Estudio de tránsito

Traffic Consulting Group

Estudio de Tránsito
Parque Tecnológico de Cayey
Cayey, PR

Preparado para:
Parque Tecnológico de Cayey Inc.
Diciembre 2005

1606 PONCE DE LEÓN SUITE 603 • SAN JUAN, PR 00909
TEL. (787)724-2007 • FAX: (787)724-0690
INFO@TRAFFICPR.COM • WWW.TRAFFICPR COM

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 7

4 Teoría 8

4.1 Evaluación de Nivel de Servicio (LOS) para una intersección 8
4.2 Relación entre demoras y Nivel de Servicio 9
4.3 Glosario 10

5 Análisis de Tránsito 12

5.1 Afluencia vehicular 12
5.2 Crecimiento Anual 13
5.3 Generación de Viajes 14
5.4 Distribución de Viajes 14
5.5 Tránsito Futuro 15
5.6 Modelación de Tránsito 16
5.6.1 Intersección PR-738 y PR-743 17
5.6.2 Intersección PR-1 y PR-738 19
5.6.3 Intersección PR-1 y Conector PR-52 22
5.6.4 Intersección PR-743 y Acceso Parque Tecnológico 25

6 Conclusiones y Recomendaciones 28

7 Certificación 30

8 Referencias 31

9 Apéndices 32

9.1 Apéndice 1: Flujos Obtenidos Mediante Conteos 32
9.2 Apéndice 2: Listado de Archivos de Modelaciones 37
9.3 Apéndice 3: Resultados modelaciones 38

Lista de Tablas

Tabla 1 Desglose de área por lote 5
Tabla 2 Criterio del Nivel de Servicio para intersecciones 10
Tabla 3 Flujos PR-738 y PR-743 (Condición Presente) 12
Tabla 4 Flujos PR-1 y PR-738 (Condición Presente) 13
Tabla 5 Flujos PR-1 y Conector PR-52 (Condición Presente) 13
Tabla 6 Flujos PR-743 frente al proyecto (Condición Presente) 13
Tabla 7 Generación de Viajes Parque Tecnológico de Cayey 14
Tabla 8 Flujos PR-738 y PR-743 (Condición Futuro) 15
Tabla 9 Flujos PR-1 y PR-738 (Condición Futuro) 15
Tabla 10 Flujos PR-1 y Conector PR-52 (Condición Futuro) 15
Tabla 11 Flujos PR-743 y Acceso Proyecto (Condición Futuro) 15
Tabla 12 Flujos PR-738 y PR-743 (Condición Futuro + 5 años) 16
Tabla 13 Flujos PR-1 y PR-738 (Condición Futuro + 5 años) 16
Tabla 14 Flujos PR-1 y Conector PR-52 (Condición Futuro + 5 años) 16
Tabla 15 Flujos PR-743 y acceso Proyecto (Condición Futuro + 5 años) 16
Tabla 16 Resultados modelación Int. PR-738 y PR-743 19
Tabla 17 Resultados modelación Int. PR-1 y PR-738 21
Tabla 18 Resultados modelación Int. PR-1 y Conector PR-52 25
Tabla 19 Resultados modelación Int. PR-743 y Acceso Parque Tecnológico 27

Lista de Figuras

Figura 1 Mapa de Localización 6
Figura 2 Int. PR-738 y PR-743 18
Figura 3 Int. PR-1 y PR-738 20
Figura 4 Int. PR-1 y Conector PR-52 23
Figura 5 Fases Int. PR-1 y PR-52 24
Figura 6 Int. PR-743 y Acceso Parque Tecnológico 26
Figura 7 Diagrama Conceptual Nuevas Rampas PR-52 29

1 INTRODUCCIÓN

El siguiente informe presenta un estudio de tránsito en el área destinada para la construcción del proyecto industrial "Parque Tecnológico de Cayey" en el municipio de Cayey. 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 barrio Vegas del municipio de Cayey en el lado norte del Km. 35.4 de la autopista PR-52, en la zona no inundable entre el Río Guavate y el Río La Plata. El proyecto consiste en la ubicación de seis lotes industriales para establecer industrias principalmente de alta tecnología. La siguiente tabla muestra un desglose del área de construcción en cada lote.

Tabla 1 Desglose de área por lote

Lote	Área Total de Construcción (pies cuadrados)
1	108,366
2	243,738
3	155,700
4	221,610
5	205,740
6	249,159
Total	1,184,313

La siguiente figura muestra un mapa de localización del proyecto.

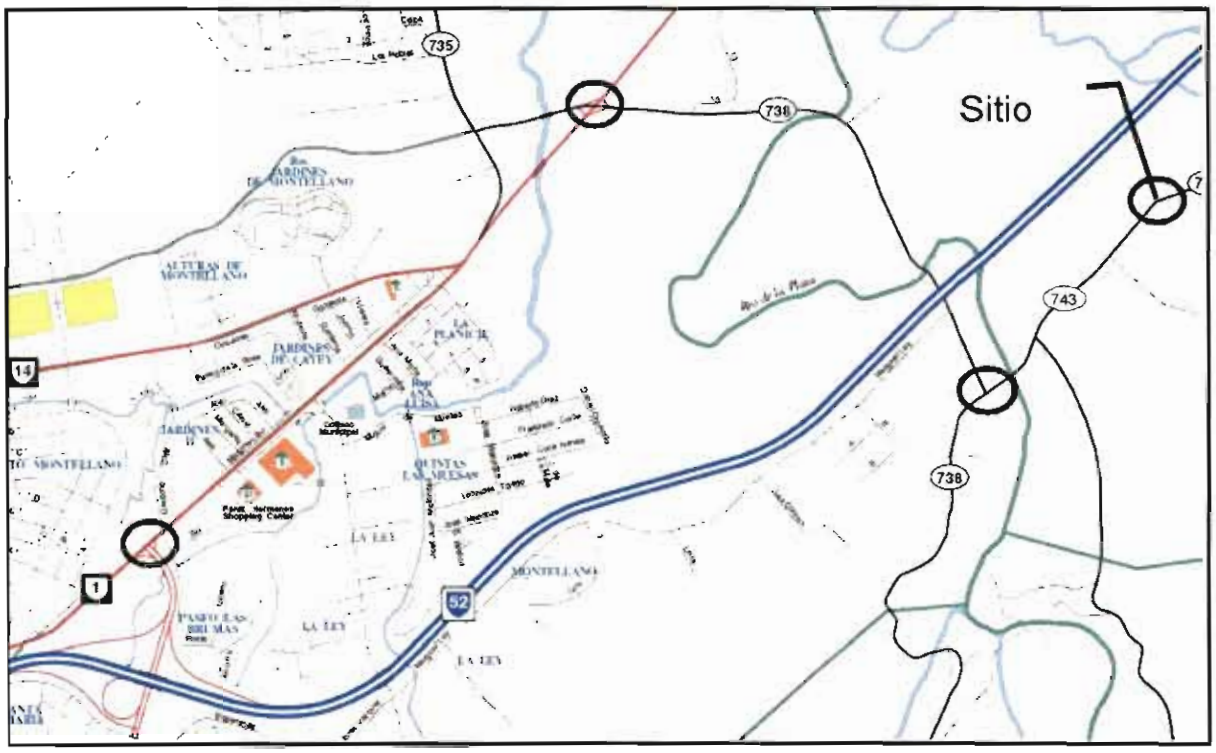

Figura 1 Mapa de Localización

En varias ocasiones el desarrollador ha solicitado al Departamento de Transportación y Obras Públicas el que se le permita construir un acceso directo a la autopista PR-52. La contestación ha sido negativa hasta la fecha, pero aceptando que existe una oportunidad ya que esta podría ser una de las opciones como parte del proyecto del Conector Cidra-Cayey. Desafortunadamente no se ha terminado el estudio de dicho proyecto, por lo que no se ha determinado la localización final de dicho corredor.

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

1. El jueves 20 de octubre de 2005 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-738 y PR-743
    b. Int. PR-1 y PR-738
    c. Int. PR-1 y conector PR-52

2. Dado que el proyecto no estará completado hasta aproximadamente el año 2010, los flujos del año 2005 fueron expandidos a ese año usando un factor de crecimiento anual. Dado que el parque tendrá mas de 325,000 pies cuadrados, también se proyectaron los flujos a 5 años después de la operación del proyecto.

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 2 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 3 Flujos PR-738 y PR-743 (Condición Presente)

2005	PR-738		PR-743		PR-738		
	S-L	S-T	N-T	N-R	W-L	W-R	Total
Pico AM	116	28	92	56	48	464	804
Pico PM	324	60	36	8	4	216	648

Tabla 4 Flujos PR-1 y PR-738 (Condición Presente)

2005	PR-1			PR-738			PR-1			PR-738			
	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	32	540	72	116	20	20	44	340	76	140	64	208	1672
Pico PM	144	576	236	32	60	84	60	468	44	88	44	40	1876

Tabla 5 Flujos PR-1 y Conector PR-52 (Condición Presente)

2005	PR-1		PR-52		PR-1		
	S-T	S-R	E-L	E-R	N-L	N-T	Total
Pico AM	580	1656	700	780	480	620	4816
Pico PM	968	1028	724	824	384	444	4372

En adición, por medio de un análisis de continuidad pudimos determinar el flujo que transita en la carretera PR-743, frente al área del proyecto.

Tabla 6 Flujos PR-743 frente al proyecto (Condición Presente)

2005	PR-743		
	E-T	W-T	Total
Pico AM	164	80	244
Pico PM	44	64	108

5.2 Crecimiento Anual

Los flujos obtenidos en el año 2005 fueron expandidos al año 2010, 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 un parque industrial de mas de 325,000, también se realizó una proyección al año 2015, siguiendo las recomendaciones de las "Guías para la Preparación de Estudios Operacionales de Accesos y de Tránsito para Puerto Rico".

5.3 Generación de Viajes

El proyecto consiste de la construcción de un parque industrial de 1,184,313 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 utilizó la categoría 130, Parque Industrial, como uso de terreno, y como variable independiente se utilizó el número de miles de pies cuadrados. La siguiente tabla muestra los resultados de este cómputo.

Tabla 7 Generación de Viajes Parque Tecnológico de Cayey

				ADT			Pico AM			Pico PM		
Uso	Categoria	Tamaño	Unidad	Total	In	Out	Total	In	Out	Total	In	Out
Parque Industrial	130	1,184.313	X 1000 pc	6622	3311	3311	692	567	125	954	200	754

5.4 Distribución de Viajes

Para la distribución de viajes presumimos que todos los viajes llegarían y saldrían desde la autopista PR-52. Dado que a este momento no se ha permitido la construcción de rampas a la autopista desde el área cercana al proyecto, la ruta mas adecuada sería saliendo de los predios virando a la derecha en la carretera PR-743, para seguir hasta la intersección de la PR-738. En esta intersección se haría un viraje a la derecha, y se seguiría hasta la PR-1 en donde se viraría a la izquierda. A través de la carretera PR-1 se conseguiría llegar al conector de la carretera PR-52.

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 8 Flujos PR-738 y PR-743 (Condición Futuro)

2010 + P	PR-738		PR-743		PR-738		
	S-L	S-T	N-T	N-R	W-L	W-R	Total
Pico AM	125	30	99	185	619	500	1558
Pico PM	349	65	39	763	204	233	1653

Tabla 9 Flujos PR-1 y PR-738 (Condición Futuro)

2010 + P	PR-1			PR-738			PR-1			PR-738			
	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-R	T
Pico AM	34	582	645	250	22	22	47	366	82	151	69	224	2
Pico PM	155	621	454	788	65	90	65	504	47	95	47	43	2

Tabla 10 Flujos PR-1 y Conector PR-52 (Condición Futuro)

2010 + P	PR-1		PR-52		PR-1		
	S-T	S-R	E-L	E-R	N-L	N-T	Total
Pico AM	625	1784	754	1407	642	668	5880
Pico PM	1043	1107	780	1088	1168	478	5664

Tabla 11 Flujos PR-743 y Acceso Proyecto (Condición Futuro)

2010 + P	PR-743		Acceso Proyecto		PR-743		
	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	177	0	0	**125**	**567**	86	955
Pico PM	47	0	0	**754**	**200**	69	1070

A continuación se presentan los flujos proyectados a 5 años después del comienzo de la operación del proyecto.

Tabla 12 Flujos PR-738 y PR-743 (Condición Futuro + 5 años)

2015 + P	PR-738		PR-743		PR-738		
	S-L	S-T	N-T	N-R	W-L	W-R	Total
Pico AM	135	32	107	190	623	538	1625
Pico PM	376	70	42	763	205	251	1707

Tabla 13 Flujos PR-1 y PR-738 (Condición Futuro + 5 años)

2015 + P	PR-1			PR-738			PR-1			PR-738			
	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-R	T
Pico AM	37	627	651	260	23	23	51	395	88	162	74	241	2
Pico PM	167	668	474	791	70	97	70	543	51	102	51	46	3

Tabla 14 Flujos PR-1 y Conector PR-52 (Condición Futuro + 5 años)

2015 + P	PR-1		PR-52		PR-1		
	S-T	S-R	E-L	E-R	N-L	N-T	Total
Pico AM	673	1922	812	1472	682	720	6281
Pico PM	1123	1193	840	1156	1200	515	6027

Tabla 15 Flujos PR-743 y acceso Proyecto (Condición Futuro + 5 años)

2015 + P	PR-743		Acceso Proyecto		PR-743		
	E-T	E-R	N-L	N-R	W-L	W-T	Total
Pico AM	190	0	0	125	567	93	975
Pico PM	51	0	0	754	200	74	1079

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-738 y PR-743

Esta intersección es controlada por un PARE, con una geometría de "T". La operación no es típica ya que la carretera PR-738 firma los accesos oeste y sur de la intersección y la carretera PR-748 está en el acceso norte, pero la prioridad pertenece a los movimientos que se mueven entre los accesos oeste y norte.

Cada acceso cuenta con un carril por dirección, aunque en el acceso oeste hay un carril para cada viraje. La calzada sur tiene un ancho de 5.5 metros, la norte mide 5.4 metros, y la oeste mide 4.2 metros. La siguiente figura muestra un croquis de esta intersección, seguida por una tabla que muestra los resultados obtenidos para las distintas situaciones modeladas.

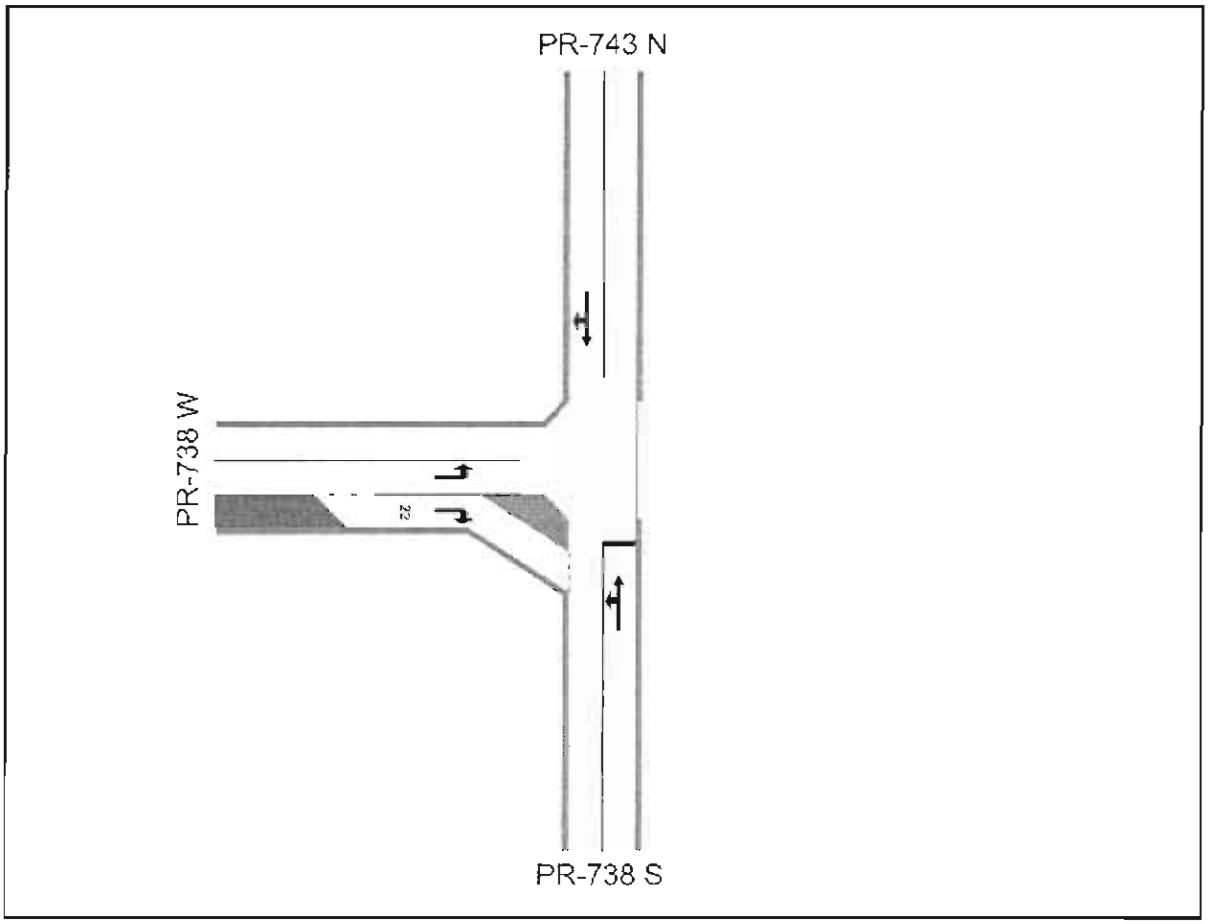

Figura 2 Int. PR-738 y PR-743

Tabla 16 Resultados modelación Int. PR-738 y PR-743

	Demora Promedio por Vehículo [seg.] y Nivel de Servicio (LOS)				
	Cola Promedio [metros]				
	Acceso Sur PR-738	Acceso Este N/A	Acceso Norte PR-743	Acceso Oeste PR-738	Total Int.
Base 2005					
AM	11.4 B	N/A	3.3 A	13.4 B	11.2
	0		0	6	6
PM	10.8 B	N/A	1.5 A	8.4 A	9.4
	0		0	0	0
Futuro 2010					
AM	17.8 C	N/A	10.3 B	11.0 B	11.5
	2		3	6	6
PM	32.5 D	N/A	9.3 A	8.5 A	14.9
	18		2	0	18
Futuro 2015					
AM	18.4 C	N/A	10.4 B	11.2 B	11.8
	3		3	7	7
PM	40.4 E	N/A	9.3 A	8.6 A	17.2
	26		2	1	26

Como se puede notar en la tabla anterior, esta intersección podrá manejar sin problemas el aumento en tránsito que se espera como consecuencia del proyecto bajo estudio.

5.6.2 Intersección PR-1 y PR-738

Esta intersección es controlada por prioridad, en una configuración de cruz. La carretera PR-738 corre en el eje este-oeste, y la PR-1 corre en el norte-sur. Ambas carreteras cuentan con un carril por dirección, aunque en el acceso este hay un ensanche en la boca de la intersección, teniendo dos carriles llegando a la intersección. La calzada sur mide 7.7 metros, la este mide 11.1 metros en la boca,

la norte mide 6.8 metros y la oeste, 6.5 metros. La siguiente figura muestra un croquis de esta intersección.

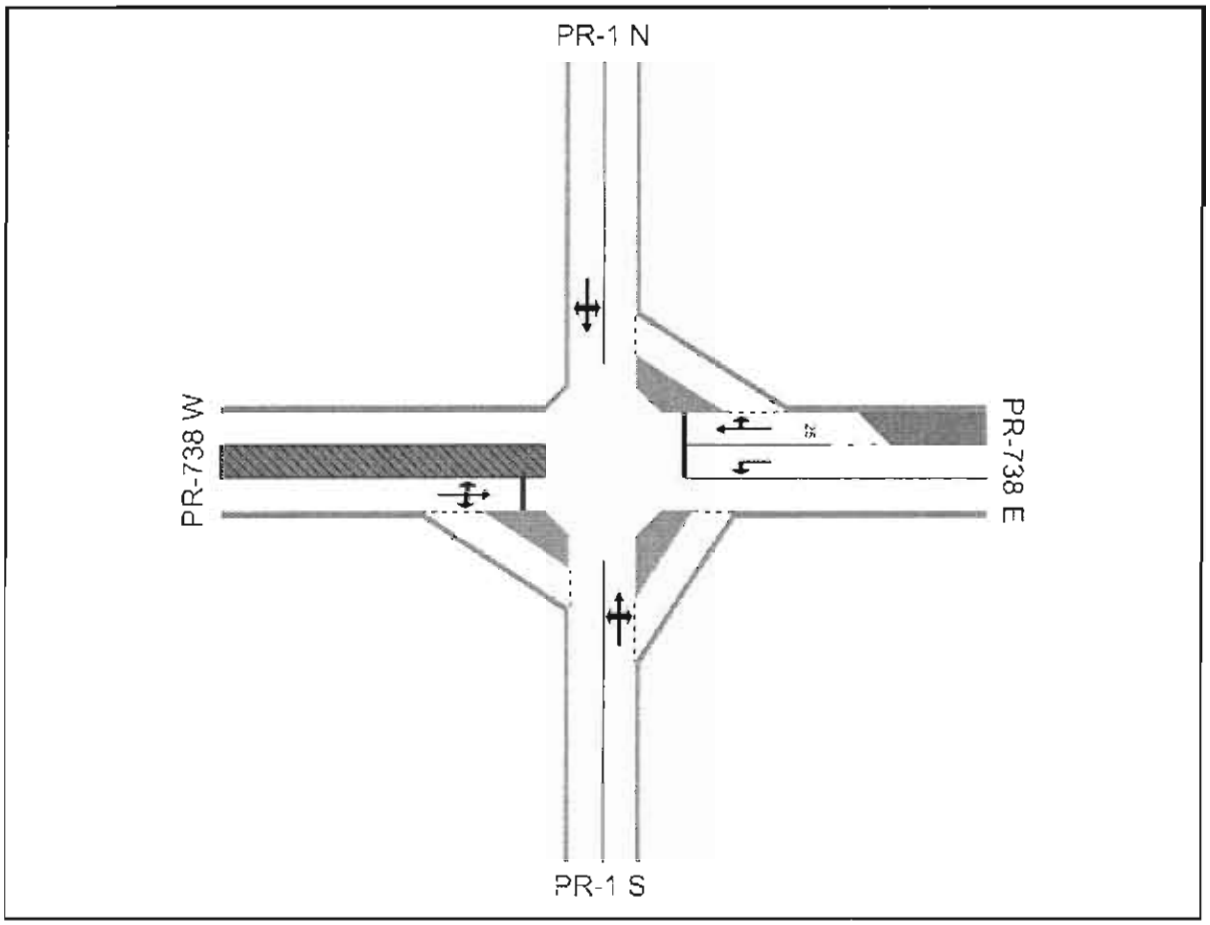

Figura 3 Int. PR-1 y PR-738

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

Tabla 17 Resultados modelación Int. PR-1 y PR-738

	Demora Promedio por Vehículo [seg.] y Nivel de Servicio (LOS)				
	Cola Promedio [metros]				
	Acceso Sur PR-1	Acceso Este PR-738	Acceso Norte PR-1	Acceso Oeste PR-738	Total Int.
Base 2005					
AM	4.6 A	21.2 C	7.4 A	21.4 C	11.0
	4	3	5	9	9
PM	12.5 B	23.7 C	12.8 B	31.9 D	15.4
	17	4	13	7	17
Futuro 2010					
AM	15.5 C	154.8 F	49.5 E	135.4 F	60
	28	81	46	108	108
PM	23.5 C	996.4 F	31.9 D	87.3 F	337.7
	47	1781	36	28	1781
Futuro 2010 con semáforo					
AM	10.8 B	21.0 C	12.4 B	17.9 B	13.6 B
	13	4	5	9	13
PM	17.4 B	28.0 C	13.6 B	17.9 B	20.0 C
	17	21	8	4	21
Futuro 2015 con semáforo					
AM	11.3 B	21.4 C	12.9 B	18.8 B	14.1 B
	14	5	6	11	14
PM	19.6 B	30.9 C	13.6 B	18.9 B	21.7 C
	20	25	9	5	25

La geometría presente de esta intersección no es adecuada para manejar el aumento en tránsito que se espera ocurra como consecuencia de la operación del proyecto bajo estudio. Este aumento en tránsito crearía unas demoras muy altas en la intersección, en particular en el periodo de la tarde. Para este periodo, en el acceso este obtuvimos una demora total de 261.01 veh-h/h, valor mucho mayor a los 4 veh-h/h que utiliza el "warrant" 3 del MUTCD para justificar un semáforo. Para poder manejar este aumento creamos un escenario, en donde se instala un semáforo para el control del tránsito, ya que el tránsito de la vía principal, PR-1, no

proveería brechas suficientes para el tránsito de la vía secundaria. En adición, aumentamos el número de carriles a 4 en la PR-1, tal y como se está construyendo en la PR-1, al sur de la carretera PR-14. Estas mejoras geométricas traerían una operación buena a la intersección,

5.6.3 Intersección PR-1 y Conector PR-52

Esta intersección es controlada por semáforo, en una configuración de "T". La carretera PR-1 corre en el eje norte-sur, y el Conector de la PR-52 es el acceso Este de la intersección. La siguiente figura muestra un croquis de esta intersección.

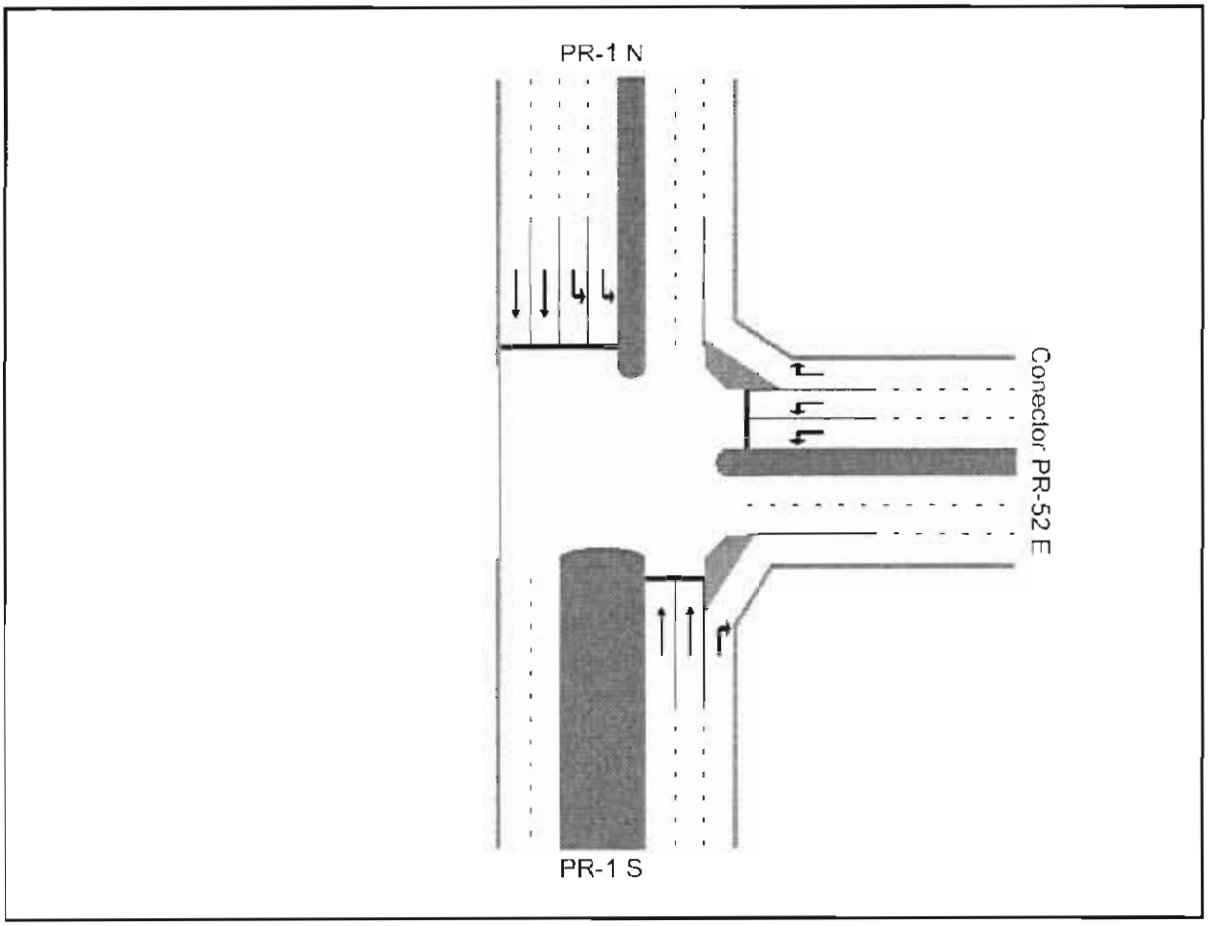

Figura 4 Int. PR-1 y Conector PR-52

En la siguiente figura se muestran las fases de este semáforo.

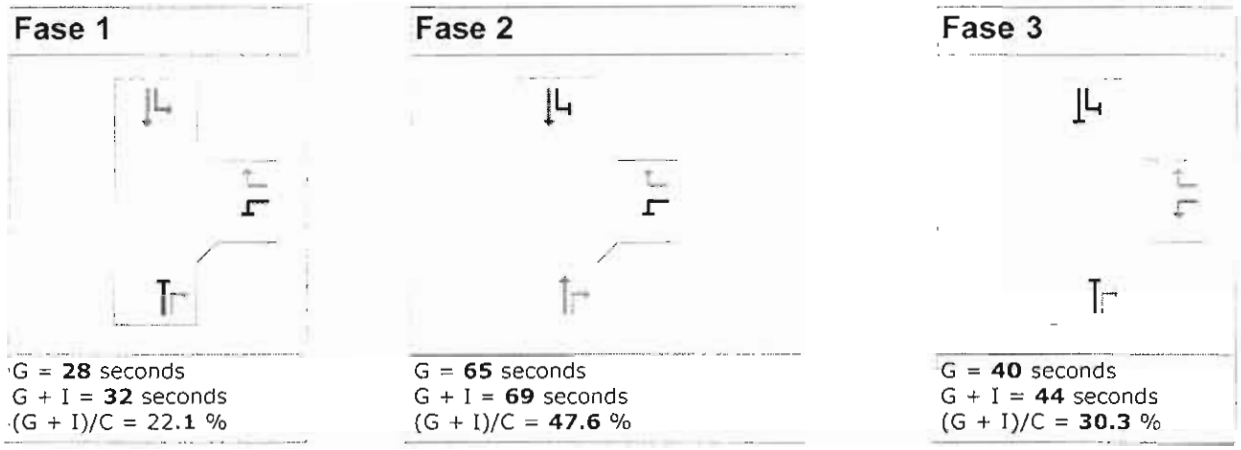

Figura 5 Fases Int. PR-1 y PR-52

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

Tabla 18 Resultados modelación Int. PR-1 y Conector PR-52

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	COLA PROMEDIO [METROS]				
	Acceso Sur PR-1	Acceso Este Conector PR-52	Acceso Norte PR-1	Acceso Oeste N/A	Total Int.
Base 2005					
AM	12.9 B	31.4 C	34.8 C	N/A	23.6 C
	15	34	28		34
PM	18.9 B	31.3 C	35.2 D	N/A	26.4 C
	29	36	21		36
Futuro 2010					
AM	12.2 B	15.0 B	18.6 B	N/A	14.7 B
	15	15	14		15
PM	28.3 C	27.3 C	37.3 D	N/A	30.6 C
	51	36	48		51
Futuro 2015					
AM	13.2 B	15.6 B	19.0 B	N/A	15.4 B
	16	17	16		17
PM	32.7 C	31.9 C	45.8 D	N/A	36.2 D
	65	47	64		65

Como se puede notar, esta intersección no se verá afectada por la operación del proyecto bajo estudio.

5.6.4 Intersección PR-743 y Acceso Parque Tecnológico

Esta intersección es la que se formará en el acceso del proyecto, y sería controlada por prioridad, en una configuración de "T". En la actualidad la carretera PR-743 cuenta con dos carriles. La siguiente figura muestra un croquis de la geometría que tendría esta intersección.

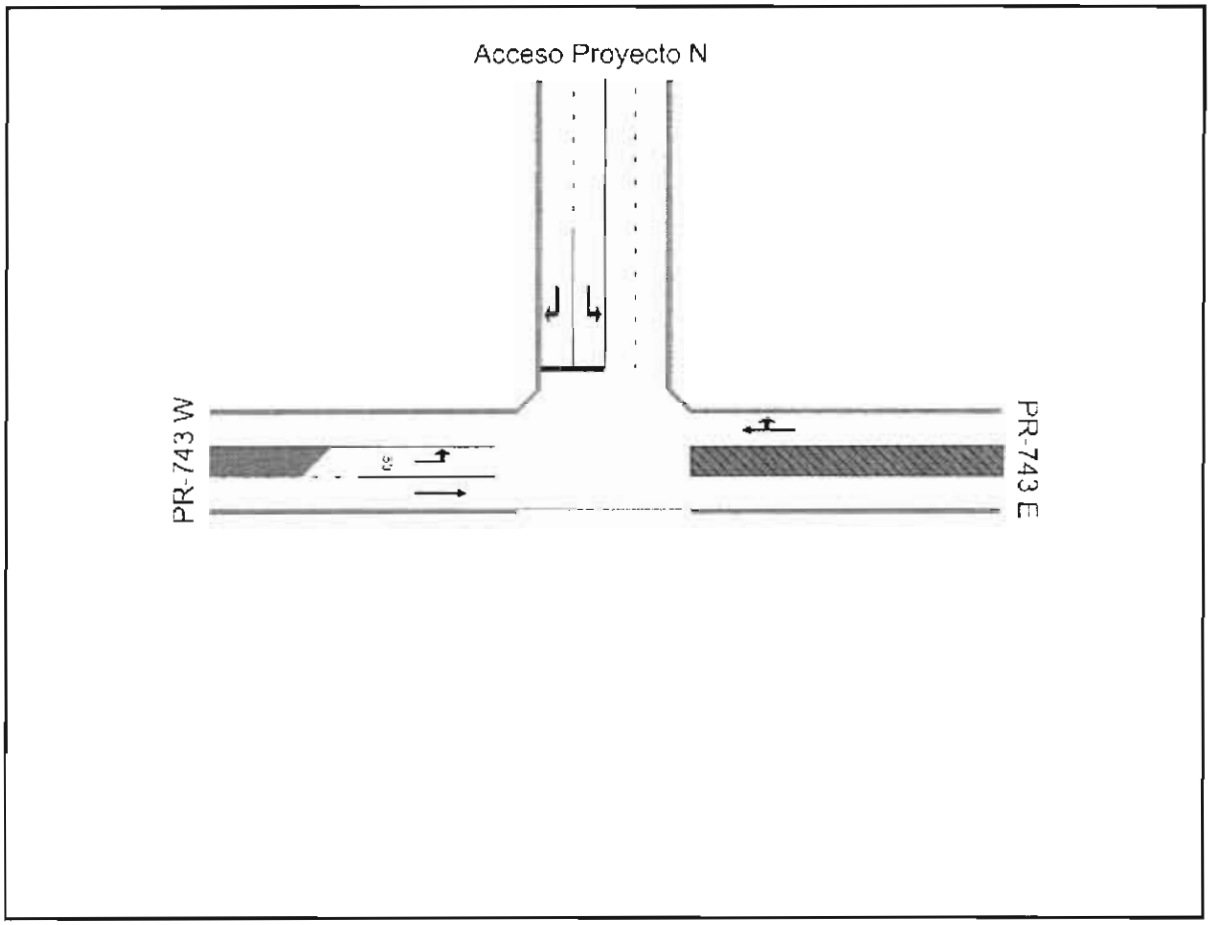

Figura 6 Int. PR-743 y Acceso Parque Tecnológico

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

Tabla 19 Resultados modelación Int. PR-743 y Acceso Parque Tecnológico

	DEMORA PROMEDIO POR VEHÍCULO [SEG.] Y NIVEL DE SERVICIO (LOS)				
	COLA PROMEDIO [METROS]				
	Acceso Sur N/A	Acceso Este PR-743	Acceso Norte Proyecto	Acceso Oeste PR-743	Total Int.
Base 2005					
AM	N/A	0.0 A	11.4 B	8.4 A	7.3
		0	0	2	2
PM	N/A	0.2 A	11.0 B	6.3 A	9.4
		0	1	0	1
Futuro					
AM	N/A	0.0 A	11.5 B	8.5 A	7.2
		0	0	2	2
PM	N/A	0.2 A	11.1 B	6.2 A	9.3
		0	1	0	1

Como podemos notar, esta intersección no confrontará ningún problema como consecuencia de la construcción del proyecto propuesto.

En el Apéndice 3 presentamos las corridas del programa aaSIDRA para las intersecciones discutidas anteriormente. La versión electrónica para la evaluación de la Autoridad de Carreteras y Transportación puede ser solicitada por correo electrónico a través de la siguiente dirección: info@trafficpr.com.

6 CONCLUSIONES Y RECOMENDACIONES

El proyecto bajo estudio es uno que debido a su tamaño generará un gran número de viajes debido al gran número de empleos que allí habrá. En los parques industriales cada día ocurren unos periodos pronunciados de alto volumen vehicular, rodeados por periodos largos de tiempo donde casi no ocurren viajes. En la ruta que hemos identificado hacia la autopista, hemos encontrado que la intersección de las carreteras PR1 y PR-738 se vería afectada, ya que la misma no tendría suficiente capacidad para manejar efectivamente el tránsito, una vez construido el parque tecnológico. Esta intersección necesitaría un semáforo y un ensanche en la carretera PR-1. Sin embargo, existe otra opción, la cual eliminaría el impacto del tránsito en la zona. La misma sería el permitir el acceso directo desde la autopista PR-52 hasta la zona del proyecto, lo cual no crearía ningún problema a la autopista, ni afectaría los recaudos de los peajes. Este acceso también podría ser utilizado por el futuro Conector Cidra-Cayey, por lo que esta alternativa debe ser considerada seriamente en la evaluación de dicho conector. Hay que recordar que el desarrollo de este proyecto es piedra angular en el nuevo plan económico que forma parte de la política pública del país, teniendo el endoso tanto del gobierno central, como de los gobiernos municipales de la zona. Aunque el proyecto sería viable sin la construcción de estas rampas, las cuales serían pagadas por el desarrollador, las mismas serían de beneficio no sólo para el Parque Tecnológico de Cayey, sino también para el tránsito en general del área, ya que podrían ser utilizados por el proyecto del Conector Cidra-Cayey y por el proyecto de la periferal de Cayey. En la siguiente figura se muestra un

muestra un diagrama preparado por el desarrollador, que muestra conceptualmente como lucirían las rampas nuevas, así como también el Conector Cidra-Cayey.

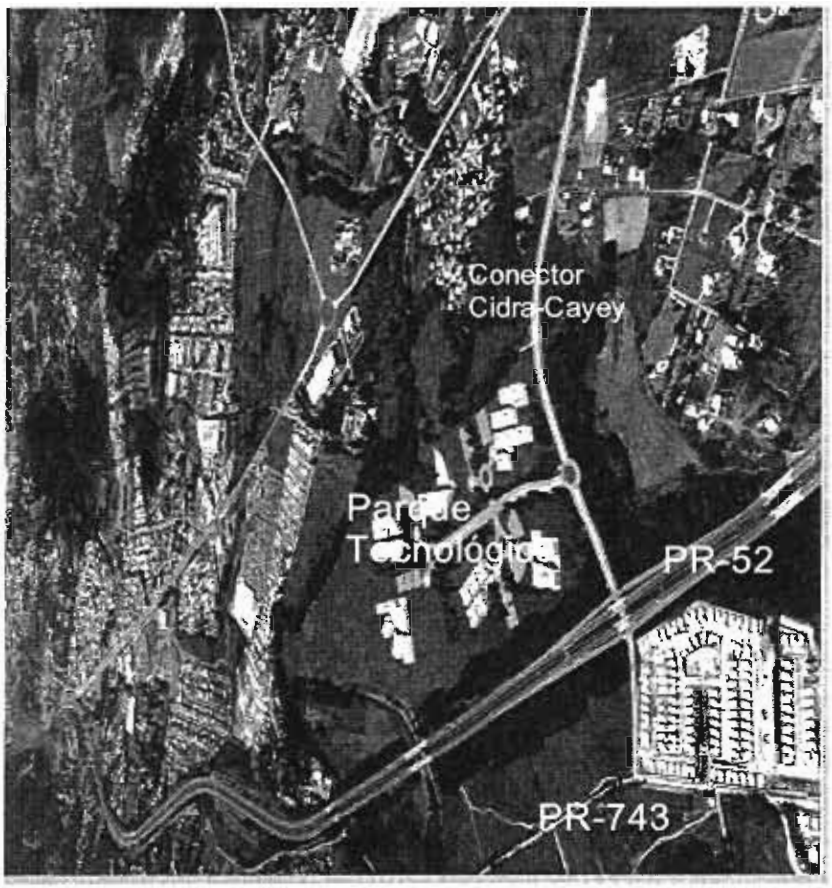

Figura 7 Diagrama Conceptual Nuevas Rampas PR-52

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

Carlos M. Contreras, PE, PTOE
Lic. 13395

8 REFERENCIAS

1. Trip Generation Manual, Institute of Transportation Engineers, 7th edition, 2003
2. Trip Generation Handbook: An ITE Recommended Practice, Institute of Transportation Engineers, March 2001
3. aaSIDRA 2.1 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-738 y PR-743

Beginning	Movement						
of Period	S-L	S-T	N-T	N-R	W-L	W-R	Total
6:00	20	5	12	1	20	52	110
6:15	26	8	16	2	33	64	149
6:30	35	1	26	2	16	94	174
6:45	17	3	35	6	17	122	200
7:00	29	7	23	14	12	116	201
7:15	29	5	17	2	11	99	163
7:30	28	1	8	7	12	78	134
7:45	37	5	10	4	12	86	154
8:00	27	11	12	1	11	64	126
8:15	55	4	9	1	12	32	113
8:30	35	4	9	2	10	44	104
8:45	25	6	7	1	8	33	80
9:00	22	4	5	2	7	28	68
9:15	30	3	7	1	5	24	70
9:30	29	7	8	2	8	25	79
9:45	24	4	5	1	10	26	70
10:00	27	3	6	1	4	29	70
10:15	22	5	4	2	8	32	73
10:30	30	4	5	1	5	30	75
10:45	33	4	7	2	7	31	84
11:00	38	4	8	2	1	27	80
11:15	32	3	9	1	2	27	74
11:30	35	7	7	1	1	35	86
11:45	30	6	7	4	2	37	86
12:00	34	4	4	2	2	37	83
12:15	26	7	1	0	1	32	67
12:30	29	12	6	1	1	33	82
12:45	43	6	9	5	1	23	87
13:00	41	2	2	2	2	25	74
13:15	39	3	5	3	2	20	72
13:30	44	4	4	5	1	19	77
13:45	38	7	7	7	1	32	92
14:00	51	10	8	2	1	33	105
14:15	50	11	10	4	2	38	115
14:30	49	14	5	3	1	39	111
14:45	54	15	4	2	1	41	117
15:00	68	16	7	1	9	43	144
15:15	73	11	7	2	1	35	129
15:30	76	19	9	7	2	21	134
15:45	68	9	7	2	1	42	129
16:00	62	14	4	3	1	46	130
16:15	64	13	8	2	3	54	144
16:30	64	10	9	4	2	59	148
16:45	65	12	11	2	2	52	144
17:00	81	15	9	2	1	54	162
17:15	65	12	6	1	2	55	141
17:30	63	4	14	2	6	51	140
17:45	58	8	7	0	1	48	122

Conteo PR-1 y PR-738

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	16	7	6	5	5	4	49	12	17	4	8	133		
6:15	3	35	12	11	7	5	9	68	5	27	15	21	218		
6:30	4	37	7	18	4	6	7	111	8	31	15	27	275		
6:45	8	73	17	17	9	7	9	104	14	40	11	31	340	966	
7:00	7	69	14	18	12	3	12	103	14	54	18	21	345	1178	
7:15	8	135	18	29	5	5	11	85	19	35	16	52	418	1378	
7:30	5	80	17	22	10	13	11	92	21	34	14	28	347	1450	
7:45	8	84	26	15	14	13	3	95	34	28	11	30	361	1471	
8:00	7	92	21	11	8	16	8	88	14	21	15	31	332	1458	
8:15	13	96	25	6	8	17	9	95	23	17	4	18	331	1371	
8:30	8	87	22	10	4	27	3	85	17	14	7	10	294	1318	
8:45	5	62	22	6	4	14	7	79	16	21	12	14	262	1219	
9:00	6	51	18	11	5	10	5	65	12	18	11	6	218	1105	
9:15	8	58	15	10	6	14	8	64	10	15	8	8	224	998	
9:30	7	57	12	14	7	20	9	63	11	20	5	7	232	936	
9:45	10	60	10	12	8	15	8	62	9	18	6	9	227	901	
10:00	11	64	19	10	7	17	11	52	8	17	7	10	233	916	
10:15	10	52	17	11	5	11	10	60	9	15	4	11	215	907	
10:30	15	59	15	10	6	10	5	55	8	19	3	10	215	890	
10:45	16	60	20	1	3	16	1	54	6	20	3	8	208	871	
11:00	23	75	19	9	5	13	8	59	8	16	4	9	248	886	
11:15	21	79	29	7	9	19	9	87	12	12	3	8	295	966	
11:30	28	91	29	16	8	21	10	88	8	18	5	14	336	1087	
11:45	33	90	37	4	4	14	9	88	13	21	6	10	329	1208	
12:00	20	102	37	3	4	26	8	76	6	16	5	10	313	1273	
12:15	26	95	37	8	1	18	12	79	10	25	9	11	331	1309	
12:30	32	117	33	5	6	19	6	82	6	18	5	18	347	1320	
12:45	35	108	28	11	11	15	11	86	11	23	8	13	360	1351	
13:00	24	94	29	12	9	20	10	92	12	18	5	17	342	1380	
13:15	38	104	52	11	8	14	12	89	10	15	4	11	368	1417	
13:30	20	120	64	10	11	20	14	78	11	14	8	14	384	1454	
13:45	29	115	59	9	14	21	15	101	9	12	7	12	403	1497	
14:00	33	148	39	14	12	20	12	100	8	20	9	13	428	1583	
14:15	30	129	59	8	12	25	11	90	11	11	10	14	410	1625	
14:30	28	138	44	9	10	24	10	93	10	15	8	19	408	1649	
14:45	25	139	45	10	14	25	13	93	7	19	7	14	411	1657	
15:00	23	148	59	24	22	21	12	91	13	17	10	20	460	1689	
15:15	30	144	56	11	15	24	22	103	13	21	15	13	467	1746	
15:30	33	150	53	19	12	17	19	109	8	26	10	9	465	1803	
15:45	36	144	59	8	15	21	15	117	11	22	11	10	469	1861	
16:00	38	104	55	9	17	19	18	125	12	18	4	15	434	1835	
16:15	27	98	52	14	10	21	21	117	9	20	9	8	406	1774	
16:30	31	110	48	17	6	20	14	127	14	23	6	8	424	1733	
16:45	14	122	18	13	9	24	20	140	9	22	6	7	404	1668	
17:00	34	80	56	10	13	19	22	151	12	11	11	6	425	1659	
17:15	50	106	56	14	8	23	18	97	8	13	7	17	417	1670	
17:30	32	141	45	15	13	27	23	91	9	27	7	22	452	1698	
17:45	29	125	31	6	12	20	19	93	2	25	12	5	379	1673	

PR-1 y Conector PR-52

Beginning	Movement								
of Period	S-T	S-R	E-L	E-R	N-L	N-T	Total		
6:00	45	278	98	100	69	78	668		
6:15	59	300	100	105	70	93	727		
6:30	69	307	109	129	75	105	794		
6:45	95	373	189	159	66	138	1020	3209	
7:00	68	338	201	128	86	142	963	3504	
7:15	63	325	200	149	113	166	1016	3793	
7:30	145	414	175	195	120	155	1204	4203	
7:45	111	310	172	136	112	135	976	4159	
8:00	144	249	154	119	98	101	865	4061	
8:15	123	269	131	102	79	91	795	3840	
8:30	96	249	149	115	64	79	752	3388	
8:45	115	259	158	121	65	79	797	3209	
9:00	120	249	148	109	67	80	773	3117	
9:15	125	263	136	98	63	100	785	3107	
9:30	110	247	128	111	52	95	743	3098	
9:45	135	239	136	110	63	87	770	3071	
10:00	129	178	130	96	49	93	675	2973	
10:15	117	159	124	98	57	90	645	2833	
10:30	120	168	107	100	55	100	650	2740	
10:45	125	178	129	109	60	95	696	2666	
11:00	128	200	138	93	81	105	745	2736	
11:15	167	164	116	72	72	109	700	2791	
11:30	145	127	125	85	65	132	679	2820	
11:45	161	126	154	100	60	128	729	2853	
12:00	157	150	133	94	65	142	741	2849	
12:15	147	121	124	71	83	153	699	2848	
12:30	204	124	145	102	84	133	792	2961	
12:45	189	139	156	114	94	139	831	3063	
13:00	201	178	145	110	84	128	846	3168	
13:15	200	169	163	124	96	135	887	3356	
13:30	205	159	147	104	98	109	822	3386	
13:45	209	169	152	98	78	132	838	3393	
14:00	198	178	160	78	99	128	841	3388	
14:15	200	166	142	96	104	109	817	3318	
14:30	214	195	138	88	100	119	854	3350	
14:45	219	200	140	96	96	125	876	3388	
15:00	239	171	150	106	85	136	887	3434	
15:15	241	258	152	112	96	127	986	3603	
15:30	201	232	190	118	106	133	980	3729	
15:45	164	260	186	164	93	115	982	3835	
16:00	135	267	179	149	95	137	962	3910	
16:15	228	281	188	187	101	107	1092	4016	
16:30	119	285	164	203	99	114	984	4020	
16:45	242	257	181	206	96	111	1093	4131	
17:00	178	263	197	143	106	132	1019	4188	
17:15	239	269	190	120	115	110	1043	4139	
17:30	170	194	241	109	95	127	936	4091	
17:45	128	145	202	157	73	112	817	3815	

Conteo PR-743 frente al Acceso proyecto (Obtenido por continuidad)

Beginning	Movement						
of Period	E-T	E-R	N-L	N-R	W-L	W-T	Total
6:00	13					25	38
6:15	18					41	59
6:30	28					17	45
6:45	**41**					**20**	**61**
7:00	37					19	56
7:15	19					16	35
7:30	15					13	28
7:45	14					17	31
8:00	13					22	35
8:15	10					16	26
8:30	11					14	25
8:45	8					14	22
9:00	7					11	18
9:15	8					8	16
9:30	10					15	25
9:45	6					14	20
10:00	7					7	14
10:15	6					13	19
10:30	6					9	15
10:45	9					11	20
11:00	10					5	15
11:15	10					5	15
11:30	8					8	16
11:45	11					8	19
12:00	6					6	12
12:15	1					8	9
12:30	7					13	20
12:45	14					7	21
13:00	4					4	8
13:15	8					5	13
13:30	9					5	14
13:45	14					8	22
14:00	10					11	21
14:15	14					13	27
14:30	8					15	23
14:45	6					16	22
15:00	8					25	33
15:15	9					12	21
15:30	16					21	37
15:45	9					10	19
16:00	7					15	22
16:15	10					16	26
16:30	13					12	25
16:45	13					14	27
17:00	11					16	**27**
17:15	7					14	21
17:30	16					10	26
17:45	7					9	16

9.2 Apéndice 2: Listado de Archivos de Modelaciones

Archivo	Lugar	Periodo
01_PR-743 y PR-738_BA.OUT	01 Int PR-743 y PR-738	Pico AM Base
01_PR-743 y PR-738_BP.OUT	01 Int PR-743 y PR-738	Pico PM Base
01_PR-743 y PR-738_FA.OUT	01 Int PR-743 y PR-738	Pico AM Futuro
01_PR-743 y PR-738_FA+5.OUT	01 Int PR-743 y PR-738	Pico AM Futuro + 5 anos
01_PR-743 y PR-738_FP.OUT	01 Int PR-743 y PR-738	Pico PM Futuro
01_PR-743 y PR-738_FP+5.OUT	01 Int PR-743 y PR-738	Pico PM Futuro + 5 anos
02_PR-1 y PR-738_BA.OUT	02 Int PR-1 y PR-738	Pico AM Base
02_PR-1 y PR-738_BP.OUT	02 Int PR-1 y PR-738	Pico PM Base
02_PR-1 y PR-738_FA.OUT	02 Int PR-1 y PR-738	Pico AM Futuro
02_PR-1 y PR-738_FASem.OUT	02 Int PR-1 y PR-738	Pico AM Futuro con semaforo
02_PR-1 y PR-738_FASem+5.OUT	02 Int PR-1 y PR-738	Pico AM Futuro con semaforo + 5 anos
02_PR-1 y PR-738_FP.OUT	02 Int PR-1 y PR-738	Pico PM Futuro
02_PR-1 y PR-738_FPSem.OUT	02 Int PR-1 y PR-738	Pico PM Futuro con semaforo
02_PR-1 y PR-738_FPSem+5.OUT	02 Int PR-1 y PR-738	Pico PM Futuro con semaforo + 5 anos
03_PR-1 y PR-52_BA.OUT	03 Int PR-1 y Conector PR-52	Pico AM Base
03_PR-1 y PR-52_BP.OUT	03 Int PR-1 y Conector PR-52	Pico PM Base
03_PR-1 y PR-52_FA.OUT	03 Int PR-1 y Conector PR-52	Pico AM Futuro
03_PR-1 y PR-52_FA+5.OUT	03 Int PR-1 y Conector PR-52	Pico AM Futuro + 5 anos
03_PR-1 y PR-52_FP.OUT	03 Int PR-1 y Conector PR-52	Pico PM Futuro
03_PR-1 y PR-52_FP+5.OUT	03 Int PR-1 y Conector PR-52	Pico PM Futuro + 5 anos
04_PR-743 y Acceso proyecto_FA.OUT	04 Int PR-743 y Acceso Proyecto	Pico AM Futuro
04_PR-743 y Acceso proyecto_FA+5.OUT	04 Int PR-743 y Acceso Proyecto	Pico AM Futuro + 5 Anos
04_PR-743 y Acceso proyecto_FP.OUT	04 Int PR-743 y Acceso Proyecto	Pico PM Futuro
04_PR-743 y Acceso proyecto_FP+5.OUT	04 Int PR-743 y Acceso Proyecto	Pico PM Futuro + 5 Anos

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 10:52 AM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParquelndustrialCayey\01_PR-743 y PR-738_BA.OUT

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1

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

---

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S								
1	116	0	0	0	0	0	1.00	1.00
2	0	0	28	0	0	0	1.00	1.00
North: PR-743 N								
7	0	0	92	0	0	0	1.00	1.00
9	0	0	0	0	56	0	1.00	1.00
West: PR-738 W								
10	48	0	0	0	0	0	1.00	1.00

12	0	0	0	0	464	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-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S										
1 L	116	0.0	196	0.0	196	947	0.80	553	100	0.122
2 T	28	0.0	280+	0.0	280	229	0.80	554	100	0.122
North: PR-743 N										
7 T	92	0.0	48	0.0	48	949	0.80	725	100	0.097
9 R	56	0.0	0			578	0.80	726	100	0.097
West: PR-738 W										
10 L	48	0.0	0			1857	0.80	2995	100	0.026
12 R	464	0.0	92	0.0	92	594<	0.80	2	100	0.781*

< Reduced saturation flow due to a short lane effect
+ Percentage of exiting flow included in total opposing flow

---

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s)	=	11.2
Largest average movement delay (s)	=	13.9
Largest cycle-average queue, mean (m)	=	6
Performance Index	=	14.44
Degree of saturation (highest)	=	0.781
Practical Spare Capacity (lowest)	=	2 %
Effective intersection capacity, (veh/h)	=	1029
Total vehicle flow (veh/h)	=	804
Total person flow (pers/h)	=	1206
Total vehicle delay (veh-h/h)	=	2.50
Total person delay (pers-h/h)	=	3.75
Total effective vehicle stops (veh/h)	=	524

Total effective person stops (pers/h)	=	786
Total vehicle travel (veh-km/h)	=	490.5
Total cost ($/h)	=	333.69
Total fuel (L/h)	=	54.5
Total CO2 (kg/h)	=	136.29

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.

---

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S									
1 L	0.37	0.55	11.4	0.32	0.87	0.0	0	2.12	46.2
2 T	0.09	0.13	11.3	0.32	0.90	0.0	0	0.52	46.4
North: PR-743 N									
7 T	0.00	0.01	0.2	0.14	0.02	0.0	0	0.95	58.1
9 R	0.13	0.20	8.4	0.14	0.57	0.0	0	0.88	48.3
West: PR-738 W									
10 L	0.11	0.17	8.6	0.00	0.71	0.0	0	0.78	48.5
12 R	1.79	2.69	13.9	0.85	0.71	0.8	6	9.20	43.6

---

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S									
144	0.122	0.46	0.68	11.4	0.32	0.88	0	2.64	46.2
North: PR-743 N									
148	0.097	0.13	0.20	3.3	0.14	0.23	0	1.83	54.0
West: PR-738 W									
512	0.781	1.91	2.86	13.4	0.77	0.71	6	9.98	44.0

ALL VEHICLES:									
804	0.781	2.50	3.75	11.2	0.57	0.65	6	14.44	45.9
INTERSECTION (persons):									
1206	0.781		3.75	11.2	0.57	0.65		14.44	45.9

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

---

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	144	1175	0.123	11.4	0.88	0.0	0	
North: PR-743 N									
1 TR	7, 9	148	1527	0.097	3.3	0.23	0.0	0	
West: PR-738 W									
1 L	10	48	1857	0.026	8.6	0.71	0.0	0	
2 R	12	464	594	0.781	13.9r	0.71	0.8	6	22

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-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	116	28	0	144	120	1175	0.123	100

North: PR-743 N									
1 TR	7, 9	0	92	56	148	148	1527	0.097	100
West: PR-738 W									
1 L	10	48	0	0	48	48	1857	0.026	100
2 R	12	0	0	464	464	120	594<	0.781	100

< Reduced capacity flow due to a short lane effect

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.

---

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S						
1 L	8.2	47.77	0.036	1.73	0.050	20.4
2 T	2.0	11.48	0.009	0.41	0.012	4.9
	10.1	59.25	0.044	2.15	0.062	25.3
North: PR-743 N						
7 T	4.3	29.15	0.016	0.44	0.021	10.8
9 R	3.8	22.08	0.016	0.77	0.023	9.4
	8.1	51.24	0.032	1.21	0.044	20.2
West: PR-738 W						
10 L	3.3	18.84	0.014	0.69	0.020	8.1
12 R	33.1	204.36	0.144	6.81	0.199	82.7
	36.3	223.20	0.158	7.50	0.219	90.8
INTERSECTION:	54.5	333.69	0.235	10.86	0.325	136.3

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).

---

01 Int PR-743 y PR-738
Pico AM Base
Intersection ID: 1
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: PR-738 S												
1 LT	116	28		144	0				0.123	11.4	0	
	116	28	0	144	0				0.123	11.4	0	
North: PR-743 N												
1 TR		92	56	148	0				0.097	3.3	0	
	0	92	56	148	0				0.097	3.3	0	
West: PR-738 W												
1 L	48			48	0				0.026	8.6	0	
2 R			464	464	0				0.781	13.9r	6	22
	48	0	464	512	0				0.781	13.4	6	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	804	0	0.781	11.2	6

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.

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.

Pico AM Base
Intersection ID: 1
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: PR-738 S								
1	L	116	947	0.122	11.4	B	0.0	0
2	T	28	229	0.122	11.3	B	0.0	0
		144		0.122	11.4	B	0.0	0
North: PR-743 N								
7	T	92	949	0.097	0.2	A	0.0	0
9	R	56	578	0.097	8.4	A	0.0	0
		148		0.097	3.3	A	0.0	0
West: PR-738 W								
10	L	48	1857	0.026	8.6	A	0.0	0
12	R	464	594<	0.781*	13.9	B	0.8	6
		512		0.781	13.4	B	0.8	6
ALL VEHICLES:		804		0.781	11.2	NA	0.8	6

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

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

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_BA.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 10:52 AM, 22 Nov 2005

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 10:54 AM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_BP.OUT

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1

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

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
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: PR-738 S								
1	324	0	0	0	0	0	1.00	1.00
2	0	0	60	0	0	0	1.00	1.00
North: PR-743 N								
7	0	0	36	0	0	0	1.00	1.00
9	0	0	0	0	8	0	1.00	1.00
West: PR-738 W								

10	4	0	0	0	0	0	1.00	1.00
12	0	0	0	0	216	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-743 y PR-738
Pico PM Base
Intersection ID: 1
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: PR-738 S										
1 L	324	0.0	48	0.0	48	1152	0.80	184	100	0.281
2 T	60	0.0	112+	0.0	112	213	0.80	184	100	0.282
North: PR-743 N										
7 T	36	0.0	4	0.0	4	1225	0.80	2622	100	0.029
9 R	8	0.0	0			272	0.80	2620	100	0.029
West: PR-738 W										
10 L	4	0.0	0			1857	0.80	****	100	0.002
12 R	216	0.0	36	0.0	36	604<	0.80	124	100	0.358*

< Reduced saturation flow due to a short lane effect
+ Percentage of exiting flow included in total opposing flow

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s)	=	9.4
Largest average movement delay (s)	=	10.8
Largest cycle-average queue, mean (m)	=	0
Performance Index	=	10.92
Degree of saturation (highest)	=	0.358
Practical Spare Capacity (lowest)	=	124 %
Effective intersection capacity, (veh/h)	=	1812
Total vehicle flow (veh/h)	=	648
Total person flow (pers/h)	=	972
Total vehicle delay (veh-h/h)	=	1.68
Total person delay (pers-h/h)	=	2.53

Total effective vehicle stops (veh/h)	=	468
Total effective person stops (pers/h)	=	702
Total vehicle travel (veh-km/h)	=	393.1
Total cost ($/h)	=	259.78
Total fuel (L/h)	=	43.7
Total CO2 (kg/h)	=	109.19

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.

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
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: PR-738 S									
1 L	0.97	1.46	10.8	0.17	0.89	0.0	0	5.86	46.4
2 T	0.18	0.27	10.7	0.17	0.92	0.0	0	1.09	46.6
North: PR-743 N									
7 T	0.00	0.00	0.0	0.03	0.00	0.0	0	0.36	59.6
9 R	0.02	0.03	8.2	0.03	0.65	0.0	0	0.13	48.8
West: PR-738 W									
10 L	0.01	0.01	8.6	0.00	0.71	0.0	0	0.07	48.5
12 R	0.50	0.76	8.4	0.35	0.53	0.0	0	3.40	47.9

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
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: PR-738 S									
384	0.282	1.15	1.73	10.8	0.17	0.90	0	6.95	46.5
North: PR-743 N									
44	0.029	0.02	0.03	1.5	0.03	0.12	0	0.49	57.3
West: PR-738 W									

220	0.358	0.51	0.77	8.4	0.34	0.53	0	3.47	47.9
ALL VEHICLES:									
648	0.358	1.68	2.53	9.4	0.22	0.72	0	10.92	47.6
INTERSECTION (persons):									
972	0.358		2.53	9.4	0.22	0.72		10.92	47.6

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

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
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 Aver. (vehs)	Queue Cycle Aver. (m)	Short Lane (m)
South: PR-738 S									
1 LT	1, 2	384	1365	0.281	10.8	0.90	0.0	0	
North: PR-743 N									
1 TR	7, 9	44	1497	0.029	1.5	0.12	0.0	0	
West: PR-738 W									
1 L	10	4	1857	0.002	8.6	0.71	0.0	0	
2 R	12	216	604	0.358	8.4	0.53	0.0	0	22

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	324	60	0	384	120	1365	0.281	100
North: PR-743 N									
1 TR	7,	0	36	8	44	44	1497	0.029	100

West: PR-738 W									
1	L	10	4	0	0	4	4	1857	0.002	100
2	R	12	0	0	216	216	120	604<	0.358	100

< Reduced capacity flow due to a short lane effect

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.

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
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: PR-738 S						
1 L	22.7	132.77	0.100	4.84	0.139	56.9
2 T	4.2	24.50	0.018	0.89	0.026	10.5
	26.9	157.27	0.118	5.73	0.164	67.3
North: PR-743 N						
7 T	1.6	11.04	0.006	0.12	0.007	4.0
9 R	0.5	3.13	0.002	0.11	0.003	1.3
	2.1	14.16	0.008	0.23	0.011	5.3
West: PR-738 W						
10 L	0.3	1.57	0.001	0.06	0.002	0.7
12 R	14.4	86.77	0.061	2.83	0.086	35.9
	14.6	88.34	0.062	2.89	0.087	36.6
INTERSECTION:	43.7	259.78	0.188	8.85	0.262	109.2

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).

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
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: PR-738 S												
1 LT	324	60		384	0				0.281	10.8	0	
	324	60	0	384	0				0.281	10.8	0	
North: PR-743 N												
1 TR		36	8	44	0				0.029	1.5	0	
	0	36	8	44	0				0.029	1.5	0	
West: PR-738 W												
1 L	4			4	0				0.002	8.6	0	
2 R			216	216	0				0.358	8.4	0	22
	4	0	216	220	0				0.358	8.4	0	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	648	0	0.358	9.4	0

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.

---

01 Int PR-743 y PR-738
Pico PM Base
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov	Mov	Total	Total	Deg.	Aver.	LOS	Longest Queue

No.	Typ	Flow (veh /h)	Cap. (veh /h)	of Satn (v/c)	Delay (sec)		Cycle (vehs)	Aver. (m)
South: PR-738 S								
1	L	324	1152	0.281	10.8	B	0.0	0
2	T	60	213	0.282	10.7	B	0.0	0
		384		0.282	10.8	B	0.0	0
North: PR-743 N								
7	T	36	1225	0.029	0.0	A	0.0	0
9	R	8	272	0.029	8.2	A	0.0	0
		44		0.029	1.5	A	0.0	0
West: PR-738 W								
10	L	4	1857	0.002	8.6	A	0.0	0
12	R	216	604<	0.358*	8.4	A	0.0	0
		220		0.358	8.4	A	0.0	0
ALL VEHICLES:		648		0.358	9.4	NA	0.0	0

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

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

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_BP.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 10:54 AM, 22 Nov 2005

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 10:47 AM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FA.OUT

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1

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

---

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S								
1	125	0	0	0	0	0	1.00	1.00
2	0	0	30	0	0	0	1.00	1.00
North: PR-743 N								
7	0	0	99	0	0	0	1.00	1.00
9	0	0	0	0	185	0	1.00	1.00
West: PR-738 W								

10	619	0	0	0	0	0	1.00	1.00
12	0	0	0	0	500	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-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S										
1 L	125	0.0	903	0.0	903	417	0.80	167	100	0.300
2 T	30	0.0	869+	0.0	869	100	0.80	167	100	0.300
North: PR-743 N										
7 T	99	0.0	619	0.0	619	407	0.80	229	100	0.243
9 R	185	0.0	0			761	0.80	229	100	0.243
West: PR-738 W										
10 L	619	0.0	0			1857	0.80	140	100	0.333
12 R	500	0.0	99	0.0	99	593<	0.80	-5	100	0.843*

< Reduced saturation flow due to a short lane effect
+ Percentage of exiting flow included in total opposing flow

---

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s)	=	11.5
Largest average movement delay (s)	=	17.8
Largest cycle-average queue, mean (m)	=	6
Performance Index	=	28.21
Degree of saturation (highest)	=	0.843
Practical Spare Capacity (lowest)	=	-5 %
Effective intersection capacity, (veh/h)	=	1848
Total vehicle flow (veh/h)	=	1558
Total person flow (pers/h)	=	2337
Total vehicle delay (veh-h/h)	=	4.99
Total person delay (pers-h/h)	=	7.49

Total effective vehicle stops (veh/h)	=	1059
Total effective person stops (pers/h)	=	1589
Total vehicle travel (veh-km/h)	=	944.4
Total cost ($/h)	=	649.21
Total fuel (L/h)	=	108.0
Total CO2 (kg/h)	=	269.94

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

---

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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)	Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-738 S									
1 L	0.62	0.93	17.8	0.72	1.04	0.3	2	2.85	41.2
2 T	0.15	0.22	17.7	0.72	1.04	0.3	2	0.68	41.4
North: PR-743 N									
7 T	0.14	0.20	4.9	0.67	0.60	0.4	3	1.60	51.8
9 R	0.67	1.01	13.1	0.67	0.22	0.4	3	3.01	44.1
West: PR-738 W									
10 L	1.47	2.21	8.6	0.00	0.71	0.0	0	10.11	48.5
12 R	1.94	2.92	14.0	0.97	0.72	0.9	6	9.96	43.5

---

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S									
155	0.300	0.77	1.15	17.8	0.72	1.04	2	3.53	41.3
North: PR-743 N									
284	0.243	0.81	1.21	10.3	0.67	0.35	3	4.61	46.5
West: PR-738 W									

1119	0.843	3.42	5.13	11.0	0.43	0.71	6	20.07	46.1
ALL VEHICLES:									
1558	0.843	4.99	7.49	11.5	0.51	0.68	6	28.21	45.6
INTERSECTION (persons):									
2337	0.843		7.49	11.5	0.51	0.68		28.21	45.6

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

---

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	155	517	0.300	17.8	1.04	0.3	2	
North: PR-743 N									
1 TR	7, 9	284	1168	0.243	10.3	0.35	0.4	3	
West: PR-738 W									
1 L	10	619	1857	0.333	8.6	0.71	0.0	0	
2 R	12	500	593	0.844	14.0r	0.72	0.9	6	22

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-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S									
1 LT	1,	125	30	0	155	120	517	0.300	100

```
          2
-----------------------------------------------------
 North: PR-743 N
 1 TR     7,    0   99  185  284   284 1168 0.243  100
          9
-----------------------------------------------------
 West: PR-738 W
 1 L     10   619    0    0  619   619 1857 0.333  100
 2 R     12     0    0  500  500   120  593<0.844  100
-----------------------------------------------------
  <  Reduced capacity flow due to a short lane effect

  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.
```

---

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S						
1 L	9.1	56.63	0.040	1.89	0.054	22.7
2 T	2.2	13.53	0.010	0.45	0.013	5.4
	11.2	70.15	0.050	2.34	0.067	28.1
North: PR-743 N						
7 T	6.1	36.34	0.025	1.10	0.035	15.1
9 R	12.9	79.12	0.057	2.68	0.078	32.4
	19.0	115.47	0.082	3.78	0.113	47.5
West: PR-738 W						
10 L	41.9	242.92	0.183	8.86	0.256	104.8
12 R	35.8	220.66	0.156	7.41	0.216	89.6
	77.7	463.58	0.340	16.27	0.472	194.4
INTERSECTION:	108.0	649.21	0.471	22.38	0.652	269.9

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).

---

01 Int PR-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S												
1 LT	125	30		155	0				0.300	17.8	2	
	125	30	0	155	0				0.300	17.8	2	
North: PR-743 N												
1 TR		99	185	284	0				0.243	10.3	3	
	0	99	185	284	0				0.243	10.3	3	
West: PR-738 W												
1 L	619			619	0				0.333	8.6	0	
2 R			500	500	0				0.844	14.0r	6	22
	619	0	500	1119	0				0.844	11.0	6	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1558	0	0.843	11.5	6

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.

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-743 y PR-738
Pico AM Futuro
Intersection ID: 1
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: PR-738 S								
1	L	125	417	0.300	17.8	C	0.3	2
2	T	30	100	0.300	17.7	C	0.3	2
		155		0.300	17.8	C	0.3	2
North: PR-743 N								
7	T	99	407	0.243	4.9	A	0.4	3
9	R	185	761	0.243	13.1	B	0.4	3
		284		0.243	10.3	B	0.4	3
West: PR-738 W								
10	L	619	1857	0.333	8.6	A	0.0	0
12	R	500	593<	0.843*	14.0	B	0.9	6
		1119		0.843	11.0	B	0.9	6
ALL VEHICLES:		1558		0.843	11.5	NA	0.9	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.

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

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FA.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 10:47 AM, 22 Nov 2005

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 3:50 PM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FA+5.OUT

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1

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

---

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S								
1	135	0	0	0	0	0	1.00	1.00
2	0	0	32	0	0	0	1.00	1.00
North: PR-743 N								
7	0	0	107	0	0	0	1.00	1.00
9	0	0	0	0	190	0	1.00	1.00
West: PR-738 W								

10	623	0	0	0	0	0	1.00	1.00
12	0	0	0	0	538	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-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S										
1 L	135	0.0	920	0.0	920	407	0.80	141	100	0.332
2 T	32	0.0	892+	0.0	892	96	0.80	140	100	0.333
North: PR-743 N										
7 T	107	0.0	623	0.0	623	414	0.80	210	100	0.258
9 R	190	0.0	0			735	0.80	209	100	0.259
West: PR-738 W										
10 L	623	0.0	0			1857	0.80	138	100	0.335
12 R	538	0.0	107	0.0	107	592<	0.80	-12	100	0.909*

< Reduced saturation flow due to a short lane effect
+ Percentage of exiting flow included in total opposing flow

---

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s)	=	11.8
Largest average movement delay (s)	=	18.4
Largest cycle-average queue, mean (m)	=	7
Performance Index	=	29.69
Degree of saturation (highest)	=	0.909
Practical Spare Capacity (lowest)	=	-12 %
Effective intersection capacity, (veh/h)	=	1788
Total vehicle flow (veh/h)	=	1625
Total person flow (pers/h)	=	2438
Total vehicle delay (veh-h/h)	=	5.31
Total person delay (pers-h/h)	=	7.96

Total effective vehicle stops (veh/h)	=	1113
Total effective person stops (pers/h)	=	1670
Total vehicle travel (veh-km/h)	=	985.3
Total cost ($/h)	=	679.58
Total fuel (L/h)	=	112.7
Total CO2 (kg/h)	=	281.85

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.

---

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S									
1 L	0.69	1.04	18.4	0.74	1.05	0.4	3	3.13	40.8
2 T	0.16	0.24	18.2	0.74	1.05	0.4	3	0.74	41.0
North: PR-743 N									
7 T	0.15	0.23	5.1	0.69	0.63	0.4	3	1.76	51.6
9 R	0.70	1.05	13.3	0.69	0.21	0.4	3	3.11	43.9
West: PR-738 W									
10 L	1.48	2.22	8.6	0.00	0.71	0.0	0	10.17	48.5
12 R	2.12	3.18	14.2	1.00	0.72	1.0	7	10.78	43.3

---

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S									
167	0.333	0.85	1.28	18.4	0.74	1.05	3	3.87	40.9
North: PR-743 N									
297	0.259	0.85	1.28	10.4	0.69	0.36	3	4.86	46.4

West: PR-738 W

1161	0.909	3.60	5.40	11.2	0.46	0.72	7	20.96	45.9
ALL VEHICLES:									
1625	0.909	5.31	7.96	11.8	0.53	0.68	7	29.69	45.4
INTERSECTION (persons):									
2438	0.909		7.96	11.8	0.53	0.68		29.69	45.4

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

---

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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 Aver. (vehs)	Queue Cycle Aver. (m)	Short Lane (m)
South: PR-738 S									
1 LT	1, 2	167	503	0.332	18.4	1.05	0.4	3	
North: PR-743 N									
1 TR	7, 9	297	1149	0.258	10.4	0.36	0.4	3	
West: PR-738 W									
1 L	10	623	1857	0.335	8.6	0.71	0.0	0	
2 R	12	538	592	0.910	14.2r	0.72	1.0	7	22

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-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S									
1 LT	1,	135	32	0	167	120	503	0.332	100

```
          2
-------------------------------------------------------
 North: PR-743 N
 1 TR     7,     0  107  190  297   297 1149 0.258  100
          9
-------------------------------------------------------
 West: PR-738 W
 1 L     10   623    0    0  623   623 1857 0.335  100
 2 R     12     0    0  538  538   120  592<0.910  100
-------------------------------------------------------
  <  Reduced capacity flow due to a short lane effect

  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.
```

---

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S						
1 L	9.8	61.71	0.044	2.04	0.059	24.6
2 T	2.3	14.56	0.010	0.48	0.014	5.8
	12.2	76.27	0.054	2.52	0.072	30.4
North: PR-743 N						
7 T	6.6	39.43	0.027	1.20	0.038	16.5
9 R	13.3	81.54	0.058	2.76	0.080	33.3
	19.9	120.97	0.086	3.96	0.118	49.7
West: PR-738 W						
10 L	42.2	244.49	0.185	8.92	0.257	105.5
12 R	38.5	237.85	0.168	7.93	0.232	96.3
	80.7	482.34	0.352	16.85	0.489	201.7
INTERSECTION:	112.7	679.58	0.492	23.33	0.680	281.8

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).

---

01 Int PR-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S												
1 LT	135	32		167	0				0.332	18.4	3	
	135	32	0	167	0				0.332	18.4	3	
North: PR-743 N												
1 TR		107	190	297	0				0.258	10.4	3	
	0	107	190	297	0				0.258	10.4	3	
West: PR-738 W												
1 L	623			623	0				0.335	8.6	0	
2 R			538	538	0				0.910	14.2r	7	22
	623	0	538	1161	0				0.910	11.2	7	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1625	0	0.909	11.8	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.

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-743 y PR-738
Pico AM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S								
1	L	135	407	0.332	18.4	C	0.4	3
2	T	32	96	0.333	18.2	C	0.4	3
		167		0.333	18.4	C	0.4	3
North: PR-743 N								
7	T	107	414	0.258	5.1	A	0.4	3
9	R	190	735	0.259	13.3	B	0.4	3
		297		0.259	10.4	B	0.4	3
West: PR-738 W								
10	L	623	1857	0.335	8.6	A	0.0	0
12	R	538	592<	0.909*	14.2	B	1.0	7
		1161		0.909	11.2	B	1.0	7
ALL VEHICLES:		1625		0.909	11.8	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.

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FA+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 3:50 PM, 22 Nov 2005

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 10:46 AM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FP.OUT

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1

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

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S								
1	349	0	0	0	0	0	1.00	1.00
2	0	0	65	0	0	0	1.00	1.00
North: PR-743 N								
7	0	0	39	0	0	0	1.00	1.00
9	0	0	0	0	763	0	1.00	1.00
West: PR-738 W								

10	204	0	0	0	0	0	1.00	1.00
12	0	0	0	0	233	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-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S										
1 L	349	0.0	1006	0.0	1006	408	0.80	-6	100	0.855*
2 T	65	0.0	321+	0.0	321	76	0.80	-6	100	0.855*
North: PR-743 N										
7 T	39	0.0	204	0.0	204	88	0.80	81	100	0.443
9 R	763	0.0	0			1719	0.80	80	100	0.444
West: PR-738 W										
10 L	204	0.0	0			1857	0.80	628	100	0.110
12 R	233	0.0	39	0.0	39	603<	0.80	107	100	0.386

< Reduced saturation flow due to a short lane effect
+ Percentage of exiting flow included in total opposing flow

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	D
Average intersection delay (s)	=	14.9
Largest average movement delay (s)	=	32.6
Largest cycle-average queue, mean (m)	=	18
Performance Index	=	32.82
Degree of saturation (highest)	=	0.855
Practical Spare Capacity (lowest)	=	-6 %
Effective intersection capacity, (veh/h)	=	1932
Total vehicle flow (veh/h)	=	1653
Total person flow (pers/h)	=	2480
Total vehicle delay (veh-h/h)	=	6.85
Total person delay (pers-h/h)	=	10.28

Total effective vehicle stops (veh/h)	=	1147
Total effective person stops (pers/h)	=	1721
Total vehicle travel (veh-km/h)	=	999.8
Total cost ($/h)	=	731.65
Total fuel (L/h)	=	117.0
Total CO2 (kg/h)	=	292.58

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

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S									
1 L	3.16	4.74	32.6	0.87	1.48	2.5	18	11.67	32.3
2 T	0.59	0.88	32.4	0.87	1.65	2.5	18	2.23	32.5
North: PR-743 N									
7 T	0.02	0.02	1.5	0.52	0.18	0.3	2	0.47	53.5
9 R	2.06	3.09	9.7	0.52	0.32	0.3	2	11.43	46.7
West: PR-738 W									
10 L	0.49	0.73	8.6	0.00	0.71	0.0	0	3.33	48.5
12 R	0.55	0.83	8.5	0.38	0.53	0.1	0	3.69	47.8

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S									
414	0.855	3.74	5.61	32.5	0.87	1.51	18	13.90	32.4
North: PR-743 N									
802	0.444	2.07	3.11	9.3	0.52	0.32	2	11.90	47.0
West: PR-738 W									

437	0.386	1.04	1.55	8.5	0.20	0.61	0	7.02	48.1
ALL VEHICLES:									
1653	0.855	6.85	10.28	14.9	0.52	0.69	18	32.82	42.5
INTERSECTION (persons):									
2480	0.855		10.28	14.9	0.52	0.69		32.82	42.5

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

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	414	484	0.855	32.5	1.51	2.5	18	
North: PR-743 N									
1 TR	7, 9	802	1807	0.444	9.3	0.32	0.3	2	
West: PR-738 W									
1 L	10	204	1857	0.110	8.6	0.71	0.0	0	
2 R	12	233	603	0.386	8.5	0.53	0.1	0	22

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	349	65	0	414	120	484	0.855	100
North: PR-743 N									
1 TR	7,	0	39	763	802	802	1807	0.444	100

9

West: PR-738 W									
1 L	10	204	0	0	204	204	1857	0.110	100
2 R	12	0	0	233	233	120	603<	0.386	100

< Reduced capacity flow due to a short lane effect

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.

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S						
1 L	27.8	196.57	0.127	5.63	0.159	69.5
2 T	5.4	37.13	0.025	1.16	0.032	13.5
	33.2	233.69	0.152	6.79	0.191	83.0
North: PR-743 N						
7 T	2.2	13.74	0.009	0.36	0.012	5.5
9 R	52.3	310.31	0.228	10.88	0.317	130.7
	54.5	324.05	0.237	11.24	0.329	136.2
West: PR-738 W						
10 L	13.8	80.06	0.060	2.92	0.084	34.5
12 R	15.5	93.85	0.066	3.07	0.093	38.8
	29.3	173.91	0.126	5.99	0.177	73.3
INTERSECTION:	117.0	731.65	0.515	24.02	0.697	292.6

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).

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
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: PR-738 S												
1 LT	349	65		414	0				0.855	32.5	18	
	349	65	0	414	0				0.855	32.5	18	
North: PR-743 N												
1 TR		39	763	802	0				0.444	9.3	2	
	0	39	763	802	0				0.444	9.3	2	
West: PR-738 W												
1 L	204			204	0				0.110	8.6	0	
2 R			233	233	0				0.386	8.5	0	22
	204	0	233	437	0				0.386	8.5	0	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1653	0	0.855	14.9	18

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.

---

01 Int PR-743 y PR-738
Pico PM Futuro
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov	Mov	Total	Total	Deg.	Aver.	LOS	Longest Queue

No.	Typ	Flow (veh /h)	Cap. (veh /h)	of Satn (v/c)	Delay (sec)		Cycle (vehs)	Aver. (m)
South: PR-738 S								
1	L	349	408	0.855*	32.6	D	2.5	18
2	T	65	76	0.855*	32.4	D	2.5	18
		414		0.855	32.5	D	2.5	18
North: PR-743 N								
7	T	39	88	0.443	1.5	A	0.3	2
9	R	763	1719	0.444	9.7	A	0.3	2
		802		0.444	9.3	A	0.3	2
West: PR-738 W								
10	L	204	1857	0.110	8.6	A	0.0	0
12	R	233	603<	0.386	8.5	A	0.1	0
		437		0.386	8.5	A	0.1	0
ALL VEHICLES:		1653		0.855	14.9	NA	2.5	18

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.

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FP.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 10:46 AM, 22 Nov 2005

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 3:54 PM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FP+5.OUT

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1

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

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S								
1	376	0	0	0	0	0	1.00	1.00
2	0	0	70	0	0	0	1.00	1.00
North: PR-743 N								
7	0	0	42	0	0	0	1.00	1.00
9	0	0	0	0	763	0	1.00	1.00
West: PR-738 W								

10	205	0	0	0	0	0	1.00	1.00
12	0	0	0	0	251	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-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S										
1 L	376	0.0	1010	0.0	1010	405	0.80	-14	100	0.928
2 T	70	0.0	331+	0.0	331	75	0.80	-14	100	0.933*
North: PR-743 N										
7 T	42	0.0	205	0.0	205	94	0.80	79	100	0.447
9 R	763	0.0	0			1709	0.80	79	100	0.446
West: PR-738 W										
10 L	205	0.0	0			1857	0.80	625	100	0.110
12 R	251	0.0	42	0.0	42	603<	0.80	92	100	0.416

< Reduced saturation flow due to a short lane effect
+ Percentage of exiting flow included in total opposing flow

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	E
Average intersection delay (s)	=	17.2
Largest average movement delay (s)	=	40.4
Largest cycle-average queue, mean (m)	=	26
Performance Index	=	36.74
Degree of saturation (highest)	=	0.933
Practical Spare Capacity (lowest)	=	-14 %
Effective intersection capacity, (veh/h)	=	1829
Total vehicle flow (veh/h)	=	1707
Total person flow (pers/h)	=	2561
Total vehicle delay (veh-h/h)	=	8.17
Total person delay (pers-h/h)	=	12.26

Total effective vehicle stops (veh/h)	=	1303
Total effective person stops (pers/h)	=	1955
Total vehicle travel (veh-km/h)	=	1032.6
Total cost ($/h)	=	785.33
Total fuel (L/h)	=	122.8
Total CO2 (kg/h)	=	307.07

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.

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S									
1 L	4.22	6.33	40.4	0.90	1.69	3.7	26	14.64	29.0
2 T	0.78	1.17	40.3	0.90	1.97	3.7	26	2.83	29.1
North: PR-743 N									
7 T	0.02	0.03	1.5	0.52	0.18	0.3	2	0.50	53.5
9 R	2.06	3.09	9.7	0.52	0.32	0.3	2	11.43	46.7
West: PR-738 W									
10 L	0.49	0.73	8.6	0.00	0.71	0.0	0	3.35	48.5
12 R	0.60	0.90	8.6	0.41	0.53	0.1	1	3.99	47.6

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S									
446	0.933	5.00	7.51	40.4	0.90	1.73	26	17.47	29.0
North: PR-743 N									
805	0.447	2.08	3.12	9.3	0.52	0.31	2	11.93	47.0
West: PR-738 W									

456	0.416	1.09	1.63	8.6	0.22	0.61	1	7.33	48.0
ALL VEHICLES:									
1707	0.933	8.17	12.26	17.2	0.54	0.76	26	36.74	40.7
INTERSECTION (persons):									
2561	0.933		12.26	17.2	0.54	0.76		36.74	40.7

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

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	446	481	0.928	40.4	1.73	3.7	26	
North: PR-743 N									
1 TR	7, 9	805	1803	0.447	9.3	0.31	0.3	2	
West: PR-738 W									
1 L	10	205	1857	0.110	8.6	0.71	0.0	0	
2 R	12	251	603	0.416	8.6	0.53	0.1	1	22

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S									
1 LT	1, 2	376	70	0	446	120	481	0.928	100
North: PR-743 N									
1 TR	7,	0	42	763	805	805	1803	0.447	100

9

West: PR-738 W									
1 L	10	205	0	0	205	205	1857	0.110	100
2 R	12	0	0	251	251	120	603<	0.416	100

< Reduced capacity flow due to a short lane effect

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.

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S						
1 L	31.3	233.91	0.145	6.25	0.176	78.4
2 T	6.2	44.36	0.029	1.32	0.036	15.4
	37.5	278.27	0.174	7.57	0.212	93.8
North: PR-743 N						
7 T	2.4	14.81	0.010	0.39	0.013	6.0
9 R	52.3	310.39	0.228	10.89	0.317	130.7
	54.7	325.20	0.238	11.28	0.330	136.7
West: PR-738 W						
10 L	13.9	80.45	0.061	2.93	0.085	34.7
12 R	16.8	101.41	0.071	3.32	0.100	41.9
	30.6	181.86	0.132	6.25	0.185	76.6
INTERSECTION:	122.8	785.33	0.543	25.10	0.727	307.1

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).

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
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: PR-738 S												
1 LT	376	70		446	0				0.928	40.4	26	
	376	70	0	446	0				0.928	40.4	26	
North: PR-743 N												
1 TR		42	763	805	0				0.447	9.3	2	
	0	42	763	805	0				0.447	9.3	2	
West: PR-738 W												
1 L	205			205	0				0.110	8.6	0	
2 R			251	251	0				0.416	8.6	1	22
	205	0	251	456	0				0.416	8.6	1	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1707	0	0.933	17.2	26

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.

---

01 Int PR-743 y PR-738
Pico PM Futuro + 5 anos
Intersection ID: 1
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov	Mov	Total	Total	Deg.	Aver.	LOS	Longest Queue

No.	Typ	Flow (veh /h)	Cap. (veh /h)	of Satn (v/c)	Delay (sec)		Cycle (vehs)	Aver. (m)
South: PR-738 S								
1	L	376	405	0.928	40.4	E	3.7	26
2	T	70	75	0.933*	40.3	E	3.7	26
		446		0.933	40.4	E	3.7	26
North: PR-743 N								
7	T	42	94	0.447	1.5	A	0.3	2
9	R	763	1709	0.446	9.7	A	0.3	2
		805		0.447	9.3	A	0.3	2
West: PR-738 W								
10	L	205	1857	0.110	8.6	A	0.0	0
12	R	251	603<	0.416	8.6	A	0.1	1
		456		0.416	8.6	A	0.1	1
ALL VEHICLES:		1707		0.933	17.2	NA	3.7	26

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.

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\01_PR-743 y PR-738_FP+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 3:54 PM, 22 Nov 2005

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 3:28 PM, 16 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_BA.OUT

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2

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

---

02 Int PR-1 y PR-738
Pico AM Base
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								
South: PR-1 S								
1	32	0	540	0	0	0	1.00	1.00
3	0	0	0	0	72	0	1.00	1.00
East: PR-738 E								
4	116	0	20	0	0	0	1.00	1.00
6	0	0	0	0	20	0	1.00	1.00
North: PR-1 N								

7	44	0	340	0	0	0	1.00	1.00
9	0	0	0	0	76	0	1.00	1.00
West: PR-738 W								
10	140	0	64	0	0	0	1.00	1.00
12	0	0	0	0	208	0	1.00	1.00

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

---

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2
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: PR-1 S										
1 LT	572	0.0	416	0.0	416	1632	0.80	128	100	0.350
3 R	72	0.0	0			205	0.80	128	100	0.351
East: PR-738 E										
4 LT	136	0.0	DIFF			405	0.80	138	23	0.336
6 R	20	0.0	576+	0.0	576	259	0.80	936	23	0.077
North: PR-1 N										
7 LT	384	0.0	612	0.0	612	1379	0.80	187	100	0.278
9 R	76	0.0	0			273	0.80	187	100	0.278
West: PR-738 W										
10 LT	204	0.0	DIFF			303	0.80	19	100	0.673*
12 R	208	0.0	378+	0.0	378	309	0.80	19	100	0.673*

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

---

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s)	=	11.0
Largest average movement delay (s)	=	21.9

Largest cycle-average queue, mean (m)	=	9
Performance Index	=	29.19
Degree of saturation (highest)	=	0.673
Practical Spare Capacity (lowest)	=	19 %
Effective intersection capacity, (veh/h)	=	2483
Total vehicle flow (veh/h)	=	1672
Total person flow (pers/h)	=	2508
Total vehicle delay (veh-h/h)	=	5.13
Total person delay (pers-h/h)	=	7.69
Total effective vehicle stops (veh/h)	=	762
Total effective person stops (pers/h)	=	1144
Total vehicle travel (veh-km/h)	=	1012.5
Total cost ($/h)	=	697.49
Total fuel (L/h)	=	113.6
Total CO2 (kg/h)	=	284.05

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.

---

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2
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: PR-1 S									
1 LT	0.59	0.89	3.7	0.72	0.05	0.6	4	7.05	51.0
3 R	0.22	0.33	11.1	0.72	0.18	0.6	4	1.09	46.0
East: PR-738 E									
4 LT	0.83	1.24	21.9	0.80	1.04	0.4	3	3.41	38.3
6 R	0.09	0.14	16.6	0.63	0.93	0.1	0	0.43	42.5
North: PR-1 N									
7 LT	0.66	0.99	6.2	0.80	0.11	0.7	5	5.32	49.6
9 R	0.28	0.42	13.4	0.80	0.14	0.7	5	1.22	43.8
West: PR-738 W									
10 LT	1.20	1.80	21.2	0.71	1.21	1.2	9	5.23	38.7
12 R	1.25	1.88	21.7	0.71	1.26	1.2	9	5.44	38.8

---

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-n/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (m)	Perf. Index	Aver. Speed (km/h)
South: PR-1 S									
644	0.351	0.82	1.23	4.6	0.72	0.06	4	8.14	50.3
East: PR-738 E									
156	0.336	0.92	1.38	21.2	0.78	1.03	3	3.84	38.8
North: PR-1 N									
460	0.278	0.94	1.41	7.4	0.80	0.11	5	6.54	48.6
West: PR-738 W									
412	0.673	2.45	3.68	21.4	0.71	1.24	9	10.67	38.8
ALL VEHICLES:									
1672	0.673	5.13	7.69	11.0	0.74	0.46	9	29.19	45.3
INTERSECTION (persons):									
2508	0.673		7.69	11.0	0.74	0.46		29.19	45.3

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

---

02 Int PR-1 y PR-738
Pico 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 Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: PR-1 S									
1 LTR	1, 3	644	1838	0.350	4.6	0.06	0.6	4	
East: PR-738 E									
1 L	4	116	345	0.336	22.9	1.05	0.4	3	
2 TR	4, 6	40	518	0.077	16.3	0.97	0.1	0	25
North: PR-1 N									
1 LTR	7, 9	460	1652	0.278	7.4	0.11	0.7	5	
West: PR-738 W									
1 LTR	10, 12	412	612	0.673	21.4	1.24	1.2	9	

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2
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: PR-1 S									
1 LTR	1, 3	32	540	72	644	120	1838	0.350	100
East: PR-738 E									
1 L	4	116	0	0	116	116	345	0.336	100
2 TR	4, 6	0	20	20	40	40	518	0.077	23P
North: PR-1 N									
1 LTR	7, 9	44	340	76	460	120	1652	0.278	100
West: PR-738 W									
1 LTR	10, 12	140	64	208	412	120	612	0.673	100

P Lane under-utilisation found by the "Program"

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

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2
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: PR-1 S						
1 LT	35.9	213.78	0.151	6.73	0.210	89.7
3 R	5.0	29.90	0.022	1.02	0.030	12.4
	40.8	243.69	0.172	7.75	0.240	102.1

East: PR-738 E						
4 LT	10.1	65.44	0.045	2.07	0.059	25.2
6 R	1.4	8.92	0.006	0.29	0.009	3.6
	11.5	74.35	0.051	2.36	0.068	28.8
North: PR-1 N						
7 LT	25.0	147.70	0.107	4.91	0.149	62.5
9 R	5.3	32.69	0.024	1.11	0.032	13.4
	30.4	180.39	0.130	6.02	0.181	75.9
West: PR-738 W						
10 LT	15.2	97.72	0.068	3.16	0.090	38.0
12 R	15.7	101.34	0.070	3.26	0.093	39.3
	30.9	199.06	0.138	6.42	0.183	77.3
INTERSECTION:	113.6	697.49	0.492	22.56	0.672	284.0

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	=	0.60
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).

---

02 Int PR-1 y PR-738
Pico AM Base
Intersection ID: 2
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: PR-1 S												
1 LTR	32	540	72	644	0				0.350	4.6	4	
	32	540	72	644	0				0.350	4.6	4	

East: PR-738 E										
1 L	116			116	0		0.336	22.9	3	
2 TR		20	20	40	0		0.077	16.3	0	25
	116	20	20	156	0		0.336	21.2	3	
North: PR-1 N										
1 LTR	44	340	76	460	0		0.278	7.4	5	
	44	340	76	460	0		0.278	7.4	5	
West: PR-738 W										
1 LTR	140	64	208	412	0		0.673	21.4	9	
	140	64	208	412	0		0.673	21.4	9	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1672	0	0.673	11.0	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.

---

02 Int PR-1 y PR-738
Pico AM Base
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	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-1 S								
1	LT	572	1632	0.350	3.7	A	0.6	4
3	R	72	205	0.351	11.1	B	0.6	4
		644		0.351	4.6	A	0.6	4
East: PR-738 E								
4	LT	136	405	0.336	21.9	C	0.4	3
6	R	20	259	0.077	16.6	C	0.1	0
		156		0.336	21.2	C	0.4	3
North: PR-1 N								
7	LT	384	1379	0.278	6.2	A	0.7	5
9	R	76	273	0.278	13.4	B	0.7	5

	460		0.278	7.4	A	0.7	5
West: PR-738 W							
10 LT	204	303	0.673*	21.2	C	1.2	9
12 R	208	309	0.673*	21.7	C	1.2	9
	412		0.673	21.4	C	1.2	9
ALL VEHICLES:	1672		0.673	11.0	NA	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.

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\ParqueIndustrialCayey\02_PR-1 y PR-738_BA.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 3:28 PM, 16 Nov 2005

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 1:46 PM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_BP.OUT

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2

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

---

02 Int PR-1 y PR-738
Pico PM Base
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								
South: PR-1 S								
1	144	0	576	0	0	0	1.00	1.00
3	0	0	0	0	236	0	1.00	1.00
East: PR-738 E								
4	32	0	60	0	0	0	1.00	1.00
6	0	0	0	0	84	0	1.00	1.00
North: PR-1 N								

7	60	0	468	0	0	0	1.00	1.00
9	0	0	0	0	44	0	1.00	1.00
West: PR-738 W								
10	88	0	44	0	0	0	1.00	1.00
12	0	0	0	0	40	0	1.00	1.00

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

---

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2
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: PR-1 S										
1 LT	720	0.0	512	0.0	512	1199	0.80	33	100	0.601
3 R	236	0.0	0			393	0.80	33	100	0.601
East: PR-738 E										
4 LT	92	0.0	DIFF			224	0.80	95	29	0.411
6 R	84	0.0	694+	0.0	694	205	0.80	95	100	0.410
North: PR-1 N										
7 LT	528	0.0	812	0.0	812	1369	0.80	107	100	0.386
9 R	44	0.0	0			114	0.80	107	100	0.386
West: PR-738 W										
10 LT	132	0.0	DIFF			218	0.80	32	100	0.606*
12 R	40	0.0	490+	0.0	490	66	0.80	32	100	0.606*

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

---

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	D
Average intersection delay (s)	=	15.4
Largest average movement delay (s)	=	32.3

Largest cycle-average queue, mean (m)	=	17
Performance Index	=	36.43
Degree of saturation (highest)	=	0.606
Practical Spare Capacity (lowest)	=	32 %
Effective intersection capacity, (veh/h)	=	3095
Total vehicle flow (veh/h)	=	1876
Total person flow (pers/h)	=	2814
Total vehicle delay (veh-h/h)	=	8.04
Total person delay (pers-h/h)	=	12.05
Total effective vehicle stops (veh/h)	=	636
Total effective person stops (pers/h)	=	954
Total vehicle travel (veh-km/h)	=	1136.3
Total cost ($/h)	=	834.90
Total fuel (L/h)	=	135.4
Total CO2 (kg/h)	=	338.61

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.

---

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2
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: PR-1 S									
1 LT	2.19	3.29	11.0	1.00	0.25	2.5	17	12.31	46.1
3 R	1.12	1.68	17.1	1.00	0.00	2.5	17	4.13	40.9
East: PR-738 E									
4 LT	0.60	0.90	23.5	0.82	1.05	0.5	4	2.39	37.4
6 R	0.56	0.84	23.9	0.81	1.09	0.5	4	2.22	37.5
North: PR-1 N									
7 LT	1.80	2.70	12.3	1.00	0.13	1.8	13	9.17	44.8
9 R	0.24	0.36	19.5	1.00	0.00	1.8	13	0.82	39.0
West: PR-738 W									
10 LT	1.17	1.75	31.8	0.87	1.15	1.0	7	4.11	32.7
12 R	0.36	0.54	32.3	0.87	1.21	1.0	7	1.27	32.8

---

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2
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: PR-1 S									
956	0.601	3.31	4.97	12.5	1.00	0.19	17	16.44	44.7
East: PR-738 E									
176	0.411	1.16	1.74	23.7	0.81	1.07	4	4.61	37.4
North: PR-1 N									
572	0.386	2.04	3.06	12.8	1.00	0.12	13	9.99	44.3
West: PR-738 W									
172	0.606	1.52	2.29	31.9	0.87	1.16	7	5.39	32.7
ALL VEHICLES:									
1876	0.606	8.04	12.05	15.4	0.97	0.34	17	36.43	42.4
INTERSECTION (persons):									
2814	0.606		12.05	15.4	0.97	0.34		36.43	42.4

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

---

02 Int PR-1 y PR-738
Pico 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 Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: PR-1 S									
1 LTR	1, 3	956	1592	0.601	12.5	0.19	2.5	17	
East: PR-738 E									
1 L	4	32	265	0.121	23.9	1.00	0.1	1	
2 TR	4, 6	144	351	0.410	23.6	1.08	0.5	4	25
North: PR-1 N									
1 LTR	7, 9	572	1483	0.386	12.8	0.12	1.8	13	
West: PR-738 W									
1 LTR	10, 12	172	284	0.605	31.9	1.16	1.0	7	

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2
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: PR-1 S									
1 LTR	1, 3	144	576	236	956	120	1592	0.601	100
East: PR-738 E									
1 L	4	32	0	0	32	32	265	0.121	29P
2 TR	4, 6	0	60	84	144	120	351	0.410	100
North: PR-1 N									
1 LTR	7, 9	60	468	44	572	120	1483	0.386	100
West: PR-738 W									
1 LTR	10, 12	88	44	40	172	120	284	0.605	100

P Lane under-utilisation found by the "Program"

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

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2
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: PR-1 S						
1 LT	51.0	298.96	0.225	10.88	0.312	127.6
3 R	17.0	108.53	0.075	3.47	0.101	42.6
	68.1	407.49	0.300	14.35	0.413	170.2

East: PR-738 E						
4 LT	6.8	45.20	0.031	1.39	0.040	17.1
6 R	6.3	41.76	0.028	1.26	0.037	15.7
	13.1	86.97	0.058	2.65	0.077	32.8
North: PR-1 N						
7 LT	37.6	224.20	0.165	7.92	0.228	94.0
9 R	3.2	20.91	0.014	0.66	0.019	8.0
	40.8	245.11	0.180	8.58	0.247	102.0
West: PR-738 W						
10 LT	10.3	72.96	0.047	2.04	0.059	25.7
12 R	3.1	22.37	0.014	0.62	0.018	7.9
	13.4	95.33	0.061	2.66	0.076	33.6
INTERSECTION:	135.4	834.90	0.599	28.23	0.813	338.6

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).

---

02 Int PR-1 y PR-738
Pico PM Base
Intersection ID: 2
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: PR-1 S												
1 LTR	144	576	236	956	0				0.601	12.5	17	
	144	576	236	956	0				0.601	12.5	17	

East: PR-738 E										
1 L	32			32	0		0.121	23.9	1	
2 TR		60	84	144	0		0.410	23.6	4	25
	32	60	84	176	0		0.410	23.7	4	
North: PR-1 N										
1 LTR	60	468	44	572	0		0.386	12.8	13	
	60	468	44	572	0		0.386	12.8	13	
West: PR-738 W										
1 LTR	88	44	40	172	0		0.605	31.9	7	
	88	44	40	172	0		0.605	31.9	7	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1876	0	0.606	15.4	17

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.

---

02 Int PR-1 y PR-738
Pico PM Base
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	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-1 S								
1	LT	720	1199	0.601	11.0	B	2.5	17
3	R	236	393	0.601	17.1	C	2.5	17
		956		0.601	12.5	B	2.5	17
East: PR-738 E								
4	LT	92	224	0.411	23.5	C	0.5	4
6	R	84	205	0.410	23.9	C	0.5	4
		176		0.411	23.7	C	0.5	4
North: PR-1 N								
7	LT	528	1369	0.386	12.3	B	1.8	13
9	R	44	114	0.386	19.5	C	1.8	13

	572		0.386	12.8	B	1.8	13
West: PR-738 W							
10 LT	132	218	0.606*	31.8	D	1.0	7
12 R	40	66	0.606*	32.3	D	1.0	7
	172		0.606	31.9	D	1.0	7
ALL VEHICLES:	1876		0.606	15.4	NA	2.5	17

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\ParqueIndustrialCayey\02_PR-1 y PR-738_BP.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 1:46 PM, 22 Nov 2005

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 1:50 PM, 17 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_FA.OUT

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2

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

---

02 Int PR-1 y PR-738
Pico AM 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								
South: PR-1 S								
1	34	0	582	0	0	0	1.00	1.00
3	0	0	0	0	645	0	1.00	1.00
East: PR-738 E								
4	250	0	22	0	0	0	1.00	1.00
6	0	0	0	0	22	0	1.00	1.00
North: PR-1 N								

7	47	0	366	0	0	0	1.00	1.00
9	0	0	0	0	82	0	1.00	1.00
West: PR-738 W								
10	151	0	69	0	0	0	1.00	1.00
12	0	0	0	0	224	0	1.00	1.00

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

---

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2
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: PR-1 S										
1 LT	616	0.0	448	0.0	448	900	0.80	17	100	0.684
3 R	645	0.0	0			943	0.80	17	100	0.684
East: PR-738 E										
4 LT	272	0.0	DIFF			214	0.80	-37	12	1.271*
6 R	22	0.0	905+	0.0	905	139	0.80	405	12	0.158
North: PR-1 N										
7 LT	413	0.0	1227	0.0	1227	807	0.80	56	100	0.512
9 R	82	0.0	0			160	0.80	56	100	0.512
West: PR-738 W										
10 LT	220	0.0	DIFF			184	0.80	-33	100	1.196
12 R	224	0.0	407+	0.0	407	187	0.80	-33	100	1.198

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

---

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	F
Average intersection delay (s)	=	60.0
Largest average movement delay (s)	=	165.4

Largest cycle-average queue, mean (m)	=	108
Performance Index	=	115.85
Degree of saturation (highest)	=	1.271
Practical Spare Capacity (lowest)	=	-37 %
Effective intersection capacity, (veh/h)	=	1962
Total vehicle flow (veh/h)	=	2494
Total person flow (pers/h)	=	3741
Total vehicle delay (veh-h/h)	=	41.58
Total person delay (pers-h/h)	=	62.36
Total effective vehicle stops (veh/h)	=	2061
Total effective person stops (pers/h)	=	3092
Total vehicle travel (veh-km/h)	=	1512.0
Total cost ($/h)	=	1927.86
Total fuel (L/h)	=	226.3
Total CO2 (kg/h)	=	565.86

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.

---

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2
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: PR-1 S									
1 LT	2.01	3.01	11.7	1.00	0.08	3.9	28	10.42	45.4
3 R	3.43	5.14	19.1	1.00	0.00	3.9	28	12.00	39.4
East: PR-738 E									
4 LT	12.50	18.75	165.4	0.99	2.22	11.6	81	30.28	10.8
6 R	0.14	0.22	23.5	0.83	1.00	0.2	1	0.57	37.8
North: PR-1 N									
7 LT	5.54	8.31	48.3	1.00	0.13	6.5	46	15.44	25.8
9 R	1.26	1.90	55.5	1.00	0.00	6.5	46	3.17	23.7
West: PR-738 W									
10 LT	8.26	12.39	135.2	1.00	2.62	15.4	108	21.29	12.8
12 R	8.44	12.66	135.7	1.00	3.38	15.4	108	22.69	12.9

---

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2
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: PR-1 S									
1261	0.684	5.43	8.15	15.5	1.00	0.04	28	22.41	42.1
East: PR-738 E									
294	1.271	12.64	18.96	154.8	0.97	2.13	81	30.85	11.5
North: PR-1 N									
495	0.512	6.80	10.20	49.5	1.00	0.11	46	18.61	25.4
West: PR-738 W									
444	1.198	16.70	25.05	135.4	1.00	3.00	108	43.98	12.8
ALL VEHICLES:									
2494	1.271	41.58	62.36	60.0	1.00	0.83	108	115.85	22.8
INTERSECTION (persons):									
3741	1.271		62.36	60.0	1.00	0.83		115.85	22.8

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

---

02 Int PR-1 y PR-738
Pico 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 Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: PR-1 S									
1 LTR	1, 3	1261	1843	0.684	15.5	0.04	3.9	28	
East: PR-738 E									
1 L	4	250	197	1.270	178.0	2.32	11.6	81	
2 TR	4, 6	44	277	0.159	23.2	1.00	0.2	1	25
North: PR-1 N									
1 LTR	7, 9	495	967	0.512	49.5	0.11	6.5	46	
West: PR-738 W									
1 LTR	10, 12	444	371	1.196	135.4	3.00	15.4	108	

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2
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: PR-1 S									
1 LTR	1, 3	34	582	645	1261	120	1843	0.684	100
East: PR-738 E									
1 L	4	250	0	0	250	120	197	1.270	100
2 TR	4, 6	0	22	22	44	44	277	0.159	12P
North: PR-1 N									
1 LTR	7, 9	47	366	82	495	120	967	0.512	100
West: PR-738 W									
1 LTR	10, 12	151	69	224	444	120	371	1.196	100

P Lane under-utilisation found by the "Program"

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

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2
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: PR-1 S						
1 LT	43.8	259.22	0.193	9.26	0.266	109.5
3 R	47.0	305.98	0.208	9.49	0.278	117.5
	90.8	565.20	0.400	18.75	0.544	227.0

East: PR-738 E						
4 LT	35.7	416.58	0.182	5.17	0.149	89.4
6 R	1.6	10.84	0.007	0.32	0.010	4.1
	37.4	427.42	0.190	5.50	0.159	93.5
North: PR-1 N						
7 LT	35.0	283.20	0.162	6.40	0.187	87.5
9 R	7.1	60.39	0.033	1.27	0.037	17.8
	42.1	343.58	0.196	7.67	0.224	105.2
West: PR-738 W						
10 LT	26.8	289.84	0.135	4.29	0.121	67.1
12 R	29.2	301.81	0.148	5.23	0.140	73.1
	56.1	591.65	0.283	9.52	0.261	140.1
INTERSECTION:	226.3	1927.86	1.068	41.44	1.188	565.9

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).

---

02 Int PR-1 y PR-738
Pico AM Futuro
Intersection ID: 2
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: PR-1 S												
1 LTR	34	582	645	1261	0				0.684	15.5	28	
	34	582	645	1261	0				0.684	15.5	28	

East: PR-738 E										
1 L	250			250	0		1.270	178.0	81	
2 TR		22	22	44	0		0.159	23.2	1	25
	250	22	22	294	0		1.270	154.8	81	
North: PR-1 N										
1 LTR	47	366	82	495	0		0.512	49.5	46	
	47	366	82	495	0		0.512	49.5	46	
West: PR-738 W										
1 LTR	151	69	224	444	0		1.196	135.4	108	
	151	69	224	444	0		1.196	135.4	108	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2494	0	1.271	60.0	108

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.

---

02 Int PR-1 y PR-738
Pico 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	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-1 S								
1	LT	616	900	0.684	11.7	B	3.9	28
3	R	645	943	0.684	19.1	C	3.9	28
		1261		0.684	15.5	C	3.9	28
East: PR-738 E								
4	LT	272	214	1.271*	165.4	F	11.6	81
6	R	22	139	0.158	23.5	C	0.2	1
		294		1.271	154.8	F	11.6	81
North: PR-1 N								
7	LT	413	807	0.512	48.3	E	6.5	46
9	R	82	160	0.512	55.5	F	6.5	46

	495		0.512	49.5	E	6.5	46
West: PR-738 W							
10 LT	220	184	1.196	135.2	F	15.4	108
12 R	224	187	1.198	135.7	F	15.4	108
	444		1.198	135.4	F	15.4	108
ALL VEHICLES:	2494		1.271	60.0	NA	15.4	108

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\ParqueIndustrialCayey\02_PR-1 y PR-738_FA.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 1:50 PM, 17 Nov 2005

```
                 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    4:09 PM,  1 Dec 2005

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-
738_FASem.OUT

 02 Int PR-1 y PR-738
 Pico AM Futuro con semaforo
 Intersection ID:     2


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  60 s

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

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

 * 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.
```

```
02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID:     2
            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.

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
South: PR-1 S								
1	34	0	582	0	0	0	1.00	1.00
3	0	0	0	0	645	0	1.00	1.00
East: PR-738 E								
4	250	0	22	0	0	0	1.00	1.00
6	0	0	0	0	22	0	1.00	1.00
North: PR-1 N								
7	47	0	366	0	0	0	1.00	1.00
9	0	0	0	0	82	0	1.00	1.00

```
West: PR-738 W
        10          151     0     69     0      0     0   1.00   1.00
        12            0     0      0     0    224     0   1.00   1.00
-----------------------------------------------------------------------
Based on unit time =  60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.
```

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-1 S															
1	LT	A	B	L						3		22.8		30	
3	R	*A	B			B	A	R		3	4	22.8	19.2	30	23
East: PR-738 E															
4	LT	B	A	L						3		9.0Min		24	
6	R	A	B	R		B	A			14	3	9.0Min	9.5	19	24
North: PR-1 N															
7	LT	A	B	L						3		14.6		30	
9	R (Un2)	A	B			B	A	R		3	3	14.9	9.0Min	30	24
West: PR-738 W															
10	LT	B	A	L						3		18.1		24	
12	R	A	B	R		*B	A			9	3	17.3	19.2	24	24

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

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 3(1st), 12(2nd)

L= 6 Y= 0.540 U= 0.600 T= 42.0

Cycle Time:

Minimum	Maximum	Practical	Chosen
18	150	18	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	C
Average intersection delay (s)	=	13.6
Largest average movement delay (s)	=	21.2
Largest cycle-average queue, mean (m)	=	13
Performance Index	=	50.63
Degree of saturation (highest)	=	0.595
Practical Spare Capacity (lowest)	=	51 %
Effective intersection capacity, (veh/h)	=	4194
Total vehicle flow (veh/h)	=	2494
Total person flow (pers/h)	=	3741
Total vehicle delay (veh-h/h)	=	9.42
Total person delay (pers-h/h)	=	14.13
Total effective vehicle stops (veh/h)	=	1793
Total effective person stops (pers/h)	=	2690
Total vehicle travel (veh-km/h)	=	1508.6
Total cost ($/h)	=	1073.25
Total fuel (L/h)	=	170.0
Total CO2 (kg/h)	=	424.98

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 33
Phase Green Times: 30, 24

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

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.5 - MOVEMENT PERFORMANCE

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

No.	Delay (veh-h/h)	Delay (pers-h/h)	Delay (sec)	Queued	Stop Rate	Cycle (vehs)	Aver. (m)	Index	Speed (km/h)
South: PR-1 S									
1 LT	1.96	2.94	11.5	0.75	0.64	1.8	13	12.26	45.3
3 R	1.82	2.73	10.2	0.52	0.78	0.4	3	11.46	46.4
East: PR-738 E									
4 LT	1.59	2.38	21.0	0.70	0.77	0.6	4	6.49	38.0
6 R	0.13	0.19	21.2	0.69	0.79	0.6	4	0.53	37.8
North: PR-1 N									
7 LT	1.34	2.01	11.7	0.68	0.58	0.8	5	8.07	45.2
9 R	0.37	0.55	16.2	0.63	0.79	0.8	5	1.73	41.4
West: PR-738 W									
10 LT	1.02	1.53	16.7	0.80	0.81	1.4	9	4.90	41.1
12 R	1.19	1.79	19.2	0.80	0.85	1.4	9	5.19	39.3

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (m)	Perf. Index	Aver. Speed (km/h)
Pedestrians:									
444	0.566	2.21	3.32	17.9	0.80	0.83	9	10.09	40.1
ALL VEHICLES:									
2494	0.595	9.42	14.13	13.6	0.68	0.72	13	50.63	43.4
INTERSECTION (persons):									
3741	0.595		14.13	13.6	0.68	0.72		50.63	43.4

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

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

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

South: PR-1 S											
1 LT	34	507		541	0	1949	29		0.595	12.8	13
2 TR		75	645	720	0	1950	30	16	0.595	9.3	3
	34	582	645	1261	0				0.595	10.8	13
East: PR-738 E											
1 L	125			125	0	1949	23		0.224	22.1	3
2 LTR	125	22	22	169	0	1950	1	24	0.224	20.2	4
	250	22	22	294	0				0.224	21.0	4
North: PR-1 N											
1 LT	47	106		153	0	1949	22		0.348	18.0	5
2 TR		260	82	342	0	1950	30	1	0.348	9.9	5
	47	366	82	495	0				0.348	12.4	5
West: PR-738 W											
1 LTR	151	69	224	444	0	1890	5	24	0.566	17.9	9
	151	69	224	444	0				0.566	17.9	9

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2494	0	60	0.595	13.6	13

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.

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Time Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-1 S										
1	LT	0.500		616	1036	0.595*	11.5	B	1.8	13
3	R	0.500*	0.383	645	1085	0.595*	10.2	B	0.4	3
				1261		0.595	10.8	B	1.8	13
East: PR-738 E										
4	LT	0.400		272	1216	0.224	21.0	C	0.6	4

6 R	0.317	0.400	22	98	0.224	21.2	C	0.6	4
			294		0.224	21.0	C	0.6	4
North: PR-1 N									
7 LT	0.500		413	1187	0.348	11.7	B	0.8	5
9 R (Un2)	0.500	0.400	82	236	0.347	16.2	B	0.8	5
			495		0.348	12.4	B	0.8	5
West: PR-738 W									
10 LT	0.400		220	389	0.566	16.7	B	1.4	9
12 R	0.400	0.400*	224	396	0.566	19.2	B	1.4	9
			444		0.566	17.9	B	1.4	9
ALL VEHICLES:			2494		0.595	13.6	B	1.8	13
INTERSECTION (persons):			3741			13.6		1.8	13

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

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.584	70
Average Delay	13.6	60
Stop Rate	0.72	70
Max. Queue for Any Movement	1.8	60
Perf. Index	50.6	60
Cost	1073.3	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	4268	70
Prac. Spare Cap.	54	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.

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo
Intersection ID: 2

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	4194	0.595	51	13.6	0.72	1.8	50.6	1073.3	
70	4268	0.584	54	14.8	0.72	2.0	52.3	1093.9	
80	4264	0.585	54	16.2	0.72	2.2	54.2	1117.9	
90	4172	0.598	51	18.0	0.73	2.7	56.9	1151.2	
100	4171	0.598	51	19.4	0.73	2.9	58.8	1175.8	
110	4152	0.601	50	21.1	0.74	3.3	61.3	1206.8	
120	4151	0.601	50	22.7	0.74	3.5	63.5	1235.0	
130	4179	0.597	51	24.1	0.74	3.7	65.4	1259.4	
140	4203	0.593	52	25.6	0.74	4.0	67.5	1286.9	
150	4220	0.591	52	26.9	0.74	4.2	69.4	1311.1	

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_FASem.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 4:09 PM, 1 Dec 2005

```
                 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    4:22 PM,  1 Dec 2005

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-
738_FASem+5.OUT

 02 Int PR-1 y PR-738
 Pico AM Futuro con semaforo + 5 anos
 Intersection ID:     2


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  60 s

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

 02 Int PR-1 y PR-738
 Pico AM Futuro con semaforo + 5 anos
 Intersection ID:     2
             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.

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-1 S								
1	37	0	627	0	0	0	1.00	1.00
3	0	0	0	0	651	0	1.00	1.00
East: PR-738 E								
4	260	0	23	0	0	0	1.00	1.00
6	0	0	0	0	23	0	1.00	1.00
North: PR-1 N								
7	51	0	395	0	0	0	1.00	1.00
9	0	0	0	0	88	0	1.00	1.00

```
West: PR-738 W
        10            162     0     74     0      0     0   1.00   1.00
        12              0     0      0     0    241     0   1.00   1.00
-----------------------------------------------------------------------
Based on unit time =  60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.
```

```
02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID:     2
            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
-------------------------------------------------------------------------------
South: PR-1 S
   1 LT       A  B  L                     3        24.1              30
   3 R       *A  B          B  A  R       3    4   24.1     20.2     30   23
-------------------------------------------------------------------------------
East: PR-738 E
   4 LT       B  A  L                     3         9.2              24
   6 R        A  B  R       B  A         16    3    9.0Min   9.8     17   24
-------------------------------------------------------------------------------
North: PR-1 N
   7 LT       A  B  L                     3        15.8              30
   9 R  (Un2) A  B          B  A  R       3    3   16.3      9.0Min 30   24
-------------------------------------------------------------------------------
West: PR-738 W
  10 LT       B  A  L                     3        19.2              24
  12 R        A  B  R      *B  A         10    3   19.6     20.2     23   24
-------------------------------------------------------------------------------
  Current Phase Sequence No.: 1
  Input phase sequence: A  B
  Output phase sequence: A  B
-------------------------------------------------------------------------------
  *  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
```

```
02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID:     2
            Fixed-Time Signals, Cycle Time =  60
```

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 3(1st), 12(2nd)

L= 6 Y= 0.575 U= 0.639 T= 44.3

Cycle Time:

Minimum	Maximum	Practical	Chosen
18	150	18	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)	=	21.9
Largest cycle-average queue, mean (m)	=	14
Performance Index	=	54.49
Degree of saturation (highest)	=	0.634
Practical Spare Capacity (lowest)	=	42 %
Effective intersection capacity, (veh/h)	=	4154
Total vehicle flow (veh/h)	=	2632
Total person flow (pers/h)	=	3948
Total vehicle delay (veh-h/h)	=	10.34
Total person delay (pers-h/h)	=	15.51
Total effective vehicle stops (veh/h)	=	1932
Total effective person stops (pers/h)	=	2898
Total vehicle travel (veh-km/h)	=	1592.1
Total cost ($/h)	=	1143.94
Total fuel (L/h)	=	180.5
Total CO2 (kg/h)	=	451.32

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 33
Phase Green Times: 30, 24

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

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.5 - MOVEMENT PERFORMANCE

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

No.	Delay (veh-h/h)	Delay (pers-h/h)	Delay (sec)	Queued	Stop Rate	Cycle (vehs)	Aver. (m)	Index	Speed (km/h)
South: PR-1 S									
1 LT	2.14	3.21	11.6	0.77	0.66	2.0	14	13.33	45.1
3 R	1.97	2.96	10.9	0.60	0.79	0.6	4	11.90	45.7
East: PR-738 E									
4 LT	1.68	2.52	21.4	0.70	0.77	0.7	5	6.82	37.7
6 R	0.14	0.21	21.9	0.69	0.80	0.7	5	0.56	37.4
North: PR-1 N									
7 LT	1.51	2.27	12.2	0.70	0.60	0.9	6	8.89	44.8
9 R	0.41	0.61	16.6	0.65	0.79	0.9	6	1.89	41.1
West: PR-738 W									
10 LT	1.15	1.72	17.5	0.82	0.83	1.6	11	5.38	40.5
12 R	1.34	2.01	20.0	0.82	0.87	1.6	11	5.71	38.7

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (m)	Perf. Index	Aver. Speed (km/h)
Pedestrians:									
477	0.608	2.49	3.73	18.8	0.82	0.85	11	11.10	39.5
ALL VEHICLES:									
2632	0.634	10.34	15.51	14.1	0.71	0.73	14	54.49	43.0
INTERSECTION (persons):									
3948	0.634		15.51	14.1	0.71	0.73		54.49	43.0

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

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

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

South: PR-1 S											
1 LT	37	529		566	0	1949	29		0.633	13.1	14
2 TR		98	651	749	0	1950	30	14	0.633	9.8	4
	37	627	651	1315	0				0.633	11.3	14
East: PR-738 E											
1 L	129			129	0	1949	23		0.234	22.1	3
2 LTR	131	23	23	177	0	1950	1	24	0.234	20.9	5
	260	23	23	306	0				0.234	21.4	5
North: PR-1 N											
1 LT	51	106		157	0	1949	21		0.384	19.2	5
2 TR		289	88	377	0	1950	30	1	0.384	10.3	6
	51	395	88	534	0				0.384	12.9	6
West: PR-738 W											
1 LTR	162	74	241	477	0	1890	5	24	0.608	18.8	11
	162	74	241	477	0				0.608	18.8	11

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2632	0	60	0.634	14.1	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 (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Time Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue Cycle (vehs)	Aver. (m)
South: PR-1 S										
1	LT	0.500		664	1049	0.633	11.6	B	2.0	14
3	R	0.500*	0.383	651	1027	0.634*	10.9	B	0.6	4
				1315		0.634	11.3	B	2.0	14
East: PR-738 E										
4	LT	0.400		283	1210	0.234	21.4	C	0.7	5

6 R	0.283	0.400	23	98	0.234	21.9	C	0.7	5
			306		0.234	21.4	C	0.7	5
North: PR-1 N									
7 LT	0.500		446	1161	0.384	12.2	B	0.9	6
9 R (Un2)	0.500	0.400	88	229	0.385	16.6	B	0.9	6
			534		0.385	12.9	B	0.9	6
West: PR-738 W									
10 LT	0.400		236	388	0.608	17.5	B	1.6	11
12 R	0.383	0.400*	241	396	0.608	20.0	B	1.6	11
			477		0.608	18.8	B	1.6	11
ALL VEHICLES:			2632		0.634	14.1	B	2.0	14
INTERSECTION (persons):			3948			14.1		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.
* Maximum v/c ratio, or critical green periods

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.621	70
Average Delay	14.1	60
Stop Rate	0.73	70
Max. Queue for Any Movement	2.0	60
Perf. Index	54.5	60
Cost	1143.9	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	4236	70
Prac. Spare Cap.	45	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.

---

02 Int PR-1 y PR-738
Pico AM Futuro con semaforo + 5 anos
Intersection ID: 2

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	4154	0.634	42	14.1	0.73	2.0	54.5	1143.9	
70	4236	0.621	45	15.4	0.73	2.2	56.3	1166.2	
80	4169	0.631	43	17.2	0.74	2.6	59.1	1200.9	
90	4179	0.630	43	18.8	0.75	2.9	61.5	1230.7	
100	4156	0.633	42	20.4	0.75	3.2	63.9	1261.0	
110	4159	0.633	42	22.0	0.75	3.5	66.3	1292.0	
120	4169	0.631	43	23.5	0.75	3.7	68.4	1319.3	
130	4147	0.635	42	25.3	0.76	4.1	71.1	1353.3	
140	4141	0.636	42	26.9	0.76	4.4	73.4	1383.7	
150	4133	0.637	41	28.5	0.76	4.7	75.9	1415.0	

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_FASem+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 4:22 PM, 1 Dec 2005

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 1:40 PM, 22 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_FP.OUT

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2

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

---

02 Int PR-1 y PR-738
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							
South: PR-1 S								
1	155	0	621	0	0	0	1.00	1.00
3	0	0	0	0	454	0	1.00	1.00
East: PR-738 E								
4	788	0	65	0	0	0	1.00	1.00
6	0	0	0	0	90	0	1.00	1.00
North: PR-1 N								

7	65	0	504	0	0	0	1.00	1.00
9	0	0	0	0	47	0	1.00	1.00
West: PR-738 W								
10	95	0	47	0	0	0	1.00	1.00
12	0	0	0	0	43	0	1.00	1.00

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

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
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: PR-1 S										
1 LT	776	0.0	551	0.0	551	1014	0.80	5	100	0.765
3 R	454	0.0	0			593	0.80	4	100	0.766
East: PR-738 E										
4 LT	853	0.0	DIFF			227	0.80	-79	27	3.758*
6 R	90	0.0	848+	0.0	848	90	0.80	-20	27	1.000
North: PR-1 N										
7 LT	569	0.0	1075	0.0	1075	1081	0.80	52	100	0.526
9 R	47	0.0	0			89	0.80	51	100	0.528
West: PR-738 W										
10 LT	142	0.0	DIFF			144	0.80	-19	100	0.986
12 R	43	0.0	528+	0.0	528	44	0.80	-18	100	0.977

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

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	F
Average intersection delay (s)	=	337.7
Largest average movement delay (s)	=	1093.8

Largest cycle-average queue, mean (m)	=	1781
Performance Index	=	607.12
Degree of saturation (highest)	=	3.758
Practical Spare Capacity (lowest)	=	-79 %
Effective intersection capacity, (veh/h)	=	791
Total vehicle flow (veh/h)	=	2974
Total person flow (pers/h)	=	4461
Total vehicle delay (veh-h/h)	=	279.00
Total person delay (pers-h/h)	=	418.50
Total effective vehicle stops (veh/h)	=	4329
Total effective person stops (pers/h)	=	6494
Total vehicle travel (veh-km/h)	=	1798.5
Total cost ($/h)	=	8296.62
Total fuel (L/h)	=	582.6
Total CO2 (kg/h)	=	1456.43

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.

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
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: PR-1 S									
1 LT	4.58	6.87	21.3	1.00	0.32	6.7	47	17.99	37.8
3 R	3.46	5.19	27.4	1.00	0.00	6.7	47	10.54	34.3
East: PR-738 E									
4 LT	259.18	388.76	1093.8	1.00	4.17	254.4	1781	544.19	1.9
6 R	1.83	2.75	73.2	0.99	1.63	3.9	27	5.12	20.4
North: PR-1 N									
7 LT	4.96	7.44	31.4	1.00	0.14	5.2	36	15.94	32.2
9 R	0.50	0.76	38.6	1.00	0.00	5.2	36	1.37	29.1
West: PR-738 W									
10 LT	3.44	5.16	87.2	0.96	1.57	3.9	28	9.13	17.8
12 R	1.05	1.57	87.7	0.96	1.81	3.9	28	2.83	18.0

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
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: PR-1 S									
1230	0.766	8.04	12.06	23.5	1.00	0.20	47	28.53	36.4
East: PR-738 E									
943	3.758	261.01	391.51	996.4	1.00	3.93	1781	549.31	2.1
North: PR-1 N									
616	0.528	5.46	8.19	31.9	1.00	0.13	36	17.32	31.9
West: PR-738 W									
185	0.986	4.49	6.73	87.3	0.96	1.62	28	11.96	17.8
ALL VEHICLES:									
2974	3.758	279.00	418.50	337.7	1.00	1.46	1781	607.12	5.8
INTERSECTION (persons):									
4461	3.758		418.50	337.7	1.00	1.46		607.12	5.8

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

---

02 Int PR-1 y PR-738
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 Cycle (vehs)	Queue Aver. (m)	Short Lane (m)
South: PR-1 S									
1 LTR	1, 3	1230	1607	0.766	23.5	0.20	6.7	47	
East: PR-738 E									
1 L	4	720	191	3.763	1282.0	4.66	254.4	1781	
2 LTR	4, 6	223	223	1.000	72.9r	1.58	3.9*	27<	25
North: PR-1 N									
1 LTR	7, 9	616	1170	0.526	31.9	0.13	5.2	36	
West: PR-738 W									
1 LTR	10, 12	185	188	0.984	87.3	1.62	3.9	28	

< Short lane capacity is reached and there is excess flow into an adjacent lane

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

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

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
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: PR-1 S									
1 LTR	1, 3	155	621	454	1230	120	1607	0.766	100
East: PR-738 E									
1 L	4	720	0	0	720	120	191	3.763	100
2 LTR	4, 6	68	65	90	223	120	223	1.000	27P
North: PR-1 N									
1 LTR	7, 9	65	504	47	616	120	1170	0.526	100
West: PR-738 W									
1 LTR	10, 12	95	47	43	185	120	188	0.984	100

P Lane under-utilisation found by the "Program"

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

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
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: PR-1 S						
1 LT	58.2	381.01	0.261	11.96	0.343	145.6
3 R	34.5	242.74	0.155	6.73	0.198	86.3
	92.8	623.75	0.416	18.69	0.540	231.9
East: PR-738 E						
4 LT	414.3	7068.71	2.361	29.79	0.957	1035.7
6 R	8.6	77.26	0.041	1.50	0.043	21.4
	422.9	7145.98	2.402	31.29	1.000	1057.1
North: PR-1 N						
7 LT	44.6	320.40	0.203	8.69	0.252	111.5
9 R	3.8	28.84	0.017	0.71	0.021	9.4
	48.4	349.24	0.220	9.41	0.273	120.9
West: PR-738 W						
10 LT	14.2	135.97	0.069	2.40	0.069	35.5
12 R	4.4	41.69	0.021	0.76	0.022	11.0
	18.6	177.66	0.090	3.16	0.091	46.5
INTERSECTION:	582.6	8296.62	3.127	62.54	1.904	1456.4

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	=	0.60
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).

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
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: PR-1 S												
1 LTR	155	621	454	1230	0				0.766	23.5	47	
	155	621	454	1230	0				0.766	23.5	47	
East: PR-738 E												
1 L	720			720	0				3.763	1282.0	1781	
2 LTR	68	65	90	223	0				1.000	72.9r	27*	25
	788	65	90	943	0				3.763	996.4	1781	
North: PR-1 N												
1 LTR	65	504	47	616	0				0.526	31.9	36	
	65	504	47	616	0				0.526	31.9	36	
West: PR-738 W												
1 LTR	95	47	43	185	0				0.984	87.3	28	
	95	47	43	185	0				0.984	87.3	28	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2974	0	3.758	337.7	1781

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.

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

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

---

02 Int PR-1 y PR-738
Pico PM Futuro
Intersection ID: 2
Stop Sign Controlled Intersection

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow	Total Cap.	Deg. of	Aver. Delay	LOS	Longest Queue Cycle	Aver.

	(veh /h)	(veh /h)	Satn (v/c)	(sec)		(vehs)	(m)
South: PR-1 S							
1 LT	776	1014	0.765	21.3	C	6.7	47
3 R	454	593	0.766	27.4	D	6.7	47
	1230		0.766	23.5	C	6.7	47
East: PR-738 E							
4 LT	853	227	3.758*	1093.8	F	254.4	1781
6 R	90	90	1.000	73.2	F	3.9	27
	943		3.758	996.4	F	254.4	1781
North: PR-1 N							
7 LT	569	1081	0.526	31.4	D	5.2	36
9 R	47	89	0.528	38.6	E	5.2	36
	616		0.528	31.9	D	5.2	36
West: PR-738 W							
10 LT	142	144	0.986	87.2	F	3.9	28
12 R	43	44	0.977	87.7	F	3.9	28
	185		0.986	87.3	F	3.9	28
ALL VEHICLES:	2974		3.758	337.7	NA	254.4	1781

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\ParqueIndustrialCayey\02_PR-1 y PR-738_FP.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 1:40 PM, 22 Nov 2005

```
                 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    4:05 PM,  1 Dec 2005

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-
738_FPSem.OUT

 02 Int PR-1 y PR-738
 Pico PM Futuro con semaforo
 Intersection ID:     2


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  60 s

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

```
02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID:     2
            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.

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-1 S								
1	155	0	621	0	0	0	1.00	1.00
3	0	0	0	0	454	0	1.00	1.00
East: PR-738 E								
4	788	0	65	0	0	0	1.00	1.00
6	0	0	0	0	90	0	1.00	1.00
North: PR-1 N								
7	65	0	504	0	0	0	1.00	1.00
9	0	0	0	0	47	0	1.00	1.00

```
West: PR-738 W
        10            95     0     47     0      0     0   1.00   1.00
        12             0     0      0     0     43     0   1.00   1.00
-----------------------------------------------------------------------
Based on unit time =  60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.
```

```
02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID:     2
            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
-------------------------------------------------------------------------------
South: PR-1 S
   1 LT       A  B  L                     3        28.8                31
   3 R       *A  B          B  A  R       3    3   28.8      22.2      31   23
-------------------------------------------------------------------------------
East: PR-738 E
   4 LT       B  A  L                     3        21.8                23
   6 R        A  B  R      *B  A         16    3   27.5      22.2      18   23
-------------------------------------------------------------------------------
North: PR-1 N
   7 LT       A  B  L                     3        18.5                31
   9 R  (Un2) A  B          B  A  R       3    4   19.1       9.0Min   31   22
-------------------------------------------------------------------------------
West: PR-738 W
  10 LT       B  A  L                     3         9.6                23
  12 R        A  B  R       B  A         12    3    9.0Min  10.3      22   23
-------------------------------------------------------------------------------
  Current Phase Sequence No.: 1
  Input phase sequence: A  B
  Output phase sequence: A  B
-------------------------------------------------------------------------------
  *  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
```

```
02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID:     2
            Fixed-Time Signals, Cycle Time =  60
```

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 3(1st), 6(2nd)

L= 6 Y= 0.676 U= 0.751 T= 51.1

Cycle Time:

Minimum	Maximum	Practical	Chosen
18	150	24	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	C
Average intersection delay (s)	=	20.0
Largest average movement delay (s)	=	28.7
Largest cycle-average queue, mean (m)	=	21
Performance Index	=	72.69
Degree of saturation (highest)	=	0.750
Practical Spare Capacity (lowest)	=	20 %
Effective intersection capacity, (veh/h)	=	3963
Total vehicle flow (veh/h)	=	2974
Total person flow (pers/h)	=	4461
Total vehicle delay (veh-h/h)	=	16.54
Total person delay (pers-h/h)	=	24.80
Total effective vehicle stops (veh/h)	=	2454
Total effective person stops (pers/h)	=	3681
Total vehicle travel (veh-km/h)	=	1798.0
Total cost ($/h)	=	1421.01
Total fuel (L/h)	=	213.9
Total CO2 (kg/h)	=	534.74

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 34
Phase Green Times: 31, 23

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

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.5 - MOVEMENT PERFORMANCE

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

No.	Delay (veh-h/h)	Delay (pers-h/h)	Delay (sec)	Queued	Stop Rate	Cycle (vehs)	Aver. (m)	Index	Speed (km/h)
South: PR-1 S									
1 LT	3.69	5.53	17.1	0.87	0.83	2.4	17	18.41	40.7
3 R	2.27	3.41	18.0	0.82	0.89	2.2	15	10.33	40.1
East: PR-738 E									
4 LT	6.61	9.91	27.9	0.92	0.92	3.0	21	24.34	33.9
6 R	0.72	1.08	28.7	0.91	0.93	3.0	21	2.60	33.5
North: PR-1 N									
7 LT	2.10	3.15	13.3	0.72	0.63	1.2	8	11.80	44.0
9 R	0.23	0.35	17.8	0.67	0.81	1.2	8	1.04	40.3
West: PR-738 W									
10 LT	0.68	1.02	17.3	0.71	0.74	0.6	4	3.16	40.6
12 R	0.24	0.36	19.9	0.71	0.80	0.6	4	1.00	38.7

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (m)	Perf. Index	Aver. Speed (km/h)
Pedestrians:									
185	0.258	0.92	1.38	17.9	0.71	0.75	4	4.16	40.1
ALL VEHICLES:									
2974	0.750	16.54	24.80	20.0	0.84	0.83	21	72.69	38.6
INTERSECTION (persons):									
4461	0.750		24.80	20.0	0.84	0.83		72.69	38.6

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

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

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

South: PR-1 S											
1 LT	155	281		436	0	1949	24		0.750	22.8	17
2 TR		340	454	794	0	1950	31	5	0.750	14.5	15
	155	621	454	1230	0				0.750	17.4	17
East: PR-738 E											
1 L	408			408	0	1949	23		0.735	28.2	16
2 LTR	380	65	90	535	0	1950	2	23	0.735	27.8	21
	788	65	90	943	0				0.735	28.0	21
North: PR-1 N											
1 LT	65	96		161	0	1949	18		0.451	22.6	6
2 TR		408	47	455	0	1950	31	1	0.451	10.4	8
	65	504	47	616	0				0.451	13.6	8
West: PR-738 W											
1 LTR	95	47	43	185	0	1890	2	23	0.258	17.9	4
	95	47	43	185	0				0.258	17.9	4

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2974	0	60	0.750	20.0	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 (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2
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-1 S										
1	LT	0.517		776	1034	0.750*	17.1	B	2.4	17
3	R	0.517*	0.383	454	605	0.750*	18.0	B	2.2	15
				1230		0.750	17.4	B	2.4	17
East: PR-738 E										
4	LT	0.383		853	1161	0.735	27.9	C	3.0	21

6 R	0.300	0.383*	90	122	0.736	28.7	C	3.0	21
			943		0.736	28.0	C	3.0	21
North: PR-1 N									
7 LT	0.517		569	1263	0.451	13.3	B	1.2	8
9 R (Un2)	0.517	0.367	47	104	0.451	17.8	B	1.2	8
			616		0.451	13.6	B	1.2	8
West: PR-738 W									
10 LT	0.383		142	550	0.258	17.3	B	0.6	4
12 R	0.367	0.383	43	167	0.258	19.9	B	0.6	4
			185		0.258	17.9	B	0.6	4
ALL VEHICLES:			2974		0.750	20.0	C	3.0	21
INTERSECTION (persons):			4461			20.0		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.
* Maximum v/c ratio, or critical green periods

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.742	100
Average Delay	20.0	60
Stop Rate	0.80	150
Max. Queue for Any Movement	3.0	60
Perf. Index	72.7	60
Cost	1421.0	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	4009	100
Prac. Spare Cap.	21	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.

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo
Intersection ID: 2

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	3963	0.750	20	20.0	0.83	3.0	72.7	1421.0	
70	3969	0.749	20	22.0	0.82	3.5	75.9	1462.8	
80	3972	0.749	20	23.9	0.81	3.9	79.0	1503.5	
90	3994	0.745	21	25.8	0.81	4.3	82.0	1543.1	
100	4009	0.742	21	27.6	0.80	4.7	84.9	1581.2	
110	4003	0.743	21	29.5	0.80	5.1	88.0	1622.6	
120	4001	0.743	21	31.4	0.80	5.6	91.2	1663.6	
130	3999	0.744	21	33.5	0.80	6.0	94.5	1707.4	
140	3997	0.744	21	35.5	0.80	6.5	97.9	1750.8	
150	3995	0.744	21	37.5	0.80	7.0	101.2	1793.8	

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_FPSem.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 4:05 PM, 1 Dec 2005

```
                 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    4:29 PM,  1 Dec 2005

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-
738_FPSem+5.OUT

 02 Int PR-1 y PR-738
 Pico PM Futuro con semaforo + 5 anos
 Intersection ID:     2


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  60 s

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

 * No. of Main (Timing-Capacity) Iterations =  2
   Saturation flow and/or lost time estimates for one or more movements
   have not settled at the end of the last iteration.
   Comparison of last two iterations:
     Difference in intersection degree of satn =  0.1 %
     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.
```

```
02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID:     2
            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.

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-1 S								
1	167	0	668	0	0	0	1.00	1.00
3	0	0	0	0	474	0	1.00	1.00
East: PR-738 E								
4	791	0	70	0	0	0	1.00	1.00
6	0	0	0	0	97	0	1.00	1.00
North: PR-1 N								
7	70	0	543	0	0	0	1.00	1.00

9	0	0	0	0	51	0	1.00	1.00
West: PR-738 W								
10	102	0	51	0	0	0	1.00	1.00
12	0	0	0	0	46	0	1.00	1.00

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

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	2nd Grn	Req.Mov.Time 1st Grn	2nd Grn	Eff. Grn 1st Grn	2nd Grn
South: PR-1 S															
1	LT	A	B	L						3		31.3		32	
3	R	*A	B			B	A	R		3	3	31.3	22.5	32	22
East: PR-738 E															
4	LT	B	A	L						3		22.1		22	
6	R	A	B	R		*B	A			18	3	30.0	22.5	17	22
North: PR-1 N															
7	LT	A	B	L						3		20.7		32	
9	R (Un2)	A	B			B	A	R		3	4	21.3	9.0Min	32	21
West: PR-738 W															
10	LT	B	A	L						3		10.1		22	
12	R	A	B	R		B	A			12	3	9.0Min	10.9	23	22

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

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 3(1st), 6(2nd)

L= 6 Y= 0.716 U= 0.796 T= 53.7

Cycle Time:

Minimum	Maximum	Practical	Chosen
18	150	29	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	C
Average intersection delay (s)	=	21.7
Largest average movement delay (s)	=	31.8
Largest cycle-average queue, mean (m)	=	25
Performance Index	=	80.23
Degree of saturation (highest)	=	0.795
Practical Spare Capacity (lowest)	=	13 %
Effective intersection capacity, (veh/h)	=	3937
Total vehicle flow (veh/h)	=	3130
Total person flow (pers/h)	=	4695
Total vehicle delay (veh-h/h)	=	18.90
Total person delay (pers-h/h)	=	28.35
Total effective vehicle stops (veh/h)	=	2702
Total effective person stops (pers/h)	=	4054
Total vehicle travel (veh-km/h)	=	1892.5
Total cost ($/h)	=	1537.09
Total fuel (L/h)	=	228.5
Total CO2 (kg/h)	=	571.32

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 35
Phase Green Times: 32, 22

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

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Cycle (vehs)	Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-1 S										
1	LT	4.46	6.69	19.2	0.90	0.89	2.9	20	21.10	39.2
3	R	2.66	3.99	20.2	0.85	0.93	2.9	20	11.47	38.5
East: PR-738 E										
4	LT	7.38	11.07	30.8	0.95	0.97	3.6	25	26.22	32.4
6	R	0.86	1.29	31.8	0.95	0.98	3.6	25	3.00	32.0
North: PR-1 N										
7	LT	2.25	3.38	13.2	0.73	0.64	1.4	9	12.72	44.0
9	R	0.25	0.37	17.6	0.68	0.82	1.4	9	1.13	40.4
West: PR-738 W										
10	LT	0.78	1.17	18.3	0.74	0.75	0.7	5	3.50	39.9
12	R	0.27	0.40	21.0	0.74	0.80	0.7	5	1.10	38.0

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (m)	Perf. Index	Aver. Speed (km/h)
Pedestrians:									
199	0.290	1.05	1.57	18.9	0.74	0.76	5	4.60	39.4
ALL VEHICLES:									
3130	0.795	18.90	28.35	21.7	0.86	0.86	25	80.23	37.5
INTERSECTION (persons):									
4695	0.795		28.35	21.7	0.86	0.86		80.23	37.5

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

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)	%HV	Adj. Basic	Eff Grn (secs)	Deg Sat	Aver. Delay	Longest Queue	Shrt Lane

	L	T	R	Tot		Satf.	1st	2nd	x	(sec)	(m)	(m)
South: PR-1 S												
1 LT	167	280		447	0	1949	24		0.795	25.5	19	
2 TR		388	474	862	0	1950	32	4	0.795	16.5	20	
	167	668	474	1309	0				0.795	19.6	20	
East: PR-738 E												
1 L	413			413	0	1949	22		0.781	31.1	18	
2 LTR	378	70	97	545	0	1950	2	22	0.781	30.8	25	
	791	70	97	958	0				0.781	30.9	25	
North: PR-1 N												
1 LT	70	76		146	0	1949	16		0.497	25.3	6	
2 TR		467	51	518	0	1950	32	1	0.497	10.2	9	
	70	543	51	664	0				0.497	13.6	9	
West: PR-738 W												
1 LTR	102	51	46	199	0	1890	2	22	0.290	18.9	5	
	102	51	46	199	0				0.290	18.9	5	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	3130	0	60	0.795	21.7	25

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.

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2
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-1 S										
1	LT	0.533		835	1051	0.795*	19.2	B	2.9	20
3	R	0.533*	0.367	474	596	0.795*	20.2	C	2.9	20
				1309		0.795	19.6	B	2.9	20

East: PR-738 E									
4 LT	0.367		861	1103	0.781	30.8	C	3.6	25
6 R	0.283	0.367*	97	124	0.782	31.8	C	3.6	25
			958		0.782	30.9	C	3.6	25
North: PR-1 N									
7 LT	0.533		613	1234	0.497	13.2	B	1.4	9
9 R (Un2)	0.533	0.350	51	103	0.496	17.6	B	1.4	9
			664		0.497	13.6	B	1.4	9
West: PR-738 W									
10 LT	0.367		153	528	0.290	18.3	B	0.7	5
12 R	0.383	0.367	46	158	0.290	21.0	C	0.7	5
			199		0.290	18.9	B	0.7	5
ALL VEHICLES:			3130		0.795	21.7	C	3.6	25
INTERSECTION (persons):			4695			21.7		3.6	25

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

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.791	120
Average Delay	21.7	60
Stop Rate	0.82	150
Max. Queue for Any Movement	3.6	60
Perf. Index	80.2	60
Cost	1537.1	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	3957	120
Prac. Spare Cap.	14	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.

---

02 Int PR-1 y PR-738
Pico PM Futuro con semaforo + 5 anos
Intersection ID: 2

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	3937	0.795	13	21.7	0.86	3.6	80.2	1537.1	
70	3939	0.795	13	23.8	0.86	4.0	83.6	1582.2	
80	3901	0.802	12	25.9	0.85	4.5	87.3	1630.4	
90	3917	0.799	13	27.3	0.83	5.2	89.4	1660.3	*
100	3936	0.795	13	29.1	0.83	5.6	92.5	1701.2	*
110	3950	0.792	14	31.1	0.83	6.0	95.9	1745.9	
120	3957	0.791	14	33.3	0.83	6.4	99.7	1794.1	
130	3953	0.792	14	35.3	0.83	6.8	103.1	1839.0	
140	3900	0.803	12	37.4	0.83	7.1	106.8	1886.6	
150	3917	0.799	13	39.3	0.82	7.8	110.1	1930.1	

* 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 ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\02_PR-1 y PR-738_FPSem+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 4:29 PM, 1 Dec 2005

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 2:23 PM, 16 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_BA.OUT

03 Int PR-1 y Conector PR-52
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 = 1
  Comparison of last two iterations:
  Difference in intersection degree of satn = 0.0 %
  Largest difference in eff. green times = 0 secs
  (max. value for stopping = 0 secs)

---

03 Int PR-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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.

---

03 Int PR-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S								
2	0	0	580	0	0	0	1.00	1.00
3	0	0	0	0	1656	0	1.00	1.00
East: Conector PR-52 E								
4	700	0	0	0	0	0	1.00	1.00
6	0	0	0	0	780	0	1.00	1.00
North: PR-1 N								
7	480	0	0	0	0	0	1.00	1.00
8	0	0	620	0	0	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-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr To Op Pr	Second Green Fr To Op Pr	Lost Tim 1st Grn	2nd Grn	Req.Mov.Time 1st Grn	2nd Grn	Eff. Grn 1st Grn	2nd Grn
South: PR-1 S									
2	T	*B C		4		27.4		65	
East: Conector PR-52 E									
4	L	*C A		4		33.8		40	
North: PR-1 N									
7	L	*A B		4		25.3		28	
8	T	A C		4		29.0		97	

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

* 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-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 7, 2, 4

L= 12 Y= 0.462 U= 0.514 T= 86.5

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	150	30	145

(Cycle time specified by the user)

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	23.6
Largest average movement delay (s)	=	67.1
Largest cycle-average queue, mean (m)	=	34
Performance Index	=	121.17
Degree of saturation (highest)	=	0.828
Practical Spare Capacity (lowest)	=	18 %

Effective intersection capacity, (veh/h)	=	5819
Total vehicle flow (veh/h)	=	4816
Total person flow (pers/h)	=	7224
Total vehicle delay (veh-h/h)	=	31.56
Total person delay (pers-h/h)	=	47.33
Total effective vehicle stops (veh/h)	=	3032
Total effective person stops (pers/h)	=	4548
Total vehicle travel (veh-km/h)	=	2942.8
Total cost ($/h)	=	2411.38
Total fuel (L/h)	=	335.3
Total CO2 (kg/h)	=	838.35

---

03 Int PR-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 32, 101
Phase Green Times: 28, 65, 40

(Phase times specified by the user)
Current Phase Sequence No.: 1
Input phase sequence: A B C
Output phase sequence: A B C

---

03 Int PR-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S									
2 T	4.39	6.58	27.2	0.69	0.59	2.2	15	16.55	34.3
3 R	3.63	5.45	7.9		0.60	27.9#		26.05	49.4
East: Conector PR-52 E									
4 L	11.25	16.88	57.9	0.95	0.85	4.9	34	31.44	23.3
6 R	1.65	2.48	7.6		0.60	13.0#		12.25	49.7
North: PR-1 N									
7 L	8.94	13.41	67.1	0.99	0.84	3.9	28	23.96	21.2
8 T	1.69	2.54	9.8	0.42	0.37	0.9	6	10.91	47.2

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

---

03 Int PR-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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:									
1100	0.685	10.63	15.95	34.8	0.67	0.57	28	34.88	30.7
ALL VEHICLES:									
4816	0.828	31.56	47.33	23.6	0.37	0.63	34	121.17	36.5
INTERSECTION (persons):									
7224	0.828		47.33	23.6	0.37	0.63		121.17	36.5

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

---

03 Int PR-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S												
1 T		290		290	0	2000	65		0.323	27.2	15	
2 T		290		290	0	2000	65		0.323	27.2	15	
3 R			1656	1656	0	2100	145		0.828	7.9		
	0	580	1656	2236	0				0.828	12.9	15	
East: Conector PR-52 E												
1 L	350			350	0	1985	40		0.671	57.9	34	
2 L	350			350	0	1985	40		0.671	57.9	34	
3 R			780	780	0	1985	145		0.413	7.6		
	700	0	780	1480	0				0.671	31.4	34	
North: PR-1 N												
1 L	240			240	0	1904	28		0.685	67.1	28	
2 L	240			240	0	1904	28		0.685	67.1	28	
3 T		303		303	0	1949	97		0.232	9.8	6	
4 T		317		317	0	2040	97		0.232	9.8	6	
	480	620	0	1100	0				0.685	34.8	28	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	4816	0	145	0.828	23.6	34

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.

---

03 Int PR-1 y Conector PR-52
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S										
2	T	0.448*		580	1793	0.323	27.2	C	2.2	15
3	R (Con)	1.000		1656	2001	0.828*	7.9	E#	27.9#	
				2236		0.828	12.9	B	2.2	15
East: Conector PR-52 E										
4	L	0.276*		700	1043	0.671	57.9	E	4.9	34
6	R (Con)	1.000		780	1891	0.412	7.6	C#	13.0#	
				1480		0.671	31.4	C	4.9	34
North: PR-1 N										
7	L	0.193*		480	701	0.685	67.1	E	3.9	28
8	T	0.669		620	2669	0.232	9.8	A	0.9	6
				1100		0.685	34.8	C	3.9	28
ALL VEHICLES:				4816		0.828	23.6	C	4.9	34
INTERSECTION (persons):				7224			23.6		4.9	34

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.

\# Continuous movements: Level Of Service based on density, Density (passenger cars per km or mile) instead of queue.

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_BA.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 2:23 PM, 16 Nov 2005

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 4:03 PM, 16 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_BP.OUT

03 Int PR-1 y Conector PR-52
Pico PM 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 = 1
  Comparison of last two iterations:
  Difference in intersection degree of satn = 0.0 %
  Largest difference in eff. green times = 0 secs
  (max. value for stopping = 0 secs)

---

03 Int PR-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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.

---

03 Int PR-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S								
2	0	0	968	0	0	0	1.00	1.00
3	0	0	0	0	1028	0	1.00	1.00
East: Conector PR-52 E								
4	724	0	0	0	0	0	1.00	1.00
6	0	0	0	0	824	0	1.00	1.00
North: PR-1 N								
7	384	0	0	0	0	0	1.00	1.00
8	0	0	444	0	0	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-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S									
2	T	*B C		4		43.0		65	
East: Conector PR-52 E									
4	L	*C A		4		34.9		40	
North: PR-1 N									
7	L	*A B		4		21.1		28	
8	T	A C		4		21.9		97	

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

* 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-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 7, 2, 4

L= 12 Y= 0.539 U= 0.599 T= 98.9

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	150	30	145

(Cycle time specified by the user)

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	26.4
Largest average movement delay (s)	=	65.1
Largest cycle-average queue, mean (m)	=	36
Performance Index	=	118.21
Degree of saturation (highest)	=	0.694
Practical Spare Capacity (lowest)	=	30 %

Effective intersection capacity, (veh/h)	=	6299
Total vehicle flow (veh/h)	=	4372
Total person flow (pers/h)	=	6558
Total vehicle delay (veh-h/h)	=	32.02
Total person delay (pers-h/h)	=	48.04
Total effective vehicle stops (veh/h)	=	2873
Total effective person stops (pers/h)	=	4310
Total vehicle travel (veh-km/h)	=	2671.5
Total cost ($/h)	=	2281.59
Total fuel (L/h)	=	312.2
Total CO2 (kg/h)	=	780.46

---

03 Int PR-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 32, 101
Phase Green Times: 28, 65, 40

(Phase times specified by the user)
Current Phase Sequence No.: 1
Input phase sequence: A B C
Output phase sequence: A B C

---

03 Int PR-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S									
2 T	8.28	12.42	30.8	0.78	0.70	4.1	29	30.08	32.5
3 R	2.18	3.28	7.6		0.60	17.2#		16.15	49.7
East: Conector PR-52 E									
4 L	11.72	17.58	58.3	0.96	0.86	5.1	36	32.69	23.2
6 R	1.75	2.62	7.6		0.60	13.8#		12.94	49.7
North: PR-1 N									
7 L	6.94	10.42	65.1	0.95	0.82	3.1	21	18.71	21.6
8 T	1.15	1.73	9.3	0.40	0.34	0.6	4	7.63	47.8

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

---

03 Int PR-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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:									
828	0.548	8.09	12.14	35.2	0.66	0.56	21	26.34	30.5
ALL VEHICLES:									
4372	0.694	32.02	48.04	26.4	0.46	0.66	36	118.21	34.9
INTERSECTION (persons):									
6558	0.694		48.04	26.4	0.46	0.66		118.21	34.9

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

---

03 Int PR-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S												
1 T		484		484	0	2000	65		0.540	30.8	29	
2 T		484		484	0	2000	65		0.540	30.8	29	
3 R			1028	1028	0	2100	145		0.514	7.6		
	0	968	1028	1996	0				0.540	18.9	29	
East: Conector PR-52 E												
1 L	362			362	0	1985	40		0.694	58.3	36	
2 L	362			362	0	1985	40		0.694	58.3	36	
3 R			824	824	0	1985	145		0.436	7.6		
	724	0	824	1548	0				0.694	31.3	36	
North: PR-1 N												
1 L	192			192	0	1904	28		0.548	65.1	21	
2 L	192			192	0	1904	28		0.548	65.1	21	
3 T		217		217	0	1949	97		0.166	9.3	4	
4 T		227		227	0	2040	97		0.166	9.3	4	
	384	444	0	828	0				0.548	35.2	21	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	4372	0	145	0.694	26.4	36

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.

---

03 Int PR-1 y Conector PR-52
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 145

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-1 S										
2	T	0.448*		968	1793	0.540	30.8	C	4.1	29
3	R (Con)	1.000		1028	2001	0.514	7.6	D#	17.2#	
				1996		0.540	18.9	B	4.1	29
East: Conector PR-52 E										
4	L	0.276*		724	1043	0.694*	58.3	E	5.1	36
6	R (Con)	1.000		824	1891	0.436	7.6	C#	13.8#	
				1548		0.694	31.3	C	5.1	36
North: PR-1 N										
7	L	0.193*		384	701	0.548	65.1	E	3.1	21
8	T	0.669		444	2669	0.166	9.3	A	0.6	4
				828		0.548	35.2	D	3.1	21
ALL VEHICLES:				4372		0.694	26.4	C	5.1	36
INTERSECTION (persons):				6558			26.4		5.1	36

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.

\# Continuous movements: Level Of Service based on density,
Density (passenger cars per km or mile) instead of queue.

* Maximum v/c ratio, or critical green periods

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_BP.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 4:03 PM, 16 Nov 2005

```
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    2:26 PM, 17 Nov 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-
52_FA.OUT

03 Int PR-1 y Conector PR-52
Pico AM 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 =  1
  Comparison of last two iterations:
    Difference in intersection degree of satn =  0.0 %
    Largest difference in eff. green times =  0 secs
    (max. value for stopping = 0 secs)

* 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    3  is
  greater than the critical movement degrees of saturation
  because movement is specified as Undetected or Continuous type.

* Degree of saturation of non-critical movement    6  is
  greater than the critical movement degrees of saturation
  because movement is specified as Undetected or Continuous type.
```

03 Int PR-1 y Conector PR-52
Pico AM Futuro
Intersection ID: 3
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.

---

03 Int PR-1 y Conector PR-52
Pico AM 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-1 S								
2	0	0	625	0	0	0	1.00	1.00
3	0	0	0	0	1784	0	1.00	1.00

```
East: Conector PR-52 E
         4          754     0      0      0      0      0   1.00   1.00
         6            0     0      0      0   1407      0   1.00   1.00
-----------------------------------------------------------------------
North: PR-1 N
         7          642     0      0      0      0      0   1.00   1.00
         8            0     0    668      0      0      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-1 y Conector PR-52
Pico AM Futuro
Intersection ID:     3
            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
-------------------------------------------------------------------------------
South: PR-1 S
   2 T       *B  C                         4        14.4              14
-------------------------------------------------------------------------------
East: Conector PR-52 E
   4 L       *C  A                         4        17.3              18
-------------------------------------------------------------------------------
North: PR-1 N
   7 L       *A  B                         4        15.8              16
   8 T        A  C                         4        20.0Min           34
-------------------------------------------------------------------------------
  Current Phase Sequence No.: 1
  Input phase sequence: A  B  C
  Output phase sequence: A  B  C
-------------------------------------------------------------------------------
  *  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-1 y Conector PR-52
Pico AM Futuro
Intersection ID:     3
            Fixed-Time Signals, Cycle Time =  60


Table S.3 - INTERSECTION PARAMETERS
-------------------------------------------------------
```

Critical Movements: 7, 2, 4

L= 12 Y= 0.533 U= 0.592 T= 47.5

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	150	30	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	F
Average intersection delay (s)	=	14.7
Largest average movement delay (s)	=	30.3
Largest cycle-average queue, mean (m)	=	15
Performance Index	=	119.63
Degree of saturation (highest)	=	0.892
Practical Spare Capacity (lowest)	=	10 %
Effective intersection capacity, (veh/h)	=	6595
Total vehicle flow (veh/h)	=	5880
Total person flow (pers/h)	=	8820
Total vehicle delay (veh-h/h)	=	23.98
Total person delay (pers-h/h)	=	35.97
Total effective vehicle stops (veh/h)	=	3945
Total effective person stops (pers/h)	=	5917
Total vehicle travel (veh-km/h)	=	3590.6
Total cost ($/h)	=	2571.31
Total fuel (L/h)	=	395.4
Total CO2 (kg/h)	=	988.53

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 20, 38
Phase Green Times: 16, 14, 18

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

---

03 Int PR-1 y Conector PR-52
Pico AM 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-1 S									
2 T	4.17	6.25	24.0	0.96	0.84	2.1	15	17.56	36.1
3 R	4.02	6.03	8.1		0.60	30.4#		28.10	49.1
East: Conector PR-52 E									
4 L	5.99	8.98	28.6	0.93	0.86	2.2	15	21.62	33.7
6 R	3.04	4.56	7.8		0.60	23.6#		22.12	49.5
North: PR-1 N									
7 L	5.41	8.11	30.3	0.95	0.86	2.0	14	19.02	32.8
8 T	1.35	2.03	7.3	0.55	0.48	0.7	5	11.22	50.0

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

03 Int PR-1 y Conector PR-52
Pico AM 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)
Pedestrians:									
1310	0.664	6.76	10.14	18.6	0.75	0.66	14	30.24	39.8
ALL VEHICLES:									
5880	0.892	23.98	35.97	14.7	0.39	0.67	15	119.63	42.8
INTERSECTION (persons):									
8820	0.892		35.97	14.7	0.39	0.67		119.63	42.8

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

03 Int PR-1 y Conector PR-52
Pico AM 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-1 S												
1 T		313		313	0	2000	14		0.670	24.0	15	
2 T		313		313	0	2000	14		0.670	24.0	15	
3 R			1784	1784	0	2100	60		0.892	8.1		

		0	625	1784	2409	0			0.892	12.2	15
East: Conector PR-52 E											
1	L	377			377	0	1985	18	0.665	28.6	15
2	L	377			377	0	1985	18	0.665	28.6	15
3	R			1407	1407	0	1985	60	0.744	7.8	
		754	0	1407	2161	0			0.744	15.0	15
North: PR-1 N											
1	L	321			321	0	1904	16	0.664	30.3	14
2	L	321			321	0	1904	16	0.664	30.3	14
3	T		326		326	0	1949	34	0.295	7.3	5
4	T		342		342	0	2040	34	0.295	7.3	5
		642	668	0	1310	0			0.664	18.6	14

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	5880	0	60	0.892	14.7	15

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.

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro
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-1 S										
2	T	0.233*		625	933	0.670	24.0	C	2.1	15
3	R (Con)	1.000		1784	2001	0.892*	8.1	F#	30.4#	
				2409		0.892	12.2	B	2.1	15
East: Conector PR-52 E										
4	L	0.300*		754	1134	0.665	28.6	C	2.2	15
6	R (Con)	1.000		1407	1891	0.744	7.8	E#	23.6#	
				2161		0.744	15.0	B	2.2	15
North: PR-1 N										
7	L	0.267*		642	967	0.664	30.3	C	2.0	14

8 T	0.567	668	2261	0.295	7.3	A	0.7	5
		1310		0.664	18.6	B	2.0	14
ALL VEHICLES:		5880		0.892	14.7	B	2.2	15
INTERSECTION (persons):		8820			14.7		2.2	15

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.
Continuous movements: Level Of Service based on density,
Density (passenger cars per km or mile) instead of queue.
* Maximum v/c ratio, or critical green periods

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.892	60
Average Delay	14.7	60
Stop Rate	0.66	120
Max. Queue for Any Movement	2.2	60
Perf. Index	119.6	60
Cost	2571.3	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	6595	60
Prac. Spare Cap.	10	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-1 y Conector PR-52
Pico AM 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	6595	0.892	10	14.7	0.67	2.2	119.6	2571.3	
70	6595	0.892	10	15.6	0.66	2.4	122.4	2608.8	
80	6595	0.892	10	16.6	0.66	2.7	125.4	2648.9	
90	6595	0.892	10	17.6	0.66	2.9	128.8	2693.7	
100	6595	0.892	10	18.7	0.66	3.2	132.3	2738.6	
110	6595	0.892	10	19.7	0.66	3.4	135.7	2783.6	
120	6595	0.892	10	20.7	0.66	3.7	139.0	2826.5	
130	6595	0.892	10	21.8	0.66	4.0	142.5	2871.5	
140	6595	0.892	10	22.8	0.66	4.2	145.9	2916.6	
150	6595	0.892	10	23.9	0.66	4.5	149.4	2961.8	

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_FA.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 2:26 PM, 17 Nov 2005

```
                 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    1:02 PM, 23 Nov 2005

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-
52_FA+5.OUT

 03 Int PR-1 y Conector PR-52
 Pico AM Futuro + 5 anos
 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 =  1
   Comparison of last two iterations:
     Difference in intersection degree of satn =  0.0 %
     Largest difference in eff. green times =  0 secs
     (max. value for stopping = 0 secs)

 * 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    3  is
   greater than the critical movement degrees of saturation
   because movement is specified as Undetected or Continuous type.

 * Degree of saturation of non-critical movement    6  is
   greater than the critical movement degrees of saturation
   because movement is specified as Undetected or Continuous type.
```

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
Intersection ID: 3
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.

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
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-1 S								
2	0	0	673	0	0	0	1.00	1.00
3	0	0	0	0	1922	0	1.00	1.00

```
East: Conector PR-52 E
         4          812     0      0      0      0      0   1.00   1.00
         6            0     0      0      0   1472      0   1.00   1.00
-----------------------------------------------------------------------
North: PR-1 N
         7          682     0      0      0      0      0   1.00   1.00
         8            0     0    720      0      0      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-1 y Conector PR-52
Pico AM Futuro + 5 anos
Intersection ID:     3
            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
-------------------------------------------------------------------------------
South: PR-1 S
   2 T       *B  C                         4        15.2               14
-------------------------------------------------------------------------------
East: Conector PR-52 E
   4 L       *C  A                         4        18.3               18
-------------------------------------------------------------------------------
North: PR-1 N
   7 L       *A  B                         4        16.5               16
   8 T        A  C                         4        20.0Min            34
-------------------------------------------------------------------------------
  Current Phase Sequence No.: 1
  Input phase sequence: A  B  C
  Output phase sequence: A  B  C
-------------------------------------------------------------------------------
  *  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-1 y Conector PR-52
Pico AM Futuro + 5 anos
Intersection ID:     3
            Fixed-Time Signals, Cycle Time =  60


Table S.3 - INTERSECTION PARAMETERS
-------------------------------------------------------
```

Critical Movements: 7, 2, 4

L= 12 Y= 0.571 U= 0.634 T= 50.1

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	150	33	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	F
Average intersection delay (s)	=	15.4
Largest average movement delay (s)	=	31.3
Largest cycle-average queue, mean (m)	=	17
Performance Index	=	129.90
Degree of saturation (highest)	=	0.961
Practical Spare Capacity (lowest)	=	2 %
Effective intersection capacity, (veh/h)	=	6539
Total vehicle flow (veh/h)	=	6281
Total person flow (pers/h)	=	9422
Total vehicle delay (veh-h/h)	=	26.81
Total person delay (pers-h/h)	=	40.22
Total effective vehicle stops (veh/h)	=	4276
Total effective person stops (pers/h)	=	6414
Total vehicle travel (veh-km/h)	=	3824.2
Total cost ($/h)	=	2769.64
Total fuel (L/h)	=	420.6
Total CO2 (kg/h)	=	1051.57

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 20, 38
Phase Green Times: 16, 14, 18

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

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
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-1 S									
2 T	4.70	7.05	25.1	0.98	0.88	2.3	16	19.49	35.5
3 R	4.78	7.17	9.0		0.58	33.8#		30.41	48.1
East: Conector PR-52 E									
4 L	6.73	10.09	29.8	0.95	0.89	2.5	17	24.00	33.1
6 R	3.20	4.80	7.8		0.60	24.8#		23.15	49.5
North: PR-1 N									
7 L	5.92	8.88	31.3	0.96	0.89	2.2	16	20.66	32.4
8 T	1.48	2.22	7.4	0.56	0.49	0.8	5	12.18	49.9

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

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
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)
Pedestrians:									
1402	0.705	7.40	11.11	19.0	0.76	0.68	16	32.85	39.5
ALL VEHICLES:									
6281	0.961	26.81	40.22	15.4	0.40	0.68	17	129.90	42.2
INTERSECTION (persons):									
9422	0.961		40.22	15.4	0.40	0.68		129.90	42.2

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

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
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-1 S												
1 T		337		337	0	2000	14		0.721	25.1	16	
2 T		337		337	0	2000	14		0.721	25.1	16	
3 R			1922	1922	0	2100	60		0.961	9.0		

	0	673	1922	2595	0			0.961	13.2	16
East: Conector PR-52 E										
1 L	406			406	0	1985	18	0.716	29.8	17
2 L	406			406	0	1985	18	0.716	29.8	17
3 R			1472	1472	0	1985	60	0.779	7.8	
	812	0	1472	2284	0			0.779	15.6	17
North: PR-1 N										
1 L	341			341	0	1904	16	0.705	31.3	16
2 L	341			341	0	1904	16	0.705	31.3	16
3 T		352		352	0	1949	34	0.318	7.4	5
4 T		368		368	0	2040	34	0.318	7.4	5
	682	720	0	1402	0			0.705	19.0	16

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	6281	0	60	0.961	15.4	17

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.

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
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-1 S										
2 T		0.233*		673	933	0.721	25.1	C	2.3	16
3 R	(Con)	1.000		1922	2001	0.961*	9.0	F#	33.8#	
				2595		0.961	13.2	B	2.3	16
East: Conector PR-52 E										
4 L		0.300*		812	1134	0.716	29.8	C	2.5	17
6 R	(Con)	1.000		1472	1891	0.778	7.8	E#	24.8#	
				2284		0.778	15.6	B	2.5	17
North: PR-1 N										
7 L		0.267*		682	967	0.705	31.3	C	2.2	16

8 T	0.567	720	2261	0.318	7.4	A	0.8	5
		1402		0.705	19.0	B	2.2	16
ALL VEHICLES:		6281		0.961	15.4	B	2.5	17
INTERSECTION (persons):		9422			15.4		2.5	17

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.
Continuous movements: Level Of Service based on density,
Density (passenger cars per km or mile) instead of queue.
* Maximum v/c ratio, or critical green periods

---

03 Int PR-1 y Conector PR-52
Pico AM Futuro + 5 anos
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.961	60
Average Delay	15.4	60
Stop Rate	0.66	130
Max. Queue for Any Movement	2.5	60
Perf. Index	129.9	60
Cost	2769.6	60

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	6539	60
Prac. Spare Cap.	2	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-1 y Conector PR-52
Pico AM Futuro + 5 anos
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	6539	0.961	2	15.4	0.68	2.5	129.9	2769.6	
70	6539	0.961	2	16.2	0.67	2.7	132.6	2807.1	
80	6539	0.961	2	17.2	0.67	2.9	135.6	2848.3	
90	6539	0.961	2	18.1	0.66	3.2	138.7	2889.9	
100	6539	0.961	2	19.2	0.66	3.5	142.5	2938.9	
110	6539	0.961	2	20.3	0.66	3.7	146.2	2987.9	
120	6539	0.961	2	21.3	0.66	4.0	150.0	3036.9	
130	6539	0.961	2	22.4	0.66	4.4	153.6	3083.7	
140	6539	0.961	2	23.4	0.66	4.6	157.4	3132.8	
150	6539	0.961	2	24.5	0.66	4.9	161.1	3181.9	

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_FA+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 1:02 PM, 23 Nov 2005

```
                 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    2:32 PM, 17 Nov 2005

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-
52_FP.OUT

 03 Int PR-1 y Conector PR-52
 Pico PM Futuro
 Intersection ID:     3


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  80 s

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

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

 * 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-1 y Conector PR-52
Pico PM Futuro
Intersection ID:     3
            Fixed-Time Signals, Cycle Time =  80


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.

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-1 S								
2	0	0	1043	0	0	0	1.00	1.00
3	0	0	0	0	1107	0	1.00	1.00
East: Conector PR-52 E								
4	780	0	0	0	0	0	1.00	1.00
6	0	0	0	0	1088	0	1.00	1.00
North: PR-1 N								
7	1168	0	0	0	0	0	1.00	1.00
8	0	0	478	0	0	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-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	P H A S E M A T R I X First Green Fr To Op Pr	Second Green Fr To Op Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-1 S									
2	T	*B C		4		27.2		22	
East: Conector PR-52 E									
4	L	*C A		4		22.3		18	
North: PR-1 N									
7	L	*A B		4		32.6		28	
8	T	A C		4		20.0Min		54	

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

* 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-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

Table S.3 - INTERSECTION PARAMETERS

Critical Movements: 7, 2, 4

L= 12 Y= 0.789 U= 0.877 T= 82.1

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	150	97	80

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	D
Average intersection delay (s)	=	30.6
Largest average movement delay (s)	=	54.7
Largest cycle-average queue, mean (m)	=	51
Performance Index	=	171.82
Degree of saturation (highest)	=	0.948
Practical Spare Capacity (lowest)	=	-5 %
Effective intersection capacity, (veh/h)	=	5974
Total vehicle flow (veh/h)	=	5664
Total person flow (pers/h)	=	8496
Total vehicle delay (veh-h/h)	=	48.11
Total person delay (pers-h/h)	=	72.16
Total effective vehicle stops (veh/h)	=	4827
Total effective person stops (pers/h)	=	7240
Total vehicle travel (veh-km/h)	=	3460.8
Total cost ($/h)	=	3163.31
Total fuel (L/h)	=	431.1
Total CO2 (kg/h)	=	1077.65

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 32, 58
Phase Green Times: 28, 22, 18

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

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue Cycle (vehs)	Longest Queue Aver. (m)	Perf. Index	Aver. Speed (km/h)
South: PR-1 S									
2 T	14.52	21.79	50.1	1.00	1.15	7.3	51	46.25	25.2
3 R	2.36	3.53	7.7		0.60	18.5#		17.39	49.7
East: Conector PR-52 E									
4 L	11.85	17.78	54.7	1.00	1.09	5.1	36	34.68	24.1
6 R	2.32	3.48	7.7		0.60	18.2#		17.10	49.7

North: PR-1 N									
7 L	16.38	24.57	50.5	1.00	1.11	6.9	48	49.34	25.2
8 T	0.68	1.01	5.1	0.39	0.33	0.3	2	7.07	52.6

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

03 Int PR-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (m)	Perf. Index	Aver. Speed (km/h)
Pedestrians:									
1646	0.920	17.06	25.58	37.3	0.82	0.89	48	56.41	29.7
ALL VEHICLES:									
5664	0.948	48.11	72.16	30.6	0.56	0.85	51	171.82	32.7
INTERSECTION (persons):									
8496	0.948		72.16	30.6	0.56	0.85		171.82	32.7

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

03 Int PR-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-1 S												
1 T		522		522	0	2000	22		0.948	50.1	51	
2 T		522		522	0	2000	22		0.948	50.1	51	
3 R			1107	1107	0	2100	80		0.553	7.7		
	0	1043	1107	2150	0				0.948	28.3	51	
East: Conector PR-52 E												
1 L	390			390	0	1985	18		0.917	54.7	36	
2 L	390			390	0	1985	18		0.917	54.7	36	
3 R			1088	1088	0	1985	80		0.575	7.7		
	780	0	1088	1868	0				0.917	27.3	36	

North: PR-1 N										
1 L	584			584	0	1904	28	0.920	50.5	48
2 L	584			584	0	1904	28	0.920	50.5	48
3 T		234		234	0	1949	54	0.177	5.1	2
4 T		244		244	0	2040	54	0.177	5.1	2
	1168	478	0	1646	0			0.920	37.3	48

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	5664	0	80	0.948	30.6	51

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.

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 80

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)
South: PR-1 S										
2 T		0.275*		1043	1100	0.948*	50.1	D	7.3	51
3 R	(Con)	1.000		1107	2001	0.553	7.7	D#	18.5#	
				2150		0.948	28.3	C	7.3	51
East: Conector PR-52 E										
4 L		0.225*		780	851	0.917	54.7	D	5.1	36
6 R	(Con)	1.000		1088	1891	0.575	7.7	D#	18.2#	
				1868		0.917	27.3	C	5.1	36
North: PR-1 N										
7 L		0.350*		1168	1270	0.920	50.5	D	6.9	48
8 T		0.675		478	2693	0.177	5.1	A	0.3	2
				1646		0.920	37.3	D	6.9	48
ALL VEHICLES:				5664		0.948	30.6	C	7.3	51
INTERSECTION (persons):				8496			30.6		7.3	51

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.
Continuous movements: Level Of Service based on density,
Density (passenger cars per km or mile) instead of queue.
* Maximum v/c ratio, or critical green periods

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.862	150
Average Delay	30.6	80
Stop Rate	0.77	150
Max. Queue for Any Movement	7.0	90
Perf. Index	171.6	90
Cost	3163.3	80

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	6568	150
Prac. Spare Cap.	4	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.

---

03 Int PR-1 y Conector PR-52
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	5571	1.017	-11	33.2	0.93	9.6	182.5	3279.9	
70	5883	0.963	-7	30.9	0.88	7.0	173.7	3178.7	

80	5974	0.948	-5	30.6	0.85	7.3	171.8	3163.3
90	6101	0.928	-3	30.7	0.83	7.0	171.6	3166.2
100	6299	0.899	0	31.4	0.81	7.2	173.3	3193.2
110	6319	0.896	0	32.4	0.80	7.5	176.0	3231.7
120	6406	0.884	2	33.3	0.79	7.7	178.5	3267.3
130	6496	0.872	3	34.5	0.78	8.0	181.9	3312.6
140	6517	0.869	4	35.7	0.77	8.3	185.5	3361.0
150	6568	0.862	4	36.8	0.77	8.5	188.7	3404.5

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_FP.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 2:32 PM, 17 Nov 2005

```
                 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    1:05 PM, 23 Nov 2005

 Filename: C:\Documents and Settings\Carlos M Contreras\My
Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-
52_FP+5.OUT

 03 Int PR-1 y Conector PR-52
 Pico PM Futuro + 5 anos
 Intersection ID:     3


 RUN INFORMATION
 ---------------
 Variable cycle time run: "Optimum" cycle time =  90 s

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

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

 * 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-1 y Conector PR-52
Pico PM Futuro + 5 anos
Intersection ID:     3
            Fixed-Time Signals, Cycle Time =  90


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.

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro + 5 anos
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-1 S								
2	0	0	1123	0	0	0	1.00	1.00
3	0	0	0	0	1193	0	1.00	1.00
East: Conector PR-52 E								
4	840	0	0	0	0	0	1.00	1.00
6	0	0	0	0	1156	0	1.00	1.00
North: PR-1 N								
7	1200	0	0	0	0	0	1.00	1.00
8	0	0	515	0	0	0	1.00	1.00

Intersection Level of Service	=	D
Worst movement Level of Service	=	E
Average intersection delay (s)	=	36.2
Largest average movement delay (s)	=	65.3
Largest cycle-average queue, mean (m)	=	65
Performance Index	=	202.41
Degree of saturation (highest)	=	0.972
Practical Spare Capacity (lowest)	=	-7 %
Effective intersection capacity, (veh/h)	=	6202
Total vehicle flow (veh/h)	=	6027
Total person flow (pers/h)	=	9041
Total vehicle delay (veh-h/h)	=	60.59
Total person delay (pers-h/h)	=	90.89
Total effective vehicle stops (veh/h)	=	5273
Total effective person stops (pers/h)	=	7909
Total vehicle travel (veh-km/h)	=	3682.3
Total cost ($/h)	=	3616.99
Total fuel (L/h)	=	473.8
Total CO2 (kg/h)	=	1184.41

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro + 5 anos
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.4 - PHASE INFORMATION

Phase Change Times: 0, 35, 65
Phase Green Times: 31, 26, 21

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

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro + 5 anos
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-1 S									
2 T	18.51	27.76	59.3	1.00	1.18	9.3	65	55.74	22.8
3 R	2.54	3.82	7.7		0.60	20.0#		18.75	49.7
East: Conector PR-52 E									
4 L	15.23	22.85	65.3	1.00	1.13	6.7	47	42.48	21.6
6 R	2.47	3.70	7.7		0.60	19.4#		18.17	49.6

North: PR-1 N									
7 L	21.03	31.55	63.1	1.00	1.17	9.2	64	59.49	22.0
8 T	0.81	1.22	5.7	0.39	0.34	0.4	3	7.79	51.9

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

03 Int PR-1 y Conector PR-52
Pico PM Futuro + 5 anos
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)
Pedestrians:									
1715	0.960	21.84	32.76	45.8	0.82	0.92	64	67.28	26.6
ALL VEHICLES:									
6027	0.972	60.59	90.89	36.2	0.56	0.87	65	202.41	30.2
INTERSECTION (persons):									
9041	0.972		90.89	36.2	0.56	0.87		202.41	30.2

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

03 Int PR-1 y Conector PR-52
Pico PM Futuro + 5 anos
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-1 S												
1 T		562		562	0	2000	26		0.972	59.3	65	
2 T		562		562	0	2000	26		0.972	59.3	65	
3 R			1193	1193	0	2100	90		0.596	7.7		
	0	1123	1193	2316	0				0.972	32.7	65	
East: Conector PR-52 E												
1 L	420			420	0	1985	21		0.952	65.3	47	
2 L	420			420	0	1985	21		0.952	65.3	47	
3 R			1156	1156	0	1985	90		0.611	7.7		
	840	0	1156	1996	0				0.952	31.9	47	

North: PR-1 N										
1	L	600			600	0	1904	31	0.960	63.1	64
2	L	600			600	0	1904	31	0.960	63.1	64
3	T		252		252	0	1949	61	0.190	5.7	3
4	T		263		263	0	2040	61	0.190	5.7	3
		1200	515	0	1715	0			0.960	45.8	64

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	6027	0	90	0.972	36.2	65

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.

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro + 5 anos
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Time Ratio (g/C) 1st grn	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-1 S										
2	T	0.289*		1123	1156	0.972*	59.3	E	9.3	65
3	R (Con)	1.000		1193	2001	0.596	7.7	D#	20.0#	
				2316		0.972	32.7	C	9.3	65
East: Conector PR-52 E										
4	L	0.233*		840	882	0.952	65.3	E	6.7	47
6	R (Con)	1.000		1156	1891	0.611	7.7	D#	19.4#	
				1996		0.952	31.9	C	6.7	47
North: PR-1 N										
7	L	0.344*		1200	1250	0.960	63.1	E	9.2	64
8	T	0.678		515	2704	0.190	5.7	A	0.4	3
				1715		0.960	45.8	D	9.2	64
ALL VEHICLES:				6027		0.972	36.2	D	9.3	65
INTERSECTION (persons):				9041			36.2		9.3	65

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 tne "Level of Service" topic in the
aaSIDRA Output Guide or the Output section of the on-line help.
Continuous movements: Level Of Service based on density,
Density (passenger cars per km or mile) instead of queue.
* Maximum v/c ratio, or critical green periods

---

03 Int PR-1 y Conector PR-52
Pico PM Futuro + 5 anos
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.915	140
Average Delay	36.2	90
Stop Rate	0.80	150
Max. Queue for Any Movement	9.2	100
Perf. Index	202.0	100
Cost	3617.0	90

Performance Measure	Largest Value	Cycle Time
Eff. Inters. Cap.	6588	140
Prac. Spare Cap.	-2	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-1 y Conector PR-52
Pico PM Futuro + 5 anos
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	5725	1.053	-15	41.6	1.00	11.4	224.7	3868.9	
70	5827	1.034	-13	38.4	0.94	10.8	212.3	3724.6	

80	6104	0.987	-9	36.5	0.90	9.5	204.3	3634.0
90	6202	0.972	-7	36.2	0.87	9.3	202.4	3617.0
100	6240	0.966	-7	36.3	0.85	9.2	202.0	3617.8
110	6412	0.940	-4	36.8	0.84	9.2	203.3	3639.6
120	6440	0.936	-4	37.7	0.83	9.6	205.8	3675.0
130	6469	0.932	-3	38.5	0.81	9.5	208.1	3708.4
140	6588	0.915	-2	39.5	0.80	9.9	211.3	3752.2
150	6583	0.915	-2	40.7	0.80	10.5	214.9	3800.7

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\03_PR-1 y PR-52_FP+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 1:05 PM, 23 Nov 2005

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 10:51 AM, 2 Dec 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FA.OUT

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4

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

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4
Stop Sign Controlled Intersection

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.   Fol.up   Min.   % Exit Flow
                         Gap    Hdway    Deps    Opposing
        Left turns :     7.0     4.0      2.0       50
        Through    :     6.5     3.5      2.0       50
        Right turns:     5.0     3.0      2.0       50
        Opposed turns from priority road:
                         4.5     2.5      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.
```

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4
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-743 E								
4	0	0	177	0	0	0	1.00	1.00
6	0	0	0	0	1	0	1.00	1.00
North: Acceso Proyecto N								
7	1	0	0	0	0	0	1.00	1.00
9	0	0	0	0	125	0	1.00	1.00
West: PR-743 W								
10	567	0	0	0	0	0	1.00	1.00
11	0	0	86	0	0	0	1.00	1.00

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

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s)	=	7.3
Largest average movement delay (s)	=	14.8
Largest cycle-average queue, mean (m)	=	2
Performance Index	=	14.60
Degree of saturation (highest)	=	0.488
Practical Spare Capacity (lowest)	=	64 %
Effective intersection capacity, (veh/h)	=	1963
Total vehicle flow (ven/h)	=	957
Total person flow (pers/h)	=	1436
Total vehicle delay (veh-h/h)	=	1.93
Total person delay (pers-h/h)	=	2.89
Total effective vehicle stops (veh/h)	=	502
Total effective person stops (pers/h)	=	754
Total vehicle travel (veh-km/h)	=	577.9
Total cost ($/h)	=	360.97
Total fuel (L/h)	=	59.0
Total CO2 (kg/h)	=	147.60

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.

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4
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-743 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	1.79	60.0
6 R	0.00	0.00	8.2	0.00	0.67	0.0	0	0.02	49.0
North: Acceso Proyecto N									
7 L	0.00	0.01	14.8	0.58	0.80	0.0	0	0.02	43.6
9 R	0.40	0.59	11.4	0.29	0.87	0.0	0	2.29	46.2
West: PR-743 W									
10 L	1.53	2.29	9.7	0.42	0.69	0.2	2	9.62	47.1
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.87	60.0

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4
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)
Pedestrians:									
653	0.488	1.53	2.29	8.4	0.36	0.60	2	10.49	48.5
ALL VEHICLES:									
957	0.488	1.93	2.89	7.3	0.29	0.52	2	14.60	49.9
INTERSECTION (persons):									
1436	0.488		2.89	7.3	0.29	0.52		14.60	49.9

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

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4
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-743 E												
1 TR		177	1	178	0				0.091	0.0	0	
	0	177	1	178	0				0.091	0.0		
North: Acceso Proyecto N												
1 L	1			1	0				0.002	14.8	0	
2 R			125	125	0				0.103	11.4	0	
	1	0	125	126	0				0.103	11.4	0	
West: PR-743 W												
1 L	567			567	0				0.488	9.7	2	50
2 T		86		86	0				0.044	0.0	0	
	567	86	0	653	0				0.488	8.4	2	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	957	0	0.488	7.3	2

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.

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro
Intersection ID: 4
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-743 E								
4	T	177	1939	0.091	0.0	A	0.0	0
6	R	1	11	0.091	8.2	A	0.0	0
		178		0.091	0.0	A	0.0	0
North: Acceso Proyecto N								
7	L	1	604	0.002	14.8	B	0.0	0
9	R	125	1212	0.103	11.4	B	0.0	0
		126		0.103	11.4	B	0.0	0
West: PR-743 W								
10	L	567	1163<	0.488*	9.7	A	0.2	2
11	T	86	1950	0.044	0.0	A	0.0	0
		653		0.488	8.4	A	0.2	2
ALL VEHICLES:		957		0.488	7.3	NA	0.2	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.

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

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FA.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 10:51 AM, 2 Dec 2005

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 10:59 AM, 2 Dec 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FA+5.OUT

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4

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

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4
Stop Sign Controlled Intersection

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 :	7.0	4.0	2.0	50
Through :	6.5	3.5	2.0	50
Right turns:	5.0	3.0	2.0	50
Opposed turns from priority road:				
	4.5	2.5	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.

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4
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-743 E								
4	0	0	190	0	0	0	1.00	1.00
6	0	0	0	0	1	0	1.00	1.00
North: Acceso Proyecto N								
7	1	0	0	0	0	0	1.00	1.00
9	0	0	0	0	125	0	1.00	1.00
West: PR-743 W								
10	567	0	0	0	0	0	1.00	1.00
11	0	0	93	0	0	0	1.00	1.00

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

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s)	=	7.2
Largest average movement delay (s)	=	14.9
Largest cycle-average queue, mean (m)	=	2
Performance Index	=	14.91
Degree of saturation (highest)	=	0.489
Practical Spare Capacity (lowest)	=	64 %
Effective intersection capacity, (veh/h)	=	1999
Total vehicle flow (veh/h)	=	977
Total person flow (pers/h)	=	1466
Total vehicle delay (veh-h/h)	=	1.96
Total person delay (pers-h/h)	=	2.94
Total effective vehicle stops (veh/h)	=	511
Total effective person stops (pers/h)	=	766
Total vehicle travel (veh-km/h)	=	590.0
Total cost ($/h)	=	367.38
Total fuel (L/h)	=	59.9
Total CO2 (kg/h)	=	149.85

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.

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4
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-743 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	1.92	60.0
6 R	0.00	0.00	8.2	0.00	0.67	0.0	0	0.02	49.0
North: Acceso Proyecto N									
7 L	0.00	0.01	14.9	0.59	0.80	0.0	0	0.02	43.5
9 R	0.40	0.60	11.5	0.31	0.87	0.0	0	2.29	46.2
West: PR-743 W									
10 L	1.56	2.33	9.9	0.44	0.71	0.2	2	9.72	47.0
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.94	60.0

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4
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)
Pedestrians:									
660	0.489	1.56	2.33	8.5	0.37	0.61	2	10.66	48.5
ALL VEHICLES:									
977	0.489	1.96	2.94	7.2	0.29	0.52	2	14.91	50.1
INTERSECTION (persons):									
1466	0.489		2.94	7.2	0.29	0.52		14.91	50.1

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

---

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4
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-743 E												
1 TR		190	1	191	0				0.098	0.0	0	
	0	190	1	191	0				0.098	0.0		
North: Acceso Proyecto N												
1 L	1			1	0				0.002	14.9	0	
2 R			125	125	0				0.105	11.5	0	
	1	0	125	126	0				0.105	11.5	0	
West: PR-743 W												
1 L	567			567	0				0.489	9.9	2	50
2 T		93		93	0				0.048	0.0	0	
	567	93	0	660	0				0.489	8.5	2	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	977	0	0.489	7.2	2

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.

04 Int PR-743 y Acceso Proyecto
Pico AM Futuro + 5 Anos
Intersection ID: 4
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-743 E								
4	T	190	1939	0.098	0.0	A	0.0	0
6	R	1	10	0.100	8.2	A	0.0	0
		191		0.100	0.0	A	0.0	0
North: Acceso Proyecto N								
7	L	1	590	0.002	14.9	B	0.0	0
9	R	125	1196	0.105	11.5	B	0.0	0
		126		0.105	11.5	B	0.0	0
West: PR-743 W								
10	L	567	1160<	0.489*	9.9	A	0.2	2
11	T	93	1950	0.048	0.0	A	0.0	0
		660		0.489	8.5	A	0.2	2
ALL VEHICLES:		977		0.489	7.2	NA	0.2	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.

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

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FA+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 10:59 AM, 2 Dec 2005

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 10:56 AM, 2 Dec 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FP.OUT

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4

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

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4
Stop Sign Controlled Intersection

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 :	7.0	4.0	2.0	50
Through :	6.5	3.5	2.0	50
Right turns:	5.0	3.0	2.0	50
Opposed turns from priority road:				
	4.5	2.5	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.

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4
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-743 E								
4	0	0	47	0	0	0	1.00	1.00
6	0	0	0	0	1	0	1.00	1.00
North: Acceso Proyecto N								
7	1	0	0	0	0	0	1.00	1.00
9	0	0	0	0	754	0	1.00	1.00
West: PR-743 W								
10	200	0	0	0	0	0	1.00	1.00
11	0	0	69	0	0	0	1.00	1.00

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

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s)	=	9.4
Largest average movement delay (s)	=	11.7
Largest cycle-average queue, mean (m)	=	1
Performance Index	=	17.98
Degree of saturation (highest)	=	0.547
Practical Spare Capacity (lowest)	=	46 %
Effective intersection capacity, (veh/h)	=	1959
Total vehicle flow (ven/h)	=	1072
Total person flow (pers/h)	=	1608
Total vehicle delay (veh-h/h)	=	2.79
Total person delay (pers-h/h)	=	4.18
Total effective vehicle stops (veh/h)	=	776
Total effective person stops (pers/h)	=	1163
Total vehicle travel (veh-km/h)	=	647.7
Total cost ($/h)	=	425.26
Total fuel (L/h)	=	71.6
Total CO2 (kg/h)	=	178.90

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.

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4
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-743 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.48	60.0
6 R	0.00	0.00	8.2	0.00	0.67	0.0	0	0.02	49.0
North: Acceso Proyecto N									
7 L	0.00	0.00	11.7	0.37	0.79	0.0	0	0.02	46.0
9 R	2.31	3.46	11.0	0.23	0.86	0.1	1	13.58	46.4
West: PR-743 W									
10 L	0.47	0.71	8.5	0.14	0.63	0.0	0	3.20	48.2
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.70	60.0

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4
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)
Pedestrians:									
269	0.170	0.47	0.71	6.3	0.11	0.47	0	3.89	50.8
ALL VEHICLES:									
1072	0.547	2.79	4.18	9.4	0.19	0.72	1	17.98	47.9
INTERSECTION (persons):									
1608	0.547		4.18	9.4	0.19	0.72		17.98	47.9

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

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4
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-743 E												
1 TR		47	1	48	0				0.025	0.2	0	
	0	47	1	48	0				0.025	0.2		
North: Acceso Proyecto N												
1 L	1			1	0				0.001	11.7	0	
2 R			754	754	0				0.547	11.0	1	
	1	0	754	755	0				0.547	11.0	1	
West: PR-743 W												
1 L	200			200	0				0.170	8.5	0	50
2 T		69		69	0				0.035	0.0	0	
	200	69	0	269	0				0.170	6.3	0	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1072	0	0.547	9.4	1

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.

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro
Intersection ID: 4
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-743 E								
4	T	47	1907	0.025	0.0	A	0.0	0
6	R	1	41	0.024	8.2	A	0.0	0
		48		0.025	0.2	A	0.0	0
North: Acceso Proyecto N								
7	L	1	1064	0.001	11.7	B	0.0	0
9	R	754	1378	0.547*	11.0	B	0.1	1
		755		0.547	11.0	B	0.1	1
West: PR-743 W								
10	L	200	1177<	0.170	8.5	A	0.0	0
11	T	69	1950	0.035	0.0	A	0.0	0
		269		0.170	6.3	A	0.0	0
ALL VEHICLES:		1072		0.547	9.4	NA	0.1	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.

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

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FP.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 10:56 AM, 2 Dec 2005

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 11:06 AM, 2 Dec 2005

Filename: C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FP+5.OUT

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4

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

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4
Stop Sign Controlled Intersection

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.   Fol.up   Min.   % Exit Flow
                         Gap    Hdway    Deps    Opposing
        Left turns :     7.0     4.0      2.0       50
        Through    :     6.5     3.5      2.0       50
        Right turns:     5.0     3.0      2.0       50
        Opposed turns from priority road:
                         4.5     2.5      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.
```

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4
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-743 E								
4	0	0	51	0	0	0	1.00	1.00
6	0	0	0	0	1	0	1.00	1.00
North: Acceso Proyecto N								
7	1	0	0	0	0	0	1.00	1.00
9	0	0	0	0	754	0	1.00	1.00
West: PR-743 W								
10	200	0	0	0	0	0	1.00	1.00
11	0	0	74	0	0	0	1.00	1.00

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

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s)	=	9.3
Largest average movement delay (s)	=	11.7
Largest cycle-average queue, mean (m)	=	1
Performance Index	=	18.07
Degree of saturation (highest)	=	0.549
Practical Spare Capacity (lowest)	=	46 %
Effective intersection capacity, (veh/h)	=	1968
Total vehicle flow (veh/h)	=	1081
Total person flow (pers/h)	=	1622
Total vehicle delay (veh-h/h)	=	2.79
Total person delay (pers-h/h)	=	4.19
Total effective vehicle stops (veh/h)	=	773
Total effective person stops (pers/h)	=	1159
Total vehicle travel (veh-km/h)	=	653.2
Total cost ($/h)	=	428.04
Total fuel (L/h)	=	72.0
Total CO2 (kg/h)	=	179.88

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.

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4
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-743 E									
4 T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.52	60.0
6 R	0.00	0.00	8.2	0.00	0.67	0.0	0	0.02	49.0
North: Acceso Proyecto N									
7 L	0.00	0.00	11.7	0.37	0.79	0.0	0	0.02	46.0
9 R	2.32	3.47	11.1	0.25	0.85	0.1	1	13.57	46.4
West: PR-743 W									
10 L	0.47	0.71	8.5	0.15	0.63	0.0	0	3.20	48.2
11 T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.75	60.0

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4
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)
Pedestrians:									
274	0.170	0.47	0.71	6.2	0.11	0.46	0	3.95	50.9
ALL VEHICLES:									
1081	0.549	2.79	4.19	9.3	0.20	0.71	1	18.07	48.0
INTERSECTION (persons):									
1622	0.549		4.19	9.3	0.20	0.71		18.07	48.0

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

---

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4
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-743 E												
1 TR		51	1	52	0				0.027	0.2	0	
	0	51	1	52	0				0.027	0.2		
North: Acceso Proyecto N												
1 L	1			1	0				0.001	11.7	0	
2 R			754	754	0				0.549	11.1	1	
	1	0	754	755	0				0.549	11.1	1	
West: PR-743 W												
1 L	200			200	0				0.170	8.5	0	50
2 T		74		74	0				0.038	0.0	0	
	200	74	0	274	0				0.170	6.2	0	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1081	0	0.549	9.3	1

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.

04 Int PR-743 y Acceso Proyecto
Pico PM Futuro + 5 Anos
Intersection ID: 4
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-743 E								
4	T	51	1911	0.027	0.0	A	0.0	0
6	R	1	37	0.027	8.2	A	0.0	0
		52		0.027	0.2	A	0.0	0
North: Acceso Proyecto N								
7	L	1	1055	0.001	11.7	B	0.0	0
9	R	754	1373	0.549*	11.1	B	0.1	1
		755		0.549	11.1	B	0.1	1
West: PR-743 W								
10	L	200	1177<	0.170	8.5	A	0.0	0
11	T	74	1950	0.038	0.0	A	0.0	0
		274		0.170	6.2	A	0.0	0
ALL VEHICLES:		1081		0.549	9.3	NA	0.1	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.

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

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

--- End of aaSIDRA Output ---

C:\Documents and Settings\Carlos M Contreras\My Documents\aaTraffic\aaSIDRA Projects\ParqueIndustrialCayey\04_PR-743 y Acceso proyecto_FP+5.OUT
Produced by aaSIDRA 2.1.3.356
Copyright 2000-2004
Akcelik & Associates Pty Ltd

Generated 11:06 AM, 2 Dec 2005