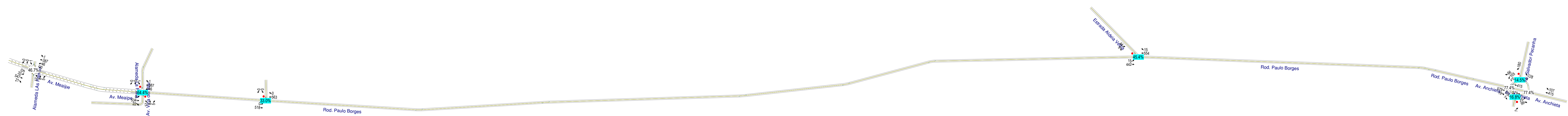















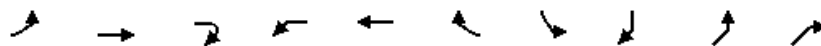


ANEXO 12

CENÁRIO 01 – MAPAS E RELATÓRIOS DE CÁLCULOS



											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER	
Lane Configurations											
Volume (vph)	0	579	0	0	415	107	0	0	25	99	
Ideal Flow (vphpl)	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	1.00	1.00	1.00	
Frt					0.972					0.850	
Flt Protected									0.950		
Satd. Flow (prot)	0	1863	0	0	1811	0	0	0	1770	1583	
Flt Permitted									0.950		
Satd. Flow (perm)	0	1863	0	0	1811	0	0	0	1770	1583	
Right Turn on Red			No			No				No	
Satd. Flow (RTOR)											
Link Speed (k/h)		50			50		50		50		
Link Distance (m)		65.5			128.2		30.3		47.9		
Travel Time (s)		4.7			9.2		2.2		3.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	629	0	0	451	116	0	0	27	108	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	629	0	0	567	0	0	0	27	108	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right	
Median Width(m)		0.0			0.0		0.0		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	
Turning Speed (k/h)	25		15	25		15	25	15	25	15	
Turn Type		NA			NA				NA	Perm	
Protected Phases		4			8				2		
Permitted Phases										2	
Minimum Split (s)		50.0			50.0				20.0	20.0	
Total Split (s)		50.0			50.0				30.0	30.0	
Total Split (%)		62.5%			62.5%				37.5%	37.5%	
Maximum Green (s)		46.0			46.0				26.0	26.0	
Yellow Time (s)		4.0			4.0				4.0	4.0	
All-Red Time (s)		0.0			0.0				0.0	0.0	
Lost Time Adjust (s)		0.0			0.0				0.0	0.0	
Total Lost Time (s)		4.0			4.0				4.0	4.0	
Lead/Lag											
Lead-Lag Optimize?											
Act Effct Green (s)		46.0			46.0				26.0	26.0	
Actuated g/C Ratio		0.58			0.58				0.32	0.32	
v/c Ratio		0.59			0.54				0.05	0.21	
Control Delay		3.8			13.0				7.5	8.5	
Queue Delay		0.1			0.0				0.0	0.0	
Total Delay		3.9			13.0				7.5	8.5	
LOS		A			B				A	A	
Approach Delay		3.9			13.0				8.3		
Approach LOS		A			B				A		
Queue Length 50th (m)		6.6			51.4				1.0	4.1	
Queue Length 95th (m)		8.5			79.1				m2.7	m7.3	
Internal Link Dist (m)		41.5			104.2		6.3		23.9		
Turn Bay Length (m)											
Base Capacity (vph)		1071			1041				575	514	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER
Starvation Cap Reductn		29			0				0	0
Spillback Cap Reductn		0			0				0	0
Storage Cap Reductn		0			0				0	0
Reduced v/c Ratio		0.60			0.54				0.05	0.21

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NEL and 6:, Start of Green

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 8.2

Intersection LOS: A

Intersection Capacity Utilization 77.4%















ICU Level of Service D












Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 100: Av. Anchieta

 30 s	 50 s
	 50 s

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SWL	SWR
Lane Configurations										
Volume (vph)	0	579	19	0	415	0	0	0	105	66
Ideal Flow (vphpl)	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	1.00	1.00	1.00
Frt		0.996								0.850
Flt Protected									0.950	
Satd. Flow (prot)	0	1855	0	0	1863	0	0	0	1770	1583
Flt Permitted									0.950	
Satd. Flow (perm)	0	1855	0	0	1863	0	0	0	1770	1583
Right Turn on Red			No			No				No
Satd. Flow (RTOR)										
Link Speed (k/h)		50			50		50		50	
Link Distance (m)		133.4			65.5		35.6		42.8	
Travel Time (s)		9.6			4.7		2.6		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	629	21	0	451	0	0	0	114	72
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	650	0	0	451	0	0	0	114	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(m)		0.0			0.0		0.0		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
Turning Speed (k/h)	25		15	25		15	25	15	25	15
Turn Type		NA			NA				NA	Perm
Protected Phases		4			8				6	
Permitted Phases										6
Minimum Split (s)		50.0			50.0				30.0	30.0
Total Split (s)		50.0			50.0				30.0	30.0
Total Split (%)		62.5%			62.5%				37.5%	37.5%
Maximum Green (s)		46.0			46.0				26.0	26.0
Yellow Time (s)		4.0			4.0				4.0	4.0
All-Red Time (s)		0.0			0.0				0.0	0.0
Lost Time Adjust (s)		0.0			0.0				0.0	0.0
Total Lost Time (s)		4.0			4.0				4.0	4.0
Lead/Lag										
Lead-Lag Optimize?										
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)		46.0			46.0				26.0	26.0
Actuated g/C Ratio		0.58			0.58				0.32	0.32
v/c Ratio		0.61			0.42				0.20	0.14
Control Delay		14.2			2.9				20.9	20.4
Queue Delay		0.0			0.3				0.0	0.0
Total Delay		14.2			3.2				20.9	20.4
LOS		B			A				C	C
Approach Delay		14.2			3.2				20.7	
Approach LOS		B			A				C	
Queue Length 50th (m)		62.3			4.7				13.1	8.1
Queue Length 95th (m)		95.3			6.5				25.5	m17.7

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SWL	SWR	
Internal Link Dist (m)		109.4			41.5		11.6		18.8		
Turn Bay Length (m)											
Base Capacity (vph)		1066			1071				575	514	
Starvation Cap Reductn		0			185				0	0	
Spillback Cap Reductn		0			0				0	0	
Storage Cap Reductn		0			0				0	0	
Reduced v/c Ratio		0.61			0.51				0.20	0.14	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2: and 6:SWL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 11.3

Intersection LOS: B




Intersection Capacity Utilization 77.4%










ICU Level of Service D









Analysis Period (min) 15










m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Av. Anchieta

					
ø6 (P)			ø4		
30 s			50 s		
			ø8		
			50 s		


















						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	0	1	123	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	0	0	0	1611	1770	1863
Flt Permitted	0.950					
Satd. Flow (perm)	0	0	0	1611	1770	1863
Link Speed (k/h)	50		50			50
Link Distance (m)	47.9		32.5			35.6
Travel Time (s)	3.4		2.3			2.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1	134	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1	134	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		3.6			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)	25	15		15	25	
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	16.8%			ICU Level of Service A		
Analysis Period (min)	15					

						
Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Volume (vph)	4	128	0	180	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869			0.865		
Flt Protected	0.999					
Satd. Flow (prot)	1617	0	0	1611	0	0
Flt Permitted	0.999					
Satd. Flow (perm)	1617	0	0	1611	0	0
Link Speed (k/h)	50		50		50	
Link Distance (m)	26.7		127.7		42.8	
Travel Time (s)	1.9		9.2		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	139	0	196	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	143	0	0	196	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
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	25	15	25	15
Sign Control	Free		Stop		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.5%			ICU Level of Service A		
Analysis Period (min)	15					

						
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	15	442	554	15	44	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.997		0.977	
Flt Protected		0.998			0.960	
Satd. Flow (prot)	0	1859	1857	0	1747	0
Flt Permitted		0.998			0.960	
Satd. Flow (perm)	0	1859	1857	0	1747	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		678.6	931.9		225.5	
Travel Time (s)		48.9	67.1		16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	480	602	16	48	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	496	618	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		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)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	45.4%			ICU Level of Service A		
Analysis Period (min)	15					



















Lanes, Volumes, Timings
300: Av. Vina del Mar/Alameda La Plata & Av. Meaípe

Cenário 01 Tarde
28/07/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	534	22	46	387	1	17	8	5	1	0	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	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.979				
Flt Protected					0.995			0.973			0.950	
Satd. Flow (prot)	0	1863	1583	0	1853	0	0	1774	0	0	1770	0
Flt Permitted					0.995			0.973			0.950	
Satd. Flow (perm)	0	1863	1583	0	1853	0	0	1774	0	0	1770	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		139.2			404.9			40.0			74.8	
Travel Time (s)		10.0			29.2			2.9			5.4	
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)	0	580	24	50	421	1	18	9	5	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	580	24	0	472	0	0	32	0	0	1	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)		0.0			0.0			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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	64.4%											
Analysis Period (min)	15											
	ICU Level of Service C											













Lanes, Volumes, Timings
400: Alameda LAs Palmas & Av. Meaípe

Cenário 01 Tarde
28/07/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	547	21	46	387	1	17	8	5	1	0	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	1.00	1.00	1.00	1.00	1.00
Frt	0.994							0.979				
Flt Protected	0.950			0.950				0.973			0.950	
Satd. Flow (prot)	1770	1852	0	1770	1863	0	0	1774	0	0	1770	0
Flt Permitted	0.950			0.950				0.885			0.736	
Satd. Flow (perm)	1770	1852	0	1770	1863	0	0	1614	0	0	1371	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)	50			50				50			50	
Link Distance (m)	87.5			183.7				58.8			28.0	
Travel Time (s)	6.3			13.2				4.2			2.0	
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
Adj. Flow (vph)	35	595	23	50	421	1	18	9	5	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	618	0	50	422	0	0	32	0	0	1	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				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
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Minimum Split (s)	15.0	45.0		15.0	45.0		15.0	15.0		20.0	20.0	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	22.2%	55.6%		22.2%	55.6%		22.2%	22.2%		22.2%	22.2%	
Maximum Green (s)	16.0	46.0		16.0	46.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
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		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)	16.0	46.0		16.0	46.0			16.0			16.0	
Actuated g/C Ratio	0.18	0.51		0.18	0.51			0.18			0.18	
v/c Ratio	0.11	0.65		0.16	0.44			0.11			0.00	
Control Delay	32.2	20.3		32.9	15.8			32.3			31.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	32.2	20.3		32.9	15.8			32.3			31.0	
LOS	C	C		C	B			C			C	
Approach Delay		20.9			17.6			32.3			31.0	
Approach LOS		C			B			C			C	
Queue Length 50th (m)	5.4	78.4		7.8	46.1			4.9			0.2	
Queue Length 95th (m)	13.8	116.2		18.1	69.7			13.1			1.5	

Lanes, Volumes, Timings
400: Alameda LAs Palmas & Av. Meaípe

Cenário 01 Tarde
28/07/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		63.5			159.7			34.8			4.0	
Turn Bay Length (m)												
Base Capacity (vph)	314	946		314	952			286			243	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.11	0.65		0.16	0.44			0.11			0.00	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 19.9







Intersection LOS: B

Intersection Capacity Utilization 46.7%

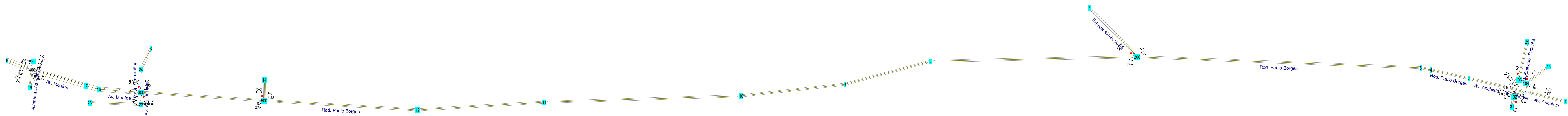
ICU Level of Service A
















Analysis Period (min) 15

Splits and Phases: 400: Alameda LAs Palmas & Av. Meaípe

 ø1	 ø2 (P)	 ø4
20 s	50 s	20 s
 ø5	 ø6	 ø8
20 s	50 s	20 s





											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER	
Lane Configurations											
Volume (vph)	0	31	0	0	27	13	0	0	1	3	
Ideal Flow (vphpl)	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	1.00	1.00	1.00	
Frt					0.956					0.850	
Flt Protected									0.950		
Satd. Flow (prot)	0	1863	0	0	1781	0	0	0	1770	1583	
Flt Permitted									0.950		
Satd. Flow (perm)	0	1863	0	0	1781	0	0	0	1770	1583	
Right Turn on Red			No			No				No	
Satd. Flow (RTOR)											
Link Speed (k/h)		50			50		50		50		
Link Distance (m)		65.5			128.2		30.3		47.9		
Travel Time (s)		4.7			9.2		2.2		3.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	34	0	0	29	14	0	0	1	3	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	34	0	0	43	0	0	0	1	3	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right	
Median Width(m)		0.0			0.0		0.0		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	
Turning Speed (k/h)	25		15	25		15	25	15	25	15	
Turn Type		NA			NA				NA	Perm	
Protected Phases		4			8				2		
Permitted Phases										2	
Minimum Split (s)		50.0			50.0				20.0	20.0	
Total Split (s)		50.0			50.0				30.0	30.0	
Total Split (%)		62.5%			62.5%				37.5%	37.5%	
Maximum Green (s)		46.0			46.0				26.0	26.0	
Yellow Time (s)		4.0			4.0				4.0	4.0	
All-Red Time (s)		0.0			0.0				0.0	0.0	
Lost Time Adjust (s)		0.0			0.0				0.0	0.0	
Total Lost Time (s)		4.0			4.0				4.0	4.0	
Lead/Lag											
Lead-Lag Optimize?											
Act Effct Green (s)		46.0			46.0				26.0	26.0	
Actuated g/C Ratio		0.58			0.58				0.32	0.32	
v/c Ratio		0.03			0.04				0.00	0.01	
Control Delay		2.0			7.6				9.0	9.3	
Queue Delay		0.0			0.0				0.0	0.0	
Total Delay		2.0			7.6				9.0	9.3	
LOS		A			A				A	A	
Approach Delay		2.0			7.6				9.3		
Approach LOS		A			A				A		
Queue Length 50th (m)		0.4			2.7				0.0	0.1	
Queue Length 95th (m)		0.9			6.9				0.5	0.9	
Internal Link Dist (m)		41.5			104.2		6.3		23.9		
Turn Bay Length (m)											
Base Capacity (vph)		1071			1024				575	514	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER
Starvation Cap Reductn		0			0				0	0
Spillback Cap Reductn		0			0				0	0
Storage Cap Reductn		0			0				0	0
Reduced v/c Ratio		0.03			0.04				0.00	0.01

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NEL and 6:, Start of Green

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.04

Intersection Signal Delay: 5.3

Intersection LOS: A















Intersection Capacity Utilization 13.3%












ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 100: Av. Anchieta

 30 s	 50 s
 50 s	 50 s

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SWL	SWR
Lane Configurations										
Volume (vph)	0	31	1	0	27	0	0	0	3	6
Ideal Flow (vphpl)	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	1.00	1.00	1.00
Frt		0.996								0.850
Flt Protected									0.950	
Satd. Flow (prot)	0	1855	0	0	1863	0	0	0	1770	1583
Flt Permitted									0.950	
Satd. Flow (perm)	0	1855	0	0	1863	0	0	0	1770	1583
Right Turn on Red			No			No				No
Satd. Flow (RTOR)										
Link Speed (k/h)		50			50		50		50	
Link Distance (m)		133.4			65.5		35.6		42.8	
Travel Time (s)		9.6			4.7		2.6		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	34	1	0	29	0	0	0	3	7
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	35	0	0	29	0	0	0	3	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(m)		0.0			0.0		0.0		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
Turning Speed (k/h)	25		15	25		15	25	15	25	15
Turn Type		NA			NA				NA	Perm
Protected Phases		4			8				6	
Permitted Phases										6
Minimum Split (s)		50.0			50.0				30.0	30.0
Total Split (s)		50.0			50.0				30.0	30.0
Total Split (%)		62.5%			62.5%				37.5%	37.5%
Maximum Green (s)		46.0			46.0				26.0	26.0
Yellow Time (s)		4.0			4.0				4.0	4.0
All-Red Time (s)		0.0			0.0				0.0	0.0
Lost Time Adjust (s)		0.0			0.0				0.0	0.0
Total Lost Time (s)		4.0			4.0				4.0	4.0
Lead/Lag										
Lead-Lag Optimize?										
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)		46.0			46.0				26.0	26.0
Actuated g/C Ratio		0.58			0.58				0.32	0.32
v/c Ratio		0.03			0.03				0.01	0.01
Control Delay		7.5			2.0				23.0	23.2
Queue Delay		0.0			0.0				0.0	0.0
Total Delay		7.5			2.0				23.0	23.2
LOS		A			A				C	C
Approach Delay		7.5			2.0				23.1	
Approach LOS		A			A				C	
Queue Length 50th (m)		2.2			0.2				0.4	0.9
Queue Length 95th (m)		5.9			0.8				2.5	4.2

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SWL	SWR	
Internal Link Dist (m)		109.4			41.5		11.6		18.8		
Turn Bay Length (m)											
Base Capacity (vph)		1066			1071				575	514	
Starvation Cap Reductn		0			0				0	0	
Spillback Cap Reductn		0			0				0	0	
Storage Cap Reductn		0			0				0	0	
Reduced v/c Ratio		0.03			0.03				0.01	0.01	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2: and 6:SWL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.03

Intersection Signal Delay: 7.5



Intersection LOS: A










Intersection Capacity Utilization 13.3%









ICU Level of Service A









Analysis Period (min) 15










Splits and Phases: 101: Av. Anchieta

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	0	0	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1863	1770	1863
Link Speed (k/h)	50		50			50
Link Distance (m)	47.9		32.5			35.6
Travel Time (s)	3.4		2.3			2.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		3.6			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)	25	15		15	25	
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					


















						
Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Volume (vph)	6	4	0	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.951			0.865		
Flt Protected	0.969					
Satd. Flow (prot)	1717	0	0	1611	0	0
Flt Permitted	0.969					
Satd. Flow (perm)	1717	0	0	1611	0	0
Link Speed (k/h)	50		50		50	
Link Distance (m)	26.7		127.7		42.8	
Travel Time (s)	1.9		9.2		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	4	0	3	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	3	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
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	25	15	25	15
Sign Control	Free		Stop		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

						
Lane Group	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations						
Volume (vph)	0	0	7	8	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.929			0.865
Flt Protected			0.977			
Satd. Flow (prot)	0	0	1691	0	0	1611
Flt Permitted			0.977			
Satd. Flow (perm)	0	0	1691	0	0	1611
Link Speed (k/h)	50		50		50	
Link Distance (m)	26.7		30.3		92.7	
Travel Time (s)	1.9		2.2		6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	8	9	0	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	17	0	0	3
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(m)	0.0		3.6		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	25	15	25	15
Sign Control	Stop		Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

						
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	0	23	33	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996			
Flt Protected						
Satd. Flow (prot)	0	1863	1855	0	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1855	0	1863	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		678.6	931.9		225.5	
Travel Time (s)		48.9	67.1		16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	25	36	1	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	37	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		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)	25			15	25	15
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						



















Lanes, Volumes, Timings
300: Av. Vina del Mar/Alameda La Plata & Av. Meaípe

Cenário 01 Noite
28/07/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	22	0	0	35	0	0	0	0	0	0	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	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	1863	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	1863	0	1863	0	0	1863	0	0	1863	0
Link Speed (k/h)	50				50				50			
Link Distance (m)	139.2				404.9				40.0			
Travel Time (s)	10.0				29.2				2.9			
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)	0	24	0	0	38	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	38	0	0	0	0	0	0	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)	0.0				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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 6.7%	ICU Level of Service A											
Analysis Period (min) 15												













Lanes, Volumes, Timings
400: Alameda LAs Palmas & Av. Meaípe

Cenário 01 Noite
28/07/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	25	0	0	31	0	0	0	0	5	0	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	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected											0.950	
Satd. Flow (prot)	1863	1863	0	1863	1863	0	0	1863	0	0	1770	0
Flt Permitted											0.757	
Satd. Flow (perm)	1863	1863	0	1863	1863	0	0	1863	0	0	1410	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		87.5			183.7			58.8			28.0	
Travel Time (s)		6.3			13.2			4.2			2.0	
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
Adj. Flow (vph)	0	27	0	0	34	0	0	0	0	5	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	34	0	0	0	0	0	5	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			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
Turn Type	Prot	NA		Prot	NA		Perm			Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Minimum Split (s)	15.0	45.0		15.0	45.0		15.0	15.0		20.0	20.0	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	22.2%	55.6%		22.2%	55.6%		22.2%	22.2%		22.2%	22.2%	
Maximum Green (s)	16.0	46.0		16.0	46.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
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		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		46.0			46.0						16.0	
Actuated g/C Ratio		0.51			0.51						0.18	
v/c Ratio		0.03			0.04						0.02	
Control Delay		11.1			11.2						31.0	
Queue Delay		0.0			0.0						0.0	
Total Delay		11.1			11.2						31.0	
LOS		B			B						C	
Approach Delay		11.1			11.2						31.0	
Approach LOS		B			B						C	
Queue Length 50th (m)		2.3			2.9						0.8	
Queue Length 95th (m)		6.4			7.6						3.8	

Lanes, Volumes, Timings
400: Alameda LAs Palmas & Av. Meaípe

Cenário 01 Noite
28/07/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		63.5			159.7			34.8			4.0	
Turn Bay Length (m)												
Base Capacity (vph)		952			952						250	
Starvation Cap Reductn		0			0						0	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.03			0.04						0.02	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.04

Intersection Signal Delay: 12.6







Intersection LOS: B

Intersection Capacity Utilization 13.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 400: Alameda LAs Palmas & Av. Meaípe

 ø1	 ø2 (P)	 ø4
20 s	50 s	20 s
 ø5	 ø6	 ø8
20 s	50 s	20 s