APPENDIX A



Florida Department of Transportation

JEB BUSH **GOVERNOR**

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JOSE ABREU SECRETARY

MEMORANDUM

DATE:

September 12, 2003

TO:

Gustavo Schmidt, P.E., District Planning and Environmental Manager

FROM:

Scott P. Seeburger, Project Manager

SUBJECT: 1-595 System Interchange Modification Report

Request to Extend Study Limits

I-595 East of University Drive to East of 195

Broward County, Florida FM No. 4052261-12-01

This memorandum serves as a Request for Extension of Study Limits for the I-595 Systems Interchange Modification Report (SIMR). The limits would be extended from University Drive to I-75 making the total project limits for the SIMR from east of I-95 to I-75. The revised project limits are consistent with the I-595 Master Plan Locally Preferred Alternative. The methodology to be used will follow that contained in the approved Methodology Letter of Understanding (MLOU), dated February 11, 2003, between the Federal Highway Administration, the Florida Department of Transportation Office of Systems Planning, and the District Four Interchange Review Committee regarding preparation of the SIMR, including the traffic factors.

Scott Seeburger

FDOT Project Manager

FHV

Gustavo Schmidt, PE

District Four Interchange Review Coordinator

Peter Tyndall AICP, for Robert Krzeminski, PE

Central Office Systems Planning Office

METHODOLOGY LETTER OF UNDERSTANDING BETWEEN

THE FEDERAL HIGHWAY ADMINISTRATION, THE FLORIDA DEPARTMENT OF TRANSPORTATION OFFICE OF SYSTEMS PLANNING,

AND THE DISTRICT FOUR

INTERCHANGE REVIEW COMMITTEE FOR PREPARING

A SYSTEMS INTERCHANGE MODIFICATION REPORT (SIMR) FOR A PORTION OF 1-595 IN BROWARD COUNTY

This document serves as the Methodology Letter of Understanding (MLOU) between the Federal Highway Administration, the Florida Department of Transportation Office of Systems Planning, and the District Four Interchange Review Committee, hereinafter referred to as "the Applicant", regarding preparation of a Systems Interchange Modification Report (SIMR) for a portion of I-595 in Broward County. This SIMR relates to the proposed I-595 Master Plan improvements for the section of interstate between University Drive and I-95, including interchanges at Davie Road, the Florida Turnpike, SR 7 (US 441) and I-95. The SIMR is also consistent with the recently approved Interchange Operational Analysis Report (IOAR) for the I-95/I-595 interchange. This MLOU outlines the criteria, assumptions, processes (analyses) and documentation requirements for this project. The SIMR will serve as a component of the future Project Development and Environmental (PD&E) Study for the same area.

The following sections are included in this MLOU:

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1.0 PURPOSE AND NEED FOR THE PROJECT

On I-595 within the Study Area, traffic demand on the mainline exceeds FDOT minimum level of service standards in both directions.

The Florida Department of Transportation strives to attain the goals itemized in its Mission Statement. Included among these goals are:

- Develop, Operate and Preserve the State Highway System.
- Coordinate and Integrate the Transportation Facilities and Services of all Governmental Entities and the Private Sector.
- Provide S afe and Efficient Transportation Facilities and Services for the Movement of People and Goods at a Reasonable Cost.
- Develop and Continuously Maintain a comprehensive Policy Plan and Modal System Plan for a Multi-Modal Statewide Transportation System.

The improvements proposed for the portion of I-595 in Broward County support the Department's efforts to achieve these goals. The proposed system modifications examined in this SIMR will advance the Department's efforts in three major areas:

- 1. The proposed design will remedy a number of deficiencies, which have been identified within the corridor. These deficiencies include such areas as level of service and weaving segments within the interchanges.
- 2. The proposed improvements will improve the safety of the study corridor.
- 3. The improvements are consistent with the long range transportation plans, which has been developed for this area.

2.0 CONSIDERED ALTERNATIVES

No Build Alternative

The No Build Alternative describes the conditions that will exist in the opening year (2014) if no improvements are considered. The conditions that must be described include, at a minimum, the operating conditions along the mainline and at ramp terminals and within the Area of Influence. Since the modification for any interchange proposal is based on a comparison of the No Build and Build Alternatives, identification of the network that is considered in the No Build Alternative in each analysis year is required.

The No Build Alternative must contain the existing transportation network and any funded planned or programmed improvements open to traffic in the analysis year. The No Build alternative will include only those improvements that are elements of the MPO Transportation Improvement Program, the MPO Long Range Transportation Plan (LRTP), the Department's Adopted Five Year Work Program, local government comprehensive plans, or development mitigation improvement projects that are elements of approved development orders. The I-595

causeway and SB-to-WB and NB-to-WB ramp improvements are in the LRTP and the District Four 5-year work program.

Build Alternative

The build alternative is based on a comprehensive evaluation of alternatives in the Master Plan. Two phases for the Build Alternative will be considered. The opening year (2014) includes the proposed Phase I improvements along I-595 at the interchanges with I-95 and Florida's Turnpike. The design year (2034) includes Phase II improvements that are the ultimate build-out of the Master Plan Locally Preferred Alternative (LPA). The LPA includes no new access connections to I-595 or I-95.

The Phase I, or opening year (2014) Build Alternative improvements include:

I-95/I-595 Interchange Improvements

- Construct two lane SB-to-WB I-95 Ramp in ultimate location to meet current design standards
- Construct NB-to-WB I-95 Ramp in ultimate location
- Widen causeway to five lanes to meet current design standards

I-595/Turnpike Interchange Improvements

- Provide direct WB-to-NB ramp to Tumpike in ultimate location including a SR 84 continuous connection
- Provide exclusive NB-to-EB Tumpike ramp that is physically separated and consistent with proposed Tumpike improvements
- Provide a three lane ramp to the Tumpike and auxiliary lane to Griffin Road consistent with Tumpike and D4 plans
- Provide a NB Auxiliary lane from Griffin Road to I-595 exit ramps

I-595 EB-to-Turnpike

• Improved traffic flow through signing and elimination of weave section

The Phase II, or design year (2034) Ultimate Master Plan LPA Buildout improvements include:

- The Collector-Distributor systems from I-95 to Davie Road
- Ultimate interchange improvements at I-95
- Reversible lanes along I-595

The following table specifies the analyses that will be performed for each analysis year:

Table 1. Analysis Design

Analysis Year	Analysis
2002	1. No Build/Existing Conditions
2014	No Build Phase I Improvements
Interim	Determine when mainline Phase I Improvements exceed capacity
2034	 No Build Ultimate LPA Buildout

3.0 AREA OF INFLUENCE

The area of influence for the SIMR is the I-595 mainline from University Drive to I-95 including the interchange ramps at University Drive (east ramps only), Davie Road Extension, Florida's Turnpike, SR 7 and I-95. In the westbound direction, the analysis network begins between US 1 and I-95, and extends to include the off-ramp to University Drive. In the eastbound direction, the analysis network begins at the SB-to-EB I-595 on-ramp from University Drive and extends to east of I-95 including the I-595 on-ramps from I-95.

In addition, the preliminary area of influence will include the Tumpike mainline from Griffin Road, including the interchange ramp north of Griffin Road, to the Peters Road's overpass. The area of influence is shown in Figure 1.

4.0 ANALYSIS YEARS

The analysis years proposed for this project are as follows:

Existing Year: 2002

Opening Year: 2014

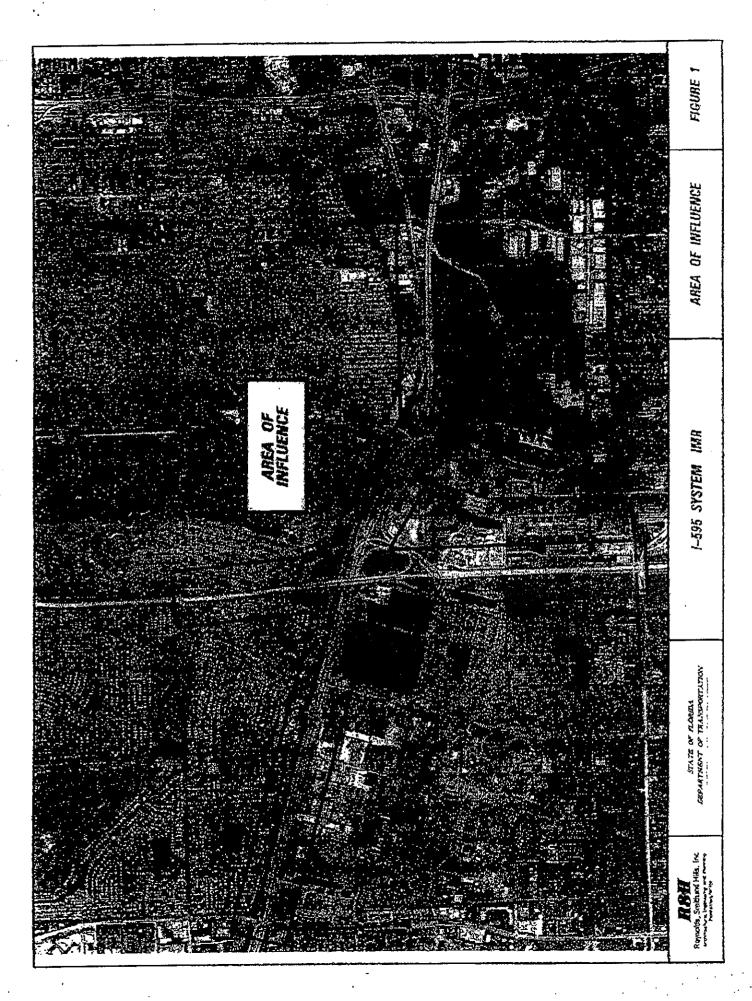
Interim Year: TBD

Design Year: 2034

The interim year will be determined by failure of the I-595 mainline section within the area of influence.

5.0 EXISTING CONDITIONS

The existing conditions analysis documented in the SIMR will primarily be extracted from the I-95/I-595 Master Plan and updated to 2002. The following information for the SIMR will be taken from the Master Plan.



- Social Impacts
- Cultural Impacts
- Natural Environment
- Physical Impacts

The year 1998 was the existing year in the Master Plan. As stated in Section 4.0 above, 2002 will be used as the existing year for the SIMR. The directional design hour volumes (DDHV) developed for the I-95/I-595 IOAR will be used as well as the latest traffic count data for the I-595 and Turnpike mainline and ramps. Year 2002 average annual daily traffic (AADT) volumes are available for the mainline and 2001 AADT volumes are available for the I-95 and I-595 ramps. These volumes will be used to develop the 2002 existing year AM and PM peak hour volumes for the mainline and ramps. From this information, 2002 traffic will be estimated and verified with the 1998 existing traffic used in the I-95/I-595 Master Plan.

6.0, 7.0, 8.0 TRAVEL DEMAND FORECASTING

The Southeast Regional Planning Model (SERPM), regression analysis, traffic trend analysis, and the judgment of a team of District Four forecasting experts were used during the Master Plan to develop 2020 DDHV for No-Build and As-Planned scenarios, as well as 2020 AM and PM peak hour volumes for the LPA. It is important that the forecasting be based on the Master Plan forecasts in order to maintain consistency with the forecasted traffic that the Master Plan recommendations have been based on. The 2002 and 2020 No-Build volumes will be used to interpolate for opening year (2014) No-Build conditions.

The 2002 and 2020 As-Planned forecasts will be used to interpolate for 2014 Build conditions. In order to determine when the LPA should begin implementation, an interim year analysis will be conducted to identify the year that the Phase I improvements are expected to fail. This will be when the mainline level of service (LOS) falls below LOS D. The 2014 Build and 2020 As-Planned forecasts will be used to interpolate for the interim year conditions. Should the interim year extend beyond 2020, the 2020 As-Planned forecasts will be projected outward by applying a 2.1 percent compounded annually growth rate to 2025 and 1.8 percent compounded annually to 2034. These rates are consistent with long-term demographic growth in the I-595 travel shed and were verified against University of Florida's Bureau of Economic and Business Research data. The 2020 LPA forecasts will be projected outward to develop volumes for the design year (2034) analysis using the same procedure. The travel demand forecast for this SIMR will be in accordance to the Interchange Handbook.

9.0 DEMOGRAPHIC DATA COLLECTION AND SOURCES

The sources for demographic data (population and employment) within the project study area will include, but not be limited to:

- I-95/I-595 Master Plan
- I-95/I-595 IOAR

- FDOT/PLANNING OFFICE
 - Statistical Abstract, Bureau of Economic and Business Research, University of Florida
 - Broward County Metropolitan Planning Organization Traffic Analysis Zone Data

10.0 DATA COLLECTION METHODOLOGY

Data utilized in the existing conditions analysis, existing year travel demand forecast, and future land forecasts will be collected from the I-95/I-595 Master Plan Study.

The most current traffic data including existing traffic counts, AADT data, and classification counts will be obtained.

Crash data obtained for the IOAR will be used for the mainline section within the Area of Influence. This information includes data for the most recent 3-year period (1998-2002) and will be summarized, along with a safety analysis to identify high crash segments/locations.

As part of the I-95/I-595 IOAR, PM peak period travel time runs were conducted on the I-595 mainline for the westbound direction only. For the SIMR, PM peak period travel time runs will be conducted on the I-595 mainline for the eastbound direction. In addition, AM peak period travel time runs will be conducted on the I-595 mainline for both directions. AM and PM peak period travel time will be conducted for both directions on the Turnpike. This data will be used to calibrate and validate the CORSIM Model for use in the operational analysis.

11.0 TRAFFIC FACTORS

The traffic factors used for the SIMR will be the same factors that were approved for use by the Federal Highway Administration for the I-95/I-595 Master Plan Study and are as follows:

Facility	K ₃₀	\mathbf{D}_{30}
I-595	8.75%	56%
I-95	7.80%	51%
SR 84	8.75%	56%

Table 2. Traffic Factors

The Applicant may propose modifications to the traffic factors during the study should supplemental data suggest more appropriate values. These modifications would employ study techniques acceptable to the FDOT and FHWA.

12.0 CONSISTENCY WITH MASTER PLANS, LGCP AND DRIs

The I-95/I-595 Master Plan will define the SIMR alternatives. They will be consistent with the approved I-95/I-595 Interchange IOAR. This SIMR will maintain consistency with the 2025 LongRange Transportation Plan Update, Broward County Local Government Plans and any approved DRIs. This SIMR will serve as an update to the Master Plan and require close coordination with FDOT.

13.0 OPERATIONAL ANALYSIS PROCEDURES

The Highway Capacity Manual, 2000 edition, will be used for the operational analysis of this project. Operational analysis will be performed on mainline segments, ramp merge/diverge, and ramp roadways. The applicant, based upon supplemental data, may suggest modifications or supplements to the analysis. CORSIM may be used to evaluate the weaving areas between interchanges. The CORSIM model will be validated with travel time runs collected for existing conditions. The CORSIM network will be modified accordingly to reflect future conditions for each design year.

14.0 CONCEPTUAL FUNDING PLAN/CONSTRUCTION SCHEDULE

This project will be funded exclusively with federal and state funding grants. District-dedicated revenue will serve as matching funds for Federal National Highway System and Surface Transportation Program funds. All improvements are funded in either the Department Ten-Year FIHS Work Program or the FIHS 2025 Cost Feasible Plan, and are phased for construction sometime during fiscal years 2016 to 2020.

15.0 CONSIDERATION OF OTHER INTERCHANGE PROPOSALS

The proposed Tumpike Enterprise improvements within the area of influence, in particular the I-595/Tumpike interchange, will be included as part of this SIMR These include widening of the Tumpike mainline and reconstruction of the two flyover ramps (SB on-ramp from I-595, SB off-ramp to I-595).

16.0 METHODOLOGY LETTER OF UNDERSTANDING CONCURRENCE

This MLOU will not be binding upon the FDOT to approve the Interchange Proposal under any circumstances nor will it nullify the FDOT's right to request changes to the study design, require additional data collection, analyses or documentation that may be required at any point during the Interchange Proposal process.

Full compliance with all MLOU requirements does not obligate FDOT or FHWA to approve the Interchange Proposal. Signing by FDOT is non-binding to approve the Interchange Proposal under any circumstances.

Scott Seeburger

FDOT Project Manager

Gustavo Schraidt, P.E.

District Four Interchange Review Coordinator

Don Davis for Jim St. John

Peter Tyndall for Robert Krzeminski, P.E. Central Office Systems Planning Office

APPENDIX B

YEAR 2002 EXISTING CONDITIONS

BASIC FREEWAY SEGMENTS

I-595

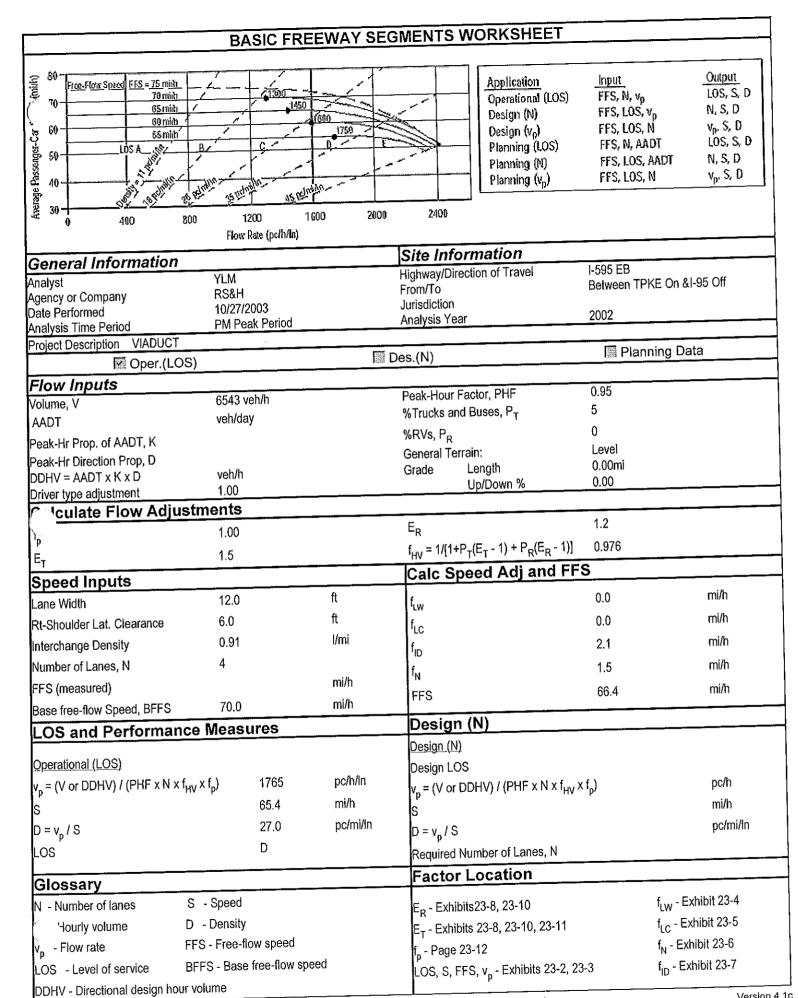
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	1.00			E _R		1.2	
F E _T	1.5			f _{HV} = 1/[1+P _T (E	E _T - 1) + P _R (E _R - 1)]	0.976	
Speed Inputs				Calc Spee	d Adj and FFS		
Lane Width	12.0		ft	f _{LW}		0.0	mi/h
Rt-Shoulder Lat. Clearance	6.0		ft	f _{LC}		0.0	mi/h
Interchange Density	0.91		I/mi	f _{ID}		2.1	mi/h
Number of Lanes, N	4			f _N		1.5	mi/h
FFS (measured)			mi/h	FFS		66.4	m i /h
Base free-flow Speed, BFFS	70.0		mi/h		<u> </u>		111011
LOS and Performar	ice Measu	res		Design (N)		
Operational (LOS) v _p = (V or DDHV) / (PHF x N x S D = v _p / S LOS	·	1365 66.4 20.5 C	pc/h/ln mi/h pc/mi/ln	Design (N) Design LOS $v_p = (V \text{ or DDH}^t)$ S $D = v_p / S$ Required Numb	V) / (PHF x N x f _{HV} x f _p) per of Lanes, N	l	pc/h mi/h pc/mi/ln
Glossary	`			Factor Lo	cation		
N - Number of lanes ' Hourly volume v _p - Flow rate LOS - Level of service DDHV - Directional design hou	S - Speed D - Density FFS - Free-flow BFFS - Base frour volume	•		f _p - Page 23-12	3-8, 23-10, 23-11	f _{LW} - Exh f _{LC} - Exh f _N - Exhil f _{ID} - Exhi	ibit 23-5 pit 23-6

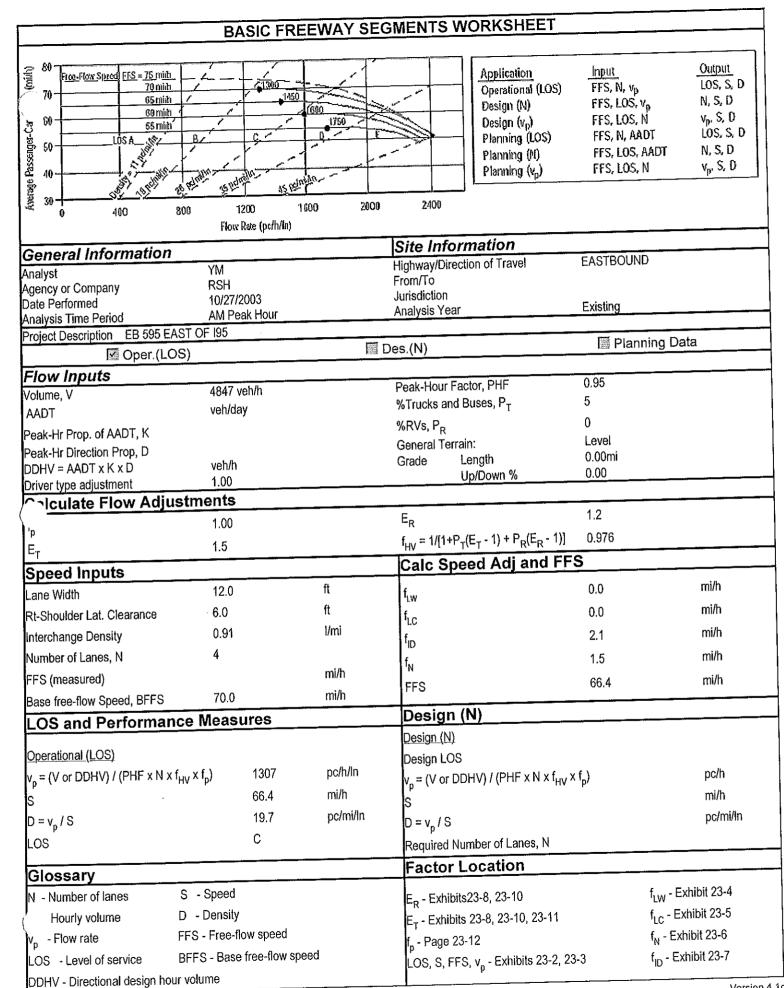
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Rt-Shoulder Lat. Clearance	6.0	ft	f _{LC}	0.0	mi/h
Interchange Density	0.91	l/mi	f _{ID}	2.1	mi/h
Number of Lanes, N	4		f _N	1.5	mi/h
FFS (measured)		mi/h	FFS	66.4	mi/h
Base free-flow Speed, BFFS	70.0	mi/h			***
LOS and Performand	ce weasures		Design (N	<u>)</u>	
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Glossary			Factor Lo	cation	
N - Number of lanes Hourly volume [v _p - Flow rate F	S - Speed D - Density FFS - Free-flow speed BFFS - Base free-flow spe	eed	f _p - Page 23-12	3-8, 23-10, 23-11	f _{LW} - Exhibit 23-4 f _{LC} - Exhibit 23-5 f _N - Exhibit 23-6 f _{ID} - Exhibit 23-7
DDHV - Directional design hour	volume		, U, 11 U, V	р	<u></u>
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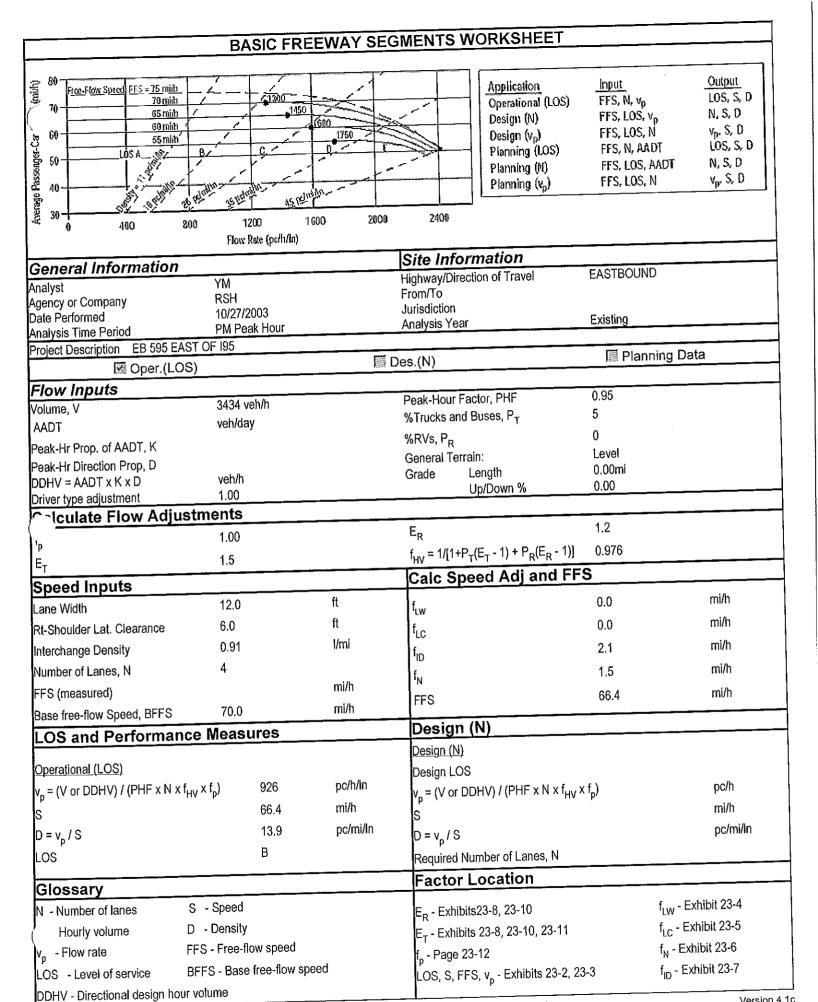
BASIC FREEWAY SEGMENTS WORKSHEET <u>FFS ≠ 75 mith</u> 70 mith Fite-Flore Speed 65 mid 60 mid Average Passenges-Car 60 55 min 2400 2009 1600 1200 800 400 Flow Rate (pc/h/ln)

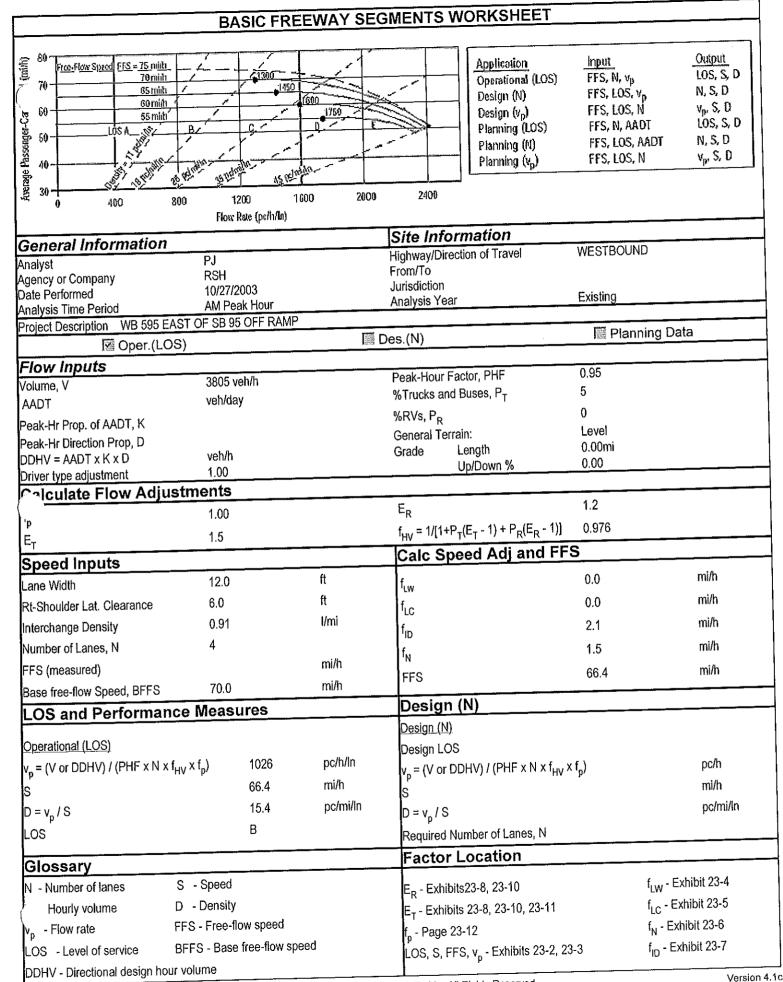
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Application .	Input	Output
Operational (LOS)	FFS, N, V _D	LOS, S, D
Design (N)	FFS, LOS, v _p	N, S, D
Design (v _p)	FFS, LOS, N	ν _p , S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v _p)	FFS, LOS, N	ν _ρ , S, D

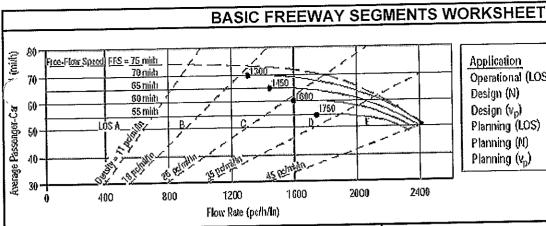
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\culate Flow Adjust					
T _p	1.00		E _R	1.2	
E _T	1.5		$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$		
Speed Inputs			Calc Speed Adj and FF	<u>-s</u>	
Lane Width	12.0	ft	l f _{LW}	0.0	mi/h
Rt-Shoulder Lat. Clearance	6.0	ft	f _{LC}	0.0	mi/h
Interchange Density	0.91	I/mi	f _{ID}	2.1	mi/h
Number of Lanes, N	4		f _N	1.5	mi/h
FFS (measured)		mi/h	FFS	66.4	mi/h
Base free-flow Speed, BFFS	70.0	mi/h			
LOS and Performanc	e Measures		Design (N)		
O (1 OC)			<u>Design (N)</u>		
Operational (LOS)	(x f _n) 2535	pc/h/ln	Design LOS		no/h
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S		mi/h	s		mi/h
D = v _p / S		pc/mi/ln	D = v _p / S		pc/mi/ln
LOS	F		Required Number of Lanes, N		
Glossary			Factor Location		
	S - Speed	<u> </u>	E _R - Exhibits23-8, 23-10		f _{LW} - Exhibit 23-4
. ,	- Density		E _T - Exhibits 23-8, 23-10, 23-11		f _{LC} - Exhibit 23-5
Trouting Toller	FS - Free-flow speed				f _N - Exhibit 23-6
-β	FFS - Base free-flow sp	eed	f _p - Page 23-12	23-3	f _{ID} - Exhibit 23-7
2000 201010101			LOS, S, FFS, v _p - Exhibits 23-2, 2		
DDHV - Directional design hour	YOUTHO	ight © 2000 Univer	sity of Florida, All Rights Reserved		Versio





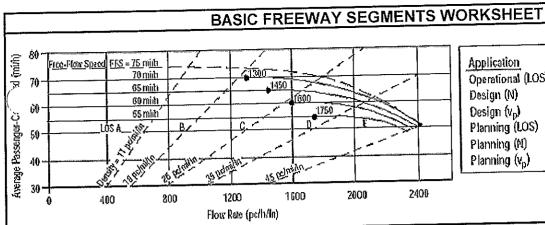






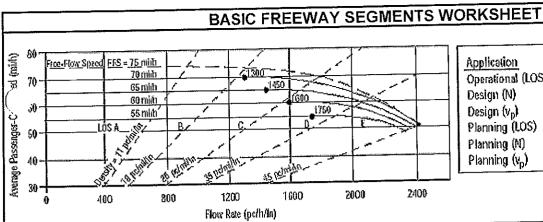
Application	Input_	Output
Operational (LOS)	FFS, N, v _D	LOS, S, D
Design (N)	FFS, LOS, V _p	N, S, D
Design (v _p)	FFS, LOS, N	ν _p . S. D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v _p)	FFS, LOS, N	v _p , S, D

0 400 80	-		1600 20	100 2400			
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l Oper.(LOS)			☑ Des.(N)		I Fla	IIIIII Data
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Volume, V	4730 v			%Trucks and		5	
AADT	veh/da	ч			Duoco, i T	0	
Peak-Hr Prop. of AADT, K				%RVs, P _R	_!	Level	
Peak-Hr Direction Prop, D				General Terra Grade	ain: Length	0.00mi	
DDHV = AADT x K x D	veh/h 1.00				Up/Down %	0.00	
Driver type adjustment		-			ориссии и		
Calculate Flow Adjust	1.00			E _R		1.2	
,h					_T (E _T - 1) + P _R (E _R	- 1)] 0.976	
E _T	1.5						
Speed Inputs				Caic Spi	eed Adj and	IFI'S	
Lane Width	12.0		ft	f _{LW}		0.0	mi/h
Rt-Shoulder Lat. Clearance	6.0		ft	f _{LC}		0.0	mi/h
Interchange Density	0.91		I/mi	f _{ID}		2.1	mi/h
Number of Lanes, N	4			f _N		1.5	mi/h
FFS (measured)			mi/h	FFS		66.4	mi/h
Base free-flow Speed, BFFS	70.0		mi/h				
LOS and Performance	e Meası	ures		Design	(N)		
0				<u>Design (N)</u>			
Operational (LOS)	e 1	4070	lla lla	Design LOS			
v _p = (V or DDHV)	, x 1 _p)	1276	pc/h/ln	v _o = (V or DI	DHV) / (PHF x N >	x f _{HV} x f _p)	pc/h
S		66.4	mi/h	s s			mi/h
D = v _p / S		19.2	pc/mi/ln	D=v _n /S			pc/mi/ln
Los		С		I -	umber of Lanes, N	١	
Glossary		<u> </u>		Factor I	_ocation		
	- Speed					·	f _{LW} - Exhibit 23-4
_	- Density			1 13	s23-8, 23-10	4.4	
riouni, roluino	S - Free-flo	nw sneed			s 23-8, 23-10, 23-	11	f _{LC} - Exhibit 23-5
р		•	مما	f _p - Page 23			f _N - Exhibit 23-6
200 20101010011100		free-flow spe	eed	LOS, S, FF	S, v _p - Exhibits 23	3-2, 23-3	f _{ID} - Exhibit 23-7
DDHV - Directional design hour v	olume			roreity of Florida, All			Version



Application	Input	Output
Operational (LOS)	FFS, N, v _D	1.0S, S, D
Design (N)	FFS, LOS, v _p	N, S, D
Design (v _p)	FFS, LOS, N	v _p , S, D
Planning (LOS)	ffs, n, aadt	LOS, S, D
Planning (M)	FFS, LOS, AADT	N, S, D
Planning (v _p)	FFS, LOS, N	v _p , S, D

General Information			Site Information			
Analyst	YLM		Highway/Direction of Travel	I-595 WB	-95 SB and SR 7/TPKE	
Agency or Company	RS&H		From/To Jurisdiction	DELWEELL	-50 OD AND ON THE INE	
Date Performed	10/27/2003		Analysis Year	2002		
and your mine to the	AM Peak Period	<u> </u>	Analysis roar			
Project Description VIADUCT			Des.(N)	∏ Pla	anning Data	
☑ Oper.(LOS) Flow Inputs		-				
/olume, V	6368 veh/h		Peak-Hour Factor, PHF	0.95		
AADT	veh/day		%Trucks and Buses, P_{T}	5		
	,		%RVs, P _R	0		
Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D			General Terrain:	Level		
DDHV = AADT x K x D	veh/h		Grade Length	0.00mi		
Driver type adjustment	1.00		Up/Down %	0.00		
Calculate Flow Adjustme	ents					
	1.00		E _R	1.2		
E _T	1.5		$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$			
Speed Inputs			Calc Speed Adj and F	<u> FS</u>		
Lane Width	11.0	ft	f _{uw}	1.9	mi/h	
Rt-Shoulder Lat. Clearance	6.0	ft	f _{LC}	0.0	mi/h	
Interchange Density	0.91	I/mi	f _{ID}	2.1	mi/h	
Number of Lanes, N	5		f _N	0.0	mi/h	
FFS (measured)		mi/h	FFS	66.0	mi/h	
Base free-flow Speed, BFFS	70.0	mi/h				
LOS and Performance N	easures		Design (N)	<u></u>		
Operational /LOS)			<u>Design (N)</u>			
Operational (LOS)	\ 4974	pc/h/lin	Design LOS		H-	
$v_p = (V \text{ or DDHV}) / (PHF x N x f_{HV} x f_p)$		•	$v_p = (V \text{ or DDHV}) / (PHF x N x f_{HV})$, x † _p)	pc/h	
S	66.0	mi/h	S		mi/h	
D = v _p / S	20.8	pc/mi/ln	D = v _p / S		pc/mi/ln	
Los	С		Required Number of Lanes, N			
Glossary	<u></u>		Factor Location			
N - Number of lanes S - S	Speed		E _R - Exhibits23-8, 23-10		f _{LW} - Exhibit 23-4	
	Density		E _T - Exhibits 23-8, 23-10, 23-11		f _{LC} - Exhibit 23-5	
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Free-flow speed		, '		f _N - Exhibit 23-6	
Ψ ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	- Base free-flow	speed	f _p - Page 23-12	no o	f _{ID} - Exhibit 23-7	
		chan	LOS, S, FFS, v _p - Exhibits 23-2,	د ی -ئ	ID - FYIIDIK 20-1	
DDHV - Directional design hour volun	116				Versi	



Application	Input	Output
Operational (LOS)	FFS, N, vp	LOS, S, D
Design (N)	FFS, LOS, v _o	N, S, D
Design (v _p)	FFS, LOS, N	ν ₀ , S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v _p)	FFS, LOS, N	v _p , S, D

Or ward Information				Site Information			
General Information Analyst Agency or Company Date Performed	ncy or Company RS&H			Highway/Direction of Travel From/To Jurisdiction	I-595 WB Between I- 2002	Between 1-95 SB and SR 7/TPKE	
Analysis Time Period	PM Pea	k Period		Analysis Year	2002		
Project Description VIADUCT			F-2-2	D 40	□ Plai	nning Data	
☑ Oper.(LOS)				Des.(N)	ARREA I ICII	ming Data	
Flow Inputs				Peak-Hour Factor, PHF	0.95		
Volume, V	8427 ve			%Trucks and Buses, P _T	5		
AADT	veh/day	i		•	0		
Peak-Hr Prop. of AADT, K				%RVs, P _R General Terrain:	Level		
Peak-Hr Direction Prop, D	مالہ است			Grade Length	0.00mi		
DDHV = AADT x K x D	veh/h 1.00			Up/Down %	0.00		
Driver type adjustment Calculate Flow Adjustr	***						
Calculate I low Aujusti	1.00			E _R	1.2		
\ <u>.</u>				$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.976		
E _T 1.5				Calc Speed Adj and FFS			
Speed Inputs				Calc Speed Adjuna 11			
Lane Width	11.0		ft	f_{LW}	1.9	mi/h	
Rt-Shoulder Lat, Clearance	6.0		ft	f _{LC}	0.0	mi/h	
Interchange Density	0.91		I/mi	f _{ID}	2.1	mi/h	
Number of Lanes, N	5			1	0.0	mi/h	
FFS (measured)			mi/h	f _N	66.0	mi/h	
Base free-flow Speed, BFFS	70.0		mi/h	FFS	00.0		
LOS and Performance	Measu	res		Design (N)			
				Design (N)			
Operational (LOS)			n 4	Design LOS			
v _p = (V or DDHV)	x f _p)	1818	pc/h/ln	$V_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV})$	(f _p)	pc/h	
S		64.6	mi/h	S	•	mi/h	
D = v _p / S		28.2	pc/mi/ln	D = V _p / S		pc/mi/ln	
LOS		D		Required Number of Lanes, N			
				Factor Location			
Glossary		··········					
, , , , , , , , , , , , , , , , , , , ,	- Speed			E _R - Exhibits23-8, 23-10		f _{LW} - Exhibit 23-4	
V Hourly volume D Density			E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exhibit 23-5			
∖ູ Flow rate FFS	S - Free-flo	w speed		f _p - Page 23-12	f _N - Exhibit 23-6		
LOS - Level of service BFFS - Base free-flow speed			d	LOS, S, FFS, v _p - Exhibits 23-2, 23	f _{ID} - Exhibit 23-7		
DDHV - Directional design hour vo	lume			Р		Vers	

BASIC FREEWAY SEGMENTS WORKSHEET Output Input Application ed (mith) Free-Flow Spred FFS = 75 mith LOS, S, D Operational (LOS) FFS, N, v_D 70 mid 70 1450 65 <u>mi</u>dt N. S. D FFS, LOS, Vn Design (N) 69 mith v_n, S, D FFS, LOS, N Design (v_n) j() 55 min LOS, S, D FFS, N, AADT Planning (LOS) 50 N. S. D FFS, LOS, AADT Planning (N) v_n, S, D FFS. LOS. N Planning (v_n) 30 2000 2400 1600 1200 400 800 Flow Rate (pc/h/lin) Site Information General Information WESTBOUND I-595 Highway/Direction of Travel YLM Analyst From/To **RSH** Agency or Company Jurisdiction 10/27/03 Date Performed 2002 Analysis Year AM Analysis Time Period Project Description WEST OF SW 136TH AVE Planning Data Des.(N) M Oper.(LOS) Flow Inputs 0.95 Peak-Hour Factor, PHF 4296 veh/h Volume, V 5 %Trucks and Buses, PT veh/day AADT 0 %RVs, P_R Peak-Hr Prop. of AADT, K Level General Terrain: Peak-Hr Direction Prop. D 0.00mi Length Grade veh/h DDHV = AADT x K x D 0.00 Up/Down % 1.00 Driver type adjustment Calculate Flow Adjustments 1.2 Ep 1.00 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ 0.976 1.5 E_T Calc Speed Adj and FFS Speed Inputs mi/h ft 0.0 12.0 Lane Width f_{LW} ft mi/h 6.0 0.0 Rt-Shoulder Lat. Clearance f_LC I/mi 0.91 mi/h 2.1 Interchange Density f_{ID} mi/h Number of Lanes, N 1,5 f_N mi/h FFS (measured) mi/h 66.4 FFS mi/h 70.0 Base free-flow Speed, BFFS Design (N) LOS and Performance Measures <u>Design (N)</u> Operational (LOS) Design LOS $V_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$ pc/h/ln pc/h 1159 $V_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$ mi/h mi/h 66.4 pc/mi/ln pc/mi/ln 17.4 $D = v_n / S$ $D = v_n / S$ В Required Number of Lanes, N LOS **Factor Location** Glossary f_{LW} - Exhibit 23-4 S - Speed E_R - Exhibits23-8, 23-10 N - Number of lanes f_{LC} - Exhibit 23-5 E_T - Exhibits 23-8, 23-10, 23-11 D - Density V - Hourly volume f_N - Exhibit 23-6 FFS - Free-flow speed Flow rate f_n - Page 23-12 BFFS - Base free-flow speed f_{ID} - Exhibit 23-7 LOS, S, FFS, v_n - Exhibits 23-2, 23-3 LOS - Level of service DDHV - Directional design hour volume

BASIC FREEWAY SEGMENTS WORKSHEET Output ed (mith) Input Free-Flow Speed FFS = 75 mith Application LOS, S. D. 70 milh FFS, N, VI Operational (LOS) 70 1450 65 midu N. S. D FFS, LOS, Vn Design (N) <u> 60 mid</u> v_D. S, D FFS, LOS, N Ð Design (v_o) 65 min Average Passenges-C LOS, S, D FFS, N, AADT Planning (LOS) 50 N. S. D FFS, LOS, AADT Planning (M) v_n, S, D FFS, LOS, N Planning (v_n) 30 2400 2600 203 1200 1600 400 Flow Rate (pc/h/lin) Site Information General Information Highway/Direction of Travel WESTBOUND I-595 YLM Analyst From/To **RSH** Agency or Company Jurisdiction 10/27/03 Date Performed 2002 Analysis Year PΜ Analysis Time Period Project Description WEST OF SW 136TH AVE Planning Data Des.(N) M Oper.(LOS) Flow Inputs 0.95 Peak-Hour Factor, PHF 5285 veh/h Volume, V 5 %Trucks and Buses, PT veh/day **AADT** 0 %RVs, P_R Peak-Hr Prop. of AADT, K Leve General Terrain: Peak-Hr Direction Prop. D 0.00mi Grade Length veh/h DDHV = AADT x K x D 0.00 Up/Down % 1.00 Driver type adjustment Calculate Flow Adjustments 1.2 1.00 0.976 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ 1.5 ET Calc Speed Adj and FFS Speed Inputs mi/h ft 0.0 12.0 Lane Width f_{LW} ft mi/h Rt-Shoulder Lat. Clearance 6.0 0.0 f_{ic} I/mi 0.91 mi/h Interchange Density 2.1 t_{ıo} 4 Number of Lanes, N mi/h 1.5 f_N mi/h FFS (measured) mi/h 66.4 **FFS** mi/h 70.0 Base free-flow Speed, BFFS Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$ 1426 pc/h/ln pc/h $v_n = (V \text{ or DDHV}) / (PHF x N x f_{HV} x f_p)$ mi/h 66.4 mi/h pc/mi/ln 21.5 pc/mi/ln $D = v_n / S$ D = v_n / S С LOS Required Number of Lanes, N Factor Location Glossary f_{rw} - Exhibit 23-4 S - Speed N - Number of lanes E_R - Exhibits23-8, 23-10 f_{LC} - Exhibit 23-5 D - Density V - Hourly volume E_r - Exhibits 23-8, 23-10, 23-11 FFS - Free-flow speed f_N - Exhibit 23-6 Flow rate f_p - Page 23-12 BFFS - Base free-flow speed f_{in} - Exhibit 23-7 LOS - Level of service LOS, S, FFS, v_n - Exhibits 23-2, 23-3

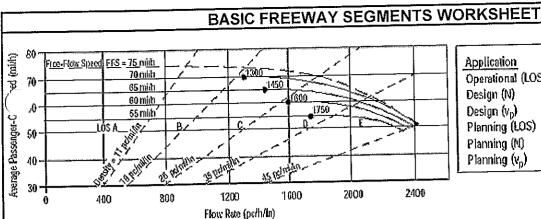
DDHV - Directional design hour volume

TURNPIKE

BASIC FREEWAY SEGMENTS WORKSHEET Output mith FFS = 75 mith Application Input F<u>ree-</u>Flow Spred LOS. S. D 70 mid) FFS, N, vo Operational (LOS) 70 귱 65 mian N, S, D Design (N) FFS, LOS, Vn 00 mid ν_p, S, D FFS. LOS. N A Design (v_o) 55 mith Passenges-C LOS, S. D. Planning (LOS) FFS, N, AADT N, S, D FFS, LOS, AADT Planning (M) v_n, S, D FFS, LOS, N Planning (v_n) Parente Parente 45 1219 30 2400 2000 1600 400 800 1200 Flow Rate (pc/h/ln) Site Information General Information TURNPIKE Highway/Direction of Travel YLM Analyst NB From/To RS&H Agency or Company Jurisdiction 3/20/03 Date Performed 2002 Analysis Year AM PEAK VOLUMES Analysis Time Period TURNPIKE NORTHBOUND SOUTH OF GRIFFIN INTERCHANGE Project Description Planning Data ☐ Des.(N) Oper.(LOS) Flow Inputs 0.95 Peak-Hour Factor, PHF 4651 veh/h Volume, V 5 %Trucks and Buses, P_T veh/dav AADT 0 %RVs, PR Peak-Hr Prop. of AADT, K Level General Terrain: Peak-Hr Direction Prop, D 0.00mi Length Grade veh/h DDHV = AADT x K x D 0.00 Up/Down % 1.00 Driver type adjustment Calculate Flow Adjustments 1.2 1.00 0.976 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ ET 1.5 Calc Speed Adj and FFS Speed Inputs ft mi/h 12.0 0.0 Lane Width f_{LW} ft mi/h 6.0 0.0 Rt-Shoulder Lat, Clearance f_{LC} I/mi 0.66 Interchange Density mi/h 8.0 $f_{\rm ID}$ 3 Number of Lanes, N mi/h 3.0 f_N mi/h FFS (measured) mi/h 66.2 **FFS** mi/h 70.0 Base free-flow Speed, BFFS Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS $v_p = (V \text{ or DDHV}) / (PHF x N x f_{HV} x f_p)$ 1673 pc/h/ln pc/h $v_x = (V \text{ or DDHV}) / (PHF x N x f_{HV} x f_p)$ 65.7 mi/h mi/h 25.5 pc/mi/ln pc/mi/ln D = v_n / S $D = v_n / S$ C Los Required Number of Lanes, N Factor Location Glossary f_{LW} - Exhibit 23-4 N - Number of lanes S - Speed E_p - Exhibits23-8, 23-10 f_{LC} - Exhibit 23-5 D - Density V - Hourly volume E_T - Exhibits 23-8, 23-10, 23-11 FFS - Free-flow speed f_N - Exhibit 23-6 Flow rate , - Page 23-12 BFFS - Base free-flow speed f_{ID} - Exhibit 23-7 LOS - Level of service LOS, S, FFS, v_p - Exhibits 23-2, 23-3 DDHV - Directional design hour volume

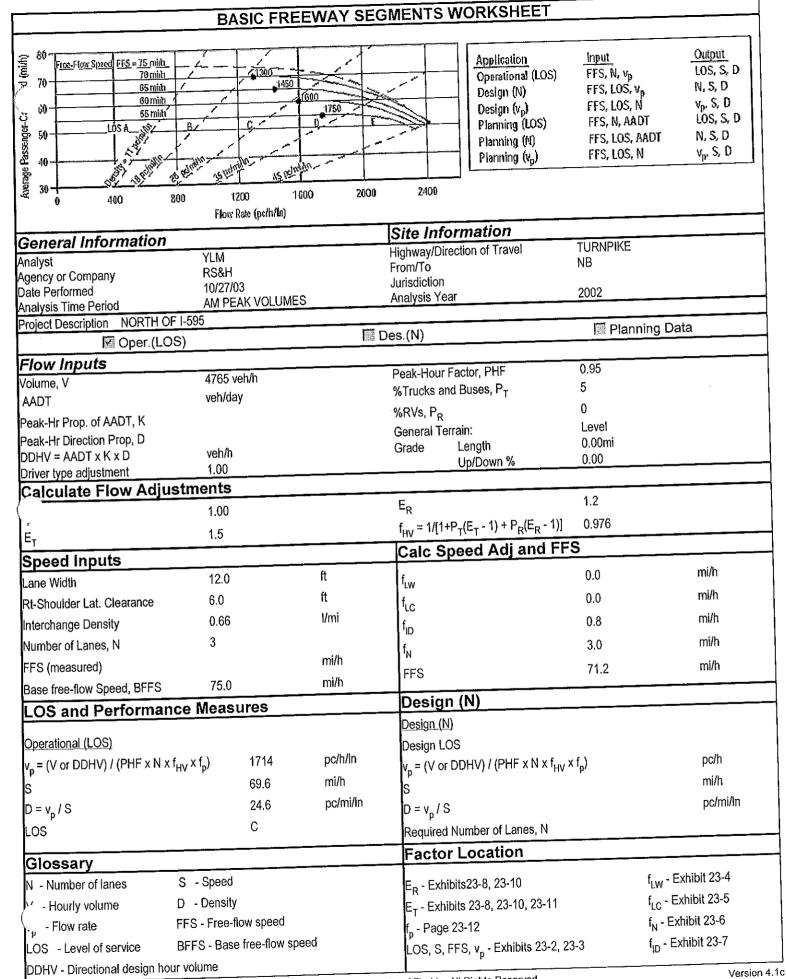
BASIC FREEWAY SEGMENTS WORKSHEET Output (mith) Input Free-Flow Spread FFS = 75 milit Application LOS, S, D 70 mid Operational (LOS) FFS, N, vo 70 3 65 miði N. S. D FFS, LOS, Vn Design (N) 60 mith v_p, S, D FFS, LOS, N D Design (v_n) 55 mith LÔS, S, D Amerige Passender-C FFS, N. AADT Planning (LOS) N, S, D FFS, LOS, AADT Planning (N) v_n, S, D FFS, LOS, N Planning (v_n) 2800 2400 1600 1200 480 200 Flow Rate (pc/h/la) Site Information General Information TURNPIKE Highway/Direction of Travel YLM _ Analyst NB From/To RS&H Agency or Company Jurisdiction 3/20/03 Date Performed 2002 Analysis Year PM PEAK VOLUMES Analysis Time Period Project Description SOUTH OF GRIFFIN INTERCHANGE Planning Data Des.(N) M Oper.(LOS) Flow Inputs 0.95 Peak-Hour Factor, PHF 4136 veh/h Volume, V 5 %Trucks and Buses, PT veh/day AADT 0 %RVs, P_R Peak-Hr Prop. of AADT, K Level General Terrain: Peak-Hr Direction Prop, D 0.00mi Grade Length veh/h DDHV = AADT x K x D 0.00 Up/Down % 1.00 Driver type adjustment Calculate Flow Adjustments 1.2 Ep 1.00 0.976 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ 1.5 E_{T} Calc Speed Adj and FFS Speed Inputs ft mi/h 0.0 12.0 Lane Width f_{LW} ft mi/h 6.0 0.0 Rt-Shoulder Lat. Clearance f_{LC} l/mi 0.66 mi/h Interchange Density 8.0 f_{ID} 3 Number of Lanes, N mi/h 3.0 f_N mi/h FFS (measured) 66.2 mi/h **FFS** mi/h 70.0 Base free-flow Speed, BFFS Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS $V_{\rm p} = (V \text{ or DDHV}) / (PHF \times N \times f_{\rm HV} \times f_{\rm p})$ pc/h/ln 1488 pc/h $V_n = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$ mi/h 66.2 mi/h 22.5 pc/mi/ln pc/mi/ln $D = v_n / S$ $D = v_n / S$ C LOS Required Number of Lanes, N Factor Location Glossary f_{LW} - Exhibit 23-4 S - Speed N - Number of lanes E_R - Exhibits23-8, 23-10 f_{LC} - Exhibit 23-5 D - Density E_T - Exhibits 23-8, 23-10, 23-11 V - Hourly volume FFS - Free-flow speed f_N - Exhibit 23-6 Flow rate f_p - Page 23-12 BFFS - Base free-flow speed f_{ID} - Exhibit 23-7 LOS, S, FFS, v_p - Exhibits 23-2, 23-3 LOS - Level of service

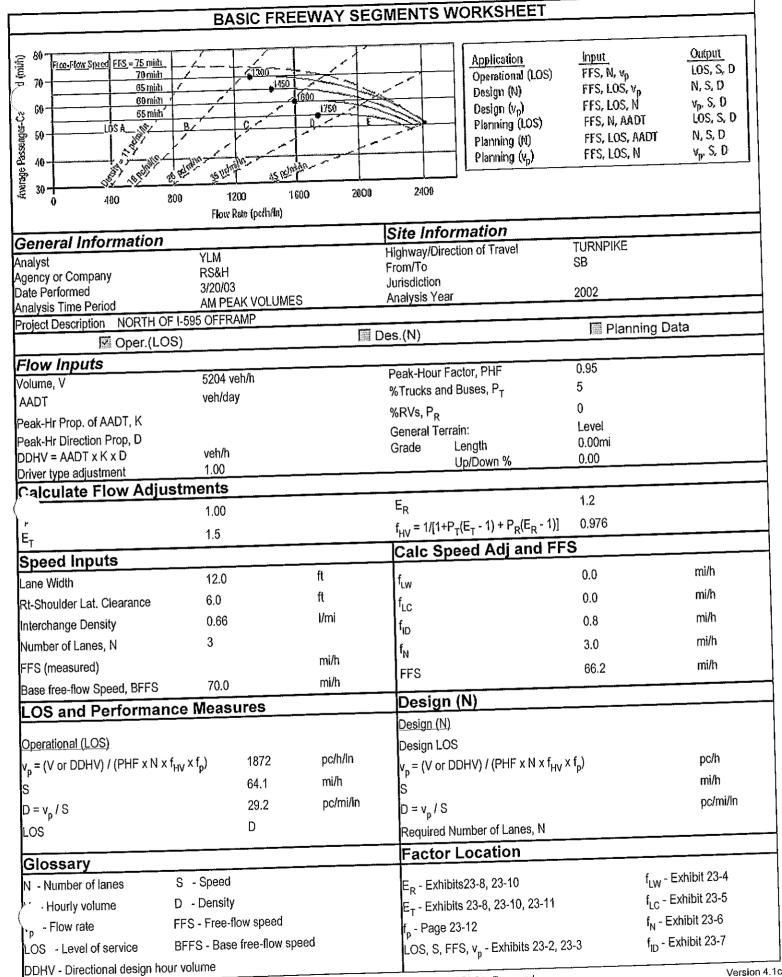
DDHV - Directional design hour volume

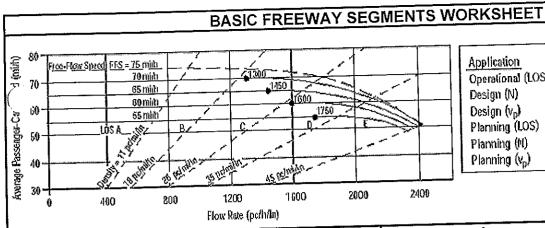


		_
Application	<u>Input</u>	Output
Operational (LOS)	FFS, N, V _D	LOS, S, D
Design (N)	FFS, LOS, V _D	N, S, D
Design (v _p)	FFS, LOS, N	ν _p , S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (M)	FFS, LOS, AADT	N, S, D
Planning (v _p)	FFS, LOS, N	v _p , S, D

General Information	1		Site Information			
nalyst	YLM		Highway/Direction of Travel TURN From/To NB		=	
Agency or Company	RS&H		From/To	ND		
Date Performed	3/20/03 PM PEAK VO <u>LUM</u>	MEC	Analysis Year	Jurisdiction Analysis Year 2002		
Analysis Time Period Proiect Description NORTH (ILO	7 Holy do 1 ca.			
Project Description NORTH (Oper.(L			Des.(N)	s.(N) 🖳 Planning Data		
Flow Inputs				0.05		
/olume, V	4638 veh/h		Peak-Hour Factor, PHF	0.95		
AADT	veh/day		%Trucks and Buses, P _T	5		
Peak-Hr Prop. of AADT, K			%RVs, P _R	0		
Peak-Hr Direction Prop, D			General Terrain:	Level 0.00mi		
DDHV = AADT x K x D	veh/h		Grade Length Up/Down %	0.00mi 0.00		
Driver type adjustment	1.00		Up/Down 76	0,00		
Ça <u>lculate Flow Adj</u> ı				1.2		
·	1.00		E _R			
E _T	1.5		$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R -$			
Speed Inputs			Calc Speed Adj and FFS			
Lane Width	12.0	ft	f_{LW}	0.0	mi/h	
Rt-Shoulder Lat, Clearance	6.0	ft	f _{LC}	0.0	mi/h	
Interchange Density	0.66	l/mi	f _{ID}	0.8	mi/h	
Number of Lanes, N	3		f _N	3.0	mi/h	
FFS (measured)		mi/h	FFS	66.2	mi/h	
Base free-flow Speed, BFFS	70.0	mi/h				
LOS and Performa	nce Measures		Design (N)			
Operational (LOS)			<u>Design (N)</u>			
	(f _{int} x f _n) 1668	pc/h/ln	Design LOS		ma/h	
v _p = (V or DDHV) / (PHF x N >		•	$v_p = (V \text{ or DDHV}) / (PHF x N x)$	t _{HV} x t _p)	pc/h	
S	65.7	mi/h	S		mi/h	
D = v _p / S	25.4	pc/mi/ln	D = v _p / S		pc/mi/ln	
Los	С		Required Number of Lanes, N			
Glossary			Factor Location			
N - Number of lanes	S - Speed		E _R - Exhibits23-8, 23-10		f _{LW} - Exhibit 23-4	
V - Hourly volume	D - Density		E _T - Exhibits 23-8, 23-10, 23-1	1	f _{LC} - Exhibit 23-5	
Flow rate	FFS - Free-flow speed		. •		f _N - Exhibit 23-6	
LOS - Level of service	BFFS - Base free-flow s	peed		f _p - Page 23-12		
DDHV - Directional design ho		•	LOS, S, FFS, v _p - Exhibits 23-	۷, ۲۵-۵	f _{ID} - Exhibit 23-7	
DDDA - DILECTIONAL design no	rai volattio		All Division of the Device of		Version	







Application	Input	Output
Operational (LOS)	FFS, N, v _D	LOS, S, D
Design (N)	FFS, LOS, v _p	N, S, D
Design (v _p)	FFS, LOS, N	ν _ρ , S, D
Planning (LOS)	ffs, N, Aadt	LOS, S. D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v _p)	FFS, LOS, N	Vp. S. D

g 0 400			1600 2600	ZALAI			
		Rate (pc/h/lin)		O:4- Informati			
General Informatio				Site Information Highway/Direction of	Travel TURNPIKI	E	
nalyst	YLM			From/To	SB	_	
gency or Company	RS&H 3/20/03	1		Jurisdiction			
Date Performed	3/20/03 PM PF	AK VO <u>LUM</u> E	ES	Analysis Year	2002		
nalysis Time Period Project Description NORTH	OF 1-595 OFFR						
Oper.(Des.(N)	Pla	anning Data	
Flow Inputs					HF 0.95		
/olume, V	4710 v	eh/h		Peak-Hour Factor, Pl	_		
AADT	veh/da	у		%Trucks and Buses,	. 1		
Peak-Hr Prop. of AADT, K				%RVs, P _R	0		
Peak-Hr Direction Prop, D				General Terrain:	Level 0,00mi		
DDHV = AADT x K x D	veh/h			Grade Length			
Oriver type adjustment	1.00			Up/Dow	/n % 0.00		
Calculate Flow Ad	justments				1.2		
` <u> </u>	1.00			E _R			
E _T	1.5			$f_{HV} = 1/[1 + P_T(E_T - 1)]$	7 Rek 12		
Speed Inputs				Calc Speed A			
Lane Width	12.0		ft	f_{LW}	0.0	mi/h	
Rt-Shoulder Lat. Clearance	6.0		ft	f _{LC}	0.0	mi/h	
Interchange Density	0.66		I/mi	f _{ID}	0.8	mi/h	
Number of Lanes, N	3			f _N	3.0	mi/h	
FFS (measured)			mi/h	FFS	66.2	mi/h	
Base free-flow Speed, BFFS	70.0		mi/h				
LOS and Performa	ance Meası	ıres		Design (N)			
0 1 1 1 1 00				<u>Design (N)</u>			
Operational (LOS)		1001	pc/h/ln	Design LOS		- a th	
$v_p = (V \text{ or DDHV}) / (PHF x N)$	1 x t ^{HA} x t ^b)	1694	•	$v_p = (V \text{ or DDHV}) /$	(PHF x N x f _{HV} x f _p)	pc/h	
S		65.6	mi/h	s		mi/h	
D = v _p / S		25.8	pc/mi/ln	D=v _p /S		pc/mi/ln	
LOS		С		Required Number	of Lanes, N		
Classoni				Factor Loca			
Glossary	S - Speed					f _{LW} - Exhibit 23-4	
N - Number of lanes	•			E _R - Exhibits23-8,		f _{LC} - Exhibit 23-5	
- Hourly volume	D - Density	avu anaad		E _T - Exhibits 23-8,	23-10, 23-11	C - FWIIDIT TO 0	
- Flow rate	FFS - Free-fl			ք _թ - Page 23-12	f_p - Page 23-12 f_N - Exhibit 2: LOS, S, FFS, v_p - Exhibits 23-2, 23-3 f_{ID} - Exhibit 2:		
LOS - Level of service	BFFS - Base	free-flow sp	peed	LOS, S, FFS, v _p - l	LOS, S, FFS, v _p - Exhibits 23-2, 23-3		
DDHV - Directional design	hour volume					Version	
,		_	ALLE & ODOO Liniu	oreity of Florida, All Rights	LEPRIACO.		

BASIC FREEWAY SEGMENTS WORKSHEET Outout Input (rejih) Application Free Flow Spreed FFS = 75 milh LOS, S, D FFS, N, vo 70 mida Operational (LOS) 70 1450 N, S, D 65 mid FFS, LOS, Vn Design (N) 60 mián v_p, S, D FFS, LOS, N Design (v_p) Average Passenges-Car 55 mid LOS, S. D. FFS, N, AADT Planning (LOS) N, S, D FFS, LOS, AADT Planning (M) v_o, S, D FFS, LOS, N Planning (v_o) 40 30 2400 1600 2000 1200 008 Flow Rate (pc/h/ln) Site Information General Information TURNPIKE Highway/Direction of Travel YI M Analyst SB From/To RS&H Agency or Company Jurisdiction 10/28/03 Date Performed 2002 Analysis Year AM PEAK VOLUMES Analysis Time Period TURNPIKE SOUTHBOUND SOUTH OF GRIFFIN OFF-RAMP Project Description Planning Data Des.(N) M Oper.(LOS) Flow Inputs 0.95 Peak-Hour Factor, PHF 3743 veh/h Volume, V 5 %Trucks and Buses, PT veh/day AADT 0 %RVs, P_R Peak-Hr Prop. of AADT, K Level General Terrain: Peak-Hr Direction Prop, D 0.00mi Length Grade DDHV = AADT x K x D veh/h 0.00 Up/Down % 1.00 Driver type adjustment Calculate Flow Adjustments 1.2 1.00 0.976 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ 1.5 Calc Speed Adj and FFS Speed Inputs mi/h ft 0.0 12.0 ane Width f_{LW} mi/h ft 0.0 6.0 Rt-Shoulder Lat. Clearance F_{LC} mi/h I/mi 0.66 8.0 Interchange Density f_{ID} mi/h 3 Number of Lanes, N 3.0 f_N mi/h mi/h FFS (measured) 66.2 FFS mi/h 70.0 Base free-flow Speed, BFFS Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS pc/h/ln pc/h 1346 $V_p = (V \text{ or DDHV}) / (PHF x N x f_{HV} x f_p)$ mi/h mi/h 66.2 nl/im/od pc/mi/ln 20.3 $D = v_n / S$ $D = v_n / S$ C LOS Required Number of Lanes, N **Factor Location** Glossary f_{LW} - Exhibit 23-4 E_R - Exhibits23-8, 23-10 S - Speed N - Number of lanes f_{LC} - Exhibit 23-5 E_T - Exhibits 23-8, 23-10, 23-11 D - Density - Hourly volume f_N - Exhibit 23-6 FFS - Free-flow speed ν_p - Flow rate f_p - Page 23-12 f_{ID} - Exhibit 23-7 BFFS - Base free-flow speed LOS, S, FFS, v_0 - Exhibits 23-2, 23-3 LOS - Level of service DDHV - Directional design hour volume Version 4.1c

	BASIC FRE	EWAY SEC	AA CINIDIAI	ORKSHEET		
80 Free-Flow Speed FFS = 75 migh 70 migh 65 mith		600	is the same of the	Operational (LOS)	nput FS, N, v _p FFS, LOS, v _p	Output LOS, S, D N, S, D
00 60 min 55 min 55 min 40 40	Br C.	1750		Design (v _p) Planning (LOS) Planning (현)	FFS, LOS, N FFS, N, AADT FFS, LOS, AADT	v _p , S, D LOS, S, D N, S, D
30 Sept. 10 Sept. 10	gentling as netrolling at section of the section of	500 2000	2400	Planning (v _p)	FFS, LOS, N	v _p , S, D
eneral Information	,		Site Infor			
nalyst gency or Company	YLM RS&H		Highway/Direct From/To Jurisdiction	ion of Travel TU SE	IRNPIKE 3	
ate Performed	10/28/03 PM PEAK VOLUME	S	Analysis Year	20	02	
roject Description SOUTH OF			Des.(N)		Planning D	ata
Flow Inputs						
olume, V AADT	4307 veh/h veh/day		Peak-Hour Fac %Trucks and I	Suses, P _T 5	95	
reak-Hr Prop. of AADT, K reak-Hr Direction Prop, D reak-Hr AADT x K x D	veh/h			ength 0	evel .00mi	
river type adjustment	1.00			Jp/Down % 0	.00	
alculate Flow Adjus	1.00		E _R	1	.2	
E _T	1.5			(E) 17 Ri R N	.976	
Speed Inputs			Calc Spe	ed Adj and FFS		
ane Width	12.0	ft	f _{LW}	(0.0	mi/h
Rt-Shoulder Lat. Clearance	6.0	ft	f _{LC}	(0.0	mi/h
nterchange Density	0.66	1/mi	f _{ID}	(0.8	mi/h
Number of Lanes, N	3		f _N	;	3.0	mi/h
FFS (measured)		mi/h	FFS		66.2	mi/h
Base free-flow Speed, BFFS	70.0	mi/h		(NA)		
LOS and Performand	ce Measures		Design (N)	(N)		
Operational (LOS)	v.f.) 4540	pc/h/in	<u>Design (N)</u> Design LOS			pc/h
v _p = (V or DDHV)	_{HV} x f _p) 1549 66.1	mi/h	v _p = (V or DI	OHV) / (PHF x N x f _{HV} x f _p)		mi/h
D = v _p / S	23.4	pc/mi/ln	D = v _p / S			pc/mi/ln
LOS	С			umber of Lanes, N		
Glossary			Factor I	_ocation		
	S - Speed		E _R - Exhibit	s23-8, 23-10		Exhibit 23-4
14 - Multipet of Janes	,			. 00 0 00 10 00 11	f. c	Exhibit 23-5
Hourly volume	D - Density		F ⁴ - EXUIDIO	\$ 23-8, 23-10, 23-11	1.0	
Hourly volume	D - Density FFS - Free-flow speed BFFS - Base free-flow sp	ı	f _n - Page 23	s 23-8, 23-10, 23-11 3-12 S, v _p - Exhibits 23-2, 23-3	f _N - E	Exhibit 23-6 Exhibit 23-7

RAMPS AND RAMP JUNCTIONS

I-595

Reynold Smith and Hills, Inc						
South Pine Island Road Plantation, FL 33324						
Phone: 954-474-3005 E-mail:	Fax:	954-4	74-1304			
		Merge	Analysis_			
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: AM Peak Freeway/dir or travel: WESTBO Junction: Jurisdiction: Analysis Year: 2002 Description: SR 7NB ON RAM	טאטט		IERGE			
		Free	eway Data_			
Type of analysis Type of analysis Type of lanes in freeway Free-flow speed on freeway Volume on freeway	Merge 4 6 643	0.0 4	mph vph			
		On	Ramp Data	ì		
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel	480 30 ane	00	mph vph ft ft			
	_Adjacer	ıt Ramı	p Data (if o	ne exists)		
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	C	(es 1560)ownst n 1895	ft			
Conv	version to	pc/h l	Jnder Base	Conditions_	 	
Junction Components	Free	Ramp	Ramp	Adjacent		
Volume V (vph)	6434	480	1560	vph		

Length 0.00 % 0.00 mi 0.00 mi Trucks and buses PCE, ET 1.5 1.5 1.5 Recreational vehicle PCE, ER 1.2 1.2 1.2 Heavy vehicle adjustment, fHV 0.976 0.990 0.990 Driver population factor, fP 1.00 1.00 Flow rate, vp 6942 510 1659 pcph
Estimation of V12 Merge Areas
L = 0.00 (Equation 25-2 or 25-3)
EQ P = 0.228 Using Equation 4 FM
v = v (P) = 1585 pc/h 12 F FM
Capacity Checks
Actual Maximum LOS F? V 7452 9200 No
(FO v 2095 4600 No R12
Level of Service Determination (if not F)
Density, D = 5.475 + 0.00734 v + 0.0078 v - 0.00627 L = 19.7 pc/mi/ln R R 12 A Level of service for ramp-freeway junction areas of influence B
Speed Estimation
S
Space mean speed in ramp influence area, S = 54.1 mph R
Space mean speed in outer lanes, S = 51.2 mph
Space mean speed for all vehicles, S = 52.0 mph

Reynold Smith and Hills, Inc				
South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 95	54-474-1304		
	Me	erge Analysis_		
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: PM Peak Freeway/dir or travel: WESTBC Junction: Jurisdiction: Analysis Year: 2002 Description: SR 7NB ON RAME	> TO WB 59			
		Freeway Data ₋		
Type of analysis Type of analysis Tree-flow speed on freeway Volume on freeway	Merge 4 60.0 8198	mph vph		
		On Ramp Dat	a	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel la		vph ft ft		
	_Adjacent R	amp Data (if c	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	On 189	40 vph /nstream 95 ft		
Conv	ersion to po	/h Under Base	e Conditions	
Junction Components	_	mp	Adjacent	
Volume, V (vph)	8198 5	596 1840	vph	

```
0.95
                                   0.95
                           0.95
Peak-hour factor, PHF
                                              484
                                      157
                                                     ٧
                             2157
Peak 15-min volume, v15
                                        2
                                              %
                                 2
                          5
Trucks and buses
                                              %
                                 0
                                         0
                           0
Recreational vehicles
                                        Level
                                Level
                        Level
Terrain type:
                                              %
                            % 0.00
                                     % 0.00
                      0.00
   rade
                                     mi 0.00 mi
                            mi 0.00
                       0.00
  Length
                                             1.5
                                      1.5
                              1.5
Trucks and buses PCE, ET
                                      1.2
                                             1.2
Recreational vehicle PCE, ER
                               1.2
                                                0.990
                                       0.990
Heavy vehicle adjustment, fHV
                               0.976
                                    1.00
                                            1.00
Driver population factor, fP
                            1.00
                                         1956
                                                pcph
                        8845
                                634
Flow rate, vp
                          Estimation of V12 Merge Areas_____
         L = 0.00 (Equation 25-2 or 25-3)
         P = 0.213 Using Equation 4
          FM
         v = v (P) = 1883 pc/h
          12 F FM
                                 Capacity Checks_____
                                     LOS F?
                        Maximum
              Actual
                                   Yes
                        9200
               9479
   V
   ΕO
                                   No
                        4600
               2517
   R12
                  Level of Service Determination (if not F)______
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 22.9
                                                          pc/mi/ln
                        12
                 R
Level of service for ramp-freeway junction areas of influence F
                               Speed Estimation_____
                                 M = 0.342
Intermediate speed variable,
Space mean speed in ramp influence area, S = 53.8 mph
                                    S = 46.4 \text{ mph}
Space mean speed in outer lanes,
                                S = 48.2 mph
```

Space mean speed for all vehicles,

Reynold Smith and Hills, Inc

3 South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 954-	-474-1304		
	Merg	e Analysis		
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: AM Pea Freeway/dir or travel: WESTB Junction: Jurisdiction: Analysis Year: 2002 Description: SR 84ON RAMP	OUND	ERGE (AFT		
	Fre	eway Data		
Type of analysis Number of lanes in freeway Leaflow speed on freeway Volume on freeway	Merge 3 60.0 5210	mph vph		
	On	Ramp Dat	a	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel	Right 1 45.0 791 300 lane	mph vph ft ft		
	_Adjacent Ram	np Data (if o	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	Yes 651 Downs On 2600	vph tream ft		
Con	version to pc/h	Under Bas	e Conditions	_
(Junction Components	Freeway Ramp	Ramp	Adjacent	
Volume, V (vph)	5210 791		vph	

```
0.95
                                   0.95
                           0.95
Peak-hour factor, PHF
                                      208
                                              171
                             1371
Peak 15-min volume, v15
                                              %
                                 2
                                        2
                          5
Trucks and buses
                                              %
                                        0
                           0
                                  0
Recreational vehicles
                                Level
                                        Level
                        Level
Terrain type:
                                     % 0.00
                                              %
                            % 0.00
                      0.00
( Grade
                                     mi 0.00 mi
                            mi 0.00
                       0.00
  ∟ength
                              1.5
                                      1.5
                                             1.5
Trucks and buses PCE, ET
                                              1.2
                              1.2
                                      1.2
Recreational vehicle PCE, ER
                                                0.990
                                       0.990
Heavy vehicle adjustment, fHV
                               0.976
                                            1.00
Driver population factor, fP
                            1.00
                                    1.00
                                               pcph
                                        692
                                841
                        5621
Flow rate, vp
                          Estimation of V12 Merge Areas_____
         L = 0.00 (Equation 25-2 or 25-3)
          EQ
         P = 0.586 Using Equation 1
          FΜ
         v = v (P) = 3293 \text{ pc/h}
          12 F FM
                                 Capacity Checks_____
                                     LOS F?
                        Maximum
              Actual
                                   No
                        6900
               6462
   FO
                        4600
                                   No
               4134
   R12
                  Level of Service Determination (if not F)_____
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 35.5
                                                          pc/mi/ln
                                Α
                        12
                 R
     R
Level of service for ramp-freeway junction areas of influence E
                               Speed Estimation_____
                                 M = 0.537
Intermediate speed variable,
Space mean speed in ramp influence area,
                                        S = 50.3 mph
                                S = 53.3 mph
Space mean speed in outer lanes,
Space mean speed for all vehicles, S = 51.4 mph
```

Reynold Smith and Hills, Inc				
3 South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 954	-474-1304		
	Merg	ge Analysis_		
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: PM Peal Freeway/dir or travel: WESTBO Junction: Jurisdiction: Analysis Year: 2002 Description: SR 84ON RAMP	UND	ERGE (AFT		
	Fre	eeway Data		,
Type of analysis No mber of lanes in freeway Logical Community No lume on freeway No lume on freeway	Merge 3 60.0 7371	mph vph		
	Or	n Ramp Dat	a	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel lane	Right 1 45.0 637 e 300 lane	mph vph ft ft		
	_Adjacent Ran	np Data (if c	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	Yes 810 Downs On 2600	vph stream ft		
Conv	version to pc/h	Under Base	Conditions_	
Junction Components	Freeway Ramp		Adjacent	
Volume, V (vph)	7371 637	810	vph	

```
0.95
                                   0.95
                           0.95
Peak-hour factor, PHF
                                              213
                                      168
                             1940
Peak 15-min volume, v15
                                        2
                                              %
                                 2
                          5
Trucks and buses
                                              %
                                  0
                                        0
                           0
Recreational vehicles
                                        Level
                               Level
                        Level
Terrain type:
                                              %
                                     % 0.00
                            % 0.00
                       0.00
   rade
                            mi 0.00
                                     mi 0.00
                                             mi
                       0.00
  Length
                                      1.5
                                             1.5
                              1.5
Trucks and buses PCE, ET
                                      1.2
                                              1.2
                               1.2
Recreational vehicle PCE, ER
                                                0.990
                                       0.990
                              0.976
Heavy vehicle adjustment, fHV
                                    1.00
                                            1.00
Driver population factor, fP
                            1.00
                                               pcph
                                        861
                        7953
                                677
Flow rate, vp
                          Estimation of V12 Merge Areas_____
         L = 0.00 (Equation 25-2 or 25-3)
          EQ
         P = 0.586 Using Equation 1
          FΜ
         v = v (P) = 4660 \text{ pc/h}
          12 F FM
                                 Capacity Checks_____
                                     LOS F?
                        Maximum
              Actual
                                   Yes
                        6900
               8630
   CO
                        4600
                                   Yes
               5337
   R12
                  Level of Service Determination (if not F)______
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 44.9
                                                          pc/mi/ln
                        12
                 R
Level of service for ramp-freeway junction areas of influence F
                               Speed Estimation_____
                                 M = 1.105
Intermediate speed variable,
Space mean speed in ramp influence area, S = 40.1 mph
                                S = 47.5 mph
Space mean speed in outer lanes,
                                S = 42.6 mph
Space mean speed for all vehicles,
```

TURNPIKE

BASIC FREEWAY SEGMENTS WORKSHEET Free-Flow Spaced FRS = 75 minh Output Application nput 70 mids 70 LOS, S, D Operational (LOS) FFS, N, vo 65 mich N, S, D FFS, LOS, V_n Design (N) 60 min Ĉ0 v_o, S, D 66 mlihi Design (v_o) FFS, LOS, N tiverage Passenger-C: LOS, S, D Planning (LOS) FFS, N. AADT 50 N. S. D Planning (N) FFS, LOS, AADT Planning (v.) FFS, LOS, N v_n , S, D 30 2000 2400 800 1200 1600 Flow Rate (pc/h/ln) Site Information General Information TURNPIKE Highway/Direction of Travel YLM Analyst From/To NB RS&H Agency or Company Jurisdiction Date Performed 3/23/03 2002 AM PEAK VOLUMES Analysis Year Analysis Time Period Project Description GRIFFIN ON RAMP Des.(N) Planning Data M Oper.(LOS) Flow Inputs 0.95 5325 veh/h Peak-Hour Factor, PHF Volume, V %Trucks and Buses, PT 5 AADT veh/day 0 Peak-Hr Prop. of AADT, K %RVs, P_R General Terrain: Level Peak-Hr Direction Prop. D Length 0.00mi Grade $DDHV = AADT \times K \times D$ veh/h 1.00 Up/Down % 0.00 Driver type adjustment Calculate Flow Adjustments E_R 1.2 1.00 0.976 Er 1.5 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ Calc Speed Adj and FFS Speed Inputs ft ane Width 12.0 0.0 mi/h f_{LW} ft 6.0 Rt-Shoulder Lat. Clearance 0.0 mi/h f_LC I/mi 0.66 Interchange Density 8.0 mi/h $f_{\rm ID}$ Number of Lanes, N 1.5 mi/h f_N FFS (measured) mi/h **FFS** 67.7 mi/h Base free-flow Speed, BFFS 70.0 mi/h Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p) 1436 pc/h/ln $v_n = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_n)$ pc/h 67.7 mi/h mi/h 21.2 pc/mi/ln $D = v_p / S$ $D = v_n / S$ pc/mi/ln C LOS Required Number of Lanes, N **Factor Location** Glossary N - Number of lanes S - Speed f_{IW} - Exhibit 23-4 E_R - Exhibits23-8, 23-10 Hourly volume D - Density f_{IC} - Exhibit 23-5 E_T - Exhibits 23-8, 23-10, 23-11 Flow rate FFS - Free-flow speed f_o - Page 23-12 f_N - Exhibit 23-6 LOS - Level of service BFFS - Base free-flow speed LOS, S, FFS, v_n - Exhibits 23-2, 23-3 f_{ID} - Exhibit 23-7 DDHV - Directional design hour volume

BASIC FREEWAY SEGMENTS WORKSHEET Output Input Free Flow Speed FFS = 75 miles Application LOS, S, D FFS, N, vD 70 midt Operational (LOS) 70 N, S, D 핗 65 mi<u>s</u>h FFS, LOS, V. Design (N) v_p, S, D LOS, S, D 60 mitt FFS, LOS, N Design (v_n) A) 55 milh FFS, N, AADT Planning (LOS) fverage Passender-C N, S, D FFS, LOS, AADT Planning (N) v_n, S, D FFS. LOS. N Planning (v_n) 30 2400 1600 2000 1200 200 460 Flow Rate (pollulin) Site Information General Information TURNPIKE Highway/Direction of Travel YLM Analyst NB From/To RS&H Agency or Company Jurisdiction 3/20/03 Date Performed 2002 Analysis Year PM PEAK VOLUMES Analysis Time Period Project Description GRIFFIN ON RAMP Planning Data Des.(N) Oper.(LOS) Flow Inputs 0.95 Peak-Hour Factor, PHF 4533 veh/h Volume, V 5 %Trucks and Buses, PT veh/day AADT 0 %RVs, P_R Peak-Hr Prop. of AADT, K Level General Terrain: Peak-Hr Direction Prop, D 0.00mi Grade Length veh/h DDHV = AADT x K x D Up/Down % 0.00 1.00 Driver type adjustment Calculate Flow Adjustments 1.2 E_R 1.00 0.976 $f_{HV} = 1/[1+P_T(E_T-1) + P_R(E_R-1)]$ 1.5 E_{T} Calc Speed Adj and FFS Speed Inputs mi/h ft 0.0 12.0 Lane Width f_{uw} mi/h ft 0.0 6.0 Rt-Shoulder Lat. Clearance f_{LC} l/mi mi/h 0.66 8.0 Interchange Density f_{ιο} 4 mi/h Number of Lanes, N 1.5 f_N mi/h FFS (measured) mi/h 67.7 FFS mi/h 70.0 Base free-flow Speed, BFFS Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS pc/h/ln $V_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$ pc/h 1223 $V_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$ mi/h mi/h 67.7 pc/mi/ln pc/mi/ln 18.1 D = v_n / S $D = v_p / S$ C Required Number of Lanes, N LOS Factor Location Glossary f_{LW} - Exhibit 23-4 E_R - Exhibits23-8, 23-10 S - Speed N - Number of lanes f_{LC} - Exhibit 23-5 E_T - Exhibits 23-8, 23-10, 23-11 D - Density V - Hourly volume f_N - Exhibit 23-6 FFS - Free-flow speed f_p - Page 23-12 Flow rate f_{ID} - Exhibit 23-7 BFFS - Base free-flow speed LOS, S, FFS, v_p - Exhibits 23-2, 23-3 LOS - Level of service DDHV - Directional design hour volume Version 4.1c

Reynold Smith and Hills, Inc				
South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 954	1-474-1304		
	Mer	ge Analysis	s	
Analyst: YLM Agency/Co.: RS&H Date performed: 1/8/04 Analysis time period: AM PEA Freeway/dir or travel: NB TUR Junction: Jurisdiction: Analysis Year: 2002 Description: I-595 ON RAMP	NPIKE	ΊΚΕ		
	Fr	eeway Data	a	
Type of analysis I ber of lanes in freeway Free-flow speed on freeway Volume on freeway	Merge 3 70.0 3122	mph vph		
	Oı	n Ramp Da	ata	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel	Right 1 45.0 1643 2500	mph vph ft ft		
	_Adjacent Rar	mp Data (if	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp	No	vph		
Distance to adjacent Ramp		ft		
Conv	version to pc/h	Under Bas	se Conditions	
Junction Components	Freeway Ramı	Ramp	Adjacent	
Volume, V (vph)	3122 164	43	vph	

```
Peak-hour factor, PHF
                                     432
Peak 15-min volume, v15
                             822
                                                  ٧
                                             %
                                 2
                          5
Trucks and buses
                                              %
                           0
                                  0
Recreational vehicles
                                Level
                                        Level
                       Level
T∕rain tvpe:
                                         %
                          %
                                  %
  3rade
                                         mi
                          mi
                                  mi
  Length
                              1.5
                                      1.5
Trucks and buses PCE, ET
                                      1.2
                              1.2
Recreational vehicle PCE, ER
                                       0.990
                              0.976
Heavy vehicle adjustment, fHV
Driver population factor, fP
                                    1.00
                            1.00
                        3368
                                1747
                                              pcph
Flow rate, vp
                          Estimation of V12 Merge Areas_____
         L = 6210.55 (Equation 25-2 or 25-3)
          EQ
         P = 0.647 Using Equation 1
          FΜ
         v = v (P) = 2181 \text{ pc/h}
          12 F FM
                                Capacity Checks_____
                                    LOS F?
              Actual
                       Maximum
                                  No
                       7200
              5115
                                  No
                        4600
              3928
   R12
                  Level of Service Determination (if not F)______
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 19.6
                                                         pc/mi/ln
                                Α
                R
                       12
Level of service for ramp-freeway junction areas of influence B
                ___Speed Estimation_____
                                 M = 0.294
Intermediate speed variable,
Space mean speed in ramp influence area, S = 61.8 mph
                                 S = 67.5 mph
Space mean speed in outer lanes,
Space mean speed for all vehicles, S = 63.0 mph
```

0.95

0.95

Reynold Smith and Hills, Inc				
South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 95	4-474-1304	1	
	Me	rge Analysi	s	
Analyst: YLM Agency/Co.: RS&H Date performed: 1/8/04 Analysis time period: PM PE Freeway/dir or travel: NB TUF Junction: Jurisdiction: Analysis Year: 2002 Description: I-595 ON RAMP	RNPIKE			
	<u> </u>	reeway Dat	a	<u> </u>
Type of analysis Number of lanes in freeway Free-flow speed on freeway Volume on freeway	Merge 3 70.0 2829	mph vph	ata	·
		m Kamp De	<u> </u>	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel		mph vph ft ft		
	Adjacent Rai	mp Data (if	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	No	∨ph ft		
·	version to nc/h		e Conditions	
				
Junction Components	Freeway Ram	Ramp p	Adjacent	
Volume, V (vph)	2829 180		vph	

```
0.95
                                   0.95
Peak-hour factor, PHF
                                     476
Peak 15-min volume, v15
                             744
                                                  V
                                             %
                                 2
Trucks and buses
                                              %
                           0
                                  0
Recreational vehicles
                                Level
                                        Level
                        Level
T∕ ain type:
                                  %
                                          %
                           %
  3rade
                                         mi
                           mi
                                  mi
  Length
                                      1.5
Trucks and buses PCE, ET
                              1.5
                                      1.2
                              1.2
Recreational vehicle PCE, ER
                                       0.990
Heavy vehicle adjustment, fHV
                              0.976
                                    1.00
Driver population factor, fP
                            1.00
                        3052
                                1923
                                              pcph
Flow rate, vp
                          Estimation of V12 Merge Areas_____
         L = 6210.55 (Equation 25-2 or 25-3)
          EQ
         P = 0.647 Using Equation 1
          FΜ
         v = v (P) = 1976 pc/h
          12 F FM
                                 Capacity Checks_____
                                    LOS F?
              Actual
                       Maximum
                                  No
              4975
                        7200
                                  No
                        4600
              3899
   R12
                 Level of Service Determination (if not F)_____
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 19.3 \text{ pc/mi/ln}
                R
                        12
                                Α
Level of service for ramp-freeway junction areas of influence B
                  Speed Estimation_____
                                 M = 0.288
Intermediate speed variable,
Space mean speed in ramp influence area, S = 61.9 mph
                                 S = 67.9 mph
Space mean speed in outer lanes,
Space mean speed for all vehicles, S = 63.1
                                             mph
```

BASIC FREEWAY SEGMENTS WORKSHEET (mixh) Free-Flow Speed FRS = 75 mills Application Output Input 70 mids 70 LOS, S, D 표 Operational (LOS) FFS, N, vn 1450 65 milt FFS, LOS, v_n N, S, D Design (N) 60 min G0 v_p. S. D 55 min Design (v_p) FFS, LOS, N fiverage Passenger-C FFS, N, AADT LOS, S. D. Planning (LOS) 50 N, S, D FFS, LOS, AADT Planning (N) 40 v_n, S, D Planning (v_n) FFS. LOS. N 17 topunda 30 2000 2400 1200 1600 Flow Rate (pc/h/ln) Site Information General Information SB TURNPIKE Highway/Direction of Travel YLM Analyst From/To RS&H Agency or Company Jurisdiction Date Performed 3/20/03 2002 AM PEAK VOLUMES Analysis Year Analysis Time Period Project Description Griffin Rd off-ramp Des.(N) Planning Data Oper.(LOS) Flow Inputs Peak-Hour Factor, PHF 0.95 4183 veh/h Volume, V %Trucks and Buses, PT 5 AADT veh/day 0 Peak-Hr Prop. of AADT, K %RVs, P_R General Terrain: Level Peak-Hr Direction Prop. D 0.00mi Grade Length DDHV = AADT x K x Dveh/h 1.00 Up/Down % 0.00 Driver type adjustment Calculate Flow Adjustments 1.2 E_R 1.00 0.976 ET 1.5 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ Calc Speed Adj and FFS Speed Inputs ft Lane Width 12.0 mi/h 0.0 f_{iw} ft 6.0 Rt-Shoulder Lat, Clearance 0.0 mi/h f_{LC} 0.66 I/mi Interchange Density 8.0 mi/h f_{iD} Number of Lanes, N 4 1.5 mi/h f_N FFS (measured) mi/h mi/h **FFS** 67.7 Base free-flow Speed, BFFS 70.0 mi/h Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS $V_{\rm n} = (V \text{ or DDHV}) / (PHF \times N \times f_{\rm HV} \times f_{\rm n})$ 1128 pc/h/ln $v_n = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_n)$ pc/h 67.7 mi/h mi/h 16.7 pc/mi/ln $D = v_D / S$ pc/mi/ln $D = v_n / S$ В _OS Required Number of Lanes, N Factor Location Glossary S - Speed N - Number of lanes f_{LW} - Exhibit 23-4 E_R - Exhibits23-8, 23-10 · Hourly volume D - Density f_{LC} - Exhibit 23-5 E_T - Exhibits 23-8, 23-10, 23-11 Flow rate FFS - Free-flow speed f_N - Exhibit 23-6 f_n - Page 23-12 LOS - Level of service BFFS - Base free-flow speed f_{ID} - Exhibit 23-7 LOS, S, FFS, v_D - Exhibits 23-2, 23-3 DDHV - Directional design hour volume

Peak-hour factor, PHF 0.95 0.95 0.95 Peak 15-min volume, v15 1999 158 157 v Trucks and buses 5 2 2 % Recreational vehicles 0 0 0 % Terrain type: Level Level Level Carade 0.00 % 0.00 % Length 0.00 mi 0.00 mi Trucks and buses PCE, ET 1.5 1.5 1.5 Recreational vehicle PCE, ER 1.2 1.2 1.2 Heavy vehicle adjustment, fHV 0.976 0.990 0.990 Driver population factor, fP 1.00 1.00 1.00 Flow rate, vp 8197 639 634 pcph
Estimation of V12 Merge Areas
L = 0.00 (Equation 25-2 or 25-3)
EQ P = 0.212 Using Equation 4
FM v = v (P) = 1740 pc/h 12 F FM
Capacity Checks
Actual Maximum LOS F? v 8836 9200 No
R12
Level of Service Determination (if not F)
Density, D = 5.475 + 0.00734 v + 0.0078 v - 0.00627 L = 21.9 pc/mi/ln R R 12 A Level of service for ramp-freeway junction areas of influence C
Speed Estimation
Intermediate speed variable, M = 0.336
Space mean speed in ramp influence area, S = 54.0 mph R
Space mean speed in outer lanes, S = 47.9 mph

Reynold Smith and Hills, Inc				
3 South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 954-	474-1304		
	Diver	ge Analysis	3	
Analyst: PJ Agency/Co.: RSH Date performed: 10/27/200 Analysis time period: AM Peak Freeway/dir or travel: EASTBO Junction: Jurisdiction: Analysis Year: Existing Description: EB 595 TO SR 7 0	Hour UND	'ERGE		
	Fre	eway Data		
Type of analysis Type of analysis Thee-flow speed on freeway Volume on freeway	Diverge 4 60.0 8567 Off F	mph vph Ramp Data		
Side of freeway Number of lanes in ramp Free-Flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel lane	ane	mph vph ft ft		
	_Adjacent Ram	p Data (if o	one exists)	
Does adjacent ramp exist? Volume on adjacent ramp Position of adjacent ramp Type of adjacent ramp Distance to adjacent ramp	Yes 623 Downsti Off 1276	ft		
Conv	ersion to pc/h	Under Bas	e Conditions_	
Junction Components Volume, V (vph)	Freeway Ramp 8567 847		Adjacent vph	

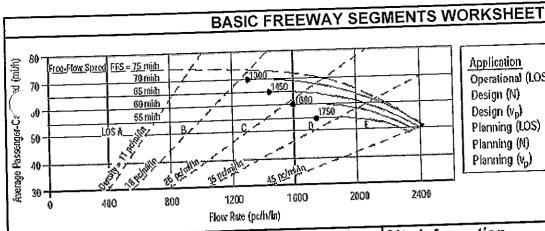
```
0.95
                                     0.95
                             0.95
Peak-hour factor, PHF
                                                164
                               2254
                                        223
Peak 15-min volume, v15
                                                 %
                                          2
                                   2
                            5
Trucks and buses
                                                 %
                                           0
                                    0
                            0
Recreational vehicles
                                          Level
                                  Level
                         Level
Terrain type:
                                        % 0.00
                                                 %
                              % 0.00
                        0.00
   ⊿rade
                                                 mi
                              mi 0.00
                                       mi 0.00
                        0.00
   Length
                                                1.5
                                        1.5
                                1.5
Trucks and buses PCE, ET
                                                1.2
                                        1.2
Recreational vehicle PCE, ER
                                1.2
                                                   0.990
                                          0.990
Heavy vehicle adjustment, fHV
                                0.976
                                               1.00
                                      1.00
Driver population factor, fP
                              1.00
                                           662
                                                  pcph
                                   900
                          9243
Flow rate, vp
                            Estimation of V12 Diverge Areas_____
          L = 0.00 (Equation 25-8 or 25-9)
           EQ
          P = 0.436 Using Equation 8
           FD
          v = v + (v - v) P = 4538 \text{ pc/h}
           12 R F R FD
                                   Capacity Checks_____
                                       LOS F?
                          Maximum
               Actual
                                      Yes
                           9200
                 9243
   v = v
    Fi F
                                     Yes
                4538
                          4400
    V
    12
                                       No
                            9200
                  8343
   v = v - v
    FO F R
                                     No
                          2100
                900
    R
                    Level of Service Determination (if not F)______
                D = 4.252 + 0.0086 \text{ v} - 0.009 \text{ L} = 41.0 \text{ pc/mi/ln}
 Density,
                          12
                                  D
              R
 Level of service for ramp-freeway junction areas of influence F
                             ___Speed Estimation_____
                                    D = 0.379
 Intermediate speed variable,
 Space mean speed in ramp influence area,
                                           S = 53
                                                     mph
                                       S = 60.5
                                                  mph
 Space mean speed in outer lanes,
 \xi_{r} ace mean speed for all vehicles, S = 56.7
                                                 mph
```

REYNOLDS, SMITH AND HILLS REYNOLDS, SMITH AND HILLS

Phone: F E-mail:	ax:Diverge Analysis
Analyst: PJ Agency/Co.: RSH Date performed: 10/27/20 Analysis time period: PM Pea Freeway/dir or travel: EASTBO Junction: Jurisdiction: Analysis Year: Existing Description: EB 595 TO SR 7	CHour OUND OFF RAMP DIVERGE
	Freeway Data
Type of analysis in the number of lanes in freeway Free-flow speed on freeway Volume on freeway	Diverge 4 60.0 mph 6199 vph Off Ramp Data
Side of freeway Number of lanes in ramp Free-Flow speed on ramp Volume on ramp Length of first accel/decel land Length of second accel/decel	lane
	_Adjacent Ramp Data (if one exists)
Does adjacent ramp exist? Volume on adjacent ramp Position of adjacent ramp Type of adjacent ramp Distance to adjacent ramp	Yes 774 vph Downstream Off 1276 ft
Cor	version to pc/h Under Base Conditions
Junction Components	Freeway Ramp Adjacent Ramp
Volume, V (vph)	6199 673 774 VPI

Peak-hour factor, PHF 0.95 0.95 0.95 Peak 15-min volume, v15 1631 177 204 v Trucks and buses 5 2 2 % Recreational vehicles 0 0 0 % Level Level Level Level Length 0.00 % 0.00 % Length 0.00 mi 0.00 mi Trucks and buses PCE, ET 1.5 1.5 1.5 Recreational vehicle PCE, ER 1.2 1.2 1.2 Heavy vehicle adjustment, fHV 0.976 0.990 0.990 Driver population factor, fP 1.00 1.00 1.00 Flow rate, vp 6688 716 823 pcph
Estimation of V12 Diverge Areas
L = 0.00 (Equation 25-8 or 25-9)
EQ P = 0.436 Using Equation 8
FD v = v + (v - v) P = 3320 pc/h
12 R F R FD
Capacity Checks
Actual Maximum LOS F? v = v 6688 9200 No
y 3320 4400 No
12 $v = v - v$ 5972 9200 No
FO F R v 716 2100 No R
Level of Service Determination (if not F)
Density, $D = 4.252 + 0.0086 \text{ v} - 0.009 \text{ L} = 30.6 \text{ pc/mi/ln}$
Level of service for ramp-freeway junction areas of influence D
Speed Estimation
Intermediate speed variable, D = 0.362
Space mean speed in ramp influence area, S = 53 mph R
Space mean speed in outer lanes, S = 63.2 mph
Space mean speed for all vehicles, S = 57.9 mph

BASIC FREEWAY SEGMENTS WORKSHEET (cailt) Output Free Flar Speed FFS = 75 mills Application nput 70 mish LOS, S, D FFS, N, Vn Operational (LOS) 70 -공 1450 65 milh N, S, D FFS, LOS, Va Design (N) 60 midu v_p, S, O 60FFS, LOS, N Design (v_o) 55 mlih Average Passenger-C LOS, S, D FFS, N, AADT Planning (LOS) 50 N, S, D FFS, LOS, AADT Planning (N) v_0 , S, DFFS, LOS, N Planning (v_n) 30 2400 2000 1200 1600 200 480 Flow Rate (pc/n/ln) Site Information General Information Highway/Direction of Travel EASTBOUND YLM Analyst From/To **RSH** Agency or Company Jurisdiction 10/28/03 Date Performed Existing Analysis Year PM Peak Hour Analysis Time Period Project Description EB 595 EAST OF SR 840FF RAMP Planning Data ■ Des.(N) M Oper.(LOS) Flow Inputs 0.95 Peak-Hour Factor, PHF 5526 veh/h Volume, V %Trucks and Buses, PT 5 veh/day AADT 0 %RVs, PR Peak-Hr Prop. of AADT, K Level General Terrain: Peak-Hr Direction Prop. D 0.00mi Grade Lenath veh/h $DDHV = AADT \times K \times D$ Up/Down % 0.00 1.00 Driver type adjustment Calculate Flow Adjustments 1.2 1.00 0.976 $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ 1.5 Calc Speed Adj and FFS Speed Inputs ft mi/h 12.0 0.0 Lane Width f_{LW} ft Rt-Shoulder Lat. Clearance 6.0 0.0 mi/h f_{LC} I/mi 0.91 mi/h Interchange Density 2.1 מו^ל Number of Lanes, N mi/h 1.5 N mi/h FFS (measured) mi/h 66.4 FFS mi/h 70.0 Base free-flow Speed, BFFS Design (N) LOS and Performance Measures Design (N) Operational (LOS) Design LOS $v_{D} = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_{n})$ 1491 pc/h/ln pc/h $V_{\rm p} = (V \text{ or DDHV}) / (PHF x N x f_{\rm HV} x f_{\rm p})$ mi/h 66.4 mi/h pc/mi/ln 22.5 pc/mi/ln D = v_p / S $D = v_n / S$ C LOS Required Number of Lanes, N Factor Location Glossary f_{LW} - Exhibit 23-4 N - Number of lanes S - Speed E_R - Exhibits23-8, 23-10 f_{LC} - Exhibit 23-5 D - Density E_T - Exhibits 23-8, 23-10, 23-11 V - Hourly volume FFS - Free-flow speed f_N - Exhibit 23-6 Flow rate f_p - Page 23-12 f_{ID} - Exhibit 23-7 BFFS - Base free-flow speed LOS - Level of service LOS, S, FFS, v_n - Exhibits 23-2, 23-3 DDHV - Directional design hour volume



A - U-stion	Input	Output
Application (ACE)	FFS, N, V _D	LOS, S, D
Operational (LOS)	FFS, LOS, V _D	N, S, D
Design (N)		v ₀ , S, D
Design (v _p)	FFS, LOS, N	LOS, S, D
Planning (LOS)	FFS, N, AADT	
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v _p)	FFS, LOS, N	ν _ρ , S, D

30 400 800) e (pc/h/lin)	1600	2000	2400				
	LW/K KG	e (herraren)			Site Information				
General Information nalyst gency or Company nate Performed	RSH 10/28/03	<u> </u>			Highway/Direction of Travel From/To Jurisdiction	EASTBOUN Existing	D		
nalysis Time Period	AM Peak				Analysis Year	Existing			
Project Description EB 595 EAST	OF SR84 O	FF RAME			-	Plan	ning Data		
☑ Oper.(LOS)				MU	es.(N)				
low Inputs	7700	JI ₂			Peak-Hour Factor, PHF	0.95			
/olume, V	7720 vel veh/day	I/I1			%Trucks and Buses, P _T	5			
AADT	veniday				%RVs, P _R	0			
Peak-Hr Prop. of AADT, K					General Terrain:	Level			
Peak-Hr Direction Prop, D DDHV = AADT x K x D	veh/h				Grade Length	0,00mi			
Driver type adjustment	1.00				Up/Down %	0.00			
Calculate Flow Adjust	ments					1.2			
	1.00				E _R				
E _T	1.5				$f_{HV} = 1/[1 + P_T(E_T - 1) + P_R(E_T)]$				
Speed Inputs	<u> </u>				Calc Speed Adj ar	nd FFS			
Lane Width	12.0		ft		f _{LW}	0.0	mi/h		
Rt-Shoulder Lat, Clearance	6.0		ft		f _{LC}	0.0	mi/h		
Interchange Density	0.91		1/mi			2.1	mi/h		
Number of Lanes, N	4				f _{ID}	1,5	mi/h		
FFS (measured)			mi/h		f _N	66.4	mi/h		
Base free-flow Speed, BFFS	70.0		mi/h		FFS	00.4			
LOS and Performance		res			Design (N)				
LOS and Performance	C MOGO			"	<u>Design (N)</u>				
Operational (LOS)					Design LOS				
$v_p = (V \text{ or DDHV}) / (PHF x N x f_{HV})$	/ x f _p)	2082	pc/h/lr	า	$v_p = (V \text{ or DDHV}) / (PHF x)$	N x f _{HV} x f _p)	pc/h		
S		60.8	mi/h		S		mi/h		
D = v _p /S		34.2	pc/mi/	/in	D = v _p / S		pc/mi/ln		
LOS		D			Required Number of Lane	s, N			
					Factor Location				
Glossary	Coood						f _{LW} - Exhibit 23-4		
14 Hallings of ionics	S - Speed				E _R - Exhibits23-8, 23-10	00 44	f _{LC} - Exhibit 23-5		
Troung rolams	- Density	u enond			E _T - Exhibits 23-8, 23-10,	ZO-11	f _N - Exhibit 23-6		
Lh 1300 yard	FS - Free-flo		onood		f _p - Page 23-12	in , aga			
200 2010101	FFS - Base f	ree-flow s	speea		LOS, S, FFS, v _p - Exhibits	3 23-2, 23-3	f _{ID} - Exhibit 23-7		
DDHV - Directional design hour	volume				ity of Florida, All Rights Reserve		Version		

Reynold Smith and Hills, Inc				
3 South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 954-	474-1304		
	Merg	je Analysis_		_
Analyst: PJ Agency/Co.: RSH Date performed: 10/27/200 Analysis time period: AM Peak Freeway/dir or travel: EASTBO Junction: Jurisdiction: Analysis Year: Existing Description: TURNPIKE ON F	OUND	≣B		
	Fre	eway Data_		
Type of analysis Type of analysis Tree-flow speed on freeway Volume on freeway	Merge 3 60.0 7097	mph vph		
	Or	n Ramp Data	B	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel	iane	mph vph ft ft		
	_Adjacent Ran	np Data (if o	ne exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	Yes 846 Downs On 1750	ft		
Con	version to pc/h	Under Base	Conditions_	
Junction Components Volume, V (vph)	Freeway Ram 7097 14	·	Adjacent vph	

Peak-hour factor, PHF 0.95 0.95 0.95 Peak 15-min volume, v15 1868 383 223 v Trucks and buses 5 2 2 % Recreational vehicles 0 0 0 % Terrain type: Level Level Level Length 0.00 % 0.00 % Length 0.00 mi 0.00 mi Trucks and buses PCE, ET 1.5 1.5 1.5 Recreational vehicle PCE, ER 1.2 1.2 1.2 Heavy vehicle adjustment, fHV 0.976 0.990 0.990 Driver population factor, fP 1.00 1.00 1.00 Flow rate, vp 7657 1546 899 pcph							
Estimation of V12 Merge Areas							
L = 0.00 (Equation 25-2 or 25-3)							
EQ P = 0.600 Using Equation 1 FM v = v (P) = 4593 pc/h 12 F FM							
Capacity Checks							
Actual Maximum LOS F? v 9203 6900 Yes							
v 6139 4600 Yes R12							
Level of Service Determination (if not F)							
Density, D = 5.475 + 0.00734 v + 0.0078 v - 0.00627 L = 47.6 pc/mi/ln R R 12 A Level of service for ramp-freeway junction areas of influence F							
Speed Estimation							
Intermediate speed variable, M = 2.057							
Space mean speed in ramp influence area, S = 23.0 mph R							
Space mean speed in outer lanes, S = 48.9 mph							
Space mean speed for all vehicles, S = 27.9 mph							

Reynold Smith and Hills, Inc					
South Pine Island Road Plantation, FL 33324					
Phone: 954-474-3005 E-mail:	Fax:	954-47	'4-1304		
		Merge /	Analysis_		
Analyst: PJ Agency/Co.: RSH Date performed: 10/27/20 Analysis time period: PM Pea Freeway/dir or travel: EASTBO Junction: Jurisdiction: Analysis Year: Existing Description: TURNPIKE ON R	k Hour DUND	95 EB			
		Freev	vay Data		_
Type of analysis The nber of lanes in freeway The e-flow speed on freeway Volume on freeway	Merge 3 60 4752		mph /ph amp Dat	a	
		01110	amp Dat	4	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel	1126 9 80	٧	mph ph ft ft		
	_Adjacent	Ramp	Data (if c	ne exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	Or	es 665 ownstre 1 750	vph am ft		
Conv	version to	oc/h Un	der Base	Conditions_	
Junction Components		Ramp	amp	Adjacent	
Volume, V (vph)	4752	1126	665	vph	

```
0.95
                                           0.95
                            0.95
Peak-hour factor, PHF
                                              175
                             1251
                                      296
                                                    ٧
Peak 15-min volume, v15
                                              %
                                        2
                                 2
Trucks and buses
                                              %
                                        0
                                  0
Recreational vehicles
                           0
                                Level
                                        Level
                        Level
Terrain type:
                           % 0.00
                                     % 0.00
                                              %
                       0.00
← 3rade
                                     mi 0.00 mi
                           mi 0.00
                       0.00
  Length
                                             1.5
                              1.5
                                      1.5
Trucks and buses PCE, ET
                                             1.2
                                      1.2
Recreational vehicle PCE, ER
                               1.2
                                                0.990
Heavy vehicle adjustment, fHV
                               0.976
                                       0.990
                                            1.00
Driver population factor, fP
                                    1.00
                            1.00
                                         707
                                                pcph
                                1197
                        5127
Flow rate, vp
                          Estimation of V12 Merge Areas_____
         L = 0.00 (Equation 25-2 or 25-3)
          EQ
         P = 0.600 Using Equation 1
          FΜ
         v = v (P) = 3076 \text{ pc/h}
          12 F FM
                                 Capacity Checks_____
                                    LOS F?
                        Maximum
              Actual
                                   No
               6324
                        6900
   FO
                        4600
                                   No
               4273
   R12
                  Level of Service Determination (if not F)______
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 33.2 pc/mi/ln
                        12
                                Α
                 R
      R
Level of service for ramp-freeway junction areas of influence D
                               Speed Estimation_____
                                 M = 0.529
Intermediate speed variable,
Space mean speed in ramp influence area,
                                       S = 50.5 mph
                                S = 54.4
                                              mph
Space mean speed in outer lanes,
Space mean speed for all vehicles, S = 51.7 mph
```

	RAMPS AND RAMP JUNCTIONS WORKSHEET											
General	Informati					Site Inf						
Analyst2		YLM					ajion or riale.			I-595 EB I-95 SB On-Ramp		
Agency or Co		RS&H 11/23/200	1			nction risdiction			1-9:	3 SD OII-1	Tamp	
Date Perform Analysis Time		AM	T			alysis Year			Exi	sting		
Project Descr												
Inputs												
Upstream Ad	j Ramp	Terrain Leve									Downstrea	m Adj Ramp
☐ Yes	■ On										🔚 Yes	屬 On
□ No	I≣ Off										I≣ No	I∰ Off
L _{up} =	ft										L _{down} =	ft
			S _{FF} = 70.	0 mph		S	FR =	55.0 mp	h		VD =	veh/h
Vu =	veh/h		;	Sketch (s	show lane	es, L _A , L _{D,} V	$_{R}$, V_{f})			********		
Convers	ion to pc	/h Under	Base (Condi	tions							
(pc/h)	V (Veh/hr)	PHF	Terr		Truck	%Rv		f _{HV}		f _p	v=V/PHF f	HV ^f p
Freeway	3847	0.95	Lev	el	5	0		976		.00	4151	
Ramp	1000	0.95	Lev	el	2	0	0.	990	1	.00	1063	
UpStream					ļ		ļ					
DownStream	1	Manna Anna			<u></u>	l <u>.</u>	<u> </u>		Divor	ge Areas	<u></u>	
Eatlmati	an afv	Merge Areas	5			Estima	tion	ofv	244N-224C2C24SECCC	ge Alcas		
<u> ESIIIIAU</u>	on of v ₁₂						1101			I ± (\) /	V VD	
		$V_{12} = V_F (P_{FM})$)			$V_{12} = V_R + (V_F - V_R)P_{FD}$						
	ation 25-2 or						a = (Equation 25-8 or 25-9)					
$P_{FM} = 0.209$	using Equati	on 0				P _{FD} = using Equation						
V ₁₂ = 868	pc/h					$V_{12} = pc_1$						
Capacity	/ Checks		1.0			Capac	ity C	heck	S			
	Actu	al Max	dmum	LO	SF?			Actu	al	Max	imum	LOS F?
						V _{FI} =V	F			See Exh	iibit 25-14	
V _{FO}	5214	See Ex	hibit 25-7	N	10	V ₁₂				440	0:All	
						V _{FO} = V _F	-	See Ex		See Exh	nibit 25-14	
V _{R12}	1931	460	IIA:00	N	lo	V_R				See Exhibit 25-3		
	Service	Datarmin	ation /	if not	E)	<u> </u>	11 S	entica	n De			f not F)
	5.475 + 0.007	/				JSCACIA	V 20-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1				, - 0.009 L _D	
1			10 112 0.	00021 LA	1	D _R =	(pc/ n	IX		1,	2	
'`	-17.6 (pc/ m/h	•				1		oit 25-4)				
	A (Exhibit 25-								nn.			
	stimatio					Speed		imati iibit 25-1				
1 0	.312 (Exibit 2	•				D _s =	•		•	•		
S _R = 78	.7 mph (Exhil	bit 25-19)				'`	•	(Exhibit				
•	i.9 mph (Exhil					١ ،	•	(Exhibit		•		
S= 70.1 mph (Exhibit 25-14)						S =	mph	(Exhibit	25-15)		

		RAMP	S AND	RAME	NUNC	CTIONS	Personne legislene ein	January Berling	name who were any section of	: T		
General	Informati	on				Site Inf	,	******				
Analyst2		YLM				eeway/Dir of Travel I-595 EB					Domo	
Agency or Co Date Perform		RS&H 11/23/200	14			nction I-95 SB C risdiction			5 SB On-	Rallip		
Analysis Tim		PM				alysis Year			Ex	isting		
	ription I-595	SIMR						(1)	articessortess			
Inputs						100						
Upstream Ad	j Ramp	Terrain Leve	1								Downstrea	m Adj Ramp
☐ Yes	☐ On										∏∰ Yes	☐ On
I No	☐ Off										□ No	I∭ Off
L _{up} =	ft						· · · -		•	···	L _{down} =	ft
Vu =	veh/h		S _{FF} = 70				111	55.0 m	ph		VD =	veh/h
						es, L _A , L _D ,V	$_{R}, V_{f}$	ALTERNATURE VIEW VOICE VIEW	an consumer or publication			
Convers	ion to pc	/h Under	Base	Condi	tions						r is religion.	
(pc/h)	V (Veh/hr)	PHF	Teri	ain	Truck	%Rv		f _{HV}		f _p	v=V/PHF f	HV ^f p
Freeway	2516	0.95	Lev		5	0		976		1.00	2715	
Ramp	918	0.95	Lev	el	2	0	0.	990		1.00	976	
UpStream Down Stream		ļ	<u></u>				 	·				
DownStream	1)	Merge Areas	!		l		<u></u>		Dive	ge Areas		·
Estimati	on of v ₁₂	THE RESERVE OF THE PARTY OF THE PARTY.				Estima	tior	ı of v	na vercence consider de	U		
		/ ₁₂ = V _E (P _{EM})							/ _R + (V _F -	V _R)P _{FD}	
 L=o = (Eau	ation 25-2 or 2	12 1				L _{EQ} = (Equation 25-8 or 25-9)						
]	using Equation					P _{FD} = using Equation						
V ₁₂ = 567		UII U				V ₁₂ = pc/h						
Section and an additional designation of						Capaci		hack	re			
Capaciti	/ Checks			100	^ F^	Capaci	uy v	1		Max	dimum	LOS F?
	Actua	ai iviax	dmum	LO	S F?	\ \ _\\		Actu	ıaı			LOO1:
V _{FO}	3691	See Ex	hibit 25-7	N	0	V _{F1} =V _I	F	<u> </u>			nibit 25-14	
FV						V ₁₂				44(00:All	
.,						$V_{FO} = V_{F}$		See Ext	ee Exhibit 25-14			
V _{R12}	1543	46	IIA:00	N	0	V _R				See Exhibit 25-3		
	Carrian	Datarmin	ation /	if nat	E)		V C	envio	a De			f not F)
F1	Service I			/		ECAC!					₂ - 0.009 L _D	
	5.475 + 0.007		76 V ₁₂ - 0.	UUUZI LA		D -			.02 • (7.0000 V ₁	2 - 0.000 LD	H
'`	-20.6 (pc/ m/lr					'`	(pc/ m (Evhil	oit 25-4)				
	A (Exhibit 25-											
	stimation					Speed D _s =		iirriati iibit 25-1				
1 ~	.321 (Exibit 2	*				1 -	•	(Exhibit	-	١		
'`	.0 mph (Exhib	-				'`	•	•				
, v	.9 mph (Exhib	•				1	-	(Exhibit				
S= 72.2 mph (Exhibit 25-14)						S = mph (Exhibit 25-15)						

Reynold Smith and Hills, Inc				
South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 95	54-474-1304		
	Me	erge Analysis		
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: AM Pea Freeway/dir or travel: WESTB Junction: Jurisdiction: Analysis Year: 2002 Description: SR 84 ON RAMP	k Volumes OUND	MERGE		
	F	reeway Data	a	·
Type of analysis Type of analysis Type of lanes in freeway Fide-flow speed on freeway Volume on freeway	Merge 4 60.0 4878	vph		
	(On Ramp Da	ta	<u>.</u>
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel	Right 1 45.0 809 300 lane	mph vph ft ft		
	_Adjacent Ra	amp Data (if	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	Yes 747 Dowi On 124	nstream		
Conv	version to pc/	h Under Bas	e Conditions_	
Junction Components Volume, V (vph)	Freeway Rar 4878 80	· ·	Adjacent vph	

Peak-hour factor, PHF 0.95 0.95 0.95 Peak 15-min volume, v15 1284 213 197 v Trucks and buses 5 2 2 % Recreational vehicles 0 0 0 % Terrain type: Level Level Level Langth 0.00 % 0.00 % 0.00 mi Length 0.00 mi 0.00 mi 0.00 mi Trucks and buses PCE, ET 1.5 1.5 1.5 Recreational vehicle PCE, ER 1.2 1.2 1.2 Heavy vehicle adjustment, fHV 0.976 0.990 0.990 Driver population factor, fP 1.00 1.00 1.00 Flow rate, vp 5263 860 794 pcph
Estimation of V12 Merge Areas
L = 0.00 (Equation 25-2 or 25-3)
EQ P = 0.185 Using Equation 4 FM
v = v (P) = 972 pc/h 12 F FM
Capacity Checks
Actual Maximum LOS F? v 6123 9200 No
(FO v 1832 4600 No R12
Level of Service Determination (if not F)
Density, D = 5.475 + 0.00734 v + 0.0078 v - 0.00627 L = 17.5 pc/mi/ln R R 12 A Level of service for ramp-freeway junction areas of influence B
Speed Estimation
Intermediate speed variable, M = 0.318
Space mean speed in ramp influence area, S = 54.3 mph
R Space mean speed in outer lanes, S = 54.1 mph
Space mean speed for all vehicles, S = 54.1 mph

Reynold Smith and Hills, Inc

Plantation, FL 33324		
Phone: 954-474-3005 E-mail:	Fax: 954-474-1304	
	Merge Analysis	
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: PM Pea Freeway/dir or travel: WESTB Junction: Jurisdiction: Analysis Year: 2002 Description: SR 84 ON RAMP	ak Volumes OUND	
	Freeway Data	
Type of analysis Number of lanes in freeway Puber of lanes in freeway Volume on freeway	Merge 4 60.0 mph 6552 vph	
	On Ramp Data	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel	Right 1 45.0 mph 1045 vph 300 ft lane ft	
	Adjacent Ramp Data (if one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	Yes 601 vph Downstream On 1243 ft	
Conv	version to pc/h Under Base Conditions	
Junction Components	Freeway Ramp Adjacent Ramp	
Volume, V (vph)	6552 1045 601 vph	

```
0.95
                            0.95
                                    0.95
Peak-hour factor, PHF
                                               158
                                       275
                                                      ٧
                              1724
Peak 15-min volume, v15
                                  2
                                         2
                                               %
                           5
Trucks and buses
                                                %
                            0
                                   0
                                          0
Recreational vehicles
                                         Level
                        Level
                                 Level
Terrain type:
                                      % 0.00
                                                %
                             % 0.00
                       0.00
( 3rade
                                      mi 0.00
                                               mi
                             mi 0.00
                       0.00
  Length
                                               1.5
                                       1.5
Trucks and buses PCE, ET
                               1.5
                                               1.2
                                1.2
                                       1.2
Recreational vehicle PCE, ER
                                                 0.990
                                        0.990
Heavy vehicle adjustment, fHV
                                0.976
                                             1.00
                                     1.00
Driver population factor, fP
                             1.00
                                 1111
                                          639
                                                 pcph
Flow rate, vp
                         7069
                           Estimation of V12 Merge Areas_____
               0.00 (Equation 25-2 or 25-3)
          EQ
          P = 0.153 Using Equation 4
          v = v (P) = 1083 \text{ pc/h}
          12 F FM
                                  Capacity Checks_____
                                      LOS F?
                        Maximum
               Actual
                                    No
                         9200
               8180
   ٧
   FO
                                    No
                         4600
               2194
   R12
                   Level of Service Determination (if not F)_____
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 20.2
                                                            pc/mi/ln
                                 Α
                         12
                 R
      R
Level of service for ramp-freeway junction areas of influence C
                               Speed Estimation_____
                                  M = 0.329
Intermediate speed variable,
Space mean speed in ramp influence area,
                                         S = 54.1
                                     S = 49.3
                                               mph
Space mean speed in outer lanes,
```

mph

S = 50.5

Space mean speed for all vehicles,

Reynold Smith and Hills, Inc				
South Pine Island Road Plantation, FL 33324				
Phone: 954-474-3005 E-mail:	Fax: 95	4-474-1304		
	Me	rge Analysis	s	
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: AM Peal Freeway/dir or travel: WESTBO Junction: Jurisdiction: Analysis Year: 2002 Description: SR 7 SB ON RAM	k Volumes OUND	5 MERGE		
	F	reeway Data	a	
Type of analysis // mber of lanes in freeway // ue-flow speed on freeway Volume on freeway	Merge 4 60.0 5687	mph vph		
	0	n Ramp Da	ata	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel l	Right 1 45.0 747 300 ane	mph vph ft ft		
	_Adjacent Rai	mp Data (if	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	On 1283			
Conv	ersion to pc/h	Under Bas	e Conditions_	
Junction Components	Freeway Ram	Ramp _p	Adjacent	
Volume, V (vph)	5687 74		vph	

```
0.95
                                             0.95
Peak-hour factor, PHF
                             0.95
                                               126
                              1497
                                       197
Peak 15-min volume, v15
                                               %
                                         2
                                  2
                           5
Trucks and buses
                                                %
                            0
                                   0
                                          0
Recreational vehicles
                                         Level
                                 Level
                         Level
Terrain type:
                                                %
                                       % 0.00
                       0.00
                             % 0.00
  Grade
                       0.00
                             mi 0.00
                                      mi 0.00
                                               mi
  Lenath
                                               1.5
                                       1.5
                               1.5
Trucks and buses PCE, ET
                                       1.2
                                               1.2
                                1.2
Recreational vehicle PCE, ER
                                        0.990
                                                 0.990
                                0.976
Heavy vehicle adjustment, fHV
                             1.00
                                     1.00
                                             1.00
Driver population factor, fP
                         6136
                                          510
                                 794
                                                 pcph
Flow rate, vp
                           Estimation of V12 Merge Areas
               0.00 (Equation 25-2 or 25-3)
          EQ
         P = 0.193 Using Equation 4
          FM
         v = v (P) = 1184 \text{ pc/h}
          12 F FM
                                  Capacity Checks_____
                                     LOS F?
              Actual
                        Maximum
                                   No
               6930
                         9200
  V
   FO
                                   No
                         4600
               1978
   R12
                  Level of Service Determination (if not F)_____
Density, D = 5.475 + 0.00734 + 0.0078 + 0.00627 = 18.7
                                                           pc/mi/ln
                        12
                                 Α
     R
                 R
Level of service for ramp-freeway junction areas of influence B
                               Speed Estimation_____
                                  M = 0.322
Intermediate speed variable,
Space mean speed in ramp influence area, S = 54.2 mph
Space mean speed in outer lanes,
                                     S = 52.4 mph
```

Space mean speed for all vehicles, S = 52.9 mph

HCS2000: Ramps and Ramp Junctions Release 4.1c

Reynold Smith and Hills, Inc

South Pine Island Road Plantation, FL 33324					
Phone: 954-474-3005 E-mail:	Fax	954	-474-1304		
		_Merg	ge Analysis		
Analyst: YLM Agency/Co.: RSH Date performed: 10/27/03 Analysis time period: PM Pea Freeway/dir or travel: WESTB Junction: Jurisdiction: Analysis Year: 2002 Description: SR 7 SB ON RAM	k Volume OUND		MERGE		
		Fre	eeway Data		
Type of analysis Number of lanes in freeway e-flow speed on freeway Volume on freeway	Merge 4 6 759	0.0	mph vph		
		Or	n Ramp Dat	:a	
Side of freeway Number of lanes in ramp Free-flow speed on ramp Volume on ramp Length of first accel/decel lane Length of second accel/decel l	601 30	5.0 00	mph vph ft ft		
	Adjacen	t Ran	np Data (if o	one exists)	
Does adjacent ramp exist? Volume on adjacent Ramp Position of adjacent Ramp Type of adjacent Ramp Distance to adjacent Ramp	D 0		vph tream ft		
Conv	ersion to	pc/h	Under Base	e Conditions	
(Junction Components	Free	way Ramp	Ramp	Adjacent	
Volume, V (vph)	7597	601		vph	

	BASIC F	REEWAY SE	GMENTS WORKSHEET		
Figure F	nith 1300 nith 1	150 (600 1750) 1600 2000	Application Operational (LOS) Design (N) Design (v _p) Planning (LOS) Planning (M) Planning (v _p)	Input FFS, N, vp FFS, LOS, Vp FFS, LOS, N FFS, N, AADT FFS, LOS, AADT FFS, LOS, N	Output LOS, S, D N, S, D V _p , S, O LOS, S, D N, S, D V _p , S, D
General Informatio	n		Site Information		
Analyst Agency or Company Date Performed Analysis Time Period	YLM RS&H 3/20/03 PM PEAK VOLUI d off-ramp	MES	Highway/Direction of Travel From/To Jurisdiction Analysis Year	SB TURNPIKE 2002	
☑ Oper.(I	_OS)		Des.(N)	Planning !	Data
Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D Driver type adjustment	4901 veh/h veh/day veh/h 1.00		Peak-Hour Factor, PHF %Trucks and Buses, P _T %RVs, P _R General Terrain: Grade Length Up/Down %	0.95 5 0 Level 0.00mi 0.00	
Calculate Flow Adj					
E _T	1.00 1.5		E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	1.2 0.976	
Speed Inputs			Calc Speed Adj and FFS)	
Lane Width Rt-Shoulder Lat. Clearance Interchange Density Number of Lanes, N	12.0 6.0 0.66 4	ft ft I/mi	$egin{aligned} f_{LW} & & & & & & & & & & & & & & & & & & &$	0.0 0.0 0.8 1.5	mi/h mi/h mi/h mi/h
FFS (measured)		mi/h	FFS	67.7	mi/h
Base free-flow Speed, BFFS	70.0	mi/h		······	
LOS and Performa Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times N)$ S $D = v_p / S$	x f _{HV} x f _p) 1322 67.7 19.5	pc/h/in mi/h pc/mi/ln	Design (N) Design (N) Design LOS v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p S D = v _p / S)	pc/h mi/h pc/mi/ln
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes) Hourly volume	S - Speed D - Density FFS - Free-flow speed BFFS - Base free-flow sp our volume	eed	E _R - Exhibits23-8, 23-10 E _T - Exhibits 23-8, 23-10, 23-11 f _p - Page 23-12 LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{LC} - E f _N - Ex	xhibit 23-4 xhibit 23-5 hibit 23-6 khibit 23-7

MAJOR MERGE AND DIVERGE

HIGHWAY CAPACITY MANUAL ANALYSIS

Major Merge Area Analysis

Where a two-lane on-ramp results in a lane addition, the junction is classified as a major merge area. The Highway Capacity Manual (HCM) analysis is limited to checking capacities on approaching legs and the departing freeway. The capacity of each entering leg and the departing freeway is computed using Exhibit 25-3 (p. 25-4) and Exhibit 25-7 (p. 25-8) in the HCM 2000.

Exhibit 25-3. Approximate Capacity of Ramp Roadways

	Capacity (pc/h)					
Free Flow Speed of Ramp , S _{fr} (mi.h)	Single-Lane Ramps	Two-Lane Ramps				
> 50	2200	4400				
> 40 - 50	2100	4100				
> 30 - 40	2000	3800				
>= 20 - 30	1900	3500				
< 20	1800	3200				

Exhibit 25-7. Capacity Values for Merge Areas

Freeway Free-Flow	Maximum Num	Max. Desirable Flow Entering			
Speed (mi/h)	2	3	4	> 4	influence Area, V _{r12} (pc/h)
>= 70	4800	7200	9600	2400/ln	4600
65	4700	7050	9400	2350/ln	4600
60	4600	6900	9200	2300/ln	4600
55	4500	6750	9000	2250/ln	4600

Determining Flow Rate (pc/h)

$$v_i = V_i / (PHF \times f_{hv} \times f_{p})$$
 (25-1)

 v_i = flow rate for movement i under base conditions during peak 15 min of hour (pc/h)

 V_i = hourly volume for movement i (vph)

PHF = peak-hour factor freeway - 0.95 ramp - 0.95

> f_{hv} = adjustment factor for heavy vehicles freeway - 0.976 ramp - 0.99

 f_p = adjustment factor for drive population freeway - 1.0 ramp - 1.0

Major Diverge Area Analysis

When a two-lane-off-ramp results in a lane drop, it is treated as a major diverge segment. In this case, the entering demand and the departing demand on each exit leg must be checked against the capacity of the approximate entry or departure leg. Equation 25-12 allows the density across all freeway lanes to be estimated for a distance of 1,500 ft upstream of the gore area. This density can be compared with the LOS criteria in Exhibit 24-4 to determine the LOS in the diverge area.

 $D = 0.0109 * (V_E / N)$ (25-12)

D = average density across all freeway lanes for a distance of 1,500 ft upstream of diverge (pc/mi/ln)

 V_F = freeway flow rate approaching diverge area (pc/h)

N = number of freeway lanes

Exhibit 25-4. LOS Criteria for Merge and Diverge Areas

LOS	Density (pc/mi/ln)
А	<= 10
В	> 10 - 20
С	> 20 - 28
D	> 28 - 35
E	> 35
F	Demand exceeds capacity

Determining Flow Rate (pc/h)

```
V_F = V_i / (PHF \times f_{hv} \times f_p)
```

 V_F = flow rate for movement i under base conditions during peak 15 min of hour (pc/h)

 V_i = hourly volume for movement i (vph)

PHF = peak-hour factor freeway - 0.95 ramp - 0.95

> f_{hv} = adjustment factor for heavy vehicles freeway - 0.976 ramp - 0.99

f_p = adjustment factor for drive population freeway - 1.0 ramp - 1.0

Special Cases

When a two-lane, right-hand off-ramp has a single deceleration lane and the left-hand ramp lane splits from Lane 1 of the freeway at the gore area, without a deceleration lane, the following formula needs to be used:

$$V_{12} = V_R + (V_F - V_R)(P_{FD})$$

 V_{12} = hourly volume for movement (vph)

V_{12*} = flow rate for movement under base conditions during peak 15 min of hour (pc/h)

ramp - 0.95

P_{FO}=0.450

 $V_{12*} = V_{12} / (PHF \times f_{hv} \times f_{p})$

f_{hv} = adjustment factor for heavy vehicles freeway - 0.976

ramp - 0.99

f_p = adjustment factor for drive population

freeway - 1.0 ramp - 1.0

 $D_R = 4.252 + 0.0086V_{12} - 0.009L_D$ (Eq.25-10)

D_R= density of diverge influence area(pc/mi/ln)

V₁₂ = flow rate entering ramp influence area(pc/h)

L_D= Length of Deceleration Lane (Ft)

MERGE ANALYSIS

A 1.1) NB I-95 On-Ramp to EB I-595 (AM)

Approaching Freeway Volume:

$$Vi = 2,647$$
 PHF = 0.95

$$fhv = 0.976$$

$$fp = 1.00$$

Ramp Volume:

$$Vi = 1.200$$

$$PHF = 0.95$$

$$fhv = 0.99$$

$$fp = 1.00$$

$$vi = 1.27$$

Departing Freeway Volume:

$$Vi = 3.847$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

A 1.2) NB I-95 On-Ramp to EB I-595 (PM)

Approaching Freeway Volume:

$$Vi = 1,473$$

$$PHF = 0.95$$

fhv =
$$0.976$$
 fp = 1.00

$$fp = 1.00$$

Ramp Volume:

$$Vi = 1,043$$

$$PHF = 0.95$$

$$fhv = 0.99$$
 $fp = 1.00$

$$fp = 1.0$$

Departing Freeway Volume:

$$Vi = 2.516$$

$$PHF = 0.95$$

$$fhv = 0.976$$
 $fp = 1.00$

$$p = 1.00$$

A 2.1) NB I-95 On-Ramp to WB I-595 (AM)

Approaching Freeway Volume:

$$Vi = 1.510$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

Ramp Volume:

$$Vi = 2,128$$

$$PHF = 0.95$$

$$fhv = 0.99$$

$$fp = 1.00$$

Departing Freeway Volume:

$$Vi = 3,638$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

A 2.2) NB I-95 On-Ramp to WB I-595 (PM)

Approaching Freeway Volume:

$$Vi = 2,477$$
 PHF = 0.95

$$fhv = 0.976$$
 $fp = 1.00$

$$fp = 1.00$$

Ramp Volume:

$$Vi = 2,550$$

$$PHF = 0.95$$

$$fhv = 0.99$$

fhv =
$$0.99$$
 fp = 1.00

$$vi = 2,711 (pc/h)$$

Departing Freeway Volume:

$$PHF = 0.95$$

$$fhv = 0.976$$
 $fp = 1.00$

$$fp = 1.00$$

$$vi = 5,422 (pc/h)$$

A 3.1) SB I-95 On-Ramp to WB I-595 (AM)

Approaching Freeway Volume:

$$Vi = 3.638$$

$$fhv = 0.976$$

$$fp = 1.00$$

$$vi = 3,924 (pc/h)$$

Ramp Volume:

$$Vi = 2,703$$

$$PHF = 0.95$$

$$fhv = 0.99$$

$$fp = 1.00$$

Departing Freeway Volume:

$$Vi = 6.368$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

A 3.2) SB I-95 On-Ramp to WB I-595 (PM)

Approaching Freeway Volume:

$$Vi = 5.027$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

5,422 (pc/h)

fhv =
$$0.99$$
 fp = 1.00

capacity = 6,900

Departing Freeway Volume:

$$Vi = 8.427$$

$$fhv = 0.976$$
 $fp = 1.00$

$$fp = 1.00$$

$$vi = 9.089 (pc/h)$$

A 4.1) I-595 On-Ramp to SB Turnpike (AM)

Approaching Freeway Volume:

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

$$vi = 2,627 (pc/h)$$

Ramp Volume:

$$Vi = 1,747$$

$$PHF = 0.95$$

$$fhv = 0.99$$

$$fp = 1.00$$

Departing Freeway Volume:

$$Vi = 4,183$$

$$fhv = 0.976$$

$$fp = 1.00$$

A 4.2) I-595 On-Ramp to SB Turnpike (PM)

Approaching Freeway Volume:

$$Vi = 2,598$$

$$fhv = 0.976$$

$$fp = 1.00$$

Ramp Volume:

$$Vi = 2,303$$

$$PHF = 0.95$$

$$fhv = 0.99$$

$$fp = 1.00$$

$$vi = 2,449 (pc/h)$$

Departing Freeway Volume:

$$Vi = 4.901$$

$$fhv = 0.976$$

<

$$fp = 1.00$$

DIVERGE ANALYSIS

B 1.1 EB I-595 Off-Ramp to NB I-95 (AM)

$$V_i = 9,397$$
 PHF = 0.95 fhv = 0.976 fp = 1.00 $V_F = 10,135$ (pc/h)

N = 4

Therefore D = 27.62 pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 27.62 > 20 - 28 Exhibit 25-4 gives LOS as C in the diverge area.

Level of Service = C

B 1.2 EB I-595 Off-Ramp to NB I-95 (PM)

$$V_i = 6,543$$
 PHF = 0.95 fhv = 0.976 fp = 1.00 $V_F = 7,057$ (pc/h)

N = 4

Therefore D = 19.23 pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 19.23 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 2.1 EB 1-595 Off-Ramp to SB 1-95 (AM)

$$V_i = 6.097$$
 PHF = 0.95 fhv = 0.976 fp = 1.00 $V_F = 6.576$ (pc/h)

N = 3

Therefore D = 23.89 pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 23.89 > 20 - 28 Exhibit 25-4 gives LOS as C in the diverge area.

Level of Service = C

B 2,2 EB I-595 Off-Ramp to SB I-95 (PM)

$$V_i = 4.143$$
 PHF = 0.95 $V_F = 4.468$ (pc/h)

fhv = 0.976

fp = 1.00

N = 3

Therefore

D = 16.23

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 16.23 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 3.1 WB I-595 Off-Ramp to SB I-95 (AM)

$$Vi = 3,805$$
 PHF = 0.95 $V_F = 4,104 \text{ (pc/h)}$

fhv = 0.976

fp = 1.00

N = 4

Therefore

D = 11.18

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 11.18 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 3.2 WB I-595 Off-Ramp to SB I-95 (PM)

$$V_i = 4,730$$
 PHF = 0.95 fhv = 0.976 fp = 1.00 $V_F = 5,101$ (pc/h)

N = 4

Therefore

D = 13.90

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 13.90 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 4.1 WB I-595 Off-Ramp NB I-95 (AM)

$$Vi = 2,803$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

 $V_F = 3,023 \text{ (pc/h)}$

N = 3

Therefore

D = 10.98

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 10.98 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 4.2 WB I-595 Off-Ramp NB I-95 (PM)

$$Vi = 3,437$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

$$V_F = 3,707 \text{ (pc/h)}$$

N = 3

Therefore

D = 13.47

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 13.47 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 5.1 WB I-595 Off-Ramp SR 7/Turnpike (AM)

$$Vi = 6.368$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

 $V_F =$

6,868 (pc/h)

N = 5

Therefore

D = 14.97

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 14.97 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 5.2 WB I-595 Off-Ramp SR7/Turnpike (PM)

 $V_F =$

$$Vi = 8,427$$

$$PHF = 0.95$$

9,089 (pc/h)

$$fhv = 0.976$$

$$fp = 1.00$$

N = 5

Therefore

D = 19.81

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 19.81 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 6.1 WB I-595 Off-Ramp University Drive (AM)

$$Vi = 7,150$$

PHF = 0.95

fhv = 0.976

fp = 1.00

 $V_F = 7.711 \text{ (pc/h)}$

N = 4

Therefore

D = 21.01

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 21.01 > 20 - 28 Exhibit 25-4 gives LOS as C in the diverge area.

Level of Service = C

B 6.2 WB I-595 Off-Ramp University Drive (PM)

$$Vi = 8.989$$

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$

 $V_F =$

9,695 (pc/h)

N = 4

Therefore

D = 26.42

pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 26.42 > 20 - 28 Exhibit 25-4 gives LOS as C in the diverge area.

Level of Service = C

B 7.1 NB Turnpike Off-Ramp I-595 (AM)

$$V_i = 5,325$$
 PHF = 0.95 fhv = 0.976 fp = 1.00 $V_F = 5,743$ (pc/h)

N = 4

Therefore D = 15.65 pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 15.65 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 7.2 NB Turnpike Off-Ramp I-595 (PM)

$$V_i = 4,533$$
 PHF = 0.95 fhv = 0.976 fp = 1.00 $V_F = 4,889$ (pc/h)

N = 4

Therefore D = 13.32 pc/mi/ln

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 13.32 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

B 8.1 SB Turnpike Off-Ramp I-595 (AM)

$$V_F = 5,204$$
 PHF = 0.95 fhv = 0.976 fp = 1.00 Pfd = 0.45 $V_{12} = V_R + (V_F - V_R)(P_{FD})$ $V_R = 2768$ $V_{12} = 3864.2$ $V_{12} = 4167.601$ $V_{D} = 2000$

D = 22.09 pc/mi/ln

Therefore

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 22.09 > 20-28 Exhibit 25-4 gives LOS as C in the diverge area.

Level of Service = C

B 8.2 SB Turnpike Off-Ramp I-595 (PM)

$$V_F = 4,710$$
 PHF = 0.95

$$PHF = 0.95$$

$$fhv = 0.976$$

$$fp = 1.00$$
 Pfd = 0.45

$$Pfd = 0.45$$

$$V_{12} = V_R + (V_F - V_R)(P_{FD})$$

$$V_{12}$$
= 3281.1

2000

D = 16.68

pc/mi/ln

Therefore

To determine the LOS in the diverge area, the above calculated density is compared with Exhibit 25-4 (p.25-5) of the HCM 2000.

For D = 16.68 > 10 - 20 Exhibit 25-4 gives LOS as B in the diverge area.

Level of Service = B

WEAVING

I-595

		F	REEWA	Y WEAV	ING WOR	KSHEET			
Genera	l Informat	ion	10.00	Same College	Site Info	rmation	157524	$H_{i} = 0$	
Analyst YLM Agency/Company RS&H Date Performed 9/20/04 Analysis Time Period AM Peak Period				Freeway/Dir of Weaving Seg Jurisdiction Analysis Yea	Location	I-595 EB Between SW 136 and Flamingo 2002			
Inputs									
Freeway fre Weaving no Weaving se Terrain	ee-flow speed, sumber of lanes, eg length, L (ft)	N	60 5 650 Leve		Weaving type Volume ratio, Weaving ratio	, VR		A 0.3 0.2	
Conver	sions to p	c/h Unde	r Base C	ondition	ıs		0.040000000		T
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	V
<u>'' /</u> Vo1	4581	0.95	5	0	1.5	1.2	0.976	1.00	4942
Vo2	0	0.95	2	0	1.5	1.2	0.990	1.00	0
Vw1	1467	0.95	2	0	1.5	1.2	0.990	1.00	1559
Vw2	480	0.95	2	0	1.5	1.2	0.990	1.00	510
Vw				2069	Vnw				4942
V				100					7011
-	ig and No	n-Weavin	g Speeds	3		1000			
			Unconstr	ained				trained	
		Weaving	(i = w)	Non-Wea	ving (i = nw)		Weaving (i = w)		ving (= nw)
a (Exhibit 2	24-6)						15		00
b (Exhibit 2						4.00		4.00	
c (Exhibit 2		ļ					.97 .80		.75
d (Exhibit 2									.54
Weaving intensity factor, Wi Weaving and non-weaving speeds, Si (ml/h)				3.92 25.16					
Number of	lanes required number of lanes	s, Nw (max)			1.80 1.40	☑ if Nw > N	w (max) const	rained operat	ion
Weavir	ig Segme	nt Speed	Density	Levelo					
	egment speed,			37.64					

Weaving Segment Speed, Densi	ty, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	37.64
Weaving segment density, D (pc/mi/ln)	37.26
Level of service, LOS	E
Capacity of base condition, c _h (pc/h)	8465
Capacity as a 15-minute flow rate, c (veh/h)	8259
Capacity as a full-hour volume, c _h (veh/h)	7846

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".

 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			FREEWA	Y WEAV	ING WOR	ner sommitte fred i statute and a statute an			
General	Informat	ion			Site Info	rmation			
Analyst		YLM			Freeway/Dir o		1-595 EASTBOUND BETWEEN SW136AVE AND		
Agency/Com		RS&H 9/20/0			Weaving Seg	Location	FLAMI	INGO	
Date Perform Analysis Tim		9/20/0 PM	4		Jurisdiction	_	2002		
7 (natybio 1iii)	OT OHOU				Analysis Year		2002		
Inputs									
Freeway free	-flow speed, s nber of lanes,	SFF (mi/h)	60 5		Weaving type			A	.4
Weaving num	ilenath. L. (ff)	IN	650		Volume ratio,			0.3 0.2	
Terrain			Leve		Weaving ratio), K		0.2	
Convers	ions to p	c/h Unde	r Base C	onditior			ı .		l l
(pc/h)	٧	PHF	Truck %	RV %	E _T	ER	fHV	fp	V
Vo1	3594	0.95	5	0	1.5	1.2	0.976	1.00	3877
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0
Vw1	1181	0.95	2	0	1.5	1.2	0.990	1.00	1255
Vw2	480	0.95	2	0	1.5	1.2	0.990	1.00	510
Vw				1765	Vnw				3877
V								and the second	5642
Weaving	and No	n-Weavin	g Speeds	3					
	Prince and the Conference of t		Unconstr				Constrained		
		Weaving	(i = w)	Non-Wea	iving (i = nw)	Weaving (i = w)		Non-Weaving (= nw)	
a (Exhibit 24							15 0.00 00 4.00		
b (Exhibit 24		<u> </u>					.00 4.00 .97 1.30		
c (Exhibit 24 d (Exhibit 24						·	80		75
Weaving intensit						3.	27	0.	43
Weaving and no speeds, Si (mi/h)	n-weaving					26	3.71	49.99	
Number of la	anes required	for unconstrai	ned operation	, Nw	1.81				
	ımber of lane:				1.40		, , ,		1
	If Nw < Nv	/(max) uncons	trained operat	ion			w (max) const	rained operat	ION
			Density,		f Service,	and Caj	pacity		
	gment speed,			39.28					
Weaving seg Level of serv	gment density	, ט (pc/mi/in)		28.73 D					
	base condition	n c. (nc/h)		8465					
		-	h/h)	8259					
Capacity as a 15-minute flow rate, c (veh/h)				0200					

Capacity as a full-hour volume, ch (veh/h) 7846

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".

- b. Capacity constrained by basic freeway capacity.

 c. Capacity occurs under constrained operating conditions.

 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.

- e. Four-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.

 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).

 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.

 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
- h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.

 j. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

		A CONTRACTOR OF THE PROPERTY O	REEWA	Y WEAV	ING WOR	The reason is the recommendation of the contract of the contra			
Genera	l Informat	ion			Site Info	rmation			
Analyst		YLM			Freeway/Dir	of Travel	1-595 EASTBOUND		
Analyst Agency/Co	mpany	RS&H			Weaving Seg	Location	BETWEEN FLAMINGO AND HIATUS		
Date Perfo		9/16/0	4		Jurisdiction		ПАТС	10	
Analysis Ti	me Period	AM			Analysis Yea	r	2002		
nputs									
	ee-flow speed,		60		Weaving type	•		Α	
	imber of lanes,	N	4 1100	1	Volume ratio,	, VR		0.2	
vveaving so Terrain	eg length, L (ft)		Leve		Weaving ratio	o, R		0.1	12
	sions to p	c/h Unde	r Base C	ondition	IS				7
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	V
Vo1	5879	0.95	5	0	1.5	1.2	0.976	1.00	6343
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0
Vw1	1289	0.95	2	0	1.5	1.2	0.990	1.00	1370
Vw2	169	0.95	2	0	1.5	1.2	0.990	1.00	179
Vw .				1549	Vnw				6343
V									7892
Weavir	ig and No	n-Weavin	g Speeds						
			Unconstr			Constrained			
		Weaving			ving (i = nw)	Weaving (i = w)		Non-Weaving (= nw)	
a (Exhibit 2		0.15			.00				
b (Exhibit 2		2.20			.30				
<u>c (Exhibit 2</u> d (Exhibit 2		0.80			.75				
	sity factor, Wi	1.29			.72				
Weaving and non-weaving speeds, Si (mi/h) 36.84			44.05						
	lanes required		ned operation,	Nw	1.24				
Maximum	number of lane:		tantanal	tau.	1.40	∭ if No < No.	u (may) const	roined operat	ion
	If Nw < Nv						v (max) const	rameu operat	1011
	ng Segme		vensity,	42.42	i service,	anu vai	Jacity		
vveaving s	egment speed,	o (milu)		42.42					

Weaving Sogment Speed Deus	ty, Level of Service, and Capacity
	42.42
Weaving segment speed, S (mi/h) Weaving segment density, D (pc/mi/ln)	46.51
Level of service, LOS	F.
	7104
Capacity of base condition, c _b (pc/h)	7431
Capacity as a 15-minute flow rate, c (veh/h)	7250
Capacity as a full-hour volume, c _h (veh/h)	6887

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions". b. Capacity constrained by basic freeway capacity.

- b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/n (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			FREEWA	Y WEAV	ING WOR	KSHEET			
Genera	Informat	ion			Site Info	rmation			
Analyst YLM Agency/Company RS&H Date Performed 9/16/04 Analysis Time Period PM				Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	J Location	I-595 EASTBOUND BETWEEN FLAMINGO AND HIATUS 2002			
Inputs			es esta de la companya de la company						
Weaving nu Weaving se Terrain	e-flow speed, s mber of lanes, g length, L (ft)	N	60 4 110 Lev	ivveaving ratio		, VR	De part en esta que esta esta esta esta esta esta esta est	A 0.20 0.12	
Conver	sions to p	c/h Unde	r Base C	ondition	s	1	ı	T	T T
(pc/h)	V	PHF	Truck %	RV %	Ε _Τ	ER	fhv	fp	V
Vo1	4639	0.95	5	0	1.5	1.2	0.976	1.00	5005
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0
Vw1	1038	0.95	2	0	1.5	1.2	0.990	1.00	1103
Vw2	136	0.95	2	0	1.5	1.2	0.990	1.00	144
Vw				1247	Vnw		e iledical	0.00	5005
V						1			6252
	g and No	n-Weavin	a Speeds	1					
	y and no		Unconstr				Cons	trained	
		Weaving	(i = w)	Non-Weaving (i = nw)		Weavir	ng (i = w)	Non-Wea	ving (= nw)
a (Exhibit 2	4-6)	0.15			00				
b (Exhibit 2		2.20			00				
c (Exhibit 2		0.97		·	30				
d (Exhibit 2 Weaving intens		0.80			75 54				
Weaving and n		39.5			.50				
speeds, Si (mi/	n)								
	anes required umber of lanes		ned operation	, INW	1.21 1.40				
	If Nw < Nw		trained operat	ion		if Nw > Nv	v (max) constr	ained operati	on
	g Segme								States
***************************************	gment speed,			45.68					
Weaving segment density, D (pc/mi/ln)				34.22					
Level of service, LOS				D		·			
Capacity of base condition, c _b (pc/h)				7411					*****
Capacity as	a 15-minute fl	ow rate, c (vel	n/h)	7230					
	a full-hour vol			6868					
Notes			uni di						1070

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.

- c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

				V \MEA\	ING WOR	KCHEEI	-		
General	Informati	-AW-1-13	KEEVVA	YVEAV	Site Info	turcial control comments makes recovered to the first control for			
<u>Utiltiai</u>	HHUMMAN				Freeway/Dir o		I-595 E	ASTBOUND	A STATE OF THE PARTY OF THE PAR
Analyst		YLM			1 '		BETWEEN HIATUS AND NOB		
Agency/Con Date Perfori		RS&H 9/16/04	1		Weaving Seg	Location	HILL		
Analysis Tin		9/10/04 AM	t		Jurisdiction	_	2002		
	10 1 0110 0				Analysis Yea		2002		
Inputs					1				
	e-flow speed, S		60 4		Weaving type			Α	
	mber of lanes, g length, L (ft)	N	1030	n	Volume ratio,			0.1 0.4	
Terrain			Leve	el	Weaving ratio), K 	The state of the s	V.º	19
Conver	sions to p	c/h Unde	r Base C	ondition	1S				1
(pc/h)	V	PHF	Truck %	RV %	E _T _	ER	fHV	fp	V
Vo1	6752	0.95	5	0	1.5	1.2	0.976	1.00	7285
Vo2	0	0.90	0	0	1,5	1.2	1.000	1.00	0
Vw1	436	0.95	2	0	1.5	1.2	0.990	1.00	463
Vw2	416	0.95	2	0	1.5	1.2	0.990	1.00	442
Vw				905	Vnw				7285
V									8190
	g and Nor	n-Weavin	a Speeds	8					
	y will say		Unconstr				Constrained		
		Weaving	(i = w)	Non-Wea	ving (i = nw)	Weavir	Weaving (i = w) Non-Weaving (= i		
a (Exhibit 2	4-6)	0.15)		.00				
b (Exhibit 2	4-6)	2.20			.00				
c (Exhibit 24		0.97			.30			<u></u>	
d (Exhibit 2		0.80).75				
Weaving intens Weaving and n	·	1.20	-,		0.59				
speeds, Si (mi/l	h)	37.7			6.44				
	lanes required t		ned operation,	, Nw	0.87 1.40				
	umber of lanes If Nw < Nw		tinad anarat	ion		≣ ifNlu/>Nh	w (max) const	rained operat	ion
					f Service,		and the second s	allica opera.	an a
	g Segme r gment speed,		Density	45.29	l aalvica	allu vul	Javiej		
	egment speed, egment density,			45.29					
Level of ser		D (porring)		F					
	base condition	1. C. (pc/h)		7884					
oupout, o.		, -D /t							

Weaving segment speed, S (mi/h)	45.29	
Weaving segment density, D (pc/mi/ln)	45.21	
Level of service, LOS	F	
Capacity of base condition, c _b (pc/h)	7884	
Capacity as a 15-minute flow rate, c (veh/h)	7692	
Capacity as a full-hour volume, c _h (veh/h)	7307	

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			DEE/WA	Y WEAV	ING WOR	KSHFF1				
General	Informat		RELVVA	1 AALTWA	Site Info					
Analyst YLM Agency/Company RS&H Date Performed 9/14/04 Analysis Time Period PM				Freeway/Dir of Weaving Seg Jurisdiction Analysis Yea	of Travel Location	I-595 EASTBOUND BETWEEN HIATUS AND NO HILL 2002				
					Allalysis Toa	ı	2002	Control of		
Inputs Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 1030 Terrain Leve				Weaving type Volume ratio Weaving ratio	, VR	A 0.12 0.47				
Conver	sions to p	c/h Unde	r Base C	ondition	is .					
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	٧	
<u>"</u> Vo1	5274	0.95	5	0	1.5	1.2	0.976	1.00	5690	
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0	
Vw1	403	0.95	2	0	1.5	1.2	0.990	1.00	428	
Vw2	351	0.95	2	0	1.5	1.2	0.990	1.00	373	
Vw				801	Vnw				5690	
V						3435-030			6491	
Weavin	g and No	n-Weavin	g Speeds	3				186	1 (20)	
			Unconstr	ained		Constrained				
		Weaving	(i = w)		ving (i = nw)	Weavi	ng (i = w)	Non-Weaving (= nw		
a (Exhibit 2		0.15			.00					
b (Exhibit 2		2.20			.00					
c (Exhibit 2		0.97			.30 .75					
d (Exhibit 2 Weaving intens		0.80			.46					
Weaving and n	ion-weaving	40.2			9.32					
speeds, Si (mi/	h) lanes required	J			0.90					
Number of Maximum r	number of lane	s. Nw (max)	neu operation	, 1444	1.40					
	☑ If Nw < Nv	v(max) uncons	trained operat	tion			w (max) const		ion	
Weavin	g Segme	nt Speed.	Density,	Levelo	f Service,	and Cap	oacity			
Weaving se	egment speed,	S (mi/h)		47.99						
Weaving se	egment density			33.82						
Level of se				D						
0	5 (194)	(n-a/h)		7005						

Weaving Segment Speed, Dens	ity, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	47.99
Weaving segment density, D (pc/mi/ln)	33.82
Level of service, LOS	D
Capacity of base condition, ch (pc/h)	7805
Capacity as a 15-minute flow rate, c (veh/h)	7615
Capacity as a full-hour volume, c _h (veh/h)	7234

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

		F	REEWA	Y WEAV	ING WOR	KSHEET				
General	Informat			10000	Site Info	MATERIAL PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY				
Analyst Agency/Com Date Perform	pany ned	YLM RS&H 9/14/04			Freeway/Dir of Weaving Seg		BETW IS	I-595 EASTBOUND BETWEEN NOB HILL AND PINE IS		
Analysis Tim	e Period	AM	and the second s		Analysis Yea	r	2002			
Inputs					1					
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 1000 Terrain Leve			el	Weaving type Volume ratio, VR Weaving ratio, R			A 0.20 0.47			
Convers	ions to p	c/h Unde	r Base C	<u>ondition</u>	S		r			
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	٧	
Vo1	6405	0.95	5	0	1.5	1.2	0.976	1.00	6910	
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0	
Vw1	870	0.95	2	0	1.5	1.2	0.990	1.00	924	
Vw2	783	0.95	2	0	1.5	1.2	0.990	1.00	832	
Vw				1756	Vnw				6910	
V			and the second						8666	
<u>'</u>	and No.	n-Weavin	a Sneeds							
TTGATUI	g arim juoi		Unconstr				Cons	trained		
		Weaving		Non-Weaving (i = nw)		Weaving (i = w)		Non-Weaving (= nw)		
a (Exhibit 24	-6)	0.15		0.00						
b (Exhibit 24	-6)	2.20			00					
c (Exhibit 24		0.97			30					
d (Exhibit 24		0.80			75					
Weaving intensit		1.54			89					
speeds, Si (mi/h))	34.6		L	.41					
		for unconstrair	ed operation,	Nw	1.27 1.40					
1	ımber of lanes	s, ivw (iliax) r(max) unconsi	rainad anarat	ion			v (max) constr	ained operati	on	
					f Service,			amod operati		
	ment speed,		pensity,	39.84						
	gment density,			54.38						
Level of serv			_	F						
Capacity of I	pase condition	, c _h (pc/h)		7293						
		ow rate, c (vel	ı/h)	7115						
		ume, c _h (veh/h		6759						
Notes		11.7	-	1						

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions". b. Capacity constrained by basic freeway capacity.

- b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

		<u></u>	REEWA	/ WEAV	ING WOR	KSHEET	•		
General	Informati	on			Site Info	rmation			
Date Perform	Analyst YLM Agency/Company RS&H Date Performed 9/20/04 Analysis Time Period PM				Freeway/Dir of Weaving Seg Jurisdiction Analysis Year	Location	I-595 EASTBOUND BETWEEN NOB HILL AND PII IS 2002		
					Analysis Tea		2002		
Inputs Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 1000 Terrain Level				ivveavino raiio. K			A 0.22 0.44		
Convers	ions to p	c/h Unde	r Base C	ondition	IS.				
(pc/h)	٧	PHF	Truck %	RV %	E _T	ER	fHV	fp	٧
Vo1	4995	0.95	5	0	1.5	1.2	0.976	1.00	5389
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0
Vw1	790	0.95	2	0	1.5	1.2	0.990	1.00	839
Vw2	630	0.95	2	0	1.5	1.2	0.990	1.00	669
Vw		l .		1508	Vnw				5389
V								100	6897
Weaving	ı and Noı	n-Weavin	g Speeds					5 5 5 1	
			Unconstr	ained				trained	
		Weaving	(i = w)				ing (i = w) Non-Weaving (=		
a (Exhibit 24		0.15			.00				
b (Exhibit 24		2.20			.30	<u> </u>			
c (Exhibit 24 d (Exhibit 24	 	0.97			.75				
Weaving intensit		1.27			.70				
Weaving and no	n-weaving	37.0		44	1.41				
Maximum nu	nes required imber of lanes	i for unconstraii s, Nw (max)	ned operation, trained operat		1.29 1.40	if Nw > Nv	w (max) constr	rained operat	ion
					f Service,	and Car	acity		Second Col
	ment speed,			42.55					
	ment density			40.52			<u></u> .		
Level of serv				E					
Capacity of t	oase condition	ı, c _b (pc/h)		7193					
Capacity as	a 15-minute fl	ow rate, c (vel	n/h)	7018					
Capacity as	a full-hour vol	ume, c _h (veh/ì	1)	6667					

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
- b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
- c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

		7	REEWA	<u>Y WEAV</u>	ING WOR	KSHEEL			
Genera	l Informat	ion			Site Info	rmation	1209		
		YLM	· · · · · · · · · · · · · · · · · · ·		Freeway/Dir o	Freeway/Dir of Travel EASTBOUND			
Analyst YLM Agency/Company RS&F			Weaving Seg	Location		SLAND AND RSITY			
Date Perfor		10/27/	2003		Jurisdiction		OIVIVE	110111	
Analys <mark>is T</mark> ir	ne Period	AM			Analysis Year	•			
Inputs						neonije se se se			
Freeway free-flow speed, SFF (mi/h) 60					Weaving type)		Α	
Weaving number of lanes, N			4 500		Volume ratio,	VR		0.3	
Weaving seg length, L (ft) Terrain			Leve		Weaving ratio), R		0.4	13
	sions to p	c/h Unde			າຣ			0.00	
(pc/h)	V	PHF	Truck %	RV %	Ε _T	E _R	fHV	fp	V
Vo1	5843	0.95	5	0	1.5	1.2	0.976	1.00	6304
Vo2	0	0.95	2	0	1.5	1.2	0.990	1.00	0
Vw1	1432	0.95	2	0	1.5	1.2	0.990	1.00	1522
Vw2	1067	0.95	2	0	1.5	1.2	0.990	1.00	1134
Vw			A COURS	2656	Vnw				6304
V								a de la companya de l	8960
Weavir	g and No	n-Weavin	g Speeds	3					and the same
			Unconstr					strained	
		Weaving	(i = w)	Non-Wea	aving (i = nw)		ng (i = w)		ving (= nw)
a (Exhibit 2	24-6)						15		.00
b (Exhibit 2	24-6)	ļ		ļ			00		.30
c (Exhibit 2				<u> </u>			97 80		.75
d (Exhibit 2							.63		21
Weaving inten									7.61
speeds, Si (mi		ng and non-weaving 20.79).18 			

If Nw < Nw(max) unconstrained operation

if Nw > Nw (max) constrained operation

ty, Level of Service, and Capacity
30.34
73.83
F
5979
5833
5541

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			-REEWA	Y WEAV	ING WOR	The second section of the second second section and the second second section is a second sec			
Genera	l Informat	ion			Site Info	rmation			
A. alvat	···	YLM			Freeway/Dir of Travel EASTBOUND I-595				
Analyst Agency/Co	mnany	RS&H			Weaving Seg	Location		ISLAND AND	
	Date Performed 9/16/04				Jurisdiction	,	UNIVE	ERSITY	
Analysis Ti		PM			Analysis Yea	r			
					/ inaryola roa				
Inputs	0	0 (!/ -)	60						
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4					Weaving type			A	•
	eg length, L (ft)	11	500		Volume ratio,			0.3 0.3	
Terrain			Lev		Weaving ratio	υ, r	Control to the second s	V.C	
Conve	rsions to p	oc/h Unde	r Base C	ondition	18				
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	V
<u>v. </u>	4006	0.95	5	0	1.5	1.2	0.976	1.00	4322
Vo2	0	0.95	2	0	1.5	1.2	0.990	1.00	0
Vw1	1779	0.95	2	0	1.5	1.2	0.990	1.00	1891
Vw2	859	0.95	2	0	1.5	1.2	0.990	1.00	913
Vw				2804	Vnw				4322
V									7126
Weavi	ng and No	n-Weavin	a Speed:	3	3.000				
			Unconstr	ained			Cons	trained	
		Weaving	(i = w)	Non-Wea	iving (i = nw)		ng (i = w)		ving (= nw)_
a (Exhibit	24-6)						<u>15</u>		00
b (Exhibit							00		00
c (Exhibit:							97		30 75
d (Exhibit 24-6)		<u> </u>		0.80 7.16			20		
	nsity factor, Wi			<u> </u>				-	
Weaving and speeds, Si (m	i/h)					21	.12	3/	7.73
	f lanes required		ned operation	, Nw	1.75				
Maximum I	number of lane		t	4	1.40 r	if Mur ≤ Mr	v (max) const	rained onerati	ion
	_### If Nw < Nv	v(max) uncons	trained opera	tion	Į.	28 II IAM > IA/	v (max) consi	railled oberat	IVII

I I I I I I I I I I I I I I I I I I I	
Weaving Segment Speed, Densi	ty, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	28.81
Weaving segment density, D (pc/mi/ln)	61.83
Level of service, LOS	F
Capacity of base condition, c _b (pc/h)	5660
Capacity as a 15-minute flow rate, c (veh/h)	5522
Capacity as a full-hour volume, ch (veh/h)	5246

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			REEWA'	Y WEAV	ING WOR	A PROPERTY OF THE PARTY OF THE				
General	Informati	on			Site Info	rmation				
Analyst Agency/Com Date Perform Analysis Tim	ned	PJ RSH 9/16/04 AM Pe	1 ak Hour		Freeway/Dir o Weaving Seg Jurisdiction Analysis Year	Location	Eastbound Between University and Davie Existing			
nputs					, 1					
Freeway free Weaving nun Weaving seg Terrain	Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 5 Weaving seg length, L (ft) 2300			el	Weaving type Volume ratio, Weaving ratio	, VR	ada (C 0.29 0.17		
Convers	sions to p	c/h Unde	r Base C	ondition	S		4	T	T	
(pc/h)	٧	PHF	Truck %	RV %	E _T	E _R	fHV	fp	V	
Vo1	6463	0.95	5	0	1.5	1.2	0.976	1.00	6973	
Vo2	15	0.95	2	0	1,5	1.2	0.990	1.00	15	
Vw1	2199	0.95	2	0	1.5	1.2	0.990	1.00	2337	
Vw2	447	0.95	2	0	1.5	1.2	0.990	1.00	475	
Vw				2812	Vnw				6988	
V					- 12	0.00			9800	
l.:	g and Noi	n-Weavin	a Speeds	3		10.046.3144				
en filos (Perril a filia) e inclui com		Section 110 Sectio	Unconstr	ained	Marine Mary 24			trained		
		Weaving			Non-Weaving (i = nw)		ng (i = w)	Non-Wea	ving (= nw)	
a (Exhibit 24		80.0			.00					
b (Exhibit 24		2.30			6.00 1.10		<u></u>	 		
c (Exhibit 24 d (Exhibit 24		0.80			.60			 		
Weaving Intensit		0.59			.37	<u> </u>				
Weaving and no	on-weaving	46.4			1.62					
speeds, Si (mi/h	n) anes required			<u></u>	2.48					
	umber of lanes		100 operanon	, 1111	3.00					
	☑ If Nw < Nw	ı(max) uncons					v (max) constr	rained operat	ion	
Weavin	g Segmei	nt Speed,	Density,	Level o	f Service,	and Car	acity			
Weaving seg	gment speed,	S (mi/h)		50.01						
	gment density	, D (pc/mi/ln)		39.19			<u> </u>			
Level of serv		4 4.3		E 40500						
	base condition			10590						
	a 15-minute fl			10332						
Capacity as	a full-hour vol	ume, c _h (veh/r	1)	9815						
Notes							25, *Ramps and R			

			REEWA	Y WEAV	ING WOR	KSHEE			
Genera	l Informati	A A A A A A A A A A A A A A A A A A A	and the state of	1	Site Info	A STATE OF A STATE OF			
Date Perfor	Analyst PJ Agency/Company RSH Date Performed 9/16/04 Analysis Time Period PM Peak Hour			Weaving Seg Jurisdiction	Freeway/Dir of Travel Weaving Seg Location Jurisdiction Analysis Year		Eastbound Between University and Da Existing		
Inputs									ESE SE
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 5 Weaving seg length, L (ft) 2300 Terrain Leve				Weaving type Volume ratio Weaving ratio	, VR	C 0.31 0.16			
	sions to p	c/h Unde	r Base C	ondition)S				
(pc/h)	٧	PHF	Truck %	RV %	E _T	ER	fHV	fp	٧
<u>'''' / / / / / / / / / / / / / / / / / </u>	4518	0.95	5	0	1.5	1.2	0.976	1.00	4874
Vo2	25	0.95	2	0	1.5	1.2	0,990	1.00	26
Vw1	1757	0.95	2	0	1.5	1.2	0.990	1.00	1867
Vw2	347	0.95	2	0	1.5	1.2	0.990	1.00	368
Vw				2235	Vnw				4900
V									7135
Weavir	ig and Noi	n-Weavin	g Speeds	5					
			Unconstr				Constrained		
		Weaving			ving (i = nw)	Weavir	ng (i = w)	Non-Wea	ving (= nw)
a (Exhibit 2		0.08 2.30			.00 .00				
b (Exhibit 2 c (Exhibit 2		0.80			.10			<u>.</u>	
d (Exhibit 2		0.60			.60				
Weaving inten	sity factor, Wi	0.48		0	.29				
Weaving and r speeds, Si (mi	non-weaving //h)	48.7	7	50	3.73	1			
Number of	lanes required to number of lanes	, Nw (max)			2.49 3.00				
	☑ If Nw < Nw						v (max) const	rained operat	ion
	ng Segmen		Density,		f Service,	and Gar	pacity		
Weaving segment speed, S (mi/h) Weaving segment density, D (pc/mi/ln)			52.07						
	egment density, ervice, LOS	D (pe/mi/in)		27.41 C					
	f base condition	. c. (pc/h)		10256					
Capacity U	i base containon	D (KOLL)		10200					

a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions". b. Capacity constrained by basic freeway capacity.
c. Capacity occurs under constrained operating conditions.
d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
d. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

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9506

Capacity as a 15-minute flow rate, c (veh/h) Capacity as a full-hour volume, ch (veh/h)

· · · · · · · · · · · · · · · · · · ·							_			
	N	XXXX are a company of the company of	FREEWA	Y WEAV	ING WOR	The second secon	<u> </u>	The state of the s		
Genera	Informat	1011			Oife iiiio	IIIauon				
Analyst		YM			Freeway/Dir		Eastbound Between Davie Rd and Turnpil			
Agency/Cor		RSH 9/16/0	4		Weaving Seg Jurisdiction	Location	Betwe	en Davie Ko	and Lumpike	
Date Perfor Analysis Tir			ak Hour		Analysis Yea	ır	Existir	10		
	ilo i onou	7 (1) 1						3		
Inputs		0 - ('#\	00		1					
	e-flow speed, mber of lanes,		60 5		Weaving type			В		
	g length, L (ft)	, IV	196	0	Volume ratio			0.:		
Terrain			Leve	el	Weaving rati	o, K	NATION Proposed weeks achours as the sales of MASS	0.4	48	
Conver	sions to p	oc/h Unde	r Base C	ondition	<u>19</u>	1			1	
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	fHV	fp	V	
Vo1	7251	0.95	5	0	1.5	1.2	0.976	1.00	7823	
Vo2	329	0.95	2	0	1.5	1.2	0.990	1.00	349	
Vw1	1411	0.95	2	0	1.5	1.2	0.990	1.00	1500	
Vw2	1316	0.95	2	0	1.5	1.2	0.990	1.00	1399	
Vw				2899	∨nw				8172	
V									11071	
Weavin	g and No	n-Weavin	g Speeds	3						
			Unconstr				Constrained			
		Weaving			ving (i = nw)	Weavir	ng (i = w)	Non-Wea	Non-Weaving (= nw)	
a (Exhibit 2		0.08			,00					
b (Exhibit 2		2.20			.00			1		
c (Exhibit 2 d (Exhibit 2		0.70			.50					
Weaving intens		0.66			.40					
Weaving and n speeds, Si (mi/	on-weaving	45.0			0.62					
Number of	anes required	for unconstrain	ned operation,	Nw	1.45	<u> </u>		· · · · · · · · · · · · · · · · · · ·		
	umber of lane:		·		3.50					
	☑ If Nw < Nv	· · ·				The second	w (max) const	rained operat	ion	
			Density,		f Service,	and Cap	pacity			
	gment speed,			49.04						
	gment density	, D (pc/mi/ln)		45.15 F						
Level of ser		- 0 (nc/h)		·						
	base condition		- JI. X	10641						
Capacity as	a 15-minute f	iow rate, c (vel	1/n)	10381						

Capacity as a full-hour volume, ch (veh/h) Notes -

a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions". b. Capacity constrained by basic freeway capacity.
c. Capacity occurs under constrained operating conditions.

9862

- c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

				V WEV	ING WOR	KCHEET				
General	Informat	and the second s	·KEEVVA	IVVEAV	Site Info	TO THE RESERVE OF THE PROPERTY				
Analyst YM Agency/Company RSH Date Performed 9/16/04 Analysis Time Period PM Peak Hour					Freeway/Dir of Weaving Seg Jurisdiction Analysis Yea	Location	Eastbound Between Davie and Turnpike Existing			
Inputs										
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 5 Weaving seg length, L (ft) 1960 Terrain Leve			el	Weaving type Volume ratio, VR Weaving ratio, R		B 0.29 0.48				
Convers	ions to p	c/h Unde	r Base C	ondition	1		ı			
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	fHV	fp	٧	
Vo1	5140	0.95	5	0	1.5	1.2	0.976	1.00	5545	
Vo2	265	0.95	2	0	1.5	1.2	0.990	1.00	281	
Vw1	1135	0.95	2	0	1.5	1.2	0.990	1.00	1206	
Vw2	1059	0.95	2	0	1.5	1.2	0.990	1.00	1125	
Vw			05	2331	Vnw				5826	
V									8157	
*	g and Nor	ı-Weavin	a Speeds	4						
			Unconstr				Cons	trained		
		Weaving		Non-Weaving (i = nw)		Weavir	Weaving (i = w)		ring (= nw)	
a (Exhibit 24		0.08		0.00						
b (Exhibit 24		2.20		6.00			··-			
c (Exhibit 24		0.70		1.00						
d (Exhibit 24 Weaving intensit		0.50 0.56		0.50 0.33						
Weaving intensit		 		52.51						
speeds, Si (mi/h))	47.1		<u> </u>						
	anes required t umber of lanes		ed operation,	NW	1.54 3.50					
1	∭ If Nw < Nw		rained operat	ion		if Nw > Nv	v (max) constr	ained operation	on	
		1			Service,		CONTRACTOR	715		
	gment speed,			50.84			DOSE DE COMPANION DE LA COMPAN		***************************************	
Weaving segment density, D (pc/mi/ln)				32.09						
Level of serv	/ice, LOS			D						
Capacity of base condition, c _b (pc/h)				10445						
Capacity as	a 15-minute fle	ow rate, c (veh	/h)	10190						
Capacity as	a full-hour volu	ume, c _h (veh/h)	9680						
Notes			and a substitute	100000						

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.

- c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

	orange and a second	MILOULE	FREEWA	Y WEAV	ING WOR	nan samming open meter andere blike beginn om sam			
General Ir	nformat	ion			Site Info	rmation			
Analyst Agency/Compa Date Performed Analysis Time F	1	YLM RS&H 9/16/0 AM Pe	4 ak Period		Freeway/Dir of Travel Weaving Seg Location Jurisdiction Analysis Year		I-595 WB Between Flamingo and SW 136th 2002		and SW
nputs					1				
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 1250 Terrain Level			el	HANDANION FAILE		B 0.30 0.28			
Conversion	ons to p	c/h Unde	r Base C	ondition	18		,	1	T
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	fHV	fp	V
Vo1	3825	0.95	5	0	1.5	1.2	0.976	1.00	4126
Vo2	0	0.95	2	0	1.5	1.2	0.990	1.00	0
Vw1	1217	0.95	2	0	1.5	1.2	0.990	1.00	1293
/w2	471	0.95	2	0	1.5	1.2	0.990	1.00	500
/w	· · · · · · · · · · · · · · · · · · ·]		1793	Vnw				4126
v									5919
w Weaving a	and No	n-Weavin	a Speeds					district the second	
recaving :	3010131401	I TOUTH	Unconstr			T	Cons	trained	
		Weaving		Non-Weaving (i = nw)		Weaving (i = w)		Non-Weaving (= nw	
a (Exhibit 24-6)		0.08		0.00					
b (Exhibit 24-6)		2.20		6.00					
c (Exhibit 24-6)		0.70			.00				
d (Exhibit 24-6)		0.50		0.50 0.41		<u> </u>			
Weaving intensity fa Weaving and non-w		0.67							
speeds, Si (ml/h) Number of lane Maximum num	es required to ber of lanes	, Nw (max)		Nw	0.47 1.54 3.50]	v (max) const	rained operat	ion
Weaving					f Service.	and Car	pacity		
Weaving segm				48.65					
Weaving segm				30.41					
Level of service				D					
Capacity of bas	se condition	, c _b (pc/h)		7862					
Capacity as a	15-minute fl	ow rate, c (vel	n/h)	7670					
		ume, c _h (veh/r		7286					

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
- b. Capacity constrained by basic freeway capacity.
- c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).

- g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases. h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases. i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

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			REEWA	<u>Y WEAV</u>	ING WOR	The second state of the second					
Genera	<u> Informat</u>	ion			Site Info				A of Cycles		
Analyst Agency/Cor Date Perfor		YLM RS&H 9/16/0	4		Freeway/Dir of Weaving Seg		I-595 WB Between Flamingo and SW 136th				
Analysis Tir			ak Period		Jurisdiction Analysis Year 20				02		
	Invite				punalyolo roa						
Inputs	e-flow speed, S	See (mi/h)	60								
	Weaving number of lanes, N 4				Weaving type		B 0.28				
	g length, L (ft)		1250		Volume ratio, Weaving ratio			0.2			
Terrain			Leve			711					
Conver	sions to p	Γ			1				Γ		
(pc/h) V		PHF	Truck %	RV %	E _T	E _R	fHV	f p	٧		
Vo1	4896	0.95	5	0	1.5	1.2	0.976	1.00	5282		
Vo2	0	0.95	2	0	1.5	1.2	0.990	1.00	0		
Vw1	1512	0.95	2	0	1.5	1.2	0.990	1.00	1607		
 Vw2	389	0.95	2	0	1.5	1.2	0.990	1.00	413		
Vw				2020	Vnw				5282		
V									7302		
	a and No	n-Weavin	a Speeds								
Weaving and Non-Weaving Speeds Unconstra							trained				
	Weaving (i = w)		Non-Weaving (i = nw)		Weavir	ıg (i = w)	Non-Weav	ving (= nw)			
a (Exhibit 2	4-6)	0.08		0.00							
b (Exhibit 2		2.20		6.00							
c (Exhibit 2			0.70		1.00						
d (Exhibit 2		0.50		0.50 0.45							
Weaving intens Weaving and n			0.74								
speeds, Si (mi/	h)	43.6		49.55							
Maximum r	lanes required f umber of lanes ☑ If Nw < Nw	s, Nw (max)			1.45 3.50	if Nw > Nu	v (max) consti	ained operati	on		
	g Segmer							umou opoiau	J		
	egment speed,		Deliaity,	47.78		and out					
	egment density,			38.21							
Level of se	<u> </u>	D (positional)		E							
	base condition	ı, c _h (pc/h)		8042							
Capacity as	a 15-minute fl	ow rate, c (vel	1/h)	7846							
Capacity as	a full-hour vol	ume, c _h (veh/h)	7454							
Notes							e e trabi				
a. Weaving set b. Capacity occ c. Capacity occ d. Three-lane T e. Four-lane Ty f. Capacity con g. Five-lane Ty	ments longer than a nstrained by basic from the sure under constrain type A segments do rype A segments do no strained by maximul pe A segments do no ing segments do no ing segments do no	eeway capacity. ed operating condi not operate well a not operate well at m allowable weavin to operate well at v	tions. t volume ratios gre volume ratios grea ng flow rate: 2,800 volume ratios grea olume ratios greal	eater than 0.45. Poter than 0.35. Po pc/h (Type A), 4 ter than 0.20. Po er than 0.80. Poo	oor operations and so	some local queui some local queuir 0 (Type C). some local queuin ome local queuing	ing are expected in g are expected in g are expected in are expected in s	n such cases. such cases. such cases. uch cases.			
i. Type C weav M	ng segments od No				of Florida, All R						

		consequences with the continue days (Clark & A. C. 1274)	FREEWA	Y WEA\	ING WOF	end phase of the alleg accounts your across yourself				
Analyst YLM Agency/Company RS&H Date Performed 9/16/04				Site Info Freeway/Dir Weaving Seq Jurisdiction	of Travel	I-595 WESTBOUND BETWEEN HIATUS AND FLAMINGO				
Analysis Time Period AM					Analysis Yea	ır	2002			
Inputs										
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 1050 Terrain Leve			el	Weaving type Volume ratio, VR Weaving ratio, R		A 0.20 0.14				
Convers	sions to p	c/h Unde	r Base C	ondition	18					
(pc/h)	٧	PHF	Truck %	RV %	ET	ER	fHV	fp	٧	
Vo1	4864	0.95	5	0	1,5	1.2	0.976	1.00	5247	
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0	
Vw1	1074	0.95	2	0	1.5	1.2	0.990	1.00	1141	
Vw2	178	0.95	2	0	1.5	1.2	0.990	1.00	189	
Vw			1	1330	Vnw				5247	
V					Becker (1975)				6577	
Weavin	g and Noi	n-Weavin	g Speeds	9.		0.0004				
			Unconstr	ained			Constrained			
		Weaving		Non-Weaving (i = nw)		Weavir	Weaving (i = w) Non-W		/ing (= nw)	
a (Exhibit 24		0.15		0.00						
b (Exhibit 24		2.20 0.97		4.00 1.30						
c (Exhibit 24 d (Exhibit 24		0.80		0.75						
Weaving intensi		1.13			.60					
Weaving and no speeds, Si (mi/h	n-weaving	38.4	3	46	5.23					
Number of I	anes required tumber of lanes		ned operation,	Nw	1.22 1.40					
]	☑ If Nw < Nw	(max) uncons	trained operat					ained operation	on	
Weavin	g Segmer	nt Speed,	Density,	T	f Service,	and Cap	acity			
Weaving segment speed, S (mi/h)				44.41						
Weaving segment density, D (pc/mi/ln)				37.03						
Level of ser		, ,,		E						
	base condition			7345						
	a 15-minute fl			7166						
Capacity as	a full-hour vole	ume, c _h (veh/h)	6808						

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions". b. Capacity constrained by basic freeway capacity.
- c. Capacity occurs under constrained operating conditions.
- c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 li. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

		the state of the s	REEWA'	Y WEAV	ING WOR	navora dedicasa sada di ali Arce de regione de provincio de l'arce de la composito de l'arce de				
<u>General</u>	Informat	ion			Site Info					
Analyst		YLM			1			I-595 WESTBOUND		
Agency/Com	pany	RS&H			Military in a Coat Lagrana			BETWEEN HIATUS AND FLAMINGO		
Date Perform	ned	9/16/04	1		Jurisdiction			11400		
Analysis Tim	e Period	PM			Analysis Year 2002					
Inputs					The second secon					
	-flow speed, S		60		Weaving type	a		Α		
	nber of lanes,	N	4	Volume ratio VR				0.1	9	
			1050 Leve		Weaving ratio			0.1	0	
Terrain Convers	ione to n	c/h Unde			ıs	100				
. 14 1000000	pc/h) V		Truck %	RV %	E _T	E _R	fHV	f p	v	
Vo1	6258	PHF 0.95	5	0	1.5	1.2	0.976	1.00	6752	
Vo2	0238	0.90	0	0	1.5	1.2	1.000	1.00	0	
	ļ				1.5	1.2	0.990	1.00	1424	
Vw1	1340	0.95	2	0				1.00	159	
Vw2	150	0.95	2	0	1.5	1.2	0.990	1.00	<u> </u>	
Vw				1583	Vnw				6752	
V									8335	
Weaving and Non-Weaving Speeds				1 1 C C	The Control of the Co					
Unconstra								trained		
		Weaving					ng (i = w)	Non-Wea	ving (= nw	
a (Exhibit 24		ļ	0.15		0.00					
b (Exhibit 24		2.20		4.00						
c (Exhibit 24		0.97		1.30						
d (Exhibit 24		0.80		0.75 0.78						
Weaving intensil Weaving and no			1.39							
speeds, Si (mi/h)	35.8		43.01						
		for unconstrair	ned operation,	Nw	1.22					
	ımber of lanes				1.40	SCALL SAL	/	ained aparati	ion.	
		(max) unconst					v (max) constr	amed operati	UII	
			Density,		f Service,	and Cap	acity			
	ment speed,			41.45						
	ment density,	ט (pc/ml/ln)		50.27 F			Training to the state of the st			
Level of serv		a Inalb\								
	pase condition		, lb\	7420 7239				****		
Capacity as a 15-minute flow rate, c (veh/h) Capacity as a full-hour volume, c _h (veh/h)				6877						
	a luli-flour voi	uirio, oh (voim	1	0077					-	
b. Capacity cons c. Capacity occu d. Three-lane Tv	strained by basic frous From the strain one A segments do	eeway capacity. ed operating condi not operate well a	tions. I volume ratios gre	ater than 0.45. F	as using the proced	some local queu	ing are expected in	n such cases.		
e. Four-lane Typ f. Capacity cons g. Five-lane Typ h. Tyne B weavi	ne A segments do retrained by maximum e A segments do no no segments do no	not operate well at m allowable weavis ot operate well at v ot operate well at v	volume ratios grea ng flow rate: 2,800 volume ratios great olume ratios greate	ter than 0.35. Po pc/h (Type A), 4 er than 0.20. Po er than 0.80. Poc	oor operations and a 1,000 (Type B), 3,50 or operations and s or operations and so	some local queuir 10 (Type C). some local queuin	ng are expected in g are expected in are expected in s	such cases. such cases. uch cases.		

		I	FREFWA	Y WFAV	ING WOR	KSHFF	-			
Gonora	Informat		ILLIIA	IVLAV	Site Info	con unit y remainment of the control				
Analyst YLM Agency/Company RS&H Date Performed 9/16/04 Analysis Time Period AM				Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	of Travel Location	I-595 WESTBOUND BETWEEN NOB HILL AND HIATUS 2002				
Inputs					1					
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 100 Terrain Leve			IMPANING LAIIU K			A 0.12 0.43				
Conver	sions to p	oc/h Unde	r Base C	ondition	s	13.5				
(pc/h)	(pc/h) V		Truck %	RV %	E _T	ER	fHV	fp	V	
Vo1	5499	0.95	5	0	1.5	1.2	0.976	1.00	5933	
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0	
Vw1	439	0.95	2	0	1.5	1.2	0.990	1.00	466	
Vw2	329	0.95	2	0	1.5	1.2	0.990	1.00	349	
VW2	020	1 0.00		815	Vnw]	5933	
V				010	1*111				6748	
·	a and No	a Moovin	a Spoods						0110	
Weaving and Non-Weaving Speeds Unconstra							Cons	trained		
	Weaving (i = w)			r	ving (i = nw)	Weavin	Weaving (i = w) Non-Weaving (= nv			
a (Exhibit 2	4-6)		0.15		0.00				<u> </u>	
b (Exhibit 24		2.20		4.00						
c (Exhibit 24	1-6)	0.97		1.30						
d (Exhibit 24			0.80		0.75					
Weaving intens Weaving and no		1.04		0.49						
vveaving and ni speeds, Si (ml/l		39.5	6	48.63						
Number of I	anes required	for unconstrair	ned operation,	Nw	0.89					
	umber of lanes	• • •			1.40	∰ 9/N N.	(
		(max) uncons	•				(max) constr	ained operation	UI1	
			Density,		Service,	ang Gap	acity	San		
	gment speed, gment density,			47.32 35.65					<u> </u>	
Level of ser	<u> </u>	, D (pc/m/m)		E						
	base condition	c. (nc/h)		7793						
		ow rate, c (vel	1/h)	7603						
		ume, c _h (veh/h		7223						
Notes	a juli fical vol	arriot of traini	<u>/</u>	7220						
a. Weaving seg b. Capacily con c. Capacily occ d. Three-lane T e. Four-lane Ty f. Capacily cons g. Five-lane Ty h. Type B weav	strained by basic frus under constrain type A segments do pe A segments do retrained by maximul te A segments do no ing segments do no	eeway capacity. ed operating condi not operate well at not operate well at m allowable weavir ot operate well at v	ions. I volume ratios grea volume ratios grea Ig flow rate: 2,800 volume ratios greate plume ratios greate	ater than 0.45. P ter than 0.35. Po pc/h (Type A), 4. ter than 0.20. Poer than 0.80. Poo	as using the proced oor operations and so oor operations and so 000 (Type B), 3,500 or operations and so r operations and so	some local queui ome local queuin 0 (Type C). ome local queuing me local queuing	ng are expected in g are expected in g are expected in s are expected in s	such cases. such cases. such cases. uch cases.		
i. Type C weavi M	ng segments do no		lume ratios greate Copyright © 20		operations and sor			ur cases.		

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Canaral	Informat	AL COMPANY OF THE PROPERTY OF	-KEEWA	Y WEAV	/ING WOR	A REAL PROPERTY AND ADDRESS OF THE PARTY AND A			
Analyst Agency/Com Date Perforn					Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	of Travel g Location	I-595 WESTBOUND BETWEEN NOB HILL AND HIATUS 2002		
Inputs									
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 1000 Terrain Leve			el	Weaving type Volume ratio, VR Weaving ratio, R		A 0.10 0.49			
Convers	ions to p	c/h Unde	r Base C	ondition	<u>1\$</u>				7
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	٧
Vo1	7178	0.95	5	0	1.5	1.2	0.976	1.00	7744
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0
Vw1	420	0.95	2	0	1.5	1.2	0.990	1.00	446
Vw2	410	0.95	2	0	1.5	1.2	0.990	1.00	435
Vw				881	Vnw	1			7744
V								Transmit to the second	8625
Weaving	and Nor	n-Weavin	a Speeds	\$					
	Account of the second s	Weaving	Unconstr	ained			Constrained ing (i = w) Non-Weaving (= nw		
a (Exhibit 24	-6)	0.15			1.00				
b (Exhibit 24		2.20			.00				
c (Exhibit 24		0.97			.30			1	
d (Exhibit 24		0.80			0.75		<u> </u>		
Weaving intensit Weaving and no		1.27			.63				
speeds, Si (mi/h)	37.0		<u></u>	5.74			<u> </u>	
Maximum nu	nes required t imber of lanes	, Nw (max)	•		0.83 1.40				·
	☑ If Nw < Nw	<u> </u>					v (max) const	rained operat	ion
			vensity,	44.67	f Service,	anu cap	Jacity		
	gment speed, s gment density,			48.27					
Level of serv		- (pointing)		F					
	pase condition	, c _h (pc/h)	,	7907					
	a 15-minute flo		n/h)	7714					
	a full-hour volu			7328					
		U /	ı	1					The state of the s

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions". b. Capacity constrained by basic freeway capacity.
- c. Capacity occurs under constrained operating conditions.

- c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

, .			FREEWA	Y WEAV	ING WOF	RKSHEET			
Genera	l Informat	ion		Section 1	Site Info	rmation			
Analyst Agency/Col Date Perfor Analysis Til	med 9/16/04				Freeway/Dir Weaving Seç Jurisdiction Analysis Yea	g Location	I-595 WESTBOUND BETWEEN PINE AND NOB HIL 2002		
Inputs Freeway free-flow speed, SFF (mi/h) Weaving number of lanes, N Weaving seg length, L (ft) Terrain Conversions to pc/h Under			Leve	4 Volume ratio, Veaving ratio, Weaving ratio,		, VR		A 0.2 0.4	
(pc/h)	SICHISECO.	PHF	Truck %	RV %	E _T	E _R	fHV	fp	v
Vo1	4826	0.95	5	0	1.5	1.2	0.976	1.00	5206
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0
Vw1	1002	0,95	2	0	1.5	1.2	0.990	1.00	1065
Vw2	824	0.95	2	0	1.5	1.2	0.990	1.00	876
Vw			I	1941	Vnw				5206
V		150000			1			· · · · · · · · · · · · · · · · · · ·	7147
Weavir	g and No	n-Weavir	g Speeds	3					

Burn to March of the Control of the		strained	Constrained			
	Weaving (i = w)	Non-Weaving (i = nw)	Weaving (i = w)	Non-Weaving (= nw)		
a (Exhibit 24-6)			0.15	0.00		
b (Exhibit 24-6)			4.00	4.00		
c (Exhibit 24-6)			0.97	1.30		
d (Exhibit 24-6)			0.80	0.75		
Weaving intensity factor, Wi			3.17	0.47		
Weaving and non-weaving speeds, Si (mi/h)			26.98	49.04		

Number of lanes required for unconstrained operation, Nw Maximum number of lanes, Nw (max)

1.50 1,40

If Nw < Nw(max) unconstrained operation

if Nw > Nw (max) constrained operation

man in the first transfer of the first trans	
Weaving Segment Speed, Density	, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	40.13
Weaving segment density, D (pc/mi/ln)	44.52
Level of service, LOS	F
Capacity of base condition, c _b (pc/h)	6934
Capacity as a 15-minute flow rate, c (veh/h)	6765
Capacity as a full-hour volume, c _h (veh/h)	6427

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			REEWA'	Y WEAV	ING WOR				and the same of th
General	Informat	on			Site Info	mation			
Analyst YLM Agency/Company RS&H Date Performed 9/20/04 Analysis Time Period PM			4		Freeway/Dir o Weaving Seg Jurisdiction Analysis Year	Location	I-595 WESTBOUND BETWEEN PINE AND NOB HIL 2002		
Inputs		0.000				50			
Freeway free-flow speed, SFF (mi/h) Weaving number of lanes, N Weaving seg length, L (ft) Terrain		60 4 1080 Leve	əl	Weaving type Volume ratio, Weaving ratio	VR	A 0.27 0.46			
Conver	sions to p	c/h Unde	r Base C	ondition)S	ese tra		I	T T
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	fHV	fp	V
Vo1	6338	0.95	5	0	1.5	1.2	0.976	1.00	6838
Vo2	0	0.90	0	0	1.5	1.2	1.000	1.00	0
Vw1	1250	0.95	2	0	1.5	1.2	0.990	1.00	1328
Vw2	1080	0.95	2	0	1.5	1.2	0.990	1.00	1148
Vw			I	2476	Vnw			D. Company Phys.	6838
V	1								9314
Weavin	g and No	n-Weavin	g Speeds	3					
			Unconstr				Constrained		
	Weaving (i = w) Non-		Non-Wea	iving (i = nw)		ng (i = w)		ving (= nw)	
a (Exhibit 2	4-6)						15		.00
	(Exhibit 24-6)				00		.00		
c (Exhibit 24-6)					0.97 0.80		1.30 0.75		
d (Exhibit 24-6)			<u></u>		.06	0.75			
Weaving intens Weaving and n speeds, Si (mi/	on-weaving					 	.88		5.31

If Nw < Nw(max) unconstrained operation

if Nw > Nw (max) constrained operation

I I I I I I I I I I I I I I I I I I I	
Weaving Segment Speed, Dens	ity, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	37.19
Weaving segment density, D (pc/mi/ln)	62.61
Level of service, LOS	F
Capacity of base condition, c _b (pc/h)	6970
Capacity as a 15-minute flow rate, c (veh/h)	6800
Capacity as a full-hour volume, c _h (veh/h)	6460

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.

- e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases. f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
- r. Capacity constrained by maximum allowable weaving flow rate: 2,000 pcm (Type A), 4,000 (Type B), 3,300 (Type C).

 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.

 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.

 j. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			REEWA						
General	Informat	ion		The Page	Site Info	rmation			
Analyst		YLM			Freeway/Dir	of Travel		BOUND 1-595	
Analyst Agency/Com	pany	RS&H			Weaving Seg	Location	UNIVE ISLAN	RSITY AND I	PINE
Date Perform	ned	9/20/0	4		Jurisdiction		100 110		
Analysis Time Period AM				Analysis Yea	r	2002			
Inputs									
Freeway free	-flow speed, S	SFF (mi/h)	60		Weaving type	9		В	
	nber of lanes,	N	4 800		Volume ratio,	, VR		0.2	
vveaving seg Terrain	length, L (ft)		Leve	el	Weaving ratio	o, R		0.3	9
	ions to n	c/h Unde			8		The Co		
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	V
Vo1	4999	0.95	5	0	1.5	1,2	0.976	1.00	5393
Vo2	0	0.95	2	0	1.5	1.2	0.990	1.00	0
Vw1	1002	0.95	2	0	1.5	1.2	0.990	1.00	1065
Vw2	651	0.95	2	0	1.5	1.2	0.990	1.00	692
Vw	001	1		1757	Vnw		*		5393
V									7150
	and No	n Waavin	a Speeds						
Weaving and Non-Weaving Speeds Unconstra						Cons	trained		
	Weaving (i = w)			ving (i = nw)	Weavi	ng (i = w)	Non-Wea	ving (= nw)	
a (Exhibit 24	-6)	0.08	<u> </u>		.00				
b (Exhibit 24		2.20			.00				
c (Exhibit 24		0.70		1.00					
d (Exhibit 24		0.50		0.50 0.47					
Weaving intensit Weaving and no	·	-			3.96				
speeds, Si (ml/h)) ·	41.7							
	anes required Imber of lanes	for unconstrain	ned operation,	NW	1.69 3.50				
		(max) uncons	trained operat	ion		if Nw > N	w (max) const	rained operati	ion
Weaving	Senme	nt Speed	Density.	Level o	f Service,				
	gment speed,			46.98					
	ment density			38.05					
Level of serv				E	<u>.</u>				
Capacity of I	base conditior	n, c _b (pc/h)		7866					
Capacity as	a 15-minute fl	ow rate, c (vel	n/h)	7674					
Capacity as	a full-hour vol	ume, c _h (veh/h	ı)	7290					
Notes									
a. Weaving segr b. Capacity cons c. Capacity occu d. Three-lane Tyo	strained by basic fr irs under constrain rpe A segments do ne A segments do	reeway capacity. ned operating cond o not operate well a not operate well at	itions. t volume ratios gre volume ratios grea no flow rate: 2.800	eater than 0.45. F ater than 0.35. Po pc/h (Type A), 4	eas using the proced Poor operations and por operations and 1,000 (Type B), 3,50	i some local que some local queui 00 (Type C).	uing are expected in ng are expected in	n such cases. such cases.	
f. Capacity cons g. Five-lane Typ	e A segments do r	not operate well at of operate well at v	volume ratios grea obume ratios great	iter than 0.20. Po er than 0.80. Poo	nor operations and so or operations and so or operations and so	some local queul ome local queuin	g are expected in s	such cases.	

			REEWA	Y WEAV	ING WOR	AND AND PROPERTY OF THE PROPER			
General	Informat	on			Site Info	rmation :			
Date Perforr	Analyst YLM Agency/Company RS&H Date Performed 9/20/04 Analysis Time Period PM				Freeway/Dir of Weaving Seg Jurisdiction Analysis Yea	Location	WESTBOUND I-595 UNIVERSITY AND PINE ISLAND 2002		
Inputs			sone at the s			4			
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 4 Weaving seg length, L (ft) 800 Terrain Leve			el	Weaving type Volume ratio, VR Weaving ratio, R		B 0.25 0.37			
Convers	sions to p	c/h Unde	r Base C	ondition	<u>ıs</u>		v e e	r	
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	fHV	fp	V
<u>" </u>	6608	0.95	5	0	1.5	1.2	0.976	1.00	7129
Vo2	0	0.95	2	0	1.5	1.2	0.990	1.00	0
Vw1	1400	0.95	2	0	1.5	1.2	0.990	1.00	1488
Vw2	810	0.95	2	0	1.5	1.2	0.990	1.00	861
Vw	010	0.00		2349	Vnw				7129
				2010	1				9478
V	g and No	. IN/acidin	a Canade				The State of the S		
vveavini	g and wo	I=YVEaVIII	Unconstr				Cons	trained	
		Weaving				Weavir	eaving (i = w) Nor		ving (= nw)
a (Exhibit 24	1 -6)	0.08			.00				
b (Exhibit 24		2.20)	6	.00				
c (Exhibit 24	l-6)	0.70			.00				
d (Exhibit 24		0.50			.50				
Weaving intens		1.00			.63	<u> </u>			
Weaving and no speeds, Si (mi/l	1)	39.2		l	5.63				
	anes required		ned operation	, Nw	1.75				
	umber of lanes			llan	3.50	if Nhu > Nh	w (max) constr	rained onerat	ion
	☑ If Nw < Nw	(max) uncons	trained opera	llOII				unica operar	
			Density.	Level O	f Service.	and cap	Jacity		
	gment speed, gment density,			54.02 54.02					
Level of ser		U (pomon)		F					
	base condition	c. (pc/h)		7851					
	a 15-minute fl		1/h)	7660					
	a full-hour vol			7277					
Capacity as	a luli-liyul VVI	arrio, of (Activi	7	1611					

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

		F	REEWA	Y WEAV	ING WOR					
General	Informati	on	Marie Control	8-1-17-51	Site Info	rmation				
Analyst YLM Agency/Company RSH Date Performed 9/20/04 Analysis Time Period AM					Weaving Seg Jurisdiction	Freeway/Dir of Travel Weaving Seg Location Jurisdiction Analysis Year		595 WB Between Turnpike and Davie 2002 EXISTING		
Inputs	is a second						100			
Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 5 Weaving seg length, L (ft) 1550 Terrain Leve			el	Weaving type Volume ratio, Weaving ratio	, VR	B 0.26 0.45				
Convers	sions to p	<u>c/h Unde</u>	r Base C	ondition				Г		
(pc/h)	٧	PHF	Truck %	RV %	E _T	ER	fhv	fp	٧	
 Vo1	5902	0.95	5	0	1.5	1.2	0.976	1.00	6367	
Vo2	312	0.95	2	0	1.5	1.2	0.990	1.00	331	
Vw1	1248	0.95	2	0	1.5	1.2	0.990	1.00	1326	
Vw2	1012	0.95	2	0	1.5	1.2	0.990	1.00	1075	
Vw	The second			2401	Vnw				6698	
v	_								9099	
l ·	g and No	ı-Weavin	a Speeds						0.0000	
0.6.47.5.6.4.1.83	y		Unconstr				Cons	trained		
		Weaving	(i = w)			Weavir	ıg (i = w)	Non-Wea	ving (= nw)	
a (Exhibit 24	1-6)	0.08			0.00					
b (Exhibit 24		2.20			.00				<u> </u>	
c (Exhibit 24		0.70			.00 .50					
d (Exhibit 24		0.50			.38					
Weaving intensi Weaving and no	·	45.2			.32					
speeds, Si (mi/i	1)	<u> </u>		<u> </u>	1.57			<u> </u>		
Number of la	anes required umber of lanes	for unconstrail	ned operation	, NW	3.50					
	If Nw < Nw		trained operat	tion		if Nw > Nv	v (max) consti	rained operat	ion	
Weavin	n Seamei	it Speed	Density.	Levelo	f Service,	and Car	acity			
Weaving se	gment speed,	S (mi/h)		49.57						
	gment density			36.71						
Level of ser				Ε						
Capacity of	base condition	, c _b (pc/h)	_	10401						
Capacity as	a 15-minute fl	ow rate, c (vel	n/h)	10147						
	a full-hour vol			9640						
Notes					2 (8) 00 (8)					

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			REEWA	Y WEAV	ING WOR	A Annual of the Contract of th				
General	Informat	ion		STATE OF	Site Info	rmation				
Date Perforr	Analyst YLM Agency/Company RSH Date Performed 9/20/04 Analysis Time Period PM				Weaving Seg Jurisdiction	Freeway/Dir of Travel Weaving Seg Location Jurisdiction Analysis Year		595 WB Between Turnpike and Davie 2002 EXISTING		
Inputs						10.0				
Weaving nul Weaving set Terrain	Freeway free-flow speed, SFF (mi/h) 60 Weaving number of lanes, N 5 Weaving seg length, L (ft) 1550 Terrain Leve			el	Weaving type Volume ratio, Weaving ratio	, VR	B 0.26 0.46			
Convers	sions to p	c/h Unde	r Base C	ondition	IS .	Γ	l e e	<u> </u>		
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	٧	
Vo1	7517	0.95	5	0	1.5	1.2	0.976	1.00	8110	
Vo2	368	0.95	2	0	1.5	1.2	0.990	1.00	391	
Vw1	1472	0.95	2	0	1.5	1.2	0.990	1.00	1564	
Vw2	1277	0.95	2	0	1.5	1.2	0.990	1.00	1357	
Vw				2921	√nw				8501	
V									11422	
Weavin	n and No	n-Weavin	a Speeds	3						
			Unconstr				Cons	trained		
		Weaving	(i = w)	Non-Wea			ng (i = w)	Non-Wea	ving (= nw)	
a (Exhibit 24	1-6)	0.08		.}	.00					
b (Exhibit 24		2.20			.00					
c (Exhibit 24		0.70			.00			<u> </u>		
d (Exhibit 24		0.50		·	.50 .46					
Weaving intens Weaving and no speeds, Si (mi/l	n-weaving	43.5			9.36					
Number of I	anes required	for unconstrain	ned operation	, Nw	1.56					
Maximum n	umber of lanes	s, Nw (max)			3.50					
		/(max) uncons	THE PARTY OF THE P	aran a caranta a respecto de la companione de la companio			w (max) const	rained operat	ion	
Weavin	g Segmei	nt Speed,	Density,		f Service,	and Cap	pacity			
	gment speed,			47.73						
	gment density	, D (pc/mi/ln)		47.86						
Level of ser				F 40400						
1 ' '	base condition	~		10469						
		low rate, c (vel		10214						
Capacity as	a full-hour vol	ume, c _h (veh/t)	9703						
Notes		12.0								

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

TURNPIKE

	<u></u>		FRFFWA	Y WFA\	ING WOR	KSHEE	<u> </u>		
General	Informat				Site Info	A CONTRACTOR OF THE PROPERTY O	ES To Secure		
Analyst Agency/Com Date Perform Analysis Tim	ned	YLM RS&H 10/28/ AM			Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	Location	TURN TO 1-5 2002	PIKE NB 95	
Inputs Freeway free-flow speed, SFF (mi/h) Weaving number of lanes, N Weaving seg length, L (ft) Terrain				el	Weaving type Volume ratio, VR Weaving ratio, R		A 0.55 0.28		
Convers	ions to p	oc/h Unde	r Base C	ondition	18				T
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	V
Vo1	1433	0.95	2	0	1.5	1.2	0.990	1.00	1523
Vo2	790	0.95	2	0	1.5	1.2	0.990	1.00	839
Vw1	1978	0.95	2	0	1.5	1.2	0.990	1.00	2102
Vw2	770	0.95	2	0	1.5	1.2	0.990	1.00	818
Vw			,	2920	Vnw				2362
V		10.00		HE TOTAL					5282
Weavin	and No	n-Weavin	g Speeds						
Unconstrai			ained				trained		
Weaving (i = w)		Non-Wea	ving (i = nw)		ng (i = w)	Non-Weaving (= nw)			
a (Exhibit 24							15	0.00	
b (Exhibit 24							00 4.00 97 1.30		
c (Exhibit 24		-				<u> </u>	97		
d (Exhibit 24	-6)					0.	.80	0	.75

Weaving and non-weaving speeds, Si (mi/h) Number of lanes required for unconstrained operation, Nw Maximum number of lanes, Nw (max)

2.37 1.40

If Nw < Nw(max) unconstrained operation

if Nw > Nw (max) constrained operation

0.93

33.18

4.92

20.92

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
ensity, Level of Service, and Capacity
25.06
52.70
F
5765
5708
5423

Notes

Weaving intensity factor, Wi

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.

- d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases. e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases. f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C). g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases. h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases. i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			FRFFWA	Y WFA	ING WOR	KSHFF	-					
Genera	al Informat	Control and Control of	1111	A Digese in the	Site Info	Commission of the Commission o		a de la care				
Analyst Agency/Co Date Perfo Analysis T		YLM RS&H 10/28/ PM			Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	g Location	TURN TO 1-5 2002					
Inputs			michiga (1917)	s to be seen								
Freeway fr Weaving n	ee-flow speed, umber of lanes, eg length, L (ft)		45 4 750 Lev		Weaving type Volume ratio Weaving ratio	, VR		A 0.5 0.4				
Conve	rsions to p	c/h Unde	er Base C	ondition	ns .	100000						
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	fHV	fp	V			
Vo1	908	0.95	2	0	1.5	1.2	0.990	1.00	965			
Vo2	772	0.95	2	0	1.5	1.2	0.990	1.00	820			
Vw1	1204	0.95	2	0	1.5	1.2	0.990	1.00	1280			
Vw2	932	0.95	2	0	1.5	1.2	0.990	1.00	990			
Vw				2270	Vnw				1785			
V			10.00						4055			
Weavir	ng and No	n-Weavin	g Speeds	3			100					
			Unconstr				Cons	trained				
		Weaving	(i = w)	Non-Wea	ving (i = nw)	Weavir	ıg (i = w)	Non-Wea	ving (= nw)			
a (Exhibit	24-6)					0.	15	0.	00			
b (Exhibit :	24-6)						00	·4·······	00			
c (Exhibit 2	24-6)						97		30			
d (Exhibit :							80		75			
	isity factor, Wi					3.	84	0.	67			
Weaving and speeds, Si (m						22	.23	35	.98			
Number of	lanes required	for unconstrai	ned operation,	Nw	2.32							
Maximum	number of lanes				1.40							
	If Nw < Nw						/ (max) constr	ained operati	on			
	ng Segmei		Density,		f Service,	and Cap	acity					
	egment speed,			26.73								
Weaving s	egment density	, D (pc/mi/ln)		37.93								

Weaving Segment Speed, Dens	ity, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	26.73
Weaving segment density, D (pc/mi/ln)	37.93
Level of service, LOS	E
Capacity of base condition, c _b (pc/h)	5765
Capacity as a 15-minute flow rate, c (veh/h)	5708
Capacity as a full-hour volume, c _h (veh/h)	5423

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.

- d. Inree-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.

 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.

 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).

 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.

 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.

 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

_		The second secon	· · · · · · · · · · · · · · · · · · ·		ING WOR	and the second s			
Genera	l Informat	ion			gire uno	Illiauoli			
Analyst Agency/Co Date Perfor Analysis Tir	med	YLM RS&H 10/28/ AM			Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	Location	TURN FROM 2002		
Inputs	Follow 197				10.000				
Freeway fre Weaving no Weaving se Terrain	ee-flow speed, sumber of lanes, eg length, L (ft)	N .	45 4 650 Leve	el	Weaving type Volume ratio Weaving rati	, VR		A 0.5 0.4	
Conver	sions to p	oc/h Unde	er Base C	ondition	IS .				
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	fHV	fp	٧
	845	0.95	2	0	1.5	1.2	0.990	1.00	898
Vo2	838	0.95	2	0	1.5	1.2	0.990	1.00	890
Vw1	902	0.95	2	0	1.5	1.2	0.990	1.00	958
Vw2	805	0.95	2	0	1.5	1.2	0.990	1.00	855
Vw				1813	Vnw				1788
V									3601
Weavir	g and No	n-Weavin	a Speeds	3			all disas		
			Unconstr				Cons	trained	
		Weaving	(i = w)	Non-Wea	ving (i = nw)	-	ng (i = w)		ving (= nw)
a (Exhibit 2	4-6)						15	0.	
b (Exhibit 2	4-6)						00		00
c (Exhibit 2	······································						97		30 75
d (Exhibit 2				1			80 54		55
Weaving inten Weaving and r				 			.71		.58
speeds, Si (mi	/h)	<u></u>			0.00				.00
	lanes required number of lanes	s, Nw (max)			2.09 1.40	☑ if Nw > Nv	v (max) const	rained operati	on
Wasvir	ig Segmei							1	
·	egment speed,		23. A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A	28.26	2 00 00 00 00 00 00 00 00 00 00 00 00 00				
	egment density			31.85					
Level of se				D					
				5005					

Weaving Segment Speed, Densi	ty, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	28.26
Weaving segment density, D (pc/mi/ln)	31.85
Level of service, LOS	D
Capacity of base condition, c _b (pc/h)	5635
Capacity as a 15-minute flow rate, c (veh/h)	5579
Capacity as a full-hour volume, c _h (veh/h)	5300

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

			REEWA	Y WEAV	ING WOR	KSHEE			
Genera	Informat	ion	a paradi.		Site Info	rmation			
Analyst Agency/Cor Date Perfor Analysis Tir	med	YLM RS&H 9/20/0 PM	4		Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	g Location	TURN FROM 2002		
Inputs									
Freeway fre Weaving nu	e-flow speed, s mber of lanes, g length, L (ft)		45 4 650 Leve		Weaving typo Volume ratio Weaving rati	, VR		A 0.4 0.3	
	sions to p	c/h Unde	r Base C	ondition	IS				
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	fHV	fp	٧
Vo1	1589	0.95	2	0	1.5	1.2	0.990	1.00	1689
Vo2	686	0.95	2	0	1.5	1.2	0.990	1.00	729
Vw1	1123	0.95	2	0	1.5	1.2	0.990	1.00	1193
Vw2	714	0.95	2	0	1.5	1.2	0.990	1.00	759
Vw				1952	Vnw				2418
v									4370
Weavin	g and Noi	n-Weavin	g Speeds	3					
	A SECTION OF THE PROPERTY OF T		Unconstr					strained	
		Weaving	(i = w)	Non-Wea	ving (i = nw)		ng (i = w)		ving (= nw)
a (Exhibit 2							15		.00
b (Exhibit 2		<u> </u>	••••				00 97		.30
c (Exhibit 2							80		.75
d (Exhibit 2 Weaving intens							92		.61
Weaving and n	on-weaving	<u> </u>				·	2.11	36	5.79
	anes required umber of lanes	s, Nw (max)			1.97 1.40	if Nw > N	w (max) const	rained operat	ion
Weavin	g Segmei	nt Speed.	Density,	Level o	f Service,	and Ca	pacity		
	gment speed,			28.37					
	gment density,			38.51					
Level of se				E					
· · · · · · · · · · · · · · · · · · ·	base condition			5635					
Canacity of	a 15-minute fl	ou rata a (val	/h)	5579					

Weaving Segment Speed, Densi	ty, Level of Service, and Capacity
Weaving segment speed, S (mi/h)	28.37
Weaving segment density, D (pc/mi/ln)	38.51
Level of service, LOS	E
Capacity of base condition, c _b (pc/h)	5635
Capacity as a 15-minute flow rate, c (veh/h)	5579
Capacity as a full-hour volume, c _h (veh/h)	5300

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".

 b. Capacity constrained by basic freeway capacity.
 c. Capacity occurs under constrained operating conditions.
 d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in such cases.
 e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.
 f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C).
 g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such cases.
 h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
 i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such cases.

SIGNALIZED INTERSECTIONS

General Info	rmation						AILED			4-6-75-741-2-4-6-76-76					j.	
Analyst Agency or Co	<i>YLM</i> o. <i>RSH</i> ned 9/8/04						Inters Area Jurisd Analy	sectio Type diction sis Y	on e en ∕ear	SR All d Exis	other isting	r areas g 2002	th Avenu	ťθ		
Velimaand	i million length				82.50		Projec	UI tc		1-5	595 S	SIMR				
VOIUIII9 ana	l Timing Input			EB			W					NB		T	SB	
			LT	TH	RT	LT			RT		LT	TH	RT	LT	TH	RT
Number of la	nes, N ₁		2	2	1 -	0	0		0	(0	2	1 -	2	2	0
Lane group			L	T	R					\perp		T	R	L	T	
Volume, V (v _l			569	1168	83							427	617	204	597	<u> </u>
% Heavy veh	icles, %HV		2	2	2							2	2	2	2	<u> </u>
Peak-hour fac	ctor, PHF		0.95	0.95	0.95							0.95	0.95	0.95	0.95	
Pretimed (P)	or actuated (A	١)	Р	Р	Р							P	Р	P	P	[!
Start-up lost t	time, I ₁		2.0	2.0	2.0							2.0	2.0	2.0	2.0	
Extension of	effective green	۱, e	2.0	2.0	2.0							2.0	2.0	2.0	2.0	
Arrival type, A	AT	-	3	3	3					T _		3	3	3	3	
Unit extensio	n, UE	-	3.0	3.0	3.0					1		3.0	3.0	3.0	3.0	
Filtering/met	Filtering/metering, I		1.000	1.000	1.000	0						1.000	1.000	1.000	1.000	
nitial unmet demand, Q _b			0.0	0.0	0.0		+	\neg		+		0.0	0.0	0.0	0.0	
	d / Bike / RTOR volumes		0	0	50	0				1	o	0	50			
Lane width			12.0	12.0	12.0					1		12.0	12.0	12.0	12.0	
Parking / Gra	ade / Parking		N	0	N	N			N	1	N	0	N	N	0	N
Parking mane	<u> </u>							7		+			1			
Buses stopping			0	0	0	1				+		0	0	0	0	
	pedestrians, G	 ک _{ار}			1					1_						
Phasing	EB Only	02	<u>!</u>	03		04	4		ru & R			B Only		07	30	8
Timing	G = 45.0	G≔		G =	!	G =	-		= 37.0)		= 25.0	G =		G=	 !
	Y = 6 Analysis, T = 0.2	Y =		Y =		Y =		Y =	5		Y =		Y = gth, C =	123.0	Y =	
	Capacity, Coi		elav, a	nd LOS	Detei	minat	on				<u></u>	10 LC	/III, C	140.	31 (3) (3)	
			E	EB			WB					NB			SB	
A divisted flow		LT		TH R		LT	TH	R	-	LT	\neg		RT 507	215	TH 628	RT_
Adjusted flow		599		229 35				-			_		597	215		
Lane group c	apacity, c	1256		294 158				 			_		1133	698	1927	
v/c ratio, X		0.48							_				0.53	0.31	0.33	
Total green ra		0.37									_		0.72	0.20	0.54	
Uniform delay		30,0											8.0	41.6	15.5	
rgression f		1.00		000 0.9					_					1.000	1.000	
Delay calibrat	tion, k	0.50) 0.5	50 0.5	50		<u> </u>				-		0.50	0.50	0.50	
Incremental d		1.3	15	5.6 0.0	0						1.	1.2	1.8	1.1	0.5	
Initial queue o	delay, d ₂												ļ		<u> </u>	

Control delay	31.3	53.5	0.0					35.7	9.7	42.8	16.0	
Lane group LOS	С	D	Α					D	A	D	В	
Approach delay	4	5.3				<u> </u>	2	20.9			22.8	
roach LOS,		D						С			С	
Intersection delay	3.	3.4		X _c	= 0.62		Interse	ection LC	S		С	

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HCS2000™ DETAILED REPORT General Information Site Information SR 84 EB/136th Avenue Intersection YLM Analyst All other areas Area Type Agency or Co. RSH Jurisdiction e Performed 9/8/04 Existing 2002 Analysis Year PM Peak ume Period I - 595 SIMR Project ID Volume and Timing Input SB NB WB ΕB RT LT TH RT LT TH RT LT TH TH RT LT 0 2 1 2 2 0 0 0 1 0 Number of lanes, N. 2 2 Τ Т R L Lane group L Τ R 585 1191 232 364 Volume, V (vph) 572 962 78 2 2 2 2 % Heavy vehicles, %HV 2 0.95 0.95 0.95 0.95 0.95 0.95 0.95 Peak-hour factor, PHF Р Р P P Pretimed (P) or actuated (A) Р Р P 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 20 2.0 3 3 3 3 3 3 Arrival type, AT 3 3.0 3.0 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 1.000 1.000 1.000 1.000 1.000 1.000 1.000 Filtering/metering, I 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Q_b 0.0 0.0 0 50 0 0 d / Bike / RTOR volumes 0 50 12.0 12.0 12.0 12.0 12.0 120 Lane width 12.0 0 Ν Ν Ν Ν 0 Ν Ν Ν Ν 0 Parking / Grade / Parking Parking maneuvers, N_m 0 0 0 0 Buses stopping, N_R 0 0 0 Min. time for pedestrians, G 08 07 Thru & RT SB Only 02 03 04 EB Only Phasing G = G = G = 37.0G = 25.0G = 45.0G = G = G = **Timing** Y = Y = Y = 5Y = 5Y = Y = 6Y = Y = Cycle Length, C = 123.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB NB EB WB. RT TH RT LT LT TH RT LT TΗ LT TH RT 1254 244 331 616 29 Adjusted flow rate, v 602 1013 1927 698 1064 1133 Lane group capacity, c 1256 1294 1583 0.23 0.29 0.88 0.65 0.78 0.02 v/c ratio, X 0.48 0.72 0.20 0.54 0.30 Total green ratio, g/C 1.00 0.37 0.37 19.7 32.3 6.3 47.6 34.7

Uniform delay, d₁

Delay calibration, k

Incremental delay, d2 Initial queue delay, da

ngression factor, PF

30.0

1.000

0.50

1.3

0.0

0.950

0.50

0.0

1.000

0.50

4.8

1.000

0.50

1.7

1.000

0.50

15.1

1.000

0.50

0.5

1.000

0.50

0.7

Control delay	31.3	39.4	0.0				32.8	6.9	62.6	21.5	
Lane group LOS	С	D	Α				С	Α	E	С	
Approach delay	3	5.8			· · · · · · · · · · · · · · · · · · ·		17.9			35.0	
proach LOS		D					В			D	
Intersection delay	3	2.9		X _c	= 0.70	Interse	ection LC	S		С	

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HCS2000™ DETAILED REPORT

General Information

Analyst YLM Agency or Co. RSH e Performed 9/8/04

me Period AM Peak Hour Site Information

Intersection SR 84 WB/136th Avenue

All other areas

Area Type
Jurisdiction
Analysis Year
Project ID Existing 2002 I - 595 SIMR

Volume and	Timing Input								7			7		
			ļ	<u>EB</u>	·	<u> </u>	WB			NB			SB	l DT
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of la	nes, N ₁		0	0	0	2	2	1	1	3	0	0	2	1
Lane group						L	T	R	L	T			T	R
Volume, V (v	ph)					374	616	853	112	884			427	187
% Heavy veh	icles, %HV					2	2	2	2	2			2	2
Peak-hour fa	ctor, PHF					0.95	0.95	0.95	0.95	0.95			0.95	0.95
Pretimed (P)	or actuated (A	۸)				P	P	Р	P	P			P	P
Start-up lost	time, I ₁					2.0	2.0	2.0	2.0	2.0			2.0	2.0
Extension of	effective greer	ո, e				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Arrival type,	ΑT					3	3	3	3	3			3	3
Unit extensio	n, UE				-	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Filtering/mete	ering, I					1.000	1.000	1.000	1.000	1.000			1.000	1.000
Initial unmet	demand, Q _b					0.0	0.0	0.0	0.0	0.0			0.0	0.0
ੀ / Bike / F	RTOR volumes	3	0			0	0	50				0	0	50
Lane width						12.0	12.0	12.0	12.0	12.0			12.0	12.0
Parking / Gra	ide / Parking		N		N	N	0	N	N	0	N	N	0	N
Parking mane	euvers, N _m													
Buses stoppi	ng, N _B	•				0	0	0	0	0			0	0
Min. time for	pedestrians, C	e P _D												
Phasing	WB Only	02		03		04	-	Thru & R	T N	B Only		07	(08
	G = 40.0	G =	***	G =		G =	(3 = 30.0	G =	= 25.0	G =		G≔	
Timing	Y = 6	Y =		Υ=		Y =	\	Y = 5	Y =	: 5	Y =	Y =		
Duration of Analysis, T = 1.00									Су	cle Leng	th, C =	111.0		
*****	Capacity, Co		elay, a	nd LOS	Deter	mination								

VALUE OF THE PROPERTY OF THE P		EB			WB			NB]	SB	
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v				394	648	845	118	931			449	144
Lane group capacity, c				1237	1275	1583	398	2748			956	1084
v/c ratio, X				0.32	0.51	0.53	0.30	0.34			0.47	0.13
Total green ratio, g/C				0.36	0.36	1.00	0.23	0.54			0.27	0.68
Uniform delay, d ₁				25.7	27.8	0.0	35.7	14.3			33.9	6.1
ngression factor, PF				1.000	1.000	0.950	1.000	1.000			1.000	1.000
Delay calibration, k				0.50	0.50	0.50	0.50	0.50			0.50	0.50
Incremental delay, d ₂				0.7	1.5	1.3	1.9	0.3			1.7	0.3
Initial queue delay, d ₃												

Control delay		26.3	29.3	1.3	37.6	14.7	35.5	6.3
Lane group LOS		С	С	Α	D	В	D	Α
Approach delay			16.1		1	17.3	28.4	
proach LOS			В			В	С	
Intersection delay	18.5	X _c	= 0.53		Interse	ection LOS	В	

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HCS2000™ DETAILED REPORT

General Information

YLM Analyst Agency or Co. RSH e Performed 9/8/04

ııme Period PM Peak Hour Site Information

Intersection

SR 84 WB/136th Avenue All other areas

Area Type

Jurisdiction Analysis Year Existing 2002 I - 595 SIMR Project ID

								. 0,000		·					Marian Programme Company & Co.
Volume and	Timing Input			, ,			,					10	ī	- OD	
			-		EB	ОТ	LT	WB TH	RT	LT	NB TH	RT	LT	SB TH	RT
Niverbou of lo	non N			LT	TH O	RT 0	2	2	1	1	3	0	0	2	1
Number of lar	nes, N ₁			0	U	0		ļ	_				-	T	R
Lane group							L	T	R	L	T			<u> </u>	<u> </u>
Volume, V (v _l	ph)						791	907	357	54	750		ļ	985	463
% Heavy veh	icles, %HV			· · · ·			2	2	2	2	2			2	2
Peak-hour fac	ctor, PHF						0.95	0.95	0.95	0.95	0.95			0.95	0.95
Pretimed (P)	or actuated (A	v)					P	P	P	P	P			P	P
Start-up lost t	time, l₁						2.0	2.0	2.0	2.0	2.0			2.0	2.0
Extension of	effective gree	ո, e					2.0	2.0	2.0	2.0	2.0			2.0	2.0
Arrival type,	AT .						3	3	3	3	3			3	3
Unit extensio	n, UE	***					3.0	3.0	3.0	3.0	3.0			3.0	3.0
Filtering/mete	ering, I			_			1.000	1.000	1.000	1.000	1.000			1.000	1.000
Initial unmet	demand, Q _b						0.0	0.0	0.0	0.0	0.0			0.0	0.0
d / Bike / F	RTOR volumes	3		0			0	0	50				0	0	50
Lane width							12.0	12.0	12.0	12.0	12.0			12.0	12.0
Parking / Gra	ide / Parking			N		Ν	N	0	N	N	0	N	N	0	N
Parking man	euvers, N _m														
Buses stoppi	ng, N _B						0	0	0	0	0			0	0
Min. time for	pedestrians, 0	3 _n			<u></u>	•									
Phasing	WB Only	T	02		03		04	Т	hru & R	T N	IB Only		07		28
	G = 40.0	G=	:		G =		G =	G	30.0		= 25.0	G =		G =	
ıımıng	Timing $Y = 6$ $Y =$				Y =		Y =	Y	′ = 5		= 5	Y =		Y =	
Duration of A	nalysis, T = 1.	.00								C)	cle Leng	th, C =	111.0		
Lane Group	Capacity, Co	ntro	l Del	ay, a	nd LOS	Deteri									
No.					В			NΒ	DT	ı T	NB Tu I	PΤ	ΙT	SB	RT

Lane Group Capacity, Co		EB			WB			NB			SB	
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v				833	955	323	57	789			1037	435
Lane group capacity, c				1237	1275	1583	398	2748			956	1084
v/c ratio, X				0.67	0.75	0.20	0.14	0.29			1.08	0.40
Total green ratio, g/C				0.36	0.36	1.00	0.23	0.54			0.27	0.68
Uniform delay, d ₁				30.0	31.1	0.0	34.4	13.9			40.5	7.6
ngression factor, PF				1.000	1.000	0.950	1.000	1.000			1.000	1.000
Delay calibration, k				0.50	0.50	0.50	0.50	0.50			0.50	0.50
Incremental delay, d ₂				3.0	4.2	0.3	0.8	0.3			173.7	1.1
Initial queue delay, d ₃												

Control delay		33.0	35.3	0.3	35.2	14.1	214.2	8.7
Lane group LOS		С	D	Α	D	В	F	Α
Approach delay			29.0			15.6	153.5	
roach LOSپر			С			В	F	
Intersection delay	67.8	X _c	= 0.70		Interse	ection LOS	E	

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HCS2000™ DETAILED REPORT General Information Site Information SR 84 EB/Flamingo Road Intersection YI M Analyst Area Type All other areas Agency or Co. RSH Jurisdiction e Performed 9/8/04 Analysis Year Existing 2002 AM Peak Hour me Period I - 595 SIMR Project ID Volume and Timing Input SB NB WB EB LT RT LT TH RT TH RT LT ТН RT TH LT 0 0 0 5 1 2 3 2 0 0 Number of lanes, N. 1 Т T R L LTR Lane group L 336 1262 460 618 Volume, V (vph) 639 118 887 2 2 2 2 % Heavy vehicles, %HV 2 2 2 0.95 0.95 0.95 0.95 Peak-hour factor. PHF 0.95 0.95 0.95 P P P Р Pretimed (P) or actuated (A) Р Р Р 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 2.0 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 3.0 3.0 1.000 1.000 1.000 1.000 Filtering/metering, I 1,000 1.000 1.000 0.0 0.0 0.0 0.0 Initial unmet demand, Qh 0.0 0.0 0.0 0 0 50 d / Bike / RTOR volumes 50 0 0 12.0 12.0 12.0 12.0 Lane width 120 12.0 12.0 0 Ν Ν Ν Parking / Grade / Parking Ν 0 Ν Ν Ν Ν 0 Parking maneuvers, N_m 0 0 0 0 Buses stopping, N_B Min. time for pedestrians, G_n 80 Thru & RT 07 SB Only 02 03 04 EB Only Phasing G = G = 20.0G = G = 20.0G = G = 25.0G = G = Timing Y = 5Y = Y = Υ = Y = 5Y = Y = 6.5Y = Cycle Length, C = 81.5 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination NB SB WB EB RT TH TH RT LT TH RT LT ΤH RT LT LT 354 1328 432 651 Adjusted flow rate, v 626 981 72 2807 2079 971 842 Lane group capacity, c 543 1068 1583 0.13 0.64 0.44 0.77 v/c ratio, X 0.92 0.05 1.15 0.61 0.25 0.55 0.25Total green ratio, g/C 0.31 1.00 0.31 27.5 8.4 28.6 8.8 27.3 0.0 Uniform delay, d₁ 28.3 1.000 1.000 1.000 1.000 ngression factor, PF 1.000 0.950 1.000 0.50 0.50 0.50 0.50 0.50 Delay calibration, k 0.50 0.50 0.1 1.5 1.5 6.8 0.1 Incremental delay, d₂ 88.3 13.8 Initial queue delay, da

Control delay	116.5	41.1	0.1				29.0	9.8	35.5	8.9	
Lane group LOS	F	D	Α				С	Α	D	Α	
Approach delay	67	67.4				2	24.3			26.1	
roach LOS	E	E E					С			С	
Intersection delay	41	1.0		X_c	= 0.88	 Interse	ection LC)S		D	

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HCS2000™ DETAILED REPORT

General Information

YLM Analyst Agency or Co. RSH e Performed 9/8/04

PM Peak Hour ııme Period

Site Information

Intersection Area Type

SR 84 EB/Flamingo Road All other areas

Jurisdiction
Analysis Year
Project ID Existing 2002 I - 595 SIMR

Volume and Timing Input		100000000000000000000000000000000000000								in the second		
		EB			WB			NB	1 ==	1	SB	БТ
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT_	TH	RT
Number of lanes, N ₁	1	2	1	0	0	0	0	5	1	2	3	0
Lane group	L	LT	R					T	R	L	T	
Volume, V (vph)	616	465	278					551	439	575	770	
% Heavy vehicles, %HV	2	2	2					2	2	2	2	
Peak-hour factor, PHF	0.95	0.95	0.95					0.95	0.95	0.95	0.95	
Pretimed (P) or actuated (A)	P	Р	P					P	P	P	P	
Start-up lost time, I ₁	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Extension of effective green, e	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Arrival type, AT	3	3	3					3	3	3	3	
Unit extension, UE	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Filtering/metering, I	1.000	1.000	1.000					1.000	1.000	1.000	1.000	
Initial unmet demand, Q _h	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
1 / Bike / RTOR volumes	0	0	50	0			0	0	50			
Lane width	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Parking / Grade / Parking	N	0	N	N		N	N	0	N	N	0	N
Parking maneuvers, N _m												
Buses stopping, N _B	0	0	0					0	0	0	0	
Min. time for pedestrians, G _p												
Phasing EB Only	02	03		04		SB Only		hru & RT		07	0	8
G = 25.0 G		G =		G =		G = 20.0		= 20.0	G =		G =	
Timing $Y = 6.5$ $Y = 6.5$	=	Y =		Y =		Y = 5		= 5	Y =		Y =	···
Duration of Analysis, $T = 0.25$					Sanda de la companio	195-190-200 y 29, a- 111 Smill Adda	C	ycle Len	gth, C =	81.5		
Lane Group Capacity, Contro	ol Delay, a	nd LOS	Deter	mination)			NR			SR	

Lane Group Capacity, Co		EB			WB	<u> </u>		NB			SB	
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v	434	703	240					580	409	605	811	
Lane group capacity, c	543	1069	1583	:				2079	971	842	2807	
v/c ratio, X	0.80	0.66	0.15					0.28	0.42	0.72	0.29	
Total green ratio, g/C	0.31	0.31	1.00					0.25	0.61	0.25	0.55	
Uniform delay, d ₁	25.9	24.5	0.0					24.9	8.2	28.2	9.7	
gression factor, PF	1.000	1.000	0.950					1.000	1.000	1.000	1.000	
Delay calibration, k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental delay, d ₂	11.7	3.2	0.2					0.3	1.3	5.2	0.3	
Initial queue delay, d ₃												

Control delay	37.6	27.7	0.2				25.2	9.6	33.4	10.0	
Lane group LOS	D	С	Α				С	Α	С	Α	
Approach delay	2	6.0			1		18.8			20.0	
ρroach LOS		C C					В	•		В	
Intersection delay	2	1.9		X _c =	: 0.61	Inte	rsection LC	os .		С	

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		HCS	2000)'" D	ETAIL	<u>_ED</u>	REPO	<u>)R'</u>	1					
General Information Analyst YLM Agency or Co. RSH :e Performed 9/8/04 Time Period AM Peak Hour					In Ai Ji Ai	terse ea T ırisdi	ction is Year	- S	SR 84		ingo R	oad		
Volume and Timing Input														
		EB				WE			l T	NB L TU	DT	I I T	SB TH	RT
	LT	TH	R ⁻		LT_	TH			LT 2	TH 3	RT 0	LT 0	5	1
Number of lanes, N ₁	0	0	0	_	1	2	1 -					-	T	R
Lane group	_	-		_		LT	R		L	T			 	
Volume, V (vph)					432	132	 -	3	296	1853	,		522	462
% Heavy vehicles, %HV		_]			2	2	2		2	2		ļ	2	2
Peak-hour factor, PHF				(0.95	0.95	5 0.9	5	0.95	0.95			0.95	0.95
Pretimed (P) or actuated (A)					P	P	P		P	Р			P	P
Start-up lost time, I					2.0	2.0	2.0)	2.0	2.0			2.0	2.0
Extension of effective green, e					2.0	2.0	2.0)	2.0	2.0			2.0	2.0
Arrival type, AT					3	3	3		3	3			3	3
Unit extension, UE					3.0	3.0	3.	0	3.0	3.0			3.0	3.0
Filtering/metering, I		-		-	1.000	1.00	00 1.00	20	1.000	1.000			1.000	1.000
Initial unmet demand, Q _b					0.0	0.0	0.0)	0.0	0.0			0.0	0.0
d / Bike / RTOR volumes	0	 			0	0	50)				0	0	50
Lane width		 	-	-	12.0	12.0	0 12.	0	12.0	12.0			12.0	12.0
Parking / Grade / Parking	l _N		- N		N	0	N		N	0	N	N	0	N
Parking maneuvers, N _m			··•		•••								-	
Buses stopping, N _B					0	0	- 0)	0	0	-	<u> </u>	0	0
Min. time for pedestrians, G _p						1			-		<u> </u>		.1	
	<u></u> 02	T	3	<u>l</u>	04		Thru 8	ι R1	T N	IB Only		07	()8
G = 25.0 G =		G =		G			G = 2			= 20.0	G=		G =	
Timing $Y = 6.5$ $Y =$		Y =		Υ	=		Y = 5			= 5	Y =		Y =	
Duration of Analysis, T = 0.25			24 <u>1.000128</u> 01470						C	/cle Leng	th, C =	81.5		
Lane Group Capacity, Control		ind LC EB	S Det	ermi.		VB		T		NB		T	SB	
-		TH	RT	LT		H_	RT	I	_T	TH	RT	LT	TH	RT
Adjusted flow rate, v				305	5 28	39	414	3.	12	1951			549	434
Lane group capacity, c				543	3 10	58	1583	84	42	2807			2079	1000
v/c ratio, X				0.56	0.2	27	0.26	0.	37	0.70			0.26	0.43
Total green ratio, g/C				0.31	1 0.3	31	1.00	0.	25	0.55			0.25	0.63
Uniform delay, d ₁				23.7		.4	0.0	25	5.5	13.3			24.8	7.6
ogression factor, PF				1.00		000	0.950	1.0	000	1.000			1.000	1.000
Delay calibration, k				0.50			0.50	-	50	0.50			0.50	0.50
Incremental delay, d ₂				4.2			0.4	-	.3	1.4			0.3	1.4
Initial queue delay, d ₃				\		-		+	-					1
minual queue delay, 43				ļ				┼				+	 	+-

		27.8	22.0	0.4	26.8	14.7	25.1	9.0
		С	С	Α	С	В	С	A
	. <u></u> 1		14.9		1	16.4	18.0	
			В			В	В	
16.4		X _c	= 0.65		Interse	ection LOS	В	
	16.4	16.4	С	C C 14.9 B	C C A 14.9 B	C C A C 14.9 B	C C A C B 14.9 16.4 B B	C C A C B C 14.9 16.4 18.0 B B B

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HCS2000™ DETAILED REPORT General Information Site Information SR 84 WB/Flamingo Road Intersection Analyst YI M Area Type All other areas Agency or Co. RSH Jurisdiction te Performed 9/8/04 Existina 2002 Analysis Year ııme Period PM Peak Hour I - 595 SIMR Project ID Volume and Timing Input SB EB WB NB LT TH RT RT LT TH RT LT TH TH RT LT 0 0 5 1 2 1 2 3 Number of lanes, N 0 1 Т Т R R 1 Lane group L LT736 387 1046 661 121 609 257 Volume, V (vph) 2 2 2 2 % Heavy vehicles, %HV 2 2 2 0.95 0.95 0.95 0.95 0.95 0.95 0.95 Peak-hour factor, PHF P Р P P Р P P Pretimed (P) or actuated (A) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 2.0 Extension of effective green, e 20 2.0 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Unit extension, UE 1.000 1.000 1.000 1.000 1.000 1.000 1.000 Filtering/metering, I 0.0 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Q_h 0.0 0 50 o 0 d / Bike / RTOR volumes 0 50 0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 Lane width Ν 0 Ν 0 Ν Ν 0 Ν Ν Ν Ν Parking / Grade / Parking Parking maneuvers, N_m 0 0 0 0 0 0 0 Buses stopping, N_B Min. time for pedestrians, G_n 80 07 04 Thru & RT NB Only 02 03 WB Only Phasing G = G = G = 20.0G = 20.0G = G = G = G = 25.0Timing Y = Y = Y = 5Y = Y = 5Y = Y = Y = 6.5Cycle Length, C = 81.5 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB NB **WB** EΒ RT LT TH LT TH RT LT ΤH RT LT TH RT 775 355 127 1101 Adjusted flow rate, v 429 483 643 1000 2079 1583 842 2807 Lane group capacity, c 543 1062 0.39 0.37 0.35 0.41 0.15 0.79 0.45 v/c ratio, X 0.25 0.63 0.55 1.00 0.25 0.31 Total green ratio, g/C 0.31 7.1 25.5 22.8 24.1 10.4 0.0 25.8 Uniform delay, d₄ 1.000 1.000 1.000 1.000 1.000 0.950 ngression factor, PF 1.000 0.50 0.50 0.50 0.50 0.50 0.50 0.50 Delay calibration, k 1.0 0.4 0.5 0.8 0.4 11.2 1.4 Incremental delay, do

Initial queue delay, d₃

Control delay		37.0	24.2	0.8	24.5	10.8	26.1	8.1
Lane group LOS		D	С	Α	С	В	С	Α
Approach delay			18.0		1	2.3	20.4	
ρroach LOS			В			В	С	
Intersection delay	16.9	X _c	= 0.53		Interse	ection LOS	В	

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HCS2000™ DETAILED REPORT

General Information

Analyst YLM Agency or Co. RSH 'e Performed 9/8/04

AM Peak Hour nme Period

Site Information

SR 84 EB/Hiatus Rd Intersection All other areas

Area Type
Jurisdiction
Analysis Year
Project ID Existing 2002 I - 595 SIMR

Volume and	Timing Input					. un			,			7	<u> </u>	
				EB			WB			NB_	l DT	1,7	SB	RT
			LT	TH	RT	LT	TH	RT	LT_	TH -	RT	LT		
Number of lar	nes, N ₁		1	2	1	0	0	0	0	3	1	2	2	0
Lane group			L	LT	R					T	R	L	T	<u> </u>
Volume, V (v	oh)		516	851	119					317	562	269	395	
% Heavy veh	icles, %HV		2	2	2					2	2	2	2	
Peak-hour fac	ctor, PHF		0.95	0.95	0.95					0.95	0.95	0.95	0.95	
Pretimed (P)	or actuated (A)	Р	Р	P					P	P	P	P	
Start-up lost t	ime, I ₁		2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Extension of	effective greer	ı, е	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Arrival type, A	λT		3	3	3					3	3	3	3	
Unit extension	n, UE		3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Filtering/mete	ering, I		1.000	1.000	1.000)				1.000	1.000	1.000	1.000	
Initial unmet of	demand, Q _b		0.0	0.0	0.0					0.0	0.0	0.0	0.0	
d / Bike / F	RTOR volumes		0	0	50	0			0	0	50			
Lane width			12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Parking / Gra	de / Parking		N	0	N	N		N	N	0	N	N	0	N
Parking mane	euvers, N _m		<u> </u>											
Buses stoppi			0	0	0		<u>-</u>			0	0	0	0	
	pedestrians, G),		.l				··· !						
Phasing	EB Only	02	<u> </u>	03		04		SB Only	TT	hru & RT	-	07	C)8
i nasing	G = 35.0	G =		G =		G =		G = 35.0		= 25.0	G:		G =	
Timing	Y = 6	Y =		Y =		Y =		Y = 5		= 5	Υ:		Y =	
Duration of A	Duration of Analysis, T = 0.25					·			С	ycle Len	gth, C :	= 111.0	L	
	Capacity, Co.		ماعير عر	2016	Deter	minatio	1		<u> </u>		-			

Lane Group Capacity, Co		EB			WB	-		NB			SB	
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v	364	1075	73					334	539	283	416	
Lane group capacity, c	558	1106	1583					1145	927	1082	2072	
v/c ratio, X	0.65	0.97	0.05					0.29	0.58	0.26	0.20	
Total green ratio, g/C	0.32	0.32	1.00					0.23	0.59	0.32	0.59	
Uniform delay, d ₁	32.8	37.5	0.0					35.7	14.5	28.4	10.8	
ngression factor, PF	1.000	1.000	0.950					1.000	1.000	1.000	1.000	<u> </u>
Delay calibration, k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental delay, d ₂	5.8	21.1	0.1					0.6	2.7	0.6	0.2	
Initial queue delay, d ₃												

Control delay	38.6	58.6	0.1				36.	3	17.1	28.9	11.0	
Lane group LOS	D	E	Α				D)	В	С	В	
Approach delay	51.0			.7		24.5		18.3				
proach LOS	D					С			В			
Intersection delay	36.1		$X_{c} = 0.53$		1	Intersection LOS				D		

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HCS2000™ DETAILED REPORT General Information Site Information SR 84 EB/Hiatus Rd Intersection YLM Analyst Area Type All other areas Agency or Co. RSH Jurisdiction te Performed 9/8/04 Analysis Year Existing 2002 PM Peak Hour ...ne Period 1 - 595 SIMR Project ID Volume and Timing Input SB NB WB EB TH RT RT LT RT LT TH RT LT TH TH LT 2 0 0 3 1 2 0 0 2 0 Number of lanes, N 1 Т TR L Lane group L LTR 328 256 159 754 Volume, V (vph) 207 396 254 2 2 2 2 % Heavy vehicles, %HV 2 2 2 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 0.95 0.95 Р Р Р Р Pretimed (P) or actuated (A) Р Р Р 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 2.0 2.0 3 3 3 3 3 3 Arrival type, AT 3 3.0 3.0 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 1.000 1.000 1.000 1.000 1.000 1.000 1.000 Filtering/metering, I 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Qh 0 0 50 d / Bike / RTOR volumes 0 0 0 50 12.0 12.0 12.0 12.0 12.0 12.0 Lane width 12.0 0 Ν Ν Ν Ν 0 Ν Ν Ν Ν 0 Parking / Grade / Parking

80 Thru & RT 07 SB Only 02 03 04 **EB** Only Phasing G = 25.0G = G = G = 35.0G = 35.0G = G = G = Timing Y = 5 Y = Y = Y = 5Y = Y = Y = 6Y = Cycle Length, C = 111.0 Duration of Analysis, T = 0.25

0

0

0

0

Parking maneuvers, N_m

Min. time for pedestrians, G_n

0

0

0

Buses stopping, N_R

Lane Group Capacity, Co	EB I			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v	146	489	215					345	217	167	794	
Lane group capacity, c	558	1107	1583					1145	927	1082	2072	
v/c ratio, X	0.26	0.44	0.14					0.30	0.23	0.15	0.38	
Total green ratio, g/C	0.32	0.32	1.00					0.23	0.59	0.32	0.59	
Uniform delay, d₁	28.4	30.2	0.0					35.7	11.0	27.3	12.3	
ngression factor, PF	1.000	1.000	0.950					1.000	1.000	1.000	1.000	
Delay calibration, k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental delay, d ₂	1.1	1.3	0.2					0.7	0.6	0.3	0.5	<u> </u>
Initial queue delay, d ₃												

Control delay	29.5	31.5	0.2				36.4	11.6	27.7	12.8	
Lane group LOS	С	С	A				D	В	С	В	
Approach delay	2	23.2				 2	26.8		15.4		***
roach LOS,		С				С			В		
Intersection delay	2	20.9		$X_{c} = 0.40$		Intersection LOS			С		

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HCS2000™ DETAILED REPORT Site Information General Information SR 84 WB/Hiatus Rd Intersection YIMAnalyst Area Type All other areas Agency or Co. RSH Jurisdiction 'e Performed 9/8/04 Analysis Year Existina 2002 AM Peak Hour ae Period 1 - 595 SIMR Project ID Volume and Timing Input SB NB WB EΒ RT LT TH RT TH RT LT TH RT LT TH LT 2 1 2 0 4 1 Number of lanes, N 0 1 1 0 0 Т Τ R 1 LTR L Lane group 355 422 203 630 309 85 147 Volume, V (vph) 2 2 2 2 2 2 % Heavy vehicles, %HV 0.95 0.95 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 P P P Р P Pretimed (P) or actuated (A) P P 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Extension of effective green, e 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Unit extension, UE 1.000 1.000 1.000 1.000 1.000 1.000 1.000 Filtering/metering, I 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Q_b 0 0 50 기 세 / Bike / RTOR volumes 0 0 50 0 12.0 12.0 12.0 12.0 12.0 12.0 Lane width 12.0 Ν 0 Ν Ν Parking / Grade / Parking Ν Ν Ν 0 Ν 0 Ν Parking maneuvers, N_m 0 0 0 0 0 0 Buses stopping, N_R Min. time for pedestrians, G 08 Thru & RT 07 NB Only WB Only 02 03 04 Phasing G = G = 25.0G = G = 35.0G = G = 35.0G = G = Timing Y = 5Y = Y = Y = 5Y = Y = Y = Y = 6Cycle Length, C = 111.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination NB SB WB ΕB RT TH RT LT TH TH RT LT TH RT LT LT 374 392 663 Adjusted flow rate, v 218 196 102 214 2137 1084 2072 1086 1583 399 Lane group capacity, c 558 0.36 v/c ratio, X 0.18 0.06 0.54 0.32 0.18 0.39 Total green ratio, g/C 0.59 0.32 0.68 0.32 1.00 0.23 0.32 27.5 7.3 11.7 29.7 27.6 0.0 37.9 Uniform delay, d₄ 1.000 1.000 1.000 0.950 1.000 1.000 Progression factor, PF 1.000 0.50 0.50 0.50 0.50 0.50 0.50 0.50 ົບelay calibration, k 0.2 0.9 0.4 0.1 5.1 0.4 2.1 Incremental delay, d₂ Initial queue delay, d₃

Control delay		31.7	28.0	0.1	43.0	12.1	27.7	8.3		
Lane group LOS		С	С	Α	D	В	С	A		
Approach delay			24.0 C			19.7	17.8	17.8		
ر, roach LOS						В	В	В		
Intersection delay	20.0	X _c	$X_{c} = 0.41$			ection LOS	С			

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HCS2000™ DETAILED REPORT Site Information General Information Intersection SR 84 WB/Hiatus Rd Analyst YLMArea Type All other areas Agency or Co. RSH Jurisdiction 'e Performed 9/8/04 Analysis Year Existing 2002 PM Peak Hour ...ne Period I - 595 SIMR Project ID Volume and Timing Input SB WB NB EB RT LT TH RT TH RT LT TH RT LT TH LT Number of lanes, N 2 0 0 4 O 0 1 2 1 1 0 L T Т R LTR L Lane group 274 257 334 Volume, V (vph) 639 151 208 201 2 2 2 % Heavy vehicles, %HV 2 2 2 2 0.95 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 0.95 Ρ P P P Pretimed (P) or actuated (A) Р Р P 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 2.0 2.0 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 Unit extension, UE 3.0 3.0 3.0 3.0 1.000 Filtering/metering, I 1.000 1.000 1.000 1.000 1.000 1.000 0.0 0.0 Initial unmet demand, Q_h 0.0 0.0 0.0 0.0 0.0 0 50 0 d / Bike / RTOR volumes 0 0 50 0 12.0 12.0 12.0 12.0 12.0 12.0 Lane width 12.0 Ν Ν 0 Parking / Grade / Parking Ν Ν Ν 0 Ν Ν 0 Ν Parking maneuvers, N_m 0 0 0 0 0 0 0 Buses stopping, N_B Min. time for pedestrians, G 07 80 Thru & RT **NB Only** Phasing WB Only 02 03 04 G = G = 35.0G = 25.0G = G = G = 35.0G = G = Timing Y = 5Y = Y = Y = 5Y = Y = 6Y = Cycle Length, C = 111.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB WB NB EB RT RT LT TH LT TH RT LT TH RT LT TH 288 218 Adjusted flow rate, v 451 381 166 212 352 1084 2137 Lane group capacity, c 1084 1583 399 2072 558 0.20 v/c ratio, X 0.35 0.10 0.53 0.17 0.13 0.81 0.59 0.32 0.68 Total green ratio, g/C 0.32 1.00 0.23 0.32 27.2 6.4 34.9 29.3 0.0 37.8 10.6 Uniform delay, d₁ 1.000 ngression factor, PF 1.000 0.950 1.000 1.000 1.000 1.000 0.50 0.50 ⊔elay calibration, k 0.50 0.50 0.50 0.50 0.50

11.9

Incremental delay, d₂
Initial queue delay, d₃

0.9

0.1

5.0

0.2

0.1

0.4

Control delay		46.9	30.2	0.1	42.8	10.8	27.3	6.8
Lane group LOS		D	С	A	D	В	С	Α
Approach delay			32.7		2	22.8	18.5	
proach LOS			С			С	В	
Intersection delay	26.5	X _c	= 0.49		Interse	ection LOS	С	

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HCS2000™ DETAILED REPORT General Information Site Information SR 84 EB- Nob Hill Road Intersection YLM Analyst Area Type All other areas Agency or Co. RSH Jurisdiction te Performed 9/8/04 Existing 2002 Analysis Year ...ne Period AM Peak Hour Project ID 1 - 595 SIMR Volume and Timing Input SB NB ΕB WB. LT TH RT LT TH RT LT TH RT LT TH RT 3 1 2 2 0 0 0 0 0 Number of lanes, N 2 1 Т T1 R R Lane group L LT163 646 458 813 Volume, V (vph) 396 1135 240 2 2 2 2 % Heavy vehicles, %HV 2 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 0.95 0.95 Р Ρ Р Ρ Pretimed (P) or actuated (A) P P P 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 20 2.0 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 3.0 3.0 1.000 1.000 1.000 1.000 Filtering/metering, I 1.000 1.000 1.000 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Q_h 0 50 d / Bike / RTOR volumes 0 0 0 50 0 12.0 12.0 12.0 12.0 Lane width 12.0 12.0 120 0 Ν Ν Ν Parking / Grade / Parking Ν 0 Ν Ν Ν Ν 0 Parking maneuvers, N_m 0 0 0 n Buses stopping, N_R 0 0 0 Min. time for pedestrians, G_n Thru & RT 07 80 SB Only 02 03 04 Phasing EB Only G = G = 50.0G = G = 42.0G = 35.0G = G = G = Timing Y = Y = Y = 5.5Y = Y = 5.5Y = 5.5Y = Y = Cycle Length, C = 143.5 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB NB WB. EB RT RT LT TH TH RT LT TH RT LT ΤH LT 429 856 172 Adjusted flow rate, v 1403 200 680 209 2405 1005 1772 998 Lane group capacity, c 432 857 1583 0.38 0.43 0.85 0.07 v/c ratio, X 0.13 0.48 1.64 0.35 0.63 0.29 0.68 Total green ratio, g/C 1.00 0.24 0.24 7.7 35.2 13.4 47.8 54.3 46.5 0.0 Uniform delay, d₁ 1.000 1.000 1.000 1.000 □ ngression factor, PF 0.950 1.000 1.000 0.50 0.50 0.50 0.50 ບelay calibration, k 0.50 0.50 0.50

292.0

3.8

Incremental delay, d₂
Initial queue delay, d₃

0.2

0.1

9.1

0.6

1.4

Control delay	50.3	346.2	0.2			35.8	14.8	56.9	7.8		
Lane group LOS	D	F	Α			D	В	Ε	Α		
Approach delay	27	73.9	<u>.</u>			27.7			48.7		
,sroach LOS		F				С			48.7 D		
Intersection delay	14	16.1		$X_{c} = 0.88$	 Inters	ection LO	os		F		

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General Info	rmation			710	7320	00	DLI	AILED Site I						145			
Analyst Agency or Co te Perform ne Period	YLM . RSH	Hour						Inters Area Juriso Analy Project	ectio Type iction sis Y	n n	SF Ali Ex	l othe cistin	EB- Nob er areas g 2002 SIMR	Hill Ro	ad		
Volume and	Timing Input											•		6 mb - 6 file			
6 Victory and a second				E	В			W		חד		LT	NB TH	RT	LT	SB_ TH	RT
Number of lar	see N	-	LT 1	T 2	1	RT 1	LT		1	RT 0		<u>LI_</u> 0	3	1	2	2	0
Lane group	100, 11	-	L	L7	- +	 R	\ <u> </u>	—			+		T	R	L	T	
Volume, V (v	nh)		320	35		189	_		_				784	322	584	970	
% Heavy veh			2	2		2	-				-		2	2	2	2	
Peak-hour fac			0.95	0.9		2.95							0.95	0.95	0.95	0.95	
	or actuated (A		P	P.S		P.90					_		P	P	P	P	
Start-up lost t	`	''	2.0	2.		2.0	<u> </u>						2.0	2.0	2.0	2.0	
·····	effective greer	 n. е	2.0	2.		2.0							2.0	2.0	2.0	2.0	
Arrival type, A	······································		3	3		3							3	3	3	3	
Unit extensio			3.0	3.0		3.0	 	<u> </u>			_		3.0	3.0	3.0	3.0	
Filtering/mete			1.00			1.000)						1.000	1.000	1.000	1.000	
Initial unmet			0.0	0.		0.0	<u></u> .						0.0	0.0	0.0	0.0	
	RTOR volumes	<u></u>	0	0		50	0		1			0	0	50			
Lane width			12.0	12	0	12.0	<u> </u>						12.0	12.0	12.0	12.0	
Parking / Gra	de / Parking		N	0		N	N		-	N	1	N	0	N	N	0	N
Parking mane							<u> </u>						<u> </u>				
Buses stoppi			0	0		0					1		0	0	0	0	
	pedestrians, G							,									
Phasing	EB Only	02	2		03		0	4	·	3 On			nru & RT		07	08	3
Timing	G = 35.0	G =		G =			G =	······		÷ 42.			= 50.0	G =		G = Y =	
	Y = 5.5 nalysis, T = 0.	Y =		Y =			Y =		Υ =	5.5			= <i>5.5</i> /cle Leng	Y= ath.C≔	143.5	1 -	
	Capacity, Co		elav.	and L	OS D	eter	minat	ion				<u>, O,</u>	TOIO EOII	311, 0	7,010		
				EB				WB					NB			SB	
A 1' 1 1 1		L		TH	RT		LT_	TH	R'	<u> </u>	LT		TH	RT	LT 645	TH	RT
Adjusted flow		169		39	146								825	286	615	1021	
Lane group c	apacity, c	432		350	1583	-		·fine ·······					0.47	998	1005	2405	<u> </u>
v/c ratio, X		0.3		.63	0.09									0.29	0.61	0.42	
Total green ra		0.2		.24	1.00									0.63	0.29	0.68	<u> </u>
Uniform delay		45.		8.5	0.0						,			11.9	43.7	10.4	
ົ່ງgression f		1.00	<u></u> -	.000	0.95							-		1.000	1.000	1.000	
Delay calibra		0.5		.50	0.50	<u> </u>				_				0.50	0.50	0.50	
Incremental of		2.7	7 ;	3.6	0.1							-	0.9	0.7	2.8	0.6	<u> </u>
Initial queue	delay, d ₃	ĺ				\perp			ļ						<u> </u>	 	ļ

Control delay	48.0	52.1	0.1					37.2	12.7	46.5	10.9	
Lane group LOS	D	D	Α					D	В	D	В	
Approach delay	4.	2.4				1	3	0.9			24.3	
ρroach LOS		D						С			С	
Intersection delay	3	0.6		X _c =	= 0.56		Interse	ection LC)S		С	

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HCS2000™ DETAILED REPORT

General Information

Analyst YLM Agency or Co. RSH 'e Performed 9/8/04

..me Period AM Peak Hour Site Information

Intersection

SR 84 WB - Nob Hill Road All other areas

Area Type
Jurisdiction
Analysis Year
Project ID

Existing 2002 I - 595 SIMR

Volume and Timing Input													
			EB		<u> </u>	WB			NB		1	SB	RT
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	
Number of lanes, N ₁		0	0	0	1	2	1	1	2	0	0	4	1
Lane group					L	LTR	R	L	T			T	R
Volume, V (vph)					373	95	358	199	843			603	368
% Heavy vehicles, %HV					2	2	2	2	2			2	2
Peak-hour factor, PHF					0.95	0.95	0.95	0.95	0.95			0.95	0.95
Pretimed (P) or actuated (A)					P	P	P	P	Р			P	P
Start-up lost time, I,					2.0	2.0	2.0	2.0	2.0			2.0	2.0
Extension of effective green,	e				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Arrival type, AT					3	3	3	3	3			3	3
Unit extension, UE					3.0	3.0	3.0	3.0	3.0			3.0	3.0
Filtering/metering, I					1.000	1.000	0 1.000	1.000	1.000			1.000	1.000
Initial unmet demand, Q _h					0.0	0.0	0.0	0.0	0.0			0.0	0.0
d / Bike / RTOR volumes		0			0	0	50				0	0	50
Lane width					12.0	12.0	12.0	12.0	12.0			12.0	12.0
Parking / Grade / Parking		N		N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N _m													
Buses stopping, N _B					0	0	0	0	0			0	0
Min. time for pedestrians, G													
Phasing WB Only	02	· · · · · · · · · · · · · · · · · · ·	03	-	04	To the second	Thru & R	T N	B Only		07		08
G = 40.0	3 =		G =		G =		G = 42.0	G:	= 50.0	G =		G =	
Timing	/ =		Y =		Y =		Y = 5.5		= 5.5	Y =		Υ =	
Duration of Analysis, T = 0.28	5							Су	cle Leng	th, C =	148.5	5	
Lane Group Capacity. Cont		lav a	nd LOS	Deter	mination	1		1 37	3	Bar Comme		10.00	

Lane Group Capacity, Co		EB			WB			NB			SB	
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v				263	337	217	209	887			635	335
Lane group capacity, c				477	891	1583	596	2324			1918	933
v/c ratio, X				0.55	0.38	0.14	0.35	0.38			0.33	0.36
Total green ratio, g/C				0.27	0.27	1.00	0.34	0.66			0.28	0.59
Uniform delay, d₁				46.6	44.1	0.0	37.0	11.7			42.1	15.9
ngression factor, PF				1.000	1.000	0.950	1.000	1.000			1.000	1.000
Delay calibration, k				0.50	0.50	0.50	0.50	0.50			0.50	0.50
Incremental delay, d ₂		-		4.5	1.2	0.2	1.6	0.5			0.5	1.1
Initial queue delay, d ₃												

Control delay		51.1	45.4	0.2	38.7	12.2	42.6	17.0
Lane group LOS		D	D	Α	D	В	D	В
Approach delay			35.2			17.2	33.7	
ρroach LOS			D			В	С	
Intersection delay	27.9	X _c	= 0.43		Interse	ection LOS	С	

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HCS2000™ DETAILED REPORT Site Information General Information SR 84 WB - Nob Hill Road YLM Intersection Analyst Agency or Co. RSH Area Type All other areas Jurisdiction e Performed 9/8/04 Existing 2002 Analysis Year ume Period PM Peak Hour Project ID 1 - 595 SIMR Volume and Timing Input NΒ SB WB EB RT LT TH RT LT TH LT TH RT LT TH RT 4 1 2 O 1 2 1 1 Number of lanes, N. 0 R LTR R L Τ Т L Lane group 493 1033 205 926 153 951 Volume, V (vph) 521 2 2 2 2 2 2 2 % Heavy vehicles, %HV 0.95 0.95 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 Р Ρ Р P P Ρ Р Pretimed (P) or actuated (A) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 1.000 1.000 1.000 1.000 1.000 1.000 1.000 Filtering/metering, I 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Qh 50 0 0 0 50 0 1/Bike / RTOR volumes o 12.0 12.0 12.0 12.0 12.0 12.0 12.0 Lane width 0 Ν Ν Ν Ν Ν 0 Ν Ν 0 Parking / Grade / Parking Ν Parking maneuvers, N_m 0 0 0 o 0 0 0 Buses stopping, N_B Min. time for pedestrians, G_n 08 07 Thru & RT **NB Only** 03 WB Only 02 Phasing G = 50.0G = G = G = G = G = 42.0G = G = 40.0**Timing** Y = Y = 5.5Y = Y = Y = Y = 5.5Y = 5.5Y = Cycle Length, C = 148.5 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB WB NΒ EB RT RT LT TH RT LT TH RT TH LT TH LT 1087 466 1001 618 161 367 701 Adjusted flow rate, v 933 1918 1583 596 2324 Lane group capacity, c 477 880 0.50 0.57 0.43 v/c ratio, X 0.77 0.80 0.39 0.27 0.59 0.28 0.27 1.00 0.34 0.66 Total green ratio, g/C 0.27 17.8 45.5 12.2 50.0 50.5 0.0 35.9 Uniform delay, d₁ 1.000 1.000 1.000 gression factor, PF 1.000 1.000 0.950 1.000

0.50

11.3

Delay calibration, k

Incremental delay, d₂
Initial queue delay, d₃

0.50

7.4

0.50

0.7

0.50

1.1

0.50

1.9

0.50

1.2

0.50

0.6

	61.3	57.9	0.7	37.1	12.8	46.7	19.7
	E	E	A	D	В	D	В
		37.7			16.2	38.6	
		D			В	D	
32.3	X _c	= 0.54		Inters	ection LOS	С	
	32.3	E	E E 37.7 D	E E A 37.7 D	37.7 D	B E E A D B 37.7 16.2 D B	

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HCS2000™ DETAILED REPORT Site Information General Information SR 84 EB- Pine Island Road Intersection YLM Analyst Area Type All other areas Agency or Co. RSH Jurisdiction Analysis Year te Performed 9/8/04 Existing 2002 I - 595 SIMR ...ne Period AM Peak Hour

Volume and	Timing Input												,		
				EB			WE				NB		1	SB	
			LT	TH	RT	LT	TH		RT	LT	TH	RT	LT_	TH_	RT
Number of lar	nes, N ₁		1	2	1	0	0		0	0	3	1	2	2	0
Lane group			L	LT	R						T	R	L	T	
Volume, V (v	oh)		637	1062	480						887	553	764	162	
% Heavy veh	icles, %HV		2	2	2						2	2	2	2	
Peak-hour fac	ctor, PHF		0.95	0.95	0.95						0.95	0.95	0.95	0.95	
Pretimed (P)	or actuated (A)	P	P	Р						P	P	P	P	
Start-up lost t	ime, I₁		2.0	2.0	2.0						2.0	2.0	2.0	2.0	
Extension of	effective greer	ı, e	2.0	2.0	2.0						2.0	2.0	2.0	2.0	
Arrival type, A	AT		3	3	3						3	3	3	3	
Unit extensio	n, UE		3.0	3.0	3.0						3.0	3.0	3.0	3.0	
Filtering/mete	ering, I		1.000	1.000	1.000						1.000	1.000	1.000	1.000	
Initial unmet	demand, Q _b		0.0	0.0	0.0						0.0	0.0	0.0	0.0	
d / Bike / F	RTOR volumes	3	0	0	50	0				0	0	50			
Lane width			12.0	12.0	12.0						12.0	12.0	12.0	12.0	
Parking / Gra	de / Parking		N	0	N	N			N	Ν	0	N	N	0	N
Parking man	euvers, N _m														
Buses stoppi	ng, N _B		0	0	0						0	0	0	0	
Min. time for	pedestrians, G	p													
Phasing	EB Only	02		03		04			3 Only		ru & RT		07	0	8
Timing	G = 45.0	G =		G =		G =			35.0		= 45.0	G =		G =	
Timing	Y = 7	Y =		Y =		Y =		Y =	6		= 7	Y =		Y =	
Duration of A	nalysis, $T = 0$.	25								Cy	cle Leng	gth, C =	145.0		

Project ID

Lane Group Capacity, Co		EB			WB			NB			SB	
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v	336	1453	453					934	529	804	171	
Lane group capacity, c	549	1086	1583					1578	1059	829	2099	
v/c ratio, X	0.61	1.34	0.29					0.59	0.50	0.97	0.08	
Total green ratio, g/C	0.31	0.31	1.00					0.31	0.67	0.24	0.59	
Uniform delay, d ₁	42.6	50.0	0.0					42.2	11.9	54.5	12.6	
ngression factor, PF	1.000	1.000	0.950					1.000	1.000	1.000	1.000	<u></u>
Delay calibration, k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental delay, d ₂	5.0	158.4	0.5					1.6	1.7	24.7	0.1	
Initial queue delay, d ₃												

Control delay	47.6	208.4	0.5			1	43.9	13.6	79.2	12.7	
Lane group LOS	D	F	Α				D	В	E	В	
Approach delay	14	2.3	■F.				32.9			67.5	
proach LOS		F					С			E	
Intersection delay	9.	2.5		X _c =	0.97	Inters	section LO	os		F	

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HCS2000™ DETAILED REPORT Site Information General Information SR 84 EB- Pine Island Road Intersection Analyst YLMArea Type All other areas Agency or Co. RSH Jurisdiction te Performed 9/8/04 Analysis Year Existing 2002 ...me Period PM Peak Hour I - 595 SIMR Project ID Volume and Timing Input WB NB SB ΕB ŔΤ LT TH RT LT TH TH RT TH RT LT LT 0 3 1 2 2 0 0 0 Number of lanes, N 1 2 1 0 Т T R L Lane group L LTR 1107 213 605 868 Volume, V (vph) 487 375 471 2 2 % Heavy vehicles, %HV 2 2 2 2 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 0.95 0.95 P Р Р Р P P P Pretimed (P) or actuated (A) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 2.0 2.0 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 3.0 3.0 1.000 1.000 1.000 1.000 1.000 Filtering/metering, I 1.000 1.000 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Q_h 0 0 0 50 d / Bike / RTOR volumes 0 0 50 12.0 12.0 12.0 12.0 Lane width 12.0 12.0 12.0 Ν 0 Ν Ν 0 Ν 0 Ν Ν Ν Parking / Grade / Parking Ν Parking maneuvers, N_m 0 0 0 0 0 0 Buses stopping, N_R Min. time for pedestrians, G_n Thru & RT 80 04 SB Only 02 03 Phasing EB Only G = G = G = G = 35.0G = 45.0G = G = G = 45.0Timing Y = Y = Y = 7Y = Y = 6Y = 7Y = Y = Cycle Length, C = 145.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB NB ĒΒ WB LT TH RT LT TH RT LT TH RT TH RT LT 914 172 637 1165 Adjusted flow rate, v 443 257 651 2099 1578 1059 829 Lane group capacity, c 549 1077 1583 0.56 0.58 0.16 0.77 v/c ratio. X 0.47 0.60 0.28 0.59 0.67 0.24 0.31 Total green ratio, g/C 0.31 0.31 1.00 51.2 17.9 42.0 8.9 Uniform delay, d₁ 40.3 42.4 0.0 1.000 1.000 1.000 1.000 ngression factor, PF 1.000 1.000 0.950 0.50 0.50 0.50 0.50 Delay calibration, k 0.50 0.50 0.50 1.1 0.3 6.8 1.6 Incremental delay, do 2.9 2.5 0.4 Initial queue delay, d₃

Control delay	43.2	45.0	0.4				43.6	9.2	58.0	19.0	
Lane group LOS	D	D	Α				D	Α	E	В	
Approach delay	3	0.0				3	8.2			32.8	
proach LOS		С					D			С	
Intersection delay	3	3.3		X_c	= 0.64	Interse	ction LC	os		С	

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General Info	rmation		_	<u>H</u>	CS2	<u>000</u>	DE	ETAII			POF natio							
Analyst ^aency or C	YLM	our						In Ai Ju Ai	terse rea T urisdi	ection ype iction	1	SR Ro All	ad othei	VB- Pine areas 2002 SIMR	e Island			
Volume and	Timing Input													ND		Γ	CD.	
			LT		EB TH	RT		LT	WI TH		RT	_	ĹТ	NB TH	RT	LT	SB TH	RT
Number of la	nes, N		0)	0		1	2		1		2	2	0	0	4	1
Lane group								L	LTF	7	R		L	Т			TR	R
Volume, V (\	/ph)						1	214	202	? !	511	2	81	1243		<u> </u>	712	471
% Heavy ve				\neg				2	2	 -	2		2	2			2	2
Peak-hour fa			<u> </u>).95	0.9	5 0	0.95	0.	95	0.95			0.95	0.95
	or actuated (A)					1	P	P		P		P	P			P	Р
Start-up lost				_				2.0	2.0	,	2.0	2	2.0	2.0			2.0	2.0
	effective green	, e						2.0	2.0	, ,	2.0	2	2.0	2.0			2.0	2.0
Arrival type,	AT		 					3	3		3		3	3			3	3
Unit extension	on, UE						,	3.0	3.0)	3.0		3.0	3.0			3.0	3.0
Filtering/met	ering/metering, I						1	.000	1.00	00 1	.000	1.	000	1.000			1.000	1.000
Initial unmet	al unmet demand, Q _b							0.0	0.0)	0.0	7	0.0	0.0			0.0	0.0
d / Bike /	RTOR volumes		0					0	0		50					0	0	50
Lane width							1	12.0	12.	0 1	12.0	1.	2.0	12.0			12.0	12.0
Parking / Gr	ade / Parking		N			Ν		N	0		N		N	0	N	N	0	N
Parking mar	euvers, N _m		<u> </u>															
Buses stopp								0	0		0		0	0			0	0
Min. time for	pedestrians, G	р																,
Phasing	WB Only	02	2		03		<u> </u>	04		<u> </u>	Only			u & RT	G =	07	G =	08
Timing	G = 30.0 Y = 6	G = Y =		G Y			G :			Y =	45.0 7	,	G = Y =	35.0 6	Y=		Y =	
Duration of	Analysis, T = 0.2			†			<u> </u>			<u>'</u>				le Leng		129.0		
Lane Group	Capacity, Co	ntrol D	elay,		LOS	Dete	rmin									1	00	
		L	r	EB TH	R	- 	LT	<u>V</u> T	VB H	RT	- -	LT		NB TH	RT	LT	SB TH	RT
Adjusted flo	w rate, v				- '`		113	56		243		296		308			749	443
Lane group					1		412	76	3	1583	3 1	198	2	387			1840	871
v/c ratio, X							0.27	0.7	74	0.15	5 0	.25	0	.55			0.41	0.51
Total green	ratio, g/C			•			0.23		23	1.00	0	.35	0	.67			0.27	0.55
Uniform dela					-	<u>_</u>	40.6			0.0	2	9.9	1	0.8			38.5	18.1
	factor, PF		\top	···			1.000		00	0.95	0 1.	.000) 1	.000			1.000	1.000
Delay calibr					1		0.50	0.5	50	0.50	0	.50	0	.50			0.50	0.50
Incremental							1.6	6.	5	0.2	(0.5		0.9			0.7	2.1
Initial queue										<u> </u>								

Control delay		42.2	52.4	0.2	30.4	11.8	39.2	20.2
Lane group LOS		D	D	A	С	В	D	С
Approach delay			37.4	1	1	15.2	32.1	
proach LOS			D			В	С	
Intersection delay	26.1	X _c	= 0.60		Interse	ection LOS	С	

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				Н	CS20	000	™ []	ETAI	LEI	D R	EPC	DR'	 Т						
General Info	rmation										mati								
Analyst Agency or Co	YLM	lour						A Ju A	ters rea urisd naly rojec	Type lictions sis \	e on Year	i i	Road All oti Existi	I WB- Pin ner areas ng 2002 5 SIMR	e Isla	and			
Volume and	Timing Input																		
					EB	DT	_	LT	W IT		RT		LT	NB TH	R	т	LT	SB TH	RT
Number of la	nes, N	•••	LT 0		ΓΗ 2	RT 0		1	2		1		2	2	0		0	4	1
Lane group	1						\neg	L	LTI	R	R		L	Т				TR	R
Volume, V (v	ph)						\neg	714	441	6	782		275	1080				998	716
% Heavy veh	nicles, %HV							2	2		2		2	2				2	2
Peak-hour fa	ctor, PHF			1				0.95	0.9	5	0.95	5	0.95	0.95				0.95	0.95
Pretimed (P)	or actuated (A)						Р	P		P		P	P				Р	Р
Start-up lost	time, I ₁							2.0	2.0)	2.0		2.0	2.0				2.0	2.0
Extension of	effective greer	ı, e						2.0	2.0)	2.0		2.0	2.0				2.0	2.0
Arrival type,	AT							3	3		3		3	3				3	3
Unit extension	n, UE							3.0	3.	0	3.0)	3.0	3.0				3.0	3.0
Filtering/mete	tering/metering, I							1.000	1.0	00	1.00	0	1.00	1.000				1.000	1.000
Initial unmet	tial unmet demand, Q _b							0.0	0.0	0	0.0		0.0	0.0				0.0	0.0
J / Bike / F	RTOR volumes		0					0	0		50						0	0	50
Lane width								12.0	12.	0	12.0)	12.0	12.0				12.0	12.0
Parking / Gra	_		N			Ν		N	0		N		N	0	^		N	0	N
Parking man	euvers, N _m		<u> </u>						ļ <u>.</u>										
Buses stoppi								0	()	0		0	0				0	0
	pedestrians, G		<u> </u>	<u> </u>						1					- 1		0.7		\O
Phasing	WB Only G = 30.0	02 G =	<u> </u>	G	03 =		 -	= 04			IB Or = 45			hru & RT i = 35.0	-	 -	07	G =)8
Timing	Y = 6	Y =	. ,	Y			I	=			= 7			= 6		/ =		Y =	
	nalysis, T = 0.						Anthonor		enterior de la			a karanaa	C	ycle Leng	jth, C) =	129.0		
Lane Group	Capacity, Co.	ntrol D		nd . EB	LOS E)ete	rmi	**************************************	VB		·		, i	NB			*	SB	
		L		H H	RT		LT			R	T	L	Т	TH	RT	•	LT	TH	RT
Adjusted flow	v rate, v						376	3 12	30	38	6	28	9	1137				1051	701
Lane group o	capacity, c						412	2 77	3	158	83	119	98	2387				1840	871
v/c ratio, X							0.9 ⁻	1 1.5	59	0.2	24	0.2	24	0.48				0.57	0.80
Total green r	atio, g/C						0.23	3 0.2	23	1.0	00	0.3	35	0.67				0.27	0.55
Uniform dela	y, d ₁						48.2	2 49	.5	0.		29.	.9	10.1				40.5	23.4
gression	factor, PF						1.00	00 1.0	00	0.9	50	1.0	00	1.000				1.000	1.000
Delay calibra	ition, k						0.5			0.5		0.5		0.50				0.50	0.50
Incremental							27.0	0 272	2.2	0.	4	0.	5	0.7				1.3	7.8
Initial queue	delay, d ₃									_									

Control delay		75.3	321.7	0.4	30.3	10.8	41.8	31.2
Lane group LOS		E	F	Α	С	В	D	С
Approach delay		<u> </u>	212.9	•••		14.7	37.6	
proach LOS			F			В	D	
Intersection delay	98.8	X _c	= 0.76		Interse	ection LOS	F	

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General Info Analyst Agency or Co te Perform	YLM o. RSH						Int Ar	<i>te In</i> terse ea T	<i>form</i> ction	atior) SR 8	4 EB- her are		ersity D)rive		
ne Period	ed 9/9/04 AM Peak H	lour					Ar		is Ye	ar 	Exist I - 59	ing 200 5 SIM	72 7				
Volume and	Timing Input																
			LT	EB TH	RT		T [WE TH		₹T	LT		B	RT	LT	SB TH	RT
Number of lar	nes. N		1	2	1)	0	_	<u> </u>	0	3		1	2	3	0
Lane group	1		L	LTR	R						ļ <u>.</u>	T		R	L	T	
Volume, V (v)	oh)		353	946	618				\dashv			83	 7	740	326	1811	
% Heavy veh			2	2	2						<u> </u>	2		2	2	2	
Peak-hour fac			0.95	0.95	0.95				+			0.9	5	0.95	0.95	0.95	
	or actuated (A)	P	P	P	+			\dashv		+	P		P	Р	P	
Start-up lost t		-	2.0	2.0	2.0				_		 	2.0)	2.0	2.0	2.0	
	effective green	ı, e	2.0	2.0	2.0							2.0)	2.0	2.0	2.0	
Arrival type, A	AT.	,	3	3	3						1	3		3	3	3	
Unit extension	n, UE		3.0	3.0	3.0							3.	0	3.0	3.0	3.0	
Filtering/mete	ering, I		1.000	1.000	1.00	0					1	1.0	00	1.000	1.000	1.000	
	al unmet demand, Q _b			0.0	0.0						1	0.0)	0.0	0.0	0.0	
	RTOR volumes	;	0		50	()				0	0		50			
Lane width		- 	12.0	12.0	12.0							12.	0	12.0	12.0	12.0	
Parking / Gra	de / Parking		N	0	N	1	V			N	N	О		N	N	0	N
Parking mane	euvers, N _m																
Buses stoppi	ng, N _B		0	0	0)	0	0	0	
Min. time for	pedestrians, G	p															
Phasing	EB Only	02	1	00	3	 	04			Only		Thru &			07	0	8
Timing	G = 45.0 Y = 6	G = Y =		G = Y =		G = Y =			G = Y =			G = 50 $Y = 6$),0	G = Y =		G = Y =	
Duration of A	nalysis, T = 0			-		<u> </u>		j					eng	th, C =	138.0		
	Capacity, Co		elay, a	nd LOS	S Dete	rmina	tion								,		
	. 127 . 334 . 604 . 607			EB	рт	1 7	,	√B	рт		LT	NB TH		RT	LT	SB TH	RT
Adjusted flow	rate. v	180			RT 99	LT	TI	1	RT	+	<u>L. I</u>	881		726	343	1906	101
Lane group c		577			583				· ···	+		1842		1159	622	2985	
v/c ratio, X		0.3			.19					+		0.48	-	0.63	0.55	0.64	
Total green ra	atio, ɑ/C	0.3			.00		<u> </u>					0.36		0.73	0.18	0.59	1
Uniform delay		35.			0.0		-			+	•	33.9	1	9.2	51.4	18.8	
ngression f		1.00		<u> </u>	950							1,000		1.000	1.000	1.000	
ັບelay calibra		0.5			.50		 			_		0.50		0.50	0.50	0.50	
Incremental of		1.5			0.3					-		0.9		2.6	3.5	1.1	
	• • •	1										 	-+		 	i	

Control delay	36.5	202.1	0.3					34.8	11.7	54.9	19.9	
Lane group LOS	D	F	Α					С	В	D	В	
Approach delay	15	55.7		-		1	2	24.4			25.2	
proach LOS		F			,			С			С	
Intersection delay	6	9.1		X _c =	0.89		Interse	ection L0	os		Е	

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HCS2000™ DETAILED REPORT Site Information General Information SR 84 EB- University Drive Intersection YLM Analyst Area Type All other areas Agency or Co. RSH Jurisdiction te Performed 9/9/04 Analysis Year Existing 2002 ae Period PM Peak Hour 1 - 595 SIMR Project ID Volume and Timing Input SB NB WB EB TH RT RT LT TH RT LT LT ΤH RT LT TH 0 Number of lanes, N. 0 0 0 0 3 1 2 3 2 1 1 L Т Τ R LTR R Lane group L 1055 865 257 1848 Volume, V (vph) 256 724 575 2 2 2 2 % Heavy vehicles, %HV 2 2 2 0.95 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 0.95 P P P Р Pretimed (P) or actuated (A) P P Р 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 2.0 2.0 3 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 3.0 3.0 1.000 1.000 1.000 1.000 Filtering/metering, I 1.000 1.000 1.000 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Q_b 0.0 0.0 ্রানুব / Bike / RTOR volumes 0 50 0 50 0 0 12.0 12.0 12.0 12.0 Lane width 12.0 12.0 12.0 0 Ν Ν Ν Ν Parking / Grade / Parking Ν 0 Ν Ν Ν 0 Parking maneuvers, N_m 0 0 0 0 0 Buses stopping, N_B 0 Min. time for pedestrians, G_n 08 Thru & RT 07 SB Only Phasing EB Only 02 03 04 G = 50.0G = G = 25.0G = G = G = G = 45.0G = Timina Y = 6Y = Y = Υ = Y = 6 $\overline{Y} = 6$ Y = Cycle Length, C = 138.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination NB SB WB. EB RT TH LT TH RT LT LT TH RT LT TH RT 271 1945 1111 858 Adjusted flow rate, v 303 925 355 622 2985 1842 1159 Lane group capacity, c 1070 1583 577 0.65 v/c ratio, X 0.86 0.22 0.60 0.74 0.44 0.53 0.36 0.73 0.18 0.59 Total green ratio, g/C 0.33 0.33 1.00 19.1 35.9 10.8 50.2 37.8 43.6 0.0 Uniform delay, d₁ 1.000 1.000 Progression factor, PF 0.950 1.000 1.000 1.000 1.000 0.50 0.50 0.50 0.50 ົບelay calibration, k 0.50 0.50 0.50 4.3 2.2 1.1 9.3 0.3 1.5 3.4 Incremental delay, do

Initial queue delay, d₃

Control delay	41.2	52.9	0.3					37.4	15.1	52.4	20.2	
Lane group LOS	D	D	Α					D	В	D	С	
Approach delay	3	8.9			·/··	•	2	7.7			24.1	
roach LOS,		D						С			С	
Intersection delay	2	9.4		X _c =	0.73		Interse	ction LC	os ·		С	

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				HCS	200	<i>0</i> ™ DI	ETAI	LEC	RE	ΕPO	RT	<u> </u>						
General Info	rmation									matic								
Analyst Agency or Co te Perform ne Period	YLM o. RSH	. · Hour	-		_		A Ju A	rea ⁻ urisd naly:	ection Type liction sis Yet ID	n	A E	II otl xisti	WB- Ur ner areas ng 2002 5 SIMR		rsity [Orive		
	T. 1 1						<u> </u>	rojec	עווא		1	- 590	JOHNIN					
volume and	Timing Input		T	EB		T		W	B				NB				SB	
			LT	TH	R	T	LT	Th		RT		LT	TH	T	RT	LT	TH	RT
Number of la	nes, N ₁		О	0	0		1	2		1		2	3		0	0	4	0
Lane group							L	LTF	₹	R		L	T				TR	
Volume, V (v	ph)						511	8		966		28	1162				1526	204
% Heavy veh	icles, %HV						2	2		2		2	2				2	2
Peak-hour fa	ctor, PHF						0.95	0.9	5 (0.95		0.95	0.95				0.95	0.95
Pretimed (P)	or actuated (/	A)					Р	Р		Р		Р	P				Р	P
Start-up lost	time, l₁						2.0	2.0)	2.0		2.0	2.0				2.0	
Extension of	effective gree	n, e					2.0	2.0)	2.0		2.0	2.0				2.0	
Arrival type,	AT						3	3		3		3	3				3	
Unit extensio	n, UE						3.0	3.	0	3.0		3.0	3.0				3.0	<u> </u>
Filtering/mete	ering, I					1	.000	1.00	00 1	1.000)	1.00	1.000				1.000	
Initial unmet	demand, Q _b						0.0	0.0)	0.0		0.0	0.0				0.0	
アつd / Bike / F	RTOR volume	s	0				0			50						0	0	50
Lane width						1	12.0	12.	0	12.0		12.0	12.0				12.0	
Parking / Gra	de / Parking		N		٨		N	0		N		Ν	0		N	N	0	N
Parking man	euvers, N _m																	ļ <u></u>
Buses stoppi	ng, N _B						0	0)	0		0	0			<u> </u>	0	
Min. time for	pedestrians, (G _p																
Phasing	WB Only	02		03	3		04			u & F			NB Only		·	07		8
Timing	G = 45.0 Y = 6	G = Y =		G = Y =		G :			G = Y =	50. 6	0	ļ	= 20.0 = 6		G = Y =	·	G = Y =	
Duration of A	nalysis, T = 0								<u></u>	<u> </u>			ycle Len	gth		133.0		
	Capacity, Co		elay, a	nd LO:	S Det	ermin	ation					-	•					
				ΞB		<u></u>	V	VB				-	NB	T -		,	SB	
Adjusted flow	rate v	L7	<u> </u>	Ή !	RT	431	T 		646	_	LT 29		TH 1223		RT	LT	TH 1768	RT
Lane group c			_			599	107		158		29 516		2906	\vdash			2514	
v/c ratio, X						0.72			0.41		0.00		0.42	\vdash			0.70	
Total green r	atio_d/C					0.72			1.00		0.1		0.57	 -		-	0.38	
Uniform dela						38.5			0.0		48.4		16.1	-			35.2	<u> </u>
P-ngression	<u>'</u> .					1.000			0.95		1.00	-	1.000	 			1.000	
belay calibra						0.50			0.50		0.50		0.50	-			0.50	-
Incremental of						7.3	1.		0.8		0.2		0.4	-			1.7	
Initial queue				<u> </u>		1.0	 ''	-		-				\vdash				
						 			<u> </u>	 -			ļ	╀			 	

Control delay		45.8	36.8	0.8	48.6	16.5	36.9
Lane group LOS		D	D	A	D	В	D
Approach delay			24.8	,	1	17.3	36.9
proach LOS			С			В	D
Intersection delay	27.4	X _c	= 0.60		Interse	ection LOS	С

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General Info	ormation			1100		, L	DETA		nform								
Analyst Agency or C	YLM o. RSH ned 9/9/04						li A	nterse Area T Iurisd	ection Type iction		SR All d	other	VB- Univ	ersity	Drive		
ne Period	PM Peak H	lour						\naly: Projec	sis Ye :t ID	ear			2002 SIMR				
Volume and	Timing Input						<u> </u>									0.5	
			LT	EB TH	l R	T	LT	W TH		RT	1	T	NB TH	RT	LT	SB TH	RT
Number of la	anes, N		0	0	0		1	2	•	1	2	-	3	0	0	4	0
Lane group	<u> </u>						L	LTF	7	R	L		Т			TR	
Volume, V (\	/ph)						490	35	ε	332	22	21	1409			1615	252
% Heavy vel			<u></u>				2	2		2	2	?	2			2	2
Peak-hour fa			.	 			0.95	0.9	5 0	.95	0.9	95	0.95			0.95	0.95
	or actuated (A)			1		P	P		P	F	,	P			P	P
Start-up lost		-			-		2.0	2.0) 2	2.0	2.	0	2.0			2.0	
	effective green	, e					2.0	2.0) 2	2.0	2.	0	2.0			2.0	
Arrival type,	AT						3	3		3	3	3	3			3	
Unit extension							3.0	3.	0	3.0	3	3.0	3.0			3.0	
Filtering/met	tering, I						1.000	1.00	00 1	.000	1.0	000	1.000			1.000	
	demand, Q _b						0.0	0.0) (0.0	0.	0	0.0			0.0	
	RTOR volumes		0				0			85					0	0	20
Lane width			[12.0	12.	0 1	2.0	12	2.0	12.0			12.0	
Parking / Gr	ade / Parking		N		٨	I	N	0		N	1	V	0	N	N	0	N
Parking mar	neuvers, N _m			1													
Buses stopp							0	0)	0		0	0			0	
Min. time for	r pedestrians, G	b a						• 11 11 11									
Phasing	WB Only	02		0:	3		04			1 & F			3 Only		07		8
Timing	G = 45.0	G =		G =) = / -		G = Y =	50.	0	G = Y =	20.0	G =		G = Y =	
	Y = 6 Analysis, T = 0.	Y =		Y =			<u> </u>		Υ =	0			le Leng				
	Capacity, Co.	777	elay, a	nd LO	S Det	erm	inatio	7									
•			E	В				WB	1 ==				NB	DT	1	SB	TRT
Adjusted flor	u roto v	LT	<u> </u>	H _	RT	34		TH 66	8T 527		LT 233	<u> </u>	TH 483	RT	LT	1944	KI
Adjusted flor						59		00 078	1583	-	233 516		906			2501	
Lane group	сарасну, с					-		.43	0.33		0.45		0.51			0.78	<u> </u>
v/c ratio, X	ratio «IC					0.5		.43	1.00	-).45).15		0.57			0.78	-
Total green						0.3 36.		.34 4.1	0.0). 10 51.5		7.2			36.6	
Uniform dela	ay, ɑ ₁ factor, PF					1.0		4. i 000	0.95		,000	-	.000		-	1.000	
Delay calibr						0.5		.50	0.50	-	.000 0.50		0.50		-	0.50	
•						4.		1.3	0.6		2.8		0.6			2.5	1
Incremental						 4 .	- /		0.0	\dashv			···				
Initial queue	: uelay, u ₃					ļ			-			 -			 		+

	40.2	35.4	0.6	54.3	17.9	39.0
	D	D	A	D	В	D
		22.9		2	22.8	39.0
		С			С	D
29.2	X	= 0.64		Inters	ection LOS	С
	29.2	D	D D 22.9 C	D D A 22.9 C	D D A D 22.9 C	D D A D B 22.9 C C

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HCS2000™ DETAILED REPORT

General Information

Analyst YLM Agency or Co. RSH

'e Performed 9/9/04 AM Peak Hour mne Period

Site Information

Intersection

SR-84 EB / Davie Rd. All other areas

Area Type
Jurisdiction
Analysis Year
Project ID Existing 2002 I - 595 SIMR

Volume and	Timing Input											7		
				EB			WB	l ==		NB	Loz	1	SB	RT
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	
Number of la	nes, N ₁		0	3	1	0	0	0	0	2	1	1	2	0
Lane group				LT	R					TR	R	L	T	ļ
Volume, V (v	ph)		79	350	553					451	1275	20	1264	
% Heavy veh	icles, %HV		2	2	2					2	2	2	2	
Peak-hour fa	ctor, PHF		0.95	0.95	0.95					0.95	0.95	0.95	0.95	
Pretimed (P)	or actuated (A	<u>.)</u>	Р	P	Р					P	Р	P	P	
Start-up lost	time, I₁			2.0	2.0					2.0	2.0	2.0	2.0	
Extension of	effective greer	n, e		2.0	2.0					2.0	2.0	2.0	2.0	
Arrival type,	Δ Τ			3	3					3	3	3	3	
Unit extensio	n, UE			3.0	3.0					3.0	3.0	3.0	3.0	
Filtering/mete	ering, I			1.000	1.000)				1.000	1.000	1.000	1.000	
Initial unmet	demand, Q _b			0.0	0.0					0.0	0.0	0.0	0.0	
1/Bike/F	RTOR volumes	3	0	0	90	0			0		100			
Lane width				12.0	12.0					12.0	12.0	12.0	12.0	
Parking / Gra	ide / Parking		N	0	N	N		N	N	0	N	N	0	N
Parking man	euvers, N _m													
Buses stoppi				0	0					0	0	0	0	
Min. time for	pedestrians, G	9 ₀		.										
Phasing	EB Only	02	<u> </u>	03		04		NS Perm	;	SB Only		07	0	8
	G = 40.0	G =		G =		G =	(3 = 30.0		= 60.0	G =		G =	
Timing	Y = 5	Y =		Y =		Y =	,	Y = 5	Y	= 4	Y =		Y =	
Duration of A	nalysis, $T = 0$.	25							С	ycle Len	gth, C =	144.0		
	Capacity, Co		elav. a	nd LOS	Deter	mination	1			100			Province.	

Lane Group Capacity, Co.	1	EB			WB			NB		SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		451	487					722	990	21	1331	
Lane group capacity, c		1400	1583					699	824	851	2335	
v/c ratio, X		0.32	0.31					1.03	1.20	0.02	0.57	
Total green ratio, g/C		0.28	1.00					0.21	0.52	0.66	0.66	
Uniform delay, d₁		41.2	0.0					57.0	34.5	19.8	13.4	
gression factor, PF		1.000	0.950				1	1.000	1.000	1.000	1.000	
Delay calibration, k		0.50	0.50					0.50	0.50	0.50	0.50	
Incremental delay, d ₂		0.6	0.5					42.8	102.2	0.1	1.0	
Initial queue delay, d ₃												

Control delay	41.9	0.5					99.8	136.7	19.8	14.4	
Lane group LOS	D	Α					F	F	В	В	
Approach delay	20.4			<u>'</u>		121.1			14.5		
proach LOS	С					F			В		
Intersection delay	61.5	1.5		= 0.00 Inters		Interse	ction LC	S		E	

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HCS2000™ DETAILED REPORT Site Information General Information SR-84 EB / Davie Rd. Intersection Analyst YLM All other areas Area Type Agency or Co. RSH Jurisdiction te Performed 9/9/04 Analysis Year Existina 2002 ıme Period PM Peak Hour 1 - 595 SIMR Project ID Volume and Timing Input SB ΕB WB NB TH RT LT TH RT LT TH RT LT TH RT LT 1 2 0 0 0 2 1 0 Number of lanes, N. 3 1 Τ R L TR LTR Lane group 26 1434 650 981 Volume, V (vph) 163 317 663 2 2 2 2 2 % Heavy vehicles, %HV 2 2 0.95 0.95 0.95 0.95 0.95 0.95 Peak-hour factor, PHF 0.95 P P Р P Р Ρ Pretimed (P) or actuated (A) P 2.0 2.0 2.0 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 Extension of effective green, e 2.0 2.0 3 3 3 3 3 3 Arrival type, AT 3.0 3.0 3.0 3.0 Unit extension, UE 3.0 3.0 1.000 1.000 1.000 1.000 1.000 1.000 Filtering/metering, I 0.0 0.0 0.0 0.0 0.0 0.0 Initial unmet demand, Qh 100 90 0 d / Bike / RTOR volumes 0 0 12.0 12.0 12.0 12.0 Lane width 12.0 12.0 Ν 0 Ν Ν Ν 0 Ν 0 Ν Ν Parking / Grade / Parking Ν Parking maneuvers, N_m 0 0 0 0 0 0 Buses stopping, N_R Min. time for pedestrians, G_n 80 07 **NS Perm** SB Only 03 04 02 Phasing EB Only G = G = G = 60.0G = G = G = 30.0G = 40.0G = Timing Y = Y = Y = 4Y = Y = Y = 5Y = 5Y = Cycle Length, C = 144.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB NB EΒ **WB** RT TH RT TH RT LT LT LT TH RT LT 1509 869 742 27 Adjusted flow rate, v 506 603 714 824 851 2335 Lane group capacity, c 1389 1583 1.22 0.90 0.03 0.65 v/c ratio, X 0.36 0.38 0.66 0.52 0.66 0.21 Total green ratio, g/C 0.28 1.00 14.5 57.0 31.1 19.8 41.8 0.0 Uniform delay, d₁ 1.000 1.000 1.000 1.000 rgression factor, PF 1.000 0.950

Delay calibration, k

Incremental delay, d₂
Initial queue delay, d₃

0.50

0.7

0.50

0.7

0.50

1.4

0.50

0.1

0.50

110.2

0.50

14.8

Control delay	42.5	0.7					167.2	46.0	19.9	15.9	
Lane group LOS	D	Α					F	D	В	В	
Approach delay	19.8			<u> </u>		111.4		-	16.0		
ρroach LOS	В					F		В			
Intersection delay	53.1	53.1		= 0.00	Interse		ersection LOS		D		

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HCS2000™ DETAILED REPORT Site Information General Information SR-84WB / Davie Rd. Intersection Analyst YLM All other areas Area Type Agency or Co. RSH Jurisdiction e Performed 9/9/04 Existing 2002 Analysis Year AM Peak Hour ⊥me Period 1 - 595 SIMR Project ID Volume and Timing Input SB NB EΒ **WB** RT TH RT LT TH TH RT LT RT LT LT TH 0 1 2 0 0 0 2 0 0 0 Number of lanes, N. 1 TL Lane group 530 1284 40 Volume, V (vph) 2 % Heavy vehicles, %HV 2 0.95 0.95 0.90 Peak-hour factor, PHF Р Ρ P Pretimed (P) or actuated (A) 2.0 2.0 2.0 Start-up lost time, I, 2.0 2.0 2.0 Extension of effective green, e 3 3 3 Arrival type, AT 3.0 3.0 3.0 Unit extension, UE 1.000 1.000 1.000 1.000 Filtering/metering, I 0.0 0.0 0.0 Initial unmet demand, Qh 0 d / Bike / RTOR volumes 0 12.0 12.0 12.0 Lane width Ν Ν Ν Ν 0 Ν Ν 0 Ν Ν Parking / Grade / Parking Parking maneuvers, N_m 0 0 0 Buses stopping, N_R Min. time for pedestrians, G_p 08 07 06 03 04 **NB Only** 02 WB Only Phasing G = G = G = G = 70.0G = G = G = G = 60.0Timing Y = Y = Y = Y = 6Y = Y = Y = Y = 4Cycle Length, C = 140.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB NB WB ΕB RT TH TH RT LT LT RT LT LT TH RT ΤH 1352 44 558 Adjusted flow rate, v 1717 1471 798 Lane group capacity, c 0.32 0.06 0.92 v/c ratio. X 0.50 0.43 0.43 Total green ratio, g/C 37.7 23,4 20.9 Uniform delay, d₁ 1.000 1.000 1.000 ogression factor, PF 0.50 0.50 0.50 Delay calibration, k 0.5 0.1 10.7 Incremental delay, d₂ Initial queue delay, d₃

	48.4	23.5	21.4			
	D	С	С			
		47.7	21.4			
		D	С			
40.2		= 0.60	Intersection LOS		D	
	40.2	D	D C 47.7 D	D C C 21.4 D D C	D C C 21.4 D C C	D C C C 21.4 D C C

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HCS2000™ DETAILED REPORT General Information Site Information SR-84WB / Davie Rd. Intersection YLM Analyst Area Type All other areas Agency or Co. RSH Jurisdiction e Performed 9/9/04 Existing 2002 Analysis Year ume Period PM Peak Hour Project ID 1 - 595 SIMR Volume and Timing Input SB WB NB ΕB LT TH RT LT TH RT LT TH RT LT TH RT 0 0 0 2 1 0 2 Number of lanes, N 0 0 0 1 TLane group 1 813 Volume, V (vph) 1460 185 2 2 % Heavy vehicles, %HV 0.95 Peak-hour factor, PHF 0.95 0.90 Pretimed (P) or actuated (A) Р Р Р 2.0 Start-up lost time, I, 2.0 2.0 2.0 2.0 2.0 Extension of effective green, e 3 3 3 Arrival type, AT 3.0 3.0 Unit extension, UE 3.0 1.000 1.000 Filtering/metering, I 1.000 1.000 0.0 0.0 0.0 Initial unmet demand, Q_h 0 1 / Bike / RTOR volumes 0 12.0 Lane width 12.0 12.0 Ν Ν Ν Ν O Ν Ν 0 Ν Ν Parking / Grade / Parking Parking maneuvers, N_m 0 Buses stopping, N_B 0 Min. time for pedestrians, G_n 80 06 07 02 03 04 NB Only WB Only Phasing G = G = G = G = 70.0G = 60.0G = G = G = Timing Y = Y = Y = Y = 6Y = Y = 4Y = Y = Cycle Length, C = 140.0 Duration of Analysis, T = 0.25Lane Group Capacity, Control Delay, and LOS Determination SB NB EB WB. LT TH RT RT RT LT TH RT LT TH LT TH 1537 206 856 Adjusted flow rate, v Lane group capacity, c 1717 1471 798 0.50 v/c ratio, X 1.04 0.26 0.50 0.43 Total green ratio, g/C 0.43 25.7 23.3 40.0 Uniform delay, d₁ 1.000 1.000 gression factor, PF 1.000 0.50 0.50 Delay calibration, k 0.50 1.0 36.1 0.8 Incremental delay, do Initial queue delay, da

Control delay		76.1	26.5	24.3			
Lane group LOS		E	С	С			
Approach delay			70.3	24.3			
proach LOS			E	С			
Intersection delay	55.1	X _c	= 0.75	Intersection LOS		E	

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