

APÉNDICE C

FACTORES DE CRECIMIENTO ANUAL

(FUENTE: AUTORIDAD DE CARRETERAS Y
TRANSPORTACIÓN, OFICINA RECOPIACIÓN DE DATOS Y
ANÁLISIS DE TRÁNSITO)

**ÁREA DE PROGRAMACIÓN Y ESTUDIOS ESPECIALES
OFICINA DE RECOPIACIÓN DE DATOS Y ANÁLISIS DE TRÁNSITO
DATA DE TRÁNSITO**

Humacao

<u>Núm</u>	<u>PR</u>	<u>Clasificación</u>	<u>Descripción</u>	<u>Factor Proyección a 20 años</u>
1	30	Freeway & Expressway	PR-908 a PR-53	1.68
2	30	Freeway & Expressway	PR-60 a PR-980	1.68
3	60	Freeway & Expressway	PR-924 to PR-3	1.61
4	3	Principal Arterial	PR-60 a Ave. Boulevard	1.36
5	3	Principal Arterial	PR-923 a PR-60	1.36
6	3	Principal Arterial	PR-53 a PR-923	1.36
7	3	Minor Arterial	PR-925 (Camino Pasto) a PR-53	1.41
8	3	Minor Arterial	PR-925 (Camino Pasto) a Urb. Verde Mar	1.41
9	909	Collector	PR-3 a PR-30	1.42
10	909	Collector	PR-30 a PR-908	1.42
11	908	Principal Arterial	PR-3 a Calle América	1.36
12	908	Principal Arterial	PR-30 a Calle América	1.36

Guaynabo

<u>Núm</u>	<u>PR</u>	<u>Clasificación</u>	<u>Descripción</u>	<u>Factor Proyección a 20 años</u>
1	1	Principal Arterial	PR-169 a PR-20	1.31
2	1	Principal Arterial	PR-20 a PR-173	1.31
3	1	Principal Arterial	PR-177 a PR-199	1.31
4	1	Principal Arterial	PR-20 a PR-173	1.31
5	199	Principal Arterial	PR-20 a PR-838	1.31
6	199	Principal Arterial	PR-838 a PR-1	1.31
7	169	Collector	PR-20 a PR-199	1.42
8	169	Minor Arterial	PR-199 a Acceso a PR-20	1.36
9	169	Minor Arterial	Acceso a PR-20 a PR-1	1.36
10	169	Minor Arterial	Del Km 4.6 a PR-1	1.36
11	834	Collector	Desvío PR-8834 a PR-8834	1.42

Ponce

<u>Núm</u>	<u>PR</u>	<u>Clasificación</u>	<u>Descripción</u>	<u>Factor Proyección a 20 años</u>
1	14	Principal Arterial	Entre Centro Médico y PR-10/PR-5139	1.38
2	14	Minor Arterial	Entre PR-10/PR-5139 y Urb. Tres Monjitas	1.25

San Juan

<u>Núm</u>	<u>PR</u>	<u>Clasificación</u>	<u>Descripción</u>	<u>Factor Proyección a 20 años</u>
1	848	Minor Arterial	Entre PR-887 y PR-181	1.22

FIGURA 54

APÉNDICE D
ANÁLISIS DE CAPACIDAD

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
 AM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	1784	308	0	1048	44	200	12	304	132	0	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.994				0.850		0.946	
Flt Protected	0.950							0.955			0.971	
Satd. Flow (prot)	1770	4973	0	0	5055	0	0	1779	1583	0	1711	0
Flt Permitted	0.950							0.599			0.567	
Satd. Flow (perm)	1770	4973	0	0	5055	0	0	1116	1583	0	999	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		101			11				49		27	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		109.4			116.4			101.8			78.5	
Travel Time (s)		7.9			8.4			7.3			5.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	92	1784	308	0	1048	44	200	12	304	132	0	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	2092	0	0	1092	0	0	212	304	0	220	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot						Perm		Perm	Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4			8		2	2	2	6	6	

FIGURA 62

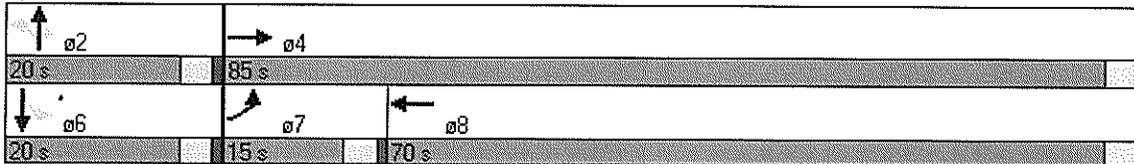
Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
 AM Condiciones Existentes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5			20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	15.0	85.0	0.0	0.0	70.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	14.3%	81.0%	0.0%	0.0%	66.7%	0.0%	19.0%	19.0%	19.0%	19.0%	19.0%	0.0%
Maximum Green (s)	11.0	81.0			66.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None			None		Max	Max	Max	Max	Max	
Act Effct Green (s)	9.9	74.9			63.2			37.1	37.1		37.1	
Actuated g/C Ratio	0.08	0.62			0.53			0.31	0.31		0.31	
v/c Ratio	0.64	0.67			0.41			0.61	0.58		0.67	
Control Delay	63.9	5.8			9.0			46.8	36.1		45.4	
Queue Delay	0.0	0.7			0.0			0.0	0.0		0.0	
Total Delay	63.9	6.6			9.0			46.8	36.1		45.4	
LOS	E	A			A			D	D		D	
Approach Delay		9.0			9.0			40.5			45.4	
Approach LOS		A			A			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 120
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 15.0
 Intersection Capacity Utilization 82.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 14: PR-199 &



Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
 AM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1496	72	84	976	0	0	0	0	688	4	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Frt		0.993									0.866	
Flt Protected				0.950						0.950	0.995	
Satd. Flow (prot)	0	5050	0	1770	5085	0	0	0	0	3221	1461	0
Flt Permitted				0.950						0.950	0.995	
Satd. Flow (perm)	0	5050	0	1770	5085	0	0	0	0	3221	1461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11									148	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		218.2			95.9			177.7			175.4	
Travel Time (s)		15.7			6.9			12.8			12.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1496	72	84	976	0	0	0	0	688	4	612
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	1568	0	84	976	0	0	0	0	619	685	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (m)		10.0		2.0	10.0					2.0	10.0	
Trailing Detector (m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Position(m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Size(m)		0.6		2.0	0.6					2.0	0.6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Detector Phase		4		3	8					6	6	

Synchro 7 - Report

FIGURA 63

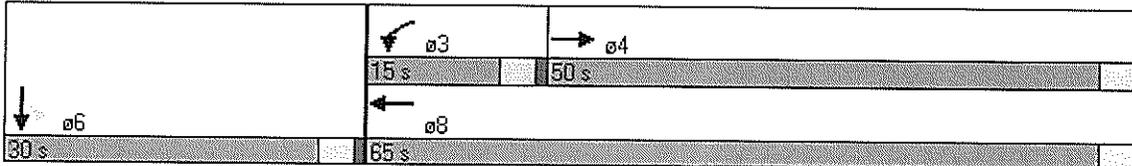
Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
 AM Condiciones Existentes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5		8.0	20.5					20.5	20.5	
Total Split (s)	0.0	50.0	0.0	15.0	65.0	0.0	0.0	0.0	0.0	30.0	30.0	0.0
Total Split (%)	0.0%	52.6%	0.0%	15.8%	68.4%	0.0%	0.0%	0.0%	0.0%	31.6%	31.6%	0.0%
Maximum Green (s)		46.0		11.0	61.0					26.0	26.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					Max	Max	
Act Effect Green (s)		45.0		9.7	56.6					55.4	55.4	
Actuated g/C Ratio		0.38		0.08	0.47					0.46	0.46	
v/c Ratio		0.82		0.60	0.41					0.42	0.91	
Control Delay		21.3		56.9	8.4					23.8	42.4	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		21.3		56.9	8.4					23.8	42.4	
LOS		C		E	A					C	D	
Approach Delay		21.3			12.3						33.6	
Approach LOS		C			B						C	

Intersection Summary

Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 120
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 22.9
 Intersection Capacity Utilization 92.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 8: PR-199 & PR-20 SB Off



Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
 AM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1668	400	264	1708	40	0	0	0	80	64	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	70.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.997							
Flt Protected	0.950			0.950								0.946
Satd. Flow (prot)	1770	4938	0	1770	5070	0	0	0	1863	0	1734	0
Flt Permitted	0.950			0.950								0.984
Satd. Flow (perm)	1770	4938	0	1770	5070	0	0	0	1863	0	1734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			4							29
Link Speed (k/h)		50			50			50				50
Link Distance (m)		168.3			293.5			91.8			114.9	
Travel Time (s)		12.1			21.1			6.6			8.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	140	1668	400	264	1708	40	0	0	0	80	64	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	2068	0	264	1748	0	0	0	0	0	240	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2				1	1		2
Detector Template	Left	Thru		Left	Thru				Right	Left		Thru
Leading Detector (m)	2.0	10.0		2.0	10.0				2.0	2.0		10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6				2.0	2.0		0.6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 2 Position(m)		9.4			9.4							9.4
Detector 2 Size(m)		0.6			0.6							0.6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type	Prot			Prot				custom		Perm		
Protected Phases	7	4		3	8							6
Permitted Phases									2	6		
Detector Phase	7	4		3	8				2	6		6

Synchro 7 - Report

FIGURA 64

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
 AM Condiciones Existentes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0				4.0	4.0	4.0	
Minimum Split (s)	20.0	60.0		5.0	60.0				20.5	15.0	15.0	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	0.0	0.0	0.0	43.6	15.0	15.0	0.0
Total Split (%)	16.2%	48.5%	0.0%	16.2%	48.5%	0.0%	0.0%	0.0%	35.3%	12.1%	12.1%	0.0%
Maximum Green (s)	16.0	56.0		16.0	56.0				39.6	11.0	11.0	
Yellow Time (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0				1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	None		None	None				Max	Max	Max	
Act Effct Green (s)	13.8	55.4		16.0	57.6						39.6	
Actuated g/C Ratio	0.11	0.45		0.13	0.47						0.32	
v/c Ratio	0.71	0.92		1.15	0.74						0.42	
Control Delay	71.7	38.3		152.1	29.1						31.2	
Queue Delay	0.0	0.0		0.0	0.0						0.0	
Total Delay	71.7	38.3		152.1	29.1						31.2	
LOS	E	D		F	C						C	
Approach Delay		40.4			45.2						31.2	
Approach LOS		D			D						C	

Intersection Summary

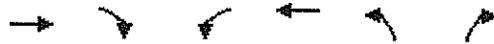
Area Type: Other
 Cycle Length: 123.6
 Actuated Cycle Length: 123
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.15
 Intersection Signal Delay: 42.1
 Intersection Capacity Utilization 79.4%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 17: PR-199 & Angel Quiñones

↙ φ2	↘ φ3	→ φ4
43.6 s	20 s	60 s
↓ φ6	↗ φ7	← φ8
15 s	20 s	60 s

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
 AM Condiciones Existentes



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↑↑	
Volume (veh/h)	1816	0	0	1864	164	228
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1816	0	0	1864	164	228
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	294					
pX, platoon unblocked			0.66		0.66	0.66
vC, conflicting volume			1816		2437	605
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			408		1355	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	68
cM capacity (veh/h)			752		92	711

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	726	726	363	621	621	621	392
Volume Left	0	0	0	0	0	0	164
Volume Right	0	0	0	0	0	0	228
cSH	1700	1700	1700	1700	1700	1700	187
Volume to Capacity	0.43	0.43	0.21	0.37	0.37	0.37	2.10
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	243.9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	553.5
Lane LOS							F
Approach Delay (s)	0.0			0.0			553.5
Approach LOS							F

Intersection Summary							
Average Delay			53.3				
Intersection Capacity Utilization			65.8%	ICU Level of Service			C
Analysis Period (min)			15				

Intersección Carretera PR-199 & PR-169
AM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	1268	148	116	1144	156	124	152	224	220	56	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	70.0		0.0	0.0		45.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.95	0.95	1.00	0.95	0.95	0.95
Frnt		0.984			0.982				0.850		0.948	
Flt Protected	0.950			0.950				0.963			0.975	
Satd. Flow (prot)	1770	5004	0	1770	4994	0	0	3408	1583	0	3271	0
Flt Permitted	0.950			0.950				0.581			0.547	
Satd. Flow (perm)	1770	5004	0	1770	4994	0	0	2056	1583	0	1835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			27				224		132	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			218.2			160.3			87.7	
Travel Time (s)		14.5			15.7			11.5			6.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.25	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	1268	148	116	1144	156	496	152	224	220	56	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	1416	0	116	1300	0	0	648	224	0	424	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.4			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	

Synchro 7 - Report

FIGURA 66

Intersección Carretera PR-199 & PR-169
 AM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5		8.0	20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	20.0	35.0	0.0	15.0	30.0	0.0	40.0	40.0	40.0	40.0	40.0	0.0
Total Split (%)	22.2%	38.9%	0.0%	16.7%	33.3%	0.0%	44.4%	44.4%	44.4%	44.4%	44.4%	0.0%
Maximum Green (s)	16.0	31.0		11.0	26.0		36.0	36.0	36.0	36.0	36.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Act Effct Green (s)	13.8	31.9		9.8	25.6			36.1	36.1		36.1	
Actuated g/C Ratio	0.16	0.36		0.11	0.29			0.41	0.41		0.41	
v/c Ratio	0.72	0.77		0.60	0.88			1.41dl	0.29		0.51	
Control Delay	50.1	28.3		51.0	37.3			30.1	3.6		15.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	50.1	28.3		51.0	37.3			30.1	3.6		15.8	
LOS	D	C		D	D			C	A		B	
Approach Delay		31.0			38.5			23.3			15.8	
Approach LOS		C			D			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 87.4
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 30.4
 Intersection Capacity Utilization 70.5%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 5: PR-199 & PR-169

 ø2	 ø3	 ø4
40 s	15 s	35 s
 ø6	 ø7	 ø8
40 s	20 s	30 s

Intersección Carretera PR-169 & PR-20

AM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	184	116	144	164	104	24	600	180	308	1020	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.850			0.850		0.970			0.996	
Fl _t Protected		0.977			0.977			0.999			0.989	
Satd. Flow (prot)	0	1820	1583	0	1820	1583	0	2046	0	0	2080	0
Fl _t Permitted		0.977			0.977			0.999			0.989	
Satd. Flow (perm)	0	1820	1583	0	1820	1583	0	2046	0	0	2080	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		181.4			181.6			163.2			502.7	
Travel Time (s)		13.1			13.1			11.8			36.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	184	116	144	164	104	24	600	180	308	1020	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	344	116	0	308	104	0	804	0	0	1368	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
 Control Type: Roundabout
 Intersection Capacity Utilization 165.5% ICU Level of Service H
 Analysis Period (min) 15

Intersección Carretera PR-1 & Camino Parcelas Canejas
AM Condiciones Existentes

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	56	88	2060	108	36	692
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		20.0	0.0	
Storage Lanes	1	0		1	0	
Taper Length (m)	7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95
Frnt	0.917			0.850		
Flt Protected	0.981					0.998
Satd. Flow (prot)	1676	0	3539	1583	0	3532
Flt Permitted	0.981					0.671
Satd. Flow (perm)	1676	0	3539	1583	0	2375
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	72			37		
Link Speed (k/h)	50		50			50
Link Distance (m)	116.3		103.0			83.1
Travel Time (s)	8.4		7.4			6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	96	2239	117	39	752
Shared Lane Traffic (%)						
Lane Group Flow (vph)	157	0	2239	117	0	791
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Minimum Split (s)	15.0		20.0	20.0	8.0	20.0
Total Split (s)	15.0	0.0	60.0	60.0	15.0	75.0
Total Split (%)	16.7%	0.0%	66.7%	66.7%	16.7%	83.3%
Maximum Green (s)	11.0		56.0	56.0	11.0	71.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Act Effct Green (s)	11.0		56.0	56.0		71.0
Actuated g/C Ratio	0.12		0.62	0.62		0.79
v/c Ratio	0.59		1.02	0.12		0.50
Control Delay	30.4		41.8	5.1		3.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	30.4		41.8	5.1		3.7
LOS	C		D	A		A

Intersección Carretera PR-1 & Camino Parcelas Canejas

AM Condiciones Existentes



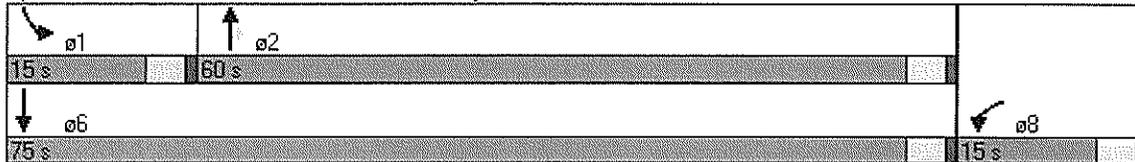
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	30.4		40.0			3.7
Approach LOS	C		D			A

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 30.9
 Intersection Capacity Utilization 72.1%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 11: Camino Parcelas Canejas & PR-1



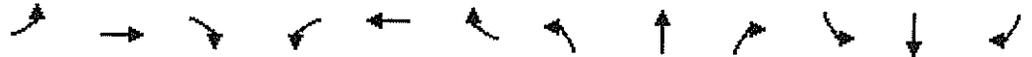
Intersección Carretera PR-1, PR-173 & PR-8834
AM Condiciones Existentes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	1392	56	248	2724	32	240	28	44	172	12	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		75.0	50.0		80.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	2		0	0		1
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.95	0.95	1.00
Frnt			0.850			0.850		0.908				0.850
Flt Protected	0.950			0.950			0.950				0.955	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3214	0	0	3380	1583
Flt Permitted	0.950			0.950			0.504				0.701	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1821	3214	0	0	2481	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45			14		48				188
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		217.2			239.2			222.4			34.8	
Travel Time (s)		15.6			17.2			16.0			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1513	61	270	2961	35	261	30	48	187	13	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	1513	61	270	2961	35	261	78	0	0	200	300
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(m)		3.6			3.6			7.2			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot		Perm	Prot		Perm	pm+pt			Perm		Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4			8	2			6		6
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0		20.0	20.0	20.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	45.0	0.0	30.0	30.0	30.0
Total Split (%)	12.5%	50.0%	50.0%	12.5%	50.0%	50.0%	12.5%	37.5%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	11.0	56.0	56.0	11.0	56.0	56.0	11.0	41.0		26.0	26.0	26.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		5.0	5.0		5.0	5.0		5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0		0	0	0
Act Effct Green (s)	11.0	56.0	56.0	11.0	56.0	56.0	41.0	41.0			26.0	26.0
Actuated g/C Ratio	0.09	0.47	0.47	0.09	0.47	0.47	0.34	0.34			0.22	0.22
v/c Ratio	0.51	0.92	0.08	1.67	1.79	0.05	0.34	0.07			0.37	0.61
Control Delay	63.8	39.8	7.4	359.6	383.8	12.3	29.5	12.5			42.4	21.6

Synchro 7 - Report

FIGURA 69

Intersección Carretera PR-1, PR-173 & PR-8834
 AM Condiciones Existentes



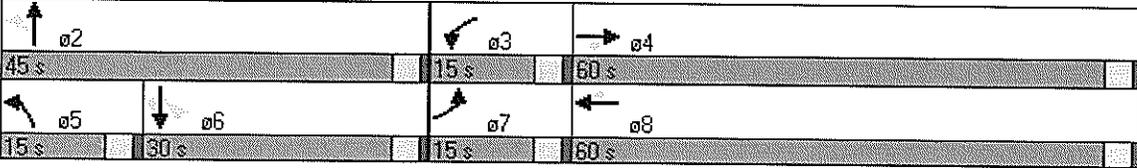
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	63.8	39.8	7.4	359.6	383.8	12.3	29.5	12.5			42.4	21.6
LOS	E	D	A	F	F	B	C	B			D	C
Approach Delay		39.8			377.8			25.6			29.9	
Approach LOS		D			F			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 Maximum v/c Ratio: 1.79
 Intersection Signal Delay: 229.7
 Intersection Capacity Utilization 109.2%
 Analysis Period (min) 15

Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 19: PR-1 & PR-8834



Intersección Carretera PR-834 & Desvio PR-834
AM Condiciones Existentes

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	964	12	0	136	84	8	4	548	0	96	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1048	13	0	148	91	9	4	596	0	104	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	239			1048			1178	1287	524	720	1241	120
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239			1048			1178	1287	524	720	1241	120
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			89	97	0	0	40	100
cM capacity (veh/h)	1325			660			76	163	498	0	174	909
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1		
Volume Total	0	524	524	13	99	141	9	4	596	109		
Volume Left	0	0	0	0	0	0	9	0	0	0		
Volume Right	0	0	0	13	0	91	0	0	596	4		
cSH	1700	1700	1700	1700	1700	1700	76	163	498	179		
Volume to Capacity	0.00	0.31	0.31	0.01	0.06	0.08	0.11	0.03	1.20	0.61		
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.7	178.0	26.8		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	58.6	27.7	132.7	51.9		
Lane LOS							F	D	F	F		
Approach Delay (s)	0.0				0.0		130.9			51.9		
Approach LOS							F			F		
Intersection Summary												
Average Delay			42.3									
Intersection Capacity Utilization			75.9%		ICU Level of Service				D			
Analysis Period (min)			15									

FIGURA 70

Intersección Carreteras PR-834 & Desvio PR-835
AM Condiciones Existentes

												
Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations												
Volume (veh/h)	108	0	8	0	8	0	1508	0	0	140	24	
Sign Control		Stop		Stop			Free			Free		
Grade		0%		0%			0%			0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly flow rate (vph)	108	0	8	0	8	0	1508	0	0	140	24	
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4									
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	1648	70	1578	1648	140			1508			
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	898	1648	70	1578	1648	140			1508			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	4.1			4.1			
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	2.2			2.2			
p0 queue free %	51	100	99	100	92	100			100			
cM capacity (veh/h)	220	98	978	73	98	1441			440			
Direction, Lane #	SB 1	SB 2	NW 1	NW 2	NE 1	NE 2	SW 1	SW 2	SW 3			
Volume Total	72	44	4	4	754	754	70	70	24			
Volume Left	72	36	0	0	0	0	0	0	0			
Volume Right	0	8	0	0	0	0	0	0	24			
cSH	220	268	98	98	1700	1700	1700	1700	1700			
Volume to Capacity	0.33	0.16	0.04	0.04	0.44	0.44	0.04	0.04	0.01			
Queue Length 95th (ft)	34	14	3	3	0	0	0	0	0			
Control Delay (s)	29.2	21.7	43.2	43.2	0.0	0.0	0.0	0.0	0.0			
Lane LOS	D	C	E	E								
Approach Delay (s)	26.3		43.2		0.0		0.0					
Approach LOS	D		E									
Intersection Summary												
Average Delay			1.9									
Intersection Capacity Utilization			51.7%	ICU Level of Service							A	
Analysis Period (min)			15									

FIGURA 71

Intersección Carretera PR-834 & PR-835
AM Condiciones Existentes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	204	68	284	620	32
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	222	74	309	674	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1593	191			74	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1593	191			74	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	73			56	
cM capacity (veh/h)	55	818			1524	

Dirección, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	65	222	49	333	674	17	17
Volume Left	65	0	0	0	674	0	0
Volume Right	0	222	0	309	0	0	0
cSH	55	818	1700	1700	1524	1700	1700
Volume to Capacity	1.20	0.27	0.03	0.20	0.44	0.01	0.01
Queue Length 95th (m)	45.3	8.8	0.0	0.0	18.6	0.0	0.0
Control Delay (s)	308.8	11.0	0.0	0.0	9.2	0.0	0.0
Lane LOS	F	B			A		
Approach Delay (s)	78.7		0.0		8.8		
Approach LOS	F						

Intersection Summary							
Average Delay			20.9				
Intersection Capacity Utilization			58.8%		ICU Level of Service		B
Analysis Period (min)			15				

Intersección Carretera PR-834 & Camino Laberinto
AM Condiciones Existentes

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	33	4	16	4	58	0	1572	43	0	176	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	36	4	17	4	63	0	1709	47	0	191	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1048	1900	96	1822	1900	854	191			1709		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1048	1900	96	1822	1900	854	191			1709		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	48	100	38	94	79	100			100		
cM capacity (veh/h)	137	68	942	28	68	302	1380			368		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2				
Volume Total	40	85	0	854	854	47	96	96				
Volume Left	0	17	0	0	0	0	0	0				
Volume Right	4	63	0	0	0	47	0	0				
cSH	76	95	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.53	0.89	0.00	0.50	0.50	0.03	0.06	0.06				
Queue Length 95th (m)	18.0	40.2	0.0	0.0	0.0	0.0	0.0	0.0				
Control Delay (s)	96.4	143.8	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	F	F										
Approach Delay (s)	96.4	143.8	0.0				0.0					
Approach LOS	F	F										
Intersection Summary												
Average Delay			7.8									
Intersection Capacity Utilization			61.5%		ICU Level of Service				B			
Analysis Period (min)			15									

FIGURA 73

Intersección Carreteras PR-835 & Desvio PR-835
AM Condiciones Existentes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	76	20	40	156	12	32
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	76	20	40	156	12	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	174	118			40	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	174	118			40	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	98			99	
cM capacity (veh/h)	810	934			1570	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	96	196	44
Volume Left	76	0	12
Volume Right	20	156	0
cSH	833	1700	1570
Volume to Capacity	0.12	0.12	0.01
Queue Length 95th (ft)	10	0	1
Control Delay (s)	9.9	0.0	2.0
Lane LOS	A		A
Approach Delay (s)	9.9	0.0	2.0
Approach LOS	A		

Intersection Summary			
Average Delay		3.1	
Intersection Capacity Utilization		24.3%	ICU Level of Service
Analysis Period (min)		15	A

FIGURA 74

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
AM Condiciones Existentes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷	↷	↶
Volume (veh/h)	8	4	4	1612	160	16
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	8	4	4	1612	160	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	974	80	160			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	974	80	160			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	249	964	1417			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	8	4	4	806	806	80	80	16
Volume Left	8	0	4	0	0	0	0	0
Volume Right	0	4	0	0	0	0	0	16
cSH	249	964	1417	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.00	0.00	0.47	0.47	0.05	0.05	0.01
Queue Length 95th (ft)	2	0	0	0	0	0	0	0
Control Delay (s)	20.0	8.7	7.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A					
Approach Delay (s)	16.2		0.0			0.0		
Approach LOS	C							

Intersection Summary								
Average Delay			0.1					
Intersection Capacity Utilization			54.6%		ICU Level of Service			A
Analysis Period (min)			15					

FIGURA 75

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
AM Condiciones Existentes

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations				 	 			 				
Volume (vph)	384	0	1188	120	32	144	0	784	56	160	444	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	14	16	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	197		60	0		0	164		0
Storage Lanes	1		1	1		2	0		0	1		0
Taper Length (ft)	25		100	50		55	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frnt			0.850			0.850		0.990				
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	2006	0	1794	3433	3539	1583	0	3504	0	1770	1863	0
Flt Permitted	0.950			0.950						0.132		
Satd. Flow (perm)	2006	0	1794	3433	3539	1583	0	3504	0	246	1863	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			438			144		10				
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1920			218			499			341	
Travel Time (s)		29.1			5.9			9.7			6.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	384	0	1188	120	32	144	0	784	56	160	444	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	384	0	1188	120	32	144	0	840	0	160	444	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			24			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.92	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2	1		2		1	2	
Detector Template	Left		Right	Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100	20		100		20	100	
Trailing Detector (ft)	0		0	0	0	0		0		0	0	
Detector 1 Position(ft)	0		0	0	0	0		0		0	0	
Detector 1 Size(ft)	20		20	20	6	20		6		20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		custom	Prot		Perm				pm+pt		
Protected Phases	5			1	6			4		3	8	
Permitted Phases			5			6				8		

FIGURA 76

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
 AM Condiciones Existentes

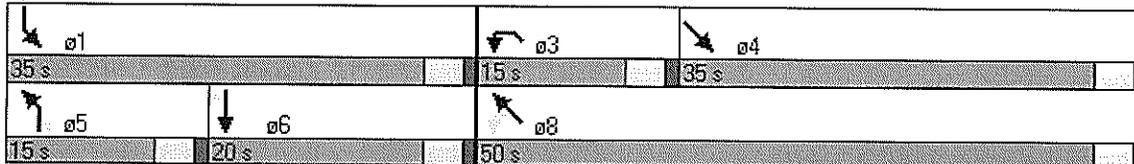
												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	5		5	1	6	6		4		3	8	
Switch Phase												
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0		4.0		4.0	4.0	
Minimum Split (s)	8.0		8.0	8.0	20.0	20.0		20.0		8.0	20.0	
Total Split (s)	15.0	0.0	15.0	35.0	20.0	20.0	0.0	35.0	0.0	15.0	50.0	0.0
Total Split (%)	17.6%	0.0%	17.6%	41.2%	23.5%	23.5%	0.0%	41.2%	0.0%	17.6%	58.8%	0.0%
Maximum Green (s)	11.0		11.0	31.0	16.0	16.0		31.0		11.0	46.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lead		Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Recall Mode	None		None	None	C-Min	C-Min		None		None	None	
Act Effct Green (s)	25.4		25.4	36.7	7.3	7.3		26.2		40.3	40.3	
Actuated g/C Ratio	0.30		0.30	0.43	0.09	0.09		0.31		0.47	0.47	
v/c Ratio	0.64		1.41	0.08	0.11	0.54		0.77		0.54	0.50	
Control Delay	35.9		210.1	16.6	35.3	14.4		31.2		19.3	16.8	
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	35.9		210.1	16.6	35.3	14.4		31.2		19.3	16.8	
LOS	D		F	B	D	B		C		B	B	
Approach Delay					17.5			31.2			17.4	
Approach LOS					B			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.41
 Intersection Signal Delay: 92.2
 Intersection Capacity Utilization 110.4%
 Analysis Period (min) 15

Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 3: Carretera PR-834 & Carretera PR-169



Intersección Carreteras PR-1, PR-169 & PR-8834
AM Condiciones Existentes

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	228	2888	0	208	1192	100	516	72	716	84	76	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	279		0	230		230	0		0	230		210
Storage Lanes	1		0	1		1	2		1	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Friction						0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2006	4011	0	2006	4011	1794	3891	2111	1794	2006	2111	1794
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2006	4011	0	2006	4011	1794	3891	2111	1794	2006	2111	1794
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						70			288			84
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		722			480			386			422	
Travel Time (s)		9.0			6.0			8.8			9.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	228	2888	0	208	1192	100	516	72	716	84	76	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	2888	0	208	1192	100	516	72	716	84	76	84
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			32			32	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6			4			8
Minimum Split (s)	8.0	15.0		8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Total Split (s)	30.0	80.0	0.0	20.0	70.0	70.0	15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	20.0%	53.3%	0.0%	13.3%	46.7%	46.7%	10.0%	23.3%	23.3%	10.0%	23.3%	23.3%
Maximum Green (s)	26.0	76.0		16.0	66.0	66.0	11.0	31.0	31.0	11.0	31.0	31.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Act Effect Green (s)	26.0	76.0		16.0	66.0	66.0	11.0	31.0	31.0	11.0	31.0	31.0
Actuated g/C Ratio	0.17	0.51		0.11	0.44	0.44	0.07	0.21	0.21	0.07	0.21	0.21
v/c Ratio	0.66	1.42		0.97	0.68	0.12	1.81	0.17	1.20	0.57	0.17	0.19
Control Delay	67.8	223.3		120.2	35.9	9.3	414.4	50.1	133.2	83.0	50.3	10.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	223.3		120.2	35.9	9.3	414.4	50.1	133.2	83.0	50.3	10.5
LOS	E	F		F	D	A	F	D	F	F	D	B

FIGURA 77

Intersección Carreteras PR-1, PR-169 & PR-8834
 AM Condiciones Existentes



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay		211.9			45.8			239.9			47.8	
Approach LOS		F			D			F			D	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 40 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 Maximum v/c Ratio: 1.81
 Intersection Signal Delay: 170.9
 Intersection Capacity Utilization 122.7%
 Analysis Period (min) 15

Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 1: Carretera PR-169 &

ø1 20 s	ø2 90 s	ø3 15 s	ø4 35 s
ø5 30 s	ø6 70 s	ø7 15 s	ø8 35 s

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
 PM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	1924	0	0	1936	100	112	8	72	88	0	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.993				0.850		0.919	
Flt Protected	0.950							0.955			0.980	
Satd. Flow (prot)	1770	5085	0	0	5050	0	0	1779	1583	0	1678	0
Flt Permitted	0.950							0.550			0.827	
Satd. Flow (perm)	1770	5085	0	0	5050	0	0	1025	1583	0	1416	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					14				38		61	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		109.4			116.4			101.8			78.5	
Travel Time (s)		7.9			8.4			7.3			5.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	1924	0	0	1936	100	112	8	72	88	0	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	1924	0	0	2036	0	0	120	72	0	220	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot						Perm		Perm	Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4			8		2	2	2	6	6	

FIGURA 78

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
 PM Condiciones Existentes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5			20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	15.0	85.0	0.0	0.0	70.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	14.3%	81.0%	0.0%	0.0%	66.7%	0.0%	19.0%	19.0%	19.0%	19.0%	19.0%	0.0%
Maximum Green (s)	11.0	81.0			66.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None			None		Max	Max	Max	Max	Max	
Act Effect Green (s)	10.5	78.6			64.1			33.4	33.4		33.4	
Actuated g/C Ratio	0.09	0.66			0.53			0.28	0.28		0.28	
v/c Ratio	0.81	0.58			0.75			0.42	0.15		0.50	
Control Delay	80.1	5.3			14.1			42.3	19.5		31.4	
Queue Delay	0.0	0.5			0.0			0.0	0.0		0.0	
Total Delay	80.1	5.8			14.1			42.3	19.5		31.4	
LOS	F	A			B			D	B		C	
Approach Delay		10.3			14.1			33.7			31.4	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 120
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 76.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 14: PR-199 &

20 s	85 s										
20 s	15 s			70 s							

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
 PM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 ↑↑↑		 ↵	 ↑↑↑					 ↵	 ↑	
Volume (vph)	0	1096	208	252	1288	0	0	0	0	1292	4	856
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Frt		0.976									0.870	
Flt Protected				0.950						0.950	0.994	
Satd. Flow (prot)	0	4963	0	1770	5085	0	0	0	0	3221	1466	0
Flt Permitted				0.950						0.950	0.994	
Satd. Flow (perm)	0	4963	0	1770	5085	0	0	0	0	3221	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57									75	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		218.2			95.9			177.7			175.4	
Travel Time (s)		15.7			6.9			12.8			12.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1096	208	252	1288	0	0	0	0	1292	4	856
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	1304	0	252	1288	0	0	0	0	1163	989	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (m)		10.0		2.0	10.0					2.0	10.0	
Trailing Detector (m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Position(m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Size(m)		0.6		2.0	0.6					2.0	0.6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex					CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		CI+Ex			CI+Ex						CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Detector Phase		4		3	8					6	6	

FIGURA 79

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
 PM Condiciones Existentes

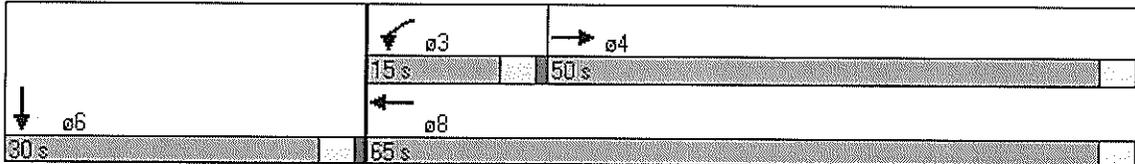
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5		8.0	20.5					20.5	20.5	
Total Split (s)	0.0	50.0	0.0	15.0	65.0	0.0	0.0	0.0	0.0	30.0	30.0	0.0
Total Split (%)	0.0%	52.6%	0.0%	15.8%	68.4%	0.0%	0.0%	0.0%	0.0%	31.6%	31.6%	0.0%
Maximum Green (s)		46.0		11.0	61.0					26.0	26.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					Max	Max	
Act Effct Green (s)		41.0		11.0	56.0					56.0	56.0	
Actuated g/C Ratio		0.34		0.09	0.47					0.47	0.47	
v/c Ratio		0.75		1.56	0.54					0.77	1.37	
Control Delay		20.2		306.4	9.5					32.2	200.8	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		20.2		306.4	9.5					32.2	200.8	
LOS		C		F	A					C	F	
Approach Delay		20.2			58.1						109.7	
Approach LOS		C			E						F	

Intersection Summary

Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 120
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.56
 Intersection Signal Delay: 70.4
 Intersection Capacity Utilization 103.8%
 Analysis Period (min) 15

Intersection LOS: E
 ICU Level of Service G

Splits and Phases: 8: PR-199 & PR-20 SB Off



Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
 PM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	1480	469	336	1508	56	0	0	0	28	24	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	70.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.995							
Flt Protected	0.950			0.950								0.945
Satd. Flow (prot)	1770	4902	0	1770	5060	0	0	0	1863	0	1732	0
Flt Permitted	0.950			0.950								0.984
Satd. Flow (perm)	1770	4902	0	1770	5060	0	0	0	1863	0	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		84			6							30
Link Speed (k/h)		50			50			50				50
Link Distance (m)		168.3			293.5			91.8				114.9
Travel Time (s)		12.1			21.1			6.6				8.3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	1480	469	336	1508	56	0	0	0	28	24	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	1949	0	336	1564	0	0	0	0	0	88	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2				1	1		2
Detector Template	Left	Thru		Left	Thru				Right	Left		Thru
Leading Detector (m)	2.0	10.0		2.0	10.0				2.0	2.0		10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6				2.0	2.0		0.6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 2 Position(m)		9.4			9.4							9.4
Detector 2 Size(m)		0.6			0.6							0.6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type	Prot			Prot				custom		Perm		
Protected Phases	7	4		3	8							6
Permitted Phases									2	6		
Detector Phase	7	4		3	8				2	6		6

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
 PM Condiciones Existentes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0				4.0	4.0	4.0	
Minimum Split (s)	20.0	60.0		5.0	60.0				20.5	15.0	15.0	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	0.0	0.0	0.0	43.6	15.0	15.0	0.0
Total Split (%)	16.2%	48.5%	0.0%	16.2%	48.5%	0.0%	0.0%	0.0%	35.3%	12.1%	12.1%	0.0%
Maximum Green (s)	16.0	56.0		16.0	56.0				39.6	11.0	11.0	
Yellow Time (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0				1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	None		None	None				Max	Max	Max	
Act Effct Green (s)	10.4	54.5		16.0	62.3						40.2	
Actuated g/C Ratio	0.08	0.44		0.13	0.51						0.33	
v/c Ratio	0.49	0.88		1.45	0.61						0.15	
Control Delay	64.4	34.7		265.5	23.2						20.9	
Queue Delay	0.0	0.0		0.0	0.0						0.0	
Total Delay	64.4	34.7		265.5	23.2						20.9	
LOS	E	C		F	C						C	
Approach Delay		35.8			66.1						20.9	
Approach LOS		D			E						C	

Intersection Summary

Area Type: Other
 Cycle Length: 123.6
 Actuated Cycle Length: 122.7
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.45
 Intersection Signal Delay: 49.8
 Intersection Capacity Utilization 72.7%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 17: PR-199 & Angel Quiñones

↖ ø2	↙ ø3	→ ø4
43.6 s	20 s	60 s
↓ ø6	↘ ø7	← ø8
15 s	20 s	60 s

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
 PM Condiciones Existentes

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑↑			↑↑↑	↘		
Volume (veh/h)	1776	0	0	1536	168	196	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly flow rate (vph)	1776	0	0	1536	168	196	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (m)	294						
pX, platoon unblocked			0.71		0.71	0.71	
vC, conflicting volume			1776		2288	592	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			674		1393	0	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			100		0	75	
cM capacity (veh/h)			650		94	772	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	710	710	355	512	512	512	364
Volume Left	0	0	0	0	0	0	168
Volume Right	0	0	0	0	0	0	196
cSH	1700	1700	1700	1700	1700	1700	179
Volume to Capacity	0.42	0.42	0.21	0.30	0.30	0.30	2.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	223.9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	526.1
Lane LOS							F
Approach Delay (s)	0.0			0.0			526.1
Approach LOS							F
Intersection Summary							
Average Delay			52.1				
Intersection Capacity Utilization			62.3%		ICU Level of Service		B
Analysis Period (min)			15				

FIGURA 81

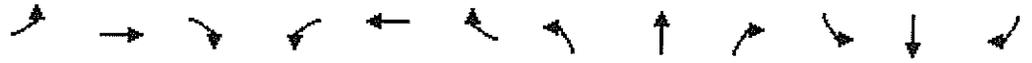
Intersección Carretera PR-199 & PR-169
PM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	972	16	200	1780	288	192	120	168	148	68	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	70.0		0.0	0.0		45.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.95	0.95	1.00	0.95	0.95	0.95
Frt		0.998			0.979				0.850		0.924	
Flt Protected	0.950			0.950				0.959			0.983	
Satd. Flow (prot)	1770	5075	0	1770	4979	0	0	3394	1583	0	3215	0
Flt Permitted	0.950			0.950				0.567			0.521	
Satd. Flow (perm)	1770	5075	0	1770	4979	0	0	2007	1583	0	1704	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			39				165		183	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			218.2			160.3			87.7	
Travel Time (s)		14.5			15.7			11.5			6.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.25	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	116	972	16	200	1780	288	768	120	168	148	68	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	988	0	200	2068	0	0	888	168	0	436	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.4			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	

Synchro 7 - Report

FIGURA 82

Intersección Carretera PR-199 & PR-169
 PM Condiciones Existentes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5		8.0	20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	10.0	30.1	0.0	18.0	38.1	0.0	41.9	41.9	41.9	41.9	41.9	0.0
Total Split (%)	11.1%	33.4%	0.0%	20.0%	42.3%	0.0%	46.6%	46.6%	46.6%	46.6%	46.6%	0.0%
Maximum Green (s)	6.0	26.1		14.0	34.1		37.9	37.9	37.9	37.9	37.9	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Act Effct Green (s)	6.0	27.0		13.1	34.1			37.9	37.9			37.9
Actuated g/C Ratio	0.07	0.30		0.15	0.38			0.42	0.42			0.42
v/c Ratio	0.98	0.65		0.78	1.08			2.17dl	0.22			0.53
Control Delay	123.9	29.9		57.8	74.7			72.6	3.7			13.4
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	123.9	29.9		57.8	74.7			72.6	3.7			13.4
LOS	F	C		E	E			E	A			B
Approach Delay		39.8			73.2			61.7				13.4
Approach LOS		D			E			E				B

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 57.8
 Intersection Capacity Utilization 84.5%
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Intersection LOS: E
 ICU Level of Service E

Splits and Phases: 5: PR-199 & PR-169

↑ ø2	↙ ø3	→ ø4
41.9 s	18 s	30.1 s
↓ ø6	↘ ø7	← ø8
41.9 s	10 s	38.1 s

Intersección Carretera PR-169 & PR-20
 PM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	92	80	256	360	240	80	784	268	148	612	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.968			0.990	
Frt Protected		0.978			0.980			0.996			0.991	
Satd. Flow (prot)	0	1822	1583	0	1825	1583	0	2035	0	0	2071	0
Frt Permitted		0.978			0.980			0.996			0.991	
Satd. Flow (perm)	0	1822	1583	0	1825	1583	0	2035	0	0	2071	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		181.4			181.6			163.2			502.7	
Travel Time (s)		13.1			13.1			11.8			36.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	76	92	80	256	360	240	80	784	268	148	612	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	80	0	616	240	0	1132	0	0	820	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
 Control Type: Roundabout
 Intersection Capacity Utilization 134.1%
 Analysis Period (min) 15
 ICU Level of Service H

FIGURA 83

Intersección Carretera PR-1 & Camino Parcelas Canejas
PM Condiciones Existentes

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	104	68	1444	92	80	1236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		20.0	0.0	
Storage Lanes	1	0		1	0	
Taper Length (m)	7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95
Frt	0.947			0.850		
Flt Protected	0.971					0.997
Satd. Flow (prot)	1713	0	3539	1583	0	3529
Flt Permitted	0.971					0.655
Satd. Flow (perm)	1713	0	3539	1583	0	2318
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	30			45		
Link Speed (k/h)	50		50			50
Link Distance (m)	116.3		103.0			83.1
Travel Time (s)	8.4		7.4			6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	74	1570	100	87	1343
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	1570	100	0	1430
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Minimum Split (s)	15.0		20.0	20.0	8.0	20.0
Total Split (s)	15.0	0.0	60.0	60.0	15.0	75.0
Total Split (%)	16.7%	0.0%	66.7%	66.7%	16.7%	83.3%
Maximum Green (s)	11.0		56.0	56.0	11.0	71.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Act Effct Green (s)	11.0		56.0	56.0		71.0
Actuated g/C Ratio	0.12		0.62	0.62		0.79
v/c Ratio	0.79		0.71	0.10		0.90
Control Delay	57.1		13.9	4.3		14.0
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	57.1		13.9	4.3		14.0
LOS	E		B	A		B

Intersección Carretera PR-1 & Camino Parcelas Canejas

PM Condiciones Existentes



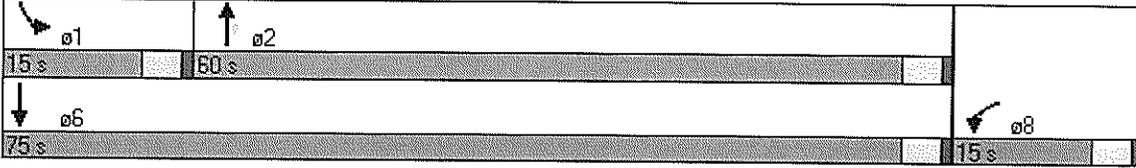
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	57.1		13.3			14.0
Approach LOS	E		B			B

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 16.1
 Intersection Capacity Utilization 96.3%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service F

Splits and Phases: 11: Camino Parcelas Canejas & PR-1



Intersección Carretera PR-1, PR-173 & PR-8834
 PM Condiciones Existentes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	388	2548	304	400	2104	56	216	96	116	180	56	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		75.0	50.0		80.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	2		0	0		1
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.95	0.95	1.00
Frt			0.850			0.850		0.918				0.850
Flt Protected	0.950			0.950			0.950				0.963	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3249	0	0	3408	1583
Flt Permitted	0.950			0.950			0.442				0.663	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1597	3249	0	0	2346	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132			31		126				190
Link Speed (k/h)		50			50			50				50
Link Distance (m)		217.2			239.2			222.4				34.8
Travel Time (s)		15.6			17.2			16.0				2.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	422	2770	330	435	2287	61	235	104	126	196	61	343
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	2770	330	435	2287	61	235	230	0	0	257	343
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot		Perm	Prot		Perm	pm+pt			Perm		Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4			8	2			6		6
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0		20.0	20.0	20.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	45.0	0.0	30.0	30.0	30.0
Total Split (%)	12.5%	50.0%	50.0%	12.5%	50.0%	50.0%	12.5%	37.5%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	11.0	56.0	56.0	11.0	56.0	56.0	11.0	41.0		26.0	26.0	26.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		5.0	5.0		5.0	5.0		5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0		0	0	0
Act Effct Green (s)	11.0	56.0	56.0	11.0	56.0	56.0	41.0	41.0			26.0	26.0
Actuated g/C Ratio	0.09	0.47	0.47	0.09	0.47	0.47	0.34	0.34			0.22	0.22
v/c Ratio	2.60	1.68	0.41	2.69	1.38	0.08	0.33	0.19			0.51	0.70
Control Delay	762.0	333.0	13.8	797.2	205.5	10.4	29.3	12.8			45.4	27.3

Intersección Carretera PR-1, PR-173 & PR-8834
 PM Condiciones Existentes

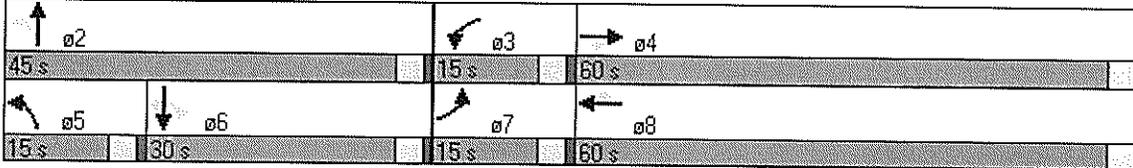
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	762.0	333.0	13.8	797.2	205.5	10.4	29.3	12.8			45.4	27.3
LOS	F	F	B	F	F	B	C	B			D	C
Approach Delay		354.5			293.8			21.1			35.0	
Approach LOS		F			F			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 Maximum v/c Ratio: 2.69
 Intersection Signal Delay: 284.5
 Intersection Capacity Utilization 122.3%
 Analysis Period (min) 15

Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 19: PR-1 & PR-8834



Intersección Carretera PR-834 & Desvio PR-834
PM Condiciones Existentes

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	220	8	0	696	180	8	4	112	0	102	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	239	9	0	757	196	9	4	122	0	111	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	952			239			677	1191	120	976	1093	476
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	952			239			677	1191	120	976	1093	476
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	98	87	100	48	99
cM capacity (veh/h)	717			1325			198	186	909	175	213	535
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1		
Volume Total	0	120	120	9	504	448	9	4	122	115		
Volume Left	0	0	0	0	0	0	9	0	0	0		
Volume Right	0	0	0	9	0	196	0	0	122	4		
cSH	1700	1700	1700	1700	1700	1700	198	186	909	218		
Volume to Capacity	0.00	0.07	0.07	0.01	0.30	0.26	0.04	0.02	0.13	0.53		
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6	3.7	22.2		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	24.0	24.8	9.6	38.7		
Lane LOS							C	C	A	E		
Approach Delay (s)	0.0				0.0		11.0			38.7		
Approach LOS							B			E		
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			38.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersección Carreteras PR-834 & Desvio PR-835
PM Condiciones Existentes

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	32	0	12	0	4	0	284	0	0	900	64
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	32	0	12	0	4	0	284	0	0	900	64
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			4								
Median type							None			None	
Median storage (veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	1044	1184	450	734	1184	900			284		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	1044	1184	450	734	1184	900			284		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	4.1			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.2			2.2		
p0 queue free %	82	100	98	100	98	100			100		
cM capacity (veh/h)	180	188	556	301	188	751			1275		
Direction, Lane #	SB 1	SB 2	NW 1	NW 2	NE 1	NE 2	SW 1	SW 2	SW 3		
Volume Total	21	23	2	2	142	142	450	450	64		
Volume Left	21	11	0	0	0	0	0	0	0		
Volume Right	0	12	0	0	0	0	0	0	64		
cSH	180	383	188	188	1700	1700	1700	1700	1700		
Volume to Capacity	0.12	0.06	0.01	0.01	0.08	0.08	0.26	0.26	0.04		
Queue Length 95th (ft)	10	5	1	1	0	0	0	0	0		
Control Delay (s)	27.6	18.5	24.4	24.4	0.0	0.0	0.0	0.0	0.0		
Lane LOS	D	C	C	C							
Approach Delay (s)	22.9		24.4		0.0		0.0				
Approach LOS	C		C								
Intersection Summary											
Average Delay			0.9								
Intersection Capacity Utilization			34.9%		ICU Level of Service				A		
Analysis Period (min)			15								

Intersección Carretera PR-834 & PR-835
 PM Condiciones Existentes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	272	404	384	64	152	4
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	296	439	417	70	165	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	785	243			417	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	785	243			417	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	42			85	
cM capacity (veh/h)	282	757			1138	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	296	439	278	209	165	2	2
Volume Left	296	0	0	0	165	0	0
Volume Right	0	439	0	70	0	0	0
cSH	282	757	1700	1700	1138	1700	1700
Volume to Capacity	1.05	0.58	0.16	0.12	0.15	0.00	0.00
Queue Length 95th (m)	91.4	30.3	0.0	0.0	4.1	0.0	0.0
Control Delay (s)	107.2	16.1	0.0	0.0	8.7	0.0	0.0
Lane LOS	F	C			A		
Approach Delay (s)	52.7		0.0		8.5		
Approach LOS	F						

Intersection Summary							
Average Delay			28.9				
Intersection Capacity Utilization			46.1%	ICU Level of Service		A	
Analysis Period (min)			15				

Intersección Carretera PR-834 & Camino Laberinto
PM Condiciones Existentes

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	52	4	12	4	12	0	288	8	0	860	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	57	4	13	4	13	0	313	9	0	935	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1093	1248	467	809	1248	157	935			313		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1093	1248	467	809	1248	157	935			313		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	67	99	94	97	98	100			100		
cM capacity (veh/h)	163	172	542	201	172	861	728			1244		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2				
Volume Total	65	30	0	157	157	9	467	467				
Volume Left	4	13	0	0	0	0	0	0				
Volume Right	4	13	0	0	0	9	0	0				
cSH	180	289	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.36	0.11	0.00	0.09	0.09	0.01	0.27	0.27				
Queue Length 95th (m)	12.4	2.8	0.0	0.0	0.0	0.0	0.0	0.0				
Control Delay (s)	36.1	18.9	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	E	C										
Approach Delay (s)	36.1	18.9	0.0				0.0					
Approach LOS	E	C										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization		36.1%		ICU Level of Service				A				
Analysis Period (min)		15										

FIGURA 89

Intersección Carreteras PR-835 & Desvio PR-835
 PM Condiciones Existentes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	↘
Volume (veh/h)	84	32	8	140	36	24
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	84	32	8	140	36	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	174	78			8	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	174	78			8	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	97			98	
cM capacity (veh/h)	798	983			1612	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	116	148	60
Volume Left	84	0	36
Volume Right	32	140	0
cSH	841	1700	1612
Volume to Capacity	0.14	0.09	0.02
Queue Length 95th (ft)	12	0	2
Control Delay (s)	10.0	0.0	4.4
Lane LOS	A		A
Approach Delay (s)	10.0	0.0	4.4
Approach LOS	A		

Intersection Summary			
Average Delay		4.4	
Intersection Capacity Utilization		29.0%	ICU Level of Service
Analysis Period (min)		15	A

FIGURA 90

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
 PM Condiciones Existentes

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations				 	 				
Volume (veh/h)	0	0	0	364	972	0			
Sign Control	Stop			Free	Free				
Grade	0%			0%	0%				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Hourly flow rate (vph)	0	0	0	364	972	0			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None	None				
Median storage (veh)									
Upstream signal (ft)									
pX, platoon unblocked									
vC, conflicting volume	1154	486	972						
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	1154	486	972						
tC, single (s)	6.8	6.9	4.1						
tC, 2 stage (s)									
tF (s)	3.5	3.3	2.2						
p0 queue free %	100	100	100						
cM capacity (veh/h)	190	527	705						
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	
Volume Total	0	0	0	182	182	486	486	0	
Volume Left	0	0	0	0	0	0	0	0	
Volume Right	0	0	0	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.00	0.00	0.11	0.11	0.29	0.29	0.00	
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A	A							
Approach Delay (s)	0.0		0.0		0.0		0.0		
Approach LOS	A								
Intersection Summary									
Average Delay			0.0						
Intersection Capacity Utilization			30.2%		ICU Level of Service		A		
Analysis Period (min)			15						

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
 PM Condiciones Existentes

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations				 	 			 				
Volume (vph)	204	0	304	188	452	252	0	860	168	172	1128	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	14	16	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	197		60	0		0	164		0
Storage Lanes	1		1	1		2	0		0	1		0
Taper Length (ft)	25		100	50		55	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	2006	0	1794	3433	3539	1583	0	3451	0	1770	1863	0
Flt Permitted	0.950			0.950						0.116		
Satd. Flow (perm)	2006	0	1794	3433	3539	1583	0	3451	0	216	1863	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			304			82		30				
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1920			218			499			341	
Travel Time (s)		29.1			5.9			9.7			6.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	204	0	304	188	452	252	0	860	168	172	1128	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	0	304	188	452	252	0	1028	0	172	1128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			24			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.92	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2	1		2		1	2	
Detector Template	Left		Right	Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100	20		100		20	100	
Trailing Detector (ft)	0		0	0	0	0		0		0	0	
Detector 1 Position(ft)	0		0	0	0	0		0		0	0	
Detector 1 Size(ft)	20		20	20	6	20		6		20	6	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		custom	Prot		Perm				pm+pt		
Protected Phases	5			1	6			4		3	8	
Permitted Phases			5			6				8		

FIGURA 92

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
 PM Condiciones Existentes

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	5		5	1	6	6		4		3	8	
Switch Phase												
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0		4.0		4.0	4.0	
Minimum Split (s)	8.0		8.0	8.0	20.0	20.0		20.0		8.0	20.0	
Total Split (s)	15.0	0.0	15.0	35.0	20.0	20.0	0.0	35.0	0.0	15.0	50.0	0.0
Total Split (%)	17.6%	0.0%	17.6%	41.2%	23.5%	23.5%	0.0%	41.2%	0.0%	17.6%	58.8%	0.0%
Maximum Green (s)	11.0		11.0	31.0	16.0	16.0		31.0		11.0	46.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lead		Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Recall Mode	None		None	None	C-Min	C-Min		None		None	None	
Act Effect Green (s)	10.7		10.7	30.0	15.2	15.2		33.7		47.0	47.0	
Actuated g/C Ratio	0.13		0.13	0.35	0.18	0.18		0.40		0.55	0.55	
v/c Ratio	0.80		0.62	0.16	0.71	0.72		0.74		0.59	1.09	
Control Delay	60.7		10.4	18.9	39.7	34.5		26.0		20.6	79.1	
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	60.7		10.4	18.9	39.7	34.5		26.0		20.6	79.1	
LOS	E		B	B	D	C		C		C	E	
Approach Delay					33.8			26.0			71.4	
Approach LOS					C			C			E	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 44.3
 Intersection Capacity Utilization 96.3%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 3: Carretera PR-834 & Carretera PR-169

ø1	ø3	ø4
35 s	15 s	35 s
ø5	ø6	ø8
15 s	20 s	50 s

Intersección Carreteras PR-1, PR-169 & PR-8834
PM Condiciones Existentes

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	340	2380	0	108	3040	112	368	88	248	44	120	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	279		0	230		230	0		0	230		210
Storage Lanes	1		0	1		1	2		1	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frnt						0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2006	4011	0	2006	4011	1794	3891	2111	1794	2006	2111	1794
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2006	4011	0	2006	4011	1794	3891	2111	1794	2006	2111	1794
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						31			248			28
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		722			480			386			422	
Travel Time (s)		9.0			6.0			8.8			9.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	2380	0	108	3040	112	368	88	248	44	120	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	2380	0	108	3040	112	368	88	248	44	120	28
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			32			32	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6			4			8
Detector Phase	5	2		1	6	6	7	4	4	3	8	8

Intersección Carreteras PR-1, PR-169 & PR-8834
 PM Condiciones Existentes

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0		8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	30.0	80.0	0.0	20.0	70.0	70.0	15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	20.0%	53.3%	0.0%	13.3%	46.7%	46.7%	10.0%	23.3%	23.3%	10.0%	23.3%	23.3%
Maximum Green (s)	26.0	76.0		16.0	66.0	66.0	11.0	31.0	31.0	11.0	31.0	31.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max								
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	26.0	76.0		16.0	66.0	66.0	11.0	31.0	31.0	11.0	31.0	31.0
Actuated g/C Ratio	0.17	0.51		0.11	0.44	0.44	0.07	0.21	0.21	0.07	0.21	0.21
v/c Ratio	0.98	1.17		0.50	1.72	0.14	1.29	0.20	0.44	0.30	0.28	0.07
Control Delay	103.7	117.2		72.1	356.3	18.5	206.7	50.8	8.1	71.6	52.1	15.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.7	117.2		72.1	356.3	18.5	206.7	50.8	8.1	71.6	52.1	15.9
LOS	F	F		E	F	B	F	D	A	E	D	B
Approach Delay		115.5			335.2			117.2			51.3	
Approach LOS		F			F			F			D	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.72
 Intersection Signal Delay: 218.0
 Intersection Capacity Utilization 130.0%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 1: Carretera PR-169 &

ø1	ø2	ø3	ø4
20 s	80 s	15 s	35 s
ø5	ø6	ø7	ø8
30 s	70 s	15 s	35 s

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	1867	0	0	1100	46	212	13	324	140	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Friction					0.994				0.850		0.946	
Flt Protected	0.950							0.955			0.971	
Satd. Flow (prot)	1770	5085	0	0	5055	0	0	1779	1583	0	1711	0
Flt Permitted	0.950							0.591			0.665	
Satd. Flow (perm)	1770	5085	0	0	5055	0	0	1101	1583	0	1172	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6				7		37	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		109.4			116.4			101.8			78.5	
Travel Time (s)		7.9			8.4			7.3			5.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	96	1867	0	0	1100	46	212	13	324	140	0	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	1867	0	0	1146	0	0	225	324	0	233	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot						Perm		Perm	Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4			8		2	2	2	6	6	

FIGURA 94

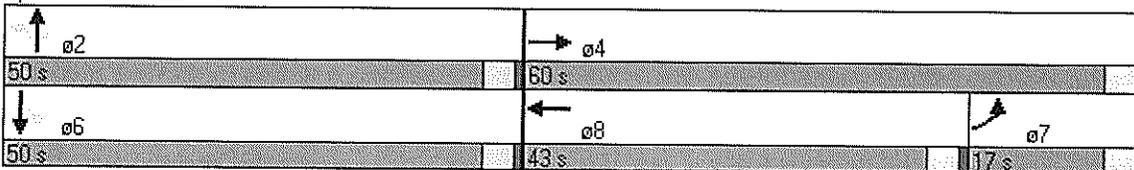
Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
Futuro AM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5			20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	17.0	60.0	0.0	0.0	43.0	0.0	50.0	50.0	50.0	50.0	50.0	0.0
Total Split (%)	15.5%	54.5%	0.0%	0.0%	39.1%	0.0%	45.5%	45.5%	45.5%	45.5%	45.5%	0.0%
Maximum Green (s)	13.0	56.0			39.0		46.0	46.0	46.0	46.0	46.0	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None			None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	15.9	51.9			32.1			50.1	50.1		50.1	
Actuated g/C Ratio	0.14	0.47			0.29			0.46	0.46		0.46	
v/c Ratio	0.38	0.78			0.78			0.45	0.45		0.42	
Control Delay	29.9	12.6			39.0			25.3	23.4		20.6	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	29.9	12.6			39.0			25.3	23.4		20.6	
LOS	C	B			D			C	C		C	
Approach Delay		13.4			39.0			24.2			20.6	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 22.9
 Intersection Capacity Utilization 79.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 14: PR-199 &



Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1566	75	91	1021	0	0	0	0	729	4	649
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr't		0.993									0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	6363	0	1770	5085	0	0	0	0	3433	1585	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	6363	0	1770	5085	0	0	0	0	3433	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9									44	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		218.2			95.9			177.7			175.4	
Travel Time (s)		15.7			6.9			12.8			12.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1566	75	91	1021	0	0	0	0	729	4	649
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1641	0	91	1021	0	0	0	0	729	653	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (m)		10.0		2.0	10.0					2.0	10.0	
Trailing Detector (m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Position(m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Size(m)		0.6		2.0	0.6					2.0	0.6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex					CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		CI+Ex			CI+Ex						CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Detector Phase		4		3	8					6		6

FIGURA 95

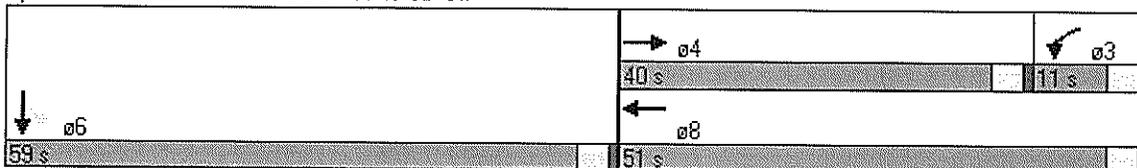
Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro AM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5		8.0	20.5					20.5	20.5	
Total Split (s)	0.0	40.0	0.0	11.0	51.0	0.0	0.0	0.0	0.0	59.0	59.0	0.0
Total Split (%)	0.0%	36.4%	0.0%	10.0%	46.4%	0.0%	0.0%	0.0%	0.0%	53.6%	53.6%	0.0%
Maximum Green (s)		36.0		7.0	47.0					55.0	55.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		C-Max		None	None					Max	Max	
Act Effct Green (s)		36.0		7.0	47.0					55.0	55.0	
Actuated g/C Ratio		0.33		0.06	0.43					0.50	0.50	
v/c Ratio		0.79		0.81	0.47					0.42	0.80	
Control Delay		14.1		73.8	8.0					18.4	30.4	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		14.1		73.8	8.0					18.4	30.4	
LOS		B		E	A					B	C	
Approach Delay		14.1			13.4						24.1	
Approach LOS		B			B						C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 60 (55%), Referenced to phase 4:EBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 17.2
 Intersection Capacity Utilization 79.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 8: PR-199 & PR-20 SB Off



Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	147	1748	419	276	1790	42	0	0	0	84	67	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	70.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.997							
Flt Protected	0.950			0.950								0.946
Satd. Flow (prot)	1770	4938	0	1770	5070	0	0	0	1863	0	1734	0
Flt Permitted	0.950			0.950								0.984
Satd. Flow (perm)	1770	4938	0	1770	5070	0	0	0	1863	0	1734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		76			5							26
Link Speed (k/h)		50			50			50				50
Link Distance (m)		168.3			293.5			91.8			114.9	
Travel Time (s)		12.1			21.1			6.6			8.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	147	1748	419	276	1790	42	0	0	0	84	67	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	2167	0	276	1832	0	0	0	0	0	251	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2				1	1		2
Detector Template	Left	Thru		Left	Thru				Right	Left		Thru
Leading Detector (m)	2.0	10.0		2.0	10.0				2.0	2.0		10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6				2.0	2.0		0.6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 2 Position(m)		9.4			9.4							9.4
Detector 2 Size(m)		0.6			0.6							0.6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type	Prot			Prot				custom		Perm		
Protected Phases	7	4		3	8							6
Permitted Phases									2	6		
Detector Phase	7	4		3	8				2	6		6

FIGURA 96

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
Futuro AM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0				4.0	4.0	4.0	
Minimum Split (s)	20.0	60.0		5.0	60.0				20.5	15.0	15.0	
Total Split (s)	22.0	61.0	0.0	26.0	65.0	0.0	0.0	0.0	23.0	23.0	23.0	0.0
Total Split (%)	20.0%	55.5%	0.0%	23.6%	59.1%	0.0%	0.0%	0.0%	20.9%	20.9%	20.9%	0.0%
Maximum Green (s)	18.0	57.0		22.0	61.0				19.0	19.0	19.0	
Yellow Time (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0				1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	None		None	None				Max	Max	Max	
Act Effct Green (s)	14.6	57.0		20.8	63.1							30.2
Actuated g/C Ratio	0.12	0.48		0.17	0.53							0.25
v/c Ratio	0.68	0.91		0.90	0.69							0.55
Control Delay	60.2	27.8		74.2	16.9							40.5
Queue Delay	0.0	0.0		0.0	0.0							0.0
Total Delay	60.2	27.8		74.2	16.9							40.5
LOS	E	C		E	B							D
Approach Delay		29.9			24.4							40.5
Approach LOS		C			C							D

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 120
 Natural Cycle: 105
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 28.0
 Intersection Capacity Utilization 82.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 17: PR-199 & Angel Quiñones

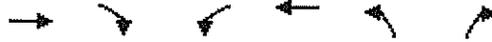
ø2	ø3	ø4
23 s	26 s	61 s
ø6	ø7	ø8
23 s	22 s	65 s

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
Futuro AM 2012

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Volume (vph)	1902	0	0	1954	172	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frts						0.850
Flt Protected					0.950	
Satd. Flow (prot)	5085	0	0	5085	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	5085	0	0	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						1
Link Speed (k/h)	50			50	50	
Link Distance (m)	293.5			95.4	68.8	
Travel Time (s)	21.1			6.9	5.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1902	0	0	1954	172	239
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1902	0	0	1954	172	239
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	5.4			5.4	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	4.0			4.0	4.0	4.0
Minimum Split (s)	20.0			20.0	20.0	20.0

FIGURA 97

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
 Futuro AM 2012

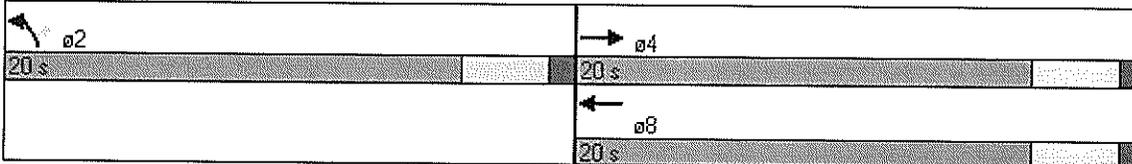


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	20.0	0.0	0.0	20.0	20.0	20.0
Total Split (%)	50.0%	0.0%	0.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0			16.0	16.0	16.0
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	None			None	C-Min	C-Min
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	19.8			19.8	12.2	12.2
Actuated g/C Ratio	0.50			0.50	0.30	0.30
v/c Ratio	0.75			0.78	0.32	0.49
Control Delay	12.7			13.3	11.9	14.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.7			13.3	11.9	14.7
LOS	B			B	B	B
Approach Delay	12.7			13.3	13.5	
Approach LOS	B			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 13.1
 Intersection Capacity Utilization 58.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 21: PR-199 & PR-1 NB Off



Intersección Carretera PR-199 & PR-169
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	209	1327	155	121	1197	163	132	186	238	234	96	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		50.0	70.0		40.0	0.0		45.0	0.0		0.0
Storage Lanes	1		1	1		1	0		2	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.95	0.95	0.95
Frt			0.850			0.850			0.850		0.952	
Flt Protected	0.950			0.950				0.964			0.977	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	4902	1583	0	3292	0
Flt Permitted	0.950			0.950				0.674			0.550	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	3427	1583	0	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			106			238		88	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			218.2			160.3			87.7	
Travel Time (s)		14.5			15.7			11.5			6.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.25	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	209	1327	155	121	1197	163	528	186	238	234	96	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	1327	155	121	1197	163	0	714	238	0	487	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.4			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex							
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	

FIGURA 98

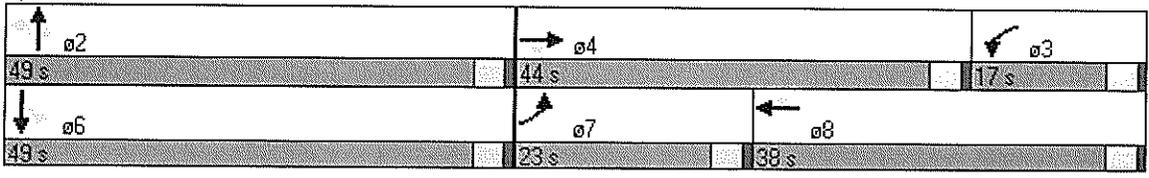
Intersección Carretera PR-199 & PR-169
Futuro AM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5	20.5	8.0	20.5	20.5	15.0	15.0	15.0	15.0	15.0	
Total Split (s)	23.0	44.0	44.0	17.0	38.0	38.0	49.0	49.0	49.0	49.0	49.0	0.0
Total Split (%)	20.9%	40.0%	40.0%	15.5%	34.5%	34.5%	44.5%	44.5%	44.5%	44.5%	44.5%	0.0%
Maximum Green (s)	19.0	40.0	40.0	13.0	34.0	34.0	45.0	45.0	45.0	45.0	45.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.7	36.9	36.9	12.2	32.3	32.3		49.0	49.0		49.0	
Actuated g/C Ratio	0.15	0.34	0.34	0.11	0.29	0.29		0.45	0.45		0.45	
v/c Ratio	0.77	0.78	0.25	0.62	0.80	0.30		1.53dl	0.28		0.56	
Control Delay	64.1	36.3	8.3	47.6	30.6	6.5		23.6	3.6		22.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	64.1	36.3	8.3	47.6	30.6	6.5		23.6	3.6		22.1	
LOS	E	D	A	D	C	A		C	A		C	
Approach Delay		37.2			29.3			18.6			22.1	
Approach LOS		D			C			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 29.2
 Intersection Capacity Utilization 69.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 5: PR-199 & PR-169



Intersección Carretera PR-169 & PR-20
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	195	123	153	174	110	26	662	191	327	1120	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		30.0	30.0		30.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	7.5		7.5	7.5		15.0	7.5		15.0	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.95
Flt		0.942				0.850		0.967			0.995	
Flt Protected	0.950			0.950				0.999		0.950	0.995	
Satd. Flow (prot)	1770	1755	0	1770	1863	1583	0	3875	0	1825	3804	0
Flt Permitted	0.611			0.379				0.893		0.281	0.760	
Satd. Flow (perm)	1138	1755	0	706	1863	1583	0	3464	0	540	2905	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				110		77			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		181.4			181.6			163.2			502.7	
Travel Time (s)		13.1			13.1			11.8			36.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	195	123	153	174	110	26	662	191	327	1120	43
Shared Lane Traffic (%)										37%		
Lane Group Flow (vph)	170	318	0	153	174	110	0	879	0	206	1284	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		

Intersección Carretera PR-169 & PR-20
Futuro AM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	29.0	61.0	61.0	0.0	61.0	61.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	32.2%	67.8%	67.8%	0.0%	67.8%	67.8%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	18.4	18.4		18.4	18.4	18.4		39.2		39.2	39.2	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28		0.59		0.59	0.59	
v/c Ratio	0.54	0.62		0.78	0.34	0.21		0.42		0.65	0.75	
Control Delay	30.9	26.8		54.6	24.1	6.5		7.5		21.2	13.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	30.9	26.8		54.6	24.1	6.5		7.5		21.2	13.4	
LOS	C	C		D	C	A		A		C	B	
Approach Delay		28.2			30.3			7.5			14.5	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 66.4
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 16.7
 Intersection Capacity Utilization 95.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service F

Splits and Phases: 3: Desde PR-20 & PR-169

↑ ø2 61 s	→ ø4 29 s
↓ ø6 61 s	← ø8 29 s

Intersección Carretera PR-1 & Camino Parcelas Canejas
Futuro AM 2012

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑↑	↗		↖↑
Volume (vph)	58	91	2163	113	38	736
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		20.0	0.0	
Storage Lanes	1	0		1	0	
Taper Length (m)	7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95
Frt	0.918			0.850		
Flt Protected	0.981					0.998
Satd. Flow (prot)	1678	0	3539	1583	0	3532
Flt Permitted	0.981					0.679
Satd. Flow (perm)	1678	0	3539	1583	0	2403
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	71			37		
Link Speed (k/h)	50		50			50
Link Distance (m)	151.1		103.0			83.1
Travel Time (s)	10.9		7.4			6.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	58	91	2163	113	38	736
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	0	2163	113	0	774
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Minimum Split (s)	15.0		20.0	20.0	8.0	20.0
Total Split (s)	15.0	0.0	60.0	60.0	15.0	75.0
Total Split (%)	16.7%	0.0%	66.7%	66.7%	16.7%	83.3%
Maximum Green (s)	11.0		56.0	56.0	11.0	71.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Act Effct Green (s)	11.0		56.0	56.0		71.0
Actuated g/C Ratio	0.12		0.62	0.62		0.79
v/c Ratio	0.56		0.98	0.11		0.49
Control Delay	29.0		33.1	5.0		3.7
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	29.0		33.1	5.0		3.7
LOS	C		C	A		A

Intersección Carretera PR-1 & Camino Parcelas Canejas Futuro AM 2012



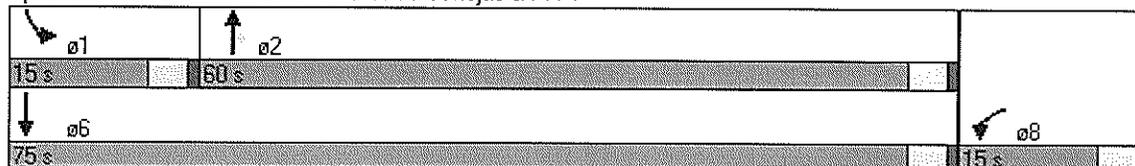
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	29.0		31.7			3.7
Approach LOS	C		C			A

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Pretimed
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 24.8
 Intersection Capacity Utilization 75.3%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 11: Camino Parcelas Canejas & PR-1



Intersección Carretera PR-1, PR-173 & PR-8834
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	 	 	 		
Volume (vph)	80	1484	59	26	2893	33	248	29	45	177	12	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		75.0	50.0		80.0	0.0		0.0	0.0		0.0
Storage Lanes	2		2	2		2	2		0	0		1
Taper Length (m)	50.0		50.0	50.0		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.95	0.95	0.95	1.00
Fr			0.850			0.850		0.909				0.850
Flt Protected	0.950			0.950			0.950				0.955	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3217	0	0	3380	1583
Flt Permitted	0.950			0.950			0.432				0.706	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1561	3217	0	0	2499	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			59			23		45				138
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		217.2			239.2			222.4			62.4	
Travel Time (s)		15.6			17.2			16.0			4.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	1484	59	26	2893	33	248	29	45	177	12	284
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	1484	59	26	2893	33	248	74	0	0	189	284
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot		Perm	Prot		Perm	pm+pt			Perm		Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4			8	2			6		6
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0		20.0	20.0	20.0
Total Split (s)	18.0	99.0	99.0	19.0	100.0	100.0	8.0	32.0	0.0	24.0	24.0	24.0
Total Split (%)	12.0%	66.0%	66.0%	12.7%	66.7%	66.7%	5.3%	21.3%	0.0%	16.0%	16.0%	16.0%
Maximum Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	4.0	28.0		20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Walk Time (s)		5.0	5.0		5.0	5.0		5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0		0	0	0
Act Effct Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	28.0	28.0			20.0	20.0
Actuated g/C Ratio	0.09	0.63	0.63	0.10	0.64	0.64	0.19	0.19			0.13	0.13
v/c Ratio	0.25	0.46	0.06	0.08	0.89	0.03	0.73	0.12			1.01df	0.86
Control Delay	65.3	14.8	2.5	61.9	27.1	4.8	68.9	23.6			68.3	56.3

Intersección Carretera PR-1, PR-173 & PR-8834
Futuro AM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	65.3	14.8	2.5	61.9	27.1	4.8	68.9	23.6			68.3	56.3
LOS	E	B	A	E	C	A	E	C			E	E
Approach Delay		16.8			27.1			58.5			61.1	
Approach LOS		B			C			E			E	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 28.9
 Intersection Capacity Utilization 90.6%
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 19: PR-1 & PR-8834

ø2	ø3	ø4
32 s	19 s	99 s
ø5	ø7	ø8
8 s	24 s	100 s

Intersección Carretera PR-834 & Desvio PR-834
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1027	13	0	148	89	9	0	119	0	102	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8
Storage Length (m)	20.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (m)	15.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frnt			0.850		0.944				0.850		0.995	
Flt Protected							0.950	0.950				
Satd. Flow (prot)	1863	3539	1583	0	3341	0	1681	1681	1583	0	2101	0
Flt Permitted							0.689	0.689				
Satd. Flow (perm)	1863	3539	1583	0	3341	0	1219	1219	1583	0	2101	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			13		89				34		4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.3			227.3			124.0			64.5	
Travel Time (s)		17.5			16.4			8.9			4.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1027	13	0	148	89	9	0	119	0	102	4
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	1027	13	0	237	0	4	5	119	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2		1	2	1	1	2	
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0		0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm				Perm		Perm	Perm		
Protected Phases		4			8			2		6		
Permitted Phases	4		4				2		2	6		

Intersección Carretera PR-834 & Desvio PR-834
Futuro AM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4		8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0		20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	0.0	20.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0		16.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None		None		C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)	5.0	5.0	5.0		5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0	0	0	0	
Act Effct Green (s)		17.5	17.5		17.5		14.5	14.5	14.5		14.5	
Actuated g/C Ratio		0.44	0.44		0.44		0.36	0.36	0.36		0.36	
v/c Ratio		0.66	0.02		0.16		0.01	0.01	0.20		0.14	
Control Delay		10.8	3.0		2.8		10.2	10.2	9.2		10.5	
Queue Delay		0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay		10.8	3.0		2.8		10.2	10.2	9.2		10.5	
LOS		B	A		A		B	B	A		B	
Approach Delay		10.7			2.8			9.2			10.5	
Approach LOS		B			A			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 51.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: PR-834 &

	ø2		ø4
20 s		20 s	
	ø6		ø8
20 s		20 s	

Intersección Carreteras PR-834 & Desvio PR-835
Futuro AM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑		↔↔		↗		↑↑			↑↑	↗
Volume (vph)	0	12	0	204	0	10	0	1604	0	0	150	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12
Storage Length (ft)	0		0	0		100	0		0	0		150
Storage Lanes	0		0	2		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		135
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Flt Permitted				0.950								
Satd. Flow (perm)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						10						165
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		462			718			452			402	
Travel Time (s)		10.5			16.3			10.3			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	12	0	204	0	10	0	1604	0	0	150	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	204	0	10	0	1604	0	0	150	165
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			13			5	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1		1		2			2	1
Detector Template		Thru		Left		Right		Thru			Thru	Right
Leading Detector (ft)		100		20		20		100			100	20
Trailing Detector (ft)		0		0		0		0			0	0
Detector 1 Position(ft)		0		0		0		0			0	0
Detector 1 Size(ft)		6		20		20		6			6	20
Detector 1 Type		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Queue (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Delay (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type				Prot		custom						Perm
Protected Phases		8!		4!				2			6	
Permitted Phases						4						6

Intersección Carreteras PR-834 & Desvio PR-835
Futuro AM 2012

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase		8		4		4		2			6	6
Switch Phase												
Minimum Initial (s)		4.0		4.0		4.0		4.0			4.0	4.0
Minimum Split (s)		20.0		20.0		20.0		20.0			20.0	20.0
Total Split (s)	0.0	22.0	0.0	22.0	0.0	22.0	0.0	78.0	0.0	0.0	78.0	78.0
Total Split (%)	0.0%	22.0%	0.0%	22.0%	0.0%	22.0%	0.0%	78.0%	0.0%	0.0%	78.0%	78.0%
Maximum Green (s)		18.0		18.0		18.0		74.0			74.0	74.0
Yellow Time (s)		3.0		3.0		3.0		3.0			3.0	3.0
All-Red Time (s)		1.0		1.0		1.0		1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0		3.0		3.0			3.0	3.0
Recall Mode		None		None		None		C-Min			C-Min	C-Min
Walk Time (s)		5.0		5.0		5.0		5.0			5.0	5.0
Flash Dont Walk (s)		11.0		11.0		11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0		0		0		0			0	0
Act Effct Green (s)		11.2		11.2		11.2		80.8			80.8	80.8
Actuated g/C Ratio		0.11		0.11		0.11		0.81			0.81	0.81
v/c Ratio		0.03		0.53		0.05		0.56			0.05	0.13
Control Delay		38.1		46.6		20.4		4.5			1.5	0.7
Queue Delay		0.0		0.0		0.0		0.0			0.0	0.0
Total Delay		38.1		46.6		20.4		4.5			1.5	0.7
LOS		D		D		C		A			A	A
Approach Delay		38.1						4.5			1.1	
Approach LOS		D						A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NET and 6:SWT, Start of Green, Master Intersection
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 8.3
 Intersection Capacity Utilization 63.5%
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 12: Carretera PR-834 &

ø2	ø4
78 s	22 s
ø6	ø8
78 s	22 s

Intersección Carretera PR-834 & PR-835
Futuro AM 2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	65	218	72	303	661	34
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	218	72	303	661	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1562	188			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1562	188			72	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	73			57	
cM capacity (veh/h)	58	823			1526	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	65	218	48	327	661	17	17
Volume Left	65	0	0	0	661	0	0
Volume Right	0	218	0	303	0	0	0
cSH	58	823	1700	1700	1526	1700	1700
Volume to Capacity	1.12	0.27	0.03	0.19	0.43	0.01	0.01
Queue Length 95th (m)	43.1	8.5	0.0	0.0	18.0	0.0	0.0
Control Delay (s)	272.2	10.9	0.0	0.0	9.1	0.0	0.0
Lane LOS	F	B			A		
Approach Delay (s)	71.0		0.0		8.7		
Approach LOS	F						

Intersection Summary			
Average Delay		19.3	
Intersection Capacity Utilization	62.0%		ICU Level of Service
Analysis Period (min)		15	B

Intersección Carretera PR-834 & Camino Laberinto
Futuro AM 2012

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	33	0	16	0	58	0	1572	43	0	176	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (m)	0.0		0.0	0.0		0.0	22.0		0.0	0.0		0.0	
Storage Lanes	0		0	0		0	1		1	0		0	
Taper Length (m)	7.5		7.5	7.5		7.5	20.0		7.5	7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt					0.894				0.850				
Flt Protected					0.989								
Satd. Flow (prot)	0	1863	0	0	1647	0	1863	3539	1583	0	3539	0	
Flt Permitted					0.916								
Satd. Flow (perm)	0	1863	0	0	1525	0	1863	3539	1583	0	3539	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					5				43				
Link Speed (k/h)		50			50			50				50	
Link Distance (m)		133.6			268.6			227.3				235.0	
Travel Time (s)		9.6			19.3			16.4				16.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	0	33	0	16	0	58	0	1572	43	0	176	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	33	0	0	74	0	0	1572	43	0	176	0	
Enter Blocked Intersection	No	No	No	No	No	No							
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)		0.0			0.0			3.6				3.6	
Link Offset(m)		0.0			0.0			0.0				0.0	
Crosswalk Width(m)		4.8			4.8			4.8				4.8	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (k/h)	25		15	25		15	25		15	25		15	
Number of Detectors	1	2		1	2		1	2	1		2		
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right		Thru		
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0		10.0		
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0		0.6		
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 2 Position(m)		9.4			9.4			9.4			9.4		
Detector 2 Size(m)		0.6			0.6			0.6			0.6		
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0			0.0		
Turn Type	Perm			Perm			Perm		Perm				
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2		2				
Detector Phase	4	4		8	8		2	2	2		6		

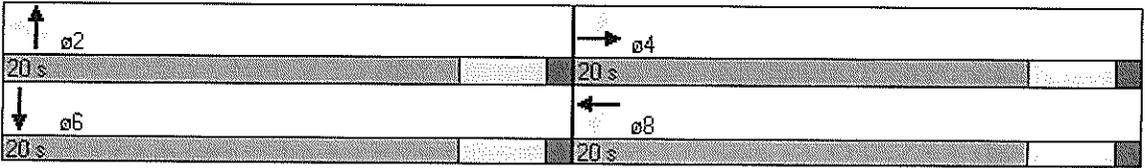
Intersección Carretera PR-834 & Camino Laberinto
Futuro AM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0		20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0	0.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0	16.0		16.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min		C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		7.2			7.4			30.2	30.2		30.2	
Actuated g/C Ratio		0.18			0.18			0.76	0.76		0.76	
v/c Ratio		0.10			0.26			0.59	0.04		0.07	
Control Delay		13.2			15.0			5.8	0.6		3.3	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		13.2			15.0			5.8	0.6		3.3	
LOS		B			B			A	A		A	
Approach Delay		13.2			15.0			5.7			3.3	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 6.0
 Intersection Capacity Utilization 61.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 3: Camino Laberinto & PR-834



Intersección Carreteras PR-835 & Desvio PR-835
Futuro AM 2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	81	21	43	166	13	34
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	81	21	43	166	13	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	186	126			43	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	186	126			43	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	98			99	
cM capacity (veh/h)	797	924			1566	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	102	209	47
Volume Left	81	0	13
Volume Right	21	166	0
cSH	820	1700	1566
Volume to Capacity	0.12	0.12	0.01
Queue Length 95th (ft)	11	0	1
Control Delay (s)	10.0	0.0	2.1
Lane LOS	B		A
Approach Delay (s)	10.0	0.0	2.1
Approach LOS	B		

Intersection Summary			
Average Delay		3.1	
Intersection Capacity Utilization		25.6%	ICU Level of Service
Analysis Period (min)		15	A

FIGURA 106

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro AM 2012

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	97	5	5	1803	309	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0	164			230
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	130			135
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Friction		0.850			0.949	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3359	0
Flt Permitted	0.950		0.484			
Satd. Flow (perm)	1770	1583	902	3539	3359	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5			157	
Link Speed (mph)	25			45	45	
Link Distance (ft)	643			2317	367	
Travel Time (s)	17.5			35.1	5.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	97	5	5	1803	309	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	5	5	1803	466	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			16	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Perm			
Protected Phases	4			2	6	
Permitted Phases		4	2			

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro AM 2012

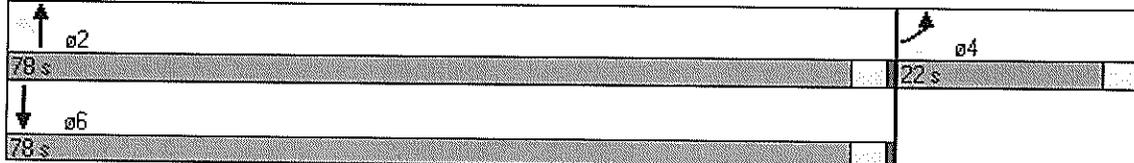


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	22.0	22.0	78.0	78.0	78.0	0.0
Total Split (%)	22.0%	22.0%	78.0%	78.0%	78.0%	0.0%
Maximum Green (s)	18.0	18.0	74.0	74.0	74.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	10.8	10.8	84.1	84.1	84.1	
Actuated g/C Ratio	0.11	0.11	0.84	0.84	0.84	
v/c Ratio	0.51	0.03	0.01	0.61	0.16	
Control Delay	50.6	23.2	2.0	3.5	1.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.6	23.2	2.0	3.5	1.1	
LOS	D	C	A	A	A	
Approach Delay	49.3			3.5	1.1	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 24 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 5.0
 Intersection Capacity Utilization 61.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 14: Entrada a LAIF & Carretera PR-834



Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro AM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations				 	 			 				
Volume (vph)	432	0	755	127	6	153	0	833	96	226	472	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	14	16	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	197		60	0		0	164		0
Storage Lanes	1		0	1		2	0		0	1		0
Taper Length (ft)	25		100	50		55	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frnt			0.850			0.850		0.984				
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	2006	0	1794	3433	3539	1583	0	3483	0	1770	1863	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	2006	0	1794	3433	3539	1583	0	3483	0	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			484			153		12				
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1913			218			499			341	
Travel Time (s)		29.0			5.9			9.7			6.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	432	0	755	127	6	153	0	833	96	226	472	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	432	0	755	127	6	153	0	929	0	226	472	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			24			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.92	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2	1		2		1	2	
Detector Template	Left		Right	Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100	20		100		20	100	
Trailing Detector (ft)	0		0	0	0	0		0		0	0	
Detector 1 Position(ft)	0		0	0	0	0		0		0	0	
Detector 1 Size(ft)	20		20	20	6	20		6		20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		custom	Prot		Perm				Prot		0.0
Protected Phases	5			1	6			4		3	8	
Permitted Phases			5			6						

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro AM 2012

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	5		5	1	6	6		4		3	8	
Switch Phase												
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0		4.0		4.0	4.0	
Minimum Split (s)	8.0		8.0	8.0	20.0	20.0		20.0		8.0	20.0	
Total Split (s)	30.0	0.0	30.0	50.0	20.0	20.0	0.0	32.0	0.0	18.0	50.0	0.0
Total Split (%)	30.0%	0.0%	30.0%	50.0%	20.0%	20.0%	0.0%	32.0%	0.0%	18.0%	50.0%	0.0%
Maximum Green (s)	26.0		26.0	46.0	16.0	16.0		28.0		14.0	46.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lag		Lead	Lead		Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Recall Mode	None		None	None	Min	Min		C-Max		None	C-Max	
Act Effct Green (s)	28.1		28.1	39.4	7.3	7.3		32.7		15.9	52.6	
Actuated g/C Ratio	0.28		0.28	0.39	0.07	0.07		0.33		0.16	0.53	
v/c Ratio	0.77		0.89	0.09	0.02	0.59		0.81		0.80	0.48	
Control Delay	36.5		20.7	17.7	41.0	17.1		38.8		58.5	17.6	
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	36.5		20.7	17.7	41.0	17.1		38.8		58.5	17.6	
LOS	D		C	B	D	B		D		E	B	
Approach Delay					17.8			38.8			30.9	
Approach LOS					B			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 4 (4%), Referenced to phase 4:SET and 8:NWT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 30.4
 Intersection Capacity Utilization 86.5%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 3: Carretera PR-834 & Carretera PR-169

ø1 50 s	ø3 18 s	ø4 32 s
ø6 20 s	ø5 30 s	ø8 50 s

Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
Futuro AM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	218	95	117	0	85	461	87	122	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	1.00	1.00
Fr					0.917				0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	2006	1936	0	0	4011	3158	2006	2111	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	2006	1936	0	0	4011	3158	2006	2111	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					67				461			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		722			387			249			260	
Travel Time (s)		16.4			8.8			5.7			5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	218	95	117	0	85	461	87	122	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	218	212	0	0	85	461	87	122	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			10			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2	1	1	2	
Detector Template				Left	Thru			Thru	Right	Left	Thru	
Leading Detector (ft)				20	100			100	20	20	100	
Trailing Detector (ft)				0	0			0	0	0	0	
Detector 1 Position(ft)				0	0			0	0	0	0	
Detector 1 Size(ft)				20	6			6	20	20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm					Perm	Prot		
Protected Phases					6			4		3	8	
Permitted Phases				6					4			
Detector Phase				6	6			4	4	3	8	
Switch Phase												
Minimum Initial (s)				4.0	4.0			4.0	4.0	4.0	4.0	
Minimum Split (s)				20.0	20.0			20.0	20.0	8.0	20.0	

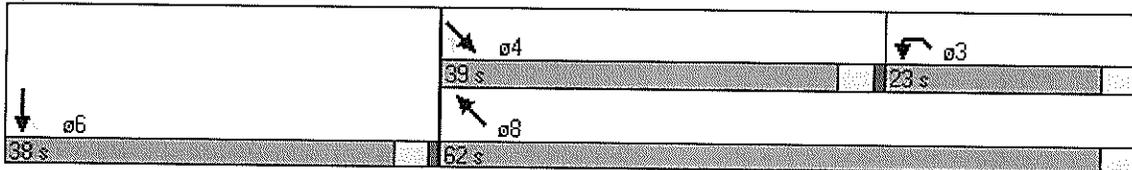
Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
 Futuro AM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	0.0	0.0	0.0	38.0	38.0	0.0	0.0	39.0	39.0	23.0	62.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	38.0%	38.0%	0.0%	0.0%	39.0%	39.0%	23.0%	62.0%	0.0%
Maximum Green (s)				34.0	34.0			35.0	35.0	19.0	58.0	
Yellow Time (s)				3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0			1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode				Max	Max			C-Max	C-Max	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0		5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)				0	0			0	0		0	
Act Effct Green (s)				45.3	45.3			35.0	35.0	9.7	46.7	
Actuated g/C Ratio				0.45	0.45			0.35	0.35	0.10	0.47	
v/c Ratio				0.24	0.23			0.06	0.33	0.45	0.12	
Control Delay				19.1	13.2			17.1	2.1	18.4	3.3	
Queue Delay				0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay				19.1	13.2			17.1	2.1	18.4	3.3	
LOS				B	B			B	A	B	A	
Approach Delay					16.2			4.4			9.6	
Approach LOS					B			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 26 (26%), Referenced to phase 4:SET, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 9.6
 Intersection Capacity Utilization 52.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 1: Carretera PR-169 &



Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
Futuro AM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	281	0	0	0	0	0	556	78	0	0	80	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frnt											0.922	
Flt Protected	0.950						0.950	0.963				
Satd. Flow (prot)	2006	2111	0	0	0	0	1905	1931	0	0	3698	0
Flt Permitted	0.950						0.000	0.000				
Satd. Flow (perm)	2006	2111	0	0	0	0	0	0	0	0	3698	0
Right Turn on Red			Yes				Yes		Yes			Yes
Satd. Flow (RTOR)												87
Link Speed (mph)		30			30			30				35
Link Distance (ft)		633			504			260				589
Travel Time (s)		14.4			11.5			5.9				11.5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	281	0	0	0	0	0	556	78	0	0	80	87
Shared Lane Traffic (%)							44%					
Lane Group Flow (vph)	281	0	0	0	0	0	311	323	0	0	167	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			16				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2					1	2				2
Detector Template	Left	Thru					Left	Thru				Thru
Leading Detector (ft)	20	100					20	100				100
Trailing Detector (ft)	0	0					0	0				0
Detector 1 Position(ft)	0	0					0	0				0
Detector 1 Size(ft)	20	6					20	6				6
Detector 1 Type	CI+Ex	CI+Ex					CI+Ex	CI+Ex				CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0					0.0	0.0				0.0
Detector 1 Queue (s)	0.0	0.0					0.0	0.0				0.0
Detector 1 Delay (s)	0.0	0.0					0.0	0.0				0.0
Detector 2 Position(ft)		94						94				94
Detector 2 Size(ft)		6						6				6
Detector 2 Type		CI+Ex						CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0				0.0
Turn Type	Perm						pm+pt					
Protected Phases		2					7	4				10
Permitted Phases	2						4					
Detector Phase	2	2					7	4				10
Switch Phase												
Minimum Initial (s)	4.0	4.0					4.0	4.0				4.0
Minimum Split (s)	20.0	20.0					8.0	20.0				20.0

Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
 Futuro AM 2012

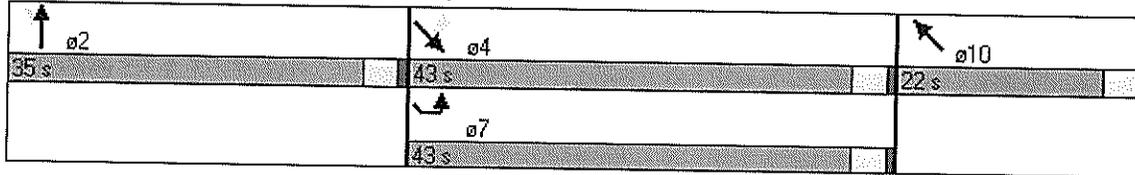
Lane/Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	35.0	35.0	0.0	0.0	0.0	0.0	43.0	43.0	0.0	0.0	22.0	0.0
Total Split (%)	35.0%	35.0%	0.0%	0.0%	0.0%	0.0%	43.0%	43.0%	0.0%	0.0%	22.0%	0.0%
Maximum Green (s)	31.0	31.0					39.0	39.0			18.0	
Yellow Time (s)	3.0	3.0					3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0					1.0	1.0			1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Recall Mode	None	None					None	C-Max			None	
Walk Time (s)	5.0	5.0						5.0			5.0	
Flash Dont Walk (s)	11.0	11.0						11.0			11.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)	19.3						60.9	60.9			7.7	
Actuated g/C Ratio	0.19						0.61	0.61			0.08	
v/c Ratio	0.72						0.27	0.27			0.46	
Control Delay	48.3						7.4	7.4			25.6	
Queue Delay	0.0						0.9	0.9			0.0	
Total Delay	48.3						8.3	8.3			25.6	
LOS	D						A	A			C	
Approach Delay								8.3			25.6	
Approach LOS								A			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 96 (96%), Referenced to phase 4:SETL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 21.4
 Intersection Capacity Utilization 52.4%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 22: Carretera PR-8834 &



Intersección Entrada Proyecto LAIF & Desvio PR-835
Futuro AM 2012

111

						
Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations						
Volume (veh/h)	0	123	90	0	34	141
Sign Control	Free		Stop		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	123	90	0	34	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		123	0	45	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		123	0	45	0
tC, single (s)	4.1		6.5	6.2	7.1	6.5
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	100		88	100	96	84
cM capacity (veh/h)	1623		767	1085	871	896
Direction, Lane #	EB 1	EB 2	SB 1	SB 2	NW 1	NW 2
Volume Total	0	123	90	0	34	141
Volume Left	0	0	0	0	34	0
Volume Right	0	123	0	0	0	0
cSH	1700	1700	767	1700	871	896
Volume to Capacity	0.00	0.07	0.12	0.00	0.04	0.16
Queue Length 95th (ft)	0	0	10	0	3	14
Control Delay (s)	0.0	0.0	10.3	0.0	9.3	9.8
Lane LOS			B	A	A	A
Approach Delay (s)	0.0		10.3		9.7	
Approach LOS			B		A	
Intersection Summary						
Average Delay			6.8			
Intersection Capacity Utilization			15.0%		ICU Level of Service	A
Analysis Period (min)			15			

FIGURA 111

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICIÓN FUTURA AM
 Highway: CARRETERA PR-1 HACIA EL NORTE - ANÁLISIS #1
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2012
 Project ID: LAIF

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type					
Free-flow speed:		Measured		Measured	
FFS or BFFS		55.0	mph	55.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		55.0	mph	55.0	mph

VOLUME

	Direction	1		2	
Volume, V		3022	vph	1247	vph
Peak-hour factor, PHF		1.00		1.00	
Peak 15-minute volume, v15		756		312	
Trucks and buses		1	%	1	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fHV		0.995		0.995	
Flow rate, vp		1518	pcphpl	626	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1518	pcphpl	626	pcphpl
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		54.6	mph	55.0	mph
Level of service, LOS		D		B	
Density, D		27.8	pc/mi/ln	11.4	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone:
E-mail:

Fax:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICIÓN FUTURA AM
 Highway: CARRETERA PR-1 HACIA EL SUR - ANÁLISIS #2
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2012
 Project ID: LAIF

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	55.0	mph	55.0	mph

VOLUME

Direction	1		2	
Volume, V	3022	vph	1247	vph
Peak-hour factor, PHF	1.00		1.00	
Peak 15-minute volume, v15	756		312	
Trucks and buses	1	%	1	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.995		0.995	
Flow rate, vp	1518	pcphpl	626	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1518	pcphpl	626	pcphpl
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		54.6	mph	55.0	mph
Level of service, LOS		D		B	
Density, D		27.8	pc/mi/ln	11.4	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: _____ Fax: _____
 E-mail: _____

Diverge Analysis

Analyst: TILYSAY HERNÁNDEZ ACEVEDO
 Agency/Co.: PLC TRAFFIC CONSULTING
 Date performed: 12/9/2009
 Analysis time period: CONDICION FUTURA AM
 Freeway/Dir of Travel: RAMPA CONEXIÓN PR-834 A PR-20
 Junction:
 Jurisdiction:
 Analysis Year: AÑO 2012
 Description: LAIF

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1723	vph

Off Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	119	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

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

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1723	119		vph
Peak-hour factor, PHF	1.00	1.00		
Peak 15-min volume, v15	431	30		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1723	119	pcph

Estimation of V12 Diverge Areas

$$L = \text{EQ} \quad (\text{Equation 25-8 or 25-9})$$

$$P = 1.000 \quad \text{Using Equation 0}$$

$$v_{12} = v_R + (v_F - v_R) P = 1723 \text{ pc/h}$$

Capacity Checks

$v_{Fi} = v_F$	Actual	Maximum	LOS F?
	1723	4500	No
$v_{FO} = v_F - v_R$	1604	4500	No
v_R	119	2000	No
$v_{3 \text{ or } av34}$	0 pc/h	(Equation 25-15 or 25-16)	
Is $v_{3 \text{ or } av34} > 2700 \text{ pc/h?}$		No	
Is $v_{3 \text{ or } av34} > 1.5 v_{12} / 2$		No	
If yes, $v_{12A} = 1723$		(Equation 25-18)	

Flow Entering Diverge Influence Area

v_{12}	Actual	Max Desirable	Violation?
	1723	4400	No

Level of Service Determination (if not F)

$$\text{Density, } D = 4.252 + 0.0086 v_R - 0.009 L_D = 14.6 \text{ pc/mi/ln}$$

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

Speed Estimation

Intermediate speed variable,	D = 0.439	
Space mean speed in ramp influence area,	S = 49.3	mph
Space mean speed in outer lanes,	S = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	2013	0	0	2037	105	119	8	88	93	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frft					0.993				0.850		0.919	
Flt Protected	0.950							0.955			0.980	
Satd. Flow (prot)	1770	5085	0	0	5050	0	0	1779	1583	0	1678	0
Flt Permitted	0.950							0.530			0.810	
Satd. Flow (perm)	1770	5085	0	0	5050	0	0	987	1583	0	1387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11				20		65	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		109.4			116.4			101.8			78.5	
Travel Time (s)		7.9			8.4			7.3			5.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	130	2013	0	0	2037	105	119	8	88	93	0	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	2013	0	0	2142	0	0	127	88	0	233	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot						Perm		Perm	Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4			8		2	2	2	6	6	

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
 Futuro PM 2012

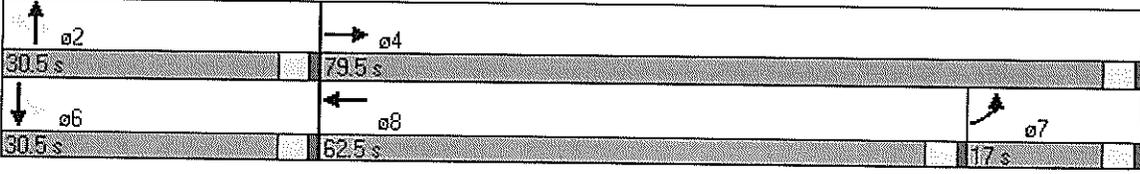


Lane/Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5			20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	17.0	79.5	0.0	0.0	62.5	0.0	30.5	30.5	30.5	30.5	30.5	0.0
Total Split (%)	15.5%	72.3%	0.0%	0.0%	56.8%	0.0%	27.7%	27.7%	27.7%	27.7%	27.7%	0.0%
Maximum Green (s)	13.0	75.5			58.5		26.5	26.5	26.5	26.5	26.5	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None			None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	11.7	72.5			56.8			29.5	29.5		29.5	
Actuated g/C Ratio	0.11	0.66			0.52			0.27	0.27		0.27	
v/c Ratio	0.69	0.60			0.82			0.48	0.20		0.56	
Control Delay	46.5	5.0			25.2			42.7	27.0		31.6	
Queue Delay	0.0	0.1			0.0			0.0	0.0		0.0	
Total Delay	46.5	5.1			25.2			42.7	27.0		31.6	
LOS	D	A			C			D	C		C	
Approach Delay		7.6			25.2			36.3			31.6	
Approach LOS		A			C			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 18.1
 Intersection Capacity Utilization 79.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 14: PR-199 &



Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1147	218	275	1348	0	0	0	0	1370	4	907
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.976									0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	6254	0	1770	5085	0	0	0	0	3433	1585	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	6254	0	1770	5085	0	0	0	0	3433	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39									7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		218.2			95.9			177.7			175.4	
Travel Time (s)		15.7			6.9			12.8			12.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1147	218	275	1348	0	0	0	0	1370	4	907
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1365	0	275	1348	0	0	0	0	1370	911	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (m)		10.0		2.0	10.0					2.0	10.0	
Trailing Detector (m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Position(m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Size(m)		0.6		2.0	0.6					2.0	0.6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Detector Phase		4		3	8					6	6	

FIGURA 116

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro PM 2012

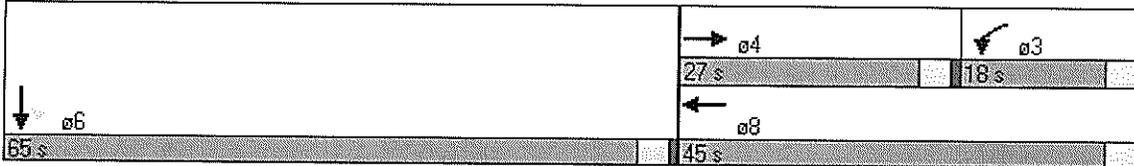
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5		8.0	20.5					20.5	20.5	
Total Split (s)	0.0	27.0	0.0	18.0	45.0	0.0	0.0	0.0	0.0	65.0	65.0	0.0
Total Split (%)	0.0%	24.5%	0.0%	16.4%	40.9%	0.0%	0.0%	0.0%	0.0%	59.1%	59.1%	0.0%
Maximum Green (s)		23.0		14.0	41.0					61.0	61.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		C-Max		None	None					Max	Max	
Act Effct Green (s)		23.0		14.0	41.0					61.0	61.0	
Actuated g/C Ratio		0.21		0.13	0.37					0.55	0.55	
v/c Ratio		1.02		1.22	0.71					0.72	1.03	
Control Delay		44.8		164.8	21.3					20.9	64.5	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		44.8		164.8	21.3					20.9	64.5	
LOS		D		F	C					C	E	
Approach Delay		44.8			45.6						38.3	
Approach LOS		D			D						D	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 63 (57%), Referenced to phase 4:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.22
 Intersection Signal Delay: 42.2
 Intersection Capacity Utilization 113.3%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service H

Splits and Phases: 8: PR-199 & PR-20 SB Off



Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1561	519	352	1589	59	0	0	0	29	25	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	70.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.963			0.995							
Flt Protected	0.950			0.950							0.944	
Satd. Flow (prot)	1770	4897	0	1770	5060	0	0	0	1863	0	1730	0
Flt Permitted	0.950			0.950							0.984	
Satd. Flow (perm)	1770	4897	0	1770	5060	0	0	0	1863	0	1730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		111			9						27	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		168.3			293.5			91.8			114.9	
Travel Time (s)		12.1			21.1			6.6			8.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	75	1561	519	352	1589	59	0	0	0	29	25	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	2080	0	352	1648	0	0	0	0	0	92	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2				1	1	2	
Detector Template	Left	Thru		Left	Thru				Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0				2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6				2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot			Prot				custom		Perm		
Protected Phases	7	4		3	8						6	
Permitted Phases									2	6		
Detector Phase	7	4		3	8				2	6	6	

FIGURA 117

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
 Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0				4.0	4.0	4.0	
Minimum Split (s)	20.0	60.0		5.0	60.0				20.5	15.0	15.0	
Total Split (s)	20.0	60.0	0.0	29.0	69.0	0.0	0.0	0.0	21.0	21.0	21.0	0.0
Total Split (%)	18.2%	54.5%	0.0%	26.4%	62.7%	0.0%	0.0%	0.0%	19.1%	19.1%	19.1%	0.0%
Maximum Green (s)	16.0	56.0		25.0	65.0				17.0	17.0	17.0	
Yellow Time (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0				1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	None		None	None				Max	Max	Max	
Act Effct Green (s)	10.5	55.9		24.4	71.8							27.8
Actuated g/C Ratio	0.09	0.47		0.20	0.60							0.23
v/c Ratio	0.49	0.89		0.98	0.54							0.22
Control Delay	57.2	26.9		84.4	10.9							28.3
Queue Delay	0.0	0.0		0.0	0.0							0.0
Total Delay	57.2	26.9		84.4	10.9							28.3
LOS	E	C		F	B							C
Approach Delay		28.0			23.9							28.3
Approach LOS		C			C							C

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 120
 Natural Cycle: 105
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 26.1
 Intersection Capacity Utilization 76.5%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 17: PR-199 & Angel Quiñones

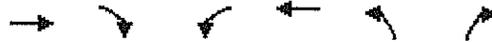
 ø2	 ø3	 ø4
21 s	29 s	60 s
 ø6	 ø7	 ø8
21 s	20 s	69 s

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
Futuro PM 2012

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Volume (vph)	1871	0	0	1618	176	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	5085	0	0	5085	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	5085	0	0	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						2
Link Speed (k/h)	50			50	50	
Link Distance (m)	293.5			95.4	68.8	
Travel Time (s)	21.1			6.9	5.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1871	0	0	1618	176	205
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1871	0	0	1618	176	205
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	5.4			5.4	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	4.0			4.0	4.0	4.0
Minimum Split (s)	20.0			20.0	20.0	20.0

FIGURA 118

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
 Futuro PM 2012



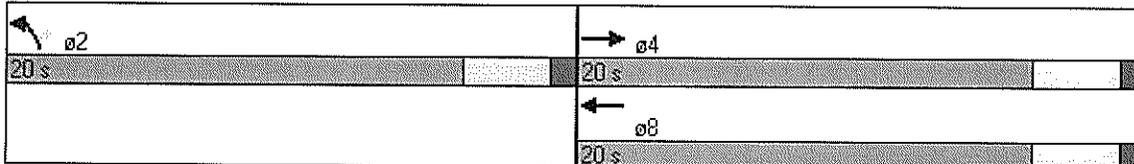
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	20.0	0.0	0.0	20.0	20.0	20.0
Total Split (%)	50.0%	0.0%	0.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0			16.0	16.0	16.0
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	None			None	C-Min	C-Min
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	20.3			20.3	11.7	11.7
Actuated g/C Ratio	0.51			0.51	0.29	0.29
v/c Ratio	0.73			0.63	0.34	0.44
Control Delay	11.3			8.9	12.7	14.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	11.3			8.9	12.7	14.3
LOS	B			A	B	B
Approach Delay	11.3			8.9	13.6	
Approach LOS	B			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 10.5
 Intersection Capacity Utilization 55.5%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 21: PR-199 & PR-1 NB Off



Intersección Carretera PR-199 & PR-169
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	1017	167	209	1863	301	204	276	179	157	212	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		50.0	70.0		40.0	0.0		45.0	0.0		0.0
Storage Lanes	1		1	1		1	0		2	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.95	0.95	0.95
Flt Protected	0.950			0.950				0.964			0.942	0.987
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	4902	1583	0	3291	0
Flt Permitted	0.950			0.950				0.691			0.514	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	3514	1583	0	1714	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			150			149			162		154	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			218.2			160.3			87.7	
Travel Time (s)		14.5			15.7			11.5			6.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.25	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	121	1017	167	209	1863	301	816	276	179	157	212	234
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	1017	167	209	1863	301	0	1092	179	0	603	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.4			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex							
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	

FIGURA 119

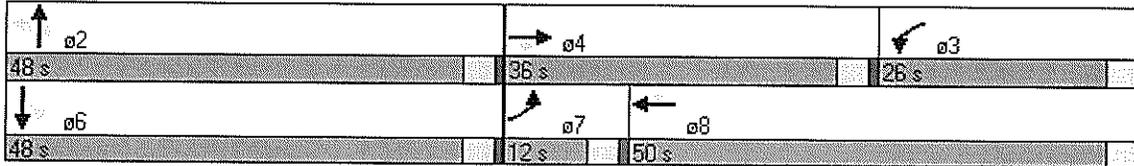
Intersección Carretera PR-199 & PR-169
Futuro PM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.5	20.5	8.0	20.5	20.5	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	12.0	36.0	36.0	26.0	50.0	50.0	48.0	48.0	48.0	48.0	48.0	0.0
Total Split (%)	10.9%	32.7%	32.7%	23.6%	45.5%	45.5%	43.6%	43.6%	43.6%	43.6%	43.6%	0.0%
Maximum Green (s)	8.0	32.0	32.0	22.0	46.0	46.0	44.0	44.0	44.0	44.0	44.0	44.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	8.0	29.1	29.1	24.5	45.7	45.7		44.3	44.3		44.3	44.3
Actuated g/C Ratio	0.07	0.26	0.26	0.22	0.42	0.42		0.40	0.40		0.40	0.40
v/c Ratio	0.94	0.76	0.32	0.53	0.88	0.40		3.32dl	0.24		0.77	0.77
Control Delay	116.1	41.0	8.1	29.9	21.2	5.6		33.0	5.2		28.7	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	116.1	41.0	8.1	29.9	21.2	5.6		33.0	5.2		28.7	28.7
LOS	F	D	A	C	C	A		C	A		C	C
Approach Delay		43.7			20.0			29.1			28.7	
Approach LOS		D			B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 28.6
 Intersection Capacity Utilization 85.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 5: PR-199 & PR-169



Intersección Carretera PR-169 & PR-20
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	98	85	271	382	254	85	981	285	157	793	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		30.0	30.0		30.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	7.5		7.5	7.5		15.0	7.5		15.0	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.95
Frt		0.930				0.850		0.968			0.990	
Flt Protected	0.950			0.950				0.997		0.950	0.997	
Satd. Flow (prot)	1770	1732	0	1770	1863	1583	0	3871	0	1825	3792	0
Flt Permitted	0.321			0.601				0.811		0.122	0.746	
Satd. Flow (perm)	598	1732	0	1120	1863	1583	0	3149	0	234	2838	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48				142		73			16	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		181.4			181.6			163.2			502.7	
Travel Time (s)		13.1			13.1			11.8			36.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	81	98	85	271	382	254	85	981	285	157	793	64
Shared Lane Traffic (%)										39%		
Lane Group Flow (vph)	81	183	0	271	382	254	0	1351	0	96	918	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25	25	15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		

Intersección Carretera PR-169 & PR-20
Futuro PM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	29.0	61.0	61.0	0.0	61.0	61.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	32.2%	67.8%	67.8%	0.0%	67.8%	67.8%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	22.2	22.2		22.2	22.2	22.2		39.8		39.8	39.8	
Actuated g/C Ratio	0.31	0.31		0.31	0.31	0.31		0.56		0.56	0.56	
v/c Ratio	0.43	0.32		0.77	0.65	0.43		0.75		0.73	0.57	
Control Delay	32.8	18.5		43.0	30.4	13.5		13.5		46.1	11.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	32.8	18.5		43.0	30.4	13.5		13.5		46.1	11.0	
LOS	C	B		D	C	B		B		D	B	
Approach Delay		22.9			29.4			13.5			14.3	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 70.6
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 18.5
 Intersection Capacity Utilization 99.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service F

Splits and Phases: 3: Desde PR-20 & PR-169

	ø2		ø4
61 s		29 s	
	ø6		ø8
61 s		29 s	

Intersección Carretera PR-1 & Camino Parcelas Canejas
Futuro PM 2012

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	107	70	1557	96	84	1337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		20.0	0.0	
Storage Lanes	1	0		1	0	
Taper Length (m)	7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95
Frt	0.947			0.850		
Flt Protected	0.971					0.997
Satd. Flow (prot)	1713	0	3539	1583	0	3529
Flt Permitted	0.971					0.666
Satd. Flow (perm)	1713	0	3539	1583	0	2357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	30			43		
Link Speed (k/h)	50		50			50
Link Distance (m)	151.1		103.0			83.1
Travel Time (s)	10.9		7.4			6.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	107	70	1557	96	84	1337
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	0	1557	96	0	1421
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Minimum Split (s)	15.0		20.0	20.0	8.0	20.0
Total Split (s)	15.0	0.0	60.0	60.0	15.0	75.0
Total Split (%)	16.7%	0.0%	66.7%	66.7%	16.7%	83.3%
Maximum Green (s)	11.0		56.0	56.0	11.0	71.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Act Effct Green (s)	11.0		56.0	56.0		71.0
Actuated g/C Ratio	0.12		0.62	0.62		0.79
v/c Ratio	0.75		0.71	0.10		0.90
Control Delay	52.6		13.7	4.3		13.5
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	52.6		13.7	4.3		13.5
LOS	D		B	A		B

Intersección Carretera PR-1 & Camino Parcelas Canejas
Futuro PM 2012



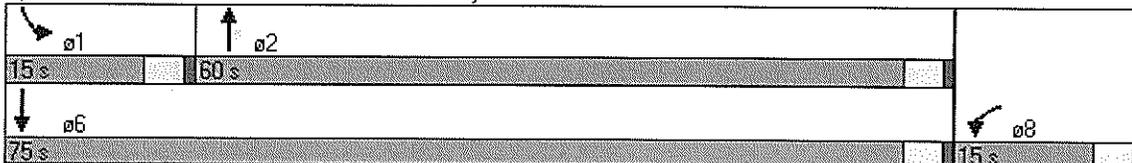
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	52.6		13.2			13.5
Approach LOS	D		B			B

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 15.5
 Intersection Capacity Utilization 102.6%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service G

Splits and Phases: 11: Camino Parcelas Canejas & PR-1



Intersección Carretera PR-1, PR-173 & PR-8834
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	406	2835	318	419	2365	59	223	99	120	185	58	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		75.0	50.0		80.0	0.0		0.0	0.0		0.0
Storage Lanes	2		2	2		2	2		0	0		1
Taper Length (m)	50.0		50.0	50.0		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.95	0.95	0.95	1.00
Frnt			0.850			0.850		0.918				0.850
Flt Protected	0.950			0.950			0.950				0.963	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3249	0	0	3408	1583
Flt Permitted	0.950			0.950			0.352				0.672	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1272	3249	0	0	2378	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208			50		120				142
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		217.2			239.2			222.4			62.4	
Travel Time (s)		15.6			17.2			16.0			4.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	406	2835	318	419	2365	59	223	99	120	185	58	325
Shared Lane Traffic (%)												
Lane Group Flow (vph)	406	2835	318	419	2365	59	223	219	0	0	243	325
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot		Perm	Prot		Perm	pm+pt			Perm		Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4			8	2			6		6
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0		20.0	20.0	20.0
Total Split (s)	18.0	99.0	99.0	19.0	100.0	100.0	8.0	32.0	0.0	24.0	24.0	24.0
Total Split (%)	12.0%	66.0%	66.0%	12.7%	66.7%	66.7%	5.3%	21.3%	0.0%	16.0%	16.0%	16.0%
Maximum Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	4.0	28.0		20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		5.0	5.0		5.0	5.0		5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0		0	0	0
Act Effct Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	28.0	28.0			20.0	20.0
Actuated g/C Ratio	0.09	0.63	0.63	0.10	0.64	0.64	0.19	0.19			0.13	0.13
v/c Ratio	1.27	0.88	0.29	1.22	0.73	0.06	0.76	0.31			1.21dl	0.97
Control Delay	195.4	27.0	4.7	177.0	19.9	3.3	72.3	24.6			79.2	78.5

FIGURA 122

Intersección Carretera PR-1, PR-173 & PR-8834
 Futuro PM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	195.4	27.0	4.7	177.0	19.9	3.3	72.3	24.6			79.2	78.5
LOS	F	C	A	F	B	A	E	C			E	E
Approach Delay		44.2			42.7			48.7			78.8	
Approach LOS		D			D			D			E	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 1.27
 Intersection Signal Delay: 46.5
 Intersection Capacity Utilization 96.9%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

d) Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 19: PR-1 & PR-8834

32 s	19 s	99 s
8 s	24 s	100 s

Intersección Carretera PR-834 & Desvio PR-834
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	245	9	0	750	191	4	4	119	17	191	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8
Storage Length (m)	20.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (m)	15.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frnt			0.850		0.970				0.850		0.992	
Flt Protected							0.950	0.990			0.996	
Satd. Flow (prot)	1863	3539	1583	0	3433	0	1681	1752	1583	0	2086	0
Flt Permitted							0.680	0.962			0.985	
Satd. Flow (perm)	1863	3539	1583	0	3433	0	1203	1702	1583	0	2063	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			9		94				119		9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.3			227.3			124.0			64.5	
Travel Time (s)		17.5			16.4			8.9			4.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	245	9	0	750	191	4	4	119	17	191	13
Shared Lane Traffic (%)							13%					
Lane Group Flow (vph)	0	245	9	0	941	0	3	5	119	0	221	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2		1	2	1	1	2	
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0		0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm				Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4				2		2	6		

Synchro 7 - Report

FIGURA 123

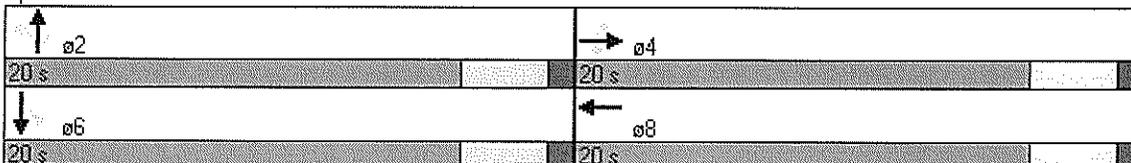
Intersección Carretera PR-834 & Desvio PR-834
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4		8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0		20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	0.0	20.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0		16.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None		None		C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)	5.0	5.0	5.0		5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0	0	0	0	
Act Effct Green (s)		15.8	15.8		15.8		16.2	16.2	16.2		16.2	
Actuated g/C Ratio		0.40	0.40		0.40		0.40	0.40	0.40		0.40	
v/c Ratio		0.18	0.01		0.67		0.01	0.01	0.17		0.26	
Control Delay		7.3	3.7		10.5		9.0	9.0	3.5		9.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay		7.3	3.7		10.5		9.0	9.0	3.5		9.9	
LOS		A	A		B		A	A	A		A	
Approach Delay		7.2			10.5			3.9			9.9	
Approach LOS		A			B			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 51.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: PR-834 &



Intersección Carreteras PR-834 & Desvio PR-835
Futuro PM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	14	0	592	0	19	0	307	0	0	962	604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12
Storage Length (ft)	0		0	0		100	0		0	0		150
Storage Lanes	0		0	2		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		135
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt Protected				0.950		0.850						0.850
Satd. Flow (prot)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Flt Permitted				0.950								
Satd. Flow (perm)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						17						578
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		462			718			452			402	
Travel Time (s)		10.5			16.3			10.3			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	14	0	592	0	19	0	307	0	0	962	604
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	592	0	19	0	307	0	0	962	604
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			13			5	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1		1		2			2	1
Detector Template		Thru		Left		Right		Thru			Thru	Right
Leading Detector (ft)		100		20		20		100			100	20
Trailing Detector (ft)		0		0		0		0			0	0
Detector 1 Position(ft)		0		0		0		0			0	0
Detector 1 Size(ft)		6		20		20		6			6	20
Detector 1 Type		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Queue (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Delay (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type				Prot		custom						Perm
Protected Phases		8		4				2			6	
Permitted Phases						4						6

FIGURA 124

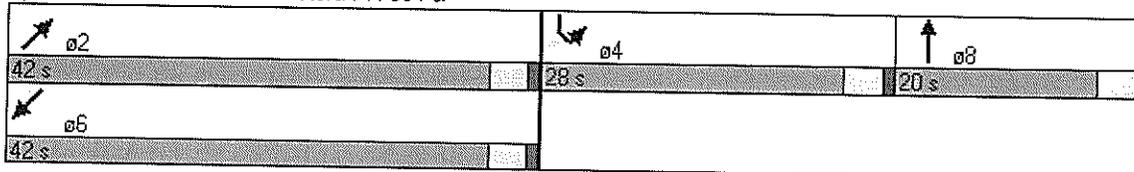
Intersección Carreteras PR-834 & Desvio PR-835
Futuro PM 2012

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase		8		4		4		2			6	6
Switch Phase												
Minimum Initial (s)		4.0		4.0		4.0		4.0			4.0	4.0
Minimum Split (s)		20.0		20.0		20.0		20.0			20.0	20.0
Total Split (s)	0.0	20.0	0.0	28.0	0.0	28.0	0.0	42.0	0.0	0.0	42.0	42.0
Total Split (%)	0.0%	22.2%	0.0%	31.1%	0.0%	31.1%	0.0%	46.7%	0.0%	0.0%	46.7%	46.7%
Maximum Green (s)		16.0		24.0		24.0		38.0			38.0	38.0
Yellow Time (s)		3.0		3.0		3.0		3.0			3.0	3.0
All-Red Time (s)		1.0		1.0		1.0		1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0		3.0		3.0			3.0	3.0
Recall Mode		None		None		None		C-Min			C-Min	C-Min
Walk Time (s)		5.0		5.0		5.0		5.0			5.0	5.0
Flash Dont Walk (s)		11.0		11.0		11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0		0		0		0			0	0
Act Effct Green (s)		5.9		20.6		20.6		59.3			59.3	59.3
Actuated g/C Ratio		0.07		0.23		0.23		0.66			0.66	0.66
v/c Ratio		0.06		0.75		0.04		0.13			0.41	0.49
Control Delay		39.8		38.7		12.5		7.0			3.8	2.7
Queue Delay		0.0		0.0		0.0		0.0			0.0	0.0
Total Delay		39.8		38.7		12.5		7.0			3.8	2.7
LOS		D		D		B		A			A	A
Approach Delay		39.8						7.0			3.3	
Approach LOS		D						A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 72 (80%), Referenced to phase 2:NET and 6:SWT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 12.4
 Intersection Capacity Utilization 56.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 12: Carretera PR-834 &



Intersección Carretera PR-834 & PR-835
Futuro PM 2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	294	435	408	73	167	4
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	294	435	408	73	167	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	780	240			408	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	780	240			408	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	43			85	
cM capacity (veh/h)	284	760			1147	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	294	435	272	209	167	2	2
Volume Left	294	0	0	0	167	0	0
Volume Right	0	435	0	73	0	0	0
cSH	284	760	1700	1700	1147	1700	1700
Volume to Capacity	1.04	0.57	0.16	0.12	0.15	0.00	0.00
Queue Length 95th (m)	89.4	29.4	0.0	0.0	4.1	0.0	0.0
Control Delay (s)	103.4	15.9	0.0	0.0	8.7	0.0	0.0
Lane LOS	F	C			A		
Approach Delay (s)	51.2		0.0		8.5		
Approach LOS	F						

Intersection Summary

Average Delay		28.1				
Intersection Capacity Utilization		49.1%		ICU Level of Service		A
Analysis Period (min)		15				

Intersección Carretera PR-834 & Camino Laberinto
Futuro PM 2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	54	0	12	5	12	6	316	9	0	925	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	22.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	20.0		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt					0.944				0.850			
Flt Protected		0.997			0.980		0.950					
Satd. Flow (prot)	0	1857	0	0	1723	0	1770	3539	1583	0	3539	0
Flt Permitted		0.972			0.884		0.307					
Satd. Flow (perm)	0	1811	0	0	1554	0	572	3539	1583	0	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12				9			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		133.6			268.6			227.3			235.0	
Travel Time (s)		9.6			19.3			16.4			16.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	54	0	12	5	12	6	316	9	0	925	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	29	0	6	316	9	0	925	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1		2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2			
Detector Phase	4	4		8	8		2	2	2		6	

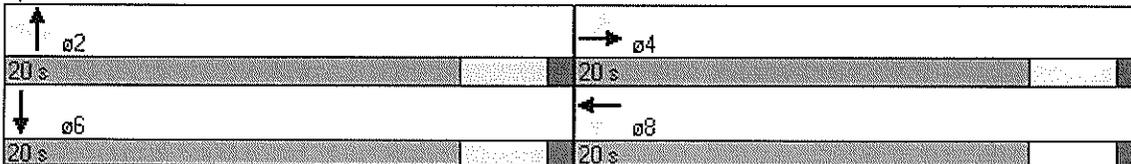
Intersección Carretera PR-834 & Camino Laberinto
Futuro PM 2012

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0		20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0	0.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0	16.0		16.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min		C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		6.8			6.6		33.6	33.6	33.6		33.6	
Actuated g/C Ratio		0.17			0.16		0.84	0.84	0.84		0.84	
v/c Ratio		0.19			0.11		0.01	0.11	0.01		0.31	
Control Delay		15.2			11.4		2.7	1.9	1.8		2.8	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		15.2			11.4		2.7	1.9	1.8		2.8	
LOS		B			B		A	A	A		A	
Approach Delay		15.2			11.4			1.9			2.8	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.31
 Intersection Signal Delay: 3.3
 Intersection Capacity Utilization 37.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 3: Camino Laberinto & PR-834



Intersección Carreteras PR-835 & Desvio PR-835
Futuro PM 2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	90	34	9	151	39	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	90	34	9	151	39	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	188	84			9	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	188	84			9	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	97			98	
cM capacity (veh/h)	781	975			1611	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	124	160	65
Volume Left	90	0	39
Volume Right	34	151	0
cSH	826	1700	1611
Volume to Capacity	0.15	0.09	0.02
Queue Length 95th (ft)	13	0	2
Control Delay (s)	10.1	0.0	4.4
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	4.4
Approach LOS	B		

Intersection Summary			
Average Delay		4.4	
Intersection Capacity Utilization		30.4%	ICU Level of Service
Analysis Period (min)		15	A

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro PM 2012

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	561	5	5	945	1569	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0	164			230
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	130			135
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.962	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3405	0
Flt Permitted	0.950		0.074			
Satd. Flow (perm)	1770	1583	138	3539	3405	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5			94	
Link Speed (mph)	25			45	45	
Link Distance (ft)	643			2317	367	
Travel Time (s)	17.5			35.1	5.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	561	5	5	945	1569	537
Shared Lane Traffic (%)						
Lane Group Flow (vph)	561	5	5	945	2106	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			16	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Perm			
Protected Phases	4			2	6	
Permitted Phases		4	2			

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro PM 2012



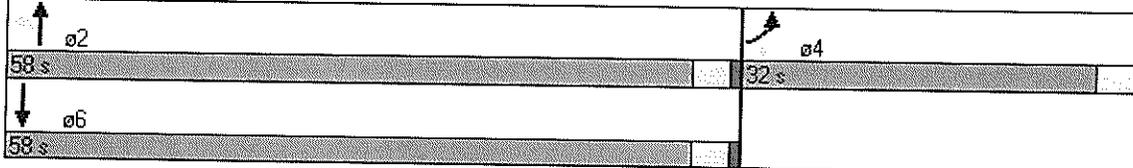
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	32.0	32.0	58.0	58.0	58.0	0.0
Total Split (%)	35.6%	35.6%	64.4%	64.4%	64.4%	0.0%
Maximum Green (s)	28.0	28.0	54.0	54.0	54.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	28.0	28.0	54.0	54.0	54.0	
Actuated g/C Ratio	0.31	0.31	0.60	0.60	0.60	
v/c Ratio	1.02	0.01	0.06	0.45	1.01	
Control Delay	75.7	13.6	4.8	10.9	38.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	75.7	13.6	4.8	10.9	38.0	
LOS	E	B	A	B	D	
Approach Delay	75.1			10.8	38.0	
Approach LOS	E			B	D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 66 (73%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 36.7
 Intersection Capacity Utilization 98.3%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 14: Entrada a LAIF & Carretera PR-834



Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro PM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations				 	 			 				
Volume (vph)	365	0	405	199	95	267	0	914	321	396	1199	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	14	16	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	197		60	0		100	169		0
Storage Lanes	1		1	1		2	0		0	1		0
Taper Length (ft)	25		100	50		55	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.961				
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	2006	0	1794	3433	3539	1583	0	3401	0	1770	1863	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	2006	0	1794	3433	3539	1583	0	3401	0	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			405			72		60				
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1920			218			499			341	
Travel Time (s)		29.1			5.9			9.7			6.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	365	0	405	199	95	267	0	914	321	396	1199	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	365	0	405	199	95	267	0	1235	0	396	1199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.92	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2	1		2		1	2	
Detector Template	Left		Right	Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100	20		100		20	100	
Trailing Detector (ft)	0		0	0	0	0		0		0	0	
Detector 1 Position(ft)	0		0	0	0	0		0		0	0	
Detector 1 Size(ft)	20		20	20	6	20		6		20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		custom	Prot		Perm				Prot		0.0
Protected Phases	5			1	6			4		3	8	
Permitted Phases			5			6						

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro PM 2012

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	5		5	1	6	6		4		3	8	
Switch Phase												
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0		4.0		4.0	4.0	
Minimum Split (s)	8.0		8.0	8.0	10.0	10.0		20.0		8.0	20.0	
Total Split (s)	19.0	0.0	19.0	32.0	13.0	13.0	0.0	35.0	0.0	23.0	58.0	0.0
Total Split (%)	21.1%	0.0%	21.1%	35.6%	14.4%	14.4%	0.0%	38.9%	0.0%	25.6%	64.4%	0.0%
Maximum Green (s)	15.0		15.0	28.0	9.0	9.0		31.0		19.0	54.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lead		Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Recall Mode	None		None	None	Min	Min		C-Max		None	C-Max	
Act Effct Green (s)	15.0		15.0	28.0	9.0	9.0		31.0		19.0	54.0	
Actuated g/C Ratio	0.17		0.17	0.31	0.10	0.10		0.34		0.21	0.60	
v/c Ratio	1.09		0.64	0.19	0.27	1.20		1.02		1.06	1.07	
Control Delay	96.0		7.1	23.3	39.6	152.3		60.1		101.0	65.3	
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	96.0		7.1	23.3	39.6	152.3		60.1		101.0	65.3	
LOS	F		A	C	D	F		E		F	E	
Approach Delay					87.5			60.1			74.2	
Approach LOS					F			E			E	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 74 (82%), Referenced to phase 4:SET and 8:NWT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 67.2
 Intersection Capacity Utilization 109.9%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 3: Carretera PR-834 & Carretera PR-169

ø1 32 s	ø3 23 s	ø4 35 s
ø5 19 s	ø6 13 s	ø8 58 s

Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
Futuro PM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	113	242	161	0	146	319	45	293	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	1.00	1.00
Frts					0.940				0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	2006	1984	0	0	4011	3158	2006	2111	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	2006	1984	0	0	4011	3158	2006	2111	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					50				319			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		722			387			249			260	
Travel Time (s)		16.4			8.8			5.7			5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	113	242	161	0	146	319	45	293	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	113	403	0	0	146	319	45	293	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			10			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2	1	1	2	
Detector Template				Left	Thru			Thru	Right	Left	Thru	
Leading Detector (ft)				20	100			100	20	20	100	
Trailing Detector (ft)				0	0			0	0	0	0	
Detector 1 Position(ft)				0	0			0	0	0	0	
Detector 1 Size(ft)				20	6			6	20	20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm					Perm	Prot		
Protected Phases					6			4		3	8	
Permitted Phases				6					4			
Detector Phase				6	6			4	4	3	8	
Switch Phase												
Minimum Initial (s)				4.0	4.0			4.0	4.0	4.0	4.0	
Minimum Split (s)				20.0	20.0			20.0	20.0	8.0	20.0	

Synchro 7 - Report

FIGURA 130

Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
Futuro PM 2012

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	0.0	0.0	0.0	46.0	46.0	0.0	0.0	30.0	30.0	14.0	44.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	51.1%	51.1%	0.0%	0.0%	33.3%	33.3%	15.6%	48.9%	0.0%
Maximum Green (s)				42.0	42.0			26.0	26.0	10.0	40.0	
Yellow Time (s)				3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0			1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode				Max	Max			C-Max	C-Max	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0		5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)				0	0			0	0		0	
Act Effect Green (s)				42.0	42.0			32.5	32.5	7.5	40.0	
Actuated g/C Ratio				0.47	0.47			0.36	0.36	0.08	0.44	
v/c Ratio				0.12	0.42			0.10	0.24	0.27	0.31	
Control Delay				14.0	15.5			17.6	2.7	35.1	7.3	
Queue Delay				0.0	0.3			0.0	0.0	0.0	2.7	
Total Delay				14.0	15.8			17.6	2.7	35.1	10.0	
LOS				B	B			B	A	D	B	
Approach Delay					15.4			7.3			13.3	
Approach LOS					B			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 4:SET, Start of Green, Master Intersection
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 12.0
 Intersection Capacity Utilization 70.5%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C

Splits and Phases: 1: Carretera PR-169 &

ø6	ø3	ø4	ø8
45 s	14 s	30 s	44 s

Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
Futuro PM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	519	0	0	0	0	0	437	100	0	0	130	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frts											0.973	
Flt Protected	0.950						0.950	0.969				
Satd. Flow (prot)	2006	2111	0	0	0	0	1905	1943	0	0	3903	0
Flt Permitted	0.950						0.000	0.000				
Satd. Flow (perm)	2006	2111	0	0	0	0	0	0	0	0	3903	0
Right Turn on Red			Yes				Yes		Yes			Yes
Satd. Flow (RTOR)											26	
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		633			504			260			589	
Travel Time (s)		14.4			11.5			5.9			11.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	519	0	0	0	0	0	437	100	0	0	130	29
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	519	0	0	0	0	0	262	275	0	0	159	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			16			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2					1	2			2	
Detector Template	Left	Thru					Left	Thru			Thru	
Leading Detector (ft)	20	100					20	100			100	
Trailing Detector (ft)	0	0					0	0			0	
Detector 1 Position(ft)	0	0					0	0			0	
Detector 1 Size(ft)	20	6					20	6			6	
Detector 1 Type	CI+Ex	CI+Ex					CI+Ex	CI+Ex			CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0					0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0					0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0					0.0	0.0			0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm						pm+pt					
Protected Phases		2					7	4			10	
Permitted Phases	2						4					
Detector Phase	2	2					7	4			10	
Switch Phase												
Minimum Initial (s)	4.0	4.0					4.0	4.0			4.0	
Minimum Split (s)	20.0	20.0					8.0	20.0			20.0	

Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
Futuro PM 2012

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	42.0	42.0	0.0	0.0	0.0	0.0	28.0	28.0	0.0	0.0	20.0	0.0
Total Split (%)	46.7%	46.7%	0.0%	0.0%	0.0%	0.0%	31.1%	31.1%	0.0%	0.0%	22.2%	0.0%
Maximum Green (s)	38.0	38.0					24.0	24.0			16.0	
Yellow Time (s)	3.0	3.0					3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0					1.0	1.0			1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Recall Mode	None	None					None	C-Max			None	
Walk Time (s)	5.0	5.0						5.0			5.0	
Flash Dont Walk (s)	11.0	11.0						11.0			11.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)	29.0						40.5	40.5			8.4	
Actuated g/C Ratio	0.32						0.45	0.45			0.09	
v/c Ratio	0.80						0.31	0.31			0.41	
Control Delay	37.3						14.7	14.7			34.8	
Queue Delay	0.0						1.2	1.2			0.0	
Total Delay	37.3						15.8	15.9			34.8	
LOS	D						B	B			C	
Approach Delay								15.9			34.8	
Approach LOS								B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 22 (24%), Referenced to phase 4:SETL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 27.5
 Intersection Capacity Utilization 70.5%
 Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service C

Splits and Phases: 22: Carretera PR-8834 &

 ø2	 ø4	 ø10
42 s	28 s	20 s
	 ø7	
	28 s	

Intersección Entrada Proyecto LAIF & Desvio PR-835
Futuro PM 2012



Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations						
Volume (veh/h)	3	47	564	1	72	541
Sign Control	Free		Stop		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	47	564	1	72	541
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		53	0	288	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		53	0	288	6
tC, single (s)	4.1		6.5	6.2	7.1	6.5
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	100		33	100	76	39
cM capacity (veh/h)	1623		837	1085	303	888

Direction, Lane #	EB 1	EB 2	SB 1	SB 2	NW 1	NW 2
Volume Total	3	47	564	1	72	541
Volume Left	3	0	0	0	72	0
Volume Right	0	47	0	1	0	0
cSH	1623	1700	837	1085	303	888
Volume to Capacity	0.00	0.03	0.67	0.00	0.24	0.61
Queue Length 95th (ft)	0	0	134	0	23	107
Control Delay (s)	7.2	0.0	17.7	8.3	20.6	15.2
Lane LOS	A		C	A	C	C
Approach Delay (s)	0.4		17.7		15.8	
Approach LOS			C		C	

Intersection Summary						
Average Delay			16.1			
Intersection Capacity Utilization			48.6%	ICU Level of Service		A
Analysis Period (min)			15			

Phone:
E-mail:

Fax:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICION FUTURA PM
 Highway: CARRETERA PR-1 HACIA EL NORTE - ANÁLISIS #1
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2012
 Project ID: LAIF

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type					
Free-flow speed:		Measured		Measured	
FFS or BFFS		55.0	mph	55.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		55.0	mph	55.0	mph

VOLUME

	Direction	1		2	
Volume, V		2491	vph	3181	vph
Peak-hour factor, PHF		1.00		1.00	
Peak 15-minute volume, v15		623		796	
Trucks and buses		1	%	1	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fHV		0.995		0.995	
Flow rate, vp		1251	pcphpl	1598	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1251	pcphp1	1598	pcphp1
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		55.0	mph	54.3	mph
Level of service, LOS		C		D	
Density, D		22.7	pc/mi/ln	29.4	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone:
E-mail:

Fax:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICION FUTURA PM
 Highway: CARRETERA PR-1 HACIA EL SUR - ANÁLISIS #2
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2012
 Project ID: LAIF

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type					
Free-flow speed:		Measured		Measured	
FFS or BFFS		55.0	mph	55.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		55.0	mph	55.0	mph

VOLUME

	Direction	1		2	
Volume, V		2491	vph	3181	vph
Peak-hour factor, PHF		1.00		1.00	
Peak 15-minute volume, v15		623		796	
Trucks and buses		1	%	1	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fHV		0.995		0.995	
Flow rate, vp		1251	pcphpl	1598	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1251	pcphpl	1598	pcphpl
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		55.0	mph	54.3	mph
Level of service, LOS		C		D	
Density, D		22.7	pc/mi/ln	29.4	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: _____ Fax: _____
 E-mail: _____

Diverge Analysis

Analyst: TILYSAY HERNÁNDEZ ACEVEDO
 Agency/Co.: PLC TRAFFIC CONSULTING
 Date performed: 12/9/2009
 Analysis time period: CONDICION FUTURA PM
 Freeway/Dir of Travel: RAMPA CONEXIÓN PR-834 A PR-20
 Junction:
 Jurisdiction:
 Analysis Year: AÑO 2012
 Description: LAIF

Freeway Data

Type of analysis	Diverge		
Number of lanes in freeway	2		
Free-flow speed on freeway	55.0	mph	
Volume on freeway	1128	vph	

Off Ramp Data

Side of freeway	Left		
Number of lanes in ramp	1		
Free-Flow speed on ramp	35.0	mph	
Volume on ramp	750	vph	
Length of first accel/decel lane	500	ft	
Length of second accel/decel lane		ft	

Adjacent Ramp Data (if one exists)

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

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1128	750		vph
Peak-hour factor, PHF	1.00	1.00		
Peak 15-min volume, v15	282	188		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1128	750	pcph

Estimation of V12 Diverge Areas

$$L = \text{EQ} \quad (\text{Equation 25-8 or 25-9})$$

$$P = 1.000 \quad \text{Using Equation 0}$$

$$v_{12} = v_R + (v_F - v_R) P = 1128 \quad \text{pc/h}$$

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1128	4500	No
$v_{FO} = v_F - v_R$	378	4500	No
v_R	750	2000	No
$v_{3 \text{ or } av34}$	0 pc/h	(Equation 25-15 or 25-16)	
Is $v_{3 \text{ or } av34} > 2700$ pc/h?		No	
Is $v_{3 \text{ or } av34} > 1.5 v_{12} / 2$		No	
If yes, $v_{12A} = 1128$		(Equation 25-18)	

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1128	4400	No

Level of Service Determination (if not F)

$$\text{Density, } D = 4.252 + 0.0086 v_R - 0.009 L_D = 9.5 \quad \text{pc/mi/ln}$$

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

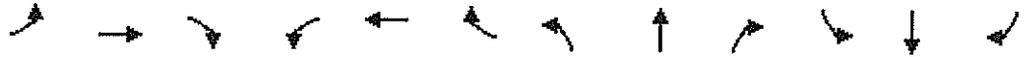
Speed Estimation

Intermediate speed variable,	$D = 0.495$	
Space mean speed in ramp influence area,	$S = 48.6$	mph
Space mean speed in outer lanes,	$S = \text{N/A}$	mph
Space mean speed for all vehicles,	$S = 48.6$	mph

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
Futuro AM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	2182	0	0	1275	53	253	15	383	111	0	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850		0.919	
Flt Protected	0.950							0.955			0.980	
Satd. Flow (prot)	1770	5085	0	0	5055	0	0	1779	1583	0	1678	0
Flt Permitted	0.950							0.535			0.709	
Satd. Flow (perm)	1770	5085	0	0	5055	0	0	997	1583	0	1214	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6				3		84	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		109.4			116.4			101.8			78.5	
Travel Time (s)		7.9			8.4			7.3			5.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	114	2182	0	0	1275	53	253	15	383	111	0	166
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	2182	0	0	1328	0	0	268	383	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot						Perm		Perm	Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases							2		2	6		6
Detector Phase	7	4			8		2	2	2	6	6	

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
 Futuro AM 2022

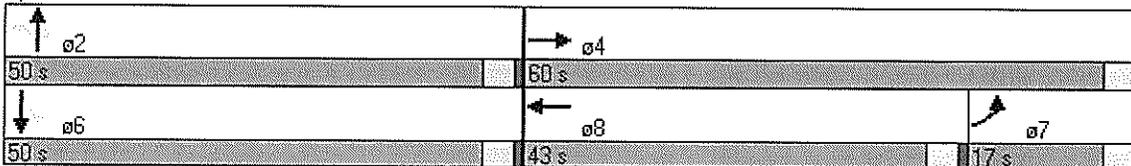


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5			20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	17.0	60.0	0.0	0.0	43.0	0.0	50.0	50.0	50.0	50.0	50.0	0.0
Total Split (%)	15.5%	54.5%	0.0%	0.0%	39.1%	0.0%	45.5%	45.5%	45.5%	45.5%	45.5%	0.0%
Maximum Green (s)	13.0	56.0			39.0		46.0	46.0	46.0	46.0	46.0	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None			None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	15.1	55.3			36.2			46.7	46.7		46.7	
Actuated g/C Ratio	0.14	0.50			0.33			0.42	0.42		0.42	
v/c Ratio	0.47	0.85			0.80			0.63	0.57		0.49	
Control Delay	32.9	12.7			37.3			33.4	28.1		19.3	
Queue Delay	0.0	0.1			0.0			0.0	0.0		0.0	
Total Delay	32.9	12.8			37.3			33.4	28.1		19.3	
LOS	C	B			D			C	C		B	
Approach Delay		13.8			37.3			30.3			19.3	
Approach LOS		B			D			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 4 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 23.4
 Intersection Capacity Utilization 92.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 14: PR-199 &



Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro AM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1839	92	105	1187	0	0	0	0	867	5	773
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frnt		0.993									0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	6363	0	1770	5085	0	0	0	0	3433	1585	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	6363	0	1770	5085	0	0	0	0	3433	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10									25	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		218.2			95.9			177.7			175.4	
Travel Time (s)		15.7			6.9			12.8			12.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1839	92	105	1187	0	0	0	0	867	5	773
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1931	0	105	1187	0	0	0	0	867	778	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (m)		10.0		2.0	10.0					2.0	10.0	
Trailing Detector (m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Position(m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Size(m)		0.6		2.0	0.6					2.0	0.6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Detector Phase		4		3	8					6		6

FIGURA 137

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro AM 2022



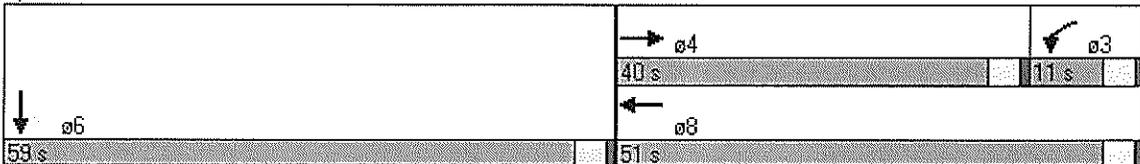
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5		8.0	20.5					20.5	20.5	
Total Split (s)	0.0	40.0	0.0	11.0	51.0	0.0	0.0	0.0	0.0	59.0	59.0	0.0
Total Split (%)	0.0%	36.4%	0.0%	10.0%	46.4%	0.0%	0.0%	0.0%	0.0%	53.6%	53.6%	0.0%
Maximum Green (s)		36.0		7.0	47.0					55.0	55.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		C-Max		None	None					Max	Max	
Act Effct Green (s)		36.0		7.0	47.0					55.0	55.0	
Actuated g/C Ratio		0.33		0.06	0.43					0.50	0.50	
v/c Ratio		0.92		0.93	0.55					0.50	0.97	
Control Delay		22.6		98.7	10.4					19.7	51.5	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		22.6		98.7	10.4					19.7	51.5	
LOS		C		F	B					B	D	
Approach Delay		22.6			17.6						34.7	
Approach LOS		C			B						C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 60 (55%), Referenced to phase 4:EBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 25.4
 Intersection Capacity Utilization 92.1%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 8: PR-199 & PR-20 SB Off



Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
Futuro AM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	2035	490	317	2066	48	0	0	0	96	77	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	70.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.997							0.946
Flt Protected	0.950			0.950								0.984
Satd. Flow (prot)	1770	4938	0	1770	5070	0	0	0	1863	0	1734	0
Flt Permitted	0.950			0.950								0.984
Satd. Flow (perm)	1770	4938	0	1770	5070	0	0	0	1863	0	1734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			5							26
Link Speed (k/h)		50			50			50				50
Link Distance (m)		168.3			293.5			91.8				114.9
Travel Time (s)		12.1			21.1			6.6				8.3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	169	2035	490	317	2066	48	0	0	0	96	77	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	2525	0	317	2114	0	0	0	0	0	288	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2				1	1		2
Detector Template	Left	Thru		Left	Thru				Right	Left		Thru
Leading Detector (m)	2.0	10.0		2.0	10.0				2.0	2.0		10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6				2.0	2.0		0.6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0		0.0
Detector 2 Position(m)		9.4			9.4							9.4
Detector 2 Size(m)		0.6			0.6							0.6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type	Prot			Prot					custom	Perm		
Protected Phases	7	4		3	8							6
Permitted Phases									2	6		6
Detector Phase	7	4		3	8				2	6		6

FIGURA 138

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
 Futuro AM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0				4.0	4.0	4.0	
Minimum Split (s)	20.0	60.0		5.0	60.0				20.5	15.0	15.0	
Total Split (s)	22.0	61.0	0.0	26.0	65.0	0.0	0.0	0.0	23.0	23.0	23.0	0.0
Total Split (%)	20.0%	55.5%	0.0%	23.6%	59.1%	0.0%	0.0%	0.0%	20.9%	20.9%	20.9%	0.0%
Maximum Green (s)	18.0	57.0		22.0	61.0				19.0	19.0	19.0	
Yellow Time (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0				1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	None		None	None				Max	Max	Max	
Act Effct Green (s)	15.5	57.0		21.6	63.2						29.4	
Actuated g/C Ratio	0.13	0.48		0.18	0.53						0.24	
v/c Ratio	0.74	1.06		0.99	0.79						0.65	
Control Delay	63.9	60.0		92.2	19.9						44.8	
Queue Delay	0.0	0.0		0.0	0.0						0.0	
Total Delay	63.9	60.0		92.2	19.9						44.8	
LOS	E	E		F	B						D	
Approach Delay		60.2			29.3						44.8	
Approach LOS		E			C						D	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 120
 Natural Cycle: 105
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 45.5
 Intersection Capacity Utilization 94.2%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 17: PR-199 & Angel Quiñones

⬅️ Ⓜ2	↙️ Ⓜ3	➡️ Ⓜ4
23 s	26 s	61 s
⬇️ Ⓜ5	↘️ Ⓜ6	⬅️ Ⓜ7
23 s	22 s	65 s

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
Futuro AM 2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Volume (vph)	2213	0	0	2254	197	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	5085	0	0	5085	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	5085	0	0	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	293.5			95.4	68.8	
Travel Time (s)	21.1			6.9	5.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2213	0	0	2254	197	274
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2213	0	0	2254	197	274
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	5.4			5.4	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	CI+Ex			CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	4.0			4.0	4.0	4.0
Minimum Split (s)	20.0			20.0	20.0	20.0

FIGURA 139

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
 Futuro AM 2022



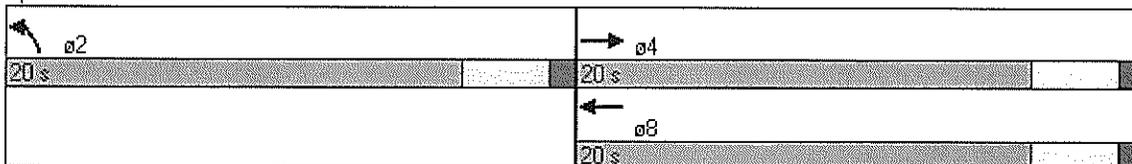
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	20.0	0.0	0.0	20.0	20.0	20.0
Total Split (%)	50.0%	0.0%	0.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0			16.0	16.0	16.0
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	None			None	C-Min	C-Min
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	20.0			20.0	12.0	12.0
Actuated g/C Ratio	0.50			0.50	0.30	0.30
v/c Ratio	0.87			0.89	0.37	0.58
Control Delay	17.9			18.8	12.0	16.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	17.9			18.8	12.0	16.2
LOS	B			B	B	B
Approach Delay	17.9			18.8	14.4	
Approach LOS	B			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 18.0
 Intersection Capacity Utilization 66.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 21: PR-199 & PR-1 NB Off



Intersección Carretera PR-199 & PR-169
Futuro AM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1524	191	155	1375	187	199	270	332	280	161	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		50.0	70.0		40.0	0.0		45.0	0.0		0.0
Storage Lanes	1		1	1		1	0		2	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.95	0.95	0.95
Frt			0.850			0.850			0.850		0.955	
Flt Protected	0.950			0.950				0.964			0.978	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	4902	1583	0	3306	0
Flt Permitted	0.950			0.950				0.688			0.524	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	3499	1583	0	1771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128			105			292		73	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			218.2			160.3			87.7	
Travel Time (s)		14.5			15.7			11.5			6.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.25	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	240	1524	191	155	1375	187	796	270	332	280	161	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	1524	191	155	1375	187	0	1066	332	0	629	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.4			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex							
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	

Intersección Carretera PR-199 & PR-169
Futuro AM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.5	20.5	8.0	20.5	20.5	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	23.0	44.0	44.0	17.0	38.0	38.0	49.0	49.0	49.0	49.0	49.0	0.0
Total Split (%)	20.9%	40.0%	40.0%	15.5%	34.5%	34.5%	44.5%	44.5%	44.5%	44.5%	44.5%	0.0%
Maximum Green (s)	19.0	40.0	40.0	13.0	34.0	34.0	45.0	45.0	45.0	45.0	45.0	45.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	17.7	39.2	39.2	12.5	33.9	33.9		46.4	46.4			46.4
Actuated g/C Ratio	0.16	0.36	0.36	0.11	0.31	0.31		0.42	0.42			0.42
v/c Ratio	0.84	0.84	0.30	0.78	0.88	0.33		3.16dl	0.40			1.52dl
Control Delay	69.8	37.6	10.1	57.4	32.8	8.5		30.3	5.4			33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	69.8	37.6	10.1	57.4	32.8	8.5		30.3	5.4			33.8
LOS	E	D	B	E	C	A		C	A			C
Approach Delay		38.9			32.3			24.4				33.8
Approach LOS		D			C			C				C

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 32.8
 Intersection Capacity Utilization 82.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 5: PR-199 & PR-169

ø2 49 s	ø4 44 s	ø3 17 s
ø6 49 s	ø7 23 s	ø8 38 s

Intersección Carretera PR-169 & PR-20
Futuro AM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	202	232	149	195	207	131	42	929	268	392	1417	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		30.0	30.0		30.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	7.5		7.5	7.5		15.0	7.5		15.0	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95
Flt		0.941				0.850		0.968			0.995	
Flt Protected	0.950			0.950				0.998		0.950		
Satd. Flow (prot)	1770	1753	0	1770	1863	1583	0	3875	0	2006	3991	0
Flt Permitted	0.516			0.247				0.828		0.167		
Satd. Flow (perm)	961	1753	0	460	1863	1583	0	3215	0	353	3991	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36				131		76			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		181.4			181.6			163.2			502.7	
Travel Time (s)		13.1			13.1			11.8			36.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	202	232	149	195	207	131	42	929	268	392	1417	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	381	0	195	207	131	0	1239	0	392	1468	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		

Intersección Carretera PR-169 & PR-20
Futuro AM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	29.0	61.0	61.0	0.0	61.0	61.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	32.2%	67.8%	67.8%	0.0%	67.8%	67.8%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	25.0	25.0		25.0	25.0	25.0		57.0		57.0	57.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28		0.63		0.63	0.63	
v/c Ratio	0.76	0.74		1.52	0.40	0.25		0.60		1.75	0.58	
Control Delay	49.8	37.0		299.3	29.2	6.0		10.6		375.4	10.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	49.8	37.0		299.3	29.2	6.0		10.6		375.4	10.6	
LOS	D	D		F	C	A		B		F	B	
Approach Delay		41.4			122.3			10.6			87.5	
Approach LOS		D			F			B			F	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.75
 Intersection Signal Delay: 62.9
 Intersection Capacity Utilization 121.7%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 3: Desde PR-20 & PR-169

ø2	ø4
61 s	29 s
ø6	ø8
61 s	29 s

Intersección Carretera PR-1 & Camino Parcelas Canejas
Futuro AM 2022

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↖		↑↑	↗		↘↙
Volume (vph)	66	99	2622	139	43	899
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		20.0	0.0	
Storage Lanes	1	0		1	0	
Taper Length (m)	7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95
Fr't	0.919			0.850		
Flt Protected	0.980					0.998
Satd. Flow (prot)	1678	0	3539	1583	0	3532
Flt Permitted	0.980					0.655
Satd. Flow (perm)	1678	0	3539	1583	0	2318
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	68			37		
Link Speed (k/h)	50		50			50
Link Distance (m)	151.1		103.0			83.1
Travel Time (s)	10.9		7.4			6.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	66	99	2622	139	43	899
Shared Lane Traffic (%)						
Lane Group Flow (vph)	165	0	2622	139	0	942
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Minimum Split (s)	15.0		20.0	20.0	8.0	20.0
Total Split (s)	15.0	0.0	60.0	60.0	15.0	75.0
Total Split (%)	16.7%	0.0%	66.7%	66.7%	16.7%	83.3%
Maximum Green (s)	11.0		56.0	56.0	11.0	71.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Act Effct Green (s)	11.0		56.0	56.0		71.0
Actuated g/C Ratio	0.12		0.62	0.62		0.79
v/c Ratio	0.62		1.19	0.14		0.59
Control Delay	33.4		110.7	5.5		4.4
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	33.4		110.7	5.5		4.4
LOS	C		F	A		A

Intersección Carretera PR-1 & Camino Parcelas Canejas Futuro AM 2022



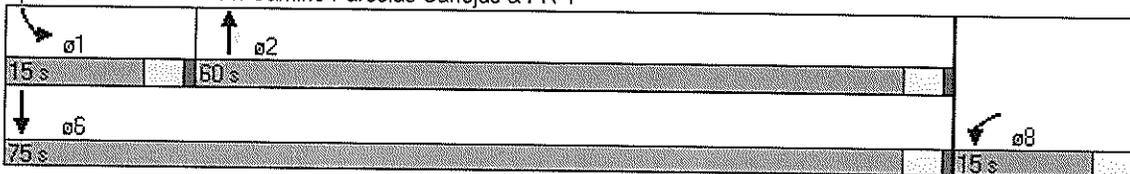
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	33.4		105.4			4.4
Approach LOS	C		F			A

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 100
 Control Type: Pre-timed
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 77.7
 Intersection Capacity Utilization 88.9%
 Analysis Period (min) 15

Intersection LOS: E
 ICU Level of Service E

Splits and Phases: 11: Camino Parcelas Canejas & PR-1



Intersección Carretera PR-1, PR-173 & PR-8834
Futuro AM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	1836	77	298	3402	38	278	32	50	194	14	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		75.0	50.0		80.0	0.0		0.0	0.0		0.0
Storage Lanes	2		2	2		2	2		0	0		1
Taper Length (m)	50.0		50.0	50.0		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.95	0.95	0.95	1.00
Frt			0.850			0.850		0.909				0.850
Flt Protected	0.950			0.950			0.950				0.955	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3217	0	0	3380	1583
Flt Permitted	0.950			0.950			0.403				0.703	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1456	3217	0	0	2488	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			22		50				136
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		217.2			239.2			222.4			62.4	
Travel Time (s)		15.6			17.2			16.0			4.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	102	1836	77	298	3402	38	278	32	50	194	14	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	1836	77	298	3402	38	278	82	0	0	208	316
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot		Perm	Prot		Perm	pm+pt			Perm		Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4			8	2			6		6
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0		20.0	20.0	20.0
Total Split (s)	18.0	99.0	99.0	19.0	100.0	100.0	8.0	32.0	0.0	24.0	24.0	24.0
Total Split (%)	12.0%	66.0%	66.0%	12.7%	66.7%	66.7%	5.3%	21.3%	0.0%	16.0%	16.0%	16.0%
Maximum Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	4.0	28.0		20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		5.0	5.0		5.0	5.0		5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0		0	0	0
Act Effct Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	28.0	28.0			20.0	20.0
Actuated g/C Ratio	0.09	0.63	0.63	0.10	0.64	0.64	0.19	0.19			0.13	0.13
v/c Ratio	0.32	0.57	0.07	0.87	1.05	0.04	0.86	0.13			1.11dl	0.96
Control Delay	66.5	16.6	2.2	90.8	56.4	5.4	81.1	23.3			70.6	76.6

Intersección Carretera PR-1, PR-173 & PR-8834
 Futuro AM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	66.5	16.6	2.2	90.8	56.4	5.4	81.1	23.3			70.6	76.6
LOS	E	B	A	F	E	A	F	C			E	E
Approach Delay		18.6			58.7			67.9			74.2	
Approach LOS		B			E			E			E	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 140
 Control Type: Pretimed
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 48.2
 Intersection Capacity Utilization 103.2%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service G

dI Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 19: PR-1 & PR-8834

ø2	ø3	ø4
32 s	19 s	99 s
ø5	ø7	ø8
8 s	24 s	100 s

Intersección Carretera PR-834 & Desvio PR-834
Futuro AM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1232	49	0	175	285	112	0	1233	0	300	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8
Storage Length (m)	20.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	1		1	0		0
Taper Length (m)	15.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.907				0.850		0.998	
Flt Protected							0.950	0.950				
Satd. Flow (prot)	0	5085	1583	0	3210	0	1681	1681	1583	0	2107	0
Flt Permitted		0.938					0.538	0.538				
Satd. Flow (perm)	0	4770	1583	0	3210	0	952	952	1583	0	2107	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			35		274				95		1	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.3			227.3			124.0			64.5	
Travel Time (s)		17.5			16.4			8.9			4.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	1232	49	0	175	285	112	0	1233	0	300	5
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	1237	49	0	460	0	56	56	1233	0	305	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2		1	2	1	1	2	
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0		0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm				Perm		Perm	Prot		
Protected Phases		4			8			2		1		6
Permitted Phases	4		4				2		2			

Intersección Carretera PR-834 & Desvio PR-834
Futuro AM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4		8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0		20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	47.0	47.0	47.0	0.0	47.0	0.0	95.0	95.0	95.0	8.0	103.0	0.0
Total Split (%)	31.3%	31.3%	31.3%	0.0%	31.3%	0.0%	63.3%	63.3%	63.3%	5.3%	68.7%	0.0%
Maximum Green (s)	43.0	43.0	43.0		43.0		91.0	91.0	91.0	4.0	99.0	
Yellow Time (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None		None		C-Min	C-Min	C-Min	None	C-Min	
Walk Time (s)	5.0	5.0	5.0		5.0		5.0	5.0	5.0		5.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0	0		0	
Act Effct Green (s)		42.4	42.4		42.4		99.6	99.6	99.6		99.6	
Actuated g/C Ratio		0.28	0.28		0.28		0.66	0.66	0.66		0.66	
v/c Ratio		0.92	0.10		0.42		0.09	0.09	1.14		0.22	
Control Delay		63.4	17.1		18.0		9.6	9.6	98.0		10.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay		63.4	17.1		18.0		9.6	9.6	98.0		10.4	
LOS		E	B		B		A	A	F		B	
Approach Delay		61.6			18.0			90.7			10.4	
Approach LOS		E			B			F			B	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.14
 Intersection Signal Delay: 62.6
 Intersection Capacity Utilization 126.3%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 6: PR-834 &

		ø2		ø4
8 s	95 s		47 s	
	ø6			ø8
103 s			47 s	

Intersección Carreteras PR-834 & Desvio PR-835
Futuro AM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑		↔↔		↗		↑↑			↑↑	↗
Volume (vph)	0	31	0	316	0	16	0	2424	0	0	347	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12
Storage Length (ft)	0		0	0		100	0		0	0		150
Storage Lanes	0		0	2		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		135
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt Protected				0.950								
Satd. Flow (prot)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Flt Permitted				0.950								
Satd. Flow (perm)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						16						313
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		462			718			452			402	
Travel Time (s)		10.5			16.3			10.3			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	31	0	316	0	16	0	2424	0	0	347	313
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	31	0	316	0	16	0	2424	0	0	347	313
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			13			5	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1		1		2			2	1
Detector Template		Thru		Left		Right		Thru			Thru	Right
Leading Detector (ft)		100		20		20		100			100	20
Trailing Detector (ft)		0		0		0		0			0	0
Detector 1 Position(ft)		0		0		0		0			0	0
Detector 1 Size(ft)		6		20		20		6			6	20
Detector 1 Type		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Queue (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Delay (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type				Prot		custom						Perm
Protected Phases		8!		4!				2			6	
Permitted Phases						4						6

Intersección Carreteras PR-834 & Desvio PR-835
Futuro AM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase		8		4		4		2			6	6
Switch Phase												
Minimum Initial (s)		4.0		4.0		4.0		4.0			4.0	4.0
Minimum Split (s)		20.0		20.0		20.0		20.0			20.0	20.0
Total Split (s)	0.0	20.0	0.0	20.0	0.0	20.0	0.0	90.0	0.0	0.0	90.0	90.0
Total Split (%)	0.0%	18.2%	0.0%	18.2%	0.0%	18.2%	0.0%	81.8%	0.0%	0.0%	81.8%	81.8%
Maximum Green (s)		16.0		16.0		16.0		86.0			86.0	86.0
Yellow Time (s)		3.0		3.0		3.0		3.0			3.0	3.0
All-Red Time (s)		1.0		1.0		1.0		1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0		3.0		3.0			3.0	3.0
Recall Mode		None		None		None		C-Min			C-Min	C-Min
Walk Time (s)		5.0		5.0		5.0		5.0			5.0	5.0
Flash Dont Walk (s)		11.0		11.0		11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0		0		0		0			0	0
Act Effct Green (s)		14.5		14.5		14.5		87.5			87.5	87.5
Actuated g/C Ratio		0.13		0.13		0.13		0.80			0.80	0.80
v/c Ratio		0.07		0.70		0.06		0.86			0.12	0.24
Control Delay		41.3		54.4		18.4		12.0			1.2	0.5
Queue Delay		0.0		0.0		0.0		0.0			0.0	0.0
Total Delay		41.3		54.4		18.4		12.0			1.2	0.5
LOS		D		D		B		B			A	A
Approach Delay		41.3						12.0			0.9	
Approach LOS		D						B			A	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NET and 6:SWT, Start of Green, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 14.0
 Intersection Capacity Utilization 89.4%
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 12: Carretera PR-834 &

 ø2	 ø4
90 s	20 s
 ø6	 ø8
90 s	20 s

Intersección Carretera PR-834 & PR-835
Futuro AM 2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	107	333	87	374	816	41
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	107	333	87	374	816	41
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1926	230			87	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1926	230			87	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	57			46	
cM capacity (veh/h)	27	772			1507	

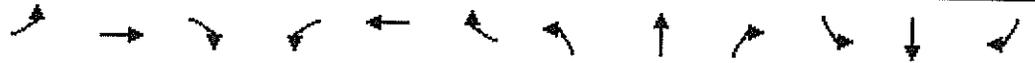
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	107	333	58	403	816	20	20
Volume Left	107	0	0	0	816	0	0
Volume Right	0	333	0	374	0	0	0
cSH	27	772	1700	1700	1507	1700	1700
Volume to Capacity	3.99	0.43	0.03	0.24	0.54	0.01	0.01
Queue Length 95th (m)	Err	17.5	0.0	0.0	27.3	0.0	0.0
Control Delay (s)	Err	13.2	0.0	0.0	10.2	0.0	0.0
Lane LOS	F	B			B		
Approach Delay (s)	2441.5		0.0		9.7		
Approach LOS	F						

Intersection Summary			
Average Delay		615.8	
Intersection Capacity Utilization		75.6%	ICU Level of Service
Analysis Period (min)		15	D

Intersección Carretera PR-834 & Camino Laberinto
Futuro AM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	36	0	23	5	63	6	2403	67	0	384	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	22.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	20.0		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frnt					0.907				0.850			
Flt Protected		0.994			0.988		0.950					
Satd. Flow (prot)	0	1852	0	0	1669	0	1770	3539	1583	0	3539	0
Flt Permitted		0.948			0.901		0.524					
Satd. Flow (perm)	0	1766	0	0	1522	0	976	3539	1583	0	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									67			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		133.6			268.6			227.3			235.0	
Travel Time (s)		9.6			19.3			16.4			16.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	36	0	23	5	63	6	2403	67	0	384	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	0	91	0	6	2403	67	0	384	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1		2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2			
Detector Phase	4	4		8	8		2	2	2		6	

Intersección Carretera PR-834 & Camino Laberinto
Futuro AM 2022



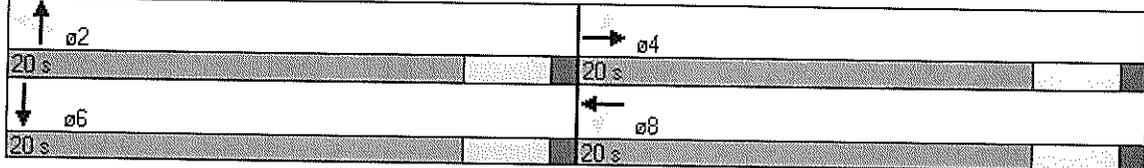
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0		20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0	0.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0	16.0		16.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min		C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		7.7			7.8		29.8	29.8	29.8		29.8	
Actuated g/C Ratio		0.19			0.20		0.74	0.74	0.74		0.74	
v/c Ratio		0.12			0.31		0.01	0.91	0.06		0.15	
Control Delay		13.0			15.8		4.2	20.3	1.8		3.5	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		13.0			15.8		4.2	20.3	1.8		3.5	
LOS		B			B		A	C	A		A	
Approach Delay		13.0			15.8			19.7			3.5	
Approach LOS		B			B			B			A	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 17.4
 Intersection Capacity Utilization 82.8%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 3: Camino Laberinto & PR-834



Intersección Carreteras PR-835 & Desvio PR-835
Futuro AM 2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	110	28	51	203	16	41
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	110	28	51	203	16	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	226	152			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	226	152			51	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	97			99	
cM capacity (veh/h)	755	894			1555	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	138	254	57			
Volume Left	110	0	16			
Volume Right	28	203	0			
cSH	779	1700	1555			
Volume to Capacity	0.18	0.15	0.01			
Queue Length 95th (ft)	16	0	1			
Control Delay (s)	10.6	0.0	2.1			
Lane LOS	B		A			
Approach Delay (s)	10.6	0.0	2.1			
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization		30.7%		ICU Level of Service		A
Analysis Period (min)			15			

FIGURA 148

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro AM 2022

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	129	5	6	2733	654	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0	164			230
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	130			135
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Flt		0.850			0.954	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3376	0
Flt Permitted	0.950		0.291			
Satd. Flow (perm)	1770	1583	542	3539	3376	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5			205	
Link Speed (mph)	25			45	45	
Link Distance (ft)	643			2317	367	
Travel Time (s)	17.5			35.1	5.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	129	5	6	2733	654	285
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	5	6	2733	939	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			16	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Perm			
Protected Phases	4			2	6	
Permitted Phases		4	2			

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro AM 2022

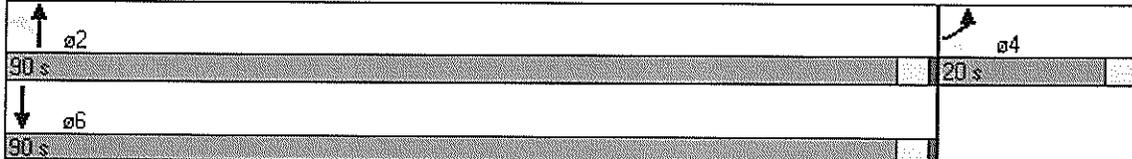


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	90.0	90.0	90.0	0.0
Total Split (%)	18.2%	18.2%	81.8%	81.8%	81.8%	0.0%
Maximum Green (s)	16.0	16.0	86.0	86.0	86.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	12.8	12.8	89.2	89.2	89.2	
Actuated g/C Ratio	0.12	0.12	0.81	0.81	0.81	
v/c Ratio	0.63	0.03	0.01	0.95	0.34	
Control Delay	59.4	24.8	2.7	13.4	1.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	59.4	24.8	2.7	13.4	1.9	
LOS	E	C	A	B	A	
Approach Delay	58.1			13.3	1.9	
Approach LOS	E			B	A	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 20 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 12.1
 Intersection Capacity Utilization 89.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 14: Entrada a LAIF & Carretera PR-834



Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro AM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	 			 	 			 		 	 	
Volume (vph)	705	0	1241	151	8	181	0	998	207	425	565	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	14	16	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		150	197		60	0		100	164		0
Storage Lanes	2		1	1		2	0		1	1		0
Taper Length (ft)	25		100	50		55	25		25	25		25
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frnt			0.850			0.850			0.850			
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	3891	0	1794	3433	3539	1583	0	3539	1583	3433	3539	0
Flt Permitted	0.950			0.950						0.121		
Satd. Flow (perm)	3891	0	1794	3433	3539	1583	0	3539	1583	437	3539	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			499			132			86			
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1920			218			499			341	
Travel Time (s)		29.1			5.9			9.7			6.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	705	0	1241	151	8	181	0	998	207	425	565	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	705	0	1241	151	8	181	0	998	207	425	565	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		32			32			0			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.92	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2	1		2	1	1	2	
Detector Template	Left		Right	Left	Thru	Right		Thru	Right	Left	Thru	
Leading Detector (ft)	20		20	20	100	20		100	20	20	100	
Trailing Detector (ft)	0		0	0	0	0		0	0	0	0	
Detector 1 Position(ft)	0		0	0	0	0		0	0	0	0	
Detector 1 Size(ft)	20		20	20	6	20		6	20	20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot	custom		Prot		Perm			Perm	pm+pt		
Protected Phases	5			1	6			4		3	8	
Permitted Phases			5			6			4	8		

FIGURA 150

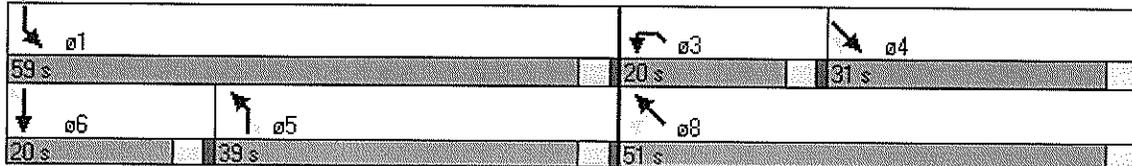
Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro AM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	5		5	1	6	6		4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0		8.0	8.0	20.0	20.0		20.0	20.0	20.0	20.0	
Total Split (s)	39.0	0.0	39.0	59.0	20.0	20.0	0.0	31.0	31.0	20.0	51.0	0.0
Total Split (%)	35.5%	0.0%	35.5%	53.6%	18.2%	18.2%	0.0%	28.2%	28.2%	18.2%	46.4%	0.0%
Maximum Green (s)	35.0		35.0	55.0	16.0	16.0		27.0	27.0	16.0	47.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lag		Lead	Lead		Lag	Lag	Lead		
Lead-Lag Optimize?	Yes		Yes		Yes	Yes		Yes	Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	Min	Min		C-Max	C-Max	None	None	
Act Effct Green (s)	41.3		41.3	55.0	9.7	9.7		29.0	29.0	47.0	47.0	
Actuated g/C Ratio	0.38		0.38	0.50	0.09	0.09		0.26	0.26	0.43	0.43	
v/c Ratio	0.48		1.26	0.09	0.03	0.70		1.07	0.43	0.75	0.37	
Control Delay	22.1		137.5	14.6	42.5	29.2		90.0	23.0	29.6	21.7	
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	22.1		137.5	14.6	42.5	29.2		90.0	23.0	29.6	21.7	
LOS	C		F	B	D	C		F	C	C	C	
Approach Delay					23.0			78.5			25.1	
Approach LOS					C			E			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 40 (36%), Referenced to phase 4:SET, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.26
 Intersection Signal Delay: 70.0
 Intersection Capacity Utilization 118.7%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 3: Carretera PR-834 & Carretera PR-169



Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
Futuro AM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	250	109	191	0	285	705	95	193	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	1.00	1.00
Frt					0.904				0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	2006	1908	0	0	4011	3158	2006	2111	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	2006	1908	0	0	4011	3158	2006	2111	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					86				705			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		722			387			249			260	
Travel Time (s)		16.4			8.8			5.7			5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	250	109	191	0	285	705	95	193	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	250	300	0	0	285	705	95	193	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			10			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2	1	1	2	
Detector Template				Left	Thru			Thru	Right	Left	Thru	
Leading Detector (ft)				20	100			100	20	20	100	
Trailing Detector (ft)				0	0			0	0	0	0	
Detector 1 Position(ft)				0	0			0	0	0	0	
Detector 1 Size(ft)				20	6			6	20	20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm					Perm	Prot		
Protected Phases					6			4		3	8	
Permitted Phases				6					4			
Detector Phase				6	6			4	4	3	8	
Switch Phase												
Minimum Initial (s)				4.0	4.0			4.0	4.0	4.0	4.0	
Minimum Split (s)				20.0	20.0			20.0	20.0	8.0	20.0	

Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
 Futuro AM 2022

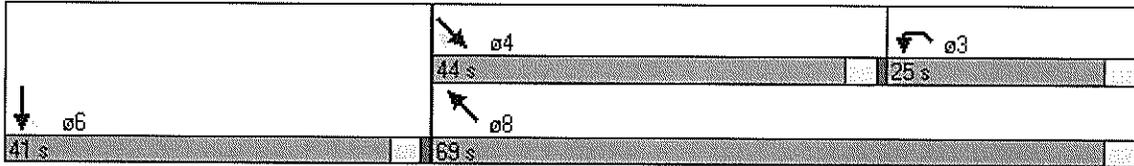
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	0.0	0.0	0.0	41.0	41.0	0.0	0.0	44.0	44.0	25.0	69.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	37.3%	37.3%	0.0%	0.0%	40.0%	40.0%	22.7%	62.7%	0.0%
Maximum Green (s)				37.0	37.0			40.0	40.0	21.0	65.0	
Yellow Time (s)				3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0			1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode				Max	Max			C-Max	C-Max	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0		5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)				0	0			0	0		0	
Act Effct Green (s)				47.5	47.5			40.0	40.0	10.5	54.5	
Actuated g/C Ratio				0.43	0.43			0.36	0.36	0.10	0.50	
v/c Ratio				0.29	0.34			0.20	0.44	0.49	0.18	
Control Delay				22.1	16.4			21.1	1.4	34.6	11.2	
Queue Delay				0.1	0.0			0.0	0.0	0.0	0.3	
Total Delay				22.2	16.4			21.1	1.4	34.6	11.5	
LOS				C	B			C	A	C	B	
Approach Delay					19.0			7.1			19.1	
Approach LOS					B			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 60 (55%), Referenced to phase 4:SET, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 12.6
 Intersection Capacity Utilization 74.2%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 1: Carretera PR-169 &



Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
Futuro AM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	411	0	0	0	0	0	813	129	0	0	99	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frts											0.927	
Flt Protected	0.950						0.950	0.965				
Satd. Flow (prot)	2006	2111	0	0	0	0	1905	1935	0	0	3718	0
Flt Permitted	0.950						0.000	0.000				
Satd. Flow (perm)	2006	2111	0	0	0	0	0	0	0	0	3718	0
Right Turn on Red			Yes				Yes		Yes			Yes
Satd. Flow (RTOR)											95	
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		633			504			260			589	
Travel Time (s)		14.4			11.5			5.9			11.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	411	0	0	0	0	0	813	129	0	0	99	95
Shared Lane Traffic (%)							43%					
Lane Group Flow (vph)	411	0	0	0	0	0	463	479	0	0	194	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			16			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2					1	2			2	
Detector Template	Left	Thru					Left	Thru			Thru	
Leading Detector (ft)	20	100					20	100			100	
Trailing Detector (ft)	0	0					0	0			0	
Detector 1 Position(ft)	0	0					0	0			0	
Detector 1 Size(ft)	20	6					20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0					0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0					0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0					0.0	0.0			0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm						pm+pt					
Protected Phases		2					7	4			10	
Permitted Phases	2						4					
Detector Phase	2	2					7	4			10	
Switch Phase												
Minimum Initial (s)	4.0	4.0					4.0	4.0			4.0	
Minimum Split (s)	20.0	20.0					8.0	20.0			20.0	

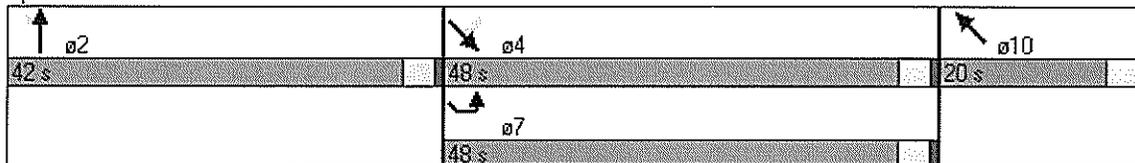
Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
Futuro AM 2022

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	42.0	42.0	0.0	0.0	0.0	0.0	48.0	48.0	0.0	0.0	20.0	0.0
Total Split (%)	38.2%	38.2%	0.0%	0.0%	0.0%	0.0%	43.6%	43.6%	0.0%	0.0%	18.2%	0.0%
Maximum Green (s)	38.0	38.0					44.0	44.0			16.0	
Yellow Time (s)	3.0	3.0					3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0					1.0	1.0			1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Recall Mode	None	None					None	C-Max			None	
Walk Time (s)	5.0	5.0						5.0			5.0	
Flash Dont Walk (s)	11.0	11.0						11.0			11.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)	27.9						61.7	61.7			8.4	
Actuated g/C Ratio	0.25						0.56	0.56			0.08	
v/c Ratio	0.81						0.43	0.44			0.52	
Control Delay	50.7						13.1	13.2			29.6	
Queue Delay	0.0						2.4	2.5			0.0	
Total Delay	50.7						15.5	15.7			29.6	
LOS	D						B	B			C	
Approach Delay								15.6			29.6	
Approach LOS								B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 30 (27%), Referenced to phase 4:SETL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 26.7
 Intersection Capacity Utilization 74.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 22: Carretera PR-8834 &



Intersección Entrada Proyecto LAIF & Desvio PR-835
Futuro AM 2022



Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations						
Volume (veh/h)	0	210	103	0	76	267
Sign Control	Free		Stop		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	210	103	0	76	267
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		210	0	52	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		210	0	52	0
tC, single (s)	4.1		6.5	6.2	7.1	6.5
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	100		85	100	91	70
cM capacity (veh/h)	1623		687	1085	839	896
Direction, Lane #	EB 1	EB 2	SB 1	SB 2	NW 1	NW 2
Volume Total	0	210	103	0	76	267
Volume Left	0	0	0	0	76	0
Volume Right	0	210	0	0	0	0
cSH	1700	1700	687	1700	839	896
Volume to Capacity	0.00	0.12	0.15	0.00	0.09	0.30
Queue Length 95th (ft)	0	0	13	0	7	31
Control Delay (s)	0.0	0.0	11.2	0.0	9.7	10.7
Lane LOS			B	A	A	B
Approach Delay (s)	0.0		11.2		10.5	
Approach LOS			B		B	
Intersection Summary						
Average Delay			7.2			
Intersection Capacity Utilization			19.9%		ICU Level of Service	A
Analysis Period (min)			15			

Intersección Entrada Residencial (LAIF) & Desvio PR-835
Futuro AM 2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗	→	↙	↘
Volume (veh/h)	0	153	57	19	57	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	153	57	19	57	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	57				210	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	57				210	57
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1547				778	1009

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	0	153	57	19	57	0
Volume Left	0	0	0	0	57	0
Volume Right	0	0	0	19	0	0
cSH	1700	1700	1700	1700	778	1700
Volume to Capacity	0.00	0.09	0.03	0.01	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	6	0
Control Delay (s)	0.0	0.0	0.0	0.0	10.0	0.0
Lane LOS					A	A
Approach Delay (s)	0.0		0.0		10.0	
Approach LOS					A	

Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization		18.1%		ICU Level of Service		A
Analysis Period (min)			15			

FIGURA 154

Phone:
E-mail:

Fax:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICION FUTURA AM
 Highway: CARRETERA PR-1 HACIA EL NORTE - ANÁLISIS #1
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2022
 Project ID: LAIF

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type					
Free-flow speed:		Measured		Measured	
FFS or BFFS		55.0	mph	55.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		55.0	mph	55.0	mph

VOLUME

	Direction	1		2	
Volume, V		3470	vph	1432	vph
Peak-hour factor, PHF		1.00		1.00	
Peak 15-minute volume, v15		868		358	
Trucks and buses		1	%	1	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fHV		0.995		0.995	
Flow rate, vp		1743	pcphpl	719	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1743	pcphpl	719	pcphpl
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		53.5	mph	55.0	mph
Level of service, LOS		D		B	
Density, D		32.6	pc/mi/ln	13.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone:
E-mail:

Fax:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICION FUTURA AM
 Highway: CARRETERA PR-1 HACIA EL SUR - ANÁLISIS #2
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2022
 Project ID: LAIF

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type					
Free-flow speed:		Measured		Measured	
FFS or BFFS		55.0	mph	55.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		55.0	mph	55.0	mph

VOLUME

	Direction	1		2	
Volume, V		3470	vph	1432	vph
Peak-hour factor, PHF		1.00		1.00	
Peak 15-minute volume, v15		868		358	
Trucks and buses		1	%	1	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fp		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fhv		0.995		0.995	
Flow rate, vp		1743	pcphpl	719	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1743	pcphp1	719	pcphp1
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		53.5	mph	55.0	mph
Level of service, LOS		D		B	
Density, D		32.6	pc/mi/ln	13.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: _____ Fax: _____
 E-mail: _____

Diverge Analysis

Analyst: TILYSAY HERNÁNDEZ ACEVEDO
 Agency/Co.: PLC TRAFFIC CONSULTING
 Date performed: 12/9/2009
 Analysis time period: CONDICION FUTURA AM
 Freeway/Dir of Travel: RAMPA CONEXIÓN PR-834 A PR-20
 Junction:
 Jurisdiction:
 Analysis Year: AÑO 2022
 Description: LAIF

Freeway Data

Type of analysis	Diverge		
Number of lanes in freeway	2		
Free-flow speed on freeway	55.0	mph	
Volume on freeway	1946	vph	

Off Ramp Data

Side of freeway	Left		
Number of lanes in ramp	1		
Free-Flow speed on ramp	35.0	mph	
Volume on ramp	586	vph	
Length of first accel/decel lane	500	ft	
Length of second accel/decel lane		ft	

Adjacent Ramp Data (if one exists)

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

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1946	586		vph
Peak-hour factor, PHF	1.00	1.00		
Peak 15-min volume, v15	487	147		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

FIGURA 157

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1946	586	pcph

Estimation of V12 Diverge Areas

$$L = \text{(Equation 25-8 or 25-9)}$$

$$EQ$$

$$P = 1.000 \text{ Using Equation 0}$$

$$FD$$

$$v_{12} = v_R + (v_F - v_R) P = 1946 \text{ pc/h}$$

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1946	4500	No
$v_{FO} = v_F - v_R$	1360	4500	No
v_R	586	2000	No
$v_{3 \text{ or } av34}$	0 pc/h	(Equation 25-15 or 25-16)	
Is $v_{3 \text{ or } av34} > 2700 \text{ pc/h?}$		No	
Is $v_{3 \text{ or } av34} > 1.5 v_{12} / 2$		No	
If yes, $v_{12A} = 1946$		(Equation 25-18)	

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1946	4400	No

Level of Service Determination (if not F)

$$\text{Density, } D = 4.252 + 0.0086 v_R - 0.009 \frac{L}{D} = 16.5 \text{ pc/mi/ln}$$

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

Speed Estimation

Intermediate speed variable,	$D = 0.481$	
Space mean speed in ramp influence area,	$S_R = 48.8$	mph
Space mean speed in outer lanes,	$S_0 = \text{N/A}$	mph
Space mean speed for all vehicles,	$S = 48.8$	mph

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	2335	0	0	2375	120	144	10	91	111	0	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993				0.850		0.919	
Flt Protected	0.950							0.955			0.980	
Satd. Flow (prot)	1770	5085	0	0	5050	0	0	1779	1583	0	1678	0
Flt Permitted	0.950							0.489			0.700	
Satd. Flow (perm)	1770	5085	0	0	5050	0	0	911	1583	0	1198	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11				10		64	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		109.4			116.4			101.8			78.5	
Travel Time (s)		7.9			8.4			7.3			5.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	2335	0	0	2375	120	144	10	91	111	0	166
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	2335	0	0	2495	0	0	154	91	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot						Perm		Perm	Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4			8		2	2	2	6	6	

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Este)
Futuro PM 2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.5			20.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	17.0	79.5	0.0	0.0	62.5	0.0	30.5	30.5	30.5	30.5	30.5	0.0
Total Split (%)	15.5%	72.3%	0.0%	0.0%	56.8%	0.0%	27.7%	27.7%	27.7%	27.7%	27.7%	0.0%
Maximum Green (s)	13.0	75.5			58.5		26.5	26.5	26.5	26.5	26.5	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None			None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	12.3	74.8			58.5			27.2	27.2		27.2	
Actuated g/C Ratio	0.11	0.68			0.53			0.25	0.25		0.25	
v/c Ratio	0.76	0.68			0.93			0.68	0.23		0.81	
Control Delay	49.9	5.0			31.2			55.1	31.6		49.0	
Queue Delay	0.0	0.3			0.0			0.0	0.0		0.0	
Total Delay	49.9	5.3			31.2			55.1	31.6		49.0	
LOS	D	A			C			E	C		D	
Approach Delay		8.0			31.2			46.4			49.0	
Approach LOS		A			C			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 22.3
 Intersection Capacity Utilization 89.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 14: PR-199 &

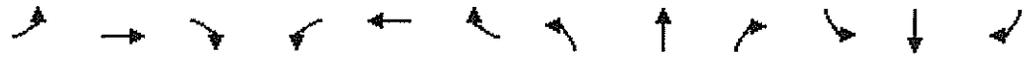
↑ ø2	→ ø4	
30.5 s	79.5 s	
↓ ø6	← ø8	↗ ø7
30.5 s	62.5 s	17 s

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1341	253	314	1589	0	0	0	0	1628	5	1084
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frnt		0.976									0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	6254	0	1770	5085	0	0	0	0	3433	1585	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	6254	0	1770	5085	0	0	0	0	3433	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39									3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		218.2			95.9			177.7			175.4	
Travel Time (s)		15.7			6.9			12.8			12.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1341	253	314	1589	0	0	0	0	1628	5	1084
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1594	0	314	1589	0	0	0	0	1628	1089	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (m)		10.0		2.0	10.0					2.0	10.0	
Trailing Detector (m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Position(m)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Size(m)		0.6		2.0	0.6					2.0	0.6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex					CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		CI+Ex			CI+Ex						CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Detector Phase		4		3	8					6	6	

FIGURA 159

Intersección Carretera PR-199 & Rampa Carretera PR-20 (Oeste)
Futuro PM 2022

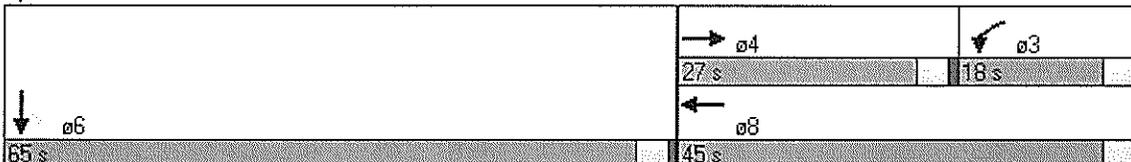


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5		8.0	20.5					20.5	20.5	
Total Split (s)	0.0	27.0	0.0	18.0	45.0	0.0	0.0	0.0	0.0	65.0	65.0	0.0
Total Split (%)	0.0%	24.5%	0.0%	16.4%	40.9%	0.0%	0.0%	0.0%	0.0%	59.1%	59.1%	0.0%
Maximum Green (s)		23.0		14.0	41.0					61.0	61.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		C-Max		None	None					Max	Max	
Act Effct Green (s)		23.0		14.0	41.0					61.0	61.0	
Actuated g/C Ratio		0.21		0.13	0.37					0.55	0.55	
v/c Ratio		1.19		1.40	0.84					0.86	1.24	
Control Delay		113.2		231.9	25.6					26.5	141.9	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		113.2		231.9	25.6					26.5	141.9	
LOS		F		F	C					C	F	
Approach Delay		113.2			59.7						72.7	
Approach LOS		F			E						E	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 63 (57%), Referenced to phase 4:EBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.40
 Intersection Signal Delay: 79.1
 Intersection Capacity Utilization 127.7%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 8: PR-199 & PR-20 SB Off



Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1807	601	404	1851	67	0	0	0	34	29	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	70.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.995						0.944	
Flt Protected	0.950			0.950							0.984	
Satd. Flow (prot)	1770	4897	0	1770	5060	0	0	0	1863	0	1730	0
Flt Permitted	0.950			0.950							0.984	
Satd. Flow (perm)	1770	4897	0	1770	5060	0	0	0	1863	0	1730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		111			8						27	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		168.3			293.5			91.8			114.9	
Travel Time (s)		12.1			21.1			6.6			8.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	88	1807	601	404	1851	67	0	0	0	34	29	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	2408	0	404	1918	0	0	0	0	0	107	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2				1	1	2	
Detector Template	Left	Thru		Left	Thru				Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0				2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6				2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot			Prot					custom	Perm		
Protected Phases	7	4		3	8						6	
Permitted Phases									2	6		
Detector Phase	7	4		3	8				2	6	6	

FIGURA 160

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Oeste)
Futuro PM 2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0				4.0	4.0	4.0	
Minimum Split (s)	20.0	60.0		5.0	60.0				20.5	15.0	15.0	
Total Split (s)	20.0	60.0	0.0	29.0	69.0	0.0	0.0	0.0	21.0	21.0	21.0	0.0
Total Split (%)	18.2%	54.5%	0.0%	26.4%	62.7%	0.0%	0.0%	0.0%	19.1%	19.1%	19.1%	0.0%
Maximum Green (s)	16.0	56.0		25.0	65.0				17.0	17.0	17.0	
Yellow Time (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0				1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	None		None	None				Max	Max	Max	
Act Effct Green (s)	11.4	56.0		25.0	71.8						27.0	
Actuated g/C Ratio	0.09	0.47		0.21	0.60						0.22	
v/c Ratio	0.53	1.03		1.09	0.63						0.26	
Control Delay	57.8	50.1		114.5	12.6						30.4	
Queue Delay	0.0	0.0		0.0	0.0						0.0	
Total Delay	57.8	50.1		114.5	12.6						30.4	
LOS	E	D		F	B						C	
Approach Delay		50.3			30.4						30.4	
Approach LOS		D			C						C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 120
 Natural Cycle: 105
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 40.5
 Intersection Capacity Utilization 86.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 17: PR-199 & Angel Quiñones

ø2	ø3	ø4
21 s	29 s	60 s
ø6	ø7	ø8
21 s	20 s	69 s

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
Futuro PM 2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Volume (vph)	2163	0	0	1885	202	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frts						0.850
Flt Protected					0.950	
Satd. Flow (prot)	5085	0	0	5085	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	5085	0	0	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	293.5			95.4	68.8	
Travel Time (s)	21.1			6.9	5.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2163	0	0	1885	202	235
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2163	0	0	1885	202	235
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	5.4			5.4	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	CI+Ex			CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	4.0			4.0	4.0	4.0
Minimum Split (s)	20.0			20.0	20.0	20.0

Intersección Carretera PR-199 & Rampa Carretera PR-1 (Este)
 Futuro PM 2022

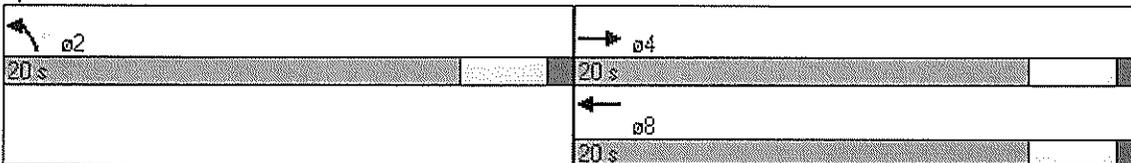


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	20.0	0.0	0.0	20.0	20.0	20.0
Total Split (%)	50.0%	0.0%	0.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0			16.0	16.0	16.0
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	None			None	C-Min	C-Min
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	20.8			20.8	11.2	11.2
Actuated g/C Ratio	0.52			0.52	0.28	0.28
v/c Ratio	0.82			0.71	0.41	0.53
Control Delay	14.6			11.7	13.2	15.9
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	14.6			11.7	13.2	15.9
LOS	B			B	B	B
Approach Delay	14.6			11.7	14.6	
Approach LOS	B			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 13.4
 Intersection Capacity Utilization 63.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 21: PR-199 & PR-1 NB Off



Intersección Carretera PR-199 & PR-169
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	1168	233	286	2139	346	268	348	241	188	272	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		50.0	70.0		40.0	0.0		45.0	0.0		0.0
Storage Lanes	1		1	1		1	0		2	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.95	0.95	0.95
Fr't			0.850			0.850			0.850		0.943	
Flt Protected	0.950			0.950				0.964			0.987	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	4902	1583	0	3294	0
Flt Permitted	0.950			0.950				0.705			0.517	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	3585	1583	0	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			149			167		140	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		201.1			218.2			160.3			87.7	
Travel Time (s)		14.5			15.7			11.5			6.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.25	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	139	1168	233	286	2139	346	1072	348	241	188	272	280
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	1168	233	286	2139	346	0	1420	241	0	740	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			5.4			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	

Intersección Carretera PR-199 & PR-169
Futuro PM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.5	20.5	8.0	20.5	20.5	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	12.0	36.0	36.0	26.0	50.0	50.0	48.0	48.0	48.0	48.0	48.0	0.0
Total Split (%)	10.9%	32.7%	32.7%	23.6%	45.5%	45.5%	43.6%	43.6%	43.6%	43.6%	43.6%	0.0%
Maximum Green (s)	8.0	32.0	32.0	22.0	46.0	46.0	44.0	44.0	44.0	44.0	44.0	44.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	8.0	30.9	30.9	23.1	46.0	46.0	44.0	44.0	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.07	0.28	0.28	0.21	0.42	0.42	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	1.08	0.82	0.40	0.77	1.01	0.46	5.73dl	0.33			1.24dl	
Control Delay	150.4	42.3	10.3	38.5	35.4	9.1	54.9	8.7			50.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay	150.4	42.3	10.3	38.5	35.4	9.1	54.9	8.7			50.2	
LOS	F	D	B	D	D	A	D	A			D	
Approach Delay		47.2			32.4		48.2				50.2	
Approach LOS		D			C		D				D	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 41.7
 Intersection Capacity Utilization 99.2%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 5: PR-199 & PR-169

ø2	ø4	ø3
48 s	36 s	26 s
ø6	ø7	ø8
48 s	12 s	50 s

Intersección Carretera PR-169 & PR-20
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	116	109	363	454	302	108	1244	363	188	1053	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		30.0	30.0		30.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	7.5		7.5	7.5		15.0	7.5		15.0	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.95
Fr _t		0.927				0.850		0.968			0.990	
Fl _t Protected	0.950			0.950				0.997		0.950	0.997	
Satd. Flow (prot)	1770	1727	0	1770	1863	1583	0	3871	0	1825	3792	0
Fl _t Permitted	0.160			0.487				0.682		0.070	0.653	
Satd. Flow (perm)	298	1727	0	907	1863	1583	0	2648	0	134	2484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52				80		73			14	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		181.4			181.6			163.2			502.7	
Travel Time (s)		13.1			13.1			11.8			36.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	96	116	109	363	454	302	108	1244	363	188	1053	76
Shared Lane Traffic (%)										36%		
Lane Group Flow (vph)	96	225	0	363	454	302	0	1715	0	120	1197	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		

Intersección Carretera PR-169 & PR-20
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	29.0	61.0	61.0	0.0	61.0	61.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	32.2%	67.8%	67.8%	0.0%	67.8%	67.8%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	25.0	25.0		25.0	25.0	25.0		57.0		57.0	57.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28		0.63		0.63	0.63	
v/c Ratio	1.16	0.44		1.44	0.88	0.61		1.01		1.41	0.76	
Control Delay	182.2	23.4		248.0	51.0	26.4		40.6		264.3	15.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	182.2	23.4		248.0	51.0	26.4		40.6		264.3	15.5	
LOS	F	C		F	D	C		D		F	B	
Approach Delay		70.9			108.3			40.6			38.2	
Approach LOS		E			F			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.44
 Intersection Signal Delay: 59.0
 Intersection Capacity Utilization 124.7%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 3: Desde PR-20 & PR-169

 ø2	 ø4
61 s	29 s
 ø6	 ø8
61 s	29 s

Intersección Carretera PR-1 & Camino Parcelas Canejas
Futuro PM 2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	126	77	1868	116	96	1665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		20.0	0.0	
Storage Lanes	1	0		1	0	
Taper Length (m)	7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95
Frt	0.949			0.850		
Flt Protected	0.970					0.997
Satd. Flow (prot)	1715	0	3539	1583	0	3529
Flt Permitted	0.970					0.585
Satd. Flow (perm)	1715	0	3539	1583	0	2070
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	28			44		
Link Speed (k/h)	50		50			50
Link Distance (m)	151.1		103.0			83.1
Travel Time (s)	10.9		7.4			6.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	126	77	1868	116	96	1665
Shared Lane Traffic (%)						
Lane Group Flow (vph)	203	0	1868	116	0	1761
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Minimum Split (s)	15.0		20.0	20.0	8.0	20.0
Total Split (s)	15.0	0.0	60.0	60.0	15.0	75.0
Total Split (%)	16.7%	0.0%	66.7%	66.7%	16.7%	83.3%
Maximum Green (s)	11.0		56.0	56.0	11.0	71.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Act Effct Green (s)	11.0		56.0	56.0		71.0
Actuated g/C Ratio	0.12		0.62	0.62		0.79
v/c Ratio	0.87		0.85	0.12		1.11
Control Delay	68.0		18.5	4.7		70.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	68.0		18.5	4.7		70.2
LOS	E		B	A		E

Intersección Carretera PR-1 & Camino Parcelas Canejas Futuro PM 2022



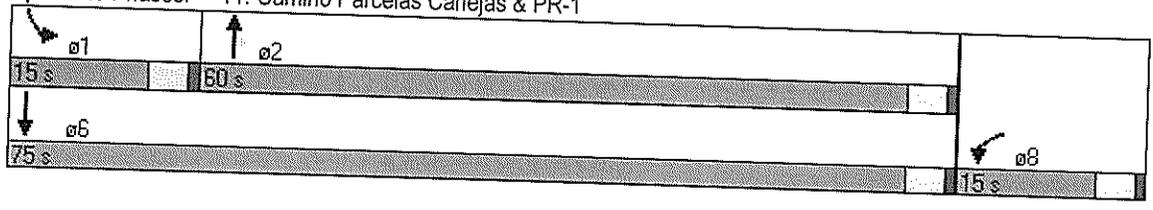
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	68.0		17.7			70.2
Approach LOS	E		B			E

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 43.7
 Intersection Capacity Utilization 122.1%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service H

Splits and Phases: 11: Camino Parcelas Canejas & PR-1



Intersección Carretera PR-1, PR-173 & PR-8834
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	472	3333	371	481	2834	67	258	111	133	203	63	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		75.0	50.0		80.0	0.0		0.0	0.0		0.0
Storage Lanes	2		2	2		2	2		0	0		1
Taper Length (m)	50.0		50.0	50.0		50.0	7.5		7.5	7.5		7.5
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.95	0.95	0.95	1.00
Frnt			0.850			0.850		0.918				0.850
Flt Protected	0.950			0.950			0.950				0.963	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3249	0	0	3408	1583
Flt Permitted	0.950			0.950			0.319				0.663	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1153	3249	0	0	2346	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			206			47		133				137
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		217.2			239.2			222.4			62.4	
Travel Time (s)		15.6			17.2			16.0			4.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	472	3333	371	481	2834	67	258	111	133	203	63	369
Shared Lane Traffic (%)												
Lane Group Flow (vph)	472	3333	371	481	2834	67	258	244	0	0	266	369
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot		Perm	Prot		Perm	pm+pt			Perm		Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4			8	2			6		6
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0		20.0	20.0	20.0
Total Split (s)	18.0	99.0	99.0	19.0	100.0	100.0	8.0	32.0	0.0	24.0	24.0	24.0
Total Split (%)	12.0%	66.0%	66.0%	12.7%	66.7%	66.7%	5.3%	21.3%	0.0%	16.0%	16.0%	16.0%
Maximum Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	4.0	28.0		20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		5.0	5.0		5.0	5.0		5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0		0	0	0
Act Effct Green (s)	14.0	95.0	95.0	15.0	96.0	96.0	28.0	28.0			20.0	20.0
Actuated g/C Ratio	0.09	0.63	0.63	0.10	0.64	0.64	0.19	0.19			0.13	0.13
v/c Ratio	1.48	1.03	0.34	1.40	0.87	0.07	0.93	0.34			1.36dl	1.12
Control Delay	274.3	53.3	6.2	244.4	25.9	4.1	96.7	25.0			87.5	120.9

Synchro 7 - Report

FIGURA 165

Intersección Carretera PR-1, PR-173 & PR-8834
Futuro PM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	274.3	53.3	6.2	244.4	25.9	4.1	96.7	25.0			87.5	120.9
LOS	F	D	A	F	C	A	F	C			F	F
Approach Delay		74.1			56.5			61.9			106.9	
Approach LOS		E			E			E			F	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 Maximum v/c Ratio: 1.48
 Intersection Signal Delay: 68.9
 Intersection Capacity Utilization 110.1%
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 19: PR-1 & PR-8834

ø2	ø3	ø4
32 s	19 s	99 s
ø5	ø6	ø8
8 s	24 s	100 s
ø7		
18 s		

Intersección Carretera PR-834 & Desvio PR-834
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	290	109	0	899	0	58	4	449	20	750	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.8	4.8	4.8
Storage Length (m)	20.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (m)	15.0		7.5	7.5		7.5	7.5		7.5	7.5		7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Flt Protected			0.850				0.950	0.958		0.850	0.997	
Satd. Flow (prot)	1863	3539	1583	0	3539	0	1681	1695	1583	0	2103	0
Flt Permitted							0.275	0.700			0.994	
Satd. Flow (perm)	1863	3539	1583	0	3539	0	487	1239	1583	0	2092	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90						428		3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.3			227.3			124.0			64.5	
Travel Time (s)		17.5			16.4			8.9			4.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	290	109	0	899	0	58	4	449	20	750	15
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	0	290	109	0	899	0	30	32	449	0	785	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2		1	2	1	1	2	
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0		0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm				Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4				2		2	6		

Synchro 7 - Report

FIGURA 166

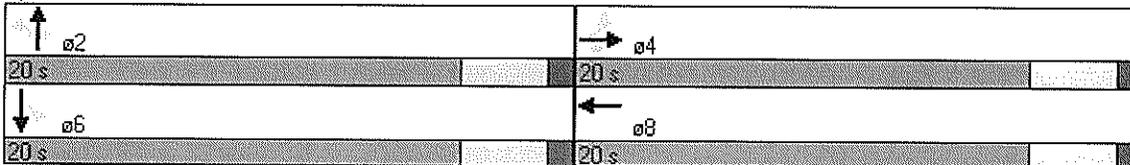
Intersección Carretera PR-834 & Desvio PR-834
Futuro PM 2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4		8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0		20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	0.0	20.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0		16.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None		None		C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)	5.0	5.0	5.0		5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0	0	0	0	
Act Effct Green (s)		14.7	14.7		14.7		17.3	17.3	17.3		17.3	
Actuated g/C Ratio		0.37	0.37		0.37		0.43	0.43	0.43		0.43	
v/c Ratio		0.22	0.17		0.69		0.14	0.06	0.48		0.86	
Control Delay		8.8	3.8		11.5		9.9	7.8	3.5		26.0	
Queue Delay		0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay		8.8	3.8		11.5		9.9	7.8	3.5		26.0	
LOS		A	A		B		A	A	A		C	
Approach Delay		7.4			11.5			4.2			26.0	
Approach LOS		A			B			A			C	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 87.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 6: PR-834 &



Intersección Carreteras PR-834 & Desvio PR-835
Futuro PM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑		↵↵		↗		↑↑			↑↑	↗
Volume (vph)	0	24	0	730	0	36	0	655	0	0	1641	694
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12
Storage Length (ft)	0		0	0		100	0		0	0		150
Storage Lanes	0		0	2		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		135
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frnt						0.850						0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Flt Permitted				0.950								
Satd. Flow (perm)	0	3539	0	3433	0	1794	0	3539	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						21						450
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		462			718			452			402	
Travel Time (s)		10.5			16.3			10.3			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	24	0	730	0	36	0	655	0	0	1641	694
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	730	0	36	0	655	0	0	1641	694
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			13			5	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1		1		2			2	1
Detector Template		Thru		Left		Right		Thru			Thru	Right
Leading Detector (ft)		100		20		20		100			100	20
Trailing Detector (ft)		0		0		0		0			0	0
Detector 1 Position(ft)		0		0		0		0			0	0
Detector 1 Size(ft)		6		20		20		6			6	20
Detector 1 Type		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Queue (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 1 Delay (s)		0.0		0.0		0.0		0.0			0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type				Prot		custom						Perm
Protected Phases		8!		4!				2			6	
Permitted Phases						4						6

Intersección Carreteras PR-834 & Desvio PR-835
Futuro PM 2022

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase		8		4		4		2			6	6
Switch Phase												
Minimum Initial (s)		4.0		4.0		4.0		4.0			4.0	4.0
Minimum Split (s)		20.0		20.0		20.0		20.0			20.0	20.0
Total Split (s)	0.0	41.0	0.0	41.0	0.0	41.0	0.0	79.0	0.0	0.0	79.0	79.0
Total Split (%)	0.0%	34.2%	0.0%	34.2%	0.0%	34.2%	0.0%	65.8%	0.0%	0.0%	65.8%	65.8%
Maximum Green (s)		37.0		37.0		37.0		75.0			75.0	75.0
Yellow Time (s)		3.0		3.0		3.0		3.0			3.0	3.0
All-Red Time (s)		1.0		1.0		1.0		1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0		3.0		3.0			3.0	3.0
Recall Mode		None		None		None		C-Min			C-Min	C-Min
Walk Time (s)		5.0		5.0		5.0		5.0			5.0	5.0
Flash Dont Walk (s)		11.0		11.0		11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0		0		0		0			0	0
Act Effct Green (s)		31.3		31.3		31.3		80.7			80.7	80.7
Actuated g/C Ratio		0.26		0.26		0.26		0.67			0.67	0.67
v/c Ratio		0.03		0.81		0.07		0.28			0.69	0.57
Control Delay		30.7		49.2		17.3		8.8			7.0	2.5
Queue Delay		0.0		0.0		0.0		0.0			0.0	0.0
Total Delay		30.7		49.2		17.3		8.8			7.0	2.5
LOS		C		D		B		A			A	A
Approach Delay		30.7						8.8			5.7	
Approach LOS		C						A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NET and 6:SWT, Start of Green, Master Intersection
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 14.9
 Intersection Capacity Utilization 79.5%
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 12: Carretera PR-834 &

02	04
79 s	41 s
06	08
79 s	41 s

Intersección Carretera PR-834 & PR-835
Futuro PM 2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕		↙	↕
Volume (veh/h)	369	562	489	115	268	5
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	369	562	489	115	268	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1085	302			489	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1085	302			489	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	19			75	
cM capacity (veh/h)	158	694			1070	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	369	562	326	278	268	2	2
Volume Left	369	0	0	0	268	0	0
Volume Right	0	562	0	115	0	0	0
cSH	158	694	1700	1700	1070	1700	1700
Volume to Capacity	2.33	0.81	0.19	0.16	0.25	0.00	0.00
Queue Length 95th (m)	246.6	67.6	0.0	0.0	7.9	0.0	0.0
Control Delay (s)	664.1	28.4	0.0	0.0	9.5	0.0	0.0
Lane LOS	F	D			A		
Approach Delay (s)	280.4		0.0		9.3		
Approach LOS	F						

Intersection Summary							
Average Delay			145.8				
Intersection Capacity Utilization			62.5%		ICU Level of Service		B
Analysis Period (min)			15				

Intersección Carretera PR-834 & Camino Laberinto
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	59	0	30	5	14	6	674	19	0	1613	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	22.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (m)	7.5		7.5	7.5		7.5	20.0		7.5	7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frnt					0.961				0.850			
Flt Protected		0.996			0.970		0.950					
Satd. Flow (prot)	0	1855	0	0	1736	0	1770	3539	1583	0	3539	0
Flt Permitted		0.966			0.977		0.139					
Satd. Flow (perm)	0	1799	0	0	1749	0	259	3539	1583	0	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					14				19			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		133.6			268.6			227.3			235.0	
Travel Time (s)		9.6			19.3			16.4			16.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	59	0	30	5	14	6	674	19	0	1613	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	49	0	6	674	19	0	1613	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1		2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2			
Detector Phase	4	4		8	8		2	2	2		6	

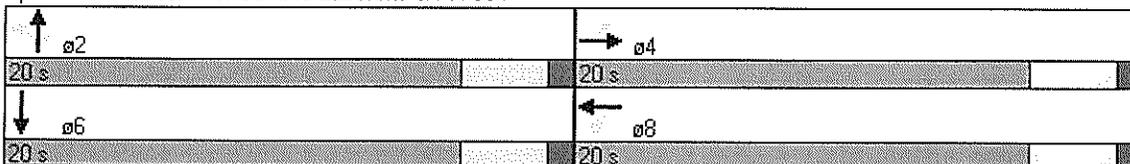
Intersección Carretera PR-834 & Camino Laberinto
Futuro PM 2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0		20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0	0.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0	16.0		16.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min		C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		6.9			6.7		33.5	33.5	33.5		33.5	
Actuated g/C Ratio		0.17			0.17		0.84	0.84	0.84		0.84	
v/c Ratio		0.21			0.16		0.03	0.23	0.01		0.54	
Control Delay		15.2			11.9		3.8	2.6	2.3		4.6	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		15.2			11.9		3.8	2.6	2.3		4.6	
LOS		B			B		A	A	A		A	
Approach Delay		15.3			11.9			2.6			4.6	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 4.5
 Intersection Capacity Utilization 60.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 3: Camino Laberinto & PR-834



Intersección Carreteras PR-835 & Desvio PR-835
Futuro PM 2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		P			4
Volume (veh/h)	115	43	10	192	50	31
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	115	43	10	192	50	31
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	237	106			10	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237	106			10	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	95			97	
cM capacity (veh/h)	728	948			1610	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	158	202	81
Volume Left	115	0	50
Volume Right	43	192	0
cSH	777	1700	1610
Volume to Capacity	0.20	0.12	0.03
Queue Length 95th (ft)	19	0	2
Control Delay (s)	10.8	0.0	4.6
Lane LOS	B		A
Approach Delay (s)	10.8	0.0	4.6
Approach LOS	B		

Intersection Summary			
Average Delay		4.7	
Intersection Capacity Utilization		35.8%	ICU Level of Service
Analysis Period (min)		15	A

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro PM 2022

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Volume (vph)	650	5	5	1432	2340	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0	164			260
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	130			135
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1794
Flt Permitted	0.950		0.056			
Satd. Flow (perm)	1770	1583	104	3539	3539	1794
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		4				399
Link Speed (mph)	25			45	45	
Link Distance (ft)	643			2317	367	
Travel Time (s)	17.5			35.1	5.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	650	5	5	1432	2340	575
Shared Lane Traffic (%)						
Lane Group Flow (vph)	650	5	5	1432	2340	575
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			16	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	0.85
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6

Intersección Carretera PR-834 & Entrada LAIF Y Vertedero Municipal
Futuro PM 2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	44.0	44.0	76.0	76.0	76.0	76.0
Total Split (%)	36.7%	36.7%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	40.0	40.0	72.0	72.0	72.0	72.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	40.0	40.0	72.0	72.0	72.0	72.0
Actuated g/C Ratio	0.33	0.33	0.60	0.60	0.60	0.60
v/c Ratio	1.10	0.01	0.08	0.67	1.10	0.47
Control Delay	106.2	18.2	19.6	18.9	72.1	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.2	18.2	19.6	18.9	72.1	2.5
LOS	F	B	B	B	E	A
Approach Delay	105.5			18.9	58.3	
Approach LOS	F			B	E	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 53.2
 Intersection Capacity Utilization 107.4%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service G

Splits and Phases: 14: Entrada a LAIF & Carretera PR-834

 02 76 s	 04 44 s
 06 76 s	

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro PM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	 			 	 			 		 	 	
Volume (vph)	534	0	673	237	113	318	0	1095	536	774	1436	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	14	16	12	12	12	12	12	12	12	12	12
Storage Length (ft)	150		0	197		60	0		100	164		0
Storage Lanes	1		1	1		2	0		1	1		0
Taper Length (ft)	70		100	50		55	25		35	25		25
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frnt			0.850			0.850			0.850			
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	3891	0	1794	3433	3539	1583	0	3539	1583	3433	3539	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	3891	0	1794	3433	3539	1583	0	3539	1583	3433	3539	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			526			318			195			
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1920			218			499			341	
Travel Time (s)		29.1			5.9			9.7			6.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	534	0	673	237	113	318	0	1095	536	774	1436	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	534	0	673	237	113	318	0	1095	536	774	1436	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		32			32			0			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.92	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2	1		2	1	1	2	
Detector Template	Left		Right	Left	Thru	Right		Thru	Right	Left	Thru	
Leading Detector (ft)	20		20	20	100	20		100	20	20	100	
Trailing Detector (ft)	0		0	0	0	0		0	0	0	0	
Detector 1 Position(ft)	0		0	0	0	0		0	0	0	0	
Detector 1 Size(ft)	20		20	20	6	20		6	20	20	6	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		custom	Prot		Perm			Perm		Split	
Protected Phases	5			1	6			4			8	8
Permitted Phases			2			6			4			

Intersección Carreteras PR-169, PR-834 & Rampa Carretera PR-20
Futuro PM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	5		2	1	6	6		4	4	8	8	
Switch Phase												
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0		20.0	8.0	20.0	20.0		20.0	20.0	20.0	20.0	
Total Split (s)	17.0	0.0	22.0	15.0	20.0	20.0	0.0	38.0	38.0	45.0	45.0	0.0
Total Split (%)	14.2%	0.0%	18.3%	12.5%	16.7%	16.7%	0.0%	31.7%	31.7%	37.5%	37.5%	0.0%
Maximum Green (s)	13.0		18.0	11.0	16.0	16.0		34.0	34.0	41.0	41.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lag	Lead	Lead	Lead						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	Min	Min		C-Max	C-Max	None	None	
Walk Time (s)			5.0									
Flash Dont Walk (s)			11.0									
Pedestrian Calls (#/hr)			0									
Act Effct Green (s)	18.9		18.2	10.8	10.1	10.1		34.0	34.0	41.0	41.0	
Actuated g/C Ratio	0.16		0.15	0.09	0.08	0.08		0.28	0.28	0.34	0.34	
v/c Ratio	0.87		0.94	0.76	0.38	0.75		1.09	0.91	0.66	1.19	
Control Delay	57.0		27.3	70.0	54.8	17.1		97.6	47.6	37.1	128.9	
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	2.2	
Total Delay	57.0		27.3	70.0	54.8	17.1		97.6	47.6	37.1	131.1	
LOS	E		C	E	D	B		F	D	D	F	
Approach Delay					42.3			81.2			98.2	
Approach LOS					D			F			F	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 14 (12%), Referenced to phase 4:SET, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 74.6
 Intersection Capacity Utilization 88.7%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service E

Splits and Phases: 3: Carretera PR-834 & Carretera PR-169

 ø1	 ø2	 ø4	 ø8
15 s	22 s	38 s	45 s
 ø6	 ø5		
20 s	17 s		

Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
Futuro PM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	130	278	323	0	277	463	50	489	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	1.00	1.00
Frnt					0.919				0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	2006	1940	0	0	4011	3158	2006	2111	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	2006	1940	0	0	4011	3158	2006	2111	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					56				463			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		722			387			249			260	
Travel Time (s)		16.4			8.8			5.7			5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	130	278	323	0	277	463	50	489	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	130	601	0	0	277	463	50	489	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			10			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2	1	1	2	
Detector Template				Left	Thru			Thru	Right	Left	Thru	
Leading Detector (ft)				20	100			100	20	20	100	
Trailing Detector (ft)				0	0			0	0	0	0	
Detector 1 Position(ft)				0	0			0	0	0	0	
Detector 1 Size(ft)				20	6			6	20	20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm					Perm	Prot		
Protected Phases					6			4		3	8	
Permitted Phases				6					4			
Detector Phase				6	6			4	4	3	8	
Switch Phase												
Minimum Initial (s)				4.0	4.0			4.0	4.0	4.0	4.0	
Minimum Split (s)				20.0	20.0			20.0	20.0	8.0	20.0	

Synchro 7 - Report

FIGURA 173

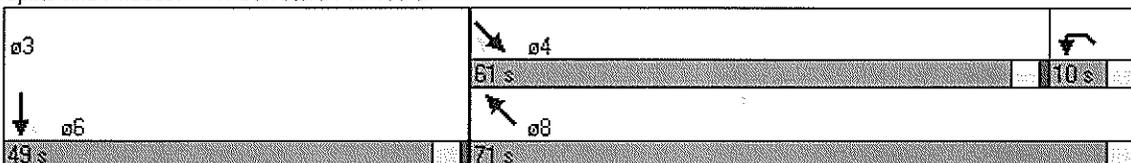
Intersección Carreteras PR-1, PR-169 & PR-8834 (Oeste)
Futuro PM 2022

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	0.0	0.0	0.0	49.0	49.0	0.0	0.0	61.0	61.0	10.0	71.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	40.8%	40.8%	0.0%	0.0%	50.8%	50.8%	8.3%	59.2%	0.0%
Maximum Green (s)				45.0	45.0			57.0	57.0	6.0	67.0	
Yellow Time (s)				3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0			1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode				Max	Max			C-Max	C-Max	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0		5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)				0	0			0	0		0	
Act Effct Green (s)				47.0	47.0			57.0	57.0	5.9	65.0	
Actuated g/C Ratio				0.39	0.39			0.48	0.48	0.05	0.54	
v/c Ratio				0.17	0.76			0.15	0.27	0.51	0.43	
Control Delay				25.4	36.4			6.0	0.7	69.3	23.0	
Queue Delay				0.2	0.7			0.0	0.0	0.0	5.8	
Total Delay				25.6	37.2			6.0	0.7	69.3	28.8	
LOS				C	D			A	A	E	C	
Approach Delay					35.1			2.7			32.6	
Approach LOS					D			A			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 6 (5%), Referenced to phase 4:SET, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 22.5
 Intersection Capacity Utilization 100.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service G

Splits and Phases: 1: Carretera PR-169 &



Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
Futuro PM 2022

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	738	0	0	0	0	0	606	139	0	0	174	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frts											0.977	
Flt Protected	0.950						0.950	0.969				
Satd. Flow (prot)	2006	2111	0	0	0	0	1905	1943	0	0	3919	0
Flt Permitted	0.950						0.000	0.000				
Satd. Flow (perm)	2006	2111	0	0	0	0	0	0	0	0	3919	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											15	
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		633			504			260			589	
Travel Time (s)		14.4			11.5			5.9			11.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	738	0	0	0	0	0	606	139	0	0	174	32
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	738	0	0	0	0	0	364	381	0	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			16			16			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2					1	2			2	
Detector Template	Left	Thru					Left	Thru			Thru	
Leading Detector (ft)	20	100					20	100			100	
Trailing Detector (ft)	0	0					0	0			0	
Detector 1 Position(ft)	0	0					0	0			0	
Detector 1 Size(ft)	20	6					20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0					0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0					0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0					0.0	0.0			0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm						pm+pt					
Protected Phases		2					7	4			10	
Permitted Phases	2						4					
Detector Phase	2	2					7	4			10	
Switch Phase												
Minimum Initial (s)	4.0	4.0					4.0	4.0			4.0	
Minimum Split (s)	20.0	20.0					8.0	20.0			20.0	

Intersección Carreteras PR-1, PR-169 & PR-8834 (Este)
Futuro PM 2022

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	63.0	63.0	0.0	0.0	0.0	0.0	37.0	37.0	0.0	0.0	20.0	0.0
Total Split (%)	52.5%	52.5%	0.0%	0.0%	0.0%	0.0%	30.8%	30.8%	0.0%	0.0%	16.7%	0.0%
Maximum Green (s)	59.0	59.0					33.0	33.0			16.0	
Yellow Time (s)	3.0	3.0					3.0	3.0			3.0	
All-Red Time (s)	1.0	1.0					1.0	1.0			1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Recall Mode	None	None					None	C-Max			None	
Walk Time (s)	5.0	5.0						5.0			5.0	
Flash Dont Walk (s)	11.0	11.0						11.0			11.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)	51.6						45.2	45.2			11.2	
Actuated g/C Ratio	0.43						0.38	0.38			0.09	
v/c Ratio	0.86						0.51	0.52			0.54	
Control Delay	41.0						36.2	36.5			53.2	
Queue Delay	1.0						6.9	7.9			0.0	
Total Delay	42.1						43.1	44.4			53.2	
LOS	D						D	D			D	
Approach Delay								43.8			53.2	
Approach LOS								D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 4:SETL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 44.2
 Intersection Capacity Utilization 100.8%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service G

Splits and Phases: 22: Carretera PR-8834 &

ø2	ø4	ø10
63 s	37 s	20 s
	ø7	
	37 s	

Intersección Entrada Proyecto LAIF & Desvio PR-835
Futuro PM 2022

						
Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	3	108	155	559	652	1
Sign Control	Free		Stop		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	108	155	559	652	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		332	6	114	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		332	6	114	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	100		14	37	16	100
cM capacity (veh/h)	1623		181	888	775	1085
Direction, Lane #	EB 1	EB 2	NW 1	NW 2	SW 1	SW 2
Volume Total	3	108	155	559	652	1
Volume Left	3	0	155	0	0	0
Volume Right	0	108	0	0	0	1
cSH	1623	1700	181	888	775	1085
Volume to Capacity	0.00	0.06	0.86	0.63	0.84	0.00
Queue Length 95th (ft)	0	0	154	115	244	0
Control Delay (s)	7.2	0.0	86.1	15.7	29.0	8.3
Lane LOS	A		F	C	D	A
Approach Delay (s)	0.2		31.0		29.0	
Approach LOS			D		D	
Intersection Summary						
Average Delay			27.8			
Intersection Capacity Utilization			58.0%	ICU Level of Service	B	
Analysis Period (min)			15			

Intersección Entrada Residencial (LAIF) & Desvio PR-835
Futuro PM 2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↑	↗	↖	↗
Volume (veh/h)	0	74	97	59	37	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	74	97	59	37	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				171	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				171	97
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	100
cM capacity (veh/h)	1496				819	959

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	0	74	97	59	37	0
Volume Left	0	0	0	0	37	0
Volume Right	0	0	0	59	0	0
cSH	1700	1700	1700	1700	819	1700
Volume to Capacity	0.00	0.04	0.06	0.03	0.05	0.00
Queue Length 95th (ft)	0	0	0	0	4	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.6	0.0
Lane LOS					A	A
Approach Delay (s)	0.0		0.0		9.6	
Approach LOS					A	

Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			15.1%	ICU Level of Service		A
Analysis Period (min)			15			

Phone:
E-mail:

Fax:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICION FUTURA PM
 Highway: CARRETERA PR-1 HACIA EL NORTE - ANÁLISIS #1
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2022
 Project ID: LAIF

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type					
Free-flow speed:		Measured		Measured	
FFS or BFFS		55.0	mph	55.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		55.0	mph	55.0	mph

VOLUME

	Direction	1		2	
Volume, V		2860	vph	3653	vph
Peak-hour factor, PHF		1.00		1.00	
Peak 15-minute volume, v15		715		914	
Trucks and buses		1	%	1	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fp		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fhv		0.995		0.995	
Flow rate, vp		1437	pcphpl	1835	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1437	pcphpl	1835	pcphpl
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		54.9	mph	53.0	mph
Level of service, LOS		D		D	
Density, D		26.2	pc/mi/ln	34.6	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone:
E-mail:

Fax:

OPERATIONAL ANALYSIS

Analyst: TILYSAY HERNANDEZ ACEVEDO
 Agency/Co: PLC TRAFFIC CONSULTING
 Date: 12/1/2009
 Analysis Period: CONDICION FUTURA PM
 Highway: CARRETERA PR-1 HACIA EL SUR - ANÁLISIS #2
 From/To:
 Jurisdiction:
 Analysis Year: AÑO 2022
 Project ID: LAIF

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type					
Free-flow speed:		Measured		Measured	
FFS or BFFS		55.0	mph	55.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		55.0	mph	55.0	mph

VOLUME

	Direction	1		2	
Volume, V		2860	vph	3653	vph
Peak-hour factor, PHF		1.00		1.00	
Peak 15-minute volume, v15		715		914	
Trucks and buses		1	%	1	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fHV		0.995		0.995	
Flow rate, vp		1437	pcphpl	1835	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		1437	pcphp1	1835	pcphp1
Free-flow speed, FFS		55.0	mph	55.0	mph
Avg. passenger-car travel speed, S		54.9	mph	53.0	mph
Level of service, LOS		D		D	
Density, D		26.2	pc/mi/ln	34.6	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: _____ Fax: _____
 E-mail: _____

----- Diverge Analysis -----

Analyst: TILYSAY HERNÁNDEZ ACEVEDO
 Agency/Co.: PLC TRAFFIC CONSULTING
 Date performed: 12/9/2009
 Analysis time period: CONDICION FUTURA PM
 Freeway/Dir of Travel: RAMPA CONEXIÓN PR-834 A PR-20
 Junction:
 Jurisdiction:
 Analysis Year: AÑO 2022
 Description: LAIF

----- Freeway Data -----

Type of analysis	Diverge		
Number of lanes in freeway	2		
Free-flow speed on freeway	55.0	mph	
Volume on freeway	1207	vph	

----- Off Ramp Data -----

Side of freeway	Left		
Number of lanes in ramp	1		
Free-Flow speed on ramp	35.0	mph	
Volume on ramp	1345	vph	
Length of first accel/decel lane	500	ft	
Length of second accel/decel lane		ft	

----- Adjacent Ramp Data (if one exists) -----

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

----- Conversion to pc/h Under Base Conditions -----

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1207	1345		vph
Peak-hour factor, PHF	1.00	1.00		
Peak 15-min volume, v15	302			v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1207	1345	pcph

Estimation of V12 Diverge Areas

L = (Equation 25-8 or 25-9)
EQ
P = 1.000 Using Equation 0
FD
 $v_{12} = v_R + (v_F - v_R) P_{FD} = 1207 \text{ pc/h}$

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1207	4500	No
$v_{FO} = v_F - v_R$	-138	4500	No
v_R	1345	2000	No
$v_{3 \text{ or } av34}$	0 pc/h	(Equation 25-15 or 25-16)	
Is $v_{3 \text{ or } av34} > 2700 \text{ pc/h?}$		No	
Is $v_{3 \text{ or } av34} > 1.5 v_{12} / 2$		No	
If yes, $v_{12A} = 1207$		(Equation 25-18)	

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1207	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 \frac{L}{D} = 10.1 \text{ pc/mi/ln}$
Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D = 0.549	
Space mean speed in ramp influence area,	S = 47.9	mph
Space mean speed in outer lanes,	S = N/A	mph
Space mean speed for all vehicles,	S = 47.9	mph

APÉNDICE E
MODELOS DE MICR-SIMULACIÓN

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvio PR-835
AM Condiciones Existentes Año 2009

Summary of All Intervals

Start Time	6:57
End Time	7:10
Total Time (min)	13
Time Recorded (min)	10
# of Intervals	2
# of Recorded Intvl	1
Vehs Entered	1097
Vehs Exited	945
Starting Vehs	184
Ending Vehs	336
Denied Entry Before	38
Denied Entry After	240
Travel Distance (mi)	514
Travel Time (hr)	68.4
Total Delay (hr)	52.7
Total Stops	1546
Fuel Used (gal)	297.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:10
Total Time (min)	10

Volumes adjusted by Growth Factors.

Vehs Entered	1097
Vehs Exited	945
Starting Vehs	184
Ending Vehs	336
Denied Entry Before	38
Denied Entry After	240
Travel Distance (mi)	514
Travel Time (hr)	68.4
Total Delay (hr)	52.7
Total Stops	1546
Fuel Used (gal)	297.2

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvio PR-835
 AM Condiciones Existentes Año 2009

1: Carretera PR-169 & Performance by movement

Movement	NBL	NBT	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR	All
Total Delay (hr)	2.4	27.8	1.6	2.8	0.1	3.3	0.5	0.2	0.2	0.2	0.0	39.1
Delay / Veh (s)	423.6	375.8	182.6	53.0	25.3	236.5	15.6	11.0	58.0	45.6	8.5	177.3
Total Stops	29	228	64	147	2	114	38	30	9	12	0	673
Travel Dist (mi)	2.2	31.2	2.6	14.9	1.0	3.4	4.1	5.1	0.7	0.9	0.4	66.4
Travel Time (hr)	2.4	28.4	1.7	3.2	0.1	3.5	0.6	0.5	0.2	0.2	0.0	40.9
Avg Speed (mph)	4	5	2	6	16	1	7	11	4	5	18	4
Fuel Used (gal)	6.1	73.1	4.7	11.9	0.6	8.9	2.5	1.6	0.8	0.7	0.2	111.1
HC Emissions (g)	1	3	0	1	0	0	0	0	0	0	0	6
CO Emissions (g)	154	791	38	327	17	54	64	36	17	39	8	1545
NOx Emissions (g)	1	6	0	4	0	0	0	0	0	0	0	13
Vehicles Entered	19	265	35	192	17	58	106	81	11	13	8	805
Vehicles Exited	20	267	29	189	16	44	104	80	11	13	8	781
Hourly Exit Rate	120	1602	174	1134	96	264	624	480	66	78	48	4686
Input Volume	228	2888	208	1192	100	516	860	716	84	76	84	6952
% of Volume	53	55	84	95	96	51	73	67	79	103	57	67
Denied Entry Before	1	36	0	0	0	0	0	0	0	0	0	37
Denied Entry After	20	209	2	7	1	0	0	0	0	0	0	239

3: Carretera PR-834 & Carretera PR-169 Performance by movement

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SET	SER	NWL	NWT	All
Total Delay (hr)	1.5	0.0	5.1	0.2	0.1	0.0	2.0	0.1	0.2	0.2	9.4
Delay / Veh (s)	112.8	64.7	119.3	45.3	32.4	2.3	55.7	32.1	31.4	8.6	69.3
Total Stops	101	3	299	13	10	26	167	10	20	17	666
Travel Dist (mi)	19.7	0.5	53.7	0.7	0.4	0.8	11.1	1.0	1.0	3.1	91.9
Travel Time (hr)	2.0	0.0	6.4	0.2	0.1	0.1	2.4	0.2	0.2	0.3	11.9
Avg Speed (mph)	10	11	8	3	4	14	5	6	4	13	8
Fuel Used (gal)	8.3	0.2	22.6	0.6	0.3	0.3	8.6	0.6	0.7	1.5	43.7
HC Emissions (g)	0	0	1	0	0	0	1	0	0	0	2
CO Emissions (g)	202	2	356	4	4	4	237	8	7	73	897
NOx Emissions (g)	2	0	3	0	0	0	2	0	0	1	8
Vehicles Entered	61	3	183	18	12	25	145	14	21	64	546
Vehicles Exited	34	2	123	14	10	25	120	14	24	66	432
Hourly Exit Rate	204	12	738	84	60	150	720	84	144	396	2592
Input Volume	384	48	1188	120	32	144	784	56	160	444	3360
% of Volume	53	25	62	70	188	104	92	150	90	89	77
Denied Entry Before	0	0	0	0	0	0	0	0	0	1	1
Denied Entry After	0	0	0	0	0	0	0	0	0	1	1

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvio PR-835
 AM Condiciones Existentes Año 2009

12: Carretera PR-834 & Performance by movement

Movement	SBL2	SBT	SBR	NWR	NET	SWT	SWR	All
Total Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Delay / Veh (s)	46.9	0.0	1.9	84.1	0.4	0.2	2.1	4.1
Total Stops	19	0	0	2	0	0	0	21
Travel Dist (mi)	2.4	0.3	0.1	0.2	19.8	1.7	0.1	24.7
Travel Time (hr)	0.3	0.0	0.0	0.1	0.7	0.1	0.0	1.2
Avg Speed (mph)	7	30	26	4	28	29	21	21
Fuel Used (gal)	1.0	0.1	0.0	0.2	5.7	0.5	0.0	7.6
HC Emissions (g)	0	0	0	0	0	0	0	0
CO Emissions (g)	9	1	0	1	62	15	0	87
NOx Emissions (g)	0	0	0	0	1	0	0	1
Vehicles Entered	19	5	1	2	226	25	3	281
Vehicles Exited	19	5	1	2	230	25	3	285
Hourly Exit Rate	114	30	6	12	1380	150	18	1710
Input Volume	108	52	8	8	1508	140	24	1848
% of Volume	106	58	75	150	92	107	75	93
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

15: Carretera PR-834 & Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Delay / Veh (s)	19.6	2.0	0.4	0.5	2.4	4.6	0.9
Total Stops	0	1	0	0	1	1	3
Travel Dist (mi)	0.0	0.0	0.1	17.1	12.6	1.4	31.2
Travel Time (hr)	0.0	0.0	0.0	0.4	0.5	0.1	1.0
Avg Speed (mph)	0	12	26	41	25	24	31
Fuel Used (gal)	0.0	0.0	0.0	4.3	4.9	0.6	9.8
HC Emissions (g)	0	0	0	0	0	0	1
CO Emissions (g)	0	0	0	144	119	13	276
NOx Emissions (g)	0	0	0	2	1	0	3
Vehicles Entered	0	1	1	245	44	4	295
Vehicles Exited	1	1	1	246	42	4	295
Hourly Exit Rate	6	6	6	1476	252	24	1770
Input Volume	8	4	4	1612	232	16	1876
% of Volume	75	150	150	92	109	150	94
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvío PR-835
 AM Condiciones Existentes Año 2009

25: Desvío PR-835 & Carretera PR-835 Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Delay / Veh (s)	5.3	1.7	3.2	2.7	4.3	0.6	3.3
Total Stops	17	0	0	0	1	0	18
Travel Dist (mi)	1.6	0.0	2.4	4.7	0.4	1.0	10.1
Travel Time (hr)	0.1	0.0	0.1	0.2	0.0	0.0	0.4
Avg Speed (mph)	19	22	26	27	21	29	25
Fuel Used (gal)	0.4	0.0	0.7	1.1	0.1	0.3	2.7
HC Emissions (g)	0	0	0	0	0	0	0
CO Emissions (g)	11	0	7	14	2	21	54
NOx Emissions (g)	0	0	0	0	0	0	1
Vehicles Entered	17	1	11	23	3	9	64
Vehicles Exited	17	1	11	23	3	7	62
Hourly Exit Rate	102	6	66	138	18	42	372
Input Volume	76	20	40	156	12	32	336
% of Volume	134	30	165	88	150	131	111
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Total Delay (hr)	52.7
Delay / Veh (s)	186.0
Total Stops	1546
Travel Dist (mi)	514.1
Travel Time (hr)	68.4
Avg Speed (mph)	12
Fuel Used (gal)	297.2
HC Emissions (g)	21
CO Emissions (g)	7598
NOx Emissions (g)	73
Vehicles Entered	1097
Vehicles Exited	945
Hourly Exit Rate	5670
Input Volume	30048
% of Volume	19
Denied Entry Before	38
Denied Entry After	240

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvio PR-835
 AM Condiciones Existentes Año 2009

Arterial Level of Service: NB Carretera PR-834

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	12	0.4	11.1	0.1	28
	18	0.4	9.5	0.1	29
	14	2.3	39.3	0.4	40
	15	0.5	6.2	0.1	40
Carretera PR-169	3	112.8	149.9	0.4	9
Total		116.5	216.0	1.0	17

Arterial Level of Service: SB Carretera PR-834

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	15	1.9	35.3	0.4	37
	14	0.5	8.0	0.1	31
	18	0.5	53.0	0.4	30
	12	0.2	8.5	0.1	32
	10	0.3	11.7	0.1	26
Total		3.4	116.5	1.0	32

Arterial Level of Service: NW Carretera PR-169

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	45.6	54.8	0.1	5
	19	2.5	11.5	0.1	23
Salida PR-20	3	8.6	14.1	0.1	18
Total		56.8	80.3	0.2	10

Arterial Level of Service: SE Carretera PR-169

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Carretera PR-834	3	55.7	66.4	0.1	5
	19	42.2	50.9	0.1	5
	1	15.6	20.4	0.1	13
Total		113.5	137.7	0.2	6

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvío PR-835
AM Condiciones Existentes Año 2009

Arterial Level of Service: WB Desvío PR-835

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	13	0.0	13.9	0.1	30
	34	0.0	5.7	0.0	30
Carretera PR-835	25	5.3	18.8	0.2	30
Total		5.3	38.5	0.3	30

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvio PR-835
 AM Condiciones Existentes Año 2009

Intersection: 1: Carretera PR-169 &

Movement	NB	NB	NB	SB	SB	SB	SB	SE	SE	SE	SE	B19
Directions Served	L	T	T	L	T	T	R	L	L	T	R	T
Maximum Queue (ft)	85	605	605	254	440	431	255	280	289	260	278	290
Average Queue (ft)	52	602	602	251	408	390	51	270	282	117	119	200
95th Queue (ft)	98	611	609	258	443	443	219	289	298	284	276	386
Link Distance (ft)		590	590		400	400		274	274	274	274	273
Upstream Blk Time (%)		45	44		16	11		56	62	0	3	30
Queuing Penalty (veh)		0	0		0	0		290	323	1	13	207
Storage Bay Dist (ft)	279			230			230					
Storage Blk Time (%)		47		24	22	24	0					
Queuing Penalty (veh)		106		140	46	24	0					

Intersection: 1: Carretera PR-169 &

Movement	B19	B19	NW	NW
Directions Served	T	T	L	T
Maximum Queue (ft)	338	213	49	68
Average Queue (ft)	221	163	18	18
95th Queue (ft)	432	218	48	62
Link Distance (ft)	273	273		288
Upstream Blk Time (%)	12			
Queuing Penalty (veh)	84			
Storage Bay Dist (ft)			230	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Carretera PR-834 & Carretera PR-169

Movement	NB	NB	SB	SB	SB	SB	SB	SE	SE	NW	NW
Directions Served	L	R	L	L	T	T	R	T	TR	L	T
Maximum Queue (ft)	1514	1574	35	61	24	46	56	436	455	116	114
Average Queue (ft)	826	922	10	41	19	26	11	282	335	87	78
95th Queue (ft)	1748	1795	33	63	35	51	48	443	471	126	118
Link Distance (ft)	1795	1795		132	132			436	436		273
Upstream Blk Time (%)								1	1		
Queuing Penalty (veh)								0	0		
Storage Bay Dist (ft)			197			60	60			164	
Storage Blk Time (%)						0	0				
Queuing Penalty (veh)						0	0				

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvío PR-835
 AM Condiciones Existentes Año 2009

Intersection: 12: Carretera PR-834 &

Movement	SB	SB	NW
Directions Served	<	<	R
Maximum Queue (ft)	73	72	27
Average Queue (ft)	38	50	8
95th Queue (ft)	72	72	25
Link Distance (ft)	623	623	537
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Carretera PR-834 &

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	12	24
Average Queue (ft)	2	5
95th Queue (ft)	11	20
Link Distance (ft)	155	155
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25: Desvío PR-835 & Carretera PR-835

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	52	29
Average Queue (ft)	37	6
95th Queue (ft)	55	25
Link Distance (ft)	756	660
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1235

Micro-Simulación Red #1 PR-1, PR-169, PR-834 y Desvio PR-835
 AM Condiciones Existentes Año 2009

Intersection: 3: Carretera PR-834 & Carretera PR-169

Phase	1	3	4	5	6	8
Movement(s) Served	SBL	NWL	SET	NBL	SBT	NWTL
Maximum Green (s)	31.0	11.0	31.0	11.0	16.0	46.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	C-Min	None
Avg. Green (s)	34.2	10.2	41.1	17.6	10.7	55.2
g/C Ratio	0.29	0.10	0.48	0.21	0.11	0.65
Cycles Skipped (%)	29	13	0	0	14	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	43	13	67	83	86	83
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): 85.0
 Number of Complete Cycles : 6

Micro-Simulación Red #2 PR-199, PR-1, PR-169 y PR-20
AM Condiciones Existentes Año 2009

Summary of All Intervals

Start Time	6:57
End Time	7:10
Total Time (min)	13
Time Recorded (min)	10
# of Intervals	2
# of Recorded Intvls	1
Vehs Entered	1742
Vehs Exited	1694
Starting Vehs	227
Ending Vehs	275
Denied Entry Before	5
Denied Entry After	4
Travel Distance (km)	862
Travel Time (hr)	42.1
Total Delay (hr)	22.0
Total Stops	1765
Fuel Used (l)	1093.4

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:10
Total Time (min)	10

Volumes adjusted by Growth Factors.

Vehs Entered	1742
Vehs Exited	1694
Starting Vehs	227
Ending Vehs	275
Denied Entry Before	5
Denied Entry After	4
Travel Distance (km)	862
Travel Time (hr)	42.1
Total Delay (hr)	22.0
Total Stops	1765
Fuel Used (l)	1093.4

Micro-Simulación Red #2 PR-199, PR-1, PR-169 y PR-20
 AM Condiciones Existentes Año 2009

5: PR-199 & PR-169 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.3	1.3	0.2	0.2	1.8	0.3	0.1	0.1	0.1	0.4	0.0	0.1
Delay / Veh (s)	32.7	23.1	29.2	41.4	31.6	42.4	23.8	20.5	6.5	31.7	9.9	7.8
Total Stops	24	136	23	27	185	27	15	10	1	42	4	14
Travel Dist (km)	6.3	39.7	5.0	4.8	42.8	4.9	2.5	2.5	5.0	3.0	1.0	1.6
Travel Time (hr)	0.5	2.3	0.4	0.4	2.9	0.4	0.2	0.2	0.2	0.5	0.1	0.1
Avg Speed (kph)	15	18	14	13	15	11	13	16	31	6	14	15
Fuel Used (l)	9.7	57.2	6.6	6.7	54.8	6.8	4.0	4.1	7.0	7.4	1.9	2.3
HC Emissions (g)	0	2	0	0	1	0	0	0	0	0	0	0
CO Emissions (g)	93	700	45	39	314	25	39	40	110	47	16	41
NOx Emissions (g)	1	7	0	0	4	0	0	0	1	1	0	1
Vehicles Entered	34	209	26	22	208	24	17	18	39	43	14	24
Vehicles Exited	32	211	27	20	210	25	20	17	37	46	15	23
Hourly Exit Rate	192	1266	162	120	1260	150	120	102	222	276	90	138
Input Volume	200	1268	148	116	1316	156	124	152	224	220	56	148
% of Volume	96	100	109	103	96	96	97	67	99	125	161	93
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: PR-199 & PR-169 Performance by movement

Movement	All
Total Delay (hr)	5.0
Delay / Veh (s)	26.5
Total Stops	508
Travel Dist (km)	119.2
Travel Time (hr)	8.1
Avg Speed (kph)	15
Fuel Used (l)	168.6
HC Emissions (g)	4
CO Emissions (g)	1511
NOx Emissions (g)	15
Vehicles Entered	678
Vehicles Exited	683
Hourly Exit Rate	4098
Input Volume	4128
% of Volume	99
Denied Entry Before	0
Denied Entry After	0

Micro-Simulación Red #2 PR-199, PR-1, PR-169 y PR-20
 AM Condiciones Existentes Año 2009

8: PR-199 & PR-20 SB Off Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	1.4	0.0	0.1	0.4	0.8	0.0	0.2	3.0
Delay / Veh (s)	19.2	10.4	33.1	9.7	23.2	16.6	5.9	15.9
Total Stops	157	2	15	65	76	0	2	317
Travel Dist (km)	57.5	1.9	1.5	15.2	19.1	0.0	10.5	105.7
Travel Time (hr)	2.7	0.1	0.2	0.7	1.3	0.0	0.4	5.4
Avg Speed (kph)	22	27	8	21	14	5	25	20
Fuel Used (l)	67.1	1.8	1.8	15.0	29.7	0.1	11.3	126.6
HC Emissions (g)	3	0	0	0	1	0	0	4
CO Emissions (g)	727	11	3	129	280	0	81	1232
NOx Emissions (g)	9	0	0	1	2	0	1	13
Vehicles Entered	283	11	15	164	120	0	101	694
Vehicles Exited	257	10	15	154	132	1	100	669
Hourly Exit Rate	1542	60	90	924	792	6	600	4014
Input Volume	1640	72	84	977	688	4	612	4077
% of Volume	94	83	107	95	115	150	98	98
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

11: PR-199 & PR-20 NB On Performance by movement

Movement	EBT	WBT	WBR	All
Total Delay (hr)	0.3	0.1	0.0	0.4
Delay / Veh (s)	2.7	2.8	2.9	2.7
Total Stops	10	0	1	11
Travel Dist (km)	34.9	20.4	5.2	60.4
Travel Time (hr)	1.1	0.6	0.2	1.8
Avg Speed (kph)	32	35	28	33
Fuel Used (l)	47.1	24.8	5.0	76.9
HC Emissions (g)	2	1	0	3
CO Emissions (g)	594	335	34	963
NOx Emissions (g)	7	3	0	10
Vehicles Entered	361	174	44	579
Vehicles Exited	364	178	45	587
Hourly Exit Rate	2184	1068	270	3522
Input Volume	2184	1060	276	3520
% of Volume	100	101	98	100
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Micro-Simulación Red #2 PR-199, PR-1, PR-169 y PR-20
 AM Condiciones Existentes Año 2009

14: PR-199 & Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Total Delay (hr)	0.2	0.8	0.1	0.4	0.0	0.3	0.0	0.2	0.1	0.1	2.2
Delay / Veh (s)	32.8	10.1	4.5	9.3	4.6	30.9	27.7	12.2	27.2	16.0	11.8
Total Stops	17	121	6	76	2	26	3	41	16	16	324
Travel Dist (km)	2.0	33.5	2.8	18.2	0.4	2.5	0.4	4.7	1.1	1.1	66.8
Travel Time (hr)	0.2	1.5	0.1	0.9	0.0	0.3	0.1	0.4	0.2	0.1	3.8
Avg Speed (kph)	10	23	21	20	22	7	8	13	6	9	18
Fuel Used (l)	2.4	30.7	1.9	27.7	0.4	5.2	0.9	7.0	2.4	2.2	80.9
HC Emissions (g)	0	1	0	0	0	0	0	0	0	0	2
CO Emissions (g)	23	231	10	259	6	46	4	61	9	21	670
NOx Emissions (g)	0	3	0	2	0	1	0	1	0	0	7
Vehicles Entered	17	289	58	172	4	30	5	56	19	20	670
Vehicles Exited	17	287	60	171	4	30	5	58	18	17	667
Hourly Exit Rate	102	1722	360	1026	24	180	30	348	108	102	4002
Input Volume	92	1784	308	1048	44	200	12	304	132	88	4012
% of Volume	111	97	117	98	55	90	250	114	82	116	100
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0

17: PR-199 & Angel Quiñones Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	All
Total Delay (hr)	0.4	2.4	0.2	2.6	2.4	0.0	0.1	0.0	0.1	8.2
Delay / Veh (s)	64.2	31.2	10.6	204.7	29.4	48.4	36.0	10.2	14.4	39.5
Total Stops	24	201	18	111	213	2	5	4	8	586
Travel Dist (km)	3.9	42.9	5.9	13.7	87.4	0.6	0.6	0.9	1.9	157.8
Travel Time (hr)	0.5	3.4	0.4	2.9	4.2	0.0	0.1	0.0	0.1	11.7
Avg Speed (kph)	8	13	18	5	21	15	7	19	13	14
Fuel Used (l)	8.7	69.9	7.3	30.9	81.6	0.7	1.0	1.4	2.8	204.2
HC Emissions (g)	0	1	0	0	2	0	0	0	0	4
CO Emissions (g)	57	494	35	69	513	1	9	31	20	1229
NOx Emissions (g)	0	6	0	1	6	0	0	0	0	14
Vehicles Entered	25	272	68	51	296	2	5	9	20	748
Vehicles Exited	22	274	67	39	301	2	6	8	20	739
Hourly Exit Rate	132	1644	402	234	1806	12	36	48	120	4434
Input Volume	140	1668	400	264	1724	40	80	64	96	4476
% of Volume	94	99	100	89	105	30	45	75	125	99
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

Micro-Simulación Red #2 PR-199, PR-1, PR-169 y PR-20
 AM Condiciones Existentes Año 2009

21: PR-199 & PR-1 NB Off Performance by movement

Movement	EBT	WBT	NBL	NBR	All
Total Delay (hr)	0.4	0.1	0.7	0.8	2.0
Delay / Veh (s)	4.5	0.7	112.3	96.2	10.5
Total Stops	0	1	2	3	6
Travel Dist (km)	83.7	28.9	1.2	1.5	115.2
Travel Time (hr)	2.1	0.9	0.8	0.8	4.6
Avg Speed (kph)	40	35	2	3	29
Fuel Used (l)	79.5	55.9	7.3	8.0	150.8
HC Emissions (g)	2	2	0	0	4
CO Emissions (g)	548	913	12	14	1486
NOx Emissions (g)	8	8	0	0	15
Vehicles Entered	288	329	25	29	671
Vehicles Exited	288	326	23	29	666
Hourly Exit Rate	1728	1956	138	174	3996
Input Volume	1816	1864	164	228	4072
% of Volume	95	105	84	76	98
Denied Entry Before	0	0	2	3	5
Denied Entry After	0	1	2	1	4

Total Network Performance

Total Delay (hr)	22.0
Delay / Veh (s)	46.0
Total Stops	1765
Travel Dist (km)	861.6
Travel Time (hr)	42.1
Avg Speed (kph)	21
Fuel Used (l)	1093.4
HC Emissions (g)	29
CO Emissions (g)	10520
NOx Emissions (g)	109
Vehicles Entered	1742
Vehicles Exited	1694
Hourly Exit Rate	10164
Input Volume	34397
% of Volume	30
Denied Entry Before	5
Denied Entry After	4

Micro-Simulación Red #2 PR-199, PR-1, PR-169 y PR-20
 AM Condiciones Existentes Año 2009

Arterial Level of Service: EB PR-199

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
PR-1 SB On	17	31.2	45.1	0.2	14
PR-1 NB Off	21	4.6	25.8	0.3	41
Total		35.8	70.9	0.5	24

Arterial Level of Service: WB PR-199

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
PR-1 NB Off	21	0.7	9.5	0.1	37
Angel Quiñones	17	29.9	51.0	0.3	21
Total		30.7	60.6	0.4	23

Micro-Simulación Red #2 PR-199, PR-1, PR-169 y PR-20
 AM Condiciones Existentes Año 2009

Intersection: 5: PR-199 & PR-169

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	T	LT	TR
Maximum Queue (m)	51.5	51.8	192.5	192.5	35.0	65.3	77.0	72.8	27.4	15.6	52.1	28.7
Average Queue (m)	27.3	41.6	140.9	124.3	23.3	52.1	63.0	64.7	17.4	8.8	46.7	22.9
95th Queue (m)	49.2	57.6	244.0	215.8	39.6	68.2	82.7	79.6	27.8	18.5	52.9	31.1
Link Distance (m)		187.9	187.9	187.9		190.8	190.8	190.8	141.0	141.0	68.5	68.5
Upstream Blk Time (%)			1	1								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (m)	100.0				70.0							
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 8: PR-199 & PR-20 SB Off

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	TR	L	T	T	T	L	L	LTR
Maximum Queue (m)	84.0	84.7	91.5	33.0	52.8	52.4	33.0	46.5	53.7	47.6
Average Queue (m)	41.8	43.3	58.8	19.3	25.8	25.6	17.6	28.4	31.8	35.7
95th Queue (m)	92.1	94.1	101.6	32.7	48.5	48.1	30.4	50.8	54.0	52.3
Link Distance (m)	190.8	190.8	190.8	74.6	74.6	74.6	74.6	158.1	158.1	158.1
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 11: PR-199 & PR-20 NB On

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)