ARTPLAN 2002 Conceptual Planning Analysis

Description/File Information

Filename	W:\04\04211 2010 es\Travel Time Study\artplan\fut w proj\AP_PM_Old Cutler_SB w imp.xml	**Date Prepared**	4/8/2010		
Program	ARTPLAN	**Version**	5.2.0		
Analyst	DPA	**Agency**		**District**	
Arterial Name	Old Cutler Rd	**Begin Intersection**	SW 176 Street	**End Intersection**	SW 184 Street
Study Period	Kother	**Peak Direction**	Southbound		
User Notes	Future (2015) with Project with Imps - PM Peak				

Facility Data

Roadway Variables		Traffic Variables		Control Variables		Multimodal Variables	
Area Type	Urbanized	**AADT**	14872	**Arrival Type**	4	**Paved Shoulder/Bike Lane**	No
Class	2	**K**	0.103	**Signals/Mile**	1.00	**Outside Lane Width**	Typical
Posted Speed	40	**D**	0.66	**Cycle Length**	120	**Pavement Condition**	Typical
# Thru Lanes	2	**PHF**	0.98	**Through g/C**	0.5	**Sidewalk**	Yes
Median Type	None	**% Turns Excl. Lanes**	1	**Control Type**	Semiactuated	**Sidewalk/Roadway Separation**	Typical
Left Turn Lanes	No	**% Heavy Vehicles**	2			**Sidewalk/Roadway Protective Barrier**	No
		Base Sat Flow Rate	1900			**Obstacle to Bus Stop**	No
		Local Adj. Factor	0.98			**Bus Freq**	1
		Adjusted Sat Flow Rate	1387			**Bus Span Of Service**	15

Automobile Segment Data

Segment #	Cycle Length	g/C	Arr. Type	% Turns	# Dir. Lanes	Length	AADT	Hourly Vol.	FFS	Median Type
1 (to SW 184 Street)	130	0.61	4	25	1	0.625	16240	1168	45	None

Automobile LOS

Segment #	Thru Mvmt Flow Rate	v/c	Control Delay	Int. Approach LOS	Speed (mph)	Segment LOS
1 (to SW 184 Street)	894	1.06	42.64	D	22.5	F

Arterial Length	0.6	Auto Speed	****	Auto LOS	F

Automobile Service Volume Tables

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	580	1100	1130	***	***
2	1260	2230	2260	***	***
3	1950	3360	3380	***	***
4	2630	4490	4510	***	***
*	580	1100	1130	***	***
Lanes	**Hourly Volume In Both Directions**				
2	880	1670	1710	***	***
4	1910	3380	3420	***	***
6	2950	5090	5130	***	***
8	3990	6800	6840	***	***
*	880	1670	1710	***	***
Lanes	**Annual Average Daily Traffic**				
2	8500	16200	16600	***	***
4	18500	32800	33200	***	***
6	28700	49400	49800	***	***
8	38700	66000	66400	***	***
*	8500	16200	16600	***	***

Multimodal Segment Data

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to SW 184 Street)	No	Typical	Typical	Yes	Typical	No	No	1	15

Pedestrian SubSegment Data

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to SW 184 Street)	100			Yes			Typical			No		

Multimodal LOS

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Segment	Score	1	2	3	Segment	Score	Segment	Adj.Bus
1 (to SW 184 Street)	E	4.70	E			E	4.79	F	0.85

Bicycle LOS	4.70	E	Pedestrian LOS	4.79	E	Bus LOS	.85	F

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	**	**	**
2	**	**	**	**	**
3	**	**	**	**	**
4	**	**	**	**	**
*	**	**	**	**	**
Lanes	**Hourly Volume In Both Directions**				
2	**	**	**	**	**
4	**	**	**	**	**
6	**	**	**	**	**
8	**	**	**	**	**
*	**	**	**	**	**
Lanes	**Annual Average Daily Traffic**				
2	**	**	**	**	**
4	**	**	**	**	**
6	**	**	**	**	**
8	**	**	**	**	**
*	**	**	**	**	**

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	**	**	**
2	**	**	**	**	**
3	**	**	**	**	**
4	**	**	**	**	**
*	**	**	**	**	**
Lanes	**Hourly Volume In Both Directions**				
2	**	**	**	**	**
4	**	**	**	**	**
6	**	**	**	**	**
8	**	**	**	**	**
*	**	**	**	**	**
Lanes	**Annual Average Daily Traffic**				
2	**	**	**	**	**
4	**	**	**	**	**
6	**	**	**	**	**
8	**	**	**	**	**
*	**	**	**	**	**

Bus

	A	B	C	D	E
Lanes	**Buses Per Hour In Peak Direction**				
2	>7.00	>5.00	>=4.00	>=3.00	>=2.00
Lanes	**Buses in Study Hour in Peak Direction (Daily)**				
2	>7.00	>5.00	>=4.00	>=3.00	>=2.00

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the segment data screen.**
**** Cannot be acheived using table input value defaults.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
****** Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.**

Appendix D

Intersection Capacity Analysis

Old Cutler Road / SW 176 Street

AM Peak Hour

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	DPA	Intersection	Old Cutler Rd & SW 176 St
Agency or Co.		Area Type	All other areas
Date Performed		Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	Existing (2010)
		Project ID	Palmer Trinity Traffic Study - #04211

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0		0				0	1			1	0
Lane Group		LR						LT			TR	
Volume, V (vph)	217		11				3	760			361	235
% Heavy Vehicles, %HV	2		2				2	2			2	2
Peak-Hour Factor, PHF	0.70		0.70				0.79	0.79			0.70	0.70
Pretimed (P) or Actuated (A)	A		A				A	A			A	A
Start-up Lost Time, l_1		2.0						2.0			2.0	
Extension of Effective Green, e		2.0						2.0			2.0	
Arrival Type, AT		3						3			3	
Unit Extension, UE		3.0						3.0			3.0	
Filtering/Metering, I		1.000						1.000			1.000	
Initial Unmet Demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR Volumes	0	0	0				0	0		0	0	0
Lane Width		16.0						12.0			12.0	
Parking / Grade / Parking	N	0	N				N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0						0			0	
Min. Time for Pedestrians, G_p	3.2						3.2			3.2		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 21.0	G =	G =	G =	G = 89.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		326						966			852	
Lane Group Capacity, c		350						1378			1308	
v/c Ratio, X		0.93						0.70			0.65	
Total Green Ratio, g/C		0.17						0.74			0.74	
Uniform Delay, d_1		48.8						8.3			7.7	
Progression Factor, PF		1.000						1.000			1.000	
Delay Calibration, k		0.45						0.27			0.23	
Incremental Delay, d_2		31.1						1.6			1.2	
Initial Queue Delay, d_3		0.0						0.0			0.0	
Control Delay		79.9						10.0			8.9	
Lane Group LOS		E						A			A	
Approach Delay	79.9						10.0			8.9		
Approach LOS	E						A			A		
Intersection Delay	20.2			X_c = 0.74			Intersection LOS			C		

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Date Performed		Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	Future (2015) without Project
		Project ID	Palmer Trinity Traffic Study - #04211

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0		0				0	1			1	0
Lane Group		LR						LT			TR	
Volume, V (vph)	232		12				3	815			387	251
% Heavy Vehicles, %HV	2		2				2	2			2	2
Peak-Hour Factor, PHF	0.70		0.70				0.79	0.79			0.70	0.70
Pretimed (P) or Actuated (A)	A		A				A	A			A	A
Start-up Lost Time, l_1		2.0						2.0			2.0	
Extension of Effective Green, e		2.0						2.0			2.0	
Arrival Type, AT		3						3			3	
Unit Extension, UE		3.0						3.0			3.0	
Filtering/Metering, I		1.000						1.000			1.000	
Initial Unmet Demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR Volumes	0	0	0				0	0		0	0	0
Lane Width		16.0						12.0			12.0	
Parking / Grade / Parking	N	0	N				N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0						0			0	
Min. Time for Pedestrians, G_p	3.2						3.2			3.2		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 21.0	G =	G =	G =	G = 89.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		348						1036			912	
Lane Group Capacity, c		350						1378			1308	
v/c Ratio, X		0.99						0.75			0.70	
Total Green Ratio, g/C		0.17						0.74			0.74	
Uniform Delay, d_1		49.4						9.1			8.3	
Progression Factor, PF		1.000						1.000			1.000	
Delay Calibration, k		0.50						0.31			0.26	
Incremental Delay, d_2		46.5						2.4			1.7	
Initial Queue Delay, d_3		0.0						0.0			0.0	
Control Delay		95.9						11.4			9.9	
Lane Group LOS		F						B			A	
Approach Delay	95.9						11.4			9.9		
Approach LOS	F						B			A		
Intersection Delay	23.6			X_c = 0.80			Intersection LOS			C		

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Date Performed		Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	Future (2015) w Project
		Project ID	Palmer Trinity Traffic Study - #04211

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0		0				0	1			1	0
Lane Group		LR						LT			TR	
Volume, V (vph)	204		11				3	961			685	202
% Heavy Vehicles, %HV	2		2				2	2			2	2
Peak-Hour Factor, PHF	0.70		0.70				0.79	0.79			0.70	0.70
Pretimed (P) or Actuated (A)	A		A				A	A			A	A
Start-up Lost Time, l_1		2.0						2.0			2.0	
Extension of Effective Green, e		2.0						2.0			2.0	
Arrival Type, AT		3						3			3	
Unit Extension, UE		3.0						3.0			3.0	
Filtering/Metering, I		1.000						1.000			1.000	
Initial Unmet Demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR Volumes	0	0	0				0	0		0	0	0
Lane Width		16.0						12.0			12.0	
Parking / Grade / Parking	N	0	N				N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0						0			0	
Min. Time for Pedestrians, G_p	3.2						3.2			3.2		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 21.0	G =	G =	G =	G = 89.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis, T = 0.25 | Cycle Length, C = 120.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		307						1220			1268	
Lane Group Capacity, c		350						1377			1339	
v/c Ratio, X		0.88						0.89			0.95	
Total Green Ratio, g/C		0.17						0.74			0.74	
Uniform Delay, d_1		48.2						11.7			13.5	
Progression Factor, PF		1.000						1.000			1.000	
Delay Calibration, k		0.40						0.41			0.46	
Incremental Delay, d_2		21.4						7.3			13.9	
Initial Queue Delay, d_3		0.0						0.0			0.0	
Control Delay		69.6						19.0			27.4	
Lane Group LOS		E						B			C	
Approach Delay	69.6						19.0			27.4		
Approach LOS	E						B			C		
Intersection Delay	28.4			X_c = 0.93			Intersection LOS			C		

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