	28.0

Queue values in this table are mean cycle-average queue (metres).

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
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 Cycle (vehs)	Queue Aver. (m)	Shrt Lane (m)
South: PR-180 S													
1 L	1	49	11	0	0	1	230	0.004	29.9	0.61	0.0	0	28
2 TR	2, 3	28	8	7	17	171	612	0.279	16.8	0.72	0.7	5	
East: PR-3 E													
1 L	4	51	9	0	0	136	211	0.645	35.8	0.83	1.0	7	27
2 TR	5, 6	18	26	10	6	940	907	1.036	60.1	1.38	14.8	104	
North: PR-180 N													
1 L	7	47	13	0	0	132	132	1.000	31.7r	0.78	0.9	6<	15
2 LTR	8, 9	27	9	7	17	552	604	0.915	39.1	1.03	5.9	41	
West: PR-3 W													
1 L	10	51	9	0	0	279	279	1.000	48.3r	0.98	3.1	22<	44

2 LTR	11, 12	25	26	8	1	640	845	0.758	22.9	0.90	4.1	28

< Short lane capacity is reached and there is excess flow into an adjacent lane

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane 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-180 S													
1 L	1	1	0	0	1	3.50	1970	1255<	0	132	230	0.004	100
2 TR	2, 3	0	105	66	171	3.70	1990	571	1892	60	612	0.279	100
East: PR-3 E													
1 L	4	136	0	0	136	3.10	1930	1405<	0	0	211	0.645	100
2 TR	5, 6	0	544	396	940	3.10	1930	1890	879	60	907	1.036	100
North: PR-180 N													
1 L	7	132	0	0	132	2.90	1910	608<	0	132	132	1.000	100
2 LTR	8, 9	382	109	61	552	2.90	1910	634	1794	60	604	0.915	100
West: PR-3 W													
1 L	10	279	0	0	279	3.30	1950	1857	0	0	279	1.000	100
2 LTR	11, 12	53	586	1	640	3.30	1950	1950	18	60*	845	0.758	100

< Reduced saturation flow due to a short lane effect

* Large end capacity has resulted in a saturation flow which is larger than the full unopposed saturation flow

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3

Fixed-Time Signals, Cycle Time = 60

Table S.8B - SCATS MF PARAMETER

Lane No.	Mov No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
South: PR-180 S							
1 L	1	1	230	1876	1214	0.004	100
2 TR	2, 3	171	612	1953	NA	0.279	100
East: PR-3 E							
1 L	4	136	211	1838	1272	0.645	100
2 TR	5, 6	907	907	1890	NA	1.036	100
North: PR-180 N							
1 L	7	132	132	1819	1391	1.000	100
2 LTR	8, 9	552	604	1836	NA	0.915	100
West: PR-3 W							
1 L	10	279	279	1857	1286	1.000	100
2 LTR	11, 12	640	845	1942	NA	0.758	100

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

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

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

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

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

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3

Fixed-Time Signals, Cycle Time = 60

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: PR-180 S						
1 L	0.1	0.55	0.000	0.01	0.000	0.2
2 T	7.1	45.64	0.030	1.32	0.040	17.6
3 R	4.8	32.46	0.021	0.95	0.028	12.1
	12.0	78.66	0.052	2.29	0.069	29.9
East: PR-3 E						
4 L	10.8	80.81	0.049	2.07	0.060	27.0
5 T	50.9	414.14	0.243	10.04	0.277	127.4
6 R	38.0	324.21	0.182	7.30	0.202	95.0
	99.7	819.16	0.474	19.42	0.540	249.3
North: PR-180 N						
7 L	10.2	74.18	0.046	1.98	0.058	25.5
8 LT	41.1	304.74	0.190	8.17	0.231	102.6
9 R	5.2	41.32	0.024	1.00	0.029	13.1
	56.5	420.24	0.260	11.14	0.317	141.2
West: PR-3 W						
10 L	23.7	191.50	0.110	4.43	0.128	59.2
11 LT	47.1	319.77	0.210	9.18	0.270	117.7
12 R	0.1	0.56	0.000	0.02	0.000	0.2
	70.9	511.83	0.320	13.62	0.398	177.2
INTERSECTION:	239.0	1829.90	1.107	46.47	1.324	597.6

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

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-180 S												
1 L	1			1	0	1970	11		0.004	29.9	0	28
2 TR		105	66	171	0	1990	8	17	0.279	16.8	5	
	1	105	66	172	0				0.279	16.9	5	
East: PR-3 E												
1 L	136			136	0	1929	9		0.645	35.8	7	27
2 TR		544	396	940	0	1930	26	6	1.036	60.1	104	
	136	544	396	1076	0				1.036	57.1	104	
North: PR-180 N												
1 L	132			132	0	1909	13		1.000	31.7r	6	15
2 LTR	382	109	61	552	0	1910	9	17	0.915	39.1	41	
	514	109	61	684	0				1.000	37.7	41	
West: PR-3 W												
1 L	279			279	0	1949	9		1.000	48.3r	22	44
2 LTR	53	586	1	640	0	1950	26	1	0.758	22.9	28	
	332	586	1	919	0				1.000	30.6	28	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2851	0	60	1.037	41.5	104

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

Queue values in this table are mean cycle-average queue (metres).

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

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-180 S										
1	L	0.183		1	230<	0.004	29.9	C	0.0	0
2	T	0.217		105	376	0.279	13.8	B	0.7	5
3	R (Und)	0.183	0.433	66	236	0.280	21.6	C	0.7	5
				172		0.280	16.9	B	0.7	5
East: PR-3 E										
4	L	0.150		136	211<	0.645	35.8	D	1.0	7
5	T	0.433		544	525	1.037*	56.7	E	14.8	104
6	R (Un2)	0.433*	0.333	396	382	1.036	64.9	E	14.8	104
				1076		1.037	57.1	E	14.8	104
North: PR-180 N										
7	L	0.217*		132	132<	1.000	31.7	C	0.9	6
8	LT	0.217		491E	537	0.915	38.2	D	5.9	41
9	R (Und)	0.200	0.433	61E	67	0.917	46.1	D	5.9	41
				684		1.000	37.7	D	5.9	41
West: PR-3 W										
10	L	0.150*		279	279	1.000	48.3	D	3.1	22
11	LT	0.433		639E	844	0.758	22.9	C	4.1	28
12	R (Und)	0.433	0.367	1E	1	0.811	30.7	C	4.1	28
				919		1.000	30.6	C	4.1	28
ALL VEHICLES:				2851		1.037	41.5	D	14.8	104
INTERSECTION (persons):				4277			41.5		14.8	104

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

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	1.019	120
Average Delay	41.5	60
Stop Rate	1.01	150
Max. Queue for Any Movement	14.8	60
Perf. Index	109.4	60
Cost	1829.9	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	2798	120
Prac. Spare Cap.	-12	120

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	2750	1.037	-13	41.5	1.10	14.8	109.4	1829.9	
70	2769	1.030	-13	43.7	1.07	14.8	112.5	1874.7	
80	2780	1.026	-12	47.9	1.08	14.8	119.5	1963.1	
90	2789	1.022	-12	50.8	1.08	15.3	124.0	2022.6	
100	2796	1.019	-12	52.5	1.06	15.8	126.6	2058.1	
110	2761	1.033	-13	49.4	1.01	15.2	121.0	1990.4	
120	2798	1.019	-12	50.9	1.01	17.0	123.5	2023.0	
130	2778	1.026	-12	55.4	1.02	18.5	130.8	2117.3	
140	2737	1.041	-14	59.5	1.03	19.9	137.4	2198.1	
150	2774	1.028	-12	59.5	1.01	19.9	137.1	2195.4	

--- End of aaSIDRA Output ---

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03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

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: Cycle average queue, Average

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

* Opposed turn in movement 9 has high x.
  Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

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-180 S								
1	1	0	0	0	0	0	1.00	1.00
2	0	0	113	0	0	0	1.00	1.00
3	0	0	0	0	71	0	1.00	1.00
East: PR-3 E								
4	146	0	0	0	0	0	1.00	1.00
5	0	0	580	0	0	0	1.00	1.00
6	0	0	0	0	416	0	1.00	1.00
North: PR-180 N								
7	540	0	0	0	0	0	1.00	1.00
8	0	0	118	0	0	0	1.00	1.00
9	0	0	0	0	66	0	1.00	1.00
West: PR-3 W								
10	358	0	0	0	0	0	1.00	1.00
11	0	0	621	0	0	0	1.00	1.00
12	0	0	0	0	1	0	1.00	1.00

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

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
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	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-180 S															
1 L		F	A	L						6		10.0Min		10	
2 T		F	A							4		10.0Min		12	
3 R	(Und)	B	F	R		F	B			20	4	10.0Min	19.0Min	12	24
East: PR-3 E															
4 L		A	B							4		10.3		8	
5 T		B	F							4		35.9		28	
6 R	(Un2)*	B	F			F	B	R		4	9	35.9	30.7	28	19

```
North: PR-180 N
   7 L        F  A  L                      4        17.3              12
   8 LT      *F  A                         4        17.8              12
   9 R  (Und) B  F  R       F  B          19    4   21.4     46.4     13   24
-------------------------------------------------------------------------------
West: PR-3 W
  10 L       *A  B                         4        12.9               8
  11 LT       B  F                         4        29.0              28
  12 R  (Und) B  F          F  B  R       4    8   31.8     19.0Min  28   20
-------------------------------------------------------------------------------
  Current Phase Sequence No.: 2
  Input phase sequence: A  B  F
  Output phase sequence: A  B  F
-------------------------------------------------------------------------------
  *  Critical Movement/Green Period

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
```

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	HV (%)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-180 S											
1 L	1	0.0	1350<		0.001		225	0.90	****	100	0.004
2 T	113	0.0	1866		0.061		373	0.90	197	100	0.303
3 R	71	0.0	322	425	0.000	0.167	234	0.90	197	100	0.303
East: PR-3 E											
4 L	146	0.0	1542<		0.095		206	0.90	27	100	0.710
5 T	580	0.0	1211		0.479		565	0.90	-12	100	1.026
6 R	416	0.0	701	247	0.479	0.325	405	0.90	-12	100	1.026
North: PR-180 N											
7 L	129	0.0	646<		0.200		129	0.90	-10	100	1.000
8 LT	529E	0.0	2555		0.207		511	0.90	-13	100	1.035*
9 R	66	0.0	116	97	0.037	0.637	64	0.90	-13	100	1.032
West: PR-3 W											
10 L	248	0.0	1857		0.133		248	0.90	-10	100	1.000
11 LT	731E	0.0	1948		0.375		909	0.90	12	100	0.805
12 R	1	0.0	2	0	0.500	0.000	1	0.90	14	100	0.789

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

Opposed turn in movement 9 has high x.
Its capacity is mainly due to end departures. Consider increasing the number of end departures, and/or specifying this as an undetected movement, since it may be affecting the timing results adversely.

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
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
10	W_L		A	B	4	0.133	0.148	12.9
6	E_R	1st	B	F	4	0.479	0.532	35.9
8	N_LT		F	A	4	0.207	0.230	17.8
				Total:	12	0.819	0.910	66.6

Cycle Time:

Minimum	Maximum	Practical	Chosen
29	150	134	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	D
Worst movement Level of Service	=	E
Average intersection delay (s)	=	44.0
Largest average movement delay (s)	=	61.8
Largest cycle-average queue, mean (m)	=	103
Performance Index	=	121.21
Degree of saturation (highest)	=	1.035
Practical Spare Capacity (lowest)	=	-13 %
Effective intersection capacity, (veh/h)	=	2929
Total vehicle flow (veh/h)	=	3031
Total person flow (pers/h)	=	4547
Total vehicle delay (veh-h/h)	=	37.07
Total person delay (pers-h/h)	=	55.61
Total effective vehicle stops (veh/h)	=	3398
Total effective person stops (pers/h)	=	5098
Total vehicle travel (veh-km/h)	=	1836.7
Total cost ($/h)	=	2004.00
Total fuel (L/h)	=	257.9
Total CO2 (kg/h)	=	644.69

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	8	12	0.200
B	12	16	28	32	0.533
F	44	48	12	16	0.267

Current Phase Sequence No.: 2
Input phase sequence: A B F
Output phase sequence: A B F

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
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 Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-180 S									
1 L	0.01	0.01	30.9	0.85	0.61	0.0	0	0.03	32.4
2 T	0.40	0.61	12.9	0.80	0.63	0.7	5	2.35	43.6
3 R	0.41	0.61	20.7	0.80	0.82	0.7	5	1.71	38.3
East: PR-3 E									
4 L	1.54	2.31	37.9	0.99	0.87	1.2	8	4.93	29.3
5 T	8.54	12.80	53.0	1.00	1.36	14.7	103	27.33	24.4
6 R	7.07	10.60	61.2	1.00	1.36	14.7	103	20.53	22.3
North: PR-180 N									
7 L	1.15	1.73	32.2	0.92	0.78	0.9	6	3.88	31.8
8 LT	7.92	11.88	53.9	1.00	1.25	8.9	62	24.84	24.2
9 R	1.13	1.70	61.8	1.00	1.25	8.9	62	3.25	22.3
West: PR-3 W									
10 L	3.98	5.97	57.9	1.00	1.11	3.4	24	11.42	23.1
11 LT	4.92	7.37	24.2	0.92	0.91	4.9	34	20.92	36.0
12 R	0.01	0.01	32.1	0.92	0.96	4.9	34	0.03	32.0

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
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-180 S									
185	0.303	0.82	1.23	16.0	0.80	0.71	5	4.08	41.3
East: PR-3 E									
1142	1.026	17.14	25.71	54.0	1.00	1.30	103	52.79	24.1
North: PR-180 N									
724	1.035	10.21	15.31	50.7	0.99	1.16	62	31.97	25.1
West: PR-3 W									
980	1.000	8.91	13.36	32.7	0.94	0.96	34	32.37	31.6
ALL VEHICLES:									
3031	1.035	37.07	55.61	44.0	0.96	1.12	103	121.21	27.1
INTERSECTION (persons):									
4547	1.035		55.61	44.0	0.96	1.12		121.21	27.1

Queue values in this table are mean cycle-average queue (metres).

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
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 Cycle (vehs)	Queue Aver. (m)	Shrt Lane (m)
South: PR-180 S													
1 L	1	50	10	0	0	1	225	0.004	30.9	0.61	0.0	0	28
2 TR	2, 3	28	10	6	16	184	608	0.303	15.9	0.71	0.7	5	
East: PR-3 E													
1 L	4	52	8	0	0	146	206	0.710	37.9	0.87	1.2	8	27
2 TR	5, 6	17	28	9	6	996	970	1.026	56.4	1.36	14.7	103	
North: PR-180 N													
1 L	7	48	12	0	0	129	129	1.000	32.2r	0.78	0.9	6<	15
2 LTR	8, 9	27	10	7	16	595	575	1.035	54.8	1.05	8.9	62	
West: PR-3 W													
1 L	10	52	8	0	0	248	248	1.000	57.9r	1.11	3.4	24<	44

2 LTR	11, 12	23	28	8	1	732	910	0.805	24.2	0.97	4.9	34

< Short lane capacity is reached and there is excess flow into an adjacent lane

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane 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-180 S													
1 L	1	1	0	0	1	3.50	1970	1350<	0	132	225	0.004	100
2 TR	2, 3	0	113	71	184	3.70	1990	606	1900	60	608	0.303	100
East: PR-3 E													
1 L	4	146	0	0	146	3.10	1930	1542<	0	0	206	0.710	100
2 TR	5, 6	0	580	416	996	3.10	1930	1890	883	60	970	1.026	100
North: PR-180 N													
1 L	7	129	0	0	129	2.90	1910	646<	0	132	129	1.000	100
2 LTR	8, 9	411	118	66	595	2.90	1910	570	1799	60	575	1.035	100
West: PR-3 W													
1 L	10	248	0	0	248	3.30	1950	1857	0	0	248	1.000	100
2 LTR	11, 12	110	621	1	732	3.30	1950	1950	17	60*	910	0.805	100

< Reduced saturation flow due to a short lane effect

* Large end capacity has resulted in a saturation flow which is larger than the full unopposed saturation flow

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

Fixed-Time Signals, Cycle Time = 60

Table S.8B - SCATS MF PARAMETER

Lane No.	Mov No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
South: PR-180 S							
1 L	1	1	225	1876	1173	0.004	100
2 TR	2, 3	184	608	1953	NA	0.303	100
East: PR-3 E							
1 L	4	146	206	1838	1225	0.710	100
2 TR	5, 6	970	970	1890	NA	1.026	100
North: PR-180 N							
1 L	7	129	129	1819	1364	1.000	100
2 LTR	8, 9	575	575	1836	NA	1.035	100
West: PR-3 W							
1 L	10	248	248	1857	1238	1.000	100
2 LTR	11, 12	732	910	1935	NA	0.805	100

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

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

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

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

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

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total L/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: PR-180 S						
1 L	0.1	0.56	0.000	0.01	0.000	0.2
2 T	7.6	48.44	0.033	1.43	0.044	18.9
3 R	5.2	34.46	0.023	1.03	0.030	12.9
	12.8	83.45	0.056	2.47	0.074	32.1
East: PR-3 E						
4 L	11.7	89.14	0.054	2.25	0.065	29.4
5 T	53.6	425.93	0.254	10.70	0.295	133.9
6 R	39.4	329.39	0.188	7.67	0.212	98.4
	104.7	844.45	0.496	20.62	0.572	261.7
North: PR-180 N						
7 L	10.0	73.22	0.046	1.94	0.057	25.1
8 LT	47.2	387.99	0.222	8.87	0.252	118.1
9 R	6.0	52.19	0.028	1.09	0.031	15.1
	63.3	513.41	0.296	11.91	0.340	158.2
West: PR-3 W						
10 L	22.1	188.06	0.105	4.07	0.117	55.4
11 LT	54.8	374.06	0.246	10.81	0.315	137.1
12 R	0.1	0.57	0.000	0.02	0.000	0.2
	77.1	562.69	0.350	14.90	0.432	192.7
INTERSECTION:	257.9	2004.00	1.199	49.89	1.419	644.7

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/L)	=	0.900
Fuel resource cost factor	=	0.50
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	27.00
Time value factor	=	0.60
Average occupancy (persons/veh)	=	1.5
Light vehicle mass (1000 kg)	=	1.4
Heavy vehicle mass (1000 kg)	=	11.0
Light vehicle idle fuel rate (L/h)	=	1.350
Heavy vehicle idle fuel rate (L/h)	=	2.000

The idle fuel and vehicle mass parameters given above are the default values (data given in RIDES may override some of these parameters).

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

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-180 S												
1 L	1			1	0	1970	10		0.004	30.9	0	28
2 TR		113	71	184	0	1990	10	16	0.303	15.9	5	
	1	113	71	185	0				0.303	16.0	5	
East: PR-3 E												
1 L	146			146	0	1929	8		0.710	37.9	8	27
2 TR		580	416	996	0	1930	28	6	1.026	56.4	103	
	146	580	416	1142	0				1.026	54.0	103	
North: PR-180 N												
1 L	129			129	0	1909	12		1.000	32.2r	6	15
2 LTR	411	118	66	595	0	1910	10	16	1.035	54.8	62	
	540	118	66	724	0				1.035	50.7	62	
West: PR-3 W												
1 L	248			248	0	1949	8		1.000	57.9r	24	44
2 LTR	110	621	1	732	0	1950	28	1	0.805	24.2	34	
	358	621	1	980	0				1.000	32.7	34	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	3031	0	60	1.035	44.0	103

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

Queue values in this table are mean cycle-average queue (metres).

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

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

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	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-180 S										
1 L		0.167		1	225<	0.004	30.9	C	0.0	0
2 T		0.200		113	373	0.303	12.9	B	0.7	5
3 R	(Und)	0.200	0.400	71	234	0.303	20.7	C	0.7	5
				185		0.303	16.0	B	0.7	5
East: PR-3 E										
4 L		0.133		146	206<	0.710	37.9	D	1.2	8
5 T		0.467		580	565	1.026	53.0	D	14.7	103
6 R	(Un2)	0.467*	0.317	416	405	1.026	61.2	E	14.7	103
				1142		1.026	54.0	D	14.7	103
North: PR-180 N										
7 L		0.200		129	129<	1.000	32.2	C	0.9	6
8 LT		0.200*		529E	511	1.035*	53.9	D	8.9	62
9 R	(Und)	0.217	0.400	66E	64	1.032	61.8	E	8.9	62
				724		1.035	50.7	D	8.9	62
West: PR-3 W										
10 L		0.133*		248	248	1.000	57.9	E	3.4	24
11 LT		0.467		731E	909	0.805	24.2	C	4.9	34
12 R	(Und)	0.467	0.333	1E	1	0.789	32.1	C	4.9	34
				980		1.000	32.7	C	4.9	34
ALL VEHICLES:				3031		1.035	44.0	D	14.7	103
INTERSECTION (persons):				4547			44.0		14.7	103

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

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	1.035	60
Average Delay	44.0	60
Stop Rate	1.06	90
Max. Queue for Any Movement	14.7	60
Perf. Index	121.2	60
Cost	2004.0	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	2929	60
Prac. Spare Cap.	-13	60

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.

---

03 Int PR-3 y PR-180
Pico PM Futuro + 5 yrs.
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Eff. Int. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h	Unsett
60	2929	1.035	-13	44.0	1.12	14.7	121.2	2004.0	
70	2828	1.072	-16	48.0	1.09	15.5	127.5	2090.5	
80	2858	1.061	-15	52.3	1.10	19.1	134.8	2186.6	
90	2900	1.045	-14	50.6	1.06	17.4	131.3	2146.1	
100	2886	1.050	-14	54.9	1.08	19.7	138.9	2243.1	
110	2845	1.065	-16	60.6	1.09	21.9	148.8	2371.3	
120	2865	1.058	-15	61.2	1.07	22.1	149.6	2383.2	
130	2781	1.090	-17	66.2	1.08	23.8	158.3	2495.5	
140	2808	1.079	-17	69.0	1.08	25.9	163.1	2550.6	
150	2767	1.095	-18	71.1	1.07	25.8	166.5	2595.4	

--- End of aaSIDRA Output ---

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Estudio de Tránsito
Paseo Costa del Sur
Salinas, PR

Preparado para:
RMA Environmental
Enero 2007

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Tabla de Contenido

1 Introducción 4

2 Localización y descripción de la acción propuesta 5

3 Metodología para la evaluación del impacto en el tránsito debido a la acción propuesta 6

4 Teoría 7

4.1 Evaluación de Nivel de Servicio (LOS) para una intersección 7
4.2 Relación entre demoras y Nivel de Servicio 8
4.3 Glosario 8

5 Análisis de Tránsito 11

5.1 Afluencia vehicular 11
5.2 Crecimiento Anual 12
5.3 Generación de Viajes 12
5.4 Distribución de Viajes 13
5.5 Tránsito Futuro 13
5.6 Modelación de Tránsito 15
5.6.1 Intersección PR-3 y PR-706 15
5.6.2 Intersección PR-3 y Acceso Proyecto 18
5.6.3 Intersección PR-3 y PR-180 22

6 Conclusiones y Recomendaciones 27

7 Certificación 28

8 Referencias 29

9 Apéndices 30

9.1 Apéndice 1: Flujos Obtenidos Mediante Conteos 30
9.2 Apéndice 2: Listado de Archivos de Modelaciones 34
9.3 Apéndice 3: Fotografías de las intersecciones 35
9.4 Apéndice 4: Resultados modelaciones 38

Lista de Tablas

Tabla 1 Criterio del Nivel de Servicio para intersecciones 8
Tabla 2 Flujos Int. PR-3 y PR-706 (Condición Presente) 11
Tabla 3 Flujos Int. PR-3 y Acceso Residencial Proyecto (Condición Presente) 12
Tabla 4 Flujos Int. PR-3 y PR-180 (Condición Presente) 12
Tabla 5 Generación de Viajes 13
Tabla 6 Flujos Int. PR-3 y PR-706 (Condición Futuro 2012) 14
Tabla 7 Flujos Int. PR-3 y Acceso Proyecto (Condición Futuro 2012) 14
Tabla 8 Flujos Int. PR-3 y PR-180 (Condición Futuro 2012) 14
Tabla 9 Flujos Int. PR-3 y PR-706 (Condición Futuro 2017) 14
Tabla 10 Flujos Int. PR-3 y Acceso Proyecto (Condición Futuro 2017) 14
Tabla 11 Flujos Int. PR-3 y PR-180 (Condición Futuro 2017) 15
Tabla 12 Resultados Modelación Int. PR-1 y PR-706 17
Tabla 13 Resultados Modelación Int. PR-3 y Acceso Proyecto 21
Tabla 14 Resultados Modelación Int. PR-3 y PR-180 25

Lista de Figuras

Figura 1 Mapa de Localización 5
Figura 2 Int. PR-3 y PR-706 16
Figura 3 Int. PR-3 y Acceso Proyecto (Geometría Presente) 19
Figura 4 Int. PR-3 y Acceso Proyecto (Geometría Futuro) 20
Figura 5 Croquis y Diagrama de Fases Int. PR-3 y PR-180 23
Figura 6 Fotografías Accesos Int. PR-3 y PR-706 35
Figura 7 Fotografías Accesos Int. PR-3 y Proyecto 36
Figura 8 Fotografías Accesos Int. PR-3 y PR-180 37