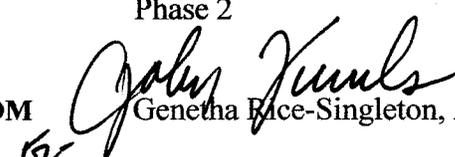


DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

**FILE** P. I. No. 0000765, Cook-Tift Counties **OFFICE** Preconstruction  
NHS-0000-00(765)  
I-75 from CR246/Cook to CR 204 in Tift County **DATE** September 26, 2006  
Phase 2

**FROM**  Genetha Rice-Singleton, Assistant Director of Preconstruction

**TO** *for* SEE DISTRIBUTION

**SUBJECT** APPROVED REVISED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

Attachment

**DISTRIBUTION:**

Brian Summers  
Harvey Keepler  
Ken Thompson  
Michael Henry  
Keith Golden  
Joe Palladi  
Paul Liles  
Joe Sheffield  
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** NHS-0000-00(765) Tift County  
P.I. No. 0000765  
I-75 from CR 246/Cook to CR 204 in Tift County -- Phase 2

**OFFICE:** Consultant Design  
**DATE:** August 2, 2006

**FROM:** *M. Babs Abubakari*  
Mr. Mohammed (Babs) Abubakari, PE, State Consultant Design and Program Delivery Engineer

**TO:** Margaret Pirkle, P.E., Assistant Director of Preconstruction

**SUBJECT: Revised Project Concept Report**

Attached is the original copy of the Revised Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

The proposed project would reconstruct the existing interchange at Interstate 75 (I-75) and Omega-Eldorado Road/CR 418 (Exit 55) in Tift County. This project would begin at mile log 54.14 and end at mile log 55.54 on Interstate 75 and is approximately 1.4 miles in length. The proposed revisions to the original concept include changes to the typical section of Omega-Eldorado Road/CR 418, changes to the typical section of the bridge, changes to the Right of Way limits and changes to Access Control. The suggested changes are outlined in detail in the attached revised concept report. Following is a brief description of these changes.

On Omega-Eldorado Road/CR 418 the typical section changed from four 12' lanes, 20' raised median and 4' paved outside shoulders to two 12' lanes, one 14' center lane and 10' shoulders with 6.5' being paved. The typical section of the bridge over I-75 changed from four 12' lanes and a 4' flush median to two 12' lanes and a 14' center lane. The Right of Way limits changed because, the bridge has been shifted to the north of the existing bridge, thus shifting the alignment of Omega-Eldorado Road/CR418 to the north. The distance between the ramp alignments have been increased from 822' of separation to 1000' of separation. This shift in the ramp alignments have been shifted out to improve the sight distance. Access control limits have changed because the ramp centerlines have been shifted. The original concept proposed access control limits of 375' on the east and west sides of the interchange. The revised concept proposes an access control limit of 400' on the west side of the interchange and 300' on the east side of the interchange. In addition right turn lanes were added on the Exit Ramps and on Omega-Eldorado Road/CR 418 at the Entrance Ramps to I-75.

The revised concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP)

Date: 8/9/06

  
\_\_\_\_\_  
State Transportation Planning Administrator

Cc: Brian Summers, P.E. Project Review Engineer  
Harvey Keepler, State Environmental/Location Engineer  
Keith Golden, State Traffic Operations Engineer  
Joe Palladi, P.E. State Transportation Planning Administrator  
Jamie Simpson, State Transportation Financial Management Administrator  
Joe Sheffield, District 4 Engineer  
Scott Chambers, District 4, Area 8 Engineer  
Paul Liles, P.E., State Bridge Design Engineer

# REVISED PROJECT CONCEPT REPORT

**Need and Purpose:** (As shown in the Approved Concept Report, Dated January 5, 2000)

Project NH-75-1(206) is one of eight programmed projects to widen Interstate 75 to six lanes. The project's south terminus is widening project NH-75-1(205), which will also be widened to six lanes. The north terminus is the six lane section of I-75 in Tifton. This project is 9.8 miles in length.

The Department's objective is to increase the number of through travel lanes on I-75 from four lanes to a minimum of six lanes throughout the state. Interstate 75 from State Route 133 in Lowndes County north approximately 87 miles to the Crisp/Dooly County Line is the only section of I-75 in Georgia that has not been widened to six lanes. In the Tifton area, 17 miles of the 87 miles have already been widened to six lanes.

The 1997 AADT for this section of I-75 is 37,200 vehicles with a 24-hour truck percentage of 24%. The AADT is projected to increase to 65,200 vehicles by the year 2017. During 1997, there were 31 accidents per 100 Million Vehicle Miles Traveled (MVMT) along this stretch of interstate compared to a statewide average of 49 accidents per 100 MVMT.

The level of service along this section of I-75 is presently at a level "C". Without the addition of a third lane in each direction, the level of service will decrease to a level "F" before 2017. However, a third lane in each direction will improve the level of service on I-75 to a level "B" and the projected level of service for 2017 to a level "C".

For safety and construction staging purposes, crossroads and bridges over I-75 will be widened to four lanes with a median separation. The roadway and shoulder widening will improve site distance for cars on the ramps exiting I-75, and the existing crossroad vertical curve will be reconstructed to meet design speed. The four lane widening will aid in the maintenance of traffic during construction.

This project will provide continuity along Interstate 75 by adding a third lane in each direction. The proposed widening will also allow increased vehicle spacing thus providing more time to maneuver and react to potentially dangerous situations.

## **Project Location:**

This project is located in southern Tift County. Beginning at approximate mile log 54.14, it extends approximately 1.4 miles along Interstate 75 through the CR 418/Omega-Eldorado Road interchange to mile log 55.54.

## **Description of the Approved Concept:**

The approved concept consisted of 2 Phases:

Phase 1: Consisted of widening the existing four lane mainline of I-75 to six lanes.

Phase 2: Consists of the reconstruction of the interchange at CR 418-Omega-Eldorado Road (Exit 14) with a diamond interchange. This interchange will be designed to accommodate a future 8 lane typical section for I-75. This crossroad will be widened to four lanes at the interchange.

**PDP Classification:** Major  X (Phase 2)  Minor  X (Phase 1)

**Federal Oversight:** Full Oversight (X), Exempt ( ), State Funded ( ), or Other ( )

**Functional Classification:** Rural Principal Arterial – Phase I

**U. S. Route Number(s):** I-75                      **State Route Number(s):** SR 401

**Traffic (AADT) as shown in the approved concept:**  
Current Year: 1996 (41,500) Design Year: 2016 (65,200)

**Proposed features to be revised:**

- **Typical Section:**

- Omega-Eldorado Road/CR 418

- Roadway from four 12' lanes with a 20' raised median and 4' paved outside shoulders to two 12' lanes with a 14' center lane and 10' outside shoulders, 6.5' paved.

- Bridge over I-75 from four 12' lanes with a 4' flush median to two 12' lanes with a 14' center lane.

- **Project Termini:**

- It is proposed that the project termini for Phase 2 along I-75 be revised from beginning at mile log 17.2 in Cook County and ending at mile log 6.0 in Tift County to beginning at mile log 54.14 on I-75 and ending at mile log 55.54 all in Tift County. This project originally designated as Project NH-75-1(206) Phase 2 is now designated as Project NHS-0000-00(765).

- **Right-of-Way Limits:**

- From a symmetrical widening along Omega-Eldorado Road/CR 418 providing 822-feet of separation between ramp centerlines to widening on the North side of Omega-Eldorado Road/CR 418 and providing 1000-feet of separation between ramp centerlines.

- **Access Control:**

- From 375-feet along Omega-Eldorado Road/CR 418, on both the east and the west sides of the interchange to 300-feet on the east and 400 feet on the west side of the interchange.

**Describe the Revised Features to be approved:**

The proposed typical section on Omega-Eldorado Road/CR 418 has been revised from four 12' lanes with a 20' raised median and 4' paved shoulders to two 12' lanes with a 14' center lane and 10' (6.5' paved) shoulders. The typical section was revised because the traffic analysis did not warrant more lanes. The shoulder width was revised to accommodate future bike lanes along Omega-Eldorado Road/CR 418. The proposed bridge typical section over I-75 was revised to match the typical section of Omega-Eldorado Road/CR 418.

The project termini are proposed to be revised because this project is Phase 2 of the Approved Concept for Project NH-75-1(206). This Phase 2 project has been given the new designation of NHS-0000-00(765) and is the reconstruction of the Omega-Eldorado Road/CR 418 interchange with I-75, beginning at mile log 54.14 on I-75 and ending at mile log 55.54. Phase 1 of the Approved Concept for Project NH-75-1(206) was for the widening of I-75 which began at mile log 17.2 in Cook County and ended at mile log 6.0 in Tift County.

The right-of-way limits are proposed to be revised from the approved concept. These changes are because the alignment for Omega-Eldorado Road/CR 418 and the bridge have been shifted to the north and the distance between the ramps have been increased from 822' of separation to 1000' of separation. These changes have affected the analyses of natural, social, and cultural resources associated with this project, but there are no additional impacts to historical, archaeological, or UST sites associated with this change. There are no additional displacements and no additional impacts to churches, cemeteries, schools or hospitals associated with this change in the right of way limits.

The access control limits along Omega-Eldorado Road/CR 418 have been revised. Once the ramp centerlines were relocated to 1000' of separation additional right of way impacts along Omega – Eldorado Road/CR 418 associated with this change were incurred. Meeting the minimum Access Control limits of 300' along Omega-Eldorado Road/CR 418 on the east side of the interchange requires an approximately 16 acre parcel owned by Robert Adcock to become land locked. If access was provided to this parcel it is assumed the limits of access control on the east side of the interchange would decrease to at most 200', requiring a design variance. On the west side of the interchange it is recommend to maintain 400' of limited access. On the existing concept limited access is shown for approximately 375', measured from the centerline of the ramp with the crossroad centerline, on the east and west sides of the interchange. GDOT current policy dictates the minimum distance for access control is 300 feet. The preferred distance for access control is 1000 feet in rural areas; this distance is measured from the intersection of the ramp centerline with the crossroad centerline.

**Additional features for Phase 2 not included in the approved concept:**

**Revised Project Description for Phase 2:** The proposed project would reconstruct the existing interchange at Interstate 75 (I-75) and Omega-Eldorado Road/CR 418 (Exit 55) in Tift County. This project is a part of the Georgia Department of Transportation's (DOT) overall objective to increase the number of travel lanes on I-75 from 4 lanes to a minimum of 6 lanes throughout the state. The reconstruction would include replacing the existing 216-foot, two-lane bridge at this interchange with a new 332-foot bridge that will correct sight distance deficiencies and allow for the future widening of I-75 to a minimum of 8 lanes. In addition to replacing the bridge, the reconstruction will relocate the exit and entrance ramps at this interchange; and improve Omega-Eldorado Road/CR 418 from U.S. 41 west approximately 2,600 feet. The proposed rural typical section for Omega-Eldorado Road/CR 418 is two 12-foot lanes, a 14-foot center turn lane and 10-foot wide shoulders, with 6.5 feet paved. Right turn lanes will be added along Omega-Eldorado Road/CR 418 at the entrance ramps to I-75, these turn lanes will be delineated with islands to define the path of allowed movement and prohibit undesirable movements. The exit and entrance ramps would be relocated to achieve 1,000 feet of separation between ramp termini to allow for improved sight distance over the bridge and at the ramp intersections. The proposed typical section for these ramps is a 16-foot travel lane with 12-foot outside shoulders and 6-foot inside shoulders. In addition, designated 12-foot wide right-turn lanes would be provided along the I-75 exit ramps at Omega-Eldorado Road/CR 418. These right turn lanes will be delineated with islands to define the path of allowed movement and prohibit undesirable movements.

**Add Functional Classification for Phase 2: Rural Major Collector**

**Updated traffic data (AADT) for Phase 2:**

Current: 2012 (14800)

Design: 2032 (2600)

**Programmed/Schedule for Phase 2:**

**P.E:** October 2006

**R/W:** February 2007

**Construction:** February 2008

**Revised Cost Estimates:**

ESTIMATED COST - PHASE 2			
CONSTRUCTION:	\$16,796,307.01	RIGHT-OF-WAY:	\$4,064,500
E & C (10%):	\$1,679,630.70	ACQUIRED BY :	Consultant
INFLATION :	\$1,893,783.62	UTILITIES :	To be determined
		ADJUSTED BY :	GDOT
TOTAL PROJECT COST:		\$24,434,221.33	

Is the project located in a Non-attainment area? .....Yes .....No.

**Recommendation:** It is recommended that these proposed changes to the concept be approved for implementation.

Attachments:

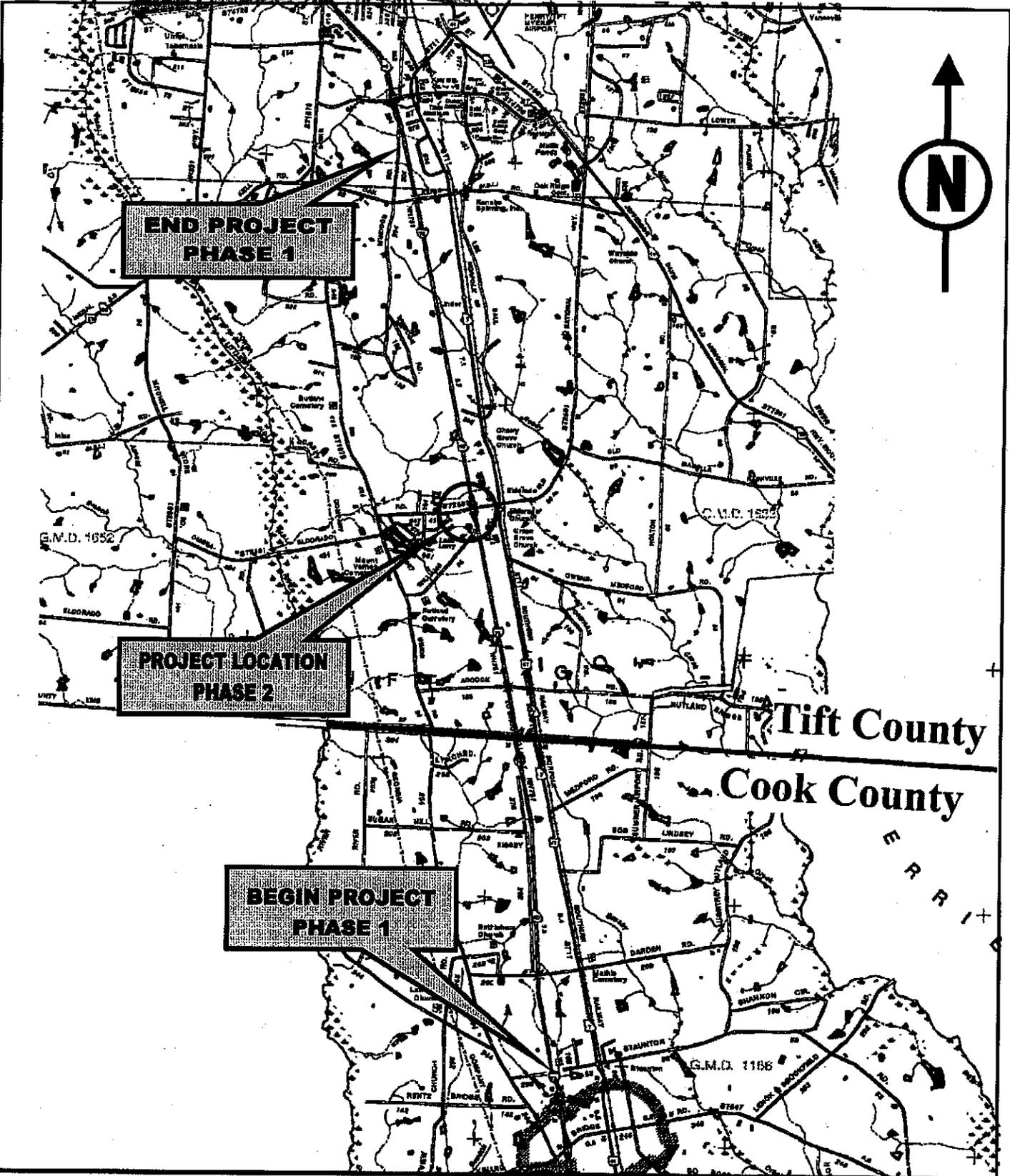
1. Sketch Map
2. Cost Estimate
3. Traffic
4. Typical Sections

- Full Oversight projects

Concur: Bobby A. H.  
 Director of Preconstruction

Approve: Thomas J. Shannon  
 For: Division Administrator, FHWA

Approve: O. D. H.  
 Chief Engineer



**END PROJECT  
PHASE 1**

**PROJECT LOCATION  
PHASE 2**

**BEGIN PROJECT  
PHASE 1**

Tift County

Cook County

**I-75 From CR 246/Cook to CR 204 in  
Tift County -Phase 2  
NHS-0000-00(765)  
P.I. 000765**

**PROJECT LOCATION MAP**

NOT TO SCALE

**Estimate Report for file "PI 0000765"**

<b>Section Roadway</b>					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
201-1500	1	LS	500000.00	CLEARING & GRUBBING -	500000.00
208-0100	200000	CY	30.00	IN PLACE EMBANKMENT	6000000.00
436-1000	1300	LF	8.39	ASPHALTIC CONCRETE CURB -	10907.00
621-4070	400	LF	173.44	CONCRETE SIDE BARRIER, TYPE 7C	69376.00
634-1200	15	EA	91.75	RIGHT OF WAY MARKERS	1376.25
636-1014	250	SF	12.19	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 1	3047.50
636-1031	500	SF	20.85	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	10425.00
636-2070	100	LF	7.09	GALV STEEL POSTS, TP 7	709.00
638-1001	4	LS	75000.00	STR SUPPORT FOR OVERHEAD SIGN, TP 1, STA -	300000.00
641-1100	500	LF	31.46	GUARDRAIL, TP T	15730.00
641-1200	3500	LF	14.33	GUARDRAIL, TP W	50155.00
641-5001	4	EA	499.61	GUARDRAIL ANCHORAGE, TP 1	1998.44
641-5012	10	EA	1591.33	GUARDRAIL ANCHORAGE, TP 12	15913.30
643-1152	7500	LF	27.77	CH LK FENCE, ZC COAT, 6 FT, 9 GA	208275.00
652-0110	2	EA	39.83	PAVEMENT MARKING, ARROW, TP 1	79.66
652-0120	2	EA	43.80	PAVEMENT MARKING, ARROW, TP 2	87.60
653-1501	10000	LF	0.28	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	2800.00
653-1502	4000	LF	0.28	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	1120.00
653-1810	200	LF	0.95	THERMOPLASTIC SOLID TRAF STRIPE, 10 IN, WHITE	190.00
653-3501	2000	GLF	0.17	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	340.00
657-2085	3	LM	22307.89	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB	66923.67
657-4085	1	GLM	10646.46	PREFORMED PLASTIC SKIP PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB	10646.46
657-5000	1500	SY	20.59	PREFORMED PLASTIC PVMT MARKINGS	30885.00
657-7085	3	LM	21380.64	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-YELLOW), TP PB	64141.92
<b>Section Sub Total:</b>					<b>\$7,365,126.80</b>

<b>Section Pavement</b>					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
310-1101	9500	TN	15.70	GR AGGR BASE CRS, INCL MATL	149150.00
402-1812	2500	TN	80.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	200000.00
402-3112	2000	TN	80.00	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	160000.00
402-3113	1500	TN	80.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	120000.00
402-3121	4000	TN	85.00	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	340000.00
413-1000	500	GL	1.17	BITUM TACK COAT	585.00
430-0220	70000	SY	85.00	PLAIN PC CONC PVMT, CL 1 CONC, 12 INCH THK	5950000.00
432-5010	100	SY	1.84	MILL ASPH CONC PVMT, VARIABLE DEPTH	184.00
433-1000	450	SY	150.00	REINF CONC APPROACH SLAB	67500.00
<b>Section Sub Total:</b>					<b>\$6,987,419.00</b>

<b>Section Drainage</b>					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0301	4	EA	1690.43	CONC SPILLWAY, TP 1	6761.72
550-1241	100	LF	44.13	STORM DRAIN PIPE, 24 IN, H 10-15	4413.00
550-1300	100	LF	51.83	STORM DRAIN PIPE, 30 IN, H 1-10	5183.00
550-1360	100	LF	63.04	STORM DRAIN PIPE, 36 IN, H 1-10	6304.00
550-2180	200	LF	25.43	SIDE DRAIN PIPE, 18 IN, H 1-10	5086.00
550-4118	8	EA	289.90	FLARED END SECTION 18 IN, SIDE DRAIN	2319.20
550-4418	4	EA	394.69	FLARED END SECTION, 18 IN, SLOPE DRAIN	1578.76
576-1018	200	LF	26.69	SLOPE DRAIN PIPE, 18 IN	5338.00
<b>Section Sub Total:</b>					<b>\$36,983.68</b>

<b>Section Traffic Control</b>					
Item Number	Quantity	Units	Unit Price	Item Description	Cost

Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	250000.00	TRAFFIC CONTROL -	250000.00
150-5000	4	EA	438.68	TRAFFIC CONTROL, TEMPORARY SAND LOADED ATTENUATOR MODULE	1754.72
153-1300	1	EA	75000.00	FIELD ENGINEERS OFFICE TP 3	75000.00
652-5301	3000	LF	0.17	SOLID TRAF STRIPE, 6 IN, WHITE	510.00
652-5451	1500	LF	0.14	SOLID TRAFFIC STRIPE, 5 IN, WHITE	210.00
<b>Section Sub Total:</b>					<b>\$327,474.72</b>

Section Temporary Erosion Control					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	13	AC	483.41	TEMPORARY GRASSING	6284.33
163-0300	6	EA	1782.57	CONSTRUCTION EXIT	10695.42
163-0521	65	EA	169.52	CONSTRUCT AND REMOVE TEMPORARY DITCH CHECKS	11018.80
163-0531	1	EA	7737.95	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	7737.95
163-0550	4	EA	265.30	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	1061.20
165-0010	1000	LF	1.07	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	1070.00
165-0030	12500	LF	1.24	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	15500.00
165-0040	65	EA	73.96	MAINTENANCE OF EROSION CONTROL CHECKDAMS/DITCH CHECKS	4807.40
165-0060	1	EA	1060.85	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	1060.85
165-0101	6	EA	460.31	MAINTENANCE OF CONSTRUCTION EXIT	2761.86
165-0105	4	EA	97.23	MAINTENANCE OF INLET SEDIMENT TRAP	388.92
167-1000	2	EA	1690.00	WATER QUALITY MONITORING AND SAMPLING	3380.00
167-1500	18	MO	891.64	WATER QUALITY INSPECTIONS	16049.52
171-0010	2000	LF	1.89	TEMPORARY SILT FENCE, TYPE A	3780.00
171-0030	25000	LF	3.26	TEMPORARY SILT FENCE, TYPE C	81500.00
716-2000	1000	SY	1.09	EROSION CONTROL MATS, SLOPES	1090.00
<b>Section Sub Total:</b>					<b>\$168,186.25</b>

Section Permanent Erosion Control					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0240	124	TN	195.12	MULCH	24194.88
603-2182	50	SY	43.10	STN DUMPED RIP RAP, TP 3, 24 IN	2155.00
700-6910	25	AC	804.34	PERMANENT GRASSING	20108.50
700-7000	50	TN	59.10	AGRICULTURAL LIME	2955.00
700-7010	62	GL	18.99	LIQUID LIME	1177.38
700-8000	25	TN	272.90	FERTILIZER MIXED GRADE	6822.50
700-8100	1250	LB	1.62	FERTILIZER NITROGEN CONTENT	2025.00
<b>Section Sub Total:</b>					<b>\$59,438.26</b>

Section BRIDGE					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0004	750	SY	45.00	CONC SLOPE PAV, 4 IN	33750.00
500-0100	2200	SY	6.00	GROOVED CONCRETE	13200.00
500-1006	1	LS	38000.00	SUPERSTR CONCRETE, CL AA, BR NO -	38000.00
500-2100	670	LF	43.00	CONCRETE BARRIER	28810.00
500-3101	350	CY	620.00	CLASS A CONCRETE	217000.00
507-9002	750	LF	115.00	PSC BEAMS, AASHTO TYPE II, BR NO -	86250.00
507-9031	2000	LF	175.00	PSC BEAMS, AASHTO, BULB TEE, 63 IN, BR NO -	350000.00
511-1000	9200	LB	1.05	BAR REINF STEEL	9660.00
511-3000	1	LS	185000.00	SUPERSTR REINF STEEL, BR NO -	185000.00
520-2218	4200	LF	55.00	PILING, PSC, 18 IN SQ	231000.00
520-3218	2	EA	8500.00	TEST PILE, PSC, 18 IN SQ	17000.00
520-4147	1	EA	8.30	LOAD TEST, STEEL H, HP 14 X 73	8.30
540-1101	1	LS	300000.00	REMOVAL OF EXISTING BR, STA NO -	300000.00
<b>Section Sub Total:</b>					<b>\$1,851,678.30</b>

**Total Estimated Cost: \$16,796,307.01**

**Subtotal Construction Cost \$16,796,307.01**

E&C Rate 10.0 % \$1,679,630.70

Inflation Rate 5.0 % @ 2.0 Years \$1,893,783.62

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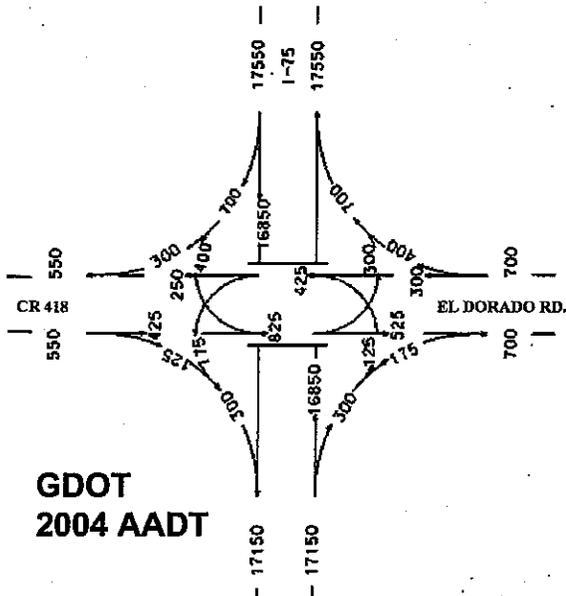
**Total Construction Cost \$20,369,721.33**

Right Of Way \$4,064,500.00

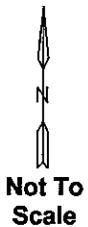
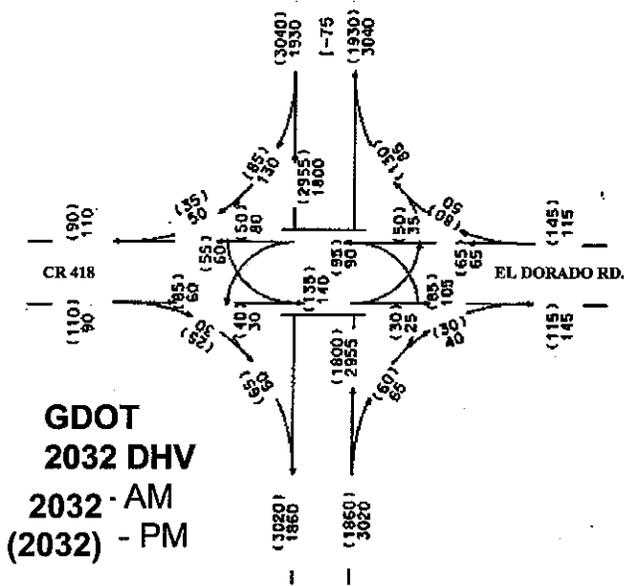
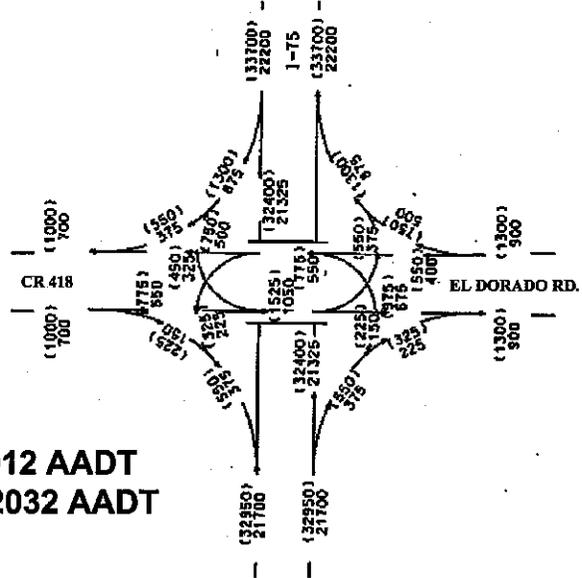
ReImb. Utilities \$0.00

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**Grand Total Project Cost \$24,434,221.33**



**GDOT  
XX - 2012 AADT  
(XX) - 2032 AADT**



Truck Percentage = 24%

<b>I-75 Traffic Analysis NHS-0000-00(765) P.I. 0000765</b>	
<b>FIGURE 3</b>	<b>Traffic Volumes</b>
<b>May 2006</b>	

Omega El Dorado Road at I-75  
MLS

I-75 at NB Ramps  
Year 2032 AM Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			1			4				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	105	0	0	65	50	25	0	40	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	114	0	0	71	54	27	0	43	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	125			114			288	315	114	332	288	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	125			114			288	315	114	332	288	98
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			96	100	95	100	100	100
cM capacity (veh/h)	1462			1475			651	585	938	581	606	958

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	152	125	71
Volume Left	38	0	27
Volume Right	0	54	43
cSH	1462	1700	802
Volume to Capacity	0.03	0.07	0.09
Queue Length 95th (ft)	2	0	7
Control Delay (s)	2.0	0.0	9.9
Lane LOS	A		A
Approach Delay (s)	2.0	0.0	9.9
Approach LOS			A

Intersection Summary		
Average Delay		2.9
Intersection Capacity Utilization	24.6%	ICU Level of Service
Analysis Period (min)		15

Omega El Dorado Road at I-75  
MLS

I-75 at SB Ramps  
Year 2032 AM Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵			↶						↷		
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	0	60	30	30	60	0	0	0	0	80	0	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	33	33	65	0	0	0	0	87	0	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	65			98			266	212	82	212	228	65
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			98			266	212	82	212	228	65
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	88	100	95
cM capacity (veh/h)	1537			1495			638	670	978	733	657	999

Direction Lane #	EB 1	WB 1	SB 1
Volume Total	98	98	141
Volume Left	0	33	87
Volume Right	33	0	54
cSH	1700	1495	816
Volume to Capacity	0.06	0.02	0.17
Queue Length 95th (ft)	0	2	16
Control Delay (s)	0.0	2.6	10.3
Lane LOS		A	B
Approach Delay (s)	0.0	2.6	10.3
Approach LOS			B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Omega El Dorado Road at I-75  
MLS

I-75 at NB Ramps  
Year 2032 PM Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			1			4				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	50	85	0	0	65	80	30	0	30	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	92	0	0	71	87	33	0	33	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	158			92			315	359	92	348	315	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			92			315	359	92	348	315	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			95	100	97	100	100	100
cM capacity (veh/h)	1422			1502			619	546	965	569	578	938

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	147	158	65
Volume Left	54	0	33
Volume Right	0	87	33
cSH	1422	1700	754
Volume to Capacity	0.04	0.09	0.09
Queue Length 95th (ft)	3	0	7
Control Delay (s)	3.0	0.0	10.2
Lane LOS	A		B
Approach Delay (s)	3.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization	29.1%		ICU Level of Service A
Analysis Period (min)		15	

Omega El Dorado Road at I-75  
MLS

I-75 at SB Ramps  
Year 2032 PM Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑						↕	
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	0	85	25	40	55	0	0	0	0	50	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	92	27	43	60	0	0	0	0	54	0	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type						None			None			
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	60			120			291	253	106	253	266	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	60			120			291	253	106	253	266	60
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	100	100	92	100	96
cM capacity (veh/h)	1544			1468			622	631	948	685	620	1006

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	120	103	92
Volume Left	0	43	54
Volume Right	27	0	38
cSH	1700	1468	788
Volume to Capacity	0.07	0.03	0.12
Queue Length 95th (ft)	0	2	10
Control Delay (s)	0.0	3.3	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	3.3	10.2
Approach LOS			B

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization	23.4%		ICU Level of Service A
Analysis Period (min)		15	

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - SB On-Ramp - 2032 AM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: SB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	66.9	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1800	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	460	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	130	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1800	60	130	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	474	16	34	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.00 %	3.00 %	3.00 %	

Length	0.00	mi	0.18	mi	0.15	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2122		71		153	pcf

### Estimation of V12 Merge Areas

$L = 0.00$  (Equation 25-2 or 25-3)  
 EQ  
 $P = 1.000$  Using Equation 0  
 FM  
 $v_{12} = v_F (P_{FM}) = 2122$  pc/h

### Capacity Checks

	Actual	Maximum	LOS F?
v <sub>FO</sub>	2193	4800	No
v <sub>R12</sub>	2193	4600	No

### Level of Service Determination (if not F)

Density,  $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 19.7$  pc/mi  
 Level of service for ramp-freeway junction areas of influence B

### Speed Estimation

Intermediate speed variable,	M = 0.301	
Space mean speed in ramp influence area,	S = 61.6	mph
Space mean speed in outer lanes,	S = N/A	mph
Space mean speed for all vehicles,	S = 61.6	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - SB Off-Ramp - 2032 PM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: SB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3040	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	85	vph
Length of first accel/decel lane	210	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	65	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3040	85	65	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	800	22	17	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70 %	3.00 %	3.00 %	

Length	0.45	mi	0.15	mi	0.18	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3584		100		77	pc/h

Estimation of V12 Diverge Areas

$L = 0.00$  (Equation 25-8 or 25-9)  
 $P = 1.000$  Using Equation 0  
 $v_{12} = v_R + (v_F - v_R) P = 3584$  pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3584	4800	No
$v_{12}$	3584	4400	No
$v_{FO} = v_F - v_R$	3484	4800	No
$v_R$	100	2200	No

Level of Service Determination (if not F)

Density,  $D = 4.252 + 0.0086 v_{12} - 0.009 L_D = 33.2$  pc/mi,  
 Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	$D = 0.112$	
Space mean speed in ramp influence area,	$S_R = 67$	mph
Space mean speed in outer lanes,	$S_0 = N/A$	mph
Space mean speed for all vehicles,	$S = 66.9$	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - SB Off-Ramp - 2032 AM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: SB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1930	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	210	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	60	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1930	130	60	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	508	34	16	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70 %	3.00 %	3.00 %	

Length	0.45	mi	0.15	mi	0.18	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2275		153		71	pcf

Estimation of V12 Diverge Areas

$$L = 0.00 \quad (\text{Equation 25-8 or 25-9})$$

$$EQ$$

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

$$FD$$

$$v_{12} = v_R + (v_F - v_R) P = 2275 \quad \text{pc/h}$$

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2275	4800	No
$v_{12}$	2275	4400	No
$v_{FO} = v_F - v_R$	2122	4800	No
$v_R$	153	2200	No

Level of Service Determination (if not F)

$$\text{Density, } D = 4.252 + 0.0086 v_{12} - 0.009 L = 21.9 \quad \text{pc/mi,}$$

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

Speed Estimation

Intermediate speed variable,	$D = 0.117$	
Space mean speed in ramp influence area,	$S = 67$	mph
Space mean speed in outer lanes,	$S = N/A$	mph
Space mean speed for all vehicles,	$S = 66.7$	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - NB On-Ramp - 2032 PM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: NB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	66.7	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1800	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	60	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1725	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1800	130	60	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	474	34	16	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	%	3.00	%	3.00

Length		mi	0.19	mi	0.14	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2122		153		71	pcf

Estimation of V12 Merge Areas

L = 0.00 (Equation 25-2 or 25-3)  
EQ  
P = 1.000 Using Equation 0  
FM  
 $v_{12} = v_{F} (P_{FM}) = 2122 \text{ pc/h}$

Capacity Checks

	Actual	Maximum	LOS F?
v <sub>FO</sub>	2275	4800	No
v <sub>R12</sub>	2275	4600	No

Level of Service Determination (if not F)

Density,  $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 20.5 \text{ pc/mi}$   
Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M = 0.308	
Space mean speed in ramp influence area,	S <sub>R</sub> = 61.4	mph
Space mean speed in outer lanes,	S <sub>0</sub> = N/A	mph
Space mean speed for all vehicles,	S = 61.4	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - NB On-Ramp - 2032 AM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: NB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	66.9	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2955	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	85	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	65	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1725	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2955	85	65	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	778	22	17	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	%	3.00 %	3.00 %	%

Length		mi	0.19	mi	0.14	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3484		100		77	pcf

Estimation of V12 Merge Areas

$L = 0.00$  (Equation 25-2 or 25-3)  
 EQ  
 $P = 1.000$  Using Equation 0  
 FM  
 $v_{12} = v_{F \text{ FM}} = 3484$  pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3584	4800	No
v R12	3584	4600	No

Level of Service Determination (if not F)

Density,  $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 30.7$  pc/mi  
 Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M = 0.410	
Space mean speed in ramp influence area,	S = 58.5	mph
Space mean speed in outer lanes,	S = N/A	mph
Space mean speed for all vehicles,	S = 58.5	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - NB Off-Ramp - 2032 PM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: NB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1860	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	130	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1725	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1860	60	130	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	489	16	34	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70 %	3.00 %	3.00 %	

Length	0.45	mi	0.14	mi	0.19	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2193		71		153	pcf

Estimation of V12 Diverge Areas

L = 0.00 (Equation 25-8 or 25-9)  
EQ  
P = 1.000 Using Equation 0  
FD  
 $v_{12} = v_R + (v_F - v_R) P_{FD} = 2193 \text{ pc/h}$

Capacity Checks

	Actual	Maximum	LOS F?
$v_{12} = v_F$	2193	4800	No
$v_{12}$	2193	4400	No
$v_{FO} = v_F - v_R$	2122	4800	No
$v_R$	71	2200	No

Level of Service Determination (if not F)

Density,  $D = 4.252 + 0.0086 v_{12} - 0.009 L_D = 20.0 \text{ pc/mi/}$   
Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D = 0.109	
Space mean speed in ramp influence area,	S = 67	mph
Space mean speed in outer lanes,	S = N/A	mph
Space mean speed for all vehicles,	S = 66.9	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - NB Off-Ramp - 2032 AM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: NB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3020	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	65	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	85	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1725	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3020	65	85	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	795	17	22	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70	% 3.00	% 3.00	%

Length	0.45	mi	0.14	mi	0.19	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3560		77		100	pcf

Estimation of V12 Diverge Areas

L = 0.00 (Equation 25-8 or 25-9)  
EQ  
P = 1.000 Using Equation 0  
FD  
 $v_{12} = v_R + (v_F - v_R) P = 3560$  pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3560	4800	No
$v_{12}$	3560	4400	No
$v_{FO} = v_F - v_R$	3483	4800	No
$v_R$	77	2200	No

Level of Service Determination (if not F)

Density,  $D = 4.252 + 0.0086 v_{12} - 0.009 L_D = 31.7$  pc/mi/  
Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D = 0.110	
Space mean speed in ramp influence area,	S <sub>R</sub> = 67	mph
Space mean speed in outer lanes,	S <sub>0</sub> = N/A	mph
Space mean speed for all vehicles,	S = 66.9	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - SB On-Ramp - 2032 PM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: SB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	70.0	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2955	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	65	vph
Length of first accel/decel lane	1350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	85	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2955	65	85	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	778	17	22	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	%	3.00	%	3.00 %

Length		mi	0.38	mi	0.30	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3484		77		100	pcf

Estimation of V12 Merge Areas

$L = 1411.81$  (Equation 25-2 or 25-3)  
 EQ  
 $P = 0.615$  Using Equation 1  
 FM  
 $v_{12} = v_F (P_{FM}) = 2144$  pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v <sub>FO</sub>	3561	7200	No
v <sub>R12</sub>	2221	4600	No

Level of Service Determination (if not F)

Density,  $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 14.3$  pc/mi  
 Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M = 0.195	
Space mean speed in ramp influence area,	S <sub>R</sub> = 64.5	mph
Space mean speed in outer lanes,	S <sub>0</sub> = 67.0	mph
Space mean speed for all vehicles,	S = 65.4	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - SB On-Ramp - 2032 AM

Mike - DWA

Phone:  
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Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: SB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	70.4	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1800	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	1350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	130	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1800	60	130	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	474	16	34	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	%	3.00	%	3.00 %

Length		mi	0.38	mi	0.30	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2122		71		153	pcf

### Estimation of V12 Merge Areas

$$L = 1382.53 \text{ (Equation 25-2 or 25-3)}$$

$$EQ$$

$$P = 0.615 \text{ Using Equation 1}$$

$$FM$$

$$v_{12} = v_F \left( \frac{P}{FM} \right) = 1306 \text{ pc/h}$$

### Capacity Checks

	Actual	Maximum	LOS F?
v <sub>FO</sub>	2193	7200	No
v <sub>R12</sub>	1377	4600	No

### Level of Service Determination (if not F)

$$\text{Density, } D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 7.7 \text{ pc/mi}$$

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

### Speed Estimation

Intermediate speed variable,	M = 0.174	
Space mean speed in ramp influence area,	S <sub>S</sub> = 65.1	mph
Space mean speed in outer lanes,	S <sub>R</sub> = 68.9	mph
Space mean speed for all vehicles,	S <sub>O</sub> = 66.5	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - SB Off-Ramp - 2032 PM  
 Mike - DWA

Phone:  
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Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: SB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3040	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	85	vph
Length of first accel/decel lane	540	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	65	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3040	85	65	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	800	22	17	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70	% 3.00	% 3.00	%

Length	0.45	mi	0.30	mi	0.38	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3584		100		77	pcf

### Estimation of V12 Diverge Areas

$$L = 0.00 \quad (\text{Equation 25-8 or 25-9})$$

$$EQ$$

$$P = 0.666 \quad \text{Using Equation 5}$$

$$FD$$

$$v_{12} = v_R + (v_F - v_R) P = 2420 \quad \text{pc/h}$$

### Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3584	7200	No
$v_{12}$	2420	4400	No
$v_{FO} = v_F - v_R$	3484	7200	No
$v_R$	100	2200	No

### Level of Service Determination (if not F)

Density,  $D = 4.252 + 0.0086 v_{12} - 0.009 L_D = 20.2 \quad \text{pc/mi/}$

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

### Speed Estimation

Intermediate speed variable,	$D = 0.112$	
Space mean speed in ramp influence area,	$S_R = 67$	mph
Space mean speed in outer lanes,	$S_0 = 76.2$	mph
Space mean speed for all vehicles,	$S = 69.6$	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - SB Off-Ramp - 2032 AM  
 Mike - DWA

Phone:  
 E-mail:

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Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: SB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1930	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	540	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	60	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1930	130	60	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	508	34	16	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70	% 3.00	% 3.00	%

Length	0.45	mi	0.30	mi	0.38	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2275		153		71	pc/h

Estimation of V12 Diverge Areas

L = 0.00 (Equation 25-8 or 25-9)  
EQ  
P = 0.696 Using Equation 5  
FD  
 $v_{12} = v_R + (v_F - v_R) P_{FD} = 1630 \text{ pc/h}$

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2275	7200	No
$v_{12}$	1630	4400	No
$v_{FO} = v_F - v_R$	2122	7200	No
$v_R$	153	2200	No

Level of Service Determination (if not F)

Density,  $D = 4.252 + 0.0086 v_{12} - 0.009 L_D = 13.4 \text{ pc/mi/}$   
Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D = 0.117	
Space mean speed in ramp influence area,	S = 67	mph
Space mean speed in outer lanes,	S = 76.8	mph
Space mean speed for all vehicles,	S = 69.3	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - NB On-Ramp - 2032 PM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: NB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	70.3	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1800	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	1350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	60	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3285	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1800	130	60	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	474	34	16	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.00 %	3.00 %	3.00 %	

Length	0.00	mi	0.34	mi	0.30	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2122		153		71	pcr

Estimation of V12 Merge Areas

L = 1384.29 (Equation 25-2 or 25-3)  
EQ  
P = 0.615 Using Equation 1  
FM  
 $v_{12} = v_F (P_{FM}) = 1306$  pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v <sub>FO</sub>	2275	7200	No
v <sub>R12</sub>	1459	4600	No

Level of Service Determination (if not F)

Density,  $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 8.3$  pc/mi  
Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M = 0.176	
Space mean speed in ramp influence area,	S <sub>S</sub> = 65.1	mph
Space mean speed in outer lanes,	S <sub>R</sub> = 68.9	mph
Space mean speed for all vehicles,	S <sub>O</sub> = 66.4	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - NB On-Ramp - 2032 AM  
 Mike - DWA

Phone:  
 E-mail:

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Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: NB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	69.9	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2955	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	85	vph
Length of first accel/decel lane	1350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	65	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3285	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2955	85	65	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	778	22	17	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.00 %	3.00 %	3.00 %	

Length	0.00	mi	0.34	mi	0.30	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3484		100		77	pc/h

Estimation of V12 Merge Areas

L = 1412.30 (Equation 25-2 or 25-3)  
EQ  
P = 0.615 Using Equation 1  
FM  
 $v_{12} = v_F (P_{FM}) = 2144 \text{ pc/h}$

Capacity Checks

	Actual	Maximum	LOS F?
v <sub>FO</sub>	3584	7200	No
v <sub>R12</sub>	2244	4600	No

Level of Service Determination (if not F)

Density,  $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 14.5 \text{ pc/mi}$   
Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M = 0.196	
Space mean speed in ramp influence area,	S = 64.5	mph
Space mean speed in outer lanes,	S = 67.0	mph
Space mean speed for all vehicles,	S = 65.4	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - NB Off-Ramp - 2032 PM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: NB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1860	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	540	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	130	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3285	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1860	60	130	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	489	16	34	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70 %	3.00 %	3.00 %	

Length	0.45	mi	0.30	mi	0.34	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2193		71		153	pcf

### Estimation of V12 Diverge Areas

$$L = 0.00 \quad (\text{Equation 25-8 or 25-9})$$

$$EQ$$

$$P = 0.702 \quad \text{Using Equation 5}$$

$$FD$$

$$v_{12} = v_R + (v_F - v_R) P = 1560 \quad \text{pc/h}$$

### Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2193	7200	No
$v_{12}$	1560	4400	No
$v_{FO} = v_F - v_R$	2122	7200	No
$v_R$	71	2200	No

### Level of Service Determination (if not F)

$$\text{Density, } D = 4.252 + 0.0086 v_{12} - 0.009 L = 12.8 \quad \text{pc/mi/}$$

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

### Speed Estimation

Intermediate speed variable,	D = 0.109	
Space mean speed in ramp influence area,	S = 67	mph
Space mean speed in outer lanes,	S = 76.8	mph
Space mean speed for all vehicles,	S = 69.5	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

Build - NB Off-Ramp - 2032 AM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Diverge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 4/4/2006  
 Analysis time period: AM  
 Freeway/dir or travel: I-75  
 Junction: NB Off-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3020	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	60.0	mph
Volume on ramp	65	vph
Length of first accel/decel lane	540	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	85	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3285	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3020	65	85	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	795	17	22	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	0.70 %	3.00 %	3.00 %	

Length	0.45	mi	0.30	mi	0.34	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3560		77		100	pc/h

Estimation of V12 Diverge Areas

L = 0.00 (Equation 25-8 or 25-9)  
EQ  
P = 0.667 Using Equation 5  
FD  
 $v_{12} = v_R + (v_F - v_R) P = 2402$  pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{12} = v_F$	3560	7200	No
$v_{12}$	2402	4400	No
$v_{FO} = v_F - v_R$	3483	7200	No
$v_R$	77	2200	No

Level of Service Determination (if not F)

Density,  $D = 4.252 + 0.0086 v_{12} - 0.009 L_D = 20.0+$  pc/mi,  
Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D = 0.110	
Space mean speed in ramp influence area,	S = 67	mph
Space mean speed in outer lanes,	S = 76.2	mph
Space mean speed for all vehicles,	S = 69.7	mph

HCS2000: Ramps and Ramp Junctions Release 4.1

No Build - SB On-Ramp 2032 PM  
 Mike - DWA

Phone:  
 E-mail:

Fax:

Merge Analysis

Analyst: MLS  
 Agency/Co.: DWA  
 Date performed: 6/20/2006  
 Analysis time period: PM  
 Freeway/dir or travel: I-75  
 Junction: SB On-Ramp  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Freeway Data

Type of analysis	66.9	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2955	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	60.0	mph
Volume on ramp	65	vph
Length of first accel/decel lane	460	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	85	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2955	65	85	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	778	17	22	v
Trucks and buses	24	24	24	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	%	3.00	%	3.00 %

Length		mi	0.18	mi	0.15	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	0.893		0.893		0.893	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	3484		77		100	pcf

### Estimation of V12 Merge Areas

$L = 0.00$  (Equation 25-2 or 25-3)  
 EQ  
 $P = 1.000$  Using Equation 0  
 FM  
 $v_{12} = v_F (P_{FM}) = 3484$  pc/h

### Capacity Checks

	Actual	Maximum	LOS F?
v <sub>FO</sub>	3561	4800	No
v <sub>R12</sub>	3561	4600	No

### Level of Service Determination (if not F)

Density,  $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 30.3$  pc/mi  
 Level of service for ramp-freeway junction areas of influence D

### Speed Estimation

Intermediate speed variable,	M = 0.403	
Space mean speed in ramp influence area,	S = 58.7	mph
Space mean speed in outer lanes,	S = N/A	mph
Space mean speed for all vehicles,	S = 58.7	mph

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No Build - I-75 South of OE SB - 2032 PM  
 Mike - DWA

Phone: Fax:  
 E-mail:

Operational Analysis

Analyst: MLS  
 Agency or Company: DWA  
 Date Performed: 4/6/2006  
 Analysis Time Period: PM  
 Freeway/Direction: I-75  
 From/To: SB S of OE Road  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	3020	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	795	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1780	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1780	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.1	mi/h
Number of lanes, N	2	
Density, D	26.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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 Freeway/Direction: I-75  
 From/To: SB S of OE Road  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

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Volume, V	1860	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	489	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1096	pc/h

Speed Inputs and Adjustments

---

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

---

Flow rate, vp	1096	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.7	pc/mi/ln
Level of service, LOS	B	

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Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1096	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

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Flow rate, vp	1096	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
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Number of lanes, N	2	
Density, D	15.7	pc/mi/ln
Level of service, LOS	B	

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Flow Inputs and Adjustments

Volume, V	3020	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	795	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1780	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1780	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.1	mi/h
Number of lanes, N	2	
Density, D	26.1	pc/mi/ln
Level of service, LOS	D	

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 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	3040	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	800	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1792	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1792	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	2	
Density, D	26.4	pc/mi/ln
Level of service, LOS	D	

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 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	1930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	508	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1138	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1138	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	16.3	pc/mi/ln
Level of service, LOS	B	

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Flow Inputs and Adjustments

Volume, V	1930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	508	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fhv	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1138	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1138	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	16.3	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst: MLS  
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 Freeway/Direction: I-75  
 From/To: NB N of OE Road  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	3040	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	800	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fhV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1792	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1792	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	2	
Density, D	26.4	pc/mi/ln
Level of service, LOS	D	

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 Jurisdiction:  
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 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	3020	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	795	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fhv	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1187	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1187	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

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Flow Inputs and Adjustments

Volume, V	1860	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	489	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	731	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	731	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	10.4	pc/mi/ln
Level of service, LOS	A	

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Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

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Flow rate, vp	731	pc/h/ln
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Flow Inputs and Adjustments

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Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	795	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fhv	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1187	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

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Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

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 From/To: SB N of OE Road  
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 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	3040	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	800	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1195	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	1195	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Build - I-75 North of OE SB - 2032 AM  
 Mike - DWA

Phone: Fax:  
 E-mail:

Operational Analysis

Analyst: MLS  
 Agency or Company: DWA  
 Date Performed: 4/6/2006  
 Analysis Time Period: AM  
 Freeway/Direction: I-75  
 From/To: SB N of OE Road  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	1930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	508	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fhv	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	758	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	758	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	10.8	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Build - I-75 North of OE NB - 2032 PM  
 Mike - DWA

Phone: Fax:  
 E-mail:

Operational Analysis

Analyst: MLS  
 Agency or Company: DWA  
 Date Performed: 4/6/2006  
 Analysis Time Period: PM  
 Freeway/Direction: I-75  
 From/To: NB N of OE Road  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	1930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	508	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.05	%
Segment length	0.19	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fhv	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	758	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.25	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

Rural Freeway

LOS and Performance Measures

Flow rate, vp	758	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	10.8	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Build - I-75 North of OE NB - 2032 AM  
 Mike - DWA

Phone: Fax:  
 E-mail:

Operational Analysis

Analyst: MLS  
 Agency or Company: DWA  
 Date Performed: 4/6/2006  
 Analysis Time Period: AM  
 Freeway/Direction: I-75  
 From/To: NB N of OE Road  
 Jurisdiction:  
 Analysis Year: 2032  
 Description: Detailed Traffic Analysis

Flow Inputs and Adjustments

Volume, V	3040	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	800	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
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Segment length	0.19	mi
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Driver population factor, vp	1.00	
Flow rate, vp	1195	pc/h

Speed Inputs and Adjustments

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Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h

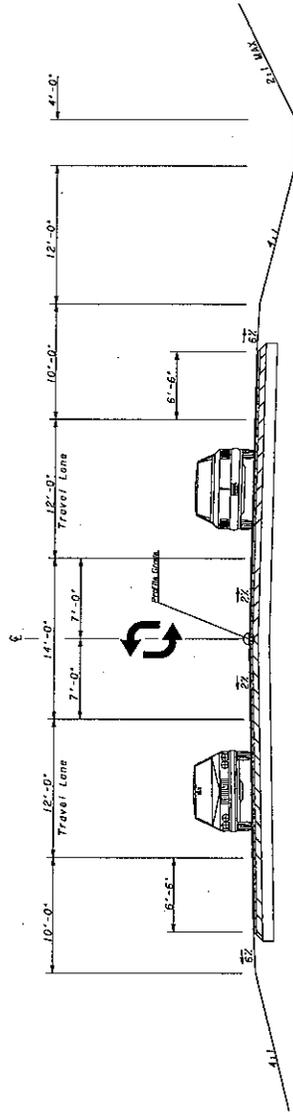
Rural Freeway

LOS and Performance Measures

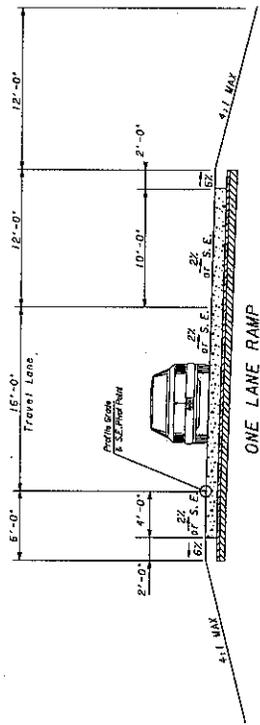
Flow rate, vp	1195	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

DATE/TITLE/REV 05/28/06	DESIGNER MUSEN	CHECKER MUSEN	PROJECT NUMBER MHS-0000-001765	COUNTY TIFT	SHEET NO.	TOTAL SHEETS
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TANGENT SECTION  
OMEGA-ELDORADO ROAD/CR 418



ONE LANE RAMP  
TANGENT SECTION  
RAMP A, RAMP B, RAMP C, RAMP D

REVISION DATES	STATE OF GEORGIA
	DEPARTMENT OF TRANSPORTATION
NOT TO SCALE	OFFICE: CONSULTANT DESIGN
	TYPICAL SECTIONS
PROJECT: MHS-0000-001765	PROJECT NO. 0000765
	DATE:
	DRAWING NO. 5-01

PLANS PROVIDED AND SUBMITTED BY  
MUSEN ENGINEERS, INC.  
1111  
AMERICAN ENGINEERS, INC.