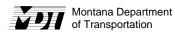




APPENDIX A

Bridge Inspection Reports



Form: bms001d

Page 1 of 7

Printing Date: Thursday, May 22 2014

100015279+09761 **Location: GREAT FALLS Structure Name:**

General Location Data

District Code, Number, Location: 03 **GREAT FALLS** MDT Maintenance Section: 31-01 Great Falls

Division Code, Location:31

GREAT FALLS

County Code, Location: 013 **CASCADE**

City Code, Location: 32800 Signed Route Number: 00015 **GREAT FALLS**

Kind fo Hwy Code, Description: 1 Str Owner Code, Description: 1

1 Interstate Hwy State Highway Agency

Maintained by Code, Description:1

Kilometer Post, Mile Post:

State Highway Agency

Intersecting Feature: SUN RIVER

Latitude: 47°29'58"

450.57 km

279.97

Structure on the State Highway System:

Structure on the National Highway System:

Longitude: 111°20'34"

Percent Trucks:

Construction Project Number: I 15-5(22)273

Construction Station Number: 589+50.00

Str Meet or Exceed NBIS Bridge Length:

Construction Drawing Number: 6903

Construction Year: 1966

Construction Data

Traffic Data Current ADT: 9,150

ADT Count Year: 2009

2 % Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

Design Loading :		5 MS 18 (HS 20)
Inventory Load, Design:	32.6 mton	A LFD Assigned
Operating Load, Design:	33.5 mton	A LFD Assigned
Posting :		5 At/Above Legal Loads

Rating Data :	Operating	Inventory	Posting
Truck 1 Type 3:			
Truck 2 Type 3-S3:			
Truck 3 Type 3-3:	58.32		

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 147.83 m

> Deck Area: 1,442.00 m sq

8.53 m Deck Roadway Width: 11.28 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

N Feature not hwy or RR Reference Feature for Vertical Clearance:

0.00 m Vertical Clearance Under the Structure:

N Feature not hwy or RR Reference Feature for Lateral Underclearance:

0.00 m Minimum Lateral Under Clearance Right: 0.00 m Minimum Lateral Under Clearance Left:

Span Data

Main Span

Number Spans: 5

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type: 0 None Deck Membrain Type: 0 None

Approach Span

Number of Spans: 0 Material Type Code, Description: Span Design Code, Description:

> 9.75 m (52) Out-to-Out Width: (50A) Curb Width: (50B) Curb Width: 0.00 m 0.00 m Skew Angle: 15°

Structure Vertical and Horizontal Clearance Data Inventory Route:

Over / Under Direction	Inventory	South, W	est or Bi-directio	nal Travel	North or East Travel			
Name	Route	Direction	Vertical	Horizontal	Direction	Vertical	Horizontal	
Route On Structure	100015	N/A			North	99.99 m	8.53 m	
I-15 NB								



Form: bms001d Printing Date : Thursday, May 22 2014

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100015279+09761 Continue

Inspection Data

Inspection Due Date : 19 December 2014

Next Under Water Insp : 15 Nov 2016

Sufficiency Rating: 78.5

(91) Inspection Frequency (months): 24

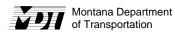
Under Water Insp Type: Type II

Structure Status: Func Obs - Elg Rehab **NBI Inspection Data** 19 December 2012 Charles Pepos - 107 Last Inspected By (90) Date of Last Inspection: (90) Inspection Date Inspected By (62) Culvert Rating : N (58) Deck Rating: 7 (36A) Bridge Rail Rating: (68) Deck Geometry: 3 (59) Superstructure Rating: (61) Channel Rating: 6 (36B) Transition Rating: (67) Structure Rating : 6 (71) Waterway Adequacy (60) Substructure Rating : 6 (36C) Approach Rail Rating (69) Under Clearance: N (36D) End Rail Rating (113) Scour Critical: 5 (72) App Rdwy Align : 7 (41) Posting Status **Unrepaired Spalls:** 0 m sq 1.00 in Deck Surfacing Depth: **Inspection Hours** Snooper Required : N Crew Hours for inspection: Snooper Hours for inspection Helper Hours: 0 Flagger Hours Special Crew Hours: 0 Special Equipment Hours: Effected Scope of Covered **Inspection Work Candidates Priority Status** Structure Work Action Condition Candidate ID Unit States

Late Reason:

Inspection Date: 12/19/2012

Requested



Form: bms001d

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Printing Date : Thursday, May 22 2014

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Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 22 - P Conc Deck/Rigid Ov X 3 1441 sq.m. 100 % % Previous Inspection Notes: 12/19/2012 - Random, tight cracks in all of the Spans. Minor studded tire wear in the wheel paths. 12/27/2010 - 9.75 * 147.83 = 1441.34 Deck had 1" milled off and then placed 2" of silica fume concrete in 2010. Deck looks Good today. Some cracking near Abutment 1 that were sealed during construction. Inspection Notes: Element 109 - P/S Conc Open Girder 739 100 % % Previous Inspection Notes: 12/19/2012 - Good condition. Spall is unchanged in Span 5 and no new hits were observed. 12/27/2010 - Good condition. Small spall on the Right girder in Span 5 has not changed. 12/02/2008 - Good Condition. Same on the Right most girder in Span 5. 11/02/2006 - Right girder in Span 5 has been hit by overheight equipment and caused a small spalled area. No cracking or visible strands in this 10/18/2002 - 147.83 * 5 = 739.15m No change. Inspection Notes: Element 210 - R/Conc Pier Wall Piers 2 thru 5 3 41 m. 90 % % % Previous Inspection Notes: 12/19/2012 - Some tight vertical cracking. Small spalls along the backside of the ice breakers. Small delamination on the face of Pier 4 near the waterline. Some surface scale on the Pierwalls near the waterline. 12/27/2010 - Tight mapping cracks in the Pierwall faces. Some small spalls along the ice breakers. Some small delaminated areas observed during last snooper inspection in the worst cracked areas. There are no additional comments from the underwater inspection by Infrastructure Engineers on 11/15/2011. CRH 12/02/2008 - Small spalls, Condition State 2, and some small delaminations, Condition State 3. 11/02/2006 - Minor concrete spall at the waterline near the Pier noses. Several areas of tight mapping cracks in all (4) Pier walls. Ice breakers painted this past summer. Per Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant structural defects below the high waterline. There are vertical cracks up to 1/16" wide with light efflorescence on both the north face and south face of pier 3 starting at the waterline and extending up 10 feet. 10/18/2002 - 10.14 * 4 = 40.56m Same as snooper inspection of 05-29-2001. 04/13/1998 - Snooper Inspection of 5-29-2001: Some minor section loss at the water line from debris and ice. Some drift at the nose of the pier shafts. Ice breakers could be painted. 02/01/1994 - None Inspection Notes:

Page 4 of 7 Form: bms001d Printing Date : Thursday, May 22 2014

100015279+09761 Continue

Smart Flag	scription									
۰	Scale Factor	Env	Quantity	Units	Insp Each	Pct Stat 1	Pct Stat 2	Pct Stat 3	Pct Stat 4	Pct Stat 5
lement 215	- R/Conc Abutr	ment 1 and	16				<u>.</u>		·	
	1	1	27	m.		90	5	5	0	
						%	%	%	%	
revious Ins	pection Notes :									
		Abutment 6	is delaminated	l. Small	spalls at the	backwall to cap	area.			UZG
					·	·		alls near girder e	embedments. Tigh	
hrinkage cr	acks in both bad	ckwalls.								
2/02/2008 · lone are a i		s a small d	elminaiton on t	ne Left (end of the ca	ip; Condition Sta	ite 3. Tight crack	s in both backwa	alls; Condition Stat	e 2. DZG
1/02/2006		cracks in I	both Abutments	s. Both	backwalls ha	ave a couple of s	mall spalls near	the bearings whe	ere girder are	CKE
mbedded.	- (10.14 * 2) (4	* 17 75) =	27 28m ok							VZJ
		17.70) =	Z7.ZOIII OK							V 20
Inspection	Notes:									
	D/C C	Diana O thu								
ement 232	- R/Conc Cap					2.0		_	-	
	1	1	41	m.		90	5	5	0	
						%	%	%	%	
revious Ins	pection Notes :		•						•	
				Span 4	side of Pier	5's cap. Small	spalls in random	areas along the	edges of the caps;	UZG
	oroblem. Bird de Small delamina			f Bent 5	's cap. Som	e minor spalls.	Bird debris on the	e caps.		ZBC
			•			·	ations; Condition	·		DZG
									some small surface	ce CKE
spalling.										
0/18/2002	- Change Env. S	state to a "1	I" as the leaky	oints ha	ave been ren	noved. Rest is the	ne same as last s	several reports.		VZJ
	Notes:									
Inspection										
Inspection										
•										
•	3 - Assembly Joi	nt/Seal Pie	er 2 and 5 - Ne	w in 201	0					
•		nt/Seal Pic	er 2 and 5 - Ne		0	100	0	0		
•	3 - Assembly Joi				0	100	0 %	0	%	
Element 303	3 - Assembly Joi	3			0				%	
element 303	3 - Assembly Joi 1 pection Notes :	3	20	m.			%		%	UZG
lement 303 revious Ins	3 - Assembly Joi 1 pection Notes : - Sanding mater	3 rial is packe	20 ed in the joint gl	m. ands. S	Steel sound s	% solid when tappe	% d on.	%	%	UZG ZBD
Previous Ins 2/19/2012	3 - Assembly Joi 1 pection Notes : - Sanding mater - All of the steel	ial is packe	ed in the joint gl	m. ands. S	Steel sound s	% solid when tappe	d on. workmanship pa	% thces.	% eakage observed.	
Previous Ins 2/19/2012 2/27/2010	3 - Assembly Joi 1 pection Notes : - Sanding mater - All of the steel - Steel sounds s	ial is packe looks Good	ed in the joint gld. Ends of the papped on. Sor	m. ands. S joints ar me smal	Steel sound sea at the cur	% solid when tappe b shows sloppy g the stell. Glan-	% d on. workmanship pa	% thces. g material. No le		ZBD
Previous Ins 12/19/2012 12/27/2010 12/02/2008 11/02/2006 apparent fro	3 - Assembly Joi 1 pection Notes: - Sanding mater - All of the steel - Steel sounds s - Joint area is pa	ial is packe looks Good solid when t	ed in the joint gld. Ends of the capped on. Sor f sanding mate	m. ands. Sioints are smalrial. So	Steel sound see at the cur I spalls along me spalling a	% solid when tappe b shows sloppy g the stell. Glanalong the joint st	d on. workmanship padd is full of sandingeel. Steel sound	% thces. g material. No le	eakage observed.	ZBC DZG g is CKC
Previous Ins 2/19/2012 2/27/2010 2/02/2008 1/02/2006 apparent fro	3 - Assembly Joi 1 pection Notes: - Sanding mater - All of the steel - Steel sounds s - Joint area is pa	ial is packe looks Good solid when t	ed in the joint gld. Ends of the capped on. Sor f sanding mate	m. ands. Sioints are smalrial. So	Steel sound see at the cur I spalls along me spalling a	% solid when tappe b shows sloppy g the stell. Glan-	d on. workmanship padd is full of sandingeel. Steel sound	% thces. g material. No le	eakage observed.	ZBD

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-	•									
-	Saala Faatan									
=lamant 211 - N	Scale Factor	Env	Quantity	Units	Insp Each	Pct Stat 1	Pct Stat 2	Pct Stat 3	Pct Stat 4	Pct Stat 5
	Moveable Bea	aring								
	1	2	25	ea.		90	10	0		
						%	%	%	%	(
Previous Inspec	ection Notes :									
12/19/2012 - Ali	lignment is ok	Spot rus	st, paint loss, an	d fadeo	paint.					UZGZ
12/27/2010 - Sp	_									ZBDZ
12/02/2008 - Sc										DZGZ
11/02/2006 - Blo										CKDP
10/18/2002 - No										VZJZ
	_	ction of 5-2	29-2001: Some	rust, pi	tting, and mi	nor paint loss; m	ostly on the north	n most pier.		RHGY
02/01/1994 - No					O .		·	·		REFI
Inspection Note	toc.									
Element 313 - F	Fived Rearing	1								
-lement 313 - 1	_		25			00	4.0	0		
	1	2	25	ea.		90	10	0		
						%	%	%	%	•
Previous Inspec	ction Notes :									
12/19/2012 - Sp	pot rust, paint	loss, and	faded paint.							UZGZ
12/27/2010 - Sp	pot rust and p	aint loss.	Bird debris.							ZBDZ
12/02/2008 - Sc	ome spot rust	and bird o	debris.							DZGZ
11/02/2006 - Blo	lown off and o	vercoat pa	ainted in 2006.							CKDP
10/18/2002 - No	lo change fron	n last repo	rt.							VZJZ
Inspection Note	tes:									
Element 331 - C	Conc Bridge F	Railing								
	1	3	296	m.		95	5	0	0	
	· ·	- O	200		_					
						%	%	%	%	•
Previous Inspec										
				nrinkage	e cracks. Sp	alling on the bac	kside of the barri	er where the W-	Beam bolts up.	UZGZ
12/27/2010 - Ur	Inchanged froi	m previous	s inspections.							ZBDZ
			s and add that th ice spall near th			pgraded to new	rail shoes since	the last inspection	on. Curbs under the	ne DZGZ
						ome cracks also	along the rebar in	n random spots	on the backside of	the CKDP
ail. Some rubs				alia an	daaranaa F	ن محمولہ مصیر انما	front of the met	al bridge reil in 1	1000	VZJZ
		JJ. UJIII IVI	mor, vertical cra	acks an	u scrapes. F	an was piaced i	n front of the met	ar bridge rail in 1	1999.	VZJZ
Inspection Note	tes:									



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					Opan.	Maiii-0 - (00111	·· <i>)</i>			
Element Des	scription									
Smart Flag	Scale Factor	Env	Quantity	Units	Insp Each	Pct Stat 1	Pct Stat 2	Pct Stat 3	Pct Stat 4	Pct Stat 5
Element 334	- Metal Rail Co	ated Stee	Posts and Top	Round	Pipe No	w behind the Co	ncrete Rail		<u>'</u>	
	1	3	296	m.		90	10	0	0	
						%	%	%	%	
Previous Ins	pection Notes :									
	· · Rusty spots, pa	aint loss. ai	nd scale on the	rail pos	ts and top p	pipe tube.				UZGZ
							on the posts and	d top rail.		ZBDZ
12/02/2008 -	Rust, paint pee	el, some su	rface pitting, ar	nd expos	sed base co	at.	·	·		DZGZ
11/02/2006 -	Rusty, pitting, f	aded paint	, peeling paint,	and sor	me prime co	at visible on the	rail psots and top	rail pipe. W-be	am has rusty spots	CKDP
throughout.	147.83 * 2 = 29	05.63m Pi	uet nitting and	naint lo	see througho	out.				VZJZ
04/13/1998 -		33.03III IX	usi, pitting, and	pairitio	iss tillought	out.				RHGY
02/01/1994 -										REFI
										IXEII
Inspection I	10103.									
Element 358	- Deck Cracking	g SmFlag								
Х	1	3	1	ea.	X	100	0	0	0	
						%	%	%	%	
Provious Inc	pection Notes :					,,	,,	,,	,9	
	<u>'</u>	a araakina s	waa viaibla tadu	217						UZGZ
	Some reflective	Ŭ		•		_				ZBDZ
	Milled off 1" an				me concret	⊌.				DZGZ
12/02/2006 -	Due to quantity	and need	to start tracking	J.						DZGZ
Inspection I	Notes:									

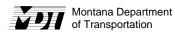


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Continue

2/19/2012 - Good markers on both sides of Abutment 1 today.	UZGZ
2/27/2010 - NBI 72, roadway alignment, rated a "7" as bridge is narrower than the approach roadway. 300d markers on Left and Right corners of Abutment 1. 2/02/2008 - Good markers on the approach section.	ZBDZ DZGZ
1/02/2006 - Markers on both side of the approach and they are in Good condition. teel bridge rail could be removed as it is not serving any purpose. Deck will be needing periodic patching and would be a Good candidate for a	CKDP
er Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant tructural defects below the high waterline. There is no significant local or general scour present. There are no significant restrictions in the hannel that will adversely impact flow. There is light timber debris at the upstream nose of pier 3. The channel bottom consists of mud/silt, and prap. NBI ITEM 61 CHANGED PER INFRASTRUCTURE ENGINEERS UNDERWATER INSPECTION. 0/18/2002 - NBI 36 is up to current standards; 26A is now concrete barrier rail.	VZJZ
4/13/1998 - 5-29-2001: Snooper inspection this pm. Should remove the trees that are going up near and under the bridge on both ends.	RHGY
2/01/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 ufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:02	REFI
9/01/1991 - Updated with tape 1994	NB94
2/01/1990 - Updated with tape 1991	NB91
2/01/1988 - Updated with tape 1989	NB89
2/01/1986 - Updated with tape 1987	NB87
1/01/1984 - Updated with tape 1985	NB85
8/01/1981 - Updated with tape 1984	NB84
3/01/1979 - Updated with tape 1980	NB80



General Location Data

INITIAL ASSESSMENT FORM FOR STRUCTURE:

Location: GREAT FALLS Structure Name:

100015279+09762

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 **GREAT FALLS** Division Code, Location:31 **GREAT FALLS**

Percent Trucks:

County Code, Location: 013 **CASCADE** City Code, Location: 32800 **GREAT FALLS**

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00015

State Highway Agency **State Highway Agency** Str Owner Code, Description: 1 Maintained by Code, Description:1

Intersecting Feature: SUN RIVER Kilometer Post, Mile Post: 450.57 km 279.97

2 %

Structure on the State Highway System: Latitude: 47°29'58"

Structure on the National Highway System: Longitude: 111°20'35"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number: I 15-5(22)273 Construction Station Number: 589+50.00

Page 1 of 7

Form: bms001d

Printing Date: Thursday, May 22 2014

Construction Drawing Number: 6903

Construction Year: 1966 Reconstruction Year: 1977

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

Current ADT: 9,150

	Design Loading:		5 MS 18 (HS 20)
ĺ	Inventory Load, Design:	32.6 mton	A LFD Assigned
ĺ	Operating Load, Design:	33.5 mton	A LFD Assigned
ĺ	Posting :		5 At/Above Legal Loads

ADT Count Year: 2009

Rating Data:	Operating	Inventory	Posting
Truck 1 Type 3:			
Truck 2 Type 3-S3:			
Truck 3 Type 3-3 :	58.32		

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 147.83 m Deck Area: 1,442.00 m sq

8.53 m Deck Roadway Width: 11.28 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

N Feature not hwy or RR Reference Feature for Vertical Clearance:

0.00 m Vertical Clearance Under the Structure:

N Feature not hwy or RR Reference Feature for Lateral Underclearance:

0.00 m Minimum Lateral Under Clearance Right: 0.00 m Minimum Lateral Under Clearance Left:

Span Data

Main Span

Number Spans: 5

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type: 0 None Deck Membrain Type: 0 None

Approach Span

Number of Spans: 0 Material Type Code, Description: Span Design Code, Description:

> 9.75 m (52) Out-to-Out Width: (50A) Curb Width: (50B) Curb Width: Skew Angle: 15°

Structure Vertical and Horizontal Clearance Data Inventory Route:

Over / Under Direction	Inventory	South, W	est or Bi-direction	nal Travel	North or East Travel			
Name	Route	Direction	Vertical	Horizontal	Direction	Vertical	Horizontal	
Route On Structure	100015	South	99.99 m	8.53 m	N/A			
I-15 SB								



Form: bms001d Printing Date : Thursday, May 22 2014

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Inspection Data

Inspection Due Date: 19 December 2014 (91) Inspection Frequency (months): 24

Next Under Water Insp : 17 Nov 2016

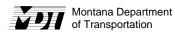
Under Water Insp Type : Type II

Sufficiency Rating: 78.5

Structure Status : Fu	nc Obs - Elg Rehab						
NBI Inspection Da	ata						
(90) Date of Last Ins	pection : 19 December	er 2012		La	st Inspected By : Charles Per	oos - 107	
(90) Inspection	on Date :				Inspected By :		
(58) Deck	Rating : 7	(68) Deck Geo	ometry : 3	(36A)	Bridge Rail Rating : 1	(62) Culver	t Rating : N
(59) Superstructure	Rating : 7	(67) Structure	Rating : 6	(36B)	Transition Rating : 1	(61) Channe	I Rating : 6
(60) Substructure	Rating : 6	(69) Under Clea		(36C) Ap	proach Rail Rating :1	(71) Waterway A	dequacy :8
(72) App Rdw	y Align : 7	(41) Posting		(360	0) End Rail Rating : 1	(113) Scour	Critical: 5
	Unrepaired S	palls: 0 m	sq		Deck Surfacing	Depth: 1.0	00 in
Inspection Hours					_	•	
Crew Hours for inspec	ction : 2			oper Required		_	
Helper H	ours :) S	•	for inspection	O		
Special Crew H	ours :			Flagger Hours	0		
Special Equipment H	ours :)				_	
Inspection Wor	k Candidates			Effected	Scope of		Covered
Candidate ID	Date Requested	Status	Priority	Structure Unit	Work	Action	Condition States
D31-FY2007-000037	26 December 2006	Approved	High	M Main	334 Metal Rail Coated	Repl Paint	
Clean and paint the rail	and posts.						
Approved. DRC							
D31-FY2013-000018	20 December 2012	Not Approved	Medium	M Main	210 R/Conc Pier Wall	Min Repair	
Remove the drift at the	nose of Pier 3.						

Late Reason:

Inspection Date: 12/19/2012



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Element Inspection Data

* * * * * * * * * * Span : Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 22 - P Conc Deck/Rigid Ov Silica Fume Concrete oOverlay in 2010 3 1441 sq.m. 100 % % Previous Inspection Notes: 12/19/2012 - Some minor studded tire wear in the wheel paths. Some reflective cracking. 12/27/2010 - 9.75 * 147.83 = 1441.34 Deck had 1" milled off and then placed 2" of silica fume concrete in 2010. Deck looks Good today. Some cracking near Abutment 1 that were sealed during construction. Inspection Notes: Element 109 - P/S Conc Open Girder 739 100 % % Previous Inspection Notes: 12/19/2012 - Good condition. 12/27/2010 - Good condition. 12/02/2008 - Good condition. Same on the scrapes in Span 5. 11/02/2006 - No problems observed. A couple of the girders in Span 5 have scrapes on their bottoms from overheight equipment. 10/18/2002 - 5 * 147.83 = 739.15m Inspection Notes: Element 210 - R/Conc Pier Wall Piers 2 thru 5 3 42 m. % % Previous Inspection Notes: 12/19/2012 - Small spalls behind the ice breakers. Pier 4 has a small delaminated area in the underwater inspection; photo. Tight cracks in the 12/27/2010 - Unchanged from previous inspections. The 11/15/2011 underwater inspection by Infrastructure Engineers shows that this element is in the same condition with the same minor defects noted in the 2006 inspection. CRH 12/02/2008 - Condition State 3 for shallow surface delaminations and Condition State 2 for minor spalls and cracking. Wear at the waterline. 11/02/2006 - Minor wear/scaling of the concrete at the waterline and behind the ice breakers. Some areas of tight mapping cracks in the Pier walls sides. Patched areas appear to be holding up well, but some delamiantion also noted. Ice breakers overcoat painted in 2006. Per Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant structural defects below the high waterline. Pier 3 and 4 have light concrete scale up to 1/32" deep and light algae growth. 10/18/2002 - 4 * 10.14 = 40.56m Same as previous reports. 04/13/1998 - Snooper Inspection of 5-29-2001: Some of the repaired areas are ok, some are questionable in their attachment to the existing concrete. Some wear and minor deterioration at the water line. Some drift at the nose of the peir shafts. 02/01/1994 - None Inspection Notes:

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Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 215 - R/Conc Abutment 1 and 6 27 m. 95 % Previous Inspection Notes: 12/19/2012 - Small spalls by some of the girder embedments and along the cap to backwall area. 12/27/2010 - Small spalls near girder embedments. Abutment 1 has some plywood on the chamfered area from past construction. 12/02/2008 - Some tight cracks in both backwalls and small spalls near the girder embedments. 11/02/2006 - Both backwalls have a small spall near the bearings where the ends of the girders are embedded. Both caps have a couple of tight cracks that are not a problem. 10/18/2002 - 10.14 * 2) (4 * 1.75) = 27.28Inspection Notes: Element 234 - R/Conc Cap Piers 2 thru 5 1 41 m. 90 % % Previous Inspection Notes: 12/19/2012 - Small spall on the Left end of Pier 2's cap. Some staining from past joint leakage. Some bird nests/debris on top of the caps. Small spall on the caps of Pier 3 and 5. 12/27/2010 - Unchanged from previous inspections. Pier 2 and 5 were cleaned off this past summer. 12/02/2008 - Cap at Bent 2 has a small spall and delaminated area. Some cracks; none are a problem. 11/02/2006 - Stained from prior leaky joints. Some tight cracking under the girders and a couple of shallow tie wires are visible. Some CZDP delaminated patched areas also found. 10/18/2002 - Dropped Env. State as no longer un leaky joints; YET. 4 * 10.14 = 40.56m No change from previous reports. Inspection Notes: Element 303 - Assembly Joint/Seal Pier 2 and 4 - New in 2010 3 100 % % % % Previous Inspection Notes: 12/19/2012 - Joint is packed with sanding material today. No apparent leakage. Steel is solid when tapped on. 12/27/2010 - Underside of deck at curbs shows poor workmanship in construction patches. 12/02/2008 - Steel sounds solid when tapped on. Small spalls along the joint edge. Full of sanding material. No leaking observed. 11/02/2006 - Joint gland is full of sanding material. No apparent leaking. Joint steel sounds solid when tapped on. Some spalling and delamiantion concrete along the joint steel. 10/18/2002 - 2 * 10.14 = 20.28m Mostly full of sanding material. Inspection Notes:



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****** * * * * Span : Main-0 - (cont.) * * * * * * * *

| | | | | | Opan. | Maili-0 - (COIII | ••• | | | |
|---------------|------------------------------|--------------|------------------|-------------|---------------------------|--------------------|--------------------|-------------------|---------------------|-------------|
| Element Des | • | | | | | | | | | |
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 | - Moveable Be | aring | | | | | | | | |
| | 1 | 1 | 25 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | C |
| Previous Ins | pection Notes : | | | | | | | | | |
| | · Alignment is G | | loss, spot rust. | and bir | rd debris. | | | | | UZGZ |
| | Spot rust, pain | | | u | | | | | | ZIDZ |
| | Spot rust and I | | | | | | | | | DZGZ |
| | · Blown off and | | | | | | | | | CZDP |
| | | | | er a leak | cv ioint [.] YFT | Rest is the sar | ne as the last sev | reral reports | | VCKA |
| | | Oldio 2 do | no longor unac | n a loai | , joint, 121 | . Troot to the oar | | orar roporto. | | 70101 |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 313 | - Fixed Bearing | g | | | | | | | | |
| | 1 | 1 | 25 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | • |
| Previous Ins | pection Notes : | | | | | | | | | |
| 12/19/2012 · | Paint loss, spo | t rust, and | birde debris. | | | | | | | UZGZ |
| | Spot rust, pain | | | | | | | | | ZIDZ |
| | Spot rust and I | | | | | | | | | DZGZ |
| | Blown off and | | | | | | | | | CZDP |
| | | | | leakv io | int: YET. R | est is the same a | as previous report | S. | | VCKA |
| | | | J | · · · , , · | •, | | | | | |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| Floment 221 | Cana Bridge | Dailing | | | | | | | | |
| Element 331 | - Conc Bridge | | | | | | _ | al | | |
| | 1 | 3 | 296 | m. | | 95 | 5 | 0 | | |
| | | | | | | % | % | % | % | • |
| Previous Ins | pection Notes: | • | | | _ | | | | <u> </u> | |
| 12/19/2012 - | Patch on the R | Right barrie | at Abutment 6 | looks (| Good and is | holding up well. | Some random sh | rinkage cracks. | Spalls at the W-B | eam UZGZ |
| to barrier co | nnection.
· Unchanged fro | m previous | inenactions | | | | | | | ZIDZ |
| | _ | | | acke = | nde have he | en undated sinc | e the past inches | tions for new au | ardrail. Both curbs | |
| Good with si | mall surface spa | all near the | deckline. | | | · | | • | | 5 IOUK DZGZ |
| | | | | cal crac | king on both | sides with the b | ackside at some | of the rebar loca | tions. | CZDP |
| 10/18/2002 | 147.83 * 2 = 29 | 95.66m S | ome dings and | scrapes | s with some | vertical shrinkag | e cracks througho | out. | | VCKA |
| Inspection I | Notes: | | | | | | | | | |
| - | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |



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****** * Span : Main-0 - (cont.) * * * * * * * *

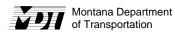
| Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Element 334 - Metal Rail Coated Steel Posts w\ Round Top Rail behind the Concrete Rail 1 3 296 m. 90 10 0 0 Previous Inspection Notes: 12/19/2012 - Rusty spots, paint loss, and some scale on the posts and top pipe rail. 12/27/2010 - Rusty spots, paint loss, and some minor surface pitting on the rail posts and top pipe. W-Beam removed in 2010. 12/02/2008 - Rusty spots, peeling paint, fading paint, and minor surface pitting. 11/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 04/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concrete it's attachment point to the deck. It is behind barrier rail now. Inspection Notes: | Pct Stat 5 UZGZ ZIDZ DZGZ CZDF VCKA |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Element 334 - Metal Rail Coated Steel Posts w\ Round Top Rail behind the Concrete Rail 1 3 296 m. 90 10 0 % % % % % % % % % % % % % % % % % | UZGZ
ZIDZ
DZGZ
CZDF
VCKA
te at RHGP |
| Previous Inspection Notes: 2/19/2012 - Rusty spots, paint loss, and some scale on the posts and top pipe rail. 2/27/2010 - Rusty spots, paint loss, and some minor surface pitting on the rail posts and top pipe. W-Beam removed in 2010. 2/02/2008 - Rusty spots, peeling paint, fading paint, and minor surface pitting. 1/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 1/01/8/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 2/4/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concrete the statechment point to the deck. It is behind barrier rail now. | ZIDZ DZGZ CZDF VCKA |
| Previous Inspection Notes: 2/19/2012 - Rusty spots, paint loss, and some scale on the posts and top pipe rail. 2/27/2010 - Rusty spots, paint loss, and some minor surface pitting on the rail posts and top pipe. W-Beam removed in 2010. 2/02/2008 - Rusty spots, peeling paint, fading paint, and minor surface pitting. 1/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 1/01/8/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 2/4/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concrete the statechment point to the deck. It is behind barrier rail now. | ZIDZ
DZGZ
CZDF
VCKA |
| Previous Inspection Notes: 12/19/2012 - Rusty spots, paint loss, and some scale on the posts and top pipe rail. 12/27/2010 - Rusty spots, paint loss, and some minor surface pitting on the rail posts and top pipe. W-Beam removed in 2010. 12/02/2008 - Rusty spots, peeling paint, fading paint, and minor surface pitting. 11/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 04/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concrete the statechment point to the deck. It is behind barrier rail now. 02/01/1994 - None | ZIDZ
DZGZ
CZDF
VCKA |
| 12/19/2012 - Rusty spots, paint loss, and some scale on the posts and top pipe rail. 12/27/2010 - Rusty spots, paint loss, and some minor surface pitting on the rail posts and top pipe. W-Beam removed in 2010. 12/02/2008 - Rusty spots, peeling paint, fading paint, and minor surface pitting. 11/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 04/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concret t's attachment point to the deck. It is behind barrier rail now. 02/01/1994 - None | ZIDZ
DZGZ
CZDF
VCKA |
| 2/27/2010 - Rusty spots, paint loss, and some minor surface pitting on the rail posts and top pipe. W-Beam removed in 2010. 12/02/2008 - Rusty spots, peeling paint, fading paint, and minor surface pitting. 1/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 1/018/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 1/04/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concret it's attachment point to the deck. It is behind barrier rail now. 1/02/2011/1994 - None | ZIDZ
DZGZ
CZDF
VCKA |
| 12/02/2008 - Rusty spots, peeling paint, fading paint, and minor surface pitting. 11/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 10/4/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concret t's attachment point to the deck. It is behind barrier rail now. 10/2/01/1994 - None | DZGZ
CZDF
VCKA
te at RHGN |
| 11/02/2006 - Rusty, pitted, paint loss, faded paint, and prime coat visible on the rail posts and top pipe rail. W-Beam has rusty spots. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 10/4/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concret t's attachment point to the deck. It is behind barrier rail now. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 10/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. | CZDF
VCKA
te at RHGI |
| 0/18/2002 - 147.83 * 2 = 295.66m More rust, pitting, and paint loss. 0/4/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concrete the attachment point to the deck. It is behind barrier rail now. 0/2/01/1994 - None | VCKA |
| 04/13/1998 - Snooper inspection of 5-29-2001: in the 2nd from the last span, the 5th post on the right, back from the pier has spalled concret
t's attachment point to the deck. It is behind barrier rail now.
02/01/1994 - None | te at RHG |
| t's attachment point to the deck. It is behind barrier rail now.
02/01/1994 - None | |
| 12/01/1994 - None | REF |
| Inspection Notes: | |
| Inspection Notes. | |
| | |
| | |
| Flamout OFO Pools Creation On Flam | |
| Element 358 - Deck Cracking SmFlag | |
| X 1 3 1 ea. X 100 0 0 | |
| % % % | |
| Previous Inspection Notes : | |
| 2/19/2012 - Some reflective cracking throughout the overlay in all the Spans. | UZGZ |
| 2/27/2010 - Milled off 1" and overlayed with 2" of silica fume concrete in 2010. | ZIDZ |
| 2/02/2008 - Due to density and size of the cracks; especially in the areas where the delaminations are starting to spall. | DZGZ |
| Inspection Notes: | |
| | |



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| 7/2010 - NBI 72, roadway alignment, rated a "7" as bridge is narrower than the approach roadway. d markers on both sides of Abutment 6. 2/2008 - Good markers on the approach corners. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. d bridge rail could be removed as it is not serving any purpose. Bridge deck has had some patched spalls and will be needing more. This id be a Good candidate for a deck re-hab. Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant stural defects below the high waterline. There is no significant local or general scour present. There are no significant restrictions in the signed that will adversely impact flow. NBI 61 CHANGED PER INFRASTRUCTURE ENGINEERS UNDERWATER INSPECTION. 8/2002 - NBI 36 is now up to current standards; 36A upgraded to concrete barrier rail now. 3/1998 - 5-29-2001: Snooper inspection this am. Should clean out the trees & brush that is going next to and underneath the structure. 1/1994 - Sufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 N Updated with tape 1994 1/1990 - Updated with tape 1999 N Updated with tape 1989 | 27/2010 - NBI 72, roadway alignment, rated a "7" as bridge is narrower than the approach roadway. 21D2 22/2008 - Good markers on the approach corners. 22D2 23D2 24D2 25D2 26D2 26D2 26D3 26D3 26D3 26D4 26D4 26D4 26D5 26D5 26D5 26D6 26D6 26D7 26D6 26D7 26D6 26D7 26D6 26D7 26D7 | General Inspection Notes | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| d markers on both sides of Abutment 6. 2/2008 - Good markers on the approach corners. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. 2/2006 - Markers on the Left and Right sides of the approach end and some patched spalls and will be needing more. This did be a Good candital will be needing more. This left conditions. 2/2006 - Markers on the Left and Spalls and will be needing more. 2/2006 - Markers on the Left and spalls and will be needing more. 2/2006 - Markers on the Left and spalls and will be needing more. 2/2007 - Markers on the Left and spalls and will be needing more. 2/2007 - Markers on the Left and spalls and will be needing more. 2/2007 - Markers on the Apple on Spalls and will be needing more. 2/2007 - Markers on the Left and spalls and will be needing more. 2/2007 - Markers on the Left and spalls a | od markers on both sides of Abutment 6. 02/2008 - Good markers on the approach corners. D2G 02/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. el bridge rail could be removed as it is not serving any purpose. Bridge deck has had some patched spalls and will be needing more. This uld be a Good candidate for a deck re-hab. Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant restrictions in the unfel that will adversely impact flow. NBI 61 CHANGED PER INFRASTRUCTURE ENGINEERS UNDERWATER INSPECTION. 18/2002 - NBI 36 is now up to current standards; 36A upgraded to concrete barrier rail now. VCK. 13/1998 - 5-29-2001: Snooper inspection this am. Should clean out the trees & brush that is going next to and underneath the structure. RHG 01/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 ficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 01/1991 - Updated with tape 1994 01/1998 - Updated with tape 1999 01/1988 - Updated with tape 1989 01/1986 - Updated with tape 1985 NB8 01/1981 - Updated with tape 1985 NB8 01/1981 - Updated with tape 1984 NB8 | 2/19/2012 - Good markers on both sides of Abutment 6. | UZGZ |
| Ibridge rail could be removed as it is not serving any purpose. Bridge deck has had some patched spalls and will be needing more. This lid be a Good candidate for a deck re-hab. Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant stural defects below the high waterline. There is no significant local or general scour present. There are no significant restrictions in the innel that will adversely impact flow. NBI 61 CHANGED PER INFRASTRUCTURE ENGINEERS UNDERWATER INSPECTION. 8/2002 - NBI 36 is now up to current standards; 36A upgraded to concrete barrier rail now. 3/1998 - 5-29-2001: Snooper inspection this am. Should clean out the trees & brush that is going next to and underneath the structure. 1/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 ciency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 Note: The provided with tape 1994 1/1990 - Updated with tape 1999 Note: The provided sum is not service in good condition. There are no significant restrictions in the substructure are no significant restrictions in the substructure are no significant restrictions. There are no significant restrictions in the structure are no significant restrictions. There are no significant restrictions in the substructure are no significant restrictions. There are no significant restrictions in the substructure are no significant restrictions. There are no significant restrictions in the substructure are no significant restrictions. There are no significant restrictions in the substructure are no significant restrictions. The substructure are no significant restrictions. There are no significant restrictions in the substructure are no significant restrictions. The substructure are no significant restrictions. | el bridge rail could be removed as it is not serving any purpose. Bridge deck has had some patched spalls and will be needing more. This uld be a Good candidate for a deck re-hab. 1 Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant local repensal scour present. There are no significant rectural defects below the high waterline. There is no significant local or general scour present. There are no significant rectural defects below the high waterline. There is no significant local or general scour present. There are no significant restrictions in the unnel that will adversely impact flow. NBI 61 CHANGED PER INFRASTRUCTURE ENGINEERS UNDERWATER INSPECTION. 18/2002 - NBI 36 is now up to current standards; 36A upgraded to concrete barrier rail now. VCK 13/1998 - 5-29-2001: Snooper inspection this am. Should clean out the trees & brush that is going next to and underneath the structure. RHG 01/1994 - Sufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 NB9 01/1991 - Updated with tape 1994 01/1990 - Updated with tape 1994 01/1998 - Updated with tape 1989 01/1986 - Updated with tape 1985 NB8 01/1984 - Updated with tape 1985 NB8 01/1981 - Updated with tape 1984 NB8 | 2/27/2010 - NBI 72, roadway alignment, rated a "7" as bridge is narrower than the approach roadway.
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2/02/2008 - Good markers on the approach corners. | ZIDZ
DZGZ |
| 3/1998 - 5-29-2001: Snooper inspection this am. Should clean out the trees & brush that is going next to and underneath the structure. 1/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 ciency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 1/1991 - Updated with tape 1994 1/1990 - Updated with tape 1991 1/1988 - Updated with tape 1989 | 13/1998 - 5-29-2001: Snooper inspection this am. Should clean out the trees & brush that is going next to and underneath the structure. 01/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 fficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 01/1991 - Updated with tape 1994 01/1990 - Updated with tape 1991 01/1988 - Updated with tape 1989 01/1986 - Updated with tape 1987 01/1984 - Updated with tape 1985 01/1981 - Updated with tape 1984 NB8 | 1/02/2006 - Markers on the Left and Right sides of the approach end and in Fair to Good condition. teel bridge rail could be removed as it is not serving any purpose. Bridge deck has had some patched spalls and will be needing more. This ould be a Good candidate for a deck re-hab. er Infrastructure Engineers August 22, 2006 underwater inspection, the substructure units are in good condition. There are no significant ructural defects below the high waterline. There is no significant local or general scour present. There are no significant restrictions in the nannel that will adversely impact flow. NBI 61 CHANGED PER INFRASTRUCTURE ENGINEERS UNDERWATER INSPECTION. | CZDP |
| 1/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 ciency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 1/1991 - Updated with tape 1994 1/1990 - Updated with tape 1991 1/1988 - Updated with tape 1989 | 01/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 fficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 01/1991 - Updated with tape 1994 01/1990 - Updated with tape 1991 01/1988 - Updated with tape 1989 01/1986 - Updated with tape 1987 01/1984 - Updated with tape 1985 01/1981 - Updated with tape 1984 NB8 | | RHGN |
| 1/1990 - Updated with tape 1991 1/1988 - Updated with tape 1989 | 01/1990 - Updated with tape 1991 NB9 01/1988 - Updated with tape 1989 NB8 01/1986 - Updated with tape 1987 NB8 01/1984 - Updated with tape 1985 NB8 01/1981 - Updated with tape 1984 NB8 | 2/01/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:28 ufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:03 | REFI |
| 1/1988 - Updated with tape 1989 | 01/1988 - Updated with tape 1989 NB8 01/1986 - Updated with tape 1987 NB8 01/1984 - Updated with tape 1985 NB8 01/1981 - Updated with tape 1984 NB8 | 9/01/1991 - Updated with tape 1994 | NB94 |
| and the state of t | 01/1986 - Updated with tape 1987 NB8 01/1984 - Updated with tape 1985 NB8 01/1981 - Updated with tape 1984 NB8 | 2/01/1990 - Updated with tape 1991 | NB91 |
| 1/1986 - Updated with tape 1987 | 01/1984 - Updated with tape 1985 NB8 01/1981 - Updated with tape 1984 NB8 | 2/01/1988 - Updated with tape 1989 | NB89 |
| | 01/1981 - Updated with tape 1984 | 2/01/1986 - Updated with tape 1987 | NB87 |
| 1/1984 - Updated with tape 1985 | | 1/01/1984 - Updated with tape 1985 | NB85 |
| 1/1981 - Updated with tape 1984 | 01/1979 - Updated with tape 1980 NB8 | 8/01/1981 - Updated with tape 1984 | NB84 |
| 1/1979 - Updated with tape 1980 | | 3/01/1979 - Updated with tape 1980 | NB80 |
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| | | | |
| | | | |



MENT FORM FOR OTROC

Location: GREAT FALLS Structure Name:

Printing Date : Thursday, May 22 2014

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Form: bms001d

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General Location Data

MDT Maintenance Section : 31-01 Great Falls

District Code, Number, Location: 03 Dist 3 GREAT FALLS Division Code, Location: 31 GREAT FALLS

County Code, Location: 013 CASCADE City Code, Location: 32800 GREAT FALLS

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number:00015

Str Owner Code, Description: 1 State Highway Agency Maintained by Code, Description: 1 State Highway Agency

Intersecting Feature: SEP 5TH AVE SW Kilometer Post, Mile Post: 450.76 km 280.09

Structure on the State Highway System : X Latitude : 47°30'04"

Structure on the National Highway System : X Longitude : 111°20'34"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number : **IG 15-5(27)274**Construction Station Number : **595+55.00**

Construction Drawing Number: 7092

Construction Year: 1967

Current ADT: 9,150 ADT Count Year: 2009 Percent Trucks: 2 % Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 36.2 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data : | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 83.84 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 38.10 m

Deck Area: 455.00 m sq

Deck Roadway Width: 11.35 m
Approach Roadway Width: 11.89 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

Reference Feature for Vertical Clearance: H Hwy beneath struct

Vertical Clearance Under the Structure : 4.60 m

Reference Feature for Lateral Underclearance : H Hwy beneath struct

Minimum Lateral Under Clearance Right : 3.66 m

Minimum Lateral Under Clearance Left : 0.00 m

Span Data

Main Span

Number Spans: 3

Material Type Code, Description : 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type : **0 None**Deck Membrain Type : **0 None**

Approach Span

Number of Spans: **0**Material Type Code, Description:
Span Design Code, Description:

(52) Out-to-Out Width: 11.95 m

(50A) Curb Width: (50B) Curb Width: 0.05 m

Skew Angle: °

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | N | orth or East Trav | el |
|------------------------|-----------|-----------|---------------------|------------|-----------|-------------------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | L07544 | Both | 4.60 m | 10.36 m | N/A | | |
| 5TH AVE. SW | | | | | | | |
| Route On Structure | 100015 | N/A | | | North | 99.99 m | 11.35 m |
| I - 15 NB | 1 | | | | | | |



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Inspection Data

Sufficiency Rating: 96.6

Inspection Due Date: 15 October 2014 (91) Inspection Frequency (months): 24

| NBI Inspection Da | ıta | | | | | | |
|---------------------------------------|------------------------|---------------------------------|------------|-------------------|--------------------------|--------------------|---------------------|
| (90) Date of Last Insp | pection : 15 October : | 2012 | | La | ast Inspected By: Charle | es Pepos - 107 | |
| (90) Inspection | n Date : | | | | Inspected By : | | |
| (58) Deck F | Rating : 7 | (68) Deck Geo | ometry : 5 | (36A) | Bridge Rail Rating : 1 | (62) Culver | t Rating : N |
| (59) Superstructure F | Rating : 7 | (67) Structure I | Rating · 7 | (36B |) Transition Rating : | (61) Channe | I Rating : N |
| (60) Substructure F | Rating : 7 | , | , | (36C) Ap | pproach Rail Rating :1 | (71) Waterway A | dequacy : N |
| (72) App Rdwy | Align: 8 | (69) Under Clea
(41) Posting | | (36 | D) End Rail Rating : 1 | (113) Scoul | · Critical : |
| | Unrepaired S | palls: 0 m | sq | | Deck Sur | facing Depth : 1.0 | 00 in |
| nspection Hours Crew Hours for inspec | tion : | | Snor | oper Required | · [N] | | |
| · | | | | | | | |
| Helper Ho | |)s | • | for inspection | O | | |
| Special Crew Ho | ours : | | | Flagger Hours | 0 | | |
| Special Equipment Ho | ours : | | | | | | |
| Inspection Work | Candidates | _ | | Effected | Scope of | | Covered |
| Candidate ID | Date
Requested | Status | Priority | Structure
Unit | Work | Action | Condition
States |
| D31-FY2004-000064 | 28 January 2004 | Approved | Medium | All Spans | Bridge | Spot Paint (flex) | |
| lean around bearings a | and repaint. | | | | | | |
| pproved. DRC | | | | | | | |

Late Reason:

Inspection Date: 10/15/2012



Inspection Notes:

INITIAL ASSESSMENT FORM FOR STRUCTURE:

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Continue

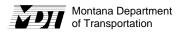
| Element I | nspection Da | ata | * * | * * * * | * * * * Coo | n : Main-0 - * ' | * * * * * * * * * | | | |
|----------------|--------------------------|--------------|--------------------|----------|-----------------|-------------------|-------------------|---------------------|--------------------|-------------|
| Element De | escription | | | | Spa | ırı . Main-u - | | | | |
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | ? - P Conc Deck/I | | , | | | | | | | |
| | 1 | 3 | 455 | sq.m. | X | 100 | 0 | 0 | 0 | |
| | | | | | | % | % | % | % | Q |
| Previous In | spection Notes : | | | | | | | | | |
| 10/15/2012 | ! - Minor wear in | the wheel p | aths. Tight trai | nsverse | cracks over | both Bent 2 and | 3. Random crad | cking in Span 1. | | QZHZ |
| 10/18/2010 | - 11.95 * 38.10 : | = 455.30 1 | I" milled off, A a | and B re | epairs done, | and 2" overlay th | en placed. Good | d condition today | | SODZ |
| Inspection | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 10 | 9 - P/S Conc Op | en Girder | | | | | | | | |
| | 1 | 1 | 191 | m. | | 100 | 0 | 0 | 0 | |
| | | | | | | % | % | % | % | (|
| Previous In | spection Notes : | | | | | | | | | |
| 10/15/2012 | : - Unchanged fro | m past insp | pections and ge | enerally | in Good con | dition. | | | | QZHZ |
| 10/18/2010 | - Generally Goo | d condition | . Minor rubs fro | om ovei | rheight loads | and some mino | r cracking on end | ls of the girders r | noted at Bents 2 a | and 3. SODZ |
| 10/15/2008 | - Good condition | n. Some m | inor rubs and s | crapes | from overhei | ght loads. | | | | QZGZ |
| 10/24/2006 | - Good condition | n. Minor cra | acks from back | side of | the embedde | ed bearing plate | to the ends of se | veral of the girde | rs. | ZZGZ |
| 10/08/2002 | 2 - 38.10 * 5 = 19 | 0.5m | | | | | | | | IZDK |
| Inspection | Notes: | | | | | | | | | |
| <u> </u> | | | | | | | | | | |
| | | | | | | | | | | |
| Element 20 | 5 - R/Conc Colu | mn Bent 2 | and 3 | | | | | | | |
| | 1 | 1 | 4 | ea. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | C |
| Previous In | spection Notes : | | | | | | | | | |
|
10/15/2012 | ·
! - All (4) are gen | erally in Go | od condition wi | th a sm | all spall on th | ne Right column | of Bent 3. | | | QZHZ |
| | - Good condition | | | | | | | | | SODZ |
| | - Generally Goo | | | | ~ | cks. | | | | QZGZ |
| | - Tight surface s | | _ | | | | | | | ZZGZ |
| | | mininago o | | | | | | | | 2262 |

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Continue

* * * * * * * * * * Span : Main-0 - (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 215 - R/Conc Abutment 1 and 4 2 30 m. 95 % Previous Inspection Notes: 10/15/2012 - Tight cracks in both of the backwalls and caps. Small spalls on the cap to backwall connection area and a couple of the embedded bearings. 10/18/2010 - Minor and tight cracks in both backwalls. Small spalls near a couple of the girder embedded bearings. 10/15/2008 - Small spall near the bearings in the backwalls. Tight cracks in both of the backwalls and caps. 10/24/2006 - Damp at the backwall to cap joint and around the bearings. A couple of small spalls where the girders are embedded in the backwalls. 10/08/2002 - (11.95 1.50 1.50) * 2 = 29.90m Minor, tight cracks in backwalls. Env. State 2 due to wet soil in median near the bridge ends. 04/13/1998 - None 02/01/1994 - None Inspection Notes: Element 234 - R/Conc Cap Bent 2 and 3 90 1 24 m. % % % % Previous Inspection Notes: 10/15/2012 - Small delaminations on the Right ends of both of the Bent caps. Minor surface spalls on the underside of both caps from rebar chair feet. Stains from past joint leakage. 10/18/2010 - Same comments as past inspections. Small delamination on Right ends of Bent 2 and 3's caps. Very minor surface distress in these 10/15/2008 - Left end of the cap at Bent 2 has a small delaminated area, 6" x 14"; Condition State 3. Tight cracks at the steps. Small surface spall on the underside of the caps from exposed rebar chair feet. 10/24/2006 - Minor surface spalls on the underside of the caps from exposed/rusty rebar chairs. 10/08/2002 - 11.95 * 2 = 23.90m Minor stains from exposed rebar chairs. Underside of left end of cap at Bent 3 has minor popouts along rebar chairs. Inspection Notes: Element 313 - Fixed Bearing Bent 2 and 3 1 1 20 90 10 ea. % % % % Previous Inspection Notes: 10/15/2012 - Spot rust, paint loss, and some debris. 10/18/2010 - Spot rust and paint loss. 10/15/2008 - Spot rust and paint loss. 10/24/2006 - Spot rust throughout. Bents 2 and 3's have pigeon debris around them. 10/08/2002 - Rusty spots throughout. Inspection Notes:



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| | | | | | | | | | cription | Element Des |
|------------|-------------------|------------------|--------------------|--------------------|------------------|-----------|-------------------------------------|----------------|--------------------------------------|---------------|
| Pct Stat 5 | Pct Stat 4 | Pct Stat 3 | Pct Stat 2 | Pct Stat 1 | Insp Each | Units | Quantity | Env | Scale Factor | Smart Flag |
| | | | | | | osts | eam w\ Steel Po | ated W-Be | - Metal Rail Co | Element 334 |
| | 0 | 5 | 10 | 85 | | m. | 76 | 3 | 1 | |
| | % | % | % | % | | | | | | |
| | | | | | | | | | ection Notes : | Previous Insp |
| QZHZ | sts show rusty | ed blocks. Rail | Loose and twist | ear Abutment 1 | t rail is bent n | es. Left | ubs on both side | lings and ru | | |
| | , | | | | | ion. | in Good conditi | Curbs are | and paint loss. | spots, scale, |
| SODZ | ent area. | | Left rail near A | | | | | • | | |
| QZGZ | | | . Curbs are in G | | | | • | | | |
| ZZGZ | 1. | | areas. Curbs are | | | | | | | |
| IZDK | | • | Rust on the posts | nout both rails. | rapes throug | and sc | y spots, pitting, | 20m Rust | | |
| RHGR | | | | | | | | | |)4/13/1998 - |
| REFI | | | | | | | | | None |)2/01/1994 - |
| | | | | | | | | | otes: | Inspection N |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | Notes | nspection N | General I |
| QZHZ | | | Ave. SW. | travellers on 5th | ne bridge for | les of th | gns on both sid | | | |
| SODZ | | d. | o retro-fit" neede | eau's policy of "r | e Bridge Bure | eets the | ed a "1" as if m | e rail, is rat | NBI 36A, bridge | 0/18/2010 - |
| | | | andha anda af ii | oncrete in 2010. | | | | | | |
| | | ne girders. | on the ends of t | and tight crack | | | to rubs on the bidsides of the brid | | | |
| QZGZ | | | | | e structure fo | es of the | gns on both side | erheight sig | Good 14'-2" ove | 0/15/2008 - |
| | | | | | | | nt testing of the | | | |
| | | | | 3. | sents 2 and 3 | over B | to wide cracks | | ск cracкing sm:
utment bearing. | |
| ZZGZ | | | | | | | due to wear and | ated a "6" o | NBI 58, deck, ra | 0/24/2006 - |
| 0 | rebar chairs. Als | om exposed/rus | Bents 2 and 3 fi | ide of the caps a | | | small surface s
girders are eml | | | |
| | | | | | | | or 5th Ave. SW | nce signs fo | 14' - 2" clearar | Posted with a |
| IZDK | curbs tapers on | proach section a | n rail, Bridge app | ce. 36B, transiti | o the curb fac | ed out to | W-beam blocke | O" as rail is | NBI 36A to a "0
Is of the structu | 0/08/2002 - |
| | | | | | | | rehab project. | | was removed d | |
| RHGR | | | | | | | . , | · · | |)4/13/1998 - |
| REFI | | | | | | | ation Accepted b | | | |
| | | | | 1 | 9/97 14:15:04 | 4 at 2/19 | d by ops\$u9004 | on Accepted | ating Calculatio | Sufficiency R |
| NB94 | | | | | | | | ape 1994 | Updated with ta | 1/01/1992 - |
| NB91 | | | | | | | | ape 1991 | Updated with ta | 3/01/1990 - |
| NB89 | | | | | | | | ape 1989 | Updated with ta | 2/01/1988 - |
| NB88 | | | | | | | | ape 1988 | Updated with ta | 2/01/1986 - |
| NB85 | | | | | | | | | Updated with ta | |
| NB84 | | | | | | | | | Updated with ta | |
| NB80 | | | | | | | | | Updated with ta | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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Location: GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 Dist 3 GREAT FALLS Division Code, Location: 31 GREAT FALLS

County Code, Location: 013 CASCADE City Code, Location: 32800 GREAT FALLS

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number:00015

Str Owner Code, Description: 1 State Highway Agency Maintained by Code, Description: 1 State Highway Agency

Intersecting Feature: SEP 5TH AVE SW Kilometer Post, Mile Post: 450.76 km 280.09

Structure on the State Highway System : X Latitude : 47°30'04" Construction Data

Structure on the National Highway System : X Longitude : 111°20'35"

Str Meet or Exceed NBIS Bridge Length:

Construction Project Number : IG 15-5(27)274

Construction Station Number: 595+55.00

Construction Drawing Number : **7092**Construction Year : **1967**

Current ADT: 9,150 ADT Count Year: 2009 Percent Trucks: 2 % Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 34.4 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3 : | 83.84 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 38.10 m

Deck Area: 455.00 m sq adway Width: 11.35 m

Deck Roadway Width: 11.35 m

Approach Roadway Width: 11.89 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data :

Vertical Clearance Over the Structure: 99.99 m

Reference Feature for Vertical Clearance: H Hwy beneath struct

Vertical Clearance Under the Structure: 4.57 m

Reference Feature for Lateral Underclearance : H Hwy beneath struct

Minimum Lateral Under Clearance Right : 3.66 m

Minimum Lateral Under Clearance Left : 0.00 m

Span Data

Main Span

Number Spans : 3

Material Type Code, Description : 5 Prestressed concrete

Span Design Code, Description : 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type : **0 None**Deck Membrain Type : **0 None**

Approach Span

Number of Spans: **0**Material Type Code, Description:
Span Design Code, Description:

(52) Out-to-Out Width : 11.95 m

(50A) Curb Width : (50B) Curb Width : 0.05 m

Skew Angle : °

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | N | orth or East Trav | vel |
|------------------------|-----------|-----------|---------------------|------------|-----------|-------------------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | L07544 | Both | 4.57 m | 10.36 m | N/A | | |
| 5TH AVE. SW | | | | | | | |
| Route On Structure | I00015 | South | 99.99 m | 11.35 m | N/A | | |
| I - 15 SB | | | | | | | |



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Inspection Data

Sufficiency Rating: 96.6
Structure Status: Not Deficient

Inspection Due Date: 15 October 2014
(91) Inspection Frequency (months): 24

| Structure Status : Not | Deficient | | | | | | | |
|-------------------------|----------------------|-------------------------------------|--------------|-------------------|--------------------|--------------|-------------------|---------------------|
| NBI Inspection Da | ata | | | | | | | |
| (90) Date of Last Insp | pection : 15 October | 2012 | | La | ast Inspected By: | Charles Pep | os - 107 | |
| (90) Inspectio | n Date : | | | | Inspected By : | | | |
| (58) Deck I | Rating : 7 | (68) Deck Geor | metry : 5 | (36A) | Bridge Rail Rating | g : 1 | (62) Culver | t Rating : N |
| (59) Superstructure I | Rating : 7 | (67) Structure R | ating: | (36B) | Transition Rating | ı : 1 | (61) Channe | I Rating : N |
| (60) Substructure I | Rating : 7 | , , | | (36C) Ap | proach Rail Ratin | g : 1 | (71) Waterway A | dequacy : N |
| (72) App Rdwy | / Align : 8 | (69) Under Cleara
(41) Posting S | | (361 | D) End Rail Rating | 9 : 1 | (113) Scour | Critical : N |
| | Unrepaired S | palls: 0 m s | sq | | De | ck Surfacing | Depth : 1.0 | 00 in |
| Inspection Hours | | | | | | | | |
| Crew Hours for inspec | tion: 2 | <u>'</u> | Snoo | per Required | : N | | | |
| Helper Ho | ours : | Sn | nooper Hours | for inspection | : 0 | | | |
| Special Crew Ho | ours : | | F | lagger Hours | : 0 | | | |
| Special Equipment Ho | ours : |) | | | - | | | |
| Inspection World | k Candidates | 8 | . , | Effected | Scope | | | Covered |
| Candidate ID | Date
Requested | Status | Priority | Structure
Unit | Work | • | Action | Condition
States |
| D31-FY2004-000065 | 28 January 2004 | Approved | Medium | All Spans | Bridg | e | Spot Paint (flex) | |
| Clean around bearings a | and repaint. | | | | | | | |
| | | | | | | | | |

Late Reason:

Inspection Date: 10/15/2012



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Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 22 - P Conc Deck/Rigid Ov X 100 3 455 sq.m. % % Previous Inspection Notes: 10/15/2012 - Minor wear in the hweel paths. Random cracking on the Left side of the deck near Abutment 4 in Span 3. 10/18/2010 - 11.95 * 38.10 = 455.30 Milled off 1", Class A and B repair, and then placed a 2" Silica Fume Concrete overlay in 2010. Good condition today. Inspection Notes: Element 109 - P/S Conc Open Girder 191 100 m. % % Previous Inspection Notes : 10/15/2012 - Unchanged from past inspections and in Good condition. 10/18/2010 - Gernally Good condition. Minor scrapes and rubs from overheight loads on the bottom of the girders. Tight cracks on the ends of the girders at Bent 2 and 3. 10/15/2008 - Generally in Good condition. Minor scrapes to the Left two girders from overheight loads. 10/24/2006 - Minor scrape to the Left girder in Span 2 from overheight load. Several of the girders have minor cracks from the backside of the embedded bearing plate to the ends of the girders. 10/08/2002 - 38.10 * 5 = 190.5mInspection Notes: Element 205 - R/Conc Column Bent 2 and 3 1 95 ea. % Previous Inspection Notes: 10/15/2012 - All are generally in Good condition with small spalls on (2) columns from construction activity. 10/18/2010 - Good condition. 10/15/2008 - Good condition. Small scrape on the Left column of Bent 2. 10/24/2006 - No major probelms noted with minor and tight surface shrinkage cracks. 10/08/2002 - Minor, tight shrinkage cracks. Inspection Notes:

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******* Span : Main-0 - (cont.) *******

| Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Element 215 - R/Conc Abutment 1 and 4 1 2 30 m. 95 5 0 0 % % % % Previous Inspection Notes: | Pct Stat 5 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Element 215 - R/Conc Abutment 1 and 4 1 2 30 m. 95 5 0 0 % % % % | |
| 1 2 30 m. 95 5 0 0 0 % % % % % | |
| % % % % | |
| | |
| Previous Inspection Notes : | 9 |
| | |
| 10/15/2012 - Tight cracks in both of the backwalls and caps. Small spalls near the cap to backwall connections and at a couple of the embed | lded QZHZ |
| bearings.
10/18/2010 - Generally Good condition. Tight cracks in both backwalls. | SZDZ |
| 10/15/2008 - Same as prior inspection and add some tight cracks in both caps and backwalls of the Abutments. | QZGZ |
| 10/13/2006 - Same as phormspection and add some tight cracks in both caps and backwalls of the Abduments. 10/24/2006 - Minor seepage at the bearings and along the cap to backwall joint. A couple of small spalls where the girders are embedded in the Abduments. | |
| to/24/2000 - Millor seepage at the bearings and along the cap to backwall joint. A couple of small spalls where the girders are embedded in the backwalls. | lile 2002 |
| 10/08/2002 - (11.95 - 1.50 - 1.50) * 2 = 29.90m Env. State 2 as some moisture coming from between the backwall to cap connection on this cand wet soil in median area. | date ISDL |
| 03/13/1998 - None | RHGT |
| 02/01/1994 - None | REFI |
| Inspection Notes: | |
| maposition recion. | |
| | |
| Element 234 - R/Conc Cap Bent 2 and 3 | |
| 1 1 24 m. 90 5 5 0 | |
| | |
| | |
| Previous Inspection Notes : | |
| 10/15/2012 - Minor surface spalls on the underside of both caps from rebar chair feet. Right end of Bent 3's cap has a small surface delamina and both caps show tight cracking on their ends. Spall with exposed rebar on the Left end of Bent 2's cap. | |
| 10/18/2010 - Minor surface spalls on the underside of both caps. Spall with exposed rebar ends on the Left end of Bent 2's cap. | SZDZ |
| 10/15/2008 - Surface spalls on the underside of both caps. Tight cracks on the ends of both caps. | QZGZ |
| 10/24/2006 - Minor and small surface spalls where rebar chairs are exposed on the underside of the caps. Staining from leakage in the past. | |
| 10/08/2002 - 2 * 11.95 = 23.90m Minor staining from areas where the rebar chairs are exposed. | ISDL |
| Inspection Notes: | |
| | |
| | |
| Element 313 - Fixed Bearing Bent 2 and 3 | |
| 1 1 20 ea. 90 10 0 | |
| % % % % | (|
| Previous Inspection Notes : | |
| 10/15/2012 - Spot rust, paint loss, and some debris. | QZHZ |
| 10/18/2010 - Spot rust and paint loss. | SZDZ |
| | QZGZ |
| 10/15/2008 - Spot rust and paint loss. | |
| | ZCGZ |
| 10/24/2006 - Spot rust on the bearings. Pigeon debris on the bearings at Bents 2 and 3. | ZCGZ
ISDL |
| 10/15/2008 - Spot rust and paint loss. 10/24/2006 - Spot rust on the bearings. Pigeon debris on the bearings at Bents 2 and 3. 10/08/2002 - Rusty spots throughout. | |
| 10/24/2006 - Spot rust on the bearings. Pigeon debris on the bearings at Bents 2 and 3. | |



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****** * * * * Span : Main-0 - (cont.) * * * * * * * * *

| | | | **** | **** | * Span : ı | Main-0 - (cont | t.) * * * * * * * * | * * * | | |
|-------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------|------------------------------------|---------------------|----------------------|--------------------|----------------------|
| Element Des | cription | | | | | | | | | |
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 334 | - Metal Rail Co | ated W-B | eam w\ Steel P | osts | | | | | · | |
| | 1 | 3 | 76 | m. | | 90 | 10 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
| 10/15/2012 - | Curbs are in G | ood condit | ion with some r | ninor sp | alls and crad | ckina. Rustv spo | ots. paint loss. ar | nd scale on the ra | ail posts. W-Bean | n has QZHZ |
| rubs and din | gs on both sides | S. | | · | | n Good condition | | | | SZDZ |
| 10/15/2008 - | Rusty spots on | the rail po | sts and W-Bea | m. Righ | nt curb has b | peen repaired. C | Curbs are now in | Good condition. | | QZGZ |
| Right side at | Abutment 4. | | | | | hit in a couple o | | nt post and broke | en curb concrete o | on the ZCGZ |
| 03/13/1998 - | | | | · | | | · | | | RHG ⁻ |
| 02/01/1994 - | None | | | | | | | | | REFI |
| Inspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Canaral | Inonaction N | Motos | | | | | | | | |
| | Inspection I | | inna an bath air | 41. | | | - 014 | | | 0711 |
| | | | ŭ | | ŭ | traffic on 5th Av | | a d | | QZHZ
SZDZ |
| NBI 58, deck
NBI 59, supe
Good 14' - 2' | rated a "8" due rstructure, rated clearance sign | e to new or
d a "7" due
ns on both : | verlay. Overlaid
to rubs on the
sides of the brid | d with S
bottom
dge for 5 | ilica Fume C
of the girder
oth Ave. SW | Concrete in 2010 s and tight crack | s on the ends of | | | |
| Consultant's
Close to a de
10/24/2006 -
NBI 60, subs
where girder | crew doing chlo
eck cracking sm
NBI 58, deck, r | oride conte
lart flag du
rated at a "
a "7" due to
d in both A | nt testing of the
e to wide crack:
6" due to wear
o minor spalls o
butments. | structu
s over B
in the w | re's deck ye
ents 2 and
heel paths a | 3.
and some spallin | g/delamiantions. | | irs. Also small sp | QZGZ
ZCGZ
alls |
| 10/08/2002 -
section/curb | NBI 36A is a "0
taper are on the
- These were re |)" because
e approach | rail is W-beam
end of the stru | cture or | ıly. | the face of the c | urbs. 36B-Trans | sition rail and brid | ge approach | ISDL
RHG |
| | Sufficiency Rat | ting Calcul | ation Accontad | by one | u5062 at 2/ | 11/07 10:44:20 | | | | REF |
| | Rating Calculation | | | | | | | | | |
| 01/01/1992 - | Updated with ta | ape 1994 | | | | | | | | NB94 |
| 03/01/1990 - | Updated with ta | ape 1991 | | | | | | | | NB91 |
| 02/01/1988 - | Updated with ta | ape 1989 | | | | | | | | NB89 |
| 02/01/1986 - | Updated with ta | ape 1988 | | | | | | | | NB88 |
| 01/01/1984 - | Updated with ta | ape 1985 | | | | | | | | NB85 |
| 08/01/1981 - | Updated with ta | ape 1984 | | | | | | | | NB84 |
| 03/01/1979 - | Updated with ta | ape 1980 | | | | | | | | NB80 |
| | | | | | | | | | | |
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Location: 1M N GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 Dist 3 GREAT FALLS Division Code, Location: 31 GREAT FALLS

County Code, Location: 013 CASCADE City Code, Location: 32800 GREAT FALLS

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00015

Str Owner Code, Description: 1 State Highway Agency Maintained by Code, Description: 1 State Highway Agency

Intersecting Feature: INT EMERSON, BNSF RR Kilometer Post, Mile Post: 454.70 km 282.54

Structure on the State Highway System : X Latitude : 47°31'17"

Structure on the National Highway System : X Longitude : 111°22'45"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number : **IG 15-5(27)274**Construction Station Number : **724+45.00**

Construction Drawing Number: 7104

Construction Year: 1967

Current ADT: 9,280 ADT Count Year: 2009 Percent Trucks: 2 % Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

| Design Loading: | | 5 MS 18 (HS 20) |
|--------------------------|-----------|------------------------|
| Inventory Load, Design : | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 34.4 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 63.18 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 107.90 m

Deck Area: 1,052.00 m sq

Deck Roadway Width: 8.55 m
Approach Roadway Width: 11.58 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

Reference Feature for Vertical Clearance: H Hwy beneath struct

Vertical Clearance Under the Structure: 6.76 m

Reference Feature for Lateral Underclearance : H Hwy beneath struct

Minimum Lateral Under Clearance Right : 2.75 m

Minimum Lateral Under Clearance Left : 0.00 m

Span Data

Main Span

Number Spans : 6

Material Type Code, Description : 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type : **0 None**Deck Membrain Type : **0 None**

Approach Span

Number of Spans: **0**Material Type Code, Description:
Span Design Code, Description:

(52) Out-to-Out Width: 9.75 m

(50A) Curb Width: (50B) Curb Width: 0.00 m

Skew Angle: 30°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | N | orth or East Trav | el |
|------------------------|-----------|-----------|---------------------|------------|-----------|-------------------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | N00123 | Both | 6.76 m | 9.14 m | N/A | | |
| VAUGHN ROAD |] | | | | | | |
| Route On Structure | 100015 | N/A | | | North | 99.99 m | 8.55 m |
| I-15 NB / EMERSON JCT |] | | | | | | |



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Continue

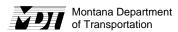
Inspection Data Inspection Due Date: 19 December 2014 (91) Inspection Frequency (months): 24 Sufficiency Rating: 76.4

Structure Status : Func Obs - Elg Rehab

| NBI Inspection Da | ata | | | | | | | | |
|---------------------------------------|-----------------------|------------------|------------|-------------------|-----------------------------|-------------------|----------------------|--|--|
| (90) Date of Last Ins | spection: 19 December | er 2012 | | La | st Inspected By: Charles Pe | epos - 107 | | | |
| (90) Inspection | on Date : | | | | Inspected By : | | | | |
| (58) Deck | | (68) Deck Geo | metry : 3 | , , | Bridge Rail Rating : 1 | | t Rating : N | | |
| (59) Superstructure Rating : 7 | | (67) Structure F | Rating : 7 | (36B) | Transition Rating : 1 | (61) Channe | | | |
| (60) Substructure | Rating: 7 | (69) Under Clear | ance:4 | (36C) Ap | proach Rail Rating :1 | (71) Waterway A | dequacy : N | | |
| (72) App Rdw | y Align : 7 | (41) Posting S | Status : A | (360 | D) End Rail Rating : 1 | (113) Scoul | Critical: | | |
| | Unrepaired Sp | palls: 0 m | sq | | Deck Surfacir | ng Depth : 0.0 | 00 in | | |
| Inspection Hours | | | | | | | | | |
| Crew Hours for inspec | | | | oper Required | | | | | |
| Helper H | |) Si | • | for inspection | O O | | | | |
| Special Crew H | | | | Flagger Hours | 0 | | | | |
| Special Equipment H | lours : | | | | | | | | |
| Inspection Wor | k Candidates | Status | Drianitus | Effected | Scope of
Work | Action | Covered
Condition | | |
| Candidate ID | Date
Requested | Status | Priority | Structure
Unit | WORK | Action | States | | |
| D31-FY2007-000030 | 27 November 2006 | Approved | Medium | M Main | Bridge | Spot Paint (flex) | | | |
| Clean and spot paint be | earings. | | | | | | | | |
| pproved. DRC | | | | | | | | | |
| | | | | | | | | | |
| D31-FY2007-000029 | 27 November 2006 | Approved | High | M Main | 300 Strip Seal Exp Joint | Min Repair | I | | |
| Clean sanding material | | Approved | підіі | IVI IVIAIII | 300 Strip Sear Exp Joint | IVIIII Repail | | | |
| approved. DRC | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| D31-FY2011-000025 | 11 January 2011 | Not Approved | Low | M Main | 334 Metal Rail Coated | Repl Paint | | | |
| clean and spot paint ra | il. | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Late Reason:

Inspection Date: 12/19/2012



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Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 12 - Bare Concrete Deck X 100 3 1052 sq.m. 0 % % Previous Inspection Notes: 12/19/2012 - Wider and open cracks over the un-jointed Bents. Random and mapping cracks in all of the Spans. Small surface spalls and delaminations along the edges of the joint steel. 12/27/2010 - Small surface spalls and delaminations along joint steel. Wear in the wheel paths and mapping cracks in all Spans. Wider transverse cracks over Bent that are without joints. 11/19/2008 - Placed into Condition State 2 as a couple of small delaminations were observed with chain drag near the joints/guard angles. Wear in the wheel paths. Wider transverse cracks over the unjointed Bents. Some mapping cracks also. 11/02/2006 - Open transverse cracks over the Bents without joints. Minor wear in the wheel paths. Some very minor flaking of latex concrete paste at the joint steel, but none delamianted or spalling. 10/07/2002 - 107.90 * 9.75 = 1052.03 Deck was hydromilled and the removed material was replaced with latex concrete. The deck has some transverse cracks over the Bents that do not have expansion joints. 04/14/1998 - None 02/01/1994 - None Inspection Notes: Element 109 - P/S Conc Open Girder 519 100 1 1 m. % Previous Inspection Notes: 12/19/2012 - No problems observed. 12/27/2010 - Good condition. 11/19/2008 - Generally Good condition. 11/02/2006 - Minor tight cracks from the backside of the embedded bearing plate to the ends of the girders on several of the girders; none are a problem 10/07/2002 - (6 * 19.8) (4 * 40.8) (5 * 47.3) = 518.5m Minor cracking of the concrete near the beam seat on a couple of girders; not a problem. Inspection Notes: Element 205 - R/Conc Column 2 thru 6 10 ea. 90 % % Previous Inspection Notes : 12/19/2012 - Small surface delaminations near the ground on the construction joints. Shallow surface spalls on a couple of the columns. Generally in Good condition. 12/27/2010 - Some small delaminated sack patches at construction joints near groundline on a couple of the columns. Small surface spalls along shallow tie wire. 11/19/2008 - Condition State 2 due to shallow tie wire and surface spalls. Condition State 3 for delaminations that have not popped off. Some cracks and small delaminations on the webwalls. 11/02/2006 - Tight surface shrinkage cracks. Some areas where shallow tie wire is on the surface. Wire is rusty and causing small surface spalls. 10/07/2002 - Minor, tight random cracks on several coulmns. Inspection Notes:

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* * * * * * * * * * Span : Main-0 - (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 215 - R/Conc Abutment 1 and 7 29 m. 95 % Previous Inspection Notes: 12/19/2012 - Good condition. Small spalls along the cap to backwall area. Erosion at the corners of the wingwalls. Some missing fill under Abutment 1's cap. Tight surface shrinkage cracks. 12/27/2010 - Small spalls along a couple of the embedded bearings. Minor and tight cracks under G2 and G3 in Abutment 1's cap. 11/19/2008 - Same as last comments. 11/02/2006 - Both caps have minor and tight cracks. A couple of small spalls where girders ends are embedded in the backwall. 10/07/2002 - (11.48 1.40 1.40) * 2 = 28.56m Minor cracking in Abutment backwalls. Minor erosion at wingwalls. Inspection Notes: Element 234 - R/Conc Cap Bents 2 thru 6 57 m. % % Previous Inspection Notes : 12/19/2012 - Bent 4's cap has a small delamination under G4 on the Span 3 side. Shallow surface spalls and delaminations on the underside of the caps from rebar chair feet. 12/27/2010 - Small delamination under G4 on the Span 3 face of Bent 4's cap. Mostly in Good condtion. Some staining. Shallow surface spalls on under of caps from rebar chair feet. 11/19/2008 - Condition State 3 for surface delaminations and Condition State 2 for cracks and small surface spalls. Staining form past joint leakage 11/02/2006 - Most all of the undersides of the Bent caps have small surface spalls with rust staining from shallow rebar chairs. 10/07/2002 - 5 * 11.48 = 57.40m Bottom side of cap at Bent 3-Right has some minor spalling concrete around exposed rebar chairs. Inspection Notes: Element 300 - Strip Seal Exp Joint 3 23 m. 95 % Previous Inspection Notes: 12/19/2012 - Lots of sanding material is packed into the gland area. No obvious leaking. Steel portions sound solid when tapped on. Small surface spalls and paste delaminations along the joint steel. 12/27/2010 - Steel sounds solid when tapped on. Small surface spalls and delaminations along edges of the steel. Both joints are full of sanding material. No leakage observed. 11/19/2008 - Steel sounds solid when tapped on. Small spalls and delamianations along the joint edges. Gland is pushed down from debris, but no tears or leakage was observed. 11/02/2006 - Joint steel is solid when tapped on. Joints are full of debris/sanding material which is pushing on the gland. No apparent leaking 10/07/2002 - 11.48 * 2 = 22.96m Joints are filled with sanding material/debris. Gland is in Good condition with no tears or leaking evident. Inspection Notes:

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******* Span : Main-0 - (cont.) *******

| Element Des | scription | | | | | | | | | |
|-------------------|--------------------|---------------|-------------------|-----------|--------------|----------------------------------------------------------------------------------------------------------------|----------------------|----------------|-------------|------------|
| Smart Flag | | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 | - Moveable Bea | aring | | | | | | | | |
| | 1 | 1 | 25 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | % |
| Previous Ins | pection Notes : | | | | | | | | | |
| l
12/19/2012 - | - Spot rust, scale | e, faded pa | int, and some r | oaste fro | om the hydo- | demolition. Alig | nment is ok. | | | UZGZ |
| | - Spot rust, paint | • | | | · | , and the second se | | | | ZZDZ |
| | - Spots of rust, p | | | rete pas | te from past | hydomilling. | | | | TZDT |
| | - Rusty spots, pa | | | | | | | | | CODN |
| | - Rusty spots wit | | _ | | | | | | | IZHP |
| Inspection I | Notes: | | | | | | | | | |
| moposiism | | | | | | | | | | |
| | | | | | | | | | | |
| Element 313 | 3 - Fixed Bearing | 1 | | | | | | | | |
| | 1 | 1 | 29 | ea. | | 90 | 10 | 0 | | |
| | • | · | | ou. | | % | % | % | % | 9 |
| D | and a Ninter | | | | | 70 | 76 | 76 | 70 | |
| | pection Notes : | | | | | | | | | 11707 |
| | Spot rust, paint | | faded paint. | | | | | | | UZGZ |
| | Spot rust and p | | | | | | | | | ZZDZ |
| | - Spots of rust, p | | and some conc | rete pas | te from past | hydomilling. | | | | TZDT |
| | - Minor spot rust | | | | | | | | | CODN |
| 10/07/2002 - | - Minor rusty spo | ots with pitt | ing. | | | | | | | IZHP |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 331 | - Conc Bridge I | Railing | | | | | | | | |
| | 1 | 3 | 216 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | 9 |
| Previous Ins | pection Notes : | | | | | I | I | I | | |
| 12/19/2012 - | - Random shrink | age cracks | s. Minor surfac | e spalls | near the dec | ck line. Spalls o | n the backside of | the W-Beam bol | t-up. | UZGZ |
| 12/27/2010 - | - Unchanged fro | m past insp | ections. | | | | | | | ZZDZ |
| 11/19/2008 - | - Same commen | its as the p | ast inspections | and ad | d some surfo | ce spalls of the o | riginal curb near | the deck line. | | TZDT |
| 11/02/2006 - | - Minor cracks al | long the rel | bar lines in a co | ouple of | the areas. S | Some minor and | random vertical of | cracking. | | CODN |
| | | | | | | | ect a barrier rail w | | f the curb. | IZHP |
| Inspection I | Notes: | | | | | | | | | |
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| Ilomont 224 | Scale Factor | Env | Quantity | | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat |
| Liemenii 334 | - Metal Rail Co | ated Singl | le W-Beam and | Steel F | Round Handr | ail w∖ Steel Post | S | | | |
| | 1 | 3 | 216 | m. | | 85 | 10 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | | | |
| 2/19/2012 - | Rusty spots, pa | aint loss. fa | iding of the pair | nt. and r | minor surface | e pitting to the po | osts near the curb | o line. | | UZ |
| | | | | | | | | | p of the curb aga | |
| ne rail posts | | a 1000, a. | | 200 | αα ροσιο | . Come canamy | a.oa. o.ag | to zama ap on to | ,p or and oand ago | TZ |
| 1/02/2006 - | W-beam, steel | posts, and | l handrail are ru | isted an | d pitted. So | me paint is peeli | ng also. All com | ponenets are be | hind the concrete | rail. CC |
| 0/07/2002 - | 107.90 * 2 = 21 | 15.80m R | usty and pitting | through | nout the rail a | and posts. The r | metal rail is behin | d the concrete b | arrier now. | ΙZ |
| Inspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| lement 358 | - Deck Crackin | g SmFlag | | | | | | | | |
| Х | 1 | 3 | 1 | ea. | X | 0 | 100 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| | | | | | | /6 | 70 | /6 | 70 | |
| <u>'</u> | pection Notes : | | | | | | | | | |
| | Unchanged fro | | | | | | | | | UZ |
| | | | | | | | oping cracks in a | ll Spans. | | Z.Z |
| 1/19/2008 - | Open cracks or | ver the unjo | ointed Bents an | id need | to start track | ting it. | | | | TZ |
| Inspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| General ! | Inspection I | Notes | | | | | | | | |
| 2/19/2012 - | Fair markers a | t the Abutm | nent 1 corners. | | | | | | | 1.15 |
| 2/27/2010 - | Fair markers of | n the Right | | of Abutn | nent 1. | | | | | UZ |
| Frasian on a | II (4) corners with | | and Left side of | ,, ,, | | | | | | ZZ |
| | | | corner being the | worse. | | alde a to the analysis | | | | ZZ |
| 11/19/2008 - | NBÍ 58, deck, r | ated a "6" | corner being the due to small de | worse.
Iaminat | ions and cra | cking in the deck | surface. | | | |
| 11/19/2008 -
Markers on th | NBI 58, deck, r
he Right and Le | ated a "6" of | corner being the
due to small de
Abutment 1 and | worse.
laminat
d in Fair | ions and cra | | s surface. | air condition. | | ZZ |
| 1/19/2008 -
Markers on the 1/02/2006 - | NBI 58, deck, r
he Right and Le | rated a "6" of sides of on and off o | corner being the
due to small de
Abutment 1 and
of the structure. | e worse.
laminat
d in Fair
Marker | ions and cra
condition.
s on the app | proach end of the | | air condition. | | ZZ
TZ |
| 1/19/2008 -
Markers on tl
1/02/2006 - | NBÍ 58, deck, r
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Minor bumps o
Markers on bot | rated a "6" of sides of on and off o | corner being the
due to small de
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Location: 1M N GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 Dist 3 GREAT FALLS Division Code, Location: 31 GREAT FALLS

County Code, Location: 013 CASCADE City Code, Location: 32800 GREAT FALLS

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00015

Str Owner Code, Description: 1 State Highway Agency Maintained by Code, Description: 1 State Highway Agency

Intersecting Feature: INT EMERSON, BNSF RR Kilometer Post, Mile Post: 454.70 km 282.54

Structure on the State Highway System : X Latitude : 47°31'17"

Structure on the National Highway System : X Longitude : 111°22'47"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number : **IG 15-5(27)274**Construction Station Number : **724+45.00**

Construction Drawing Number: 7104

Construction Year: 1967

Current ADT: 9,280 ADT Count Year: 2009 Percent Trucks: 2 % Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 34.4 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3 : | 63.18 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 109.42 m

Deck Area: 1.067.00 m sq

Deck Area : 1,067.00 m sc

Deck Roadway Width : 8.55 m

pproach Roadway Width : 11.58 m

Approach Roadway Width: 11.58 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data :

Vertical Clearance Over the Structure : 99.99 m

Reference Feature for Vertical Clearance: H Hwy beneath struct

Vertical Clearance Under the Structure: 6.76 m

Reference Feature for Lateral Underclearance : H Hwy beneath struct

Minimum Lateral Under Clearance Right : 2.75 m

Minimum Lateral Under Clearance Left : 0.00 m

Span Data

Main Span

Number Spans : 6

Material Type Code, Description : 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type : **0 None**Deck Membrain Type : **0 None**

Approach Span

Number of Spans: **0**Material Type Code, Description:
Span Design Code, Description:

(52) Out-to-Out Width: 9.75 m

(50A) Curb Width: (50B) Curb Width: 0.00 m

Skew Angle: 30°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction Inventory | | South, W | est or Bi-direction | nal Travel | North or East Travel | | | |
|----------------------------------|--------|-----------|---------------------|------------|----------------------|----------|------------|--|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal | |
| One Route Under | N00123 | Both | 6.76 m | 9.14 m | N/A | | | |
| VAUGHN ROAD | | | | | | | | |
| Route On Structure | I00015 | South | 99.99 m | 8.55 m | N/A | | | |
| I-15 SB / EMERSON JCT | | | | | | | | |



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Inspection Data

Inspection Due Date : 19 December 2014

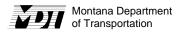
Sufficiency Rating: 76.4

Structure Status : Func Obs - Elg Rehab

(91) Inspection Frequency (months) : **24**

| NBI Inspection Da | ata | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------|--------------------------------------|-------------------------------|---------------------------|-----------------------------------------------|--------------------------------|
| (90) Date of Last Ins | pection : 19 Decembe | er 2012 | | La | ast Inspected By: Charles | Pepos - 107 | |
| (90) Inspection | on Date : | | | | Inspected By : | | |
| (58) Deck (59) Superstructure (60) Substructure (72) App Rdwy Inspection Hours Crew Hours for inspection Helper H | Rating: 7 Rating: 7 y Align: 7 Unrepaired Spection: 2 ours: 0 ours: 0 | Sr | Rating: 7 ance: 4 Status: A Solution | (36B) | : 0 | (61) Channe
(71) Waterway A
(113) Scoul | , , |
| Inspection Worl | <u></u> | Status | Priority | Effected
Structure
Unit | Scope of
Work | Action | Covered
Condition
States |
| D31-FY2007-000032 | 27 November 2006 | Approved | Medium | M Main | Bridge | Spot Paint (flex) | |
| Paint the rail. Approved. DRC | | | | | | | |
| | 27 November 2006 | Approved | Medium | M Main | 300 Strip Seal Exp Joi | nt Min Repair | |
| Clean debris/sanding m
11-19-2008 Full.
Approved. DRC | aterial from the joints. | | | | | | |
| D31-FY2011-000026 | 11 January 2011 | Not Approved | Low | M Main | Bridge | Spot Paint (flex) | |
| Paint the bearings. | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Late Reason: | 0010 | | | | | | |

Inspection Date: 12/19/2012



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Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 12 - Bare Concrete Deck X 100 3 1067 sq.m. 0 % % Previous Inspection Notes: 12/19/2012 - Open cracks over the un-jointed Bents. Minor studded tire wear in the wheel paths. Small surface spalls and delaminations along the edges of the joint's steel. Random and mapping cracks in all of the Spans. 12/27/2010 - A couple of small surface delaminations along the joint steel. Minor wear in the wheel paths. Open cracks over the Bents without a joint. Wider mapping cracks in all Spans. 11/19/2008 - A couple of small delaminations near the joints. Wear in the wheel paths. Wide transverse cracks over the unjointed Bents. Mapping cracks in most of the Spans. 11/02/2006 - Transverse cracks over the Bents without joints. Wear in the wheel paths. Minor scale/flaking of latex paste at the joint steel, but no delaminations or spalling observed. 10/07/2002 - 109.42 * 9.76 = 1066.85 Deck was hydromilled and the removed material was replaced with latex concrete. The deck has transverse cracks over all the Bents that don't have expansion joints. 04/14/1998 - None 02/01/1994 - None Inspection Notes: Element 109 - P/S Conc Open Girder 526 100 1 1 m. % Previous Inspection Notes: 12/19/2012 - Good condition. 12/27/2010 - Good condition. 11/19/2008 - No problems observed. 11/02/2006 - Girders are in Good condition. Some minor cracks from the backside of the embedded bearing plate to the ends of the several of the girders; not a problem. 10/07/2002 - (4 * 40.8) (6 * 19.8) (5 * 48.8) = 526.0m Some girders have minor cracks near beam seats. Inspection Notes: Element 205 - R/Conc Column 2 thru 6 10 ea. 90 % % Previous Inspection Notes : 12/19/2012 - Small areas of surface delaminations near the groundline at the cold joints. Right column of Bent 5 has a small spalled area. 12/27/2010 - Small delaminations to sack patches at construction joint near groundline with the Left column of Bent 4 being the worse. Some small scrapes and surface spalls on the web ties from construction. 11/19/2008 - Condition State 3 for small delamiantions observed in the Left column at Bent 4. Some small scrapes/spalls from construction acivities and the webwalls for Bents 3 and 4 show some cracks and delaminations. 11/02/2006 - Tight surface shrinkage cracks. Several small areas where tie wire is exposed and rusting. Some small surface spalling along the exposed tie wire. 10/07/2002 - Minor, tight cracks on several columns. Inspection Notes:

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Continue

* * * * * * * * * * Span : Main-0 - (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 215 - R/Conc Abutment 1 and 7 1 29 m. 95 % Previous Inspection Notes: 12/19/2012 - Small spalls along the cap to backwall area. Tight vertical crack under G2 at Abutment 1 and under G2 and G3 at Abutment 7. Erosion at all (4) wingwalls. 12/27/2010 - Small spalls near a couple of the girders in the backwalls. Vertical crack under G2 at Abutment 1 and G2 and G3 at Abutment 7 in their caps. 11/19/2008 - Unchanged from past inspections. 11/02/2006 - Tight vertical cracks in both caps witth Abutment 1's being the worse. A couple of small spalls along the ends of the girders where they are embedded in the backwalls. 10/07/2002 - (11.48 1.40 1.40) * 2 = 28.56m Minor, vertical cracks under girders at Abutment 1. Erosion at all (4) wingwalls. Inspection Notes: Element 234 - R/Conc Cap 2 thru 6 90 57 m. % % % % Previous Inspection Notes : 12/19/2012 - Small surface spalls on the faces of (3) caps near the outer anchors. Small delaminations on Span 4 face of Bent 4 under G5. Small surface spalls and delaminations on the underside of the caps from rebar chair feet. 12/27/2010 - Unchanged for small delamination under G5 on Span 4 side of Bent 4's cap. Several small surface spalls on the cap faces near outer most anchors. Some shallow surface spalls on underside of the caps. 11/19/2008 - Condition State 3 for small surface delaminations and Condition State 2 for cracks and minor spalling. Small spall on Bent 4's cap under G5 on the Span 4 side. 11/02/2006 - Underside of the caps show surface spalling from exposed and rusty rebar chairs. Also some staining around the chairs. 10/07/2002 - 5 * 11.48 = 57.40m Minor stains where construction rebar chairs are exposed. Minor, tight cracks on most caps. Inspection Notes: Element 300 - Strip Seal Exp Joint 1 3 23 95 m. % Previous Inspection Notes: 12/19/2012 - Joints are packed full of sanding material today. No apparent leakage. Steel portions sound solid when tapped on and there are small spalls/delaminations along the edges of the joint's steel. 12/27/2010 - Full of sanding material today. Steel portions of the joints sound solid when tapped but do have some shallow spalls and surface delaminations along their edges. 11/19/2008 - Steel sounds solid when tapped on. A couple of small spalls and delaminations along the steel edges. Gland is pushed down from debris with no obvious tears or leakage. 11/02/2006 - Joint steel sounds solid when tapped on. Joint area is full of debris/sanding material which is pushing down on the gland. No leaking was noted 10/07/2002 - 11.48 * 2 = 22.96m Joints are full of sanding material. Gland doesn't appear to be torn anyplace and not leaking. Inspection Notes:

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******* Span : Main-0 - (cont.) *******

| | | | | | - | waiii-u - (COIII | -, | | | |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------|--------------------|-----------|--------------|--------------------|--------------------|-------------------|----------------------|------------|
| Element Des | scription | | | | | | | | | |
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 | - Moveable Be | aring | | | | | | | | |
| | 1 | 1 | 25 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | 9 |
| Previous Ins | pection Notes : | | | | | | | | | |
| | | | . scale. and fad | ed pain | t. Alianment | is ok. | | | | UIGZ |
| 12/19/2012 - Spot rust, concrete paste, scale, and faded paint. Alignment is ok. 12/27/2010 - Paint loss, spot rust, and minor scale. | | | | | | | | | | ZWDZ |
| 11/19/2008 - Spot rust, paint loss, and some concrete paste from past hydromilling operations. | | | | | | | | | | TEDU |
| 11/02/2006 - Spot rust, paint loss, and some dirt/debris. | | | | | | | | | | CXDN |
| | Minor rust spo | | | | | | | | | IZHQ |
| | | | | | | | | | | |
| Inspection I | Notes. | | | | | | | | | |
| | | | | | | | | | | |
| Flomant 242 | Fixed Peerin | ~ | | | | | | | | |
| Element 313 | - Fixed Bearing | | | | | | 1 | | | |
| | 1 | 1 | 33 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | 9 |
| Previous Ins | pection Notes: | | | | _ | | | | | |
| 12/19/2012 - | Paint loss, spo | t rust, and | faded paint. | | | | | | | UIGZ |
| 12/27/2010 - | Paint loss and | spot rust. | Some bird debi | ris. | | | | | | ZWDZ |
| 11/19/2008 - | Spot rust, pain | t loss, and | some concrete | paste f | rom past hyd | dromilling operati | ons. | | | TEDU |
| 11/02/2006 - | Spot rust, pain | t loss, and | some debris. | | | | | | | CXDN |
| 10/07/2002 - | Minor rust spo | ts and mind | or pitting. | | | | | | | IZHQ |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 331 | - Conc Bridge | Railing | | | | | | | | |
| | 1 | 3 | 219 | m. | | 95 | 5 | 0 | 0 | |
| | ' | | 210 | 111. | | | | % | | 9/ |
| | | | | | | % | % | 70 | % | |
| | pection Notes : | | | | | | | | | |
| 12/19/2012 -
along the de | | ce shrinkag | je cracks. Spal | lls on th | e backside o | of the barriers at | the rail bolt-ups. | Small surface s | palls and deteriora | ation UIGZ |
| | · Vertical crackii | ng through | out. A couple o | f small | scrapes. | | | | | ZWDZ |
| 11/19/2008 - Unchanged. Small areas of surface deterioration on the original curbs near the deck line. | | | | | | | | | | TEDU |
| 11/02/2006 - Minor cracks along the rebar lines on the backside. Randonm vertical cracks. | | | | | | | | | | CXDN |
| 10/07/2002 | 109.42 * 2 = 2 | 18.84m M | inor, vertical cra | acks thr | oughout. Du | uring a rehab pro | ject a barrier was | s added on top of | of the existing curb | os, IZHQ |
| Inspection I | | | | | | • | | | | |
| mapection | 10153. | | | | | | | | | |
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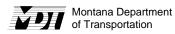
| Element 334 - Metal Rail Coated Singe W-Beam with Round Steel Handrail w\ Steel Posts 1 3 219 m. 85 10 5 0 Previous Inspection Notes: 12/19/2012 - Faded paint, spot rust, and paint loss. Minor surface pitting on the rail posts near the curb line. 12/27/2010 - Paint loss, minor surface pitting, and scale on the W-Beam and posts. Sanding material starting to build up behind the barrier on the top of the curb and against the rail posts. 11/19/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 10/07/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier rail. 04/14/1998 - None 10/20/1994 - None Inspection Notes: Element 358 - Deck Cracking SmFlag X 1 3 1 ea. X 0 100 0 0 % % % % Previous Inspection Notes: | | | | | | ~ Span : i | Main-0 - (Cont | .) | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|--------------|-------------------|-----------|-----------------|---------------------|--------------------|-------------------|---------------------|------------|
| Element 334 - Metal Rail Coated Singe W-Beam with Round Steel Handrail w\ Steel Posts 1 3 219 m. 85 10 5 0 % % % % % Previous Inspection Notes: 12/19/2012 - Faded paint, spot rust, and paint loss. Minor surface pitting on the rail posts near the curb line. 12/27/2010 - Paint loss, minor surface pitting, and scale on the W-Beam and posts. Sanding material starting to build up behind the barrier on the op of the curb and against the rail posts. 11/19/2008 - No significant change. 11/19/2008 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 10/07/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier ail. 11/19/10/1994 - None 11/19/20/20/20/20/20/20/20/20/20/20/20/20/20/ | Element Des | cription | | | | | | | | | |
| 219 m. 85 10 5 0 219/2012 - Faded paint, spot rust, and paint loss. Minor surface pitting on the rail posts near the curb line. 2/27/2010 - Paint loss, minor surface pitting, and scale on the W-Beam and posts. Sanding material starting to build up behind the barrier on the post of the curb and against the rail posts. 1/109/2008 - No significant change. 1/00/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/00/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier ail. 4/1/41/41998 - None 1/1/2004 - None 1/1/2004 - None 1/2004 - None 1/2 | Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| revious Inspection Notes: 2/19/2012 - Faded paint, spot rust, and paint loss. Minor surface pitting on the rail posts near the curb line. 2/27/2010 - Paint loss, minor surface pitting, and scale on the W-Beam and posts. Sanding material starting to build up behind the barrier on the op of the curb and against the rail posts. 1/19/2008 - No significant change. 1/10/2/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/0/7/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier all. 1/1/1/1998 - None 1/1/19/1994 - Vone 1/1/1994 - Vone 1/1/19/1994 - Vone 1/1/1994 - Vone | lement 334 | - Metal Rail Co | ated Sing | e W-Beam with | Round | Steel Handr | rail w\ Steel Post | 6 | | | |
| Previous Inspection Notes: 2/19/2012 - Faded paint, spot rust, and paint loss. Minor surface pitting on the rail posts near the curb line. 2/27/2010 - Paint loss, minor surface pitting, and scale on the W-Beam and posts. Sanding material starting to build up behind the barrier on the op of the curb and against the rail posts. 1/19/2008 - No significant change. 1/02/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/007/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier all. 1/4/14/1998 - None 1/4/14/1994 - None 1/4/1994 - None 1/4/1994 - None 2/20/2010 - Unchanged from previous inspections. 2/19/2012 - Unchanged from previous inspections. 2/219/2012 - Unchanged from previous inspections. 2/219/2010 - Wide cracks over un-jointed Bents. Some wider mapping cracks in all Spans. | | 1 | 3 | 219 | m. | | 85 | 10 | 5 | 0 | |
| 2/19/2012 - Faded paint, spot rust, and paint loss. Minor surface pitting on the rail posts near the curb line. 2/27/2010 - Paint loss, minor surface pitting, and scale on the W-Beam and posts. Sanding material starting to build up behind the barrier on the op of the curb and against the rail posts. 1/19/2008 - No significant change. 1/02/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 0/07/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier ail. 1/4/14/1998 - None 1/2/01/1994 | | | | | | | % | % | % | % | |
| 2/27/2010 - Paint loss, minor surface pitting, and scale on the W-Beam and posts. Sanding material starting to build up behind the barrier on the op of the curb and against the rail posts. 1/19/2008 - No significant change. 1/02/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/02/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier ail. 1/14/1998 - None 1/19/2004 - None 1/19/2014 - None 1/19/2012 - Unchanged from previous inspections. 2/19/2012 - Unchanged from previous inspections. 2/19/2012 - Unchanged from previous inspections. 2/19/2008 - Condition State 2 due to size of the cracks and nearing the density limit also. | revious Ins | pection Notes : | | l | | | | | l | | |
| po of the curb and against the rail posts. 1/19/2008 - No significant change. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts. The metal rail and posts are now behind a concrete barrier lail. 1/102/1994 - None 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts. The metal rail and posts are now behind a concrete barrier lail. 1/102/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts. The metal rail and posts are now behind a concrete barrier lail. 1/102/2006 - Deck Cracking SmFlag 1/102/2006 - Rust, pitting, paint peel, and posts are now behind a concrete barrier lail. 1/102/2006 - Deck Cracking SmFlag 1/102/2006 - Deck Cracking SmFlag 1/102/2006 - Rust, pitting throughout paint peel, and posts are now behind a concrete barrier lail. 1/102/2006 - Deck Cracking SmFlag 1/102/2006 | 2/19/2012 - | Faded paint, sp | oot rust, an | nd paint loss. M | linor sui | rface pitting | on the rail posts | near the curb line | 9. | | UIGZ |
| 1/19/2008 - No significant change. 1/02/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/02/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier ail. 1/14/1/1998 - None 1/19/2011 - None 1/19/2012 - Deck Cracking SmFlag X | 2/27/2010 - | Paint loss, min | or surface | pitting, and sca | le on th | e W-Beam a | and posts. Sandi | ng material starti | ng to build up be | hind the barrier on | the ZWD |
| 1/02/2006 - Rust, pitting, paint peel, and exposed prime coat on the rail posts and top handrail pipe. W-Beam has some rusty spots throughout. 1/07/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier rail. 1/14/1998 - None 1/1/1994 - None 1/1/1994 - None 1/1/1994 - None 1/1/1994 - Deck Cracking SmFlag X | | | | ts. | | | | | | | TEDL |
| 0/07/2002 - 109.42 * 2 = 218.84m Rusty spots with pitting throughout rail and posts. The metal rail and posts are now behind a concrete barrier all. 4/14/1998 - None 2/01/1994 - None Inspection Notes: lement 358 - Deck Cracking SmFlag X | | · · | Ŭ | and exposed pri | me coat | t on the rail r | posts and top ha | ndrail pipe. W-Be | eam has some ru | isty spots througho | |
| ail. 4/14/1998 - None 12/01/1994 - None Inspection Notes: Element 358 - Deck Cracking SmFlag X | | | • | | | | • | • • | | , , | |
| 2/01/1994 - None Inspection Notes: Clement 358 - Deck Cracking SmFlag X | ail. | | | acty opera | ,g | ougoutc | an and pooter in | oo.a. ra aa p | 2000 0.0 20 | | |
| Inspection Notes: Selement 358 - Deck Cracking SmFlag X | | | | | | | | | | | RHH |
| Element 358 - Deck Cracking SmFlag X | 2/01/1994 - | None | | | | | | | | | REFI |
| X 1 3 1 ea. X 0 100 0 0 0 0 % % % % % % % % % % % % % | Inspection I | Notes: | | | | | | | | | |
| X 1 3 1 ea. X 0 100 0 0 0 0 0 % % % % % % % % % % % % | | | | | | | | | | | |
| X 1 3 1 ea. X 0 100 0 0 0 0 % % % % % % % % % % % % % | | | | | | | | | | | |
| Previous Inspection Notes : 2/19/2012 - Unchanged from previous inspections. 2/27/2010 - Wide cracks over un-jointed Bents. Some wider mapping cracks in all Spans. 1/19/2008 - Condition State 2 due to size of the cracks and nearing the density limit also. | lement 358 | - Deck Crackin | g SmFlag | | | | | | | | |
| Previous Inspection Notes: 2/19/2012 - Unchanged from previous inspections. 2/27/2010 - Wide cracks over un-jointed Bents. Some wider mapping cracks in all Spans. 2/19/2008 - Condition State 2 due to size of the cracks and nearing the density limit also. | X | 1 | 3 | 1 | ea. | X | 0 | 100 | 0 | 0 | |
| 2/19/2012 - Unchanged from previous inspections. 2/27/2010 - Wide cracks over un-jointed Bents. Some wider mapping cracks in all Spans. 2/19/2008 - Condition State 2 due to size of the cracks and nearing the density limit also. | | | | | | | % | % | % | % | |
| 2/27/2010 - Wide cracks over un-jointed Bents. Some wider mapping cracks in all Spans. 1/19/2008 - Condition State 2 due to size of the cracks and nearing the density limit also. | revious Ins | pection Notes : | | | | | | | | | |
| 1/19/2008 - Condition State 2 due to size of the cracks and nearing the density limit also. | 2/19/2012 - | Unchanged fro | m previous | s inspections. | | | | | | | UIGZ |
| , , , , , , , , , , , , , , , , , , , | 2/27/2010 - | Wide cracks ov | er un-joint | ed Bents. Som | e wider | mapping cr | acks in all Spans | | | | ZWD |
| Inspection Notes: | 1/19/2008 - | Condition State | e 2 due to s | size of the crack | ks and r | nearing the c | density limit also. | | | | TEDU |
| inspection reces. | Inspection N | lotes. | | | | | | | | | |
| | nopeodon i | | | | | | | | | | |
| | | | | | | | | | | | |



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| General Inspection Notes | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 12/19/2012 - Good markers on the corners of Abutment 7. | UIGZ |
| 12/27/2010 - Good markers on both sides of Abutment 7 for approaching traffic. | ZWDZ |
| Minor erosion on all (4) corners. 11/19/2008 - NBI 58, deck, rated a "6" due to small delamiantions and cracking. Bumps on and off of the structure. Markers on both corners of Abutment 7, approach roadway, and in Fair condition. | TEDU |
| 11/02/2006 - Minor bumps on and off of the structure. There are markers on the Right and Left approach rail into the bridge and in Fair to Good condition. | CXDN |
| 10/07/2002 - Markers on North end of the structure, approach side, and in Good condition. | IZHQ |
| 04/14/1998 - None | RHHJ |
| 02/01/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:44:30 Sufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:07 | REFI |
| 01/01/1992 - Updated with tape 1994 | NB94 |
| 03/01/1990 - Updated with tape 1991 | NB91 |
| 02/01/1988 - Updated with tape 1989 | NB89 |
| 02/01/1986 - Updated with tape 1988 | NB88 |
| 01/01/1984 - Updated with tape 1985 | NB85 |
| 08/01/1981 - Updated with tape 1984 | NB84 |
| 03/01/1979 - Updated with tape 1980 | NB80 |
| | |
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Location: 1M N EMERSON JCT Structure Name:

General Location Data MDT Maintenance Section: 31-01 Great Falls District Code, Number, Location: 03 **GREAT FALLS GREAT FALLS** Division Code, Location:31 County Code, Location: 013 **CASCADE** City Code, Location: 00000 **RURAL AREA** Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00015 State Highway Agency State Highway Agency Str Owner Code, Description: 1 Maintained by Code, Description:1 Intersecting Feature: DRAINAGE 457.10 km Kilometer Post, Mile Post: 284.03 Structure on the State Highway System: Latitude: 47°31'54" **Construction Data** Structure on the National Highway System: Longitude: 111°24'06" Construction Project Number: I 15-5(9)275 Str Meet or Exceed NBIS Bridge Length: Construction Station Number: 862+50.00 Construction Drawing Number: **Traffic Data** Construction Year: 1960 Current ADT: 9,280 ADT Count Year: 2009 2 % Percent Trucks: Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|--------------------------|-----------|------------------------|
| Inventory Load, Design : | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 32.6 mton | B ASD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 48.6 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 3.86 m

Deck Area : 0.00 m sq
Deck Roadway Width : 0.00 m

Approach Roadway Width : 23.16 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data :

Vertical Clearance Over the Structure : 99.99 m

Reference Feature for Vertical Clearance: N Feature not hwy or RR

0.00 m

Skew Angle: "

(50B) Curb Width:

0.00 m

Vertical Clearance Under the Structure: 0.00 m

Reference Feature for Lateral Underclearance : N Feature not hwy or RR

Minimum Lateral Under Clearance Right : 0.00 m

Minimum Lateral Under Clearance Left : 0.00 m

(52) Out-to-Out Width:

Span Data

Main Span

Number Spans: 1

Material Type Code, Description: 3 Steel

Span Design Code, Description: 19 Culvert (includes frame culverts)

Deck

Deck Structure Type: N Not applicable

Deck Surfacing Type: N Not Applicable (applies only to strutures with no dec

Deck Protection Type: N Not applicable (applies only to structures with no de

 $\label{eq:decomposition} \mbox{Deck Membrain Type}: \ \ \mbox{\bf N Not applicable (applies only to structures with no de}$

Approach Span

Number of Spans: 0

Material Type Code, Description:

Span Design Code, Description:

(50A) Curb Width:

0.00 m

Structure Vertical and Horizontal Clearance Data Inventory Route :

| | Over / Under Direction Inventory | | South, W | est or Bi-direction | nal Travel | North or East Travel | | | | | | |
|---|----------------------------------|--------|-----------|---------------------|------------|----------------------|----------|------------|--|--|--|--|
| | Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal | | | | |
| ſ | Route On Structure | 100015 | Both | 99.99 m | 12.10 m | N/A | | | | | | |
| Γ | I - 15 | | | | | | | | | | | |



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Continue

Inspection Data

Sufficiency Rating: 80

Inspection Due Date: 28 April 2016 (91) Inspection Frequency (months): 24

Structure Status: Not Deficient **NBI Inspection Data** 28 April 2014 Charles Pepos - 107 (90) Date of Last Inspection: Last Inspected By (90) Inspection Date Inspected By (58) Deck Rating: (62) Culvert Rating: 6 (36A) Bridge Rail Rating : N (68) Deck Geometry: 9 (59) Superstructure Rating : N (61) Channel Rating: (36B) Transition Rating (67) Structure Rating: 6 (71) Waterway Adequacy :8 (60) Substructure Rating : N (36C) Approach Rail Rating (69) Under Clearance: (36D) End Rail Rating (113) Scour Critical: 8 (72) App Rdwy Align : 8 (41) Posting Status Unrepaired Spalls: 0 m sq 0.00 in Deck Surfacing Depth: **Inspection Hours** Snooper Required: Crew Hours for inspection: Snooper Hours for inspection Helper Hours: 0 Flagger Hours Special Crew Hours: 0 Special Equipment Hours: Effected Covered **Inspection Work Candidates** Scope of **Status Priority** Structure Work Action Condition Candidate ID Date Unit States Requested D31-FY2006-000196 240 Steel Culvert Rehab Elem 03 May 2006 High M Main **Approved** Clean debris from inlet and outlet of the pipe and back to R/W. Also complete the outlet drainage ditch so as to drain the standing water in the pipe. 05-03-2010 Lots of tumbleweeds at both ends today. Pipe was clean today. Ditch needs to be taken past R/W to get rid of standing water. 04-28-2014 Inlet is full of tumbleweeds today and outlet needs to be cleaned up. Approved. DRC

Late Reason:

Inspection Date: 04/28/2014



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Continue

Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 240 - Steel Culvert 3 65 m. 85 10 % % Previous Inspection Notes: 04/28/2014 - Area under SB lanes has rust, scale, and pin holes in the roof area in random spots. Concrete in the invert looks Good. (2) small holes in the roof about 30' in from the inlet. 05/07/2012 - Pipe was clean today with knee deep water standing in the outlet. Rust, scale, and surface pitting on the invert. Some small pin holes in the invert. Holes 30 ft. in from the inlet end are unchanged. A concrete liner was placed in this pipe during 2013 construction project. This took care of the problems on the invert of the pipe. 05/03/2010 - Same comments as the last inspections. Lots of tumbleweeds in the inlet and outlet of the pipe today. 04/24/2008 - No change on the 4" x 4" holes, 30 ft in from the inlet. 5 percent in Condition State 3 as a couple of small holes in the invert and because of loss of shape. Rusty spots, scale, and pitting on the bottom 1 ft of the pipe. Outlet is bouncy as hollow under the last 10 ft of the pipe. 04/18/2006 - 64.62 * 1 = 64.62m Plans say it is a 13'-0" SSPP but field measurements show it to be 12'-8"(S) x 13'-9"(R). Concrete slope protection and cutoff wall added on the Right-Inlet end after initial construction. Pipe is dry at the inlet, 1' deep standing water at outlet and 2' of standing water under the SB Inae. Pipe has some rust spots and light scale on the invert. Hollow under the first 6 ft of the outlet of the pipe with no cut off wall or slope protection in place. Pipe end bounces when jumped on. About 30 ft in from the inlet is a 4" x 4" hole in the top-Left portion of the pipe. This hole does not appear to be a problem. Inspection Notes: **General Inspection Notes** 04/28/2014 - Outlet ditch needs to be worked on as still about 1-1/2' of water backed up in the inlet of the pipe for about 40'. 05/07/2012 - Outlet end of the pipe is hollow under the pipe; back 15 ft. Pipe's shape is Fair with some egg shape to it from construction activity. 05/03/2010 - Hollow area under outlet is unchanged. Mid-thigh deep at outlet today to ankle deep at inlet. 04/24/2008 - Scour hole at outlet and shallow stream bed 50 ft from the pipe has water standing 2 ft deep back into the pipe. 04/18/2006 - Cutoff wall and slope protection on Right end added in a construction project that also cleaned out the pipe. Guardrail for I-15 at the pipe due to slope steepness and is up to current standards.



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Location: 6M S VAUGHN Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03

GREAT FALLS

Division Code, Location:31

GREAT FALLS

County Code, Location: 013

CASCADE

City Code, Location: 00000 Signed Route Number: 00015 **RURAL AREA**

Kind fo Hwy Code, Description: 1

1 Interstate Hwy

Maintained by Code, Description:1

State Highway Agency

Str Owner Code, Description: 1

State Highway Agency

Kilometer Post, Mile Post:

Intersecting Feature: JR GRADE SEP

Latitude: 47°31'60"

457.42 km

284.23

Structure on the State Highway System: Structure on the National Highway System: Str Meet or Exceed NBIS Bridge Length:

Longitude: 111°24'23"

Construction Data Construction Project Number: I 15-5(9)275

Construction Station Number: 0+00.00

Construction Drawing Number: 4209

Construction Year: 1960

Current ADT: 9,280 ADT Count Year: 2009 2 % Percent Trucks:

Reconstruction Year: 1974

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

| Design Loading : | | 5 MS 18 (HS 20) |
|--------------------------|-----------|------------------------|
| Inventory Load, Design : | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 54.4 mton | B ASD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data : | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3 : | 120.29 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 5.49 m

> Deck Area: 210.00 m sq

38.30 m Deck Roadway Width: 22.00 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

N Feature not hwy or RR Reference Feature for Vertical Clearance:

3.58 m Vertical Clearance Under the Structure:

N Feature not hwy or RR Reference Feature for Lateral Underclearance:

0.00 m Minimum Lateral Under Clearance Right: 0.00 m Minimum Lateral Under Clearance Left:

Span Data

Main Span

Number Spans: 1

Material Type Code, Description: 1 Concrete Span Design Code, Description: 1 Slab

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 6 Bituminous Deck Protection Type: 0 None Deck Membrain Type: 0 None

Approach Span

Number of Spans: 0 Material Type Code, Description: Span Design Code, Description:

> 38.30 m (52) Out-to-Out Width: (50A) Curb Width: (50B) Curb Width: 0.00 m 0.00 m Skew Angle: "

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | North or East Travel | | |
|------------------------|-----------|-----------|---------------------|------------|----------------------|----------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| Route On Structure | 100015 | South | 99.99 m | 11.00 m | North | 99.99 m | 11.00 m |
| I - 15 NB AND SB | | | | | | | |



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Inspection Data

Sufficiency Rating: 96.6 Structure Status: Not Deficient Inspection Due Date : 06 August 2014 (91) Inspection Frequency (months) : 24

| Structure Status . No | Dencient | | | | | | |
|------------------------------------------|-----------------------|------------------|--------------|-------------------|------------------------------|-----------------|---------------------|
| NBI Inspection Da | ata | | | | | | |
| (90) Date of Last Ins | pection: 06 August 2 | 012 | | La | ast Inspected By: Charles Pe | epos - 107 | |
| (90) Inspection | on Date : | | | | Inspected By : | | |
| (58) Deck | , <u> </u> | (68) Deck Geor | metry : 9 | | Bridge Rail Rating : 1 | ` | ert Rating : N |
| (59) Superstructure | | (67) Structure R | ating : 6 | (36B) |) Transition Rating : 0 | | el Rating : N |
| (60) Substructure | Rating : 6 | (69) Under Clear | ance : N | (36C) Ap | proach Rail Rating :1 | (71) Waterway A | Adequacy : N |
| (72) App Rdwy | y Align : 8 | (41) Posting S | Status : A | (361 | D) End Rail Rating : 0 | (113) Scot | ur Critical : N |
| | Unrepaired S | palls: 0 m s | sq | | Deck Surfacir | ng Depth : 4 | .00 in |
| Inspection Hours Crew Hours for inspec | | | Snoo | oper Required | · N | | |
| Helper He | | Sr | | for inspection | | \neg | |
| Special Crew H | | | • | Flagger Hours | 0 | _ | |
| Special Equipment He | | | | | U | | |
| Inspection World | k Candidates | _ | | Effected | Scope of | | Covered |
| Candidate ID | Date
Requested | Status | Priority | Structure
Unit | Work | Action | Condition
States |
| D31-FY2004-000066 | 28 January 2004 | Approved | Low | M Main | 215 R/Conc Abutment | Min Repair | |
| Clean material away fro
Approved. DRC | m the backwall drains | S. | | | | | |
| D31-FY2005-000030 | 07 October 2004 | Approved | Low | M Main | 39 Unp Conc Slab/AC Ovi | Min Repair | |
| Seal cracks between the | e deck slabs and the | • • | etween the s | lab and aspha | It surfacing. Some done, 8-6 | | |
| Approved. DRC | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Late Reason:

Inspection Date: 08/06/2012



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Continue

Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 39 - Unp Conc Slab/AC Ovl X 3 210 sq.m. 100 0 % % % Previous Inspection Notes: 08/06/2012 - Minor rutting in wheel paths. Roadway is smooth over structure. 08/09/2010 - No change from the previous inspections. 07/10/2008 - Chip seal in the past years. Minor ruts in the wheel paths, but surfacing is generally Good. Small section of exposed rebar on the underside of the slab at the Right edge of Abutment 1. 06/08/2006 - Crack at centerline under the NB lanes that has efflorescence. Minor rutting in the aspahlt surfacing. 09/21/2004 - Same as previous report. Joints at the median slabs to NB and SM slabs are leaking. 10/07/2002 - Mapping cracks on slab over the median with efflorescence on most cracks. 08/02/2000 - 38.30 * 5.49 = 210.27 Seperation at the joints. 04/14/1998 - None 12/01/1995 - None 02/01/1994 - None Inspection Notes: Element 215 - R/Conc Abutment 2 90 101 m. % % % % Previous Inspection Notes: 08/06/2012 - Some small delaminated areas near cracks with effloresence. Still partially buried backwall drains. On both abutments worse cracks are from corners of spalls under traveled lanes. 08/09/2010 - No change from the previous inspections. 07/10/2008 - 5 percent in Condition State 3 for a small delmainated areas. 5 percent in Condition State 2 for cracks with efflorescence. Left wingwall at Abutment 1 has a slight seperation from the backwall. Some backwall drains are partially buried. 06/08/2006 - Same as previously reported plus some spalled patch, 4" x 10", on the Right end of Abutment 1 just under the deck. 09/21/2004 - Cracking from the corners of lane slabs with efflorescence on the cracks. Wingwalls are tight to the backwalls. 10/07/2002 - Same as previous report. Add weep drains along both backwalls are either buried or partially covered. 08/02/2000 - (38.3 * 2) + (4 * 6.10) = 101.00mCracks with some water marking at the joints of the median section to the sections under the roadway. Slight seperation on the left end at the wingwalls to the backwall joint. 04/14/1998 - None 12/01/1995 - None 02/01/1994 - None Inspection Notes:

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****** * * * * Span : Main-0 - (cont.) * * * * * * * * *

| Element Des | cerintion | | **** | * * * * | * Span : ı | Main-0 - (cont | :.) * * * * * * * * | * * | | |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------|----------------|--------------------|-----------------------------|--------------------|------------------|------------|
| | Scale Factor | Env | Quantity | Linita | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | - Metal Rail Co | | , | Units | | PCI SIAI I | PCI SIAI 2 | PCI SIAI 3 | PCI Stat 4 | PCI SIAI 5 |
| Terrierit 554 | 1 | 3 | 11 | | 313 | 95 | 5 | 0 | 0 | |
| | <u>'</u> | 3 | 11 | m. | | | | | | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
| 8/06/2012 - | Some spot rus | t and fadeo | d paint on rail p | osts. So | me sanding | material in lowe | r post webs near | bases. | | HZG. |
| 8/09/2010 - | No change from | m the previ | ous inspections | S. | | | | | | JZD |
| 7/10/2008 - | Spot rust on th | e W-Beam | rail and top ha | If of the | posts. Pain | it loss and surfac | e pitting on the lo | ower portions of t | he webs and base | es. KZC |
| 6/08/2006 - | Unchanged. | | | | | | | | | IZDU |
| 9/21/2004 - | Spot rust on th | e rail posts | and W-Beam | rail. | | | | | | VUL |
| 10/07/2002 - | Minor rusty spo | ots to both | posts and rail. | | | | | | | |
| 08/02/2000 - | 5.49 * 2 = 10.9 | 8m | | | | | | | | GHJ) |
| Some rust a
04/14/1998 - | | | | | | | | | | RHH |
| 12/01/1995 - | None | | | | | | | | | YDN |
| 02/01/1994 - | None | | | | | | | | | REF |
| Inspection I | Votes: | | | | | | | | | |
| Пороспол | 10100. | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| General | Inspection I | Notes | | | | | | | | |
| 08/06/2012 - | Area under brid | dge was dr | y today as was | all of th | e exposed b | backwall drains. | | | | HZG |
| | | | | ets the " | no retro-fit n | needed" policy of | the Bridge Burea | au. | | JZD |
| | d shoe is lapped
Median barrier | | | ndition. | | | | | | KZC |
| | | | | | d cracks in t | he asphalt surfa | cina. | | | IZDI |
| NBI 59, supe
Small deline | erstructure, rated
ators on the rail | d a "7" due
blocks. | to minor crack | ing on th | ne underside | e of the deck slal | | alcanad out | | VUL |
| | · | | | | | | | | Lucata | |
| | | | | tandard | s. 36A is pa | art of continuous | run and is only V | v-beam with stee | o posts. | IFHF |
| | New seal and | cover in 19 | 99. | | | | | | | GHJ |
| 04/14/1998 - | | | | | | | | | | RHH |
| | Sufficiency Rat
Rating Calculation | | | | | | | | | YDN |
| ĺ | , and the second | on Accepte | a by opoquooo | + at 2/10 | 707 14.10.0 | ,0 | | | | |
|)2/01/1994 - | | | | | | | | | | REF |
|)1/01/1992 - | Updated with to | ape 1994 | | | | | | | | NB9 |
| | Updated with to | | | | | | | | | NB9 |
| 02/01/1988 - | Updated with ta | ape 1989 | | | | | | | | NB8 |
| 02/01/1986 - | Updated with ta | ape 1988 | | | | | | | | NB8 |
| 01/01/1984 - | Updated with ta | ape 1985 | | | | | | | | NB8 |
| 08/01/1981 - | Updated with ta | ape 1984 | | | | | | | | NB8 |
| | | | | | | | | | | |
| | | | | | | | | | | |
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100315000+00001 **Location: GREAT FALLS Structure Name:**

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 **GREAT FALLS** Division Code, Location:31 **GREAT FALLS**

County Code, Location: 013 **CASCADE** City Code, Location: 32800 **GREAT FALLS**

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00315

Str Owner Code, Description: 1 State Highway Agency **State Highway Agency** Maintained by Code, Description:1

Intersecting Feature: INT I-15 Kilometer Post, Mile Post: 0.02 km 0.01

Structure on the State Highway System: Latitude: 47°29'06" Construction Data Structure on the National Highway System:

Longitude: 111°20'42" Construction Project Number: I 15-5(26)271 Str Meet or Exceed NBIS Bridge Length: Construction Station Number: 536+44.00

Construction Drawing Number: 6792 **Traffic Data**

Construction Year: 1967 Current ADT: 15,040 ADT Count Year: 2009 2 % Percent Trucks: Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 36.2 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3 : | 72.91 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 89.61 m

Deck Area: 1,475.00 m sq

13.72 m Deck Roadway Width: 15.00 m Approach Roadway Width:

Median Code, Description: 2 Closed median (no barrier)

Span Data

Main Span

Number Spans: 5

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 5 Epoxy Overlay

Deck Protection Type: 0 None Deck Membrain Type: 0 None

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

H Hwy beneath struct Reference Feature for Vertical Clearance:

5.48 m Vertical Clearance Under the Structure:

H Hwy beneath struct Reference Feature for Lateral Underclearance:

3.55 m Minimum Lateral Under Clearance Right: 6.70 m Minimum Lateral Under Clearance Left:

Approach Span

Number of Spans: 0 Material Type Code, Description: Span Design Code, Description:

> 16.46 m (52) Out-to-Out Width: (50A) Curb Width: (50B) Curb Width: 0.00 m 0.00 m Skew Angle: 30°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | North or East Travel | | |
|------------------------|-----------|-----------|---------------------|------------|----------------------|----------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | 100015 | South | 6.75 m | 11.58 m | North | 5.48 m | 11.58 m |
| I-15 NB AND SB |] | | | | | | |
| Route On Structure | 100315 | West | 99.99 m | 8.53 m | East | 99.99 m | 4.88 m |
| 10TH AVE. SOUTH INT. |] | | | | | | |



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Inspection Data

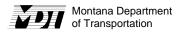
Sufficiency Rating: 88.4
Structure Status: Not Deficient

Inspection Due Date: 05 December 2014 (91) Inspection Frequency (months): 24

| NBI Inspection D | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------|-----------------------|------------------------------|----------------------------------------------|--------------------------------------------------------|
| (90) Date of Last Ins | pection : 05 December | r 2012 | | La | ast Inspected By: Charles Pe | pos - 107 | |
| (90) Inspection | on Date : | | | | Inspected By : | | |
| (58) Deck (59) Superstructure (60) Substructure (72) App Rdw Inspection Hours Crew Hours for inspection Helper Hours for Hel | Rating: 7 Rating: 6 y Align: 7 Unrepaired Space Spa | $\overline{}$ | Rating: 6 ance: 5 Status: A Solution | (36B) | : 0 | (61) Channe
(71) Waterway A
(113) Scou | rt Rating : N el Rating : N dequacy : N r Critical : N |
| Special Equipment H | ours: 0 | | | | | | |
| Inspection Wor | k Candidates | Status | Priority | Effected
Structure | Scope of
Work | Action | Covered
Condition |
| Candidate ID | Date
Requested | Status | Filonty | Unit | WOIK | Action | States |
| | 13 November 2002 | Approved | High | All Spans | 300 Strip Seal Exp Joint | Min Repair | |
| Clean the sanding mate | enal out of the rubber (| jiand. | | | | | |
| D31-FY2004-000074 | 28 January 2004 | Approved | Low | All Spans | Bridge | Spot Paint (flex) | |
| Clean and paint bearing | gs. | | | | | | |
| D31-FY2011-000022
Repair spalling / delami | 28 December 2010 nations on the Right of | Not Approved olumn of Bent 4. | Low | M Main | 205 R/Conc Column | Min Repair | |
| | | | | | | | |

Late Reason:

Inspection Date: 12/05/2012



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Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 22 - P Conc Deck/Rigid Ov 1475 X 100 3 sq.m. 0 % % Previous Inspection Notes: 12/05/2012 - Mapping cracks in all Spans. Surface delaminations along the guard angles and joint steel. Studded tire wear in the wheel paths. 12/06/2010 - Mapping cracks in most of the Spans with 4 and 5 being the worse. Wear in the wheel paths. Small delaminations along the joint 11/17/2008 - Wear in the wheel paths. Transverse cracks over the Bents w\o joints. EB lane has mapping cracks in all of the Spans. 11/02/2006 - Small delaminations along the joint over Bent 4. Wear in the wheel paths. Transverse cracking over the unjointed Bents. 10/16/2002 - 16.46 * 89.61 = 1474.98 Same on cracks with some delamination and transverse cracking also; quick chain drag. 06/03/1998 - Numerous small, tight mapping cracks throughout the wear surface of the new overlay. A seal coat was applied in 1995 after the 1-1/2" rigid overlay. 19.19 * 89.61 02/01/1994 - None Inspection Notes: Element 109 - P/S Conc Open Girder 781 100 m. % % % % Previous Inspection Notes: 12/05/2012 - Girders are in Good condition. 12/06/2010 - Good conditions with no hits observed. 11/17/2008 - Genreally in Good condition. 11/02/2006 - Generally in Good condition. Some minor cracks from the back of the embedded bearing plate to the ends of the girders on several of the girders. None of these are a problem. 10/16/2002 - (7 * 28.12) (10 * 43.5864) (8 * 18.5166) Inspection Notes: Element 205 - R/Conc Column Bent 2, 3, 4, and 5 2 ea. 90 % Previous Inspection Notes : 12/05/2012 - Right column of Bent 4 shows spalls, delaminations, and deteriorated concrete on its' SE corners; photo. Tight surface shrinkage cracks. Columns of Bent 4 have some staining from joint leakage. 12/06/2010 - All look Good except the Right column at Bent 4 which has delaminations and spalling that is getting worse; photo. 11/17/2008 - Right column at Bent 4 has delaminations and spalling for Condition State 3 and 2 respectively; photo. Tight surface shrinkage cracks throughout. 11/02/2006 - Very minor spalling on a couple of the columns and none are a problem. A couple of the tie wires are exposed, but not a problem. 10/16/2002 - Most noticeable on the south column at Bent 4. 06/03/1998 - Some spalling of concrete on a couple of the columns. 02/01/1994 - None Inspection Notes:

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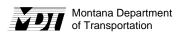
********* Span : Main.0 _ (cont) ********

| | | | | | Span . | Main-u - (COII | ι. <i>)</i> | | | |
|-------------------------------------------------------------|---------------|--------------|-----------------------------------------|----------|---------------|---------------------|-------------------|---------------------|--------------------|-------------------|
| Element Descript | ion | | | | | | | | | |
| | ale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 215 - R/ | | ment 1 and | d 6 | | | | | | | |
| | 1 | 1 | 45 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | 9 |
| Previous Inspect | on Notes : | | | | | | | | | |
| 12/05/2012 - Abu
backwall by G3 a
12/06/2010 - Ger | nd G6. | | | | | | | (2) small spalls in | n Abutment 4's | GZFZ
GAEZ |
| 11/17/2008 - (1) | • | | • • • • • • • • • • • • • • • • • • • • | | | · · | | | | RZDZ |
| 11/02/2006 - Min
of Abutment 1, S
10/16/2002 - (19 | W corner. | | cracks on both | caps. | (1) small sp | all along the gird | der embedment a | it Abutment 1. Ei | rosion on the Rig | ht side CXDO QZCJ |
| Inspection Note: | S: | | | | | | | | | |
| | | | | | | | | | | |
| Element 234 - R/ | <u> </u> | | | | | | | | | |
| | 1 | 1 | 77 | m. | | 90 | | | | |
| Previous Inspect | on Notes : | | | | | | | | | |
| 12/05/2012 - Spa | ıll on the Le | eft end of B | ent 3's cap had | not cha | anged. Ben | t 4's cap is staine | ed and has surfa | ce spalls and del | aminations on its | ' GZFZ |
| bottom at rebar of 12/06/2010 - Spa | | oft and of R | ent 3's can on t | ha Snai | n 2 side: nh | oto Delamainat | ions on the Right | t and of Bant 4's | can Some smal | I spalls GAEZ |
| on the surface of | the cap bo | ttoms from | shallow rebar of | hair fee | et. | | | | | |
| 11/17/2008 - Spa
and exposed reb | | | not gotten any | worse. | Surface de | laminations and | spalls on the und | derside of the cap | os from shallow ti | ie wire RZDZ |
| 11/02/2006 - Und
the cap at Bent 3 | | | | | | rebar chairs are | e exposed. Also | staining around t | he spalls. Left e | nd of CXDO |
| 10/16/2002 - 19. | | | Span 2 side be | aring, s | вее риото. | | | | | QZCJ |
| Inspection Notes | s: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 300 - St | rip Seal Ex | p Joint | | | | | | | | - |
| | 1 | 3 | 19 | m. | | 95 | 5 | 0 | | |
| | | | | | | % | % | % | % | 9 |
| Previous Inspect | on Notes : | | | | | | | | L | |
| 12/05/2012 - Joir
joint's steel. | · | | | | | | | | | g the GZFZ |
| 12/06/2010 - Lots | | | | | | | | | | GAEZ |
| 11/17/2008 - Full | | | _ | | | | | • | _ | |
| 11/02/2006 - Joir
delaminations ald
10/16/2002 - Full | ong the join | t steel. | nen tapped on. | Раске | a with airt/s | anding material. | No apparent are | eas of leakage. S | Some minor | CXDO
QZCJ |
| 06/03/1998 - Nee | ed to clean | out the sar | ding material th | at is in | the joint. | | | | | QFBC |
| 19.19 * 1
02/01/1994 - Nor | ne | | | | | | | | | REFI |
| Inspection Notes | S: | | | | | | | | | |
| | | | | | | | | | | |
| | <u> </u> | <u> </u> | <u> </u> | | <u> </u> | | | <u> </u> | | <u></u> |

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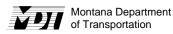
| Element Description | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------|------------------------------------------------|
| Smart Flag Scale Fa | | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 - Moveab | e Bearing Be | nt 4 | | | | | | | |
| 1 | 2 | 20 | ea. | | 90 | 10 | 0 | | |
| | | | | | % | % | % | % | |
| Previous Inspection No | tes: | I | | | | L | | | |
| 2/05/2012 - Alignmen | is Good. Rus | st, paint loss, stai | ining, ar | nd bird debri | S. | | | | GZF. |
| 12/06/2010 - Alignmen | is Good. Rus | st, dirt, paint loss | , and bi | rd debris. | | | | | GAE |
| 1/17/2008 - Rusty, pa | nt loss, and d | ebris. Also staini | ing from | n prior joint. | | | | | RZD |
| 11/02/2006 - Rusty, pa | nt loss, dirt, a | nd bird debris. | | | | | | | CXD |
| 10/16/2002 - Add and | ome paint los | S. | | | | | | | QZC |
| 06/03/1998 - Some rus | t & pitting. | | | | | | | | QFB |
| 02/01/1994 - None | | | | | | | | | REF |
| Inspection Notes: | | | | | | | | | |
| | | | | | | | | | |
| Element 313 - Fixed B | | | | | | | | | |
| | | 1 | | | | | | | |
| 1 | 1 | 64 | ea. | | 90 | 10 | 0 | | |
| | | | | | % | % | % | % | |
| | | | | | /9 | 70 | ,, | | |
| Previous Inspection No | tes: | | | | 70 | 70 | | | |
| 12/05/2012 - Bent 2, 3 | and 5 show fa | | oot rust. | . Abutment b | | | | g, and debris. Ou | uter GZF. |
| 12/05/2012 - Bent 2, 3
bearings at the Abutme | and 5 show fa | orst. | oot rust. | . Abutment b | | | | g, and debris. Ou | |
| 12/05/2012 - Bent 2, 3
pearings at the Abutmo
12/06/2010 - Rust, dirt | and 5 show fa
nts are the wo
paint loss, an | orst.
d bird debris. | | | pearings have pa | aint loss, rust, mir | nor surface pittin | g, and debris. Ou | GAE |
| 12/05/2012 - Bent 2, 3
pearings at the Abutmo
12/06/2010 - Rust, dirt
1/17/2008 - Spot rust | and 5 show fa
nts are the wo
paint loss, an
on the Bent be | orst.
d bird debris.
earings with paint | | | pearings have pa | aint loss, rust, mir | nor surface pittin | g, and debris. Ou | GAE.
RZD. |
| Previous Inspection No. 12/05/2012 - Bent 2, 3 pearings at the Abutmo 12/06/2010 - Rust, dirt 11/17/2008 - Spot rust 11/02/2006 - Some min 10/16/2002 - No change | and 5 show fants are the wo
paint loss, an
on the Bent be
for spot rust an | orst.
d bird debris.
earings with paint | | | pearings have pa | aint loss, rust, mir | nor surface pittin | g, and debris. Ou | GAE.
RZD.
CXD |
| 12/05/2012 - Bent 2, 3
pearings at the Abutmo
12/06/2010 - Rust, dirt
11/17/2008 - Spot rust
11/02/2006 - Some mi
10/16/2002 - No chang | and 5 show fants are the wo
paint loss, an
on the Bent be
for spot rust an | orst.
d bird debris.
earings with paint | | | pearings have pa | aint loss, rust, mir | nor surface pittin | g, and debris. Ou | GAE.
RZD.
CXD |
| 12/05/2012 - Bent 2, 3
pearings at the Abutme
12/06/2010 - Rust, dirt
11/17/2008 - Spot rust
11/02/2006 - Some mi | and 5 show fants are the wo
paint loss, an
on the Bent be
for spot rust an | orst.
d bird debris.
earings with paint | | | pearings have pa | aint loss, rust, mir | nor surface pittin | g, and debris. Ou | GAE.
RZD.
CXD |
| 2/05/2012 - Bent 2, 3
pearings at the Abutmo
2/06/2010 - Rust, dirt
1/17/2008 - Spot rust
1/02/2006 - Some min
0/16/2002 - No chang | and 5 show fants are the wo
paint loss, an
on the Bent be
for spot rust an | orst.
d bird debris.
earings with paint | | | pearings have pa | aint loss, rust, mir | nor surface pittin | g, and debris. Ou | GAE.
RZD.
CXD |
| 2/05/2012 - Bent 2, 3
pearings at the Abutme
2/06/2010 - Rust, dirt
1/17/2008 - Spot rust
1/02/2006 - Some min
0/16/2002 - No chang
Inspection Notes: | and 5 show fa
nts are the wo
paint loss, an
on the Bent be
or spot rust an
e. | orst.
d bird debris.
earings with paint | | | pearings have pa | aint loss, rust, mir | nor surface pittin | g, and debris. Ou | GAE.
RZD. |
| 2/05/2012 - Bent 2, 3 bearings at the Abutmo 2/06/2010 - Rust, dirt 1/17/2008 - Spot rust 1/02/2006 - Some min 0/16/2002 - No change Inspection Notes: | and 5 show fa
nts are the wo
paint loss, an
on the Bent be
for spot rust are. | orst. d bird debris. earings with paint and bird debris. | t loss ar | | pearings have pa | aint loss, rust, mir | nor surface pittin | | GAE.
RZD.
CXD |
| 2/05/2012 - Bent 2, 3
bearings at the Abutme
2/06/2010 - Rust, dirt
1/17/2008 - Spot rust
1/02/2006 - Some min
0/16/2002 - No chang
Inspection Notes: | and 5 show fa
nts are the wo
paint loss, an
on the Bent be
or spot rust an
e. | orst.
d bird debris.
earings with paint | t loss ar | | pearings have pa | aint loss, rust, mir
the Abutment be | nor surface pittin
earings. | 0 | GAE.
RZD.
CXD |
| 2/05/2012 - Bent 2, 3
bearings at the Abutme
2/06/2010 - Rust, dirt
1/17/2008 - Spot rust
1/02/2006 - Some min
0/16/2002 - No change
Inspection Notes: | and 5 show fa
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on the Bent be
for spot rust are. | orst. d bird debris. earings with paint and bird debris. | t loss ar | | pearings have pa | aint loss, rust, mir
the Abutment be | nor surface pittin | 0 | GAE.
RZD.
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the Abutment be | earings. | 0 % | GAE.
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erally in Good con | GAE: RZD. GXD. QZC. |
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erally in Good con | GAE. RZD. CXD. QZC |
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erally in Good con | GAE. RZD. CXD. QZC. ddition. GZF. GAE. RZD. |
| 2/05/2012 - Bent 2, 3 bearings at the Abutmo 2/06/2010 - Rust, dirt 1/17/2008 - Spot rust 1/02/2006 - Some min 0/16/2002 - No change Inspection Notes: | and 5 show far the work paint loss, and on the Bent before spot rust and e. dge Railing dge Railing dge Railing dge Railing dge Railing stes: | orst. d bird debris. earings with paint and bird debris. 180 Spalls at the bolt on. Rubs and scrubs and scrapes | m. holes of rapes of noted. | and surface pi | pearings have partiting on some of 95 % de of the barrier side of the barrier | aint loss, rust, mir the Abutment be 5 % s. Some shrinak er has spalls nea | oner surface pitting parings. O % ge cracks. Generate ends arour | o %
erally in Good con | GAE RZD CXD QZC adition. GZF. GAE RZD mm CXD |
| 2/05/2012 - Bent 2, 3 pearings at the Abutme 2/06/2010 - Rust, dirt 1/17/2008 - Spot rust 1/02/2006 - Some min 0/16/2002 - No chang Inspection Notes: Element 331 - Conc Bi 1 Previous Inspection Note 2/05/2012 - Rubs on 2/06/2010 - Generally 1/17/2008 - Unchang 1/02/2006 - Numerous Irilling/construction ac 0/16/2002 - ok | and 5 show far and 5 show far and 5 show far and the work paint loss, and on the Bent before spot rust and e. dge Railing dge Railing dge Railing dge Railing dge Railing stes: ooth barriers. Good conditioned with some respectively. | sporst. In display the bold of the bold o | m. holes of noted. | and surface pi | pearings have partiting on some of 95 % de of the barrier side of the barrier | aint loss, rust, mir the Abutment be 5 % s. Some shrinak er has spalls nea | oner surface pitting parings. O % ge cracks. Generate ends arour | o %
erally in Good con | GAE RZD CXD QZC Idition. GZF GAE RZD Im CXD |
| 2/05/2012 - Bent 2, 3 pearings at the Abutme 2/06/2010 - Rust, dirt 1/17/2008 - Spot rust 1/02/2006 - Some min 0/16/2002 - No chang Inspection Notes: Element 331 - Conc Br 2/05/2012 - Rubs on 2/05/2012 - Rubs on 2/06/2010 - Generally 1/17/2008 - Unchang 1/02/2006 - Numerou drilling/construction ac | and 5 show far and 5 show far and 5 show far are the work paint loss, and on the Bent before spot rust and e. dge Railing dge Railing dge Railing dge Railing dge Railing stes: ooth barriers. Good conditioned with some respectively. | sporst. In display the bold of the bold o | m. holes of noted. | and surface pi | pearings have partiting on some of 95 % de of the barrier side of the barrier | aint loss, rust, mir the Abutment be 5 % s. Some shrinak er has spalls nea | oner surface pitting parings. O % ge cracks. Generate ends arour | o %
erally in Good con | GAE RZD CXD QZC dition. GZF GAE RZD m CXD QZC |
| 2/05/2012 - Bent 2, 3 pearings at the Abutme 2/06/2010 - Rust, dirt 1/17/2008 - Spot rust 1/02/2006 - Some min 0/16/2002 - No change Inspection Notes: Concept | and 5 show far and 5 show far and 5 show far are the work paint loss, and on the Bent before spot rust and e. dge Railing dge Railing dge Railing dge Railing dge Railing stes: ooth barriers. Good conditioned with some respectively. | sporst. In display the bold of the bold o | m. holes of noted. | and surface pi | pearings have partiting on some of 95 % de of the barrier side of the barrier | aint loss, rust, mir the Abutment be 5 % s. Some shrinak er has spalls nea | oner surface pitting parings. O % ge cracks. Generate ends arour | o %
erally in Good con | GAE. RZD. CXD. QZC. ddition. GZF. GAE. RZD. |



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| Element 358 - Deck X Previous Inspection | Factor | Env | | | | | | | | |
|------------------------------------------------------------------------------------------------------|------------------------------|-------------------------|----------------------------------|----------------------|--------------------------------|--------------------|--------------------|---------------------|-------------------|-----------------------|
| Element 358 - Deck X Previous Inspection | Cracking S | | | | | | | | | |
| X
Previous Inspection | | SmEloa | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Previous Inspection | 1 | Siliriay | | | | · | | | · | |
| · | | 1 | 1 | ea. | X | 0 | 100 | 0 | 0 | |
| · | | | | | | % | % | % | % | C |
| 12/05/2012 Due to | Notes: | | | | | | | | | |
| 12/03/2012 - Due it | size and q | quantity. | Spans 4 and 5 | are the | worst. Little | to no sealer left. | | | | GZFZ |
| 12/06/2010 - Lots o | | | | | | | | | | GAEZ |
| 11/17/2008 - Condi | | | | | | nderside of the d | eck looks ok. | | | RZDZ |
| 11/02/2006 - Crack | ing very visi | ible today | y from coating | of de-ic | er. No spalle | ed areas. In Cor | ndition State 1 as | sealed in 1995. | | CXDO |
| 10/16/2002 - No cha | ange. | | | | | | | | | QZCJ |
| 06/03/1998 - Small, | , tight mapin | ng cracks | throughout th | e new ri | gid overlay. | Sealed with a se | ealer during 1995 | also. | | QFBC |
| Inspection Notes: | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | 41 NI | | | | | | | | | |
| General Inspe | | | | | | | | | | |
| 12/05/2012 - End sl
Rail terminal section
Slope protection co
photo.
12/06/2010 - End sl | n at Abutme
increte has s | ent 1-Left
slid dowr | t, NW corner, hahill into the co | nas (3) b
lumns a | roken rail po
it Bent 2 and | is causing some | e cracking and sp | alling in the slope | e protection conc | GZFZ
rete,
GAEZ |
| 11/17/2008 - Appro | | - | | IIE INL a | and SE come | #15. | | | | RZDZ |
| NE and SE rail end
11/02/2006 - Slope | shoes are l | lapped a | gainst traffic. | ows som | ne minor sett | lement and crac | king. | | | CXDO |
| 10/16/2002 - None | | | | | | | | | | QZCJ |
| 06/03/1998 - None | | | | | | | | | | QFBC |
| 02/01/1994 - Suffici
Sufficiency Rating (| | | | | | | | | | REFI |
| 01/01/1992 - Updat | ed with tape | e 1994 | | | | | | | | NB94 |
| 03/01/1990 - Updat | ed with tape | e 1991 | | | | | | | | NB91 |
| 02/01/1988 - Updat | ed with tape | e 1989 | | | | | | | | NB89 |
| | e al codelle Cara | e 1987 | | | | | | | | |



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100315000+03421

Location: GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 **GREAT FALLS** Division Code, Location:31 **GREAT FALLS**

County Code, Location: 013 **CASCADE** City Code, Location: 32800 **GREAT FALLS**

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00315

State Highway Agency **State Highway Agency** Str Owner Code, Description: 1 Maintained by Code, Description:1

Intersecting Feature: FAU 5225-14TH STREET SW Kilometer Post, Mile Post: 0.55 km 0.34

Structure on the State Highway System: Latitude: 47°29'13"

Structure on the National Highway System: Longitude: 111°20'17"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number: IG 315-5(3)272 Construction Station Number: 21+65.00

Construction Drawing Number: 6813

Construction Year: 1967 Reconstruction Year: 1995

Traffic Data Current ADT : 25,500

ADT Count Year: 2009 2 % Percent Trucks:

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 35.3 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 83.84 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 45.72 m

> Deck Area: 546.00 m sq

10.96 m Deck Roadway Width: 10.96 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

H Hwy beneath struct Reference Feature for Vertical Clearance:

5.26 m Vertical Clearance Under the Structure:

H Hwy beneath struct Reference Feature for Lateral Underclearance:

1.70 m Minimum Lateral Under Clearance Right: 0.00 m Minimum Lateral Under Clearance Left:

Span Data

Main Span

Number Spans: 3

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 1 Monolithic concrete (concurrently placed with struct

Deck Protection Type: 0 None Deck Membrain Type: 0 None Number of Spans: 0

Approach Span

Material Type Code, Description:

Span Design Code, Description:

11.95 m (52) Out-to-Out Width:

(50A) Curb Width:

(50B) Curb Width:

0.00 m

0.00 m

Skew Angle: 25°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | N | orth or East Trav | /el |
|------------------------|-----------|-----------|---------------------|------------|-----------|-------------------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | U05225 | Both | 5.26 m | 9.14 m | N/A | | |
| 14TH STREET SW | | | | | | | |
| Route On Structure | 100315 | N/A | | | North | 99.99 m | 10.96 m |
| I - 315 EB | | | | | | | |



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Inspection Data

Sufficiency Rating: 93

Inspection Due Date : 05 December 2014 (91) Inspection Frequency (months) : 24

| Structure Status : No | t Deficient | | | | | | | | |
|------------------------|------------------------|-----------------|------------|-------------------|--------------------------------------------------|-------------------|----------------------|--|--|
| NBI Inspection Da | | | | | | | | | |
| (90) Date of Last Ins | spection : 05 December | er 2012 | | La | Last Inspected By: Charles Pepos - 107 | | | | |
| (90) Inspection | on Date : | | | | Inspected By : | | | | |
| (58) Deck | Rating : 5 | (68) Deck Geo | ometry : 4 | (36A) | (36A) Bridge Rail Rating : 1 (62) Culvert Rating | | | | |
| (59) Superstructure | Rating : 8 | (67) Structure | Rating : 7 | (36B) | (36B) Transition Rating : 1 (61) Channel Rating | | | | |
| (60) Substructure | Rating : 7 | (69) Under Clea | arance : 4 | (36C) Ap | proach Rail Rating :1 | (71) Waterway A | dequacy : N | | |
| (72) App Rdw | y Align : 8 | (41) Posting | | (360 | D) End Rail Rating : 1 | (113) Scoul | r Critical : N | | |
| | Unrepaired S | palls : 0 m | sq | | Deck Surfacii | ng Depth : 0.0 | 00 in | | |
| nspection Hours | | | | | _ | | | | |
| Crew Hours for inspec | | | | oper Required | | | | | |
| Helper H | |) s | • | for inspection | 0 | | | | |
| Special Crew H | lours : | | l | Flagger Hours | . 0 | | | | |
| Special Equipment H | lours : |) | | | | | | | |
| Inspection Wor | k Candidates | Ctatus | Duianitus | Effected | Scope of | Antinu | Covered
Condition | | |
| Candidate ID | Date
Requested | - Status | Priority | Structure
Unit | Work | Action | States | | |
| D31-FY2004-000075 | 28 January 2004 | Approved | Low | All Spans | Bridge | Spot Paint (flex) | | | |
| lean and paint bearing | js. | | | | | | | | |
| pproved. DRC | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| D31-FY2007-000039 | 26 December 2006 | Approved | Medium | M Main | 12 Bare Concrete Deck | Min Repair | | | |
| atch any spalled areas | s in the surfacing. | | | | | | | | |
| pproved. DRC | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Late Reason:

Inspection Date: 12/05/2012



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Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 12 - Bare Concrete Deck X 100 3 546 sq.m. 0 % % Previous Inspection Notes: 12/05/2012 - Transverse cracks with some spalls and delaminations over Bents 2 and 3. Small delaminations along the guard angles. Wear from studded tires in the wheel paths. 12/06/2010 - Spalls, delaminations, and transverse cracks over Bent 2 and 3. Wear in the wheel paths. 2 percent or less delaminations in the deck surface. 11/17/2008 - Open transverse cracks over Bent 2 and 3. Some delaminations in all (3) Spans with an estimated 2 percent or less from a quick chain drag. Wear in the wheel paths. 11/02/2006 - Wear in the wheel paths. Transverse cracks over Bent 2 and 3 with some spalls over Bent 3 also noted. 10/10/2002 - 11.95 * 45.72 = 546.35 Add slightly open cracks over both Bents. Some minor cracking throughout. 06/03/1998 - 13.15 * 45.72= Studded tires have left an almost exposed aggregate finish in both traffic lanes. 02/01/1994 - None Inspection Notes: Element 109 - P/S Conc Open Girder 229 1 100 m. % % % Previous Inspection Notes : 12/05/2012 - Good condition. 12/06/2010 - Good condition. 11/17/2008 - Same as prior and in Good condition. 11/02/2006 - No problems observed. Some girders have minor cracks from the backside of the embedded bearing plate to the ends of the girders. 10/10/2002 - 5 * 45.72 = 228.60m Inspection Notes: Element 205 - R/Conc Column Bent 2 and 3 ea. % Previous Inspection Notes : 12/05/2012 - (2) small spall on the Right column of Bent 3. Tight surface shrinkage cracks in all (4) columns. Columns are in Good condition. 12/06/2010 - Tight surface shrinkage cracks in all (4) columns. (2) small spalls on the Right column of Bent 3; patch has popped off. Generally in Good condition. 11/17/2008 - Generally in Good condition. Small delamianted patch on the Right column of Bent 3 for Condition State 3 and a small spall near the sidewalk line on the same column for Condition State 2. 11/02/2006 - Tight surface shrinkge cracks. Right/South Column at Bent 3 has a small chipped area near the sidewalk and some delamianted areas of the patch at its construction joint to the cap. 10/10/2002 - Some minor wear, weathering, and shrinkage cracks. Inspection Notes:

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I00315000+03421 Continue

| Element Des | scription | | | | | | | | | |
|--------------|-----------------|---------------|------------------|----------|------------------|-------------------|-------------------|------------------|--------------------|------------|
| _ | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 215 | - R/Conc Abut | ment | | | | | | | | |
| | 1 | 2 | 33 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | C |
| Previous Ins | pection Notes : | | | | | | | | | |
| 2/05/2012 - | Small spalls al | ong the car | o to backwall ar | ea and | (1) small spa | all at the G3 emb | edment in Abutn | nent 1's backwal | l. | GIFZ |
| | | - | | | | rface shrinkage | | | | GZEV |
| | Unchanged. C | | | | · | | | | | RCDZ |
| 1/02/2006 - | Tight surface s | shrinakge cı | racks in both ca | aps and | some small | spalls where the | girders are emb | edded in the bad | ckwalls. | CZDO |
| | Add some eros | | | | | | | | | KLKZ |
| 06/03/1998 - | (13.15 * 2) 1. | 80 1.60 | 1.50 1.70 So | me sma | all, tight crack | ks with minor wa | ter staining. | | | QFKU |
| 02/01/1994 - | None | | | | | | | | | REFI |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| lement 234 | - R/Conc Cap | Bent 2 and | 13 | | | | | | | |
| | 1 | 1 | 26 | m. | | 100 | 0 | 0 | 0 | |
| | • | ' | 20 | 111. | | | % | | | |
| | | | | | | % | % | % | % | |
| | pection Notes : | | | | | | | | | |
| | Good condition | | _ | | | | | | | GIFZ |
| | Good condition | | _ | | | | | | | GZEV |
| | Good condition | | _ | _ | | | | | | RCDZ |
| | _ | | steps in the cap | s. Lots | of staining f | rom pigeon debr | is on tops of the | caps. | | CZDO |
| 10/10/2002 - | 13.15 * 2 = 26 | .30m | | | | | | | | KLKZ |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 313 | - Fixed Bearing | g | | | | | | | | |
| | 1 | 1 | 30 | ea. | | 85 | 15 | 0 | | |
| | | | | | | % | % | % | % | · · |
| Previous Ins | pection Notes : | | | | | | | | | |
| | | | n the bearings a | at Bents | s 2 and 3. Be | earings at both o | f the Abutments I | nave paint loss. | minor pitting, and | d GIFZ |
| neavy rust. | | | | 20 | | 5ag5 at 25a 5 | | м го раши 1000, | ·····g, a | |
| | Rusty spots, p | | | | | | | | | GZEV |
| | Rust, paint los | | | | | | | | | RCDZ |
| | | | | n debris | on the beari | ngs at Bents 2 a | nd 3. | | | CZDO |
| 10/10/2002 - | · Add some pair | nt loss and l | bird debris. | | | | | | | KLKZ |
| | Viotes. | | | | | | | | | |
| Inspection I | VOICO. | | | | | | | | | |
| Inspection I | 10103. | | | | | | | | | |



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| Smart Flag | ription | | | | | | | | | |
|----------------------------------------------------------------------|-------------------------------------------------------|----------------------|-------------------|-----------|----------------|--------------------|---------------------|------------------|-------------------|-------------------|
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 331 - | Conc Bridge I | Railing | | • | | | <u> </u> | | <u>.</u> | |
| | 1 | 3 | 91 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| Previous Insp | ection Notes : | | | | | | | | | |
| • | | inkage crad | eks Cracks on | the had | ckside of the | harrier show effl | orescence in area | as Ends shoe a | t Ahutment 1 are | GIF. |
| apped agains | t traffic. | | | | | | | | | |
| 2/06/2010 - \$
raffic flow. | Scrapes and di | ings to both | n barriers. Ver | tical shr | inkage crack | s for the length o | of the rails. End s | shoes at Abutmei | nt 1 are lapped a | gainst GZE |
| | Some scrapes | and dings | on both rails. | Γight ve | rtical crackin | g, random, throu | ghout. | | | RCD |
| 1/02/2006 - L | Jnchanged fro | m previous | reports. | | | | | | | CZD |
| 10/10/2002 - 4 | 15.72 * 2 = 91. | 44m Mino | or dings, scrape | es, and | vertical crack | ing. | | | | KLK |
| 06/03/1998 - 1 | New Cast-in-Pl | lace concre | ete rail in 1995. | | | | | | | QFK |
| 02/01/1994 - N | None | | | | | | | | | REF |
| Inspection No | otes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 358 - | Deck Crackin | g SmFlag | | | | | | | | |
| Х | 1 | 3 | 1 | ea. | X | 0 | 0 | 100 | 0 | |
| ^ | • | | | 04. | | % | % | % | % | |
| | | | | | | 70 | 70 | 70 | 70 | |
| · | ection Notes : | | | | | | | | | |
| | | | · · | | | | laminations in the | e cracked areas. | | GIF. |
| | | | v spaling starti | _ | small delamii | nations. | | | | GZE |
| 11/17/2008 - N | Nide cracks wi | ith spalling | over Bents 2 a | nd 3. | | | | | | RCD |
| Inspection No | otes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| General I | nspection I | Notes | | | | | | | | |
| | | | ap was not wo | rking to | day. Minor b | umps on and off | of the structure. | | | GIF |
| | _ | | off of the bride | _ | • | · | | | | GZE |
| | New approach | | | | | | | | | |
| Both of the rai | I end shoes at | Approach | 1 are lapped a | | | | | | | |
| | · | s to the roa | idway approac | hes. St | ill minor bum | ps on and off of | the structure. | | | CZD |
| 10/10/2002 - 0 | | | | | | | | | | KLK |
| 06/03/1998 - N | | | | | | | | | | QFK |
| | | | | | | | | | | REF |
| 02/01/1994 - S | | on Alooopic | a by opoquooo | - ut 2/ 1 | 0,07 14.10.0 | 9 | | | | |
| Sufficiency Ra | ŭ | | | | | | | | | |
| Sufficiency Ra
01/01/1992 - U | Jpdated with ta | | | | | | | | | |
| Sufficiency Ra
01/01/1992 - U
01/01/1990 - U | Jpdated with ta
Jpdated with ta | ape 1991 | | | | | | | | NBS |
| Sufficiency Ra
01/01/1992 - L
01/01/1990 - L
02/01/1988 - L | Jpdated with ta
Jpdated with ta
Jpdated with ta | ape 1991
ape 1989 | | | | | | | | NB9
NB9
NB8 |
| Sufficiency Ra
01/01/1992 - L
01/01/1990 - L
02/01/1988 - L | Jpdated with ta
Jpdated with ta | ape 1991
ape 1989 | | | | | | | | NB9 |
| Sufficiency Ra
01/01/1992 - L
01/01/1990 - L
02/01/1988 - L | Jpdated with ta
Jpdated with ta
Jpdated with ta | ape 1991
ape 1989 | | | | | | | | NB9
NB8 |
| Sufficiency Ra
01/01/1992 - L
01/01/1990 - L
02/01/1988 - L | Jpdated with ta
Jpdated with ta
Jpdated with ta | ape 1991
ape 1989 | | | | | | | | NB9
NB8 |
| Sufficiency Ra
01/01/1992 - L
01/01/1990 - L
02/01/1988 - L | Jpdated with ta
Jpdated with ta
Jpdated with ta | ape 1991
ape 1989 | | | | | | | | NB9
NB8 |
| Sufficiency Ra
01/01/1992 - U
01/01/1990 - U
02/01/1988 - U | Jpdated with ta
Jpdated with ta
Jpdated with ta | ape 1991
ape 1989 | | | | | | | | NB9
NB8 |
| Sufficiency Ra
01/01/1992 - U
01/01/1990 - U
02/01/1988 - U | Jpdated with ta
Jpdated with ta
Jpdated with ta | ape 1991
ape 1989 | | | | | | | | NB9
NB8 |



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Location: GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 **GREAT FALLS** Division Code, Location:31 **GREAT FALLS**

County Code, Location: 013 **CASCADE** City Code, Location: 32800 **GREAT FALLS**

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00315

State Highway Agency **State Highway Agency** Str Owner Code, Description: 1 Maintained by Code, Description:1

Intersecting Feature: FAU 5225-14TH STREET SW Kilometer Post, Mile Post: 0.55 km 0.34

Structure on the State Highway System: Latitude: 47°29'13" **Construction Data**

Structure on the National Highway System: Longitude: 111°20'18" Construction Project Number: IG 315-5(3)272 Str Meet or Exceed NBIS Bridge Length:

Construction Drawing Number: 6813 **Traffic Data**

Construction Year: 1967 Current ADT : 25,500 ADT Count Year: 2009 2 % Percent Trucks: Reconstruction Year: 1995

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 35.3 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 83.84 | | |

Construction Station Number: 21+65.00

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 44.20 m

> Deck Area: 639.00 m sq

13.65 m Deck Roadway Width: 14.00 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

H Hwy beneath struct Reference Feature for Vertical Clearance:

5.20 m Vertical Clearance Under the Structure:

H Hwy beneath struct Reference Feature for Lateral Underclearance:

1.70 m Minimum Lateral Under Clearance Right: 0.00 m Minimum Lateral Under Clearance Left:

Number of Spans: 0

Material Type Code, Description:

Span Design Code, Description:

Span Data

Main Span Approach Span

Number Spans: 3 Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 1 Monolithic concrete (concurrently placed with struct

Deck Protection Type: 0 None Deck Membrain Type: 0 None

14.46 m (52) Out-to-Out Width: (50A) Curb Width: (50B) Curb Width: 0.00 m 0.00 m Skew Angle: 25°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | North or East Travel | | |
|------------------------|-----------|-----------|---------------------|------------|----------------------|----------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | U05225 | Both | 5.20 m | 9.14 m | N/A | | |
| 14TH STREET SW |] | | | | | | |
| Route On Structure | 100315 | West | 99.99 m | 13.65 m | N/A | | |
| I - 315 WB | | | | | | | |



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100315000+03422 Continue

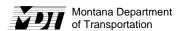
Inspection Data

Inspection Due Date : 06 December 2014

(91) Inspection Frequency (months): 48 Sufficiency Rating: 96 Structure Status: Not Deficient **NBI Inspection Data** 06 December 2010 Charles Pepos - 107 Last Inspected By (90) Date of Last Inspection: (90) Inspection Date Inspected By (62) Culvert Rating : N (58) Deck Rating: 6 (36A) Bridge Rail Rating: (68) Deck Geometry: 9 (59) Superstructure Rating: 8 (61) Channel Rating : N (36B) Transition Rating (67) Structure Rating: (71) Waterway Adequacy (60) Substructure Rating : 7 (36C) Approach Rail Rating (69) Under Clearance: 4 (36D) End Rail Rating (113) Scour Critical: (72) App Rdwy Align : 8 (41) Posting Status: Unrepaired Spalls: 0 m sq 0.00 in Deck Surfacing Depth: **Inspection Hours** Snooper Required : N Crew Hours for inspection: Snooper Hours for inspection Helper Hours: 0 Flagger Hours Special Crew Hours: 0 Special Equipment Hours: Scope of Effected Covered **Inspection Work Candidates Priority Status** Structure Work Action Condition Candidate ID Unit States Requested D31-FY2004-000076 28 January 2004 Approved Low All Spans Bridge Spot Paint (flex) Clean and paint bearings. Approved. DRC D31-FY2007-000041 26 December 2006 Medium M Main 12 Bare Concrete Deck **Approved** Min Repair Patch any spalled areas in the deck, very small at this time. Approved. DRC

Late Reason:

Inspection Date: 12/06/2010



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Element Inspection Data

Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 12 - Bare Concrete Deck X 3 639 sq.m. 0 100 % % Previous Inspection Notes: 12/06/2010 - Wear in the wheel paths. Tight cracks over Bents 2 and 3. Some random cracking in all (3) Spans. 11/02/2006 - Wear in the wheel paths. Cracking does not appear to be any worse or opening up. Put into Condition State 2 as there was (1) small, 1" x 2", area of delamination near Abutment 4 in the Left lane of traffic. 10/10/2002 - 14.46 * 44.20 = 639.13 Numerous, small and tight, transverse and mapping cracks throughout; very noticeable of the repaired areas. Maybe a smart flag for deck cracking the next report. 06/03/1998 - 44.20 * 16.35 Deck was repaired, sealed only and widened in 1995. 02/01/1994 - None Inspection Notes: Element 109 - P/S Conc Open Girder 265 100 m. % % % % Previous Inspection Notes: 12/06/2010 - Good condition. 11/02/2006 - Good condition. A couple of the girders have tight cracks from the backside of the embedded bearing plates to the ends of the airders 10/10/2002 - Some scrapes to the bottom flange, but no dings or spalled concrete. Inspection Notes: Element 205 - R/Conc Column Bent 2 and 3 95 ea. % % % Previous Inspection Notes: 12/06/2010 - Surface shrinkage cracks. Generally in Good condition. 11/02/2006 - Tight surface shrinkage cracks. Left two(2) columns on the newer portion of the bridge have some loose/spalled patches over the construction joint to the cap. 10/10/2002 - Some wear, weathering, shrinkage cracks. Inspection Notes: Element 215 - R/Conc Abutment 1 and 4 m. % % Previous Inspection Notes: 12/06/2010 - (1) small spall near girder embedment at Abutment 4. Some tight shrinkage cracks. 11/02/2006 - Minor and tight cracks in both caps with one small spalleed area in the backwall where the girders are embedded. 10/10/2002 - A little more erosion and weathering of the concrete. Inspection Notes:



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I00315000+03422 Continue

| Element Description | | | | | | | | | |
|-----------------------------------------|--------------|-------------------|----------|---------------|------------------|---------------------|-----------------|--------------------|------------|
| Smart Flag Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 234 - R/Conc Cap | Bent 2 and | 13 | | | | | | | |
| 1 | 1 | 33 | m. | | 100 | 0 | 0 | 0 | |
| | | | | | % | % | % | % | % |
| Previous Inspection Notes : | | | | _ | | | | | |
| 12/06/2010 - Some tight sur | face shrink | age cracks. Re | ebar cha | air feet show | some rust on th | ne underside of bo | oth caps. Minor | staining from bird | GZEW |
| debris.
11/02/2006 - Staining from p | oiaeon deb | ris. Some tight | cracks | at the steps | in the caps and | none are a proble | em. | | CZDO |
| 10/10/2002 - 16.35 * 2 = 32. | _ | | | | | | | | KYKZ |
| Inspection Notes: | | | | | | | | | |
| mopeonon reces. | | | | | | | | | |
| | | | | | | | | | |
| Element 313 - Fixed Bearing |) | | | | | | | | |
| 1 | 1 | 36 | ea. | | 90 | 10 | 0 | | |
| | | | | | % | % | % | % | % |
| Previous Inspection Notes : | | | | _ | | | | | |
| 12/06/2010 - Rust spots, pai | nt loss, an | d bird debris. | | | | | | | GZEW |
| 11/02/2006 - Rusty spots an | d paint los | s. Lots of piged | on debri | s on both of | the Bent caps. | | | | CZDO |
| 10/10/2002 - Add some pair | t loss and | bird debris. | | | | | | | KYKZ |
| Inspection Notes: | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Element 331 - Conc Bridge | Railing | | | | | | | | |
| 1 | 3 | 88 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | % | % | % | % | % |
| Previous Inspection Notes : | | | | | | | | | |
| 12/06/2010 - Same as past | nspections | 5. | | | | | | | GZEW |
| 11/02/2006 - Left/North rail h | nas a coup | le of patches ar | eas on | its backside. | Not a problem | , only an aesthetic | thing. | | CZDO |
| 10/10/2002 - Some dings, so | crapes, and | d vertical cracki | ng. | | | | | | KYKZ |
| 06/03/1998 - New in 1995 a | nd was Ca | st-in-Place. | | | | | | | QFIX |
| 44.20 * 2. | | | | | | | | | |
| 02/01/1994 - None | | | | | | | | | REFI |
| Inspection Notes: | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Element 358 - Deck Crackin | g SmFlag | | | | | | | | - |
| X 1 | 3 | 1 | ea. | X | 0 | 100 | 0 | 0 | |
| | | | | | % | % | % | % | % |
| Previous Inspection Notes : | | | | | | | | | |
| 12/06/2010 - Condition State | e 2 due to a | amount of tight | mappin | g cracks not | ed; especially w | hen the surface is | damp. | | GZEW |
| Inspection Notes: | | | - | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |



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| General Inspection Notes | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 12/06/2010 - Minor bumps on and off of the bridge. | GZEW |
| 11/02/2006 - Recent patches on the East approach to the structure and still a minor bump on and off of the structure. | CZDO |
| 10/10/2002 - None | KYKZ |
| 06/03/1998 - None | QFIX |
| 02/01/1994 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:45:04 Sufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:34 | REFI |
| 01/01/1992 - Updated with tape 1994 | NB94 |
| 01/01/1990 - Updated with tape 1991 | NB91 |
| 02/01/1988 - Updated with tape 1989 | NB89 |
| 02/01/1986 - Updated with tape 1988 | NB88 |
| | |
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Location: GREAT FALLS Structure Name:

General Location Data MDT Maintenance Section: 31-01 Great Falls District Code, Number, Location: 03 **GREAT FALLS** Division Code, Location:31 **GREAT FALLS** County Code, Location: 013 **CASCADE** City Code, Location: 32800 **GREAT FALLS** Kind fo Hwy Code, Description: 8 8 Other (incl toll rds) Signed Route Number: 00315 State Highway Agency **State Highway Agency** Str Owner Code, Description: 1 Maintained by Code, Description:1 Intersecting Feature: FAU 5225-14TH STREET SW Kilometer Post, Mile Post: 0.55 km 0.34 Structure on the State Highway System: Latitude: 47°29'12" **Construction Data** Structure on the National Highway System: Longitude: 111°20'17" Construction Project Number: IR 315-5(12)1F Str Meet or Exceed NBIS Bridge Length: Construction Station Number: 5+63.00 Construction Drawing Number: 15883 **Traffic Data** Construction Year: 1997 Current ADT : 25,500 ADT Count Year: 2009 2 % Percent Trucks: Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading: | | 5 MS 18 (HS 20) |
|--------------------------|-----------|------------------------|
| Inventory Load, Design : | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 34.6 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3 : | 48.6 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 41.45 m

> Deck Area: 333.00 m sq

7.11 m Deck Roadway Width: 7.32 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

Reference Feature for Vertical Clearance: H Hwy beneath struct

5.71 m Vertical Clearance Under the Structure:

H Hwy beneath struct Reference Feature for Lateral Underclearance:

Minimum Lateral Under Clearance Right: 1.90 m 0.50 m Minimum Lateral Under Clearance Left:

Span Data

Main Span

Number Spans: 3

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 1 Monolithic concrete (concurrently placed with struct

Deck Protection Type: 1 Epoxy Coated Reinforcing

Deck Membrain Type: 0 None

Approach Span

Number of Spans: 0

Material Type Code, Description:

Span Design Code, Description:

8.03 m (52) Out-to-Out Width:

(50A) Curb Width: (50B) Curb Width: 0.00 m 0.00 m Skew Angle: 15°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | North or East Travel | | |
|------------------------|-----------|-----------|---------------------|------------|----------------------|----------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | U05225 | Both | 5.71 m | 9.14 m | N/A | | |
| 14TH ST SW/BRIDGE ST |] | | | | | | |
| Route On Structure | 100315 | N/A | | | East | 99.99 m | 7.11 m |
| I-315 EB OFF RAMP |] | | | | | | |



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Inspection Data

Inspection Due Date : 16 June 2015

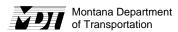
Sufficiency Rating: 96
Structure Status: Not Deficient

(91) Inspection Frequency (months): 48

| pproved. DRC | | | | | | | | |
|---------------------------------------|-----------------------------------|------------------|--------------|-----------------------|------------------------|------------------|-----------------|-------------------|
| lean and spot paint the | | ., | | | | <u> </u> | | |
| D31-FY2007-000143 | Date
Requested
02 July 2007 | Approved | Medium | Unit
M Main | 313 Fixed Beari | ng Rehab | Elem | States |
| Inspection Work | | Status | Priority | Effected
Structure | Scope of
Work | А | ction | Covered Condition |
| Special Equipment Ho | ours : | | | | | | | |
| Special Crew Ho | ours : | | I | Flagger Hours | 0 | | | |
| Helper Ho | ours : | Sr | nooper Hours | for inspection | : 0 | | | |
| nspection Hours Crew Hours for inspec | tion : | | Snoo | oper Required | : N | | | |
| noncotion House | Unrepaired S | palls: 0 m s | sq | | Deck S | urfacing Depth: | 0.00 i | n |
| (72) App Rdwy | Align : 7 | (41) Posting S | | (361 | D) End Rail Rating : 1 | | (113) Scour Cr | ritical : N |
| (60) Substructure I | Rating : 7 | (69) Under Clear | ance:4 | (36C) Ap | proach Rail Rating :1 | (71) V | Waterway Adeo | quacy :N |
| (59) Superstructure F | Rating: 7 | (67) Structure R | tating : 7 | (36B) | Transition Rating : 1 | (| 61) Channel R | ating : N |
| (58) Deck F | Rating : 7 | (68) Deck Geor | metry : 6 | (36A) | Bridge Rail Rating : 1 | | (62) Culvert Ra | ating : N |
| (90) Inspectio | n Date : | | | | Inspected By : | | | |
| (90) Date of Last Insp | pection : 16 June 201 | l1
 | | La | ast Inspected By : Cha | rles Pepos - 107 | | |
| NBI Inspection Da | | | | | _ | | | |

Late Reason:

Inspection Date: 06/16/2011



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Element Inspection Data

* * * * * * * * * * * Span : Main-0 - -1 * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 26 - Conc Deck/Coatd Bars X 100 3 333 sq.m. % % Previous Inspection Notes: 06/16/2011 - Transverse and mapping cracks over both Bents. Minor wear in the wheel paths from studded tire wear 05/31/2007 - Minor wear from studded tires. Transverse cracking over Bents 2 and 3 with the worse area at Bent 2. Not enough for a smart flag 05/04/2005 - Some wear in the wheel paths. Transverse cracking over both of the Bents. (8.03 * 40.93 (brg to brg) = 328.67m NMS) 04/30/2003 - Deck has tight mapping cracks throughout the driving surface. Studded tire wear in the wheel paths with some exposed aggregate. 08/27/2001 - 8.03 * 41.45 = 332.8 Slightly open cracks at the two bents. Numerous small, tight tansverse &/or mapping cracks throughout the driving surface. 12/23/1998 - None Inspection Notes: Element 109 - P/S Conc Open Girder 166 100 m. % % Previous Inspection Notes : 06/16/2011 - Generally in Good condition. Small nick on bottom of G1S1 has not changed. 05/31/2007 - Small nick on the Left side of the Bottom flange of G1 in Span 1, but not a problem. 05/04/2005 - Unchanged from previous reports. (4 * 40.93 = 163.72 NMS) 04/30/2003 - There is a small nick in the outside-left girder near Abutment 1. No problem with the nick or with any of the other girders noted. Graffti painted on girders near the Abutments. 08/27/2001 - 4 * 41.45 = 165.8m 12/23/1998 - None Inspection Notes: Element 205 - R/Conc Column Bents 2 and 3 ea. % Previous Inspection Notes : 06/16/2011 - Generally in Good condition with some small area where small sacked patches are peeling off. Small spall on the Right column of Bent 3 from construction. 05/31/2007 - Placed 5 percent into Condition State 2 as sacked patches are loose and peeling off of the columns. None of these areas are a problem. 05/04/2005 - Same on the small popouts. 04/30/2003 - No problems noted. A couple of small popouts in areas that were sacked during construction. 08/27/2001 - None 12/23/1998 -Inspection Notes:

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100315000+03423 Continue

* * * * * * * * * * Span : Main-0 - -1 (cont.) * * * * * * * * *

| Element Des | scription | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------|----------------|-----------------------------------------------------|---------------------------------|---------------------------------------------|----------------------------|---------------------------------------------------------|
| | • | | | | | | | | | |
| _ | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 215 | - R/Conc Abutr | ment 1 an | nd 4 | | | | | | | |
| | 1 | 1 | 20 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| Previous Insp | pection Notes : | ı | | | | L. | | | L | |
| 06/16/2011 - | Generally in G | ood conditi | ion. Small spal | l on cor | struction joir | nt of backwall to | cap area of Abut | ment 1. | | RZGE |
| 5/31/2007 - | Minor spall at t | the cap to b | oackwall constr | uction jo | oint at Abutm | ent 1. Generally | y in Good condition | on. | | EZHZ |
| 5/04/2005 - | Minor and tight | t cracks in | both of the back | kwalls. | Erosion at t | he NW corners is | s worse. (Bent 1 | = 9.62m Bent 4 | 1 = 10.67) = 20.29 | 9m EIFR |
| erosion probl | Abutments are lems, so raised Erosion at the | to all in St | ate 1. | | erosion on th | ne NW corner of | the structure. C | an't rate the elen | nent done due to | BPHZ
NHC(|
| 12/23/1998 - | | ieit willigwa | all of Abdilletit | # I. | | | | | | KBG |
| | | | | | | | | | | RDGI |
| Inspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| lement 234 | - R/Conc Cap | | | | | | | | | |
| | 1 | 1 | 16 | m. | | 100 | 0 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| revious Inst | pection Notes : | • | • | | _ | ' | , | | | |
| | | | | | | | | | | |
| | Good condition | ٦. | | | | | | | | RZGI |
| 6/16/2011 - | | | racks. Some lo | ose sa | cked patches | s at the connection | ons to the columi | ns. | | |
|)6/16/2011 -
)5/31/2007 - | Tight surface s | hrinkage c | | | | at the connection (7.92 * 2 = 15. | | ns. | | EZH |
| 06/16/2011 -
05/31/2007 -
05/04/2005 - | Tight surface s | shrinkage cooted other | than tight surfa | ce shrir | nkage cracks | | | ns. | | EZHZ
EIFR |
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 - | Tight surface s | shrinkage conted other age cracking | than tight surfa | ce shrir | nkage cracks | | | ns. | | EZHZ
EIFR
BPHZ |
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 - | Tight surface s No problems n Surface shrinks 8.03 * 2 = 16.0 | shrinkage conted other age cracking | than tight surfa | ce shrir | nkage cracks | | | ns. | | EZHZ
EIFR
BPHZ
NHC0 |
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 - | Tight surface s
No problems n
Surface shrink
8.03 * 2 = 16.0
None | shrinkage conted other age cracking | than tight surfa | ce shrir | nkage cracks | | | ns. | | EZHZ
EIFR
BPHZ
NHC0 |
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 -
08/27/2001 -
2/23/1998 - | Tight surface s
No problems n
Surface shrink
8.03 * 2 = 16.0
None | shrinkage conted other age cracking | than tight surfa | ce shrir | nkage cracks | | | ns. | | EZHZ
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05/31/2007 -
05/04/2005 -
04/30/2003 -
08/27/2001 -
2/23/1998 - | Tight surface s
No problems n
Surface shrink
8.03 * 2 = 16.0
None | shrinkage conted other age cracking | than tight surfa | ce shrir | nkage cracks | | | ns. | | EZH.
EIFF
BPH:
NHC |
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 -
08/27/2001 -
2/23/1998 -
Inspection N | Tight surface s
No problems n
Surface shrink
8.03 * 2 = 16.0
None | shrinkage c
oted other
age crackii
16m | than tight surfa | ce shrir | nkage cracks | | | ns. | | EZHZ
EIFR
BPHZ
NHC0 |
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 -
08/27/2001 -
2/23/1998 -
Inspection N | Tight surface s No problems n Surface shrinka 8.03 * 2 = 16.0 None Notes: | shrinkage c
oted other
age crackii
16m | than tight surfa | ce shrir | nkage cracks | | | ns.
0 | | EZHZ
EIFF
BPHZ
NHC(|
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 -
08/27/2001 -
12/23/1998 -
Inspection N | Tight surface s No problems n Surface shrink 8.03 * 2 = 16.0 None Notes: | shrinkage coted other age cracking 6m | than tight surfa | ce shrir | nkage cracks | . (7.92 * 2 = 15.
95 | 84m NMS) | 0 | | RZGE
EZHZ
EIFR
BPHZ
NHCC
KBGF |
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 -
08/27/2001 -
2/23/1998 -
Inspection N | Tight surface s No problems n Surface shrink 8.03 * 2 = 16.0 None Notes: - Fixed Bearing | shrinkage cooted other age cracking 6m | than tight surfa | ce shrir | nkage cracks | . (7.92 * 2 = 15. | 84m NMS)
5 | | | EZHZ
EIFF
BPHZ
NHC(|
| 06/16/2011 -
05/31/2007 -
05/04/2005 -
04/30/2003 -
08/27/2001 -
2/23/1998 -
Inspection N | Tight surface s No problems n Surface shrink: 8.03 * 2 = 16.0 None Notes: - Fixed Bearing 1 pection Notes : | shrinkage cooted other age cracking 6m | than tight surfa | ce shrir | nkage cracks | . (7.92 * 2 = 15.
95 | 84m NMS)
5 | 0 | | EZH.
EIFF
BPH.
NHC
KBG |
| 16/16/2011 - 15/31/2007 - 15/31/2007 - 15/04/2005 - 16/30/2003 - 16/27/2001 - 2/23/1998 - 16/16/2011 - 16/16/2011 - 16/16/2011 - 16/16/2011 - 16/16/2011 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/2007 - 16/31/ | Tight surface s No problems n Surface shrinks 8.03 * 2 = 16.0 None Notes: - Fixed Bearing 1 pection Notes: | chrinkage cooted other age cracking the second of the seco | than tight surfang; no problems | ea. | and 3 with so | 95
% | 84m NMS) 5 | 0 % | % | EZH.
EIFF
BPH.
NHC
KBG |
| 06/16/2011 - 05/31/2007 - 05/31/2007 - 05/04/2005 - 04/30/2003 - 08/27/2001 - 2/23/1998 - Inspection N | Tight surface s No problems n Surface shrink: 8.03 * 2 = 16.0 None Notes: - Fixed Bearing 1 pection Notes: Dirt and bird de | chrinkage cooted other age cracking 6m 1 1 ebris on be Abutment b | than tight surfaing; no problems 16 Parings of both Expearings as they | ea. Bents 2 | and 3 with so | 95
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ome spot rust. | 84m NMS) 5 % olts . Bent beari | 0
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| 06/16/2011 - 05/31/2007 - 05/31/2003 - 04/30/2003 - 08/27/2001 - 2/23/1998 - 1. Inspection N Element 313 Previous Inspection S | Tight surface s No problems n Surface shrinks 8.03 * 2 = 16.0 None Notes: - Fixed Bearing 1 pection Notes: Dirt and bird de Removed the A | chrinkage cooted other age cracking from 1 1 ebris on be Abutment be eport. Bea | than tight surfaing; no problems 16 tarings of both Epearings as they arings at Bents 2 | ea. Bents 2 / are no | and 3 with so | 95 % ome spot rust. to the anchor b ered by nesting | 84m NMS) 5 % olts . Bent beari | 0
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list and lots of debr | EZH. EIFF BPH NHC KBG RZG ris on EZH. |
| 06/16/2011 - 05/31/2007 - 05/04/2005 - 04/30/2003 - 08/27/2001 - 02/23/1998 - 10spection No. Element 313 Previous Inspection No. 05/31/2007 - 05/31/2007 - 05/04/2005 - 04/30/2003 - 05/04/2005 - 04/30/2003 - 05/05/04/2005 - 05/05/05/05/05/05/05/05/05/05/05/05/05/0 | Tight surface s No problems n Surface shrinks 8.03 * 2 = 16.0 None Notes: - Fixed Bearing 1 pection Notes: Dirt and bird de Removed the A | chrinkage cooted other age cracking from 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | than tight surfaing; no problems 16 earings of both Expearings as they arings at Bents 2 ne bearings. Pi | ea. Bents 2 / are no | and 3 with so | 95 % ome spot rust. to the anchor b ered by nesting | 84m NMS) 5 % olts . Bent beari | 0
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ngs have spot ru
8 4 = 24 NMS) | % st and lots of debr | EZH. EIFF BPH. NHC KBG RZG ris on EZH. EIFF rom BPH. |
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******* Span : Main-0 - -1 (cont.) * * * * * * * *

| EL D | | | | | - СР с | | , | | | |
|-----------------------------|---------------------------------------|--------------|------------------|-----------|----------------|---------------------|--------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Element Des | | | Ougatitus | Lloito | Inon Foob | Dot Ctot 1 | Dot Ctot 2 | Dot Stat 2 | Dot Stot 4 | Dot Ctot F |
| Smart Flag | - Conc Bridge | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Licincii 331 | 1 | _ | 0.2 | | | 0.5 | E | 0 | 0 | |
| | 1 | 3 | 83 | m. | | 95 | 5 | 0 | | |
| | | | | | | % | % | % | % | % |
| Previous Ins | pection Notes : | | | | | | | | | |
| 06/16/2011 - | Generally in G | ood conditi | ion with some ti | ght shrii | nkage crack | s. Small chips o | n the Right barrie | er in Span 3. | | RZGB |
| 05/31/2007 - | Rest of the cor | mments fro | m prior reports | still app | ly. | | | | | EZHZ |
| 05/04/2005 - | Same as last r | eport and a | add some small | nicks o | ut of the top | of the barrier in | Span 3 - Right si | ide. (40.93 * 2 = | 81.86 NMS) | |
| 04/30/2003 - | Vertical cracking | ng, mostly t | tight, throughou | t both b | arriers. A c | ouple of small po | pouts in concret | e surface of the | oarriers. | BPHZ |
| 08/27/2001 - | 41.45 * 2 = 82. | .90m | | | | | | | | NHCO |
| 12/23/1998 - | - None | | | | | | | | | KBGR |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 358 | B - Deck Crackin | g SmFlag | | | | | | | | |
| Х | 1 | 3 | 1 | ea. | X | 0 | 100 | 0 | 0 | |
| | | | | | | % | % | % | % | % |
| Dravious Inc | pection Notes : | | | | | ,, | ,,, | | , and the second | |
| | • | | | | | | | | in size. Mostly to | start RZGB |
| Gonoral | Inspection I | Notos | | | | | | | | |
| | <u> </u> | | ot roted a "7" o | o dook | io oliabtly na | arrower than the | annragah raadwa | y and it is an a | NIP (O | DZCP |
| | | | | | | arrower than the a | • • | ay and it is on a t | curve. | RZGB
EZHZ |
| NBI 60, subs | structure, rated | a "7" due to | small delamina | ations ir | | es on the columns | | | | EZNZ |
| | been repaired of | | | | se with some | e erosion to the fi | Il under the wind | wall This could | become a proble | em if EIFR |
| | der the concrete | | | | | e erosion to the n | in drider the wing | gwaii. Triis could | become a proble | IIIII LIFK |
| 04/30/2003 -
toe-nailes. | - Same commer | nts as 08-2 | 001 report. Blo | cking or | n approach | sections of the gu | uardrail are loose | e and need to be | tightened down a | and BPHZ |
| 08/27/2001 - | | | | | | | | | Bent with W-beam
nd do meet curre | |
| 12/23/1998 - | - None | | | | | | | | | KBGR |
| | | | | | | | | | | |
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Location: GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 Dist 3 GREAT FALLS Division Code, Location: 31 GREAT FALLS

County Code, Location: 013 CASCADE City Code, Location: 32800 GREAT FALLS

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00315

Str Owner Code, Description: 1 State Highway Agency Maintained by Code, Description: 1 State Highway Agency

Intersecting Feature: BNSF RAILROAD Kilometer Post, Mile Post: 1.71 km 1.06

Structure on the State Highway System : X Latitude : 47°29'16" Construction Data

Structure on the National Highway System : Longitude : 111°20'07"

Longitude : 111°20'07"

Construction Project Number : IR 315-5(12)1F

Str Meet or Exceed NBIS Bridge Length: Construction Station Number: 29+60.00

Construction Drawing Number: 1852

Traffic Data

Current ADT: 25,500 ADT Count Year: 2009 Percent Trucks: 2 %

Construction Year: 1946

Reconstruction Year: 1996

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 52.6 mton | B ASD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data : | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 120.29 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 54.21 m

Deck Area : **786.00 m sq**

Deck Roadway Width: 13.59 m

Approach Roadway Width: 13.59 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data :

Vertical Clearance Over the Structure : 99.99 m

Reference Feature for Vertical Clearance : R Railroad beneath struc

Vertical Clearance Under the Structure: 6.63 m

Reference Feature for Lateral Underclearance : R Railroad beneath struc

Minimum Lateral Under Clearance Right : 3.96 m

Minimum Lateral Under Clearance Left : 0.00 m

Number of Spans: 0

Material Type Code, Description:

Span Design Code, Description:

Span Data

Main Span Approach Span

Number Spans : 3

Material Type Code, Description : 4 Steel continuous

Span Design Code, Description : 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 1 Monolithic concrete (concurrently placed with struct

Deck Protection Type : **0 None**Deck Membrain Type : **0 None**

(-)

(52) Out-to-Out Width: 14.50 m

(50A) Curb Width: (50B) Curb Width: 0.00 m

Skew Angle:

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-directio | nal Travel | N | rel . | |
|------------------------|-----------|-----------|--------------------|------------|-----------|----------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| Route On Structure | 100315 | N/A | | | East | 99.99 m | 13.59 m |
| I-315 - EXIT 0 - EB | 1 | | | | | | |

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Inspection Data

Inspection Due Date: 28 June 2014

Sufficiency Rating: 75.4

Structure Status : Func Obs - Elg Rehab

(91) Inspection Frequency (months): 24

| NDI Inconstitut De | -4- | | | | | | |
|----------------------------------------------------------------------|-----------------------|------------------------------------|----------------|-------------------|------------------------------|-----------------|---------------------|
| NBI Inspection Da | 28 June 201 | 2 | | | oct Inspected By .Charles Pe | 2002 107 | |
| (90) Date of Last Insp | pection : 20 June 201 | 2 | | La | ast Inspected By: | :pos - 107 | |
| (90) Inspectio | n Date : | | | | Inspected By : | | |
| (58) Deck | Rating : 5 | (68) Deck Geo | metry : 2 | (36A) | Bridge Rail Rating : 1 | (62) Culve | ert Rating : N |
| (59) Superstructure I | Rating : 7 | (67) Structure F | Rating : 7 | (36B) |) Transition Rating : 1 | (61) Channe | el Rating : N |
| (60) Substructure | Rating : 7 | | | (36C) Ap | proach Rail Rating :1 | (71) Waterway A | Adequacy : N |
| (72) App Rdwy | / Align : 8 | (69) Under Clear
(41) Posting S | | (361 | D) End Rail Rating : 1 | (113) Scou | ur Critical : N |
| | Unrepaired S | palls: 0 m | sq | | Deck Surfacin | g Depth : 0. | .00 in |
| Inspection Hours | | | _ | | | | |
| Crew Hours for inspec | ction : 5 | | | per Required | <u></u> | | |
| Helper Ho | ours : |) Sr | nooper Hours f | · | 3 | | |
| Special Crew Ho | ours : C | | F | lagger Hours | : 0 | | |
| Special Equipment Ho | ours : C | | | | | <u></u> | |
| Inspection Worl | k Candidates | | | Effected | Scope of | | Covered |
| Candidate ID | Date
Requested | Status | Priority | Structure
Unit | Work | Action | Condition
States |
| D31-FY2004-000080 | 28 January 2004 | Approved | Medium | All Spans | 215 R/Conc Abutment | Min Repair | |
| repair the erosion at the 06-28-2012 Partially re Approved. DRC | | ucture. | | | | | |
| D31-FY2005-000241 | 13 July 2005 | Approved | | M Main | 234 R/Conc Cap | Min Repair | |
| Fix/repair the small dela
06-28-2012 Also (1) on
Approved. DRC | | | | side of Bent 3 | 'S. | | |
| Late Reason: | | | | | | | |

Inspection Date: 06/28/2012



Continue

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Inspection Notes:

Element Inspection Data Span: Main-0 - * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 12 - Bare Concrete Deck X 100 3 787 sq.m. 0 % % Previous Inspection Notes: 06/28/2012 - Spalling and delaminations in all (3) Spans. Lots of cracking in all of the Spans. Poor skid resistance on the older portion of the deck. 05/07/2010 - No change from the previous inspections. 06/16/2008 - Delamiantions/spalls in all (3) spans, but mostly in the newer portion of the deck. About 1/3 of 1 lane is mostly delamiantated as found in a quick chain drag. Old deck surface has little skid resistance remaining. 05/31/2007 - None 05/04/2005 - Wear in the wheel paths. Some cracking throughout. Newer portion appears to be cracking over the rebar, transverse, on 6" to 8" centers. Placed in Condition State 2 as there are a couple of delaminated areas. Same on the low skid resistance. 04/30/2003 - Minor areas of efflorescence on the underside of the deck. Tight transverse cracks throughout the deck; more evident over Bents 2 and 3. Wear in the wheel paths with exposed aggregate. Very low skid resistance. 08/06/2001 - 54.25 * 14.50 = 786.63 Studded tire wear in the wheel paths. 01/14/1999 - Small tight transverse cracks in deck surface. Minor efflorescence on underside of deck. 04/01/1996 - None 02/01/1994 - None Inspection Notes: Element 107 - Paint Stl Opn Girder 380 85 m. % % % Previous Inspection Notes : 06/28/2012 - Some fading of the paint on the newer girders and the Right side of the Left most older girder. Some rust, scale, and surface pitting of the older girders. 05/07/2010 - No change from the previous inspections. 06/16/2008 - Newer girders show minor fading of the coating system on the Outer-Right side of the Right most girder. Older portion of the structure's girders has some rusty spots, scale, and surface pitting; especially under open joints. Numerous broken welds on the attached blast plate. 05/31/2007 - None 05/04/2005 - Rusty spots, scale, minor paint loss, and smoke on the lower flange and lower portions of the web area on the older girders. New girders have no problems noted as of now. 04/30/2003 - Some spot rust on the original girders. Worse rust spots are under leaking joints. No paint on the back side of bolts used for connecting diaphragms to old girders and they are rusted. Some pack rust noted in the bottom flange area over both Bents. 08/06/2001 - 7 * 54.25 = 379.75m01/14/1999 - Very minor rust on original painted steel beams. 04/01/1996 - None 02/01/1994 - None

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| | | | | | | • | | | | |
|--------------|------------------|---------------|-----------------|-----------|---------------|--------------------|--------------------|------------------|------------------|------------|
| Element Des | <u> </u> | | | | | | | | | |
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 205 | - R/Conc Colu | | 2 and 3 | | | | | | | |
| | 1 | 1 | 8 | ea. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | Q |
| Previous Ins | pection Notes : | | l | | | | <u>l</u> | | | |
| 06/28/2012 - | (1) small delan | nination on | Bent 3's - 2nd | from the | e Left columi | n. Spall on the L | _eft column at Bei | nt 2. | | ZRGZ |
| | No change from | | | | | | | | | HZMS |
| 06/16/2008 - | Left column at | Bent 2 has | a small surfac | e spall f | rom expose | d rebar chair; Co | ondition State 2. | | | RZDZ |
| 05/31/2007 - | | | | | | | | | | EVHZ |
| 05/04/2005 - | Minor and tight | t shrinkage | cracks. Tight | cracks a | at the cap to | column construc | ction joint. | | | FZDZ |
| 04/30/2003 - | Some surface | shrinkage (| cracks. | | | | | | | ZHEB |
| 08/06/2001 - | None | | | | | | | | | NHGN |
| 01/14/1999 - | | | | | | | | | | |
| 04/01/1996 - | None | | | | | | | | | YDNF |
| 02/01/1994 - | | | | | | | | | | REFI |
| | | | | | | | | | | IXEIT |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 215 | - R/Conc Abuti | ment 1 an | d 4 | | | | | | | |
| | 1 | 1 | 35 | m. | | 95 | 5 | C | 0 | |
| | | | | | | % | % | % | % | Q |
| Previous Ins | pection Notes : | | | | | | L | | | |
| 06/28/2012 - | Tight cracks in | both backy | walls. The wor | se area | s are on the | older portion of t | the bridge. Spall | on the Left wing | wall of Abutment | 1. ZRGZ |
| 05/07/2010 - | No change from | m the previ | ous inspections | s and in | mostly Good | d condition. | | | | HZMS |
| 06/16/2008 - | Same on tight | cracks. Le | ft end of Abutn | nent 1 h | as a small sp | palled area at the | e wingwall. | | | RZDZ |
| 05/31/2007 - | None | | | | | | | | | EVHZ |
| 05/04/2005 - | Both of the bad | ckwalls hav | e cracks. | | | | | | | FZDZ |
| 04/30/2003 - | Minor and tight | t cracks in | areas where gi | rder end | ds are embed | dded in the Abut | ment backwalls. | Some erosion a | t the NE corner. | ZHEB |
| 08/06/2001 - | (14.50 * 2) + (4 | 1 * 1.60) = 3 | 35.40m | | | | | | | NHGN |
| 01/14/1999 - | None | | | | | | | | | |
| 04/01/1996 - | None | | | | | | | | | YDNF |
| 02/01/1994 - | None | | | | | | | | | REFI |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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| Element Des
Smart Flag | ccrintion | | | | | • | .) * * * * * * * | | | |
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| Jiliait i lag | • | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 234 | I - R/Conc Cap | | | Office | пор Едоп | 1 of Old 1 | 1 of Glat 2 | 1 of Olar o | 1 of Oldi 4 | 1 of old o |
| | 1 | 1 | 29 | m. | | 90 | 5 | 5 | 0 | |
| | | | | | _ | % | % | % | | |
| Provious Inc | pection Notes : | | | | | 70 | ,, | | ,0 | |
| | | aa a dalam | iontad area una | dor C0 a | n the Coen t |) face and Dant | O'a baa a amali d | alamination on t | ha Chan O faca al | ona 7DC |
| vith a small | - Bent 3's cap no
spalled area.
- No change fro | | | | · | | z s nas a smaii d | eiamination on t | he Span 2 face al | ong ZRG2
HZM3 |
| | _ | | | | | | e caps show som | e minor surface | spalls from expos | |
| | bar chair feet. | | · | | · | | | | | EVHZ |
| 5/04/2005 - | - Same on the o | old to new o | construction join | it. Sma | II delamiante | d area on the Sp | oan 2 side of Ben | t 2's cap. | | FZDZ |
| 4/30/2003 - | - Minor and tigh | t cracks wit | th some minor o | concrete | popouts wh | ere old portion a | and newer portion | of the caps are | joined together. | ZHEE |
| 8/06/2001 | - 2 * 14.50 = 29. | .00m | | | | | | | | NHG |
| 1/14/1999 - | - None | | | | | | | | | |
| 4/01/1996 | - None | | | | | | | | | YDNF |
| 2/01/1994 | - None | | | | | | | | | REF |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| lement 301 | - Pourable Joir | nt Seal Be | nts 2 and 3 | | | | | | | |
| iement oo i | 1 | 3 | 20 | m. | | 90 | 10 | 0 | | |
| | ' | 3 | 20 | 111. | | | | | | |
| | | | | | | % | % | % | % | |
| | pection Notes : | | | | | | | | | |
| 6/28/2012 - | Joint steel in the | ne older po | rtion of the decl | k only. | Staal is salid | when tenned as | | and enally alon | a the edge of the | |
| | | m the nrevi | | | | | n. Delaminations | anu spalis alon | g the eage of the s | |
| 5/07/2010 | - No change from | | ous inspections | s and in | mostly Good | condition. | | and spans alon | g the edge of the s | HZMS |
| 5/07/2010 -
6/16/2008 - | - No change from
- Joints leak. Sp | | ous inspections | s and in | mostly Good | | | anu spans alon | g the edge of the s | HZMS
RZDZ |
| 05/07/2010 -
06/16/2008 -
05/31/2007 -
05/04/2005 - | - No change from
- Joints leak. Sp
- None
- 10.21 * 2 = 20. | palls along | ious inspections
the steel guard | and in angles. | mostly Good | condition. | en tapped on. | · | added, there was | HZMS
RZD2
EVH2 |
| 06/16/2008 -
05/31/2007 -
05/04/2005 - | No change from Joints leak. Specifical None 10.21 * 2 = 20. of the joints. | palls along | ious inspections
the steel guard | and in angles. | mostly Good | condition. | en tapped on. | · | | HZMS
RZD2
EVH2 |
| 25/07/2010 -
26/16/2008 -
25/31/2007 -
25/04/2005 -
25/04/2005 -
25/04/2005 - | No change from Joints leak. Specifical None 10.21 * 2 = 20. of the joints. | palls along | ious inspections
the steel guard | and in angles. | mostly Good | condition. | en tapped on. | · | | HZMS
RZD2
EVH2 |
| 5/07/2010 -
6/16/2008 -
5/31/2007 -
5/04/2005 -
ontinuation | No change from Joints leak. Specifical None 10.21 * 2 = 20. of the joints. | palls along | ious inspections
the steel guard | and in angles. | mostly Good | condition. | en tapped on. | · | | HZMS
RZD2
EVH2 |
| 95/07/2010 - 06/16/2008 - 05/31/2007 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2005 - 05/04/2000 - 05/04/2000 - 05/04/2000 - 05/04/2000 - 05/04 | No change from Joints leak. Specifical None 10.21 * 2 = 20. of the joints. | palls along | ious inspections
the steel guard
ble guard angle | s and in
angles. | mostly Good
The steel s
ints in the old | condition. | en tapped on. | · | | HZMS
RZD2
EVH2 |
| 15/07/2010 - 16/16/2008 - 15/31/2007 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2005 - 15/04/2000 - 15/04/2000 - 15/04/2000 - 15/04/2000 - 15/04/2000 - 15/04 | - No change from Joints leak. Sp None - 10.21 * 2 = 20 of the joints. | palls along | ious inspections
the steel guard
ble guard angle | s and in angles. type joent 2 and | mostly Good
The steel s
ints in the old | condition. | en tapped on. | · | added, there was | HZMS
RZD2
EVH2 |
| 5/07/2010 -
6/16/2008 -
5/31/2007 -
5/04/2005 -
ontinuation
Inspection I | - No change from - Joints leak. Sp None - 10.21 * 2 = 20. of the joints. Notes: | palls along .42m Dou Bearing Ne | the steel guard ble guard angle | s and in angles. type joent 2 and | mostly Good
The steel s
ints in the old | condition. counds solid whe | en tapped on.
ne deck. When n | ewer deck was | added, there was | HZMS
RZD2
EVH2 |
| 5/07/2010 - 6/16/2008 - 5/31/2007 - 5/04/2005 - ontinuation Inspection I | - No change from - Joints leak. Sp None - 10.21 * 2 = 20. of the joints. Notes: | palls along .42m Dou Bearing Ne | the steel guard ble guard angle | s and in angles. type joent 2 and | mostly Good
The steel s
ints in the old | condition. ounds solid whe | en tapped on.
ne deck. When n | ewer deck was | added, there was | HZMS
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| 5/07/2010 - 6/16/2008 - 5/31/2007 - 5/04/2005 - ontinuation Inspection I | - No change from - Joints leak. Sp None - 10.21 * 2 = 20 of the joints. Notes: | palls along .42m Dou .38earing Ne | the steel guard ble guard angle ew girders at Be | s and in angles. e type joent 2 and ea. | mostly Good
The steel s
ints in the old | condition. counds solid wheeler portions of the solid wheeler port | en tapped on.
ne deck. When n | ewer deck was | added, there was | HZMS
RZD2
EVHZ
no FZD2 |
| 5/07/2010 - 6/16/2008 - 5/31/2007 - 5/04/2005 - ontinuation Inspection I | - No change from - Joints leak. Sp None - 10.21 * 2 = 20 of the joints. Notes: 0 - Elastomeric English - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | Bearing No. 1 | the steel guard ble guard angle ew girders at Be | ent 2 and ea. | mostly Good The steel s ints in the old | condition. ounds solid whe der portions of the 100 % bearings. | en tapped on.
ne deck. When n | ewer deck was | added, there was | HZMS
RZD2
EVHZ
no FZD2
ZRG2 |
| 5/07/2010 - 6/16/2008 - 5/31/2007 - 5/04/2005 - ontinuation Inspection Inspec | - No change from - Joints leak. Sp None - 10.21 * 2 = 20. of the joints. Notes: 0 - Elastomeric Elements of the pection Notes: - Rubber portion - No change from - No change from - Joints - Joints - No change from - No change from - No change from - Joints - Joints - Joints - Joints - No change from - No change from - Joints - Join | Bearing Ne | the steel guard ble guard angle ew girders at Be Spot rust on the | ent 2 and ea. | mostly Good The steel s ints in the old d 3 cortion of the | condition. ounds solid whe der portions of the 100 % bearings. | en tapped on. ne deck. When n | ewer deck was | added, there was | HZMS
RZDZ
EVHZ
no FZDZ
ZRGZ
HZMS |
| 5/07/2010 - 6/16/2008 - 5/31/2007 - 5/04/2005 - ontinuation Inspection Inspec | - No change from - Joints leak. Sp None - 10.21 * 2 = 20 of the joints. Notes: 0 - Elastomeric E 1 - Pection Notes : - Rubber portion - No change from - Unchanged. Sp. | Bearing Ne | the steel guard ble guard angle ew girders at Be Spot rust on the | ent 2 and ea. | mostly Good The steel s ints in the old d 3 cortion of the Good condit | condition. ounds solid whe der portions of the 100 % bearings. | en tapped on. ne deck. When n | ewer deck was | added, there was | HZMS RZDZ EVHZ no FZDZ ZRGZ HZMS RZDZ |
| 5/07/2010 - 6/16/2008 - 5/31/2007 - 5/04/2005 - ontinuation Inspection Inspec | - No change from - Joints leak. Sp None - 10.21 * 2 = 20 of the joints. Notes: 0 - Elastomeric English of the portion of t | Bearing Ne | sous inspections the steel guard ble guard angle ew girders at Be spot rust on the sous inspections the steel portion the steel portions. | e type jo ent 2 and ea. e steel ps and in ons and | mostly Good The steel s ints in the old d 3 cortion of the Good condit | condition. ounds solid whe der portions of the 100 % bearings. | en tapped on. ne deck. When n | ewer deck was | added, there was | HZMS RZDZ EVHZ no FZDZ ZRGZ HZMS RZDZ EVHZ |
| 25/07/2010 - 6/16/2008 - 6/5/31/2007 - 6/5/04/2005 - 6/5/04/2005 - 6/5/07/2010 - 6/5/31/2007 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/0 | - No change from - Joints leak. Sp None - 10.21 * 2 = 20. of the joints. Notes: 0 - Elastomeric Ending a spection Notes: - Rubber portion - No change from - Unchanged. Sp None - Spot rust on the | Bearing No. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | sous inspections the steel guard ble guard angle ble guard angle bew girders at Be source at the steel portion the steel portions of the bear | ent 2 and in ea. e steel ps and in ons and rings. | mostly Good The steel s ints in the old d 3 cortion of the Good condit bird debris s | tarting to build u | en tapped on. ne deck. When n | ewer deck was | added, there was | HZMS RZD2 EVHZ no FZD2 ZRG2 HZMS RZD2 EVHZ |
| 25/07/2010 - 06/16/2008 - 05/31/2007 - 05/04/2005 - 05/04/2005 - 05/07/2010 - 05/07/2010 - 05/07/2010 - 05/07/2010 - 05/07/2010 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2005 - 05/07/2000 - 05/07/2000 - 05/07/2000 - 05/07/2000 - 05/07 | - No change from - Joints leak. Sp None - 10.21 * 2 = 20 of the joints. Notes: O - Elastomeric E 1 - Pection Notes : - Rubber portion - No change from - Unchanged. Sp None - Spot rust on the - Some minor sp. | Bearing No. 1 1 Spot rust or use steel pot rust for out rust for out of the previous forms. | sous inspections the steel guard ble guard angle ble guard angle bew girders at Be was girders at Be sous inspections of the steel portions of the bear ming on the steel | ent 2 and in ea. e steel ps and in ons and rings. | mostly Good The steel s ints in the old d 3 cortion of the Good condit bird debris s | tarting to build u | en tapped on. ne deck. When n | ewer deck was | added, there was | HZMS RZDZ EVHZ no FZDZ ZRGZ HZMS RZDZ EVHZ FZDZ ZHEE |
| 25/07/2010 - 6/16/2008 - 6/5/31/2007 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/31/2007 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2005 - 6/5/04/2000 - 6/5/04/20000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/04/2000 - 6/5/ | No change from Joints leak. Sp. None - 10.21 * 2 = 20 of the joints. Notes: D - Elastomeric E 1 Pection Notes: - Rubber portion - No change from Joints - None - Spot rust on the Some minor sp. Bent #2 & #3 units and specifically a specifically and specifically a specifically and specifically a speci | Bearing No. 1 1 Spot rust or use steel pot rust for out rust for out of the previous forms. | sous inspections the steel guard ble guard angle ble guard angle bew girders at Be was girders at Be sous inspections of the steel portions of the bear ming on the steel | ent 2 and in ea. e steel ps and in ons and rings. | mostly Good The steel s ints in the old d 3 cortion of the Good condit bird debris s | tarting to build u | en tapped on. ne deck. When n | ewer deck was | added, there was | HZMS RZD2 EVHZ no FZD2 ZRG2 HZMS RZD2 EVHZ |

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| | | | | | Opan . i | | | | | |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------|-----------|----------------|----------------------------------|-------------------|-------------------------|---------------------|--------------------------------------------------------------|
| Element Des | cription | | | | | | | | | |
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 | - Moveable Bea | aring Bent | 2 and 3 under | Older G | irders | | | | | |
| | 1 | 1 | 10 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | |
| Previous Ins | ection Notes : | | | | | | <u> </u> | | | |
| 06/28/2012 - | Alignment was | Good toda | ay. Some rust, | paint los | ss, and debr | is. | | | | ZRGZ |
| | | | ous inspections | | | | | | | HZMS |
| 06/16/2008 - | Spot rust from | leakage. A | Alignment is Go | od. | | | | | | RZDZ |
| 05/31/2007 - | None | | | | | | | | | EVHZ |
| 05/04/2005 - | Some rusty spo | ots and sca | ale. | | | | | | | FZDZ |
| 04/30/2003 - | Rusty spots as | these joins | ts are leaking so | ome. Al | lso dirt and p | oack rust betwee | n bottom of the r | ocker and bottor | n plate of the bear | rings. ZHEB |
| 08/06/2001 - | Bent #2 & #3 u | nder the o | riginal girders. | Some ru | ust and pittin | ng. | | | | NHGN |
| 01/14/1999 - | None | | | | | | | | | |
| 04/01/1996 - | None | | | | | | | | | YDNF |
| 02/01/1994 - | None | | | | | | | | | REFI |
| Inspection N | lotes: | | | | | | | | | |
| • | | | | | | | | | | |
| | | | | | | | | | | |
| Element 331 | - Conc Bridge F | Railing | | | | | | | | |
| | 1 | 3 | 108 | m. | | 95 | 5 | 0 | 0 | |
| | | | .00 | •••• | | % | % | % | % | |
| Draviava Ina | action Notes | | | | | 70 | 70 | 70 | 70 | |
| | pection Notes : | | dt' ' O | O D | - (Cu - | | | | | |
| | • | | a section in Spa | an 2. Re | etro-fitted ba | | | and the second decrease | | 7007 |
| | ino change from | | | al : | | | curb is in Good o | ondition with sor | ne shrinkage crac | |
| | _ | | ous inspections | | | d condition. | curb is in Good c | ondition with sor | ne shrinkage crac | HZMS |
| | Minor and tight | | ous inspections
nrinkage cracks | | | d condition. | curb is in Good c | ondition with sor | ne shrinkage crac | HZMS
RZDZ |
| 05/31/2007 - | Minor and tight
None | surface sh | nrinkage cracks | | | d condition. | curb is in Good c | ondition with sor | ne shrinkage crac | HZMS
RZDZ
EVHZ |
| 05/31/2007 -
05/04/2005 - | Minor and tight
None
Same as previo | surface shously repor | nrinkage cracks | . Left ra | ail sets on to | d condition.
p of older curb. | | | | HZMS
RZDZ
EVHZ
FZDZ |
| 05/31/2007 -
05/04/2005 -
04/30/2003 - | Minor and tight
None
Same as previo
Vertical cracks | surface shously repore
throughou | nrinkage cracks | . Left ra | ail sets on to | d condition.
p of older curb. | curb is in Good o | | | HZMS
RZDZ
EVHZ
FZDZ
ZHEB |
| 05/31/2007 -
05/04/2005 -
04/30/2003 -
08/06/2001 - | Minor and tight
None
Same as previo
Vertical cracks
54.25 * 2 = 108 | surface shously repore
throughou | nrinkage cracks | . Left ra | ail sets on to | d condition.
p of older curb. | | | | HZMS
RZDZ
EVHZ
FZDZ
ZHEB
NHGN |
| 05/31/2007 -
05/04/2005 -
04/30/2003 -
08/06/2001 -
01/14/1999 - | Minor and tight
None
Same as previo
Vertical cracks
54.25 * 2 = 108
None | surface shously repore
throughou | nrinkage cracks | . Left ra | ail sets on to | d condition.
p of older curb. | | | | HZMS
RZDZ
EVHZ
FZDZ
ZHEB
NHGN
UAIV |
| 05/31/2007 -
05/04/2005 -
04/30/2003 -
08/06/2001 -
01/14/1999 -
04/01/1996 - | Minor and tight
None
Same as previo
Vertical cracks
54.25 * 2 = 108
None
None | surface shously repore
throughou | nrinkage cracks | . Left ra | ail sets on to | d condition.
p of older curb. | | | | HZMS
RZDZ
EVHZ
FZDZ
ZHEB
NHGN
UAIV
YDNF |
| 05/31/2007 -
05/04/2005 -
04/30/2003 -
08/06/2001 -
01/14/1999 - | Minor and tight
None
Same as previo
Vertical cracks
54.25 * 2 = 108
None
None | surface shously repore
throughou | nrinkage cracks | . Left ra | ail sets on to | d condition.
p of older curb. | | | | HZMS
RZDZ
EVHZ
FZDZ
ZHEB
NHGN
UAIV |
| 05/31/2007 -
05/04/2005 -
04/30/2003 -
08/06/2001 -
01/14/1999 -
04/01/1996 - | Minor and tight
None
Same as previo
Vertical cracks
54.25 * 2 = 108
None
None
None | surface shously repore
throughou | nrinkage cracks | . Left ra | ail sets on to | d condition.
p of older curb. | | | | HZMS
RZDZ
EVHZ
FZDZ
ZHEB
NHGN
UAIV
YDNF |



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******* Span : Main-0 - (cont.) *******

| | | | | | | main-u - (Corit | , | | | |
|----------------------------|-----------------------------------|----------------|------------------|-----------|--------------|----------------------|--------------------|-------------------|------------|------------|
| Element Des | | | | | | | | | | |
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | - Deck Crackin | g SmFlag | | | | | | | | |
| Х | 1 | 1 | 1 | ea. | X | 0 | 0 | 100 | 0 | |
| | | | | | | % | % | % | % | 9 |
| Previous Ins | pection Notes : | 1 | | | • | | - | | <u> </u> | |
| 06/28/2012 - | The worse area | as of crack | ing are showing | g lots of | spalling and | d delaminated are | eas. | | | ZRGZ |
| 05/07/2010 - | No change. | | | | | | | | | HZMS |
| 06/16/2008 - | Many of the cra | acks are wi | der, 0.5 to 1.0r | nm, and | are open. | Some of the crac | cks have scaling a | along their edges | | RZDZ |
| 05/31/2007 - | None | | | | | | | | | EVHZ |
| 05/04/2005 - | Add some crac | king over t | he rebar in Spa | an 2 to t | he previous | reports. | | | | FZDZ |
| 04/30/2003 - | Tight transvers | e and map | ping cracks thr | oughou | t. Mostly on | the older portion | of the deck. | | | ZHEB |
| 08/06/2001 - | No change. | | | | | | | | | NHGN |
| 01/14/1999 - | Small, tight tran | nverse crad | cking throughou | ut the de | eck. | | | | | |
| Inspection N | lotes: | | | | | | | | | |
| | | | | | | | | | | |
| Conoral | nonaction N | Notoo | | | | | | | | |
| | nspection N | | dae due te ere | oion on | d fanana | | | | | ZRGZ |
| 05/07/2010 - | Access is tough | וו מנינווס טוו | age due to ero | Sion and | i leffices. | | | | | HZMS |
| | Deck is getting | worso | | | | | | | | RZDZ |
| Some aspha
05/31/2007 - | t placed in the | erosion at t | the NE corner of | of the br | idge. | | | | | EVHZ |
| 05/04/2005 - | NBI 58, deck, r | ated at a " | 6" due to delam | ninations | s and minor | spalling. | | | | FZDZ |
| 04/30/2003 - | NBI 60, substru | ucture, rate | d at a "7" due t | o some | cracking in | the substructure | concrete. | | | ZHEB |
| 08/06/2001 - | None | | | | | | | | | NHGN |
| 01/14/1999 - | None | | | | | | | | | |
| | Sufficiency Rat ating Calculation | | | | | 11/97 10:45:05
35 | | | | YDNF |
| 02/01/1994 - | | | | | | | | | | REFI |
| 08/01/1992 - | Updated with ta | ape 1994 | | | | | | | | NB94 |
| 01/01/1991 - | Updated with ta | ape 1992 | | | | | | | | NB92 |
| | Updated with ta | | | | | | | | | NB91 |
| | Updated with ta | | | | | | | | | NB89 |
| | Updated with ta | | | | | | | | | NB86 |
| | • | | | | | | | | | |
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Location: GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 **GREAT FALLS GREAT FALLS** Division Code, Location:31

Percent Trucks:

County Code, Location: 013 **CASCADE** City Code, Location: 32800 **GREAT FALLS**

Kind fo Hwy Code, Description: 1 1 Interstate Hwy Signed Route Number: 00315

State Highway Agency State Highway Agency Str Owner Code, Description: 1 Maintained by Code, Description:1

Intersecting Feature: BNSF RAILROAD Kilometer Post, Mile Post: 1.71 km 1.06

2 %

Structure on the State Highway System: Latitude: 47°29'17" **Construction Data**

Structure on the National Highway System: Longitude: 111°20'07"

Str Meet or Exceed NBIS Bridge Length:

Construction Project Number: IR 315-5(12)1F Construction Station Number: 29+98.00

Construction Drawing Number: 6825

Construction Year: 1967 Reconstruction Year: 1996

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

Current ADT : 25,500

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 33.5 mton | B ASD Assigned |
| Posting: | | 5 At/Above Legal Loads |

ADT Count Year: 2009

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 78.98 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 63.40 m

Deck Area: 767.00 m sq

11.18 m Deck Roadway Width: 11.18 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

R Railroad beneath struc Reference Feature for Vertical Clearance:

6.93 m Vertical Clearance Under the Structure:

R Railroad beneath struc Reference Feature for Lateral Underclearance:

3.96 m Minimum Lateral Under Clearance Right: 0.00 m Minimum Lateral Under Clearance Left:

Span Data

Main Span

Approach Span Number Spans: 1

Material Type Code, Description: 3 Steel

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 1 Monolithic concrete (concurrently placed with struct

Deck Protection Type: 0 None Deck Membrain Type: 0 None Number of Spans: 4

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

12.09 m (52) Out-to-Out Width:

(50A) Curb Width:

(50B) Curb Width:

0.00 m

0.00 m

Skew Angle: 30°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Γ | Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | North or East Travel | | | |
|---|------------------------|-----------|-----------|---------------------|------------|----------------------|----------|------------|--|
| | Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal | |
| Γ | Route On Structure | 100315 | West | 99.99 m | 11.18 m | N/A | | | |
| Γ | I-315 AT EXIT 0 - WB | 1 | | | | | | | |

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Inspection Data

Inspection Due Date : 16 June 2015

Sufficiency Rating: 93.8 Structure Status: Not Deficient (91) Inspection Frequency (months) : **24**

| NBI Inspection Da | | | | | | | |
|-----------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------|-------------|-------------------------------|-----------------------------|-------------------|--------------------------------|
| (90) Date of Last Insp | pection : 17 June 201 | 3 | | La | ast Inspected By: Charles P | epos - 107 | |
| (90) Inspection | on Date : | | | | Inspected By : | | |
| (58) Deck | Rating : 5 | (68) Deck Geor | metry : 5 | (36A) | Bridge Rail Rating : 1 | (62) Culve | rt Rating : N |
| (59) Superstructure | Rating : 7 | (67) Structure R | ating : 6 | (36B) |) Transition Rating : | (61) Channe | el Rating : N |
| (60) Substructure | Rating : 6 | (69) Under Clear | ance · 5 | (36C) Ap | proach Rail Rating :1 | (71) Waterway A | Adequacy : N |
| (72) App Rdwy | y Align : 8 | (41) Posting S | | (361) | D) End Rail Rating : 1 | (113) Scou | r Critical : N |
| | Unrepaired Sp | oalls: 0 m s | q | | Deck Surfacion | ng Depth : 0. | 00 in |
| Inspection Hours Crew Hours for inspection Helper He | ours: 4 | | ooper Hours | oper Required for inspection | 2 | | |
| Special Crew Ho | | | | Flagger Hours | . 0 | | |
| Special Equipment Ho | | | | | | | |
| Inspection Worl | k Candidates Date Requested | Status | Priority | Effected
Structure
Unit | Scope of
Work | Action | Covered
Condition
States |
| D31-FY2003-000437 | 27 June 2003 | Approved | High | All Spans | 301 Pourable Joint Seal | Min Repair | |
| Approved. DRC | | | | | | | |
| D31-FY2003-000436 | 27 June 2003 | Approved | Low | A Approach | 12 Bare Concrete Deck | Min Repair | |
| Repair pot hole starting
05/31/2007 Add repairs
06/15/2011 More starti
Approved. DRC | s to the spalls and de | erline over Bent 4.
lamiantions also. | | | | | |
| D31-FY2004-000081 Clean pigeon debris fror 05/31/2007 Some done | m caps. Re-paint ste | Approved el as needed. inspection. | Low | All Spans | Bridge | Spot Paint (flex) | |
| Approved. DRC | | | | | | | |
| D31-FY2006-000003 | 18 October 2005 | Approved | Low | A Approach | 109 P/S Conc Open Girde | r Min Repair | |
| Clean dirt/debris from al
06/15/2011 Some work | | n Span 5. | | | | | |
| Approved. DRC | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Late Reason:

Inspection Date: 06/17/2013



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Element Inspection Data

* Span: Main-0 - STEEL WF - SPAN 3 * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 12 - Bare Concrete Deck X 100 3 190 sq.m. 0 0 % % % Previous Inspection Notes: 06/17/2013 - Cracking with delaminations and spalling in this Span. Some patching done, but the patches are starting to fail. 10-2013 deck sourvy found 7.2 percetn spalls/delaminations. 06/16/2011 - More of the delaminations are starting to spall and leaving potholes. Some patching has been done since the last inspection. 06/30/2009 - Wear in wheel paths to the aggregate. Poor skid resistance. Spalls throught span and estimate greater than 3 percent delamination. 05/31/2007 - Wear to the concrete surface. Left in Condition State 2 as estimated less than 2 percent of the surface showing spalls/distress. Some asphalt patching done on the spalls, but blowing out again. 05/04/2005 - Tight mapping cracks in the deck surface. 1 m2 delamination and spall near centerline at Bent 4. Wear in the wheel paths from studded tires. (12.09 * 15.70 = 189.81) Nate. 04/30/2003 - Tight cracking throughout the deck. Studded tire wear in the wheel paths with exposed aggregate. There is a section of delamination and a pothole on the centerline near Bent 4, 1 sq m. 08/06/2001 - 12.09 * 15.85 = 191.62 Some small, tight transverse cracking throughout. No brooming left for low skid resistance. Exposed aggregate surface in the wheel paths from studded tire wear. 01/14/1999 - None 04/01/1996 - None 02/01/1994 - None Inspection Notes: Element 107 - Paint Stl Opn Girder 79 85 m. % % % % % Previous Inspection Notes: 06/17/2013 - Rust blisters with minor surface pitting under the worst rust blisters. Girders are dirty and grimey where de-icer has sat on them. Faded paint and peeling paint in the rust blister areas where mositure can collect. 06/16/2011 - Rust, scale, and surface pitting to girders under areas that leak. Rust blisters on the lower flanges where water can collect. Paint is faded. 06/30/2009 - Same comments as past inspection and add rust blisters under areas that leak and minor surface pitting under the rust blisters. Some spot painting done during snooper inspection. 05/31/2007 - Areas on the ends of the girders under joints show the worse rusty spots and loss of paint system. Ends at Bent 3 show pitting and are rusty with paint system failure. The diaphragm vertical stiffener from the new girder, G1, to the older girder is welded solid across the top of the bottom flange; no problems observed and G2 has a hole where added diaphragm bracket was mis-drilled; photos. 05/04/2005 - Minor rust and paint loss. Mostly near the leaking joints and the original girders. (5 * 15.70 = 78.50) Nate. 04/30/2003 - Minor spot rust with some paint loss; especially under leaking joint areas and where there is pigeon debris. 08/06/2001 - 5 * 15.85 = 79.25 m No change from the last report. 01/14/1999 - Minor rust on the surface. 04/01/1996 - MINOR SURFACE RUST ON ORIGINAL BEAMS 02/01/1994 - None Inspection Notes:

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| · · · · · · · · · · · · · · · · · · · | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Element Description | |
| Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 | Pct Stat 5 |
| Element 205 - R/Conc Column Bents 3 and 4 | |
| 1 1 6 ea. 95 5 0 | 0 |
| % % % | % % |
| Previous Inspection Notes : | |
| 06/17/2013 - Some tight surface shrinkage cracks and a couple have small spalls on the corners from construction activity. | RZEV |
| 06/16/2011 - Generally in Good condition. Small spall on a couple of the columns. | RMGH |
| 06/30/2009 - Tight surface shrinkage cracks. Some staining of the concrete from leakage and bird debris. | ZZDZ |
| 05/31/2007 - Right column at Bent 3 has a small surface spall at a rebar chair foot. Tight surface shrinkage cracks noted. | EZHZ |
| 05/04/2005 - A couple of the columns have tight cracks at the connection area with the cap. | FZMK |
| 04/30/2003 - Surface shrinkage cracks. | ZZEB |
| 08/06/2001 - None | NHGO |
| 01/14/1999 - None | DCHF |
| 04/01/1996 - None | YDNF |
| 02/01/1994 - None | REFI |
| Inspection Notes: | |
| Element 234 - R/Conc Cap Bents 3 and 4 | |
| 1 1 24 m. 90 5 5 | 0 |
| % % % | % |
| Previous Inspection Notes : | |
| 06/17/2013 - Small delamination on the Span 3 face of Bent 4's cap. Lots of staining from joint leakage. Small surface spalls in the under | side of RZEV |
| the cap from rebar chair feet.
06/16/2011 - Photo of delaminations on Bent 4's cap. Staining from leakage. Some tight shrinkage cracks. Small spall on the surface nea | ar the RMGH |
| rebar chair feet. | |
| 06/30/2009 - 5 percent in stste 3 for small delaminationon bent 4 cap. Staining from bird debris and leakage on cap. Several small surface near exposed reinforcing chair feet. | spalls ZZDZ |
| 05/31/2007 - Same as past inspections and add minor surface spalls on the underside of the older portion of the caps from rebar chair feet 4's cap has (2) spalls/delaminated areas on the Span 4 edge at the top. | t. Bent EZHZ |
| 05/04/2005 - Tight surface shrinkage cracks. Construction joint between the new to old cap has some minor cracking with minor loose are along the crack edge; very minor. | as FZMK |
| 04/30/2003 - Tight surface shrinkage cracks. Staining of concrete due to leaking joints. | ZZEB |
| 08/06/2001 - 12.09 * 2 = 24.19m | NHGO |
| 2444422 | DCHF |
| | |
| 04/01/1996 - None | YDNF |
| 01/14/1999 - None
04/01/1996 - None
02/01/1994 - None | |
| 04/01/1996 - None | YDNF |
| 04/01/1996 - None
02/01/1994 - None | YDNF |

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Continue

Span: Main-0 - STEEL WF - SPAN 3 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 301 - Pourable Joint Seal Bents 3 and 4 3 20 24 m. 60 20 % % % Previous Inspection Notes: 06/17/2013 - Sealant is pulling loose and/or is missing in some areas along the joint; photo. Spalling along the joint edges. Material that makes up the headers appears to be sound. 06/16/2011 - Loose and missing sealant. Header material of the joints is in Good condition. Deck spalls just off of the joint headers. 06/30/2009 - More small spalls along joint edges. Some sealant is loose with lakage evident at both bents. 05/31/2007 - Joint is sound except where gland is torn or missing. Minor spall along the edges of the joint over Bent 4. 05/04/2005 - Spalls along both sides of the joint at Bent 4. Some areas where the sealant has failed and leaking is evident. Most of the sanding material is cleaned out in the traffic lanes. 04/30/2003 - Both joints are leaking with the gland falling out. Concrete along the joints is mostly sound except near centerline of Bent 4 where there is some spalling. 08/06/2001 - 2 * 12.09 = 24.18m 01/14/1999 - None 04/01/1996 - None 02/01/1994 - None Inspection Notes: Element 310 - Elastomeric Bearing Under New Girders ea. 95 % Previous Inspection Notes: 06/17/2013 - Rubber portion of the bearings is in Good condition with some tight surface rust and faded paint on the steel portions. 06/16/2011 - Spot rust on the steel portions of the bearings. Rubber areas are Good. 06/30/2009 - Unchanged from prior reports. Some spot rust on steel portions with spot painting done during snooper inspection. 05/31/2007 - Minor spot rust and faded paint on the steel portions. A minor tear in the rubber of the bearing at Bent 3; see photo. 05/04/2005 - Some spot rust and minor paint loss. 04/30/2003 - One slotted and one fixed(Bent 4). Some spot rust on steel portions of the bearings. 08/06/2001 - Under the new girder; left most. 01/14/1999 - None 04/01/1996 - None 02/01/1994 - None Inspection Notes:

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| | | | | оран . | Walli-0 - 51 | EEL WF - SPA | 14 3 (COIII.) | | | |
|----------------|-----------------|----------------|------------------|-----------|-----------------|-------------------|----------------------|--------------------|------------|------------|
| Element Des | | | | | T ' | 5 | | | | |
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 | - Moveable Bea | aring Bent | 3 | | | | | | | |
| | 1 | 3 | 4 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | Ç |
| Previous Ins | pection Notes : | | | | | | | | | |
| 06/17/2013 - | Bearing alignm | ent was Go | ood as mostly | plumb; 7 | 70F. Staining | g from joint leak | age with rust, sca | lle, and paint los | s also. | RZEV |
| | Good alignmer | | | | | | _ | • | | RMGH |
| | _ | | - | | | _ | ring snooper insp | ection. | | ZZDZ |
| | Alignment look | | _ | _ | | | | | | EZHZ |
| | Rusty spots, so | | | | - | | | | | FZMK |
| | | | | | - | | lue to leaking join | t. | | ZZEB |
| | | 000 00 | | o Doann | 90 | | iae te realinig jeni | | | |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| = | | | | | | | | | | |
| Element 313 | - Fixed Bearing | | | | | | | | | |
| | 1 | 1 | 2 | ea. | | 90 | 10 | 0 | | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
| 06/17/2013 - | Rust, scale, de | bris, peelin | g paint, and fa | ided pai | nt. | | | | | RZEV |
| 06/16/2011 - | Spot rust, some | e debris, ar | nd scale on the | e bearing | gs. | | | | | RMGH |
| 06/30/2009 - | Rusty areas, di | irt, debris, a | and scale on st | teel port | ions. Some s | spot painting do | ne. | | | ZZDZ |
| 05/31/2007 - | Unchanged wit | th lots of ne | w nests. Som | e areas | blew off and | spot overcoat p | painted. | | | EZHZ |
| | Spot rust, mind | | | | | | | | | FZMK |
| | Some rust and | | | | | | | | | ZZEB |
| Inspection I | | | | | | | | | | |
| inspection i | voies. | | | | | | | | | |
| | | | | | | | | | | |
| Flament 331 | - Conc Bridge I | Railing | | | | | | | | |
| LICITION 001 | 1 | 3 | 31 | 1 m | | 95 | 5 | 0 | 0 | |
| | | 3 | 3 | l m. | | | | | | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
| 06/17/2013 - | Generally in Go | ood condition | on. Left side h | as a sm | all spall on it | ts' backside. Ra | andom shrinakge | cracks. | | RZEV |
| 06/16/2011 - | Generally in Go | ood condition | on with some r | andom | vertical crack | king throughout. | | | | RMGH |
| 06/30/2009 - | Generally good | d condition. | Some crackin | g betwe | en chamfere | d areas on both | side of structure. | | | ZZDZ |
| 05/31/2007 - | Minor popouts | and tight si | urface shrinka | ge crack | S. | | | | | EZHZ |
| 05/04/2005 - | No change from | m previous | reports. (15.7 | 0 * 2 = 3 | 31.40) Nate. | | | | | FZMK |
| 04/30/2003 - | Vertical cracks | throughou | t both rails. So | ome min | or popouts ir | n the concrete o | f the rails. | | | ZZEB |
| 08/06/2001 - | 15.85 * 2 = 31. | 70m | | | | | | | | NHGC |
| 01/14/1999 - | None | | | | | | | | | DCHF |
| 04/01/1996 - | None | | | | | | | | | YDNF |
| 02/01/1994 - | None | | | | | | | | | REFI |
| Inspection I | Notes: | | | | | | | | | |
| ii ispection i | 10100. | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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****** * * * * Span : Main-0 - STEEL WF - SPAN 3 (cont.) * * * * * * * * *

| | | * * * | ***** | Span : | Main-0 - S1 | TEEL WF - SPAI | N 3 (cont.) * * | * * * * * * * * | | |
|---------------|-------------------------------------|-------------|------------------|-----------|----------------|---------------------|---------------------|-------------------|-----------------------|------------|
| Element Des | • | | | | | | | | | |
| - | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | - Deck Cracking | | | | | | | | | |
| Х | 1 | 3 | 1 | ea. | X | 0 | 0 | 100 | 0 | |
| | | | | | | % | % | % | % | 9 |
| Previous Ins | pection Notes : | | | | | ' | I. | ' | 1 | |
| 06/17/2013 - | Unchanged from | m previous | report. | | | | | | | RZEV |
| 06/16/2011 - | Numerous crac | ks in the d | elaminated are | as with | spalling at th | ne wider cracks. | | | | RMGH |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | * * * | ****** | pan : | Appr-1 - P/S | S CONC SPANS | 5 - 1,2,4,and 5 * * | ****** | | |
| Element Des | cription | | | <u>'</u> | •• | | | | | |
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 12 - | Bare Concrete | Deck | | | 1 | | | 1 | | |
| | 1 | 3 | 569 | sq.m. | X | 0 | 0 | 100 | 0 | |
| | | | | | | % | % | % | % | 9, |
| Previous Ins | pection Notes : | | | | _ | l | I. | L | | |
| 06/17/2013 - | Mapping cracks | s, wear, de | laminations, ar | nd spalli | ng in some s | spots. Some exp | posed rebar in the | e deepest spalls. | | RZEV |
| 06/16/2011 - | Wear from stud | lded tires. | Some of the de | elamina | ted areas ar | e stating to spall | and need patchi | ng. | | RMGH |
| | | | | tance. S | Small spalls | and delamination | ns in all spans. Ti | ght transverse cr | acking over unjoir | nted ZZDZ |
| | ate 3 percent de
Poor skid resis | | | with exr | oosed aggre | gate look on the | surface. Left in (| Condition State 2 | 2 as estimated at 2 | 2 EZHZ |
| percent or le | ss distressed/de | elaminated | areas. | · | | | | | | |
| | 1 ight mapping
7.09 * 12.09 = 50 | | | delamı | nated area is | s starting to spall | I near Centerline | of Bent 4. Very I | little skid resistand | e FZMK |
| 04/30/2003 - | Tight cracking t | throughout | the deck. Stud | ded tire | e wear in the | wheel paths wit | th exposed aggre | gate. Very little | skid resistance lef | t. ZZEB |
| | e and delaminat
47.55 * 12.09 = | | enterline at Ber | nt 4. | | | | | | NHGO |
| Small & tight | transverse crac | king throu | ghout. No broo | m mark | s left for poo | or skid resistance | e. Studded tire w | ear in the wheel | paths. | |
| | Spans #1, 2, 4, | & 5 | | | | | | | | DCHF |
| 04/01/1996 - | _ | | | | | | | | | YDNF |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |

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| | escription | | | T | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------|------------------------------------------------------------------|--------------------------------------|---------------------------------------|-----------------------|-----------------------------------|
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 109 | 9 - P/S Conc Op | en Girder | | | | | | | | |
| | 1 | 1 | 235 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | spection Notes : | | | | | l. | 1 | | l | |
| 6/17/2013 | - Generally in G | ood conditi | on. Diagonal o | rack/spa | all on G2 and | d G3 at Bent 3 h | as not changed. | | | RZE |
| hanged. | - G2 at Bent 3 h - Same commer | _ | | he bear | ing and has | not changed sin | ce the last inspec | ction. Spall on G | 3 has also not | RMG
ZZD |
| | | · | · · | a at Ber | nt 3 has a dia | agonal crack at 4 | 5 degrees in the | direction of she | ar at the Span side o | |
| ne sole plat
5/04/2005 | ite; photo to Hele - Minor and tight | na-D. Crun
t cracks on | nley. G3 at Be
the ends of the | nt 3 is s
e girders | palled on the near both A | Span side behi
butments; girde | nd the sole Plates
s are embedded | ; photos to Heler
in the backwalls | | e FZM |
| | ed. No cracks vis | | | | | | | instruction activit | ies when the structo | |
| 4/30/2003 | - Some minor cr | acking on t | he ends of the | girders. | Graffiti on g | girders near the | Abutments. | | | ZZE |
| 8/06/2001 | - 47.55 * 5 = 23 ⁷ | 7.75m | | | | | | | | NHG |
| | | | | | | | | | | |
| 1/14/1999 | - None | | | | | | | | | DCF |
| | - None
- INCLUDES SF | PANS 1,2,4 | ,5 | | | | | | | |
| 1/14/1999
14/01/1996
12/01/1994
Inspection | - INCLUDES SF
- None | PANS 1,2,4 | .5 | | | | | | | YDN |
| 4/01/1996
2/01/1994
Inspection | - INCLUDES SF
- None | | | | | | | | | YDN |
| 4/01/1996
2/01/1994
Inspection | - INCLUDES SF
- None
Notes: | | | ea. | | 95 | 5 | 0 | 0 | DCH
YDN
REF |
| 4/01/1996
2/01/1994
Inspection | - INCLUDES SF
- None
Notes:
5 - R/Conc Colum | mn Bents 2 | 2 and 5 | ea. | | 95 | 5 % | 0 % | 0 % | YDN |
| 14/01/1996
12/01/1994
Inspection
Element 209 | - INCLUDES SF
- None
Notes:
5 - R/Conc Colum | mn Bents 2 | 2 and 5 | ea. | | | | | | YDN |
| 4/01/1996
2/01/1994
Inspection
Element 209
Previous Ins
6/17/2013 | - INCLUDES SF - None Notes: 5 - R/Conc Colui 1 spection Notes: - Generally in G | mn Bents 2 | 2 and 5 € | | kge cracks ar | % | % | % | | YDN
REF |
| 4/01/1996
2/01/1994
Inspection
Ilement 209
Previous Ins
6/17/2013
" x 6" spall | - INCLUDES SF
- None
Notes:
5 - R/Conc Colui
1
spection Notes : | mn Bents 2 | 2 and 5
6
on. Some tigh | t shrinak | ŭ . | %
nd some small s | % palls along the so | % | % | YDN
REF |
| 4/01/1996
2/01/1994
Inspection
Element 208
Previous Ins
6/17/2013
" x 6" spall
6/16/2011 | - INCLUDES SF - None Notes: 5 - R/Conc Colui 1 spection Notes: - Generally in G I on the back-Lef | nn Bents 2 | 2 and 5 6 on. Some tighton. Same on s | t shrinak
mall spa | all on center of | % and some small so | % palls along the so | % | % | YDN
REF |
| 4/01/1996
2/01/1994
Inspection
lement 209
revious Ins
6/17/2013
" x 6" spall
6/16/2011
6/30/2009 | - INCLUDES SF - None Notes: 5 - R/Conc Column 1 spection Notes: - Generally in G I on the back-Lef - Generally in G | nn Bents 2 1 ood conditient toorner. ood conditient condition. | 2 and 5 on. Some tighton. Same on s One small spa | t shrinak
mall spa
all on ce | all on center on
ter column | % and some small should be some at Bent 2 at bent 2. | % palls along the so | % | % | YDN
REF
a RZE
RMG
ZZD |
| 4/01/1996
2/01/1994
nspection
lement 209
revious Ins
6/17/2013
" x 6" spall
6/16/2011
6/30/2009
5/31/2007 | - INCLUDES SF - None Notes: 5 - R/Conc Column 1 spection Notes: - Generally in Good on the back-Lef - Generally in Good on the back-Lef - Generally good on the spection Same as past | ood condition to condition dispections | on. Some tighton. Same on some small spanard a couple | t shrinak
mall spa
all on ce
of small | all on center on
ter column surface spal | % and some small s column at Bent 2 at bent 2. I from rebar chai | % palls along the so | %
crapes. Bent 2's | % | A RZE RMG ZZD EZH |
| 4/01/1996
2/01/1994
nspection
lement 209
revious Ins
6/17/2013
" x 6" spall
6/16/2011
6/30/2009
5/31/2007
5/04/2005 | - INCLUDES SF - None Notes: 5 - R/Conc Column 1 spection Notes: - Generally in Good on the back-Lef - Generally in Good on the back-Lef - Generally good on the spection Same as past | ood condition to condition to condition. | on. Some tighton. Same on some small spand a couple tracks on all of tracks. | t shrinak
mall spa
all on ce
of small | all on center on
ter column surface spal | % and some small s column at Bent 2 at bent 2. I from rebar chai | % palls along the so | %
crapes. Bent 2's | % middle column has | A RZE RMG ZZD EZH |
| 4/01/1996
2/01/1994
Inspection
Ilement 209
Previous Ins
6/17/2013
" x 6" spall
6/16/2011
6/30/2009
5/31/2007
5/04/2005
4/30/2003 | - INCLUDES SF - None Notes: 5 - R/Conc Column 1 spection Notes: - Generally in Good of the back-Lef - Generally in Good of the spection of the specific of | ood condition to condition to condition. | on. Some tighton. Same on some small spand a couple tracks on all of tracks. | t shrinak
mall spa
all on ce
of small | all on center on
ter column surface spal | % and some small s column at Bent 2 at bent 2. I from rebar chai | % palls along the so | %
crapes. Bent 2's | % middle column has | A RZE RMG ZZD EZH |
| 4/01/1996
2/01/1994
Inspection
Element 209
Previous Ins
6/17/2013
" x 6" spall
6/16/2011
6/30/2009
5/31/2007
5/04/2005
4/30/2003
8/06/2001 | - INCLUDES SF - None Notes: 5 - R/Conc Column 1 spection Notes: - Generally in Good on the back-Lef - Generally in Good on the back-Lef - Generally in Good on the back-Lef - Generally surface soon on the surface soon of th | ood condition to condition to condition. | on. Some tighton. Same on some small spand a couple tracks on all of tracks. | t shrinak
mall spa
all on ce
of small | all on center on
ter column surface spal | % and some small s column at Bent 2 at bent 2. I from rebar chai | % palls along the so | %
crapes. Bent 2's | % middle column has | A RZE RMG ZZC EZH FZM ZZE NHG |
| Previous Ins
16/17/2013
" x 6" spall
16/16/2011
16/30/2009
15/31/2005
14/30/2003 | - INCLUDES SF - None Notes: 5 - R/Conc Column 1 spection Notes: - Generally in G I on the back-Lef - Generally in G - Generally good - Same as past - Tight surface s - Tight surface s - Bent #2 & 5 None | ood condition to condition to condition. | on. Some tighton. Same on some small spand a couple tracks on all of tracks. | t shrinak
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| Ü | scription | | | | | | | | | |
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| lement 21 | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | 5 - R/Conc Abuti | ment 1 and | 16 | | | ' | | | | |
| | 1 | 1 | 35 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| Previous Inc | spection Notes : | | | | | | | | | |
| | · | | C | حالحمد ال | -4 4h - h1 | | -ti | | | D.7.E |
| | • | | | · | at the back | wall to cap conne | ection area. | | | RZE |
| | - Same commer | | • | | | | | | | RMG |
| | | · | • | | | area. Tight crack | ding in both abut | ment caps. | | ZZD |
| | - Tight surface s | _ | _ | | | | | | | EZH |
| | | _ | | | | r the SE corner o | | | | FZN |
| near the Abi | | | | walls. V | ery minor e | rosion near the S | E corner that is | allowing dirt/deb | ris to get on the g | irder ZZE
NHG |
| 01/14/1999 | | , | | | | | | | | DCF |
| 04/01/1996 | | | | | | | | | | YDN |
| 02/01/1994 | | | | | | | | | | REF |
| | | | | | | | | | | |
| Inspection | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| 1 | 4 D/Cara Car | Danta O a | | | | | | | | |
| ement 234 | 4 - R/Conc Cap | | | | | 0.0 | | _ | | |
| | 1 | 1 | 24 | m. | | 90 | 5 | | | |
| | | | | | | % | % | % | % | |
| Previous Ins | spection Notes : | | | | | | | | | |
| | | | | | | nation on Bent 5' | s cap near the c | onnections to the | columns. Small | RZE |
| | Ils on the bottomUnchanged an | | | | t. | | | | | RMG |
| | · · | | | | | | | | | |
| | | | | | pent 5 cap a | nd along constru | ction joints at co | lumns. Several s | mall surface spal | ls on ZZD |
| | sty rebar chair fe | et. Bird nes | sts and debris | on all ca | ps. | ŭ | • | | mall surface spal | |
| 05/31/2007
cap from ex | Minor delamia posed rebar cha | et. Bird nes
ntion on the
air feet. | sts and debris on Span 5 side of Spa | on all ca | ps. | ŭ | • | | mall surface spal | of the EZF |
| 05/31/2007
cap from ex
05/04/2005 | Minor delamia posed rebar cha Unchanged from | eet. Bird nes
ntion on the
air feet.
om the last | sts and debris of Span 5 side of span 5 side of the control of the | on all ca
f Bent 5 | ps.
's cap. Alsc | some minor sur | face spalls on th | e bottom side of | the older portion | of the EZH |
| 05/31/2007
cap from ex
05/04/2005 | Minor delamian posed rebar cha Unchanged from Tight crack at the | eet. Bird nes
ntion on the
air feet.
om the last | sts and debris of Span 5 side of span 5 side of the control of the | on all ca
f Bent 5 | ps.
's cap. Alsc | some minor sur | face spalls on th | e bottom side of | · | of the EZH |
| 05/31/2007
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05/04/2005
04/30/2003
he Span 5 s | Minor delamian posed rebar cha Unchanged from Tight crack at the | et. Bird nesontion on the air feet. om the last the new to a | sts and debris of Span 5 side of span 5 side of the control of the | on all ca
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's cap. Alsc | some minor sur | face spalls on th | e bottom side of | the older portion | of the EZH |
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's cap. Alsc | some minor sur | face spalls on th | e bottom side of | the older portion | of the EZH
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cap from ex
05/04/2005
04/30/2003
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08/06/2001
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- Unchanged from
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- 12.09 * 2 = 24. | et. Bird nesontion on the air feet. om the last the new to a | sts and debris of Span 5 side of span 5 side of the control of the | on all ca
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's cap. Alsc | some minor sur | face spalls on th | e bottom side of | the older portion | of the EZH
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24/30/2003
the Span 5 s
28/06/2001
21/14/1999 | - Minor delamian
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- Tight crack at the
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28/06/2001
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side of it.
- 12.09 * 2 = 24.

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- 12.09 * 2 = 24.
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* * * * * * * * * * Span : Appr-1 - P/S CONC SPANS - 1,2,4,and 5 (cont.) * * * * * * * *

| 16/16/2011 - Rust, paint loss, scale, and debris. 16/30/2009 - Spot rust, paint loss, and pigeon debris on the bearings. 15/31/2007 - Spot rust, paint loss, and pigeon debris on the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is risible. Blown off and spot overcoat painted if they were dry. 15/04/2005 - Minor rust, paint loss, and pigeon debris. 16/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 16/30/2003 - Spot rust and pitting. 16/30/2001 - Minor rust and pitting. 17/30/2003 - Spot rust and pitting. 18/30/2001 - Minor rust and pitting. 19/30/2001 - Minor rust and pitting. 10/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 10/30/2001 - Minor rust and pitting. 10/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 10/30/2005 - Linespection Notes: 10/30/2005 - Linespection Notes: 10/30/2005 - Linespection Notes: 10/30/2005 - Spot rust on the bearings. Some debris from birds, etc. 10/30/2005 - Same as previous Inspection. Random vertical cracks throughout. 10/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 10/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 10/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. | Element Des | cription | | • | | | | • | • | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------|--------------|-------------------|----------|---------------|---------------------|--------------------|-------------------|---------------------|--------------|
| 1 1 38 ea. 90 10 0 78 78 78 78 78 78 78 78 78 78 78 78 78 7 | Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Previous Inspection Notes: 16/17/2013 - Rust, scale, debris, and paint loss. 16/16/2011 - Rust, paint loss, scale, and debris. 16/16/2017 - Spot rust, paint fade, and some debris. The worst paint loss is on abutment bearings. 15/31/2007 - Spot rust, paint fade, and some debris. The worst paint loss is on abutment bearings. 15/31/2007 - Spot rust, paint form, and piece of the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is risible. Blown off and spot overcoat painted if they were dry. 15/04/2005 - Minor rust, paint loss, and piegen debris. 16/16/2011 - Minor rust, paint loss, and piegen debris from birds, etc. 16/16/2011 - Minor rust, paint loss, and piegen debris. 16/16/2011 - Minor rust and pitting. 11/14/1999 - None | Element 313 | - Fixed Bearing | j | | | 1 | - | | | | |
| Previous Inspection Notes: 16/17/2013 - Rust, scale, debris, and paint loss. 16/16/2011 - Rust, paint loss, scale, and debris. 16/16/30/2009 - Spot rust, paint fade, and some debris. The worst paint loss is on abutment bearings. 15/51/2007 - Spot rust, paint loss, and pigeon debris on the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is risble. Blown off and spot overcoat painted if they were dry. 15/50/4/2005 - Minor rust, paint loss, and pigeon debris. 15/50/4/2005 - Spot rust on the bearings. Some debris from birds, etc. 15/50/4/2005 - Spot rust on the bearings. Some debris from birds, etc. 15/50/4/2001 - Minor rust and pitting. 16/50/2001 - Minor rust and pitting. 17/50/4/2005 - Minor rust and pitting. 18/50/4/2005 - Minor rust and pitting. 19/50/4/2005 - Minor post of the Webeam. Random shrinkage cracking. 19/50/4/2005 - Minor good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 19/50/4/2005 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 19/50/4/2005 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 19/50/4/2005 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 15/50/4/2007 - Minor popouts and tight shrinkage cracks. 15/50/4/2007 - Minor popouts and tight shrinkage cracks. 15/50/4/2007 - Minor popouts and tight shrinkage cracks. 15/50/4/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 15/50/4/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 15/50/4/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 15/50/4/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 15/50/4/2005 - Same as previous reports. | | 1 | 1 | 38 | ea. | | 90 | 10 | 0 | | |
| 16/17/2013 - Rust, scale, debris, and paint loss. 16/16/2011 - Rust, paint loss, scale, and debris. 16/16/2011 - Rust, paint loss, scale, and debris. 16/16/20209 - Spot rust, paint loss, and pigeon debris on the bearings. 16/16/20207 - Spot rust, paint loss, and pigeon debris on the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is 16/16/20205 - Minor rust, paint loss, and pigeon debris. 16/16/20205 - Minor rust, paint loss, and pigeon debris. 16/16/20205 - Minor rust, paint loss, and pigeon debris. 16/16/20205 - Minor rust, paint loss, and pigeon debris. 16/16/20205 - Minor rust, paint loss, and pigeon debris. 16/16/20205 - Minor rust, paint loss, and pigeon debris. 16/16/20205 - Minor rust, paint loss, and pigeon debris. 16/16/20205 - Minor rust and pitting. 17/16/20205 - Minor rust and pitting. 18/16/20205 - Minor rust and pitting. 19/16/20205 - Minor rust a | | | | | | | % | % | % | % | % |
| 16/16/2011 - Rust, paint loss, scale, and debris. 16/30/2009 - Spot rust, paint loss, and pigeon debris. The worst paint loss is on abutment bearings. 15/31/2007 - Spot rust, paint loss, and pigeon debris on the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is issible. Blown off and spot overcoat painted if they were dry. 15/04/2005 - Minor rust, paint loss, and pigeon debris. 16/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 16/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 16/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 17/14/1999 - None 16/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 17/14/1999 - None 18/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 18/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 18/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 18/30/2003 - Spot rust, paint loss, and pigeon debris. 19/30/2003 - Spot rust, paint loss, and pigeon debris. 19/30/2003 - Spot rust, paint loss, and pigeon debris on the bearings in the quantity as (1) anchor bolt per bearing is sistened by a paint of an approximation of the debris of the paint of an approximation of the paint of the quantity as (1) anchor bolt per bearing is sistened by a paint of an approximation of the quantity as (1) anchor bolt per bearings is experienced by a paint of an approximation of the paint of an approximation of an approx | Previous Ins | pection Notes : | | | | | | | | | |
| 2220 2331/2007 - Spot rust, paint fade, and some debris. The worst paint loss is on abutment bearings. 235/31/2007 - Spot rust, paint loss, and pigeon debris on the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is fisble. Blown off and spot overcoat painted if they were dry. 235/31/2007 - Spot rust, paint loss, and pigeon debris on the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is fisble. Blown off and spot overcoat painted if they were dry. 235/31/2007 - Minor rust and pittings. Some debris from birds, etc. 236/31/2001 - Minor rust and pitting. 236/31/2001 - Minor rust and pitting. 237/31/31/31 - Conc Bridge Railing 237/31/31 - Conc Bridge Railing 238/31 - Conc Bridge Railing 249/31 - Conc Bridge Railing 259/31/31/31/31/31/31/31/31/31/31/31/31/31/ | 06/17/2013 - | Rust, scale, de | bris, and p | aint loss. | | | | | | | RZEV |
| 27-14/2007 - Spot rust, paint loss, and pigeon debris on the bearings. Left Abutment bearings in the quantity as (1) anchor bolt per bearing is insible. Blown off and spot overcoat painted if they were dry. 27-25/04/2005 - Minor rust, paint loss, and pigeon debris. 27-26/26/2005 - Minor rust and spot overcoat painted if they were dry. 27-26/26/2005 - Minor rust and pitting. 27-26/26/2005 - Minor population of the service of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 27-26/26/2015 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 27-26/26/2015 - Generally in Good condition. Random vertical cracks throughout. 27-26/26/2015 - Generally in Good condition. Random vertical cracks throughout. 27-26/26/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 27-26/26/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 27-26/26/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 27-26/26/2005 - Vertical cracks throughout both rails with some minor concrete popouts. 27-26/26/2005 - Vertical cracks throughout both rails with some minor concrete popouts. 27-26/26/2005 - Vertical cracks throughout both rails with some minor concrete popouts. | 06/16/2011 - | Rust, paint loss | s, scale, an | d debris. | | | | | | | RMGH |
| isible. Blown off and spot overcoat painted if they were dry. 56/04/2005 - Minor rust, paint loss, and pigeon debris. 22Et 28/06/2001 - Minor rust and pitting. 22Et 28/06/2001 - Minor popouts and tight shrinkage cracks. 22Et 28/06/2001 - Generally in Good condition. Random vertical cracks throughout. 22Et 23/06/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 22Et 23/06/2001 - 47.55 * 2 = 95.10m | 06/30/2009 - | Spot rust, paint | fade, and | some debris. T | he wors | st paint loss | is on abutment b | pearings. | | | ZZDZ |
| A/30/2003 - Spot rust on the bearings. Some debris from birds, etc. 2ZEE 28/06/2001 - Minor rust and pitting. 10/14/1999 - None 10/14/1999 - None 10/14/1996 - YON 2Element 331 - Conc Bridge Railing 2Element 331 - Conc Bridge Railing 2Element 331 - Conc Bridge Railing 3 94 m. 95 5 0 0 0 3 96 96 96 96 96 2Previous Inspection Notes: 22EE 26/07/7/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 26/06/2011 - Generally in Good condition. Random vertical cracks throughout. 26/06/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 27/06/2007 - Minor popouts and tight shrinkage cracks. 27/06/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 28/06/2001 - 47.55 * 2 = 95.10m 22EE 24/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 22EE 24/14/1999 - None 24/10/1/1996 - YON | visible. Blow | n off and spot o | vercoat pa | ainted if they we | | earings. Lef | t Abutment bear | ings in the quant | ity as (1) anchor | bolt per bearing is | EZHZ
FZMK |
| NHG/06/2001 - Minor rust and pitting. NHG/01/14/1999 - None 04/01/14/1999 - None 04/01/1996 - YONI Inspection Notes: Element 331 - Conc Bridge Railing 1 3 94 m. 95 5 0 0 0 96 96 96 96 96 Previous Inspection Notes: 06/17/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 06/16/2011 - Generally in Good condition. Random vertical cracks throughout. 06/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 06/30/2007 - Minor popouts and tight shrinkage cracks. 06/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 06/04/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 06/04/2001 - 47.55 * 2 = 95.10m NHG/01/14/1999 - None 06/01/14/1996 - YONI | | | | . • | rom bir | ds, etc. | | | | | ZZEB |
| Inspection Notes: Concentration String St | | · | • | | | , | | | | | NHGO |
| Inspection Notes: Element 331 - Conc Bridge Railing 1 3 94 m. 95 5 0 0 Previous Inspection Notes: 16/17/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 16/16/2011 - Generally in Good condition. Random vertical cracks throughout. 16/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 15/31/2007 - Minor popouts and tight shrinkage cracks. 15/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 15/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 18/06/2001 - 47.55 * 2 = 95.10m 18/14/1999 - None 18/14/1999 - None | | | | | | | | | | | DCHF |
| Element 331 - Conc Bridge Railing 1 3 94 m. 95 5 0 0 Previous Inspection Notes: 106/17/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 106/16/2011 - Generally in Good condition. Random vertical cracks throughout. 106/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 105/31/2007 - Minor popouts and tight shrinkage cracks. 105/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 106/106/2001 - 47.55 * 2 = 95.10m 107/14/1999 - None 107/14/1999 - None | 04/01/1996 - | _ | | | | | | | | | YDNF |
| Previous Inspection Notes: 106/17/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 106/16/2011 - Generally in Good condition. Random vertical cracks throughout. 106/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 105/31/2007 - Minor popouts and tight shrinkage cracks. 105/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 105/06/2001 - 47.55 * 2 = 95.10m 105/06/2001 - 47.55 * 2 = 95.10m 105/01/14/1999 - None | Element 331 | - Conc Bridge F | Railing | | | | | | | | |
| Previous Inspection Notes: 106/17/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 106/16/2011 - Generally in Good condition. Random vertical cracks throughout. 106/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 105/31/2007 - Minor popouts and tight shrinkage cracks. 105/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 106/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 108/06/2001 - 47.55 * 2 = 95.10m 101/14/1999 - None 104/01/1996 | | 1 | 3 | 94 | m. | | 95 | 5 | 0 | 0 | |
| 06/17/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 06/16/2011 - Generally in Good condition. Random vertical cracks throughout. 06/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 05/31/2007 - Minor popouts and tight shrinkage cracks. 05/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 04/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 08/06/2001 - 47.55 * 2 = 95.10m 01/14/1999 - None 04/01/1996 | | | | | | | % | | % | % | % |
| 06/17/2013 - Generally in Good condition. Small spalls on the backside of the barrier at bolt-ups to the W-Beam. Random shrinkage cracking. 06/16/2011 - Generally in Good condition. Random vertical cracks throughout. 06/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 05/31/2007 - Minor popouts and tight shrinkage cracks. 05/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 04/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 08/06/2001 - 47.55 * 2 = 95.10m 01/14/1999 - None 04/01/1996 | Previous Ins | pection Notes : | | | | | | | | | |
| 26/16/2011 - Generally in Good condition. Random vertical cracks throughout. 27/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 27/2007 - Minor popouts and tight shrinkage cracks. 25/31/2007 - Minor popouts and tight shrinkage cracks. 25/31/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 26/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 27/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 27/2007 - Minor popouts and tight shrinkage cracks. 27/20 | | | ood conditi | on. Small spall | s on the | e backside o | f the barrier at bo | olt-ups to the W-l | Beam. Random | shrinkage cracking | ı. RZEV |
| 2202 26/30/2009 - Tight surface shrinkage cracks throughout. Small surface popouts and vertical cracking in all spans. Generally good condition. 25/31/2007 - Minor popouts and tight shrinkage cracks. 25/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 24/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 22E8 26/06/2001 - 47.55 * 2 = 95.10m 26/06/2001 - 47.55 * 2 = 95 | | • | | · | | | | | | | RMGH |
| 05/04/2005 - Same as previous reports. (47.09 * 2 = 94.18) Nate. 04/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. 08/06/2001 - 47.55 * 2 = 95.10m 01/14/1999 - None 04/01/1996 | | • | | | | · · | | al cracking in all | spans. Generally | good condition. | ZZDZ |
| 04/30/2003 - Vertical cracks throughout both rails with some minor concrete popouts. ZZEE 08/06/2001 - 47.55 * 2 = 95.10m NHG 01/14/1999 - None DCH 04/01/1996 YDN | 05/31/2007 - | Minor popouts | and tight s | hrinkage cracks | i. | | | | | | EZHZ |
| 08/06/2001 - 47.55 * 2 = 95.10m 01/14/1999 - None 04/01/1996 YDNI | 05/04/2005 - | Same as previo | ous reports | s. (47.09 * 2 = 9 | 4.18) N | late. | | | | | FZMK |
| 01/14/1999 - None DCH
04/01/1996 YDN | 04/30/2003 - | Vertical cracks | throughou | t both rails with | some r | ninor concre | ete popouts. | | | | ZZEB |
| YDNI | 08/06/2001 - | 47.55 * 2 = 95. | 10m | | | | | | | | NHGO |
| | 01/14/1999 - | None | | | | | | | | | DCHF |
| Inspection Notes: | 04/01/1996 - | _ | | | | | | | | | YDNF |
| | Inspection I | Notes: | | | | | | | | | |
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| General Inspection Notes | |
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| 06/17/2013 - End shoes at East Abutment, 6, are lapped against traffic flow. | RZEV |
| Homeless person living under Span 5. Wasn't happy about the intrusion during the inspection. 06/16/2011 - End shoes on the W-Beam at the bridge ends are lapped against traffic on the East end of the structure. Homeless household along with a fire pit near Abutment 6. | RMGH |
| 06/30/2009 - NBI 58, deck, rated at "5" due to increasing delaminations and spalling in deck surface. W-beam end shoes at abutment 6 are lapped against traffic flow. | ZZDZ |
| 05/31/2007 - NBI 59, superstructure, rated a "6" due to rust, scale, and minor pitting of the steel girders in the main span. Areas under the joints were very wet from overnight rain and could not be cleaned and overcoat painted very well. | EZHZ |
| 05/04/2005 - NBÍ 58, deck, rated at a "6" due to delamination, minor potholes, and wear to the surface. NBI 60, substructure, rated at a "7" due to minor cracking at the construction joints and small popouts in the bottoms of the caps from exposed rebar chairs. | FZMK |
| 04/30/2003 - None | ZZEB |
| 08/06/2001 - None | NHGO |
| 01/14/1999 - None | DCHF |
| 04/01/1996 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:45:05 Sufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:15:35 | YDNF |
| 02/01/1994 - | REFI |
| 08/01/1992 - Updated with tape 1994 | NB94 |
| 01/01/1991 - Updated with tape 1992 | NB92 |
| 03/01/1989 - Updated with tape 1991 | NB91 |
| 04/01/1987 - Updated with tape 1989 | NB89 |
| 09/01/1984 - Updated with tape 1986 | NB86 |
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Location: GREAT FALLS Structure Name:

General Location Data MDT Maintenance Section: 31-01 Great Falls District Code, Number, Location: 03 **GREAT FALLS** Division Code, Location:31 **GREAT FALLS** County Code, Location: 013 **CASCADE** City Code, Location: 00000 **RURAL AREA** Kind fo Hwy Code, Description: 8 8 Other (incl toll rds) Signed Route Number: 00315 State Highway Agency State Highway Agency Str Owner Code, Description: 1 Maintained by Code, Description:1 Intersecting Feature: BNSF RAILROAD Kilometer Post, Mile Post: 1.71 km 1.06 Structure on the State Highway System: Latitude: 47°29'18" **Construction Data** Structure on the National Highway System: Longitude: 111°20'06" Construction Project Number: IR 315-5(12)1F Str Meet or Exceed NBIS Bridge Length: Construction Station Number: 6+55.00 Construction Drawing Number: 15924 **Traffic Data** Construction Year: 1996 Current ADT : 25,500 ADT Count Year: 2009 2 % Percent Trucks: Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|--------------------------|-----------|------------------------|
| Inventory Load, Design : | 32.6 mton | A LFD Assigned |
| Operating Load, Design: | 32.6 mton | A LFD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 48.6 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 56.69 m

Deck Area : 456.00 m sq

Deck Roadway Width: 7.11 m

Approach Roadway Width: 7.20 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure : 99.99 m

Reference Feature for Vertical Clearance : R Railroad beneath struc

Vertical Clearance Under the Structure : 6.98 m

Reference Feature for Lateral Underclearance : R Railroad beneath struc

Minimum Lateral Under Clearance Right : 1.70 m

Minimum Lateral Under Clearance Left : 0.00 m

Span Data

Main Span

Number Spans: 5

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 1 Monolithic concrete (concurrently placed with struct

Deck Protection Type: 1 Epoxy Coated Reinforcing

Deck Membrain Type: **0 None**

Approach Span

Number of Spans: 0

Material Type Code, Description:

Span Design Code, Description:

0.00 m

(50A) Curb Width :

(52) Out-to-Out Width:

(50B) Curb Width :

Skew Angle: 33°

8.05 m

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, We | est or Bi-direction | nal Travel | N | orth or East Trav | vel |
|---------------------------|-----------|-----------|---------------------|------------|-----------|-------------------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| Route On Structure | 100315 | West | 99.99 m | 7.11 m | N/A | | |
| -315 AT EXIT 0-WB OFF RAM | | | | | | | |



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Inspection Data

Inspection Due Date : 16 June 2015

Sufficiency Rating: 94

Structure Status : Functionally Obsolete

(91) Inspection Frequency (months): **48**

| NBI Inspection Da | ata | | | | | | | | | | |
|----------------------------------------------------------------------|-----------------------|----------------|---------------|-----------------------|----------------------|------------|---------------|---------|----------|------|---|
| (90) Date of Last Insp | pection : 16 June 201 | 11 | | La | st Inspected By | harles Pep | os - 107 | | | | |
| (90) Inspectio | n Date : | | | | Inspected By : | | | | | | |
| (58) Deck I | Rating : 7 | (68) Deck G | eometry : 6 | (36A) | Bridge Rail Rating : | 1 | (62) Culv | ert Ra | ating : | N | |
| (59) Superstructure I | Rating : 8 | (67) Structure | e Rating : 7 | (36B) | Transition Rating : | 1 | (61) Chanr | nel Ra | ating : | N | |
| (60) Substructure I | Rating: 7 | (69) Under Cle | | (36C) Ap | proach Rail Rating | 1 | (71) Waterway | Adeq | uacy | N | |
| (72) App Rdwy | / Align : 7 | ` ' | g Status : A | (360 | 0) End Rail Rating : | 1 | (113) Sco | ur Cr | itical : | N | |
| | Unrepaired S | palls: 0 | m sq | | Deck | Surfacing | Depth : | 0.00 ii | n | | |
| Inspection Hours | | | | | | | | | | | |
| Crew Hours for inspec | tion : 2 | 2 | Sno | oper Required | | | | | | | |
| Helper Ho | ours : | | Snooper Hours | for inspection | 0 | | | | | | |
| Special Crew Ho | ours : | | | Flagger Hours | | | | | | | |
| Special Equipment Ho | ours : | | | | | | _ | | | | |
| Inspection World | k Candidates | Status | Priority | Effected
Structure | Scope of Work | f | Action | | | ered | |
| Candidate ID | Date
Requested | Status | Filolity | Unit | WOIK | | Action | | | ites | |
| D31-FY2003-000401 | 09 May 2003 | Approved | High | M Main | 300 Strip Seal E | xp Joint | Min Repair | X | X : | X X | X |
| Clean dirt and debris ou
06/16/2011 Full of sand
Approved. DRC | | nent 1. | | | | | | | | | |
| Late Reason: | 2011 | | | | | | | | | | |

Inspection Date: 06/16/2011



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Element Inspection Data

* * * * * * * * * * Span : Main-0 - Spans 1,2,3,4,&5 * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 26 - Conc Deck/Coatd Bars X 100 3 456 sq.m. % % Previous Inspection Notes: 06/16/2011 - Wear in the wheel paths from studded tires. Small and shallow surface spalls in the concrete past the edge of the joint steel. 05/31/2007 - Minor stuudded tire wear. Good skid resistance. Wider cracks over the Bents; 0.5mm 05/04/2005 - Studded tire wear in the wheel paths. Small loose concrete along portions of the joint at Abutment 1. Wider cracks over all of the Bents. 04/30/2003 - Same comments as previous report and add studded tire wear in the wheel paths with exposed aggregate. 08/06/2001 - Transverse cracks at all (4) bents. Transverse cracks, mostly small & tight, in the west half with some minor efflorescence underneath. 12/23/1998 - 56.69 * 8.05 = 456.35 Inspection Notes: Element 109 - P/S Conc Open Girder 1 227 100 m. % % Previous Inspection Notes: 06/16/2011 - Good condition. 05/31/2007 - No problems observed. 05/04/2005 - No problems noted. (55.40 * 4 = 221.60 NMS) **EZFQ** 04/30/2003 - No problems noted. Some graffiti on girders near the Abutments. 08/06/2001 - None 12/23/1998 - 56.69 * 4 = 226.76m Inspection Notes: Element 205 - R/Conc Column Bents 2, 3, 4, and 5 ea. 95 % Previous Inspection Notes : 06/16/2011 - One small spall on the Left column at Bent 3 for Condition State 2. Several peeling sack patches at the construction joints. 05/31/2007 - Tight surface shrinakge cracks. Placed 5 percent into Condition State 2 as sacked patches are delaminated or peeling where installed. None are a problem. 05/04/2005 - Minor surface shrinkage cracks. 04/30/2003 - Minor surface shrinkage cracks. No problems noted. 08/06/2001 - None 12/23/1998 - None Inspection Notes:

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Span: Main-0 - Spans 1,2,3,4,&5 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 215 - R/Conc Abutment 1 and 6 1 24 m. 95 % % Previous Inspection Notes: 06/16/2011 - Generally in Good condition. Some tight cracking in both Backwalls and one small spall on Abutment 1's backwall. 05/31/2007 - Same as prior inspection reports. 05/04/2005 - Tight cracks in both of the backwalls. Worse crack is on the Right end of Abutment 1. Minor erosion and mostly on the Right side of Abutment 6. 04/30/2003 - Some tight cracks in both Abutment backwalls. Still some minor erosion at the wingwalls. 08/06/2001 - No change from the last report. 12/23/1998 - 11.58 + 12.34 = 23.92mSome erosion around three(3) of the wingwalls. Inspection Notes: Element 234 - R/Conc Cap Bents 2, 3, 4, and 5 37 95 m. % Previous Inspection Notes : 06/16/2011 - Generally in Good condition. One small spall in sack patch at Bent 4. Some tight vertical cracks at steps in the caps. 05/31/2007 - Minor and tight cracks at the construction joint to the column. Placed 5 percent into Condition State 2 due to sacked patches showing minor delaminations and/or peeling. None are a problem. 05/04/2005 - Minor and tight cracks at the cap to column connections. 04/30/2003 - Minor surface shrinkage cracks. No problems noted. 08/06/2001 - Dropped caps at the abutments. 9.14 * 4 = 36.56m12/23/1998 - (9.14 * 4) + (2 * 8.69) = 53.94mInspection Notes: Element 300 - Strip Seal Exp Joint 3 m. % Previous Inspection Notes : 06/16/2011 - Joint steel sounded solid when tapped on. Rubber gland is full of sanding material. Wet spot from apparent leaking near centerline. 05/31/2007 - Full of debris today. Damp near cneterline on the cap, so may have a slight leak there. Steel portions sound solid when tapped on. 05/04/2005 - Same as previously reported. Full of sanding material today. 04/30/2003 - Full of dirt/sanding material/ May be a small tear near centerline. Added cleaning as a work element. 08/06/2001 - Full of dirt and sanding material. 12/23/1998 - 8.05 * 1 = 8.05m Inspection Notes:

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* * * * * * * * * * Span : Main-0 - Spans 1,2,3,4,&5 (cont.) * * * * * * * *

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| Element Description | | . 1 | | | 5 : 0: : 1 | 5 : 0: : 0 | | | |
| Smart Flag Scale Factor E
Element 310 - Elastomeric Bearin | nv | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | | | | | 122 | | | | |
| 1 | 1 | 4 | ea. | | 100 | 0 | 0 | | |
| | | | | | % | % | % | % | o, |
| Previous Inspection Notes : | | | | _ | | | | | |
| 06/16/2011 - Good condition. Sc | me fadi | ing of the pain | t on the | steel portio | ns. | | | | RZGM |
| 05/31/2007 - No problems observ | ved. | | | | | | | | EZHZ |
| 05/04/2005 - Same as last report | í . | | | | | | | | EZFQ |
| 04/30/2003 - Minor spot rust form | ning on | painted surfac | es. Sp | ots rub off w | vith some effort. I | Not a problem as | of yet. | | BDHZ |
| 08/06/2001 - At Abutment #6. | | | | | | | | | NHGO |
| 12/23/1998 - None | | | | | | | | | AHBS |
| Inspection Notes: | | | | | | | | | |
| -1 | | | | | | | | | |
| | | | | | | | | | |
| Element 313 - Fixed Bearing | | | | | | | | | |
| | 1 | 36 | ea. | | 95 | 5 | 0 | | |
| | | | | | % | % | % | % | (|
| Daniela de la constitución de la | | | | | 76 | 76 | 76 | 76 | |
| Previous Inspection Notes : | | | | | | | | | 57014 |
| 06/16/2011 - Spot rust and some | | | | | | | | | RZGM |
| 05/31/2007 - Minor spot rust on the | | _ | | ebris starting | g to build up. | | | | EZHZ |
| 05/04/2005 - Minor spot rust and | | | | | | | | | EZFQ |
| 04/30/2003 - Minor spot rust form | ning on I | painted surfac | es. | | | | | | BDHZ |
| 08/06/2001 - None | | | | | | | | | NHGO |
| 12/23/1998 - None | | | | | | | | | AHBS |
| Inspection Notes: | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Element 331 - Conc Bridge Railir | ng | | | | | | | | |
| 1 | 3 | 113 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | % | % | % | % | (|
| Previous Inspection Notes : | | | | | | | | | |
| 06/16/2011 - Minor popouts and | scrapes | on both barrie | ers. Ra | andom vertic | al cracking through | ahout. | | | RZGM |
| 05/31/2007 - Minor popouts and | | | | | | 5· · - · · · | | | EZHZ |
| 05/04/2005 - Same as last report | _ | | | | | | | | EZFQ |
| 04/30/2003 - Vertical cracking thi | | ıt: mostly verv | tiaht. S | Some minor | popouts on rails | concrete surface: | S. | | BDHZ |
| 08/06/2001 - None | ougou | , | | | popositio en railo | | - . | | NHGO |
| 12/23/1998 - 56.69 * 2 = 113.38n | n | | | | | | | | AHBS |
| | | | | | | | | | ANDO |
| Inspection Notes: | | | | | | | | | |
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| General Inspection Notes | |
|--------------------------------------------------------------------------------------------------------------------------------------|------|
| 06/16/2011 - Rail end shoes on the approach sections of the guardrail at the bridge ends are lapped against traffic. | RZGM |
| 05/31/2007 - NBI 60, substructure, rated a "7" due to tight shrinkage cracks in the columns and caps. | EZHZ |
| 05/04/2005 - Trasnsition rail at outlet doesn't have curb taper or doubled approach section, but probably doesn't warrant it either. | EZFQ |
| 04/30/2003 - No major problems noted today. | BDHZ |
| 08/06/2001 - None | NHGO |
| 12/23/1998 - None | AHBS |
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Location: GREAT FALLS Structure Name:

General Location Data

Kind fo Hwy Code, Description: 2

MDT Maintenance Section: 31-01 Great Falls

Signed Route Number: 00103

District Code, Number, Location: 03 **GREAT FALLS GREAT FALLS** Division Code, Location:31

County Code, Location: 013 **CASCADE** City Code, Location: 32800

2 U.S. Numbered Hwy

State Highway Agency State Highway Agency Str Owner Code, Description: 1 Maintained by Code, Description:1

Intersecting Feature: CITY ST, BNSF RAILROAD Kilometer Post, Mile Post: 0.26 km 0.16

Structure on the State Highway System: Latitude: 47°30'28"

Structure on the National Highway System: Longitude: 111°20'26"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number: IG 15-5(28)274 Construction Station Number: 21+54.00

Construction Drawing Number: 7789

Construction Year: 1967 Reconstruction Year:

Traffic Data

Current ADT: 11,330 ADT Count Year: 2009 2 % Percent Trucks:

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 32.6 mton | B ASD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data : | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 85 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 167.94 m Deck Area: 2,684.00 m sq

8.32 m Deck Roadway Width: 8.32 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

R Railroad beneath struc Reference Feature for Vertical Clearance:

5.16 m Vertical Clearance Under the Structure:

R Railroad beneath struc Reference Feature for Lateral Underclearance:

Minimum Lateral Under Clearance Right: 1.52 m 0.00 m Minimum Lateral Under Clearance Left:

Span Data

Main Span

Number Spans: 4

Material Type Code, Description: 4 Steel continuous

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type: 0 None Deck Membrain Type: 0 None

Approach Span

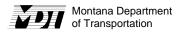
Number of Spans: 2 Material Type Code, Description: 3 Steel

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

15.98 m (52) Out-to-Out Width: (50A) Curb Width: (50B) Curb Width: 0.00 m 1.52 m Skew Angle: 45°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, We | est or Bi-direction | nal Travel | N | orth or East Trav | rel . |
|------------------------|-----------|-----------|---------------------|------------|-----------|-------------------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | -1 | Both | 5.16 m | 7.32 m | N/A | | |
| GAULT AVE. | | | | | | | |
| Route On Structure | N00103 | N/A | | | East | 99.99 m | 8.32 m |
| CENTRAL AVE WEST - EB | | | | | | | |



${\bf INITIAL\ ASSESSMENT\ FORM\ FOR\ STRUCTURE:}$

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Inspection Data

Inspection Due Date: 12 September 2014 (91) Inspection Frequency (months): 24

Sufficiency Rating: 91.4

Structure Status : Functionally Obsolete

Next Other Insp Due Date: 23 Aug 2016

Other Insp Type: Pin and Hanger

| | | | | | | Other map Type | . I ili alia Haligei |
|---------------------------------------------------|------------------------|------------------|------------|-----------------------|--------------------------|-------------------|----------------------|
| NBI Inspection Da | ata | | | | | | |
| (90) Date of Last Insp | pection : 12 Septemb | er 2012 | | La | ast Inspected By: Charle | s Pepos - 107 | |
| (90) Inspection | on Date : | | | | Inspected By : | | |
| (58) Deck | Rating : 6 | (68) Deck Geo | metry : 3 | (36A) | Bridge Rail Rating : 1 | (62) Culver | rt Rating : N |
| (59) Superstructure | Rating : 6 | (67) Structure F | Rating : 6 | (36B) | Transition Rating : 1 | (61) Channe | el Rating : N |
| (60) Substructure | Rating : 6 | (69) Under Clear | | (36C) Ap | proach Rail Rating :1 | (71) Waterway A | dequacy :N |
| (72) App Rdwy | y Align : 7 | (41) Posting S | _ | (361 | D) End Rail Rating : | (113) Scou | r Critical : N |
| | Unrepaired S | | | | Deck Sur | facing Depth : 0. | 00 in |
| Inspection Hours | · | | | <u> </u> | | | |
| Crew Hours for inspec | | | | oper Required | | | |
| Helper He | | / | | s for inspection | 9 | | |
| Special Crew Ho | 10 | | | Flagger Hours | 0 | | |
| Special Equipment Ho | 10 | | | _ | | | |
| Inspection World | k Candidates | Status | Priority | Effected
Structure | Scope of
Work | Action | Covered
Condition |
| Candidate ID | Date
Requested | Otatas | linonty | Unit | Work | Action | States |
| D31-FY2005-000060 Clean and paint bearing | 15 October 2004 | Approved | Low | All Spans | Bridge | Spot Paint (flex) | |
| Approved. DRC | | | | | | | |
| D31-FY2005-000061 | 15 October 2004 | Approved | High | All Spans | 301 Pourable Joint S | eal Min Repair | |
| Reseal the joints. | | | | | | | |
| Approved. DRC | | | | | | | |
| | | | | | | | |
| D31-FY2011-000150 | 07 February 2011 | Not Approved | Medium | All Spans | 107 Paint Stl Opn Gir | der Min Repair | |
| Clean and paint girders.
10-12-2006: Some spot | | the girders | | | · | | |
| 10 12 2000. Come spor | t overseat painting or | uno girdoro. | | | | | |
| | | | | | | | |
| D31-FY2011-000151 | 07 February 2011 | Not Approved | Medium | All Spans | 334 Metal Rail Coate | ed Repl Paint | |
| Clean and paint rail. | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| D31-FY2012-000086 | 13 September 2012 | Not Approved | Medium | All Spans | 234 R/Conc Cap | Rehab Elem | |
| Repair spalls/delaminate | | | | | 33 | | |
| | | | | | | | |
| | | | | | | | |
| Late Reason: | | | | | | | |

Inspection Date: 09/12/2012



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Continue

Element Inspection Data

Span: Main-0 - Steel Girder over RR - Spans 3 thru 6 * * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 12 - Bare Concrete Deck Latex Surface X 3 2293 sq.m. 0 100 % % Previous Inspection Notes: 09/12/2012 - Wear in wheel paths from studded tires. Cracking in all spans. Small delaminations and spalls along edges of joint steel. 09/20/2010 - Wear in the wheel paths has reduced depth of traction grooves to "0" in areas. Small surface delaminations and small spalls along joint steel. Lots of cracking in all Spans. 09/24/2008 - Wear in the wheel paths. Small spalls and delaminations along edges of the joint steel. Transverse and mapping cracks in all of the 07/25/2006 - Wear in the wheel paths. Small delamiantions along the expansion joint steel. Some mapping cracks in the latex in all of the spans. 09/29/2004 - Put deck into Condition State 2 due to small delaminations along the joints. 10/21/2002 - (79.40 * 15.98) [(15.98 18.40)/2 * 32.8] (18.40 * 25.0) = 2292.6 Put deck back to a "12" as hydromilled and replace material with Latex concrete to original deck elevations. Also Class B repairs. Transverse cracking in all spans. May need to address the cracking on next inspection. 08/30/2000 - (79.40*15.98) [(15.98 18.40) / 2 * 32.8])18.40 * 25.0) = 2292.6 Repair of delaminated areas in 1999 with hydrodemolition. Replaced with latex concrete and an overlay of the entire structure with latex concrete/ 06/03/1998 - Numerous small, tight transverse cracking thoughout the deck with some small areas of delamination when it was checked several years ago. Studded tires have left a fairly smooth wear surface. 12/01/1995 - None Inspection Notes: Element 107 - Paint Stl Opn Girder 607 85 m. % % % % Previous Inspection Notes: 09/12/2012 - Lower flange tops in areas that collect water are rusted and some surface pitting under rust blisters. Faded and chalking paint. diagonal bracing between G2 and G3 where removed in 2012 and intersecting welds drilled in reversal areas. Girders are dirty from train exhaust. 09/20/2010 - Crack on G3S4L Gusset is unchanged. Lots of debris and grime on the girders. Rust blisters with minor surface pitting. Lots of pigeon nests along the girder connections. 09/24/2008 - G3S4L near pin connection has a crack on the gusset weld for the diagonal brace. Rusty spots, scale, paint loss, and minor surface pitting in areas where water can sit on the girders. 07/25/2006 - Rust spots, pitting, some pack rust, and paint loss; especially under the joints. Left two(2) girders have some missing bolts in the bearings to girders connection. Outer girders have rust blisters on the lower flange tops and lower portion of the webs and near leaky joints. Bolts on a diagonal bracing was missing and replaced during snooper inspection. 09/29/2004 - Some rust spots, peeling paint and pitting of the girders, especially under the joints and on the lower portions of the web/lower flange. 2nd girder from the right in Span 3 is very rusty with paint peeling for 20 feet. 10/21/2002 - Minor rusty spots under leaking joints and along the bottom flange/web area. 08/30/2000 - (4 * 137.20) + 32.8 + 25.0 = 606.6mSome rust and pitting. 06/03/1998 - Some early signs of rust & pitting. 12/01/1995 - None 02/01/1994 - None Inspection Notes:

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| lement Des | | | | | | | | | | |
|-------------|-----------------------------------------------------------|---------------|------------------|-----------|---------------|-----------------|--------------------|--------------------|----------------------------------------------------------------------------------------------------------------|------------|
| Smart Flag | Scale Factor | Env | Quantity | | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 161 | | | | <u> </u> | mblies plus (| <u>'</u> | onnection Pins | | | |
| | 1 | 3 | 3 | ea. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | | I | |
| 9/12/2012 - | Pins and hange | ers where l | UT tested in Au | ugust 20 | 12. No seriou | ıs problems obs | served (see Collir | ns Engineering re | eport). | MWH |
| spection w | Still Good pain
ith little to no we
Will be UT'd th | ear also no | ted. | • | | | s Engineering. N | lo "noteables" we | ere fond in the UT | WZB
YQC |
| | | | | | | | ting in 2005 show | ed no significant | wear or problems. | NZD |
| 9/29/2004 - | Ends of the pin | ns, nuts, an | d hangers sho | wing soi | me minor rus | t where they we | ere cleaned in 200 | 01 for UT testing. | | ZZIC |
| 0/21/2002 - | See 2001 NDT | report. So | ome minor wea | ar of sev | eral pins. | | | | | VIKO |
| 8/30/2000 - | Some minor ru | st and pitti | ng. | | | | | | | |
| 6/03/1998 - | Some minor ru | ıst & pitting | . Eight(8) sets | of the p | ins have bee | n UDT'ed and v | were ok. | | | XKG |
| 2/01/1995 - | None | | | | | | | | | YDN |
| 2/01/1994 - | None | | | | | | | | | REF |
| lement 205 | - R/Conc Colur | mn (2) at E | Bent 3, 4, 5, an | d (3) at | 6 | | | | | |
| | 1 | 1 | 9 | ea. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | | | |
| | | | | | ng corners ar | nd areas are de | laminated. Some | spall/scrapes on | columns. Shallow | tie MWH |
| | sed surface spa
Bent 3's Right | | | | and cracking: | photo. Some t | ight cracks and s | mall surface spa | lls from shallow tie | WZB |
| rire. | | | | _ | | | | | | |
| | ŭ | | • | | | | edges. Some pai | | · · | YQC |
| ent 6 has s | ome spalls from | n being hot | from campfires | s. | | | | | Middle column at | |
| | n at Bent 3. Tig
Small, tight shr | | | | | arted by homel | ess people under | the structure. | , and the second se | VIK |
| 8/30/2000 - | No change. | | | | | | | | | |
| | Sama bairling | tight crack | s in the concre | te. | | | | | | XKG |
| | Some namine, | tigrit crack | | | | | | | | |
| | | tigitt crack | | | | | | | | |

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| ۰ | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| ement 215 | - R/Conc Abutr | | | | | | | | | |
| | 1 | 1 | 26 | m. | | 95 | 5 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| evious Ins | pection Notes : | | 1 | | | | | | | |
| ots of soot | from homeless of | campfires. | | | | | | · | I near G3 embedmouple of the bearing | |
| ouple of the | girders in the A | butment c | ар. | | · | Il spalls along the | • | nbedded girders | . Tight cracks unde | era YQC
NZDI |
| | Tight cracks in | | | | | | Tino baokwan. | | | ZZIC |
| | Minor, tight cra | | | | | 3 . 3 | | | | VIKO |
| 8/30/2000 -
o change. | 14.60 + 1.55 + | 9.70 = 25. | 80 East abutn | nent on | ly. | | | | | |
| | Some minor er | osion @ th | e wingwalls. | | | | | | | XKG |
| 2/01/1995 - | | | | | | | | | | YDN |
| 2/01/1994 - | None | | | | | | | | | REF |
| • | | Rents 3 th | oru 6 | | | | | | | |
| • | - R/Conc Cap | Bents 3 th | ıru 6 | m. | | 85 | 10 | 5 | 0 | |
| • | - R/Conc Cap | | | m. | | | | | | |
| | - R/Conc Cap
1 | | | m. | | 85
% | 10 | 5 | 0 % | |
| ement 234 | - R/Conc Cap
1
pection Notes : | 1 | 61 | | vooced rustv | % | % | % | % | n MW/ |
| revious Ins
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ow surface | spalls, staining areas show sta | , and e
ining. | | % chair feet. Face | % of Bent 3 cap or | % span 2 side has | % s large delaminatio | |
| revious Ins
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nd spalls (p
0/20/2010 - | pection Notes : Undersides should be undersided and promise the pr | ow surface
ider leaky a
reas. Craci | spalls, staining
areas show sta
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spalls; | photo of Ber | % chair feet. Face | % of Bent 3 cap or ce spalls and del | %
span 2 side has
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| revious Ins
9/12/2012 -
nd spalls (p
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9/24/2008 - | pection Notes : Undersides shoboto). Those undersided and from leaky joi. Unchanged. S | ow surface
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to spall on the | chair feet. Face at 3's cap. Surface the shallow tie wire ar chairs. Bent 3 | of Bent 3 cap or
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3's cap has some | span 2 side has aminations due ebar chair feet. | % s large delamination to rebar chair feet. | WZE
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| Smart Flag | ription | Env | Quantity | Linita | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat |
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| ioment ou i | 1 | 3 | 29 | m. | | 60 | 25 | 15 | | |
| | ' | J 3 | 23 | 111. | | | | | | |
| | | | | | | % | % | % | % | |
| · | ection Notes : | | | | | | | | | |
| | · | | | | | s pulled out and | | | | MV |
| | ŭ | | | | • | sounds solid wl | | | | WZ |
| | · | | | st bond | in several a | reas and debris | is pushing sealar | nt down. | | YQ |
| 7/25/2006 - L | Jnchanged fro | m previous | reports. | | | | | | | NZ |
| 3/29/2004 - S | Several areas | where the j | oint sealant ha | s lost ad | dhesion and | is pulling away fo | rom the guard an | gles. Dirt/debris | s in portions of the | e joint. ZZ |
| 0/21/2002 - E | Dirt and debris | in joints. S | Some material I | has bee | n pushed ou | t by the dirt and | debris. Joints lea | aking in these a | reas. | |
| | 2 * 14.60 = 29. | 20 "Dow o | corning" sytle. | | | | | | | |
| ome material
6/03/1998 | | | | | | | | | | XK |
| Inspection No | atoo: | | | | | | | | | |
| | | | | | | | | | | |
| lement 305 - | Assm Jt w/o S | | 32 | m | | an | 10 | 0 | | |
| lement 305 - | Assm Jt w/o S | Seal 3 | 32 | m. | | 90 | 10 | 0 | | |
| | | | 32 | m. | | | | | | |
| revious Inspe
9/12/2012 - S | 1 ection Notes: | 3 | | | p portions so | % | % | % | | gers MW |
| revious Inspe
9/12/2012 - S
puching slight | 1 ection Notes: Some spalling tly. | 3
on undersi | de of deck at jo | oints. To | | %
bund solid when | % tapped on. Finge | %
er alignment is g | % | |
| Previous Inspe
9/12/2012 - S
puching slight
9/20/2010 - G | 1 ection Notes : Some spalling tly. Good finger ali | on undersion | de of deck at jo | oints. To | nents on und | %
bund solid when
derside of the de | tapped on. Finge | er alignment is go | ood with some fine | WZ |
| revious Inspe
9/12/2012 - S
buching slight
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9/24/2008 - F
bint. Rusty ar | ection Notes : Some spalling tly. Good finger ali Finger alignme nd scale on the | on undersi | de of deck at jo
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s slightly tou | bund solid when derside of the deuching. Some specific control of the specific control of the deuching. | tapped on. Finge | er alignment is go Il apply. der concrete on | ood with some fine | WZ
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9/12/2012 - S
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* * * * * * * * * * Span : Main-0 - Steel Girder over RR - Spans 3 thru 6 (cont.) * * * * * * * *

| Element Des | cription | | - 1 | | | | ans 3 thru 6 (CO | , | | |
|------------------------------|----------------------|--------------|-------------------|---------|----------------|--------------------------------------|--------------------|--------------------|--------------------|--------------|
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 | - Moveable Bea | aring | | | 1 | | <u>"</u> | | 1 | |
| | 1 | 3 | 14 | ea. | | 85 | 15 | 0 | | |
| | | | | | | % | % | % | % | 9 |
| Previous Ins | pection Notes : | | | | | | | | | |
| 09/12/2012 - | Bearings are to | wards exp | ansion at 75 de | grees F | and tolerab | ole. Lots of debri | s and spot rust or | n bearings. | | MWHP |
| 09/20/2010 - | Bearings are to | wards exp | ansion today; 5 | 5F. De | bris, rust, ar | nd paint loss. | | | | WZBZ |
| 09/24/2008 - | Some slight alig | gnment tov | wards expansion | n today | ; 40F. Some | e dirt and debris. | Some overcoat | painting done. | | YQCZ |
| | Rusty spots, de | ebris, scale | and paint loss. | Alignr | nent is tolera | able today. Blew | off and spot ove | rcoat painted du | ring snooper | NZDN |
| inspection.
09/29/2004 - | Rusty spots, so | ale, paint | peel, and pitting | on tho | se under the | e leaking joints. | Some pigeon deb | oris/nests near so | ome of the bearing | s. ZZIO |
| | Rusty and pittir | | _ | | | 0, | , 0 | | J | VIKC |
| 08/30/2000 - | | | | | | | | | | FILQ |
| 06/03/1998 - | Some rust & pit | tting. | | | | | | | | XKGJ |
| 12/01/1995 - | None | | | | | | | | | YDNF |
| 02/01/1994 - | None | | | | | | | | | REFI |
| Inspection N | Notes: | | | | | | | | | |
| | - Fixed Bearing
1 | 2 | 14 | ea. | | 90 | 10 | 0 | % | C |
| | pection Notes : | | | | | | | | | |
| | Dirt, debris, and | | _ | | | | | | | MWHP |
| | Debris, dirt, spo | | · | | a af dalawa | and dist. Desertions | | | | WZBZ |
| | • | | , , | | | | oots and paint los | iS. | | YQCZ |
| | | | | | | ed during snoope
near some of the | | | | NZDN
ZZIO |
| | Minor rust and | | minor pitting. | orne pi | geon debits | near some or the | e bearings. | | | VIKC |
| 08/30/2000 - | | pitting. | | | | | | | | FILQ |
| | Some rust & pit | ttina. | | | | | | | | XKGJ |
| | · | | | | | | | | | |
| 12/01/1995 -
02/01/1994 - | | | | | | | | | | YDNF
REFI |
| | | | | | | | | | | - KEFI |
| Inspection N | NOTES: | | | | | | | | | |
| | | | | | | | | | | |
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* Span: Main-0 - Steel Girder over RR - Spans 3 thru 6 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 331 - Conc Bridge Railing 3 270 m. 95 % Previous Inspection Notes: 09/12/2012 - Vertical cracks and some mapping cracks on backs of barriers. Spalls where top hand rail was removed. 09/20/2010 - Unchanged from prior inspections comments. 09/24/2008 - Vertical cracks in the relief cuts. Small spalls in some areas on the Right rail where the handrail on top was removed. 07/25/2006 - Same as past inspections. 09/29/2004 - Vertical cracking between the relief cuts. Surface shrinkage cracks. A couple of small areas of fracture concrete along the tops of the barrier where the handrail was removed. 10/21/2002 - Pedestrian hand rail removed my Maintenance. Minor, vertical cracks and shrinkage cracks throughout. 08/30/2000 - Replaced steel rail with concrete barrier rail in 1999. 06/03/1998 - Some rust & pitting of the rail and posts. 12/01/1995 - None 02/01/1994 - None Inspection Notes: Element 334 - Metal Rail Coated W-Beam, Pipe Handrail, and Guard Fence w\ Steel Posts 1 3 137 m. 80 20 0 % % % Previous Inspection Notes: 09/12/2012 - Rust, scale, and paint loss on rail posts and pipes. Gaurd fence and fabric has a bend where a luminare pole fell into it. 09/20/2010 - Rust, scale, and paint loss to the posts and pipe. Guard fence posts and fabric are in Good condition. 09/24/2008 - Some rust, scale, and paint loss on the rail posts and pipes. The guard fence is in Good condition. 07/25/2006 - Same as past inspections. 09/29/2004 - Rusty spots on the rail posts and pipes. Guard fence is in Good condition. 10/21/2002 - Rusty spots and pitting throughout. Guard fence is in Good condition. 08/30/2000 - 137.2x1=137.2 Sidewalk has existing metal rail and guard fence was added during 1999 construction. Minor rust on existing rail and posts. Inspection Notes: Element 357 - Sup Pack Rust SmFlag Χ 2 Χ 100 ea. % % Previous Inspection Notes : . 09/12/2012 - Swelling and cracking of welds on diaphragms lower members where water can get to them. 09/20/2010 - Unchanged from prior inspections comments. 09/24/2008 - Diaphragms under leaky joints show pack rust with swelling and cracking of welds. Inspection Notes:

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| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | - Deck Cracking | | | 4 | | | 400 | 0 | 0 | |
| Х | 1 | 3 | | l ea. | Х | 0 | 100 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| revious Insp | pection Notes : | | | | | | | | | |
| | Both size and o | , , , , | • | | | | | | | MWH |
| | Unchanged from | | | | | | | | | WZB |
| 9/24/2008 - | Lots of wider ci | racks, near | 1.0mm, in all | Spans a | ind some are | as were density | comes into play. | | | YQC |
| nspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
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| | | * * * | * * * * * * * | Span | : Appr-1 - St | eel Girder - Spa | ans 1 and 2 * * * | ***** | | |
| lement Des | • | | | T | | 5 . 6 | 5 . 6 6 | 5.0 | | |
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| iement 12 - | Bare Concrete | | 40. | 1 | V | | 400 | 0 | d | |
| | 1 | 3 | 49 | sq.m. | Х | 0 | 100 | 0 | 0 | |
| | | | | | | % | % | % | % | |
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| | pection Notes : | | | | | | | | | |
| | | ear in whee | el paths. Spalls | s/delamii | nations along | edges of joint s | teel. Random cra | cking in both sp | ans. | MWF |
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| 9/12/2012 - 9/20/2010 - 9/24/2008 - 7/25/2006 - 9/29/2004 - 0/21/2002 - ydromilling nspection N lement 107 revious Insp 9/12/2012 - 10se near A 9/20/2010 - 10alky paint 1 9/24/2008 - 7/25/2006 - | Studded tire we Transverse and Some transverse and Some transverse and Some transverse and Some as past i Put into Condit 15.98 * 30.74 = and class B replotes: - Paint Stl Opn 1 Dection Notes: Steel is in good butment 1 from Some rust blist with some spot Paint loss, rust Rusty spots, pa | d mapping se and map nspections state 2 = 491.23 Cair. Numer | cracks. Wear oping cracks. due to small of the countries of the bottom majority of are frace pitting, and pitting in are | in the w Small sp delamina ent backs se cracks m. sters wit flanges ea. nd very as unde | heel paths. Spalls and delations along to to a "12", as that may not be the minor surfative where moist dirty girders. | Small surface spaminations along the joints. Some Latex concrete and to be re-eval when the property of the pr | alls and delamina the joint steel ec mapping cracks was placed to the uated at the next 5 % s of bottom flang Minor surface pit | ations along the liges. Wear in the liges. Wear in the in both spans. It is same elevation inspection; small small spectron; spectron; small s | joint steel. e wheel paths. n it was prior to rt flag. 0 % nalky paint. Smoke | WZE YQC NZD ZZIC VIKO WZE YQC |
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| 9/12/2012 - 9/20/2010 - 9/24/2008 - 7/25/2006 - 9/29/2004 - 0/21/2002 - ydromilling nspection N lement 107 revious Insp 9/12/2012 - 10se near A 10/20/2010 - 10/2000 - 10/21/2000 - 10/21/2000 - 10/21/2000 - 10/21/2000 - 10/21/2000 - | Studded tire we Transverse and Some transverse and Some transverse and Some transverse and Some as past i Put into Condit 15.98 * 30.74 = and class B replotes: - Paint Stl Opn 1 Dection Notes: Steel is in good butment 1 from Some rust blist with some spot Paint loss, rust Rusty spots, past of dirt/grime or Lower flange/w | d mapping se and map nspections sion State 2 = 491.23 Cair. Numer directions of the series on tops rust on the y spots, su aint loss and the girder seb portions on under less than the girder seb portions of the girder | cracks. Wear oping cracks. due to small of the country of are face pitting, and pitting in ares. Lower flangs show rusty s | in the w Small sp delamina ent backse cracks m. sters wit flanges ea. nd very as unde ges are s pots, per | heel paths. Soalls and delations along to a "12", as that may not so that may | Small surface spaminations along the joints. Some states concrete the ded to be re-evaluated to be re-evalua | alls and delamina the joint steel ed mapping cracks was placed to the uated at the next 5 % s of bottom flang Minor surface pit many areas. ck towards Abutn | ations along the liges. Wear in the liges. Wear in the in both spans. It is same elevation inspection; small small spectron; spectron; small s | joint steel. e wheel paths. n it was prior to rt flag. 0 % nalky paint. Smoke | on MWH WZE YQC VIKO VIKO VIKO VIKO VIKO VIKO VIKO VIKO |
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YQC
NZD
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VIKC |

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Span: Appr-1 - Steel Girder - Spans 1 and 2 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 161 - Paint Stl Pin/Hanger Bent 3 - End Girder Connection Pins ea. 95 % % Previous Inspection Notes: 09/12/2012 - Pins were UT tested in August 2012 and no significant problems were observed (see Collins Engineering report). 09/20/2010 - Still Good paint where re-painted by UT inspectors. Refer to report by Collins Engineering. No "noteables" were fond in the UT inspection with little to no wear also noted. 09/24/2008 - Ut'd recently. See report. Some minor rust showing. 07/25/2006 - No problems found in 2005 UT inspection. Spot rust on the ends of the pins. Wired brushed and re-painted. 09/29/2004 - Paint is worn off the areas that were cleaned for UT inspections in 2001 with some surface rust. 10/21/2002 - See NDT report from 2001. No problems noted. Inspection Notes: Element 205 - R/Conc Column Bent 2 95 ea. % Previous Inspection Notes: 09/12/2012 - Tight surface shrinkage cracks and small surface spall from tie wire. 09/20/2010 - Tight surface shrinakge cracks. Some shallow surface staining and spalls from tie wire. 09/24/2008 - Tight shrinake cracks in areas. Columns have been painted to cover graffiti. 07/25/2006 - Same on tight cracks. Graffiti has been painted over. 09/29/2004 - Tight shrinkage surface cracks. Tight cracking on the construction joints. 10/21/2002 - Some tight, shrinkage cracks throughout. 08/30/2000 - None 06/03/1998 - _ Inspection Notes: Element 215 - R/Conc Abutment 1 - West 1 20 m. 95 % Previous Inspection Notes: 09/12/2012 - Smokey and sooted from homeless campfires. Some tight cracks in backwall and a small spall near G2 embedded bearing. 09/20/2010 - Some tight vertical cracks near centerline of roadway and a small spalled area near G2's bearing. One tent and campfire going today. 09/24/2008 - Same as past comments. Generally in Good condition. 07/25/2006 - Same with one small area spalled where G2 is embedded. 09/29/2004 - Tight vertical cracks on the backwall concrete. Some cracks have minor efflorescence. 10/21/2002 - Tight, vertical cracks in the backwall concrete. 08/30/2000 - 15.98 + 1.30 + 2.80 = 20.08m06/03/1998 - None Inspection Notes:

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| Smart Flag | cription | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------|--------------------------------|----------------------------------------------------------|---------------------------------------------|--------------------|----------------------|-------------------------------------------|
| | | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 234 | - R/Conc Cap | Bent 2 | | | | | | | | |
| | 1 | 1 | 16 | m. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | L | | | |
| 9/12/2012 - | Spalled areas | with expose | ed rusty rabar a | and chai | r feet. Shallo | w surface delam | ination. | | | MWH |
| 9/20/2010 - | Same as previ | ous inspec | tion comments. | | | | | | | WZB |
| 9/24/2008 - | Condition State | e 3 due to d | delaminations. | Cracks | at the steps | and lots of dirt/de | ebris. | | | YQC |
| 7/25/2006 - | Surface spalls | where reba | ar chairs are ex | posed o | n the bottom | of the caps. | | | | NZDI |
| 9/29/2004 - | Minor rust stai | ns with sma | all spalled secti | ons on t | ne areas who | ere the rebar cha | irs are exposed; | mainly on the be | ottom of the caps. | ZZIC |
| 10/21/2002 - | ok | | | | | | | | | VIKC |
| 08/30/2000 - | 15.98 * 1 = 15 | .98m | | | | | | | | FILC |
| 06/03/1998 - | None | | | | | | | | | XKG |
| Inspection I | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| lement 30F | - Assm Jt w/o | Seal | | | | | | | | |
| Tomoni ooo | 1 | 3 | 16 | m | | 90 | 10 | 0 | | |
| | ' | 3 | 10 | m. | | | | | 0.4 | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
|)9/12/2012 - | Steel portions | sound solic | when tapped | on. Mino | r spalling on | underside of dec | ck at joint. Small | spalls/delaminate | ions along joint ste | eel. MWH |
| | | | | | spalls and o | delaminations in t | he concrete alor | ng the joint's edg | e. Minor spalling a | and WZB2 |
| | e header concr
Steel sounds s | | | | and delami | nations along the | ioint edaes. So | me spalling and | staining of the hea | ader YQC |
| concrete on | the underside o | of the deck i | n the header a | rea. | | | | | ŭ | |
| | | | | | | led area along th | e joint. | | | NZDI |
| | Joint leaks. Si | | | _ | | | | | | ZZIC |
| | Minor rust spo | | • | s the nat | ure of these | joints. | | | | VIKC |
| | 15.98 * 1 = 15 | .98m Slic | ding plate. | | | | | | | FILG |
| 08/30/2000 - | | | | | | | | | | |
| | _ | | | | | | | | | XKG |
| 08/30/2000 -
eaking.
06/03/1998 - | | | | | | | | | | XKG |
| 08/30/2000 -
eaking.
06/03/1998 - | | | | | | | | | | XKG |
| 08/30/2000 -
.eaking.
06/03/1998 - | | | | | | | | | | XKG |
| 08/30/2000 -
Leaking.
06/03/1998 -
Inspection I | Notes: | aring Ben | t 2 and 3 | | | | | | | XKG |
| 08/30/2000 -
Leaking.
06/03/1998 -
Inspection I | Notes: - Moveable Be | | | ea | | 90 | 10 | 0 | | XKG |
| 08/30/2000 -
Leaking.
06/03/1998 -
Inspection I | Notes: | aring Ben | t 2 and 3 | ea. | | 90 | 10 | 0 | 0/ | XKG |
| 08/30/2000 -
Leaking.
06/03/1998 -
Inspection I | Notes: - Moveable Be | 3 | | ea. | | 90 % | 10 | 0 % | % | XKG |
| 8/30/2000 - eaking. 6/03/1998 - Inspection I | - Moveable Be | 3 | 8 | | | % | % | | % | |
| 08/30/2000 - eaking. 16/03/1998 - Inspection I | - Moveable Be 1 pection Notes : Bearings are to | 3
owards epa | nsion but tolera | able 75 d | - | % pot rust, stained, | % and debris. | | % | MWH |
| 98/30/2000 - eaking. 16/03/1998 - Inspection | - Moveable Be 1 pection Notes: Bearings are to | 3
owards epa | nsion but tolera | able 75 o | spot rust, di | % pot rust, stained, rt, and debris on | % and debris. | % | % | MWH |
| 18/30/2000 - eaking. 16/03/1998 - Inspection I Element 311 Previous Ins 19/12/2012 - 19/20/2010 - 19/24/2008 - | - Moveable Be 1 pection Notes: Bearings are to Bearings in slight rotation | owards epa | nsion but tolera
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pansion; 55F w | able 75 one
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| 8/30/2000 - eaking. 6/03/1998 - Inspection I Element 311 Previous Ins 9/12/2012 - 9/20/2010 - 9/24/2008 - | - Moveable Be 1 pection Notes: Bearings are to | owards epa | nsion but tolera
erate expansion
pansion; 55F w | able 75 one
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| 18/30/2000 - eaking. 16/03/1998 - 16/03/1998 - 15/03/1998 - 15/03/1998 - 15/03/1998 - 15/03/1998 - 15/03/2008 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2006 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/200000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/2000 - 15/03/20 | - Moveable Be 1 pection Notes: Bearings are to Bearings in slight rotation Same as past | owards epa
ght to mode
towards ex
inspections | nsion but tolera
erate expansior
pansion; 55F w
and alignment | able 75 one hen und | spot rust, di
ler the area. | % pot rust, stained, rt, and debris on | and debris. the bearings. painting and clea | % | % | MWH
WZB
YQC
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| 8/30/2000 - eaking. 6/03/1998 - Inspection I Element 311 Previous Ins 9/12/2012 - 9/20/2010 - 9/24/2008 - 7/25/2006 - | - Moveable Be 1 pection Notes: Bearings are to Bearings in slight rotation Same as past | owards epa
ght to mode
towards ex
inspections
pitting from | nsion but tolerate expansior pansion; 55F was and alignment leaking joint. | able 75 one hen und | spot rust, di
ler the area. | pot rust, stained,
rt, and debris on
Some overcoat | and debris. the bearings. painting and clea | % | % | MWH
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| 18/30/2000 - eaking. 16/03/1998 - Inspection I Element 311 Previous Ins 19/12/2012 - 19/20/2010 - 19/24/2008 - 17/25/2006 - 19/29/2004 - 19/29/2004 - 10/21/2002 - | - Moveable Be 1 pection Notes: Bearings are to Bearings in slight rotation Same as past Spot rust and | owards epa
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ler the area. | pot rust, stained,
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Some overcoat | and debris. the bearings. painting and clea | % | % | MWH
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| 8/30/2000 - eaking. 16/03/1998 - Inspection I Element 311 Previous Ins 19/12/2012 - 19/20/2010 - 19/24/2008 - 17/25/2006 - 19/29/2004 - 0/21/2002 - 18/30/2000 - | - Moveable Be 1 pection Notes: Bearings are to Bearings in slight rotation Same as past Spot rust and processing and pittings are posts. | owards epa
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ler the area. | pot rust, stained,
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Some overcoat | and debris. the bearings. painting and clea | % | % | MWH
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NZD
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VIKG |



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* * * * * * * * * Span : Appr-1 - Steel Girder - Spans 1 and 2 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Quantity Element 313 - Fixed Bearing Abutment 1 2 ea 90 10 % % Previous Inspection Notes: 09/12/2012 - Spot rust, staining, faded paint, and some debris. 09/20/2010 - Spot rust, debris, and faded paint. 09/24/2008 - No change. 07/25/2006 - Same as past inspections. 09/29/2004 - Spot rust and pitting on the bearings. Some pigeon debris/nests on and around the bearings. 10/21/2002 - Some rust and scale on Abutment bearings. 08/30/2000 - Some rust and pitting. 06/03/1998 - Some rust & pitting. Inspection Notes: Element 321 - R/Conc Approach Slab 1 3 ea. 100 % Previous Inspection Notes : 09/12/2012 - Bump onto bridge from settlement in approach slab and roadway. 09/20/2010 - Same as previous inspection comments. 09/24/2008 - Settlement of the slab is allowing a big bump onto the structure. Sealant in the joint between the slab and bridge end is leaking and loose in areas 07/25/2006 - Put into condition State 2 due to settlement of the slab. 09/29/2004 - Minor settlement. Joint between the slab and the structure is leaking as adhesion of the sealant is broken. 10/21/2002 - Minor settlement. 08/30/2000 - None 06/03/1998 - _ Inspection Notes: Element 331 - Conc Bridge Railing 3 61 m. 95 % % % Previous Inspection Notes: 09/12/2012 - Vertical and mapping cracks. Spalls on tops of barrier where hand rail was removed. 09/20/2010 - Same as previous inspection comments. 09/24/2008 - Vertical cracks at the relief cuts. Some spalls on the top where the Right handrail was removed. 07/25/2006 - Same as last inspection. 09/29/2004 - Vertical cracking between the relief cuts. Some minor pieces of concrete were fracutured from when the metal handrail was removed from the top of the barrier. 10/21/2002 - Vertical cracking and shrinkage cracks throughout. 08/30/2000 - 30.74 * 2 = 61.48m New concrete rail in 1999. 06/03/1998 - 30.74 * 2 = 61.48Some rust & pitting of the rail posts and bridge rail. Inspection Notes:



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****** Cnon : Annu 4 Steel Circles Chang 4 and 2 (cont) *** ***

| Smart Flag
Element 334 | cription | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------|----------------------------------------|---------------------------------------|-------------------|--------------------|------------------------|-------------------------------------------------------------|
| element 334 | Scale Factor | Env | Quantity | Units Insp Eac | | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | | | | | | | | | |
| | 1 | 3 | 31 | m. | 80 | 20 | C | | |
| | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | | |
| 9/12/2012 - | Rust, scale, pa | int loss, ar | nd scrapes on p | ipe and posts. Ga | aurd fence is in goo | d condition. | | | MWHI |
| | Rust, scale, pa | int loss, ar | nd minor surface | e pitting to the pos | sts, W-Beam rail, a | nd handrail. Gua | ard fence posts | and fabric are in Goo | od WZBZ |
| ondition. | Rust naint loss | s scale ar | nd fading of the | coating system of | n the rail posts and | nines quard fer | nce is in Good c | rondition | YQCZ |
| | Same as last in | | id idding of the | oodiing System of | Traile rail pools and | pipeo. gadia ici | 100 10 111 0000 0 | orianion. | NZDN |
| | | • | some snot rust | throughout The | guard fence is in pl | ace and in Good | condition | | ZZIO |
| | · | | • | ce is in Good con | • | | condition. | | VIKC |
| | | ŭ | | | | during 1999 cons | struction Minor | rus on existing rail a | |
| osts. | 01.747.1-00.74 | Ciacwaii | That existing m | ctai raii aria gaare | renee was added | during 1000 con | Struction: Willion | ras on existing ran e | and HEQ |
| Inspection N | Notes: | | | | | | | | |
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| Conoral | Inanastian N | | | | | | | | |
| | Inspection I | | | | | | , | <i>r</i> | B 4) A // L |
| 9/12/2012 - | Area under eas | st abutmen | it nas a smail vi | liage of nomeless | people. Lots of so | ot on underside i | n area from carr | np fires. | MWH |
| | | | | | Collins Engineers | . CRH | | | |
| | Lots of camper | | • | • | | | | | WZBZ |
| | | | | installed in the be | arings at Bent 6. | | | | YQCZ |
| | | | | d delamiantions. | ons of the girders. | | | | NZDN |
| | | | | olumns and caps. | | | | | |
| | Deck cracking | | | | | | | | ZZIO |
| | | | | | | as placed on the | strucure. Unsu | re if extra dead load | has VIKC |
| | | | | some crack proble | ems to worsen
ard fence that was p | placed in 1999. | | | |
| 06/03/1998 - | | | | , and 12 gas | | | | | FILQ |
| | | | | | | | | | FILQ
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| 12/01/1995 - | | ina Calcul | ation Accepted | hv ons\$u5963 at | 3/11/97 10:45:45 | | | | XKG |
| | | | | by ops\$u5963 at
4 at 2/19/97 14:25 | | | | | |
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| Sufficiency R
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| Sufficiency R
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Location : GREAT FALLS Structure Name:

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 Dist 3 GREAT FALLS Division Code, Location: 31 GREAT FALLS

County Code, Location : 013 CASCADE City Code, Location : 32800 GREAT FALLS

Kind fo Hwy Code, Description: 3 3 State Hwy Signed Route Number: 00103

Str Owner Code, Description: 1 State Highway Agency Maintained by Code, Description: 1 State Highway Agency

Intersecting Feature: CITY ST, BNSF RAILROAD Kilometer Post, Mile Post: 0.26 km 0.16

Structure on the State Highway System : X Latitude : 47°30'29"

Structure on the National Highway System : X Longitude : 111°20'27"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number : **IG 15-5(28)274**Construction Station Number : **21+54.00**

Construction Drawing Number: 7789

Construction Year: 1967

Current ADT: 11,330 ADT Count Year: 2009 Percent Trucks: 2 % Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

| Design Loading: | | 5 MS 18 (HS 20) |
|--------------------------|-----------|------------------------|
| Inventory Load, Design : | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 32.6 mton | B ASD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 85 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 167.94 m

Deck Area: 1,781.00 m sq

Deck Roadway Width: 8.32 m

Approach Roadway Width: 9.14 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure : 99.99 m

Reference Feature for Vertical Clearance : R Railroad beneath struc

Vertical Clearance Under the Structure: 5.11 m

Reference Feature for Lateral Underclearance : R Railroad beneath struc

Minimum Lateral Under Clearance Right : 1.50 m

Minimum Lateral Under Clearance Left : 0.00 m

Span Data

Main Span

Number Spans: 4

Material Type Code, Description: 4 Steel continuous

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type : **0 None**Deck Membrain Type : **0 None**

Approach Span

Number of Spans : 2

Material Type Code, Description : 3 Steel

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

(52) Out-to-Out Width: 10.61 m

(50A) Curb Width: (50B) Curb Width: 1.52 m

Skew Angle: 45°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, West or Bi-directional Travel | | | North or East Travel | | |
|------------------------|-----------|--------------------------------------|----------|------------|----------------------|----------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | -1 | N/A | 5.11 m | 7.32 m | N/A | | |
| GUALT AVE | | | | | | | |
| Route On Structure | N00103 | Both | 99.99 m | 8.32 m | N/A | | |
| CENTRAL AVE. WEST - WB | | | | | | | |

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Inspection Data

Inspection Due Date: 13 September 2014 (91) Inspection Frequency (months): 24

Sufficiency Rating: 76.3

Structure Status : Func Obs - Elg Rehab

Next Other Insp Due Date : 22 Aug 2016

Other Insp Type: Pin and Hanger

| NBI Inspection Da | ata | | | | | | |
|---------------------------------------------------|-----------------------|-----------------|---------------|-------------------|------------------------------|-------------------|---------------------|
| (90) Date of Last Ins | pection : 13 Septemb | er 2012 | | La | ast Inspected By: Charles Pe | pos - 107 | |
| (90) Inspection | on Date : | | | | Inspected By : | | |
| , , , | | | | | , , | | |
| (58) Deck | Rating : 6 | (68) Deck Ge | eometry : 3 | (36A) | Bridge Rail Rating : | (62) Culver | t Rating : N |
| (59) Superstructure | Rating : 6 | (67) Structure | Rating : 6 | (36B) | Transition Rating : 1 | (61) Channe | el Rating : N |
| (60) Substructure | Rating : 6 | (69) Under Clea | | (36C) Ap | proach Rail Rating :1 | (71) Waterway A | dequacy : N |
| (72) App Rdw | y Align : 7 | (41) Posting | | (361 | D) End Rail Rating : 1 | (113) Scou | r Critical : N |
| | Unrepaired Sp | palls: 0 m | n sq | | Deck Surfacin | g Depth : 0. | 00 in |
| Inspection Hours | | | | | | | |
| Crew Hours for inspec | ction : 7 | 1 | Sno | oper Required | : Y | | |
| Helper H | ours : 0 | , | Snooper Hours | for inspection | 5 | | |
| Special Crew H | ours : 13.5 | | | Flagger Hours | 0 | | |
| Special Equipment H | | | | | | | |
| Inspection Wor | k Candidates | | | Effected | Scope of | | Covered |
| Candidate ID | Date
Requested | Status | Priority | Structure
Unit | Work | Action | Condition
States |
| D31-FY2005-000058 | 15 October 2004 | Approved | Low | All Spans | Bridge | Spot Paint (flex) | |
| 2006 - Some overcoat p | painting and cleaning | done. | | | | | |
| D31-FY2005-000059 | 15 October 2004 | Approved | High | All Spans | 301 Pourable Joint Seal | Min Repair | |
| Reaseal these joints. | | | | | | | |
| Approved. DRC | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| D31-FY2011-000152 | 07 February 2011 | Not Approved | Medium | All Spans | Bridge | Spot Paint (flex) | |
| Clean and paint Bearing
2006 - Some overcoat p | gs. | | Medium | улг оранз | Blidge | Opot Faint (nex) | |
| | | | | | | | |
| D31-FY2011-000153 | 07 February 2011 | Not Approved | Low | All Spans | 334 Metal Rail Coated | Repl Paint | |
| Clean and paint Rail Po | | Not Approved | LOW | , in Oparis | JOH MICIAI IVAII COALEU | rtopi i ailit | |
| C.Carrana paint rail 1 0 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Late Reason: | | | | | | | |

Inspection Date: 09/13/2012



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Continue

Element Inspection Data

Span: Main-0 - Steel Girders over RR - Spans 3 thru 6 * * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 12 - Bare Concrete Deck X 3 2003 sq.m. 0 100 % % Previous Inspection Notes: 09/13/2012 - Studded tire wear in wheel paths. Spalls/Delaminations along edges of joint steel. Mapping cracks in all spans. 09/21/2010 - Lots of tight mapping cracks. Wear in the wheel paths. Small spalls and delaminations along joint steel. 09/23/2008 - Wear in the wheel paths. Transverse and mapping cracks in areas. Small spalls and surface delaminations along the joint edges. 10/13/2006 - Wear in the wheel paths. Right lane has more mapping cracks in it. Spalls/Delaminations along the joint achorage's steel. 09/29/2004 - Put the deck into Condition State 2 as there are some small areas of delamination along the joint edges. 10/21/2002 - 14.60 * 137.20 = 2003.12 Deck element changed to a "12" as the Latex concrete was placed back to the original depths after the 1999 hydromill and Class B repair operations. Cracks in latex where sealed in 1999 with HMWM. Many tight transverse deck cracks. MDT Maintenance is spraying the deck with freeze guard. Cracks are soaking ip the freeze guard. 08/30/2000 - New Latex concrete overlay in 1999 with some transverse cracking(small and tight). Cracks sealed with HMWM before construction was completed. Delaminated areas were removed by hydrodemolition and replaced with latex concrete. 06/03/1998 - 14.60 * 137.20 = 2003.12. Numerous small, tight transverse cracking throughout with small areas of delamination when it was checked several years ago. Studded tires have left a fairly smooth wear surface. 12/01/1995 - None 02/01/1994 - None Inspection Notes: Element 107 - Paint Stl Opn Girder 549 80 15 m. % % % % % Previous Inspection Notes: 09/13/2012 - Rust blisters, minor surface pitting, and paint loss on tops of lower girder flanges where water and debris has collected. Diagonals between G2 and G3 were removed and intersecting welds in tension reversal zones were drilled early in 2012 under statewide steel rehab job. 09/21/2010 - Dirty, grime, bird debris, and rust blisters on top of the bottom flanges. Some surface pitting under rust blisters. Faded and chalky 09/23/2008 - Rust, scale, paint loss, and some surface pitting under rust blisters. Outer girders and areas under leaky joints are the worse. Very dirty from diesel smoke, bird debris, and de-icer. 10/13/2006 - Rust, scale, pitting and paint loss. Most notiable under joints, outside girders, and where piegon nest/debris are built-up. Pulled most of this stuff off. 09/29/2004 - Rusty, scale, peeling paint, and minor pitting; mostly under the joints and on the lower flange/web areas. 10/21/2002 - Rusty spots throughout and some pitting. Mostly under leaking joints and on the bottom flange/lower web area. 08/30/2000 - No Change; mainly under the joints. 06/03/1998 - 4 * 137.20 = 548.80. Show some signs of early rust & pitting. 12/01/1995 - None 02/01/1994 - None Inspection Notes:

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Continue

* Span: Main-0 - Steel Girders over RR - Spans 3 thru 6 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Quantity Element 161 - Paint Stl Pin/Hanger (4) Pin and Hanger Assemblies plus (4) End Girder Connection Pins 3 12 ea. 95 0 % % % % Previous Inspection Notes: 09/13/2012 - Pins and hangers were UT tested in August 2012 and no excessive wear was noted (see Collins Engineering reports). 09/21/2010 - Still Good paint where re-painted by UT inspectors. Refer to report by Collins Engineering. No "noteables" were fond in the UT inspection with little to no wear also noted. 09/23/2008 - 2005 UT showed no problems. Some minor rust on the pins and hangers. 10/13/2006 - Showed ok in 2005 UT testing. 09/29/2004 - Ends of the pins, nuts, and hangers are showing some minor rust where the paint was removed for UT testing. No major wear or problems noted in UT inspection in 2001. 10/21/2002 - See Bills report from 2001. 08/30/2000 - No Change; mainly under the joints. 06/03/1998 - Some minor rusting and pitting. Eight(8) pins have been UDT'ed and are ok. 12/01/1995 - None 02/01/1994 - None Inspection Notes: Element 205 - R/Conc Column Bent 3, 4, 5, 6, and 7 ea. 90 % Previous Inspection Notes: 09/13/2012 - Shallow surface delaminations near tiewire or reinforcing chair feet. Some columns have tight vertical cracks near their corners. Scrapes and shallow spalls on some. 09/21/2010 - Tight surface shrinkage cracks with some cracking on the edges. Some surface spalls from shallow tie wire. 09/23/2008 - Tight cracking in most of the columns. Some surface spalls and small delaminations from shallow tie wire or exposed feet of the rebar chairs. Right column at Bent 3 has not gotten any worse. 10/13/2006 - Same as past inspections with surface spalling where rebar chairs are exposed. Bent 3's Right column has a small spall on the edge with some staining. 5 percent in Condition State 3 is probably pushing it for the staining and spalls. 09/29/2004 - Tight cracks and shrinkage cracks on most of the columns. Tight cracks near construction joints to the caps. Some rust stains from exposed rebar chairs and/or wire. 10/21/2002 - Some tight cracks throughout. Graffti and smoked areas from homeless people under the structure. 08/30/2000 - No Change. 06/03/1998 - Some hairline, tight cracking in the concrete. 12/01/1995 - None 02/01/1994 - None Inspection Notes:

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Continue

* Span: Main-0 - Steel Girders over RR - Spans 3 thru 6 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 215 - R/Conc Abutment East Abutment (7) 2 26 m. 95 % Previous Inspection Notes: 09/13/2012 - Some tight cracking in backwall and cap. Small spall near embedded bearings and along cap/backwall connection. Lots of belongings of homeless people stacked on backwalls. 09/21/2010 - Tight cracks in the backwall and under G3. A couple of small spalls near bearing embedments. One camper between G2 and G3 09/23/2008 - Some tight cracks in the backwall and cap. Small spalls along the edges of the girders where they are embedded into the backwalls. 10/13/2006 - Unchanged from previous inspections. 09/29/2004 - Minor spalling and deteriorated concrete where the girders meet the backwalls. Minor erosion at the Left wingwall. 10/21/2002 - (14.060 1.55 9.70 = 25.80m Minor erosion at wingwall. Some minor concrete deterioration where girders meet the backwalls. Inspection Notes: Element 234 - R/Conc Cap Bent 3, 4, 5, 6, and 7 2 58 85 10 m. % Previous Inspection Notes: 09/13/2012 - Bent 3 cap has a delamination on Span 2 face along with some spalling (photo). Surface spalls/delaminations on underside of caps from reinforcing chair feet. 09/21/2010 - Staining from mositure and rebar chair feet. Delaminated and cracked areas on most of the caps. Some surface spalls and delaminations from shallow tie wire. 09/23/2008 - Spalls, cracking, and delaminations in most of the caps. Underside of the caps show surface spalls/delaminations from exposed rebar chair feet. Some staining on the Right end of Bent 3's cap at delamination under G4S2 side. 10/13/2006 - Caps show surface spalls from shallow rebar chairs. Some minor staining in delaminated areas. 5 percent in Condition State 3 is maybe alittle strong. 09/29/2004 - Some minor spalled areas on bottoms of the caps where rebar chairs are exposed and rusting. Some minor cracking under the beam seats. 10/21/2002 - Same as previous report. Some staining in areas where joints leak. 08/30/2000 - 4 * 14.60 = 58.40m Env. #2 as some under leaking joints. 06/03/1998 - 5 * 14.60. Some sanding material on some of the caps. 12/01/1995 - None 02/01/1994 - None Inspection Notes:

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Continue

* Span: Main-0 - Steel Girders over RR - Spans 3 thru 6 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 301 - Pourable Joint Seal 25 3 29 m. 60 15 % % % Previous Inspection Notes: 09/13/2012 - Steel portions sound solid when tapped on. Minor spalling and deterioration on underside of deck and joints. Sealant is loose, torn, and missing in joints. Small delaminations/spalls along edge of joint steel. 09/21/2010 - Several areas of loose and pushed down sealant. Some small areas of torn sealant. 09/23/2008 - Leaky, sanding material pushed in, and loose sealant along the joints edges. Some small surface mortar spalls/delaminations along the steel edges. 10/13/2006 - Unchanged from previous rpeorts. 09/29/2004 - Several areas where the sealant has lost contact and is pulling away. Joints are leaking. Some debris/dirt in the joints and this is putting prressure on the sealant. 10/21/2002 - Sanding material and debris in joints. Some areas where Dow Corning has pulled away or been forced open from debris in the 08/30/2000 - 14.60 * 2 = 29.20m "Dow corning" Some missing material and sanding material in the joint. Inspection Notes: Element 305 - Assm Jt w/o Seal 10 1 3 29 m. 90 % % Previous Inspection Notes: 09/13/2012 - Steel sounds solid when tapped on and finger alignment is good. Small spalls/delaminations along edge of joint steel. Minor spalling and deterioration on underside of deck at joint area. 09/21/2010 - Good alignment on the fingers. Small spalls and surface delaminations along the joint edges. Steel sounds solid when tapped on. Minor deterioration and spalling of the deck concrete on the bottom side under the steel. 09/23/2008 - Steel sounds solid when tapped on. Finger alignment is Good. Some cracking and small spalls along the underside of the deck edges at the joints. 10/13/2006 - Steel portions of the joints sound solid when tapped on. Some delaminations/spalls along the steel. Finger alignment is Good this 09/29/2004 - West most sliding plate has a small section of delamination on its' edge, 8 to 12". Finger joint alignment is Good. 10/21/2002 - Minor rusty spots. Joints are in good alignment. 08/30/2000 - No Change. 06/03/1998 - 14.60 * 2. Some rust and pitting. (1) Finger & (1) Sliding Plate Joints. 12/01/1995 - None 02/01/1994 - None Inspection Notes:

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Continue

| Element Dec | | | Span . IV | 1a111-0 - | Steel Girde | is over KK - Sp | ans 3 thru 6 (C 0 | Jiii.) | | |
|-------------------------------|--------------------------------|--------------|--------------------|-----------|---------------|---------------------|--------------------------|---------------------|--------------------|-------------|
| Element Des | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| - | - Moveable Be | | | | mop _uen | | | | . 5. 5.4. | |
| | 1 | 3 | 12 | ea. | | 85 | 10 | Ę | 5 | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
| | | anchor bo | Its at Bent 3. Be | earings | near maximu | un expansion (70 |) dearees F). Ru | stv spots, scale. | paint loss, and de | ebris NLGQ |
| at bearings. | | | | _ | | | , | | | |
| 09/21/2010 - bearings. | inear maximun | n movemer | nt in expansion | at Bent | 3; 50F. Rus | ty spots, dirt, an | a some peeling p | paint. Lots of pig | geons nesting nea | ar the WZBZ |
| | Rusty spots, dovement; 48F for | | | ne over | coat painting | done. Alignmer | nt of the bearings | at Bent 2 are in | expansion and no | ear YZCZ |
| | | | | cent in (| Condition Sta | ate 3 for the aligi | nment of rockers | at Bent 3; still to | olerable. Clean ar | nd NADO |
| overcoat pair
09/29/2004 - | | Some scale | e, peeling paint. | and pit | tina. Piaeon | nest and debris | near the bearing | IS. | | ZAIP |
| | Minor rusting s | | | aa p | ggee | | | , | | VZKC |
| 08/30/2000 - | | • | | | | | | | | FIKL |
| 06/03/1998 - | Some rust & pi | itting. | | | | | | | | MHIL |
| 12/01/1995 - | None | | | | | | | | | YDNF |
| 02/01/1994 - | | | | | | | | | | REFI |
| Inspection N | | | | | | | | | | |
| mapection | | | | | | | | | | |
| | | | | | | | | | | |
| Element 313 | - Fixed Bearing | g | | | | | | | | |
| | 1 | 3 | 12 | ea. | | 95 | 5 | (| | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
| 09/13/2012 - | Spot rust and f | ading pain | t. | | | | | | | NLGQ |
| 09/21/2010 - | Some dirt and | grime. Pai | int still looks Go | od with | only some s | pot rust. | | | | WZBZ |
| 09/23/2008 - | Some spot rus | t. Cleaned | and overcoat | spot pai | nted. | | | | | YZCZ |
| 10/13/2006 - | Same as previ | ous reports | s. Clean and ov | /ercoat | painted. | | | | | NADO |
| 09/29/2004 - | Rust spots and | d pitting. P | igeon nest arou | ınd som | e of the bear | rings. | | | | ZAIP |
| 10/21/2002 - | Minor rusting s | pots and p | its. | | | | | | | VZKC |
| 08/30/2000 - | No change. | | | | | | | | | FIKL |
| 06/03/1998 - | Some rust & pi | itting. | | | | | | | | MHIL |
| 12/01/1995 - | None | | | | | | | | | YDNF |
| 02/01/1994 - | None | | | | | | | | | REFI |
| Inspection N | lotes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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Continue

* * * * * * * * * Span : Main-0 - Steel Girders over RR - Spans 3 thru 6 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 331 - Conc Bridge Railing 274 95 3 m. % Previous Inspection Notes: 09/13/2012 - Random shrinkage cracks. Top of barrier has some spalls where hand rail was removed. 09/21/2010 - Unchanged from past inspection comments. 09/23/2008 - Vertical cracks at relief cuts. Small surface spalls where hand rail was removed from the top of the Left rail. 10/13/2006 - Same as past inspection reports. 09/29/2004 - Minor vertical cracking between relief cuts. Some areas of fractured concrete where the hand rail was removed from the top of the barrier rail. 10/21/2002 - Some vertical cracks and mapping/shrinkage cracks. 08/30/2000 - Changed from metal rail to concrete rail in 1999. 06/03/1998 - 137.20 * 2 = 274.4. Some rust & ptting of the rail & rail posts. 12/01/1995 - None 02/01/1994 - None Inspection Notes: Element 334 - Metal Rail Coated W-Beam and Round Steel Pipe w\ Guard Fence and Steel Posts 1 3 137 80 20 m. % % % % Previous Inspection Notes: 09/13/2012 - Rust, scale, paint loss, and peeling paint on posts and pipe rail. Gaurd fence and fabric in good condition. 09/21/2010 - Spot rust, scale, peeling paint, and faded paint on the posts and pipe rail. Guard fence posts and fabric are in Good condition. 09/23/2008 - Same comments as past inspections. 10/13/2006 - Paint system is pitted, flaking, and rusty throughout. W-Beam has some spot rust. Guard fence is in Good condition. 09/29/2004 - Rust spots on the rail posts and pipe. Some spot rust on the W-Beam rail. Guard fence is in Good condition. 10/21/2002 - Rusty spots with some pitting. Guard fence is in Good condition. /ZKC 08/30/2000 - Rail along sidewalk is metal rail and new guard fence added during 1999 construction. Some minor rust on posts and existing w-Inspection Notes: Element 357 - Sup Pack Rust SmFlag Χ 1 Χ 100 ea. % % % Previous Inspection Notes: 09/13/2012 - Lower angles on diaphragms show spreading and cracked welds from pack rust. 09/21/2010 - Unchanged from past inspection comments. 09/23/2008 - Added due to pack rust at the diaphragms under leaky joints. Some swelling has cracked welds; photo. Inspection Notes:

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Continue

* * * * * * * * * Span : Main-0 - Steel Girders over RR - Spans 3 thru 6 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 358 - Deck Cracking SmFlag X 100 3 ea. 0 % Previous Inspection Notes: 09/13/2012 - Due to size and density. 09/21/2010 - Unchanged from past inspection comments and not yet in Condition State 3. 09/23/2008 - Added due to the size of some of the cracks, 1.00mm, and density of the cracks in some areas. Inspection Notes: * * * * * * * * * * Span : Appr-1 - Steel Girders - Span 1 and 2 * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 12 - Bare Concrete Deck 449 100 sq.m. Χ % % % % % Previous Inspection Notes: 09/13/2012 - Studded tire wear in wheel paths. Mapping cracks in both spans. Shallow spalls/delaminations along joint steel. 09/21/2010 - Tight mapping cracks. Minor spalls and delaminations along joint edges. Wear in the wheel paths. 09/23/2008 - Wear in the wheel paths. Transverse and mapping cracks in areas. Small spalls/delaminations along the joint edges. 10/13/2006 - Same comments as past inspections. 09/29/2004 - Had to move to Condition State 2 due to small delaminations along the joints. Some mapping cracks in the spans. 10/21/2002 - 14.60 * 30.74 = 448.8 Changed Element to "12" as the Latexx concrete was only placed to the existing levels after hydromiliing and Class B repairs. Inspection Notes: Element 107 - Paint Stl Opn Girder 2 123 m. % % % % Previous Inspection Notes : 09/13/2012 - Rust blisters with some surface pitting on tops of bottom flange where moisture collects. Girders are dirty and have faded paint. 09/21/2010 - Dirty, grimey, and faded paint. Minor rust blisters with surface pitting. 09/23/2008 - Rust, scale, minor surface pitting, and paint loss; worse in areas that the deicer and water collects. Girders are dirty. 10/13/2006 - Rust, scale, peeling paint, paint loss, and pitting; mainly in areas under/near leaky joints. 09/29/2004 - Unchanged from previous reports. 10/21/2002 - Rusty spots with some minor pitting under joints and on the bottom flange/lower web area. 08/30/2000 - No Change. 06/03/1998 - 4 * 30.74 = 122.96. Some areas of rust & pitting. Inspection Notes:

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Continue

Span : Appr-1 - Steel Girders - Span 1 and 2 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Env Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Quantity Element 161 - Paint Stl Pin/Hanger Bent 3 - Pins Only 3 ea. 100 % % Previous Inspection Notes: NLGQ 09/13/2012 - Pins were UT tested in August 2012 and no significant wear was observed. 09/21/2010 - Still Good paint where re-painted by UT inspectors. Refer to report by Collins Engineering. No "noteables" were fond in the UT inspection with little to no wear also noted. 09/23/2008 - Cleaned and re-painted after UT testing this summer. See report for findings. 10/13/2006 - UT testing in 2005 showed no problems. 09/29/2004 - Minor rust where paint has weathered off of the pins from whre they were cleaned for UT inspection. 10/21/2002 - Girder to Girder connection. No problems noted when inspected/NDT'd in 2001. Inspection Notes: Element 205 - R/Conc Column Bent 2 95 ea. % Previous Inspection Notes: 09/13/2012 - Tight surface shrinkage cracks and a small shallow spall from tie wire. 09/21/2010 - Some tight surface shrinkage cracks. Left column has tight cracks on the Left-Back corners of the column. 09/23/2008 - Both columns show tight shrinkage cracks. Generally in Good condition. 10/13/2006 - No change exept that the graffiti has been painted over. 09/29/2004 - Tight shrinkage cracks. Tight cracks at the construction joint near the caps. Graffiti on both columns. 10/21/2002 - Minor shrinkage cracks throughout. Some graffti from homeless village/camp under the structure. 08/30/2000 - None 06/03/1998 - _ Inspection Notes: Element 215 - R/Conc Abutment Abutnment 1 - West 1 1 19 m. 95 % Previous Inspection Notes: 09/13/2012 - Generally good condition. Some tight cracks and few small spalls near cap/backwall connection and near embedded bearings. 09/21/2010 - Unchanged from past inspection comments. Good condition. Fence on the Left end of the Abutment is broken over by homeless traffic. 09/23/2008 - Tight cracks in the backwall and under a couple of the girders in the cap. Small spalls at a couple of the girders edges where embedded in the backwall. 10/13/2006 - Minor delaminations where the girdrs are embedded in the backwalls. Some tight cracks between the girders. Still minor erosion at the corners. 09/29/2004 - Same as previous report. 10/21/2002 - Minor concrete popouts and deterioration where girders are embedded in backwall. Minor erosion at wingwall. 08/30/2000 - No change. 06/03/1998 - 14.60 + 1.30 + 2.80 = 18.7. Some erosion @ the wingwalls. Inspection Notes:

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Continue

Span : Appr-1 - Steel Girders - Span 1 and 2 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Quantity Element 234 - R/Conc Cap Bent 2 15 m. 90 % Previous Inspection Notes: 09/13/2012 - Spall with exposed rebar and some shallow surface delaminations. 09/21/2010 - Small delaminations and spalls on the cap. Surface spall from tie wire and rebar chair feet. 09/23/2008 - Shallow surface delaminations; Condition State 3. Some small surface spalls from shallow tie wire and rebar chair feet; Condition State 2. 10/13/2006 - Surface spalls on the underside of the cap from shallow rebar chairs. Cap is stained from leaky joint above. 09/29/2004 - Minor rust stains and spalling where chairs are exposed on the bottom side of the cap. Staining from leaking joint. 10/21/2002 - ok 08/30/2000 - 14.60 * 1 = 14.60m 06/03/1998 - 14.60 * 2 = 29.2 Inspection Notes: Element 305 - Assm Jt w/o Seal 3 15 m. 90 10 % Previous Inspection Notes: 09/13/2012 - Steel sounds solid when tapped on. Some delaminations/spalls along edges of joint steel. 09/21/2010 - Small spalls along the joint steel edge. Steel sounds solid when tapped on. 09/23/2008 - Steel sounds solid when tapped on. Some small surface spalls and delaminations along the joint edges. 10/13/2006 - Steel all sounds solid when tapped on. Small spots of delaminated concrete and small spalls in a couple of areas along the joint's 09/29/2004 - Small spot of delamination on the joint edge, 4". Leaky also. 10/21/2002 - Minor rusty spots. Leaking as normal for a sliding plate joint. 08/30/2000 - Leaking. 06/03/1998 - Sliding Plate. Inspection Notes: Element 311 - Moveable Bearing 3 95 ea. % Previous Inspection Notes: 09/13/2012 - Bearings are towards slight expansion (65 degeers F). Paint is faded, dirty, and has spot rust. 09/21/2010 - Slight expansion; 50F. Some spot rust and debris. 09/23/2008 - Good to Fair alignment today as slightly in expansion; 48F. Some cleaning and overcoat painting done. 10/13/2006 - Rust, scale, and some paint loss. Alignment is Good. 09/29/2004 - Spot rust and pitting from leaking joint. 10/21/2002 - Minor rusty spots with some pitting under leaking joints. 08/30/2000 - No change. 06/03/1998 - Some rust & pitting. Inspection Notes:

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Continue

Span: Appr-1 - Steel Girders - Span 1 and 2 (cont.) * * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 313 - Fixed Bearing Abutment 1 2 ea 95 % Previous Inspection Notes: 09/13/2012 - Spot rust and faded paint. 09/21/2010 - Spot rust and some soot from campfires on G1 and G2 bearing areas. 09/23/2008 - Some overcoat painting has been done. 10/13/2006 - Some rust, paint loss, amd flaking paint where visible. 09/29/2004 - Same as previous report. 10/21/2002 - Rusty spots where visible. 08/30/2000 - No change. 06/03/1998 - Some rust & ptting. Inspection Notes: Element 321 - R/Conc Approach Slab West - Abutment 1 1 3 100 ea. Previous Inspection Notes: 09/13/2012 - Slab shows settlement and a bump. Sealant between slab and bridge end is torn most of length. 09/21/2010 - Torn and loose sealant in the joint between the slab and bridge end. Settlement in the slab and approach roadway. 09/23/2008 - Same as past inspections. 10/13/2006 - Put into Condition State 2 due to settlement. Joint between the slab and bridge is leaking into the approach fill. 09/29/2004 - Big bump for the off going traffic. Joint between the slab and bridge is leaking. Some of the sealant has lost its' bond to the guard angles 10/21/2002 - Bump going off of the structure due to settlement of approach slab. 08/30/2000 - None 06/03/1998 -Inspection Notes: Element 331 - Conc Bridge Railing 1 3 61 m. 95 % Previous Inspection Notes: 09/13/2012 - Tight shrinkage cracking. Small spalls where hand rail was removed. 09/21/2010 - Unchanged from past inspection comments. 09/23/2008 - Vertical cracking along the relief cuts. Small spalls where handrail was removed on the Left rail. 10/13/2006 - Same as past reports. 09/29/2004 - Vertical cracking between the relief cuts. Some fractured concrete where the hand rail was removed. 10/21/2002 - Minor vertical cracks and some shrinkage cracks throughout. 08/30/2000 - Replaced matel rail with concrete barrier in 1999. 06/03/1998 - 30.74 * 2 = 61.48. Some rust & pitting of the rail posts & bridge rail. Inspection Notes:



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General Location Data

INITIAL ASSESSMENT FORM FOR STRUCTURE:

Location: GREAT FALLS Structure Name: GF Warden Br-WB

P00060094+08281

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 **GREAT FALLS GREAT FALLS** Division Code, Location:31

County Code, Location: 013 **CASCADE** City Code, Location: 32800 **GREAT FALLS**

2 U.S. Numbered Hwy Kind fo Hwy Code, Description: 2 Signed Route Number: 00089

State Highway Agency State Highway Agency Str Owner Code, Description: 1 Maintained by Code, Description:1

Intersecting Feature: MISSOURI RV, U5205, BNSF Kilometer Post, Mile Post: 152.60 km 94.82

Structure on the State Highway System: Latitude: 47°29'37"

Structure on the National Highway System: Longitude: 111°18'41"

Str Meet or Exceed NBIS Bridge Length:

Traffic Data

Current ADT: 37,380 ADT Count Year: 2009 2 % Percent Trucks:

Construction Data

Construction Project Number: F 60-2(5)92 1 2 Construction Station Number: 46+06.00

Construction Year: 1983

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Form: bms001d

Printing Date: Thursday, May 22 2014

Construction Drawing Number: 12646

Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 32.6 mton | B ASD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data: | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3 : | 48.6 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 646.79 m

Deck Area: 10,192.00 m sq

12.10 m Deck Roadway Width: 12.19 m Approach Roadway Width:

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure: 99.99 m

H Hwy beneath struct Reference Feature for Vertical Clearance:

6.46 m Vertical Clearance Under the Structure:

H Hwy beneath struct Reference Feature for Lateral Underclearance:

7.40 m Minimum Lateral Under Clearance Right: 0.00 m Minimum Lateral Under Clearance Left:

Number of Spans: 14

Material Type Code, Description: 5 Prestressed concrete

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Span Data

Main Span

Number Spans: 6

Material Type Code, Description: 4 Steel continuous

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 1 Monolithic concrete (concurrently placed with struct

Deck Protection Type: 0 None Deck Membrain Type: 0 None

15.76 m (52) Out-to-Out Width: (50A) Curb Width: (50B) Curb Width: 0.00 m 2.74 m Skew Angle: 45°

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | N | orth or East Trav | vel . |
|------------------------|-----------|-----------|---------------------|------------|-----------|-------------------|------------|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal |
| One Route Under | U05205 | Both | 6.46 m | 7.32 m | N/A | | |
| RIVER ROAD | | | | | | | |
| Route On Structure | P00060 | West | 99.99 m | 12.10 m | N/A | | |
| 10TH AVE SOUTH WB | | | | | | | |

Approach Span



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Continue

Inspection Data

Sufficiency Rating: 96.3

Inspection Due Date: 19 September 2014 (91) Inspection Frequency (months): 24

Next Under Water Insp : 15 Nov 2016

Under Water Insp Type : Type II

| Structure Status : No | t Deficient | | | | | | |
|----------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------|--------------------------------|
| NBI Inspection Da | ata | | | | | | |
| (90) Date of Last Ins | spection : 19 Septemb | per 2012 | | La | ast Inspected By: Charles Pe | pos - 107 | |
| (90) Inspection | on Date : | | | | Inspected By : | | |
| (58) Deck
(59) Superstructure
(60) Substructure
(72) App Rdw | Rating : 6 | (68) Deck Geo (67) Structure F (69) Under Clear (41) Posting S palls: 0 m | Rating : 6 ance : 7 Status : A | (36B) | Bridge Rail Rating: Transition Rating: proach Rail Rating: D) End Rail Rating: | (61) Channe
(71) Waterway A
(113) Scou | |
| Inspection Hours | | | | | | 9 - 0 - 1 | |
| Crew Hours for inspec
Helper H
Special Crew H
Special Equipment H | lours : C |) Sı | | poper Required
s for inspection
Flagger Hours | 12 | | Coursed |
| Inspection Wor Candidate ID | Date Requested | Status | Priority | Effected
Structure
Unit | Scope of
Work | Action | Covered
Condition
States |
| D31-FY2004-000264 | 02 February 2004 | Approved | Low | All Spans | Bridge | Spot Paint (flex) | |
| Approved. DRC D31-FY2004-000263 | 02 February 2004 | Approved | Low | All Spans | 12 Bare Concrete Deck | Min Repair | |
| Clean Drains throughou
2003-08-05: Cleaned d
Approved. DRC | ıt. | | Low | y iii Opuno | 12 Bare Control Book | уштторан | |
| D31-FY2005-000076 | 18 October 2004 | Approved | Low | All Spans | 334 Metal Rail Coated | Rehab Elem | I |
| Clean and spot paint the
Approved. DRC | e rail posts and rail tu | bes on the right bar | rier and Outs | side-Right edge | of the structure. | | |
| | | | | | | | |
| D31-FY2008-000120 Patch spalled areas. | 14 July 2008 | Approved | Low | All Spans | 12 Bare Concrete Deck | Min Repair | |
| Approved. DRC | | | | | | | |
| | | | | | | | |
| D31-FY2011-000131 | 07 February 2011 | Not Approved | Low | All Spans | 12 Bare Concrete Deck | Min Repair | |
| Repair damaged downs | spouts. | | | | | | |
| D31-FY2011-000132 | 07 February 2011 | Not Approved | High | All Spans | 305 Assm Jt w/o Seal | Rehab Elem | |

Clean the finger joint troughs. 2003-08-05: Cleaned left half of the finger toughs today. W.A.Lay



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Continue

| Inspection World | k Candidates | Status | Priority | Effected
Structure | Scope of
Work | Action | Covered
Condition |
|--------------------------|-----------------------|------------------------|----------|-----------------------|----------------------|--------------|----------------------|
| Candidate ID | Date
Requested | Status | Thomy | Unit | WOIK | Action | States |
| | | | | | | | |
| D31-FY2013-000004 | 02 October 2012 | Not Approved | High | A Approach | 305 Assm Jt w/o Seal | Rehab Elem | |
| epair the loose finger j | oint at Bent 8 on the | Left side of the bridg | je. | | | | |
| | | | | | | | |
| | | | | | | | |
| D31-FY2013-000005 | 02 October 2012 | Not Approved | High | All Spans | Bridge | Rehab (flex) | |

Late Reason:

Inspection Date: 09/19/2012

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Element Inspection Data

Span: Main-0 - Steel Girder Spans 14 - 19 * * * * * * * * * Element Description Smart Flag Scale Factor Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Element 12 - Bare Concrete Deck X 3 4618 sq.m. 0 100 0 % % % Previous Inspection Notes: 09/19/2012 - Random spalled areas in most of the Spans and delaminations along the joint edges. Some cracked areas with delaminations in Spans 15 thru 17. Some spalls have been patched with the velocity patcher. 09/27/2010 - Small spalls and delaminations along the joint edges. Steel sounds solid when tapped on. 06/20/2008 - Same as past inspections and add some spalling and delamiantions along the joint edges. 08/17/2006 - None 10/06/2004 - Transverse cracking throughout with some cracks that are wider and open. Spalling along joint edges. Some areas of mapping cracks, mostly in the Left lane. Some wear in the wheel paths. 10/21/2002 - Same as last report and add some minor delamination noted with a small spalled area at one joint. 08/23/2000 - 293 * 15.76 = 4617.68 No change from previous report plus some delaminations noted on spot checks near the joints. 12/11/1997 - Deck has mapping cracks throughout. 10/01/1995 - None 09/01/1992 - None Inspection Notes: Element 107 - Paint Stl Opn Girder 2 1465 90 10 m. % % Previous Inspection Notes: 09/19/2012 - Minor peeling paint in areas. Rust blisters with minor surface pitting near joints that leak. Faded and dirty paint throughout the 09/27/2010 - Rust blisters, scale, and minor paint loss on tops of the lower flanges of the outer girders. Wose areas are where water can leak onto the girders from joints or drains. 06/20/2008 - Rust, scale, and paint loss on the lower web and bottom flanges; especially near leaky joints and downspouts. 08/17/2006 - None 10/06/2004 - Spot rust and some paint fade on the lower portions of the web and bottom flanges; especially near leaking joints. 10/21/2002 - Some paint loss along the under side of the girders near drains, more so on G5. Some speckled rust starting on the left side of the web and bottom flange of G1. A 4" x 1"(h) 1' back of Pier 19 for G1S18R. 08/23/2000 - 293 * 5 = 1465.0m Some rust and pitting. 12/11/1997 - None 10/01/1995 - None 09/01/1992 - None Inspection Notes:

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| | | * * * * | * * * * * * Sp | an : M | ain-0 - Steel | Girder Spans 1 | 14 - 19 (cont.) * | * * * * * * * * | * | |
|----------------|-----------------------------------------------------|----------------|--------------------------|---------------|----------------|-----------------------------------|---------------------|---------------------|-------------------------------------------|-----------------|
| Element De | <u>'</u> | | | 1 | | · · · · · · · · · · · · · · · · · | 5 . 6 6 | | | |
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 205 | 5 - R/Conc Colu | | | | | | | | | |
| | 1 | 3 | 2 | 7 ea. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| Previous Ins | spection Notes : | | | | | | | | | |
| 09/19/2012 - | - Right column a | at Pier 16 h | nas a small dela | aminated | d area. | | | | | ZZJO |
| | · · | | | | | xposed rebar fe | et. Rust on lower | portions of the i | ce breakers. | EZJZ |
| | - Same as past | • | | | • | • | on reaction on | portions or the r | oo broakere. | OZKZ |
| 08/17/2006 | · | mopodiom | o, but onderwa | | ay be ameren | | | | | TZCZ |
| | | vor portion | of the ice bree | koro T | iaht ahrinkaa | o orooko on mor | ot columna Mina | r anat rust stains | fron ovnoced robe | |
| chair legs. S | Some scale belo | ow the norr | mal waterline. | | | lce breakers nee | | r spot rust stains | fron exposed reba | ır GIDZ
IZHX |
| | - Env. #3 as alw | - | J | | J | | · | | | FIAS |
| | - (4) columns ea | | s 14 - 19 and <i>(</i> 3 | 3) colum | ns at Bent 20 |) | | | | FKAR |
| 10/01/1995 | | 2011 2011 1018 | o i i io ana (c | , Joiui I | at Don't 20 | | | | | YDNF |
| 09/01/1993 · | | | | | | | | | | REFI |
| J9/U1/1992 · | - None | | | | | | | | | KEFI |
| Inspection | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 220 | o - R/C Sub Pile | Cap/Ftg | Pier 15 thru 19 |) | | | | | | |
| | 1 | 3 | 4 | 4 ea. | | 100 | 0 | 0 | 0 | |
| | | | | | _ | % | % | % | % | |
| Duarria ya Ina | | | | | | ,0 | 76 | ,,, | ,,, | |
| | spection Notes : | | | | | | | | | |
| 09/19/2012 | - None | | | | | | | | | ZZJC |
| 09/27/2010 | - Per the 2011 ι | ınderwater | inspection by I | nfrastru | cture Engine | ers there is no c | hange to the con | dition of this eler | nent. CRH | EZJZ |
| 06/20/2008 | - See latest Und | derwater II | report. | | | | | | | OZK2 |
| The pier 3 s | ubfooting is now | v covered b | by sand and riv | er rock. | The pier 4 s | ubfooting is exp | osed 10 inches hi | | at the upstream no
am nose and is in g | |
| | imber formwork
- Unchanged, b | | | | | ce of the pier 5 | footing. | | | GIDZ |
| | | ut check th | e iasiesi uriuei | water re | port. | | | | | |
| 10/21/2002 | | | 7/45/20 (0 | | | | | | | IZHX |
| 08/23/2000 | - LW underwa | ater Inspec | tion 7/15/98 (G | uthrie D | iving Co) A | III exposed footii | ngs in good condi | tion. | | FIAS |
| Inspection | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Element 227 | 7 - R/C Submer | ged Pile I | Pier 15 thru 19 | | | | | | | |
| | 1 | 3 | 20 | ea. | | 90 | 10 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| | | | | | | /0 | 70 | /0 | 70 | |
| | spection Notes : | | | | | | | | | |
| 09/19/2012 | - None | | | | | | | | | ZZJC |
| 09/27/2010 | - Per the 2011 ι | ınderwater | inspection by I | nfrastru | cture Engine | ers there is no c | hange in the cond | dition of this elen | nent. CRH | EZJZ |
| 06/20/2008 | - See latest Und | derwwater l | II report. | | | | | | | OZKZ |
| | | | | | | | s vertical cracking | present on piers | s 4 thru 7. The vert | tical TZCZ |
| cracking is g | generally 1/32" t | o 1/16" wic | de and extends | from the | e waterline to | | | | | |
| | - Unchanged, b | ut check th | e iastest under | water re | роп. | | | | | GIDZ |
| 10/21/2002 | | | | | | | | | | IZHX |
| | LW Underw
significant deter | | | Guthrie [| Diving Co) | All have light sc | aling below water | line. Piers have | 1/32" vertical crack | s. FIAS |
| Inspection | | noration or | uistress. | | | | | | | |
| เมอุคธิดิเกิด | NOLES. | | | | | | | | | |

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* * * * * * * * * Span : Main-0 - Steel Girder Spans 14 - 19 (cont.) * * * * * * * *

| | scription | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------|
| - | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 234 | - R/Conc Cap | | | | | | | | | |
| | 1 | 1 | 156 | m. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | <u>-</u> | | | 1 | 1 | |
| et on the u
9/27/2010 -
ight cracks | nderside of the Staining on ca at steps in the | caps. Cap
ps under le
caps. Dirt a | s at Pier 15 an
aky joints. Sor
and debris in a | d 16 ha
ne sma
reas. | ve small surf
Il surface spa | ace delamination | ns on their Right
side of the caps f | ends.
rom exposed/rus | pouts from rebar of
ty rebar chair feet
le of the caps show | EZJ |
| | hair feet with m | | | J | | | · | , | · | TZC |
| racks under | the bearings. | | | | | | | | nts. Some tight ve | rtical GID2 |
| | | Ŭ | nkage cracks t | hrougho | out. Dirt and o | debris on top of the | he cap at Pier 17 | under the finger | joint. | IZH. |
| | 7 * 22.29 = 150 | 63.03m | | | | | | | | FIA |
| 2/11/1997 - | | | | | | | | | | FKA |
| 0/01/1995 - | None | | | | | | | | | YDN |
| 9/01/1992 - | None | | | | | | | | | REF |
| nspection N | Notes: | | | | | | | | | |
| | - Assm Jt w/o | | | | Sliding Plate | at Bent 14 and P | | | | |
| | | Seal Finge | r Joint at Pier 1 | | Sliding Plate | 90 | 10 | 0 | | |
| lement 305 | - Assm Jt w/o | | | | Sliding Plate | | | 0 % | % | |
| lement 305 | - Assm Jt w/o | 3 | | | Sliding Plate a | 90 | 10 | | % | |
| lement 305 | - Assm Jt w/o : 1 pection Notes : Spalling along | the edges | 60 of the steel. St | m. | | 90 | 10 | % | %
dirt and debris wit | h ZZJ |
| lement 305 revious Ins 9/19/2012 - ome areas 9/27/2010 - | - Assm Jt w/o s 1 pection Notes : Spalling along of the troughs s | the edges of showing dark | of the steel. St | m.
reel sou | nds solid who | 90
%
en tapped on. Ti | 10
%
roughs under the | % joints are full of | | |
| revious Insp
9/19/2012 -
pome areas
9/27/2010 -
pint edges.
6/20/2008 -
pie downspo | pection Notes: Spalling along of the troughs are further than the spalling along of the troughs are further than the spalling and the spalling are plugged to the spalling | the edges chowing dar | of the steel. St
nage.
oris. Good alig | m.
reel sou
nment o | nds solid who | 90
%
en tapped on. Ti
teel sounds solid
when tapped on | 10
%
roughs under the | % joints are full of n. Some small sp | dirt and debris wit | the EZJ |
| revious Ins
9/19/2012 -
ome areas
9/27/2010 -
int edges.
6/20/2008 -
e downspo
8/17/2006 - | - Assm Jt w/o sign of the troughs are further plugged None | the edges of showing dar all of dirt/det gnment at Fd. Small sp | of the steel. St
mage.
oris. Good alig
Pier 17 is Good
alls/delamination | m.
reel sou
nment c | nds solid who
on fingers. S
sounds solid
ng the joint ed | 90
%
en tapped on. To
teel sounds solid
when tapped on
dges. | roughs under the
I when tapped or
I. Trough under | % joints are full of n. Some small sp | dirt and debris wit
palled areas along
sanding material a | the EZJ
and OZk |
| revious Ins
9/19/2012 -
ome areas
9/27/2010 -
int edges.
6/20/2008 -
e downspo
8/17/2006 -
0/06/2004 -
dges. | pection Notes: Spalling along of the troughs are further point aliquits are plugged. None | the edges of showing dar all of dirt/det gnment at Fd. Small sp | of the steel. St
mage.
oris. Good alig
Pier 17 is Good
alls/delamination | m. reel sou nment c . Steel ons alor | nds solid who
on fingers. S
sounds solid
ng the joint ed | 90
%
en tapped on. To
teel sounds solid
when tapped on
dges. | roughs under the when tapped or . Trough under Trough under | % joints are full of n. Some small sp | dirt and debris wit | the EZJ
and OZK
TZC
GID |
| ement 305 revious Insport 19/2012 - 19/2010 - 19/2010 - 19/2010 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - 19/2006 - | pection Notes: Spalling along of the troughs are further plugged None Troughs uinde | the edges of showing dar all of dirt/det gnment at Fd. Small sport the joints at the finger j | of the steel. St
mage.
oris. Good alig
Pier 17 is Good
alls/delamination | m. reel sou nment c . Steel ons alor | nds solid who
on fingers. S
sounds solid
ng the joint ed | en tapped on. To teel sounds solid when tapped on dges. | roughs under the when tapped or . Trough under Trough under | % joints are full of n. Some small sp | dirt and debris wit
palled areas along
sanding material a | the EZJ
and OZk
TZC
GID
IZH |
| revious Insp
0/19/2012 -
ome areas (6)/27/2010 -
int edges.
6/20/2008 -
6/20/2006 -
0/06/2004 -
0/06/2002 -
0/21/2002 -
8/23/2000 - | pection Notes: Spalling along of the troughs are further plugged by the troughs are plugged. Troughs uinde to the troughs uinde | the edges of showing darnill of dirt/det gnment at F d. Small sp r the joints at the finger j | of the steel. St
mage.
oris. Good alig
Pier 17 is Good
alls/delamination
are full of dirt a
ioint is full of sa
2m | m. reel sou nment o . Steel ons alor and sand | nds solid who
on fingers. S
sounds solid
ng the joint ed
ding material. | en tapped on. To teel sounds solid when tapped on dges. | roughs under the when tapped or . Trough under unment is Good. parrier rail. | % joints are full of n. Some small specifies the joint is full of Minor spalled sp | dirt and debris wit
palled areas along
sanding material a | the EZJ and OZK TZC GID IZH FIA |
| revious Ins
3/19/2012 -
ome areas
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int edges.
6/20/2008 -
e downspo
3/17/2006 -
0/06/2004 -
dges.
0/21/2002 -
3/23/2000 -
2/11/1997 - | pection Notes: Spalling along of the troughs are further foughs are further form. Finger joint aliquits are plugged None Troughs uinde No change but 15.76 + (2 * 22 Sliding plate jo | the edges of showing darnill of dirt/det gnment at F d. Small sp r the joints at the finger j | of the steel. St
mage.
oris. Good alig
Pier 17 is Good
alls/delamination
are full of dirt a
ioint is full of sa
2m | m. reel sou nment o . Steel ons alor and sand | nds solid who
on fingers. S
sounds solid
ng the joint ed
ding material. | 90 % en tapped on. To teel sounds solid when tapped on dges. Finger joint align the both ends by the both series where the solid part of t | roughs under the when tapped or . Trough under unment is Good. parrier rail. | % joints are full of n. Some small specifies the joint is full of Minor spalled sp | dirt and debris wit
palled areas along
sanding material a | the EZJ
and OZF
TZC
GID
IZH
FIA |
| revious Insp
9/19/2012 -
ome areas 6/27/2010 -
int edges.
6/20/2008 -
ee downspo
0/06/2004 -
dges.
0/21/2002 -
8/23/2000 - | pection Notes: Spalling along of the troughs are further foughs are further formal for | the edges of showing darnill of dirt/det gnment at F d. Small sp r the joints at the finger j | of the steel. St
mage.
oris. Good alig
Pier 17 is Good
alls/delamination
are full of dirt a
ioint is full of sa
2m | m. reel sou nment o . Steel ons alor and sand | nds solid who
on fingers. S
sounds solid
ng the joint ed
ding material. | 90 % en tapped on. To teel sounds solid when tapped on dges. Finger joint align the both ends by the both series where the solid part of t | roughs under the when tapped or . Trough under unment is Good. parrier rail. | % joints are full of n. Some small specifies the joint is full of Minor spalled sp | dirt and debris wit
palled areas along
sanding material a | the EZJ
and OZF
TZC
GID
IZH
FIA
FKA
YDN |
| revious Ins
30/19/2012 -
ome areas
9/27/2010 -
int edges.
6/20/2008 -
e downspo
8/17/2006 -
0/06/2004 -
dges.
0/21/2002 -
8/23/2000 -
2/11/1997 -
0/01/1995 - | pection Notes: Spalling along of the troughs are further from the plugged None Troughs uinde No change but 15.76 + (2 * 22 Sliding plate jo None None | the edges of showing darnill of dirt/det gnment at F d. Small sp r the joints at the finger j | of the steel. St
mage.
oris. Good alig
Pier 17 is Good
alls/delamination
are full of dirt a
ioint is full of sa
2m | m. reel sou nment o . Steel ons alor and sand | nds solid who
on fingers. S
sounds solid
ng the joint ed
ding material. | 90 % en tapped on. To teel sounds solid when tapped on dges. Finger joint align the both ends by the both series where the solid part of t | roughs under the when tapped or . Trough under unment is Good. parrier rail. | % joints are full of n. Some small specifies the joint is full of Minor spalled sp | dirt and debris wit
palled areas along
sanding material a | the EZJ
and OZK
TZC |

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* * * * * * * * * * Span : Main-0 - Steel Girder Spans 14 - 19 (cont.) * * * * * * * *

| | | | 96. | | | i Girder Spans | (551111) | | | | |
|-------------------------------|-------------------------------------|----------------------------|--------------------------------------|-----------------------|--------------|------------------|---------------------|--------------------|----------------------------------------------------------|---------|----------------------|
| Element Des | cription | | | | | | | | | | |
| | Scale Factor | Env | Quantity | | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Sta | at 5 |
| Element 311 | - Moveable Be | aring Pier | 14, 15, 17(doub | oles), 18 | , and 20 | | | | | | |
| | 1 | 2 | 30 | ea. | | 85 | 10 | 5 | D. C. | | |
| | | | | | | % | % | % | % | | (|
| Previous Insp | pection Notes : | | | | | | | | | | |
| also broken.
09/27/2010 - | Spot rust, stair
Spot rust and o | ning, and d
debris on s | ebris at the leal
ome of the bear | ky joints
rings. A | lignment is | ok today. Same | on previously re | ported broken a | r bolts for G5S17
nchor bolts.
se anchor bolts,, b | | ZZJO
EZJZ
OZKZ |
| | pearings as pre | | | | | | | | paint loss on other | s. | TZCZ |
| 10/06/2004 - | Rust spots, pitt | ting and so | me paint loss o | n the be | arings. Un | changed from pr | evious reports when | hen viewed by b | inoculars. | | GIDZ |
| | Loose anchor b | bolts but tig | ght in their holes | at Pier | 18 for G4L | , G3L and R, and | d G2R. Some rus | st, pitting, minor | paint loss and de | bris at | IZHX |
| all bearings.
08/23/2000 - | Env. #2 as und | der joints. | Some rust and p | oitting. | | | | | | | FIAS |
| | 5 shoes each a | | | _ | es), Pier 15 | and Bent 14 | | | | | FKAR |
| 10/01/1995 - | None | | | | | | | | | | YDNF |
| 09/01/1992 - | None | | | | | | | | | | REFI |
| Element 313 | - Fixed Bearing | | | | | | | | | | |
| | 1 | 1 | 10 | ea. | | 95 | 5 | (| | | |
| | | | | | | % | % | % | % | | |
| Previous Insp | pection Notes : | • | 1 | | | | | | | | |
| 09/19/2012 - | Spot rust, pain | t loss, and | some debris. | | | | | | | Ā | ZZJO |
| 09/27/2010 - | Spot rust with s | some dirt/d | ebris. | | | | | | | | EZJZ |
| 06/20/2008 - | Overcoat paint | ed some, b | out still some ru | st and p | aint loss to | others. | | | | | OZKZ |
| 08/17/2006 - | | | | | | | | | | | TZCZ |
| | • | | · · | | • | • | en viewed by bind | oculars. | | | GIDZ |
| | Some rust, pitti | | paint loss and c | lebris at | all bearing | S. | | | | | IZHX |
| | Some rust and | | | | | | | | | | FIAS |
| | Fixed shoes at | Piers 16 a | na 19. | | | | | | | | FKAR |
| 10/01/1995 -
09/01/1992 - | | | | | | | | | | | YDNF
REFI |
| | | | | | | | | | | ' | KLII |
| Inspection N | NOIG9. | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

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* * * * * * * * * Span : Main-0 - Steel Girder Spans 14 - 19 (cont.) * * * * * * * * *

| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------|-------------------|----------|--------------|---------------------|--------------------------------------|------------|---------------------|-------------------|
| lement 331 | - Conc Bridge I | | | | | | | | | |
| | 1 | 3 | 586 | m. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| ovious las | naction Notes | | | | | 70 | 70 | 70 | 70 | |
| | pection Notes : | | | | | | | | | |
| | | | | _ | | | ace shrinkage cra | | | ZZJ(|
| inor delam | inations on barr | ier in spots | | | | | and scaling alon
and some spalled | | ondition State 3 de | ue to EZJ.
OZK |
| B/17/2006 · | | | | | | an dolan matod | aa 000 0pa00 | . 4. 545. | | TZC |
| | - Tight vertical c | racks even | / 3 to 4 feet | | | | | | | GID |
| | - Minor shrinkag | | , 0 10 1 10011 | | | | | | | IZH) |
| | - 293 * 2 = 586m | | | | | | | | | FIAS |
| | | | MENT WAS AD | DED 6/ | 16/2000 NF | EED TO VERIEY | CONDITION ST | ATE(S) | | FKA |
| | | IG II. EEEI | WEITT WAS AD | DLD 0/ | 10/2000. 141 | LED TO VEIGHT | CONDITION OF | A12(0). | | TIVA |
| nspection | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| lement 334 | I - Metal Rail Co | ated | | | | | | | | |
| | 1 | 3 | 293 | m. | | 90 | 10 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | l | | | | l. | | | | |
| 9/19/2012 | - Spot rust, expo | sed base | coat, and faded | paint th | roughout. C | Chainlink fabric is | s in Good condition | on. | | ZZJ(|
| | - Spot rust, expo | | | • | Ŭ | | | | | EZJ. |
| | - Rsuty spots, pa | | | | _ | | | | | OZK |
| 8/17/2006 | | , | | | | | | | | TZC |
| | - Rusty spots on | the rail po | sts and tubes. | | | | | | | GID |
| | - Add some scra | | | nout. | | | | | | IZH |
| | - Some rust and | | | | | | | | | FIAS |
| | - Pedestrian rail | | ide of bridge | | | | | | | FKA |
| 0/01/1995 | | OH I VOI III O | ide of bridge. | | | | | | | YDN |
| 9/01/1992 | | | | | | | | | | REF |
| | | | | | | | | | | INLI |
| Inspection | Notes: | | | | | | | | | |
| Пороспол | | | | | | | | | | |
| Поросион | | | | | | | | | | |
| | | | | | | | | | | |
| | 3 - Deck Crackin | g SmFlag | | | | | | | | |
| | 3 - Deck Crackin
1 | g SmFlag | 1 | ea. | X | 0 | 100 | 0 | 0 | |
| lement 358 | | | 1 | ea. | Х | 0 % | 100 | 0 | 0 | |
| Element 358 | | | 1 | ea. | X | | | | | |
| lement 358 X revious Ins | 1 pection Notes : | 3 | 1
ne into plav | ea. | Х | | | | | |
| X Previous Ins | pection Notes : | 3
density con | | | | % | | | | ZZJ(
EZJ |
| revious Ins
9/19/2012 | pection Notes : - Both size and o | 3
density con | | | | % | | | | |
| X Previous Ins 9/19/2012 9/27/2010 6/20/2008 | pection Notes : - Both size and of the cracking - Unchanged. | 3
density con | | | | % | | | | EZJ.
OZK |
| Previous Ins
9/19/2012
9/27/2010
6/20/2008
8/17/2006 | pection Notes : - Both size and c - Lots of cracking - Unchanged None | 3
density con | e small delamin | ations i | n the worse | %
areas. | % | % | % | EZJ
OZK
TZC |
| Previous Ins
9/19/2012
9/27/2010
6/20/2008
8/17/2006
0/06/2004 | pection Notes : - Both size and c - Lots of cracking - Unchanged None | 3 density cong with some | e small delamin | ations i | n the worse | %
areas. | % | % | | EZJ
OZK
TZC |

* * * * * * * * * Span : Appr-1 - P/S Concrete Spans 1 thru 13 and 20 * * * * * * * *

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* * * * * * * * * Span : Appr-1 - P/S Concrete Spans 1 thru 13 and 20 (cont.) * * * * * * * *

| | scription | | | | I | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------|-----------------|----------------------------------------------------|------------------------------------------|----------------------------------|-----------------------|----------------------------------------------|
| ٥ | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 12 - | Bare Concrete | Deck | | | | | | | | |
| | 1 | 3 | 5576 | sq.m. | X | 0 | 100 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| Previous Ins | pection Notes : | | | | | | | | | |
| 9/19/2012 - | Spalls and dela | aminations | along joint stee | el. Som | e random de | laminations in m | ost of the Spans | with some potho | oles/spalls starting. | ZZJ |
| | | | | | | | he worse cracke | | | |
| 6/20/2008 - | Wear is probab | oly a little w | orse and the re | est of the | e comments | still apply. | | | | OZK |
| 8/17/2006 - | None | | | | | | | | | TZC |
| 0/06/2004 - | Transverse cra | cking throp | oughout with so | me of th | ne cracks wid | der and open; se | e photos. Spallir | ng along joint ed | ges. Some areas o | of GID |
| | cks; mainly in th | | | | | e: roet ie uneban | ged from previou | is roports | | IZH: |
| | No change. | alions and v | very small spail | eu area | is at the joint | s, rest is unicrian | ged from previou | is reports. | | |
| | · No change.
· Deck has mino | r cracking t | throughout | | | | | | | FKA |
| 0/01/1997 - | | i cracking i | illoughout. | | | | | | | YDN |
| | · 353.79 * 15.76 | EE7E 70 | | | | | | | | REF |
| nspection N | | | | | | | | | | |
| lamont 100 | D/C Cone One | an Cirdar | | | | | | | | |
| Element 109 | - P/S Conc Ope | en Girder | 2209 | m. | | 95 | 5 | O | 0 | |
| Element 109 | | | 2209 | m. | | 95 | 5 | 0 | 0 % | |
| | | | 2209 | m. | | | | Ĭ | | |
| revious Ins | 1
pection Notes : | 1 | | | ral of the gir | % | | % | | ZZJ |
| revious Ins
9/19/2012 - | pection Notes : | 1 nd surface | spalls on ends | of seve | | % ders. Mostly on | % | % bisture on them. | % | ZZJ
EZJ |
| Previous Ins
19/19/2012 -
19/27/2010 - | pection Notes : | 1 nd surface | spalls on ends | of seve | | % ders. Mostly on | % those that get mo | % bisture on them. | % | EZJ |
| Previous Ins
9/19/2012 -
9/27/2010 -
6/20/2008 - | pection Notes : Minor cracks at Generally Good No change. | 1 nd surface | spalls on ends | of seve | | % ders. Mostly on | % those that get mo | % bisture on them. | % | EZJ
OZk |
| Previous Ins
199/19/2012 -
199/27/2010 -
196/20/2008 -
198/17/2006 - | pection Notes : Minor cracks at Generally Good No change. | 1 nd surface d condition | spalls on ends | of seve | nd cracking o | ders. Mostly on on ends of sever | those that get mo | oisture on them. | % | EZJ
OZŁ
TZC |
| Previous Ins
19/19/2012 -
19/27/2010 -
16/20/2008 -
18/17/2006 -
0/06/2004 - | pection Notes : Minor cracks and Generally Good No change. None Same on the gi | nd surface
d condition | spalls on ends . Some minor s | of seve
spalls an | nd cracking of | ders. Mostly on on ends of sever urder at Bent 12. | those that get mo
al of the girders t | oisture on them. hat have now ex | % rposed strands. | EZ.
OZŁ
TZC
rs. GID |
| Previous Ins
19/19/2012 -
19/27/2010 -
16/20/2008 -
18/17/2006 -
0/06/2004 -
0/21/2002 -
howing. | pection Notes : Minor cracks and Generally Good No change. None Same on the gits | nd surface
d condition | spalls on ends . Some minor s | of seve
spalls an | nd cracking of | ders. Mostly on on ends of sever urder at Bent 12. | those that get mo
al of the girders t | oisture on them. hat have now ex | % posed strands. | EZJ
OZK
TZC
rs. GID
d IZH |
| Previous Ins
19/19/2012 -
19/27/2010 -
16/20/2008 -
18/17/2006 -
0/06/2004 -
0/21/2002 -
howing.
18/23/2000 - | pection Notes: Minor cracks at Generally Good No change. None Same on the gi | nd surface
d condition | spalls on ends . Some minor s | of seve
spalls an | nd cracking of | ders. Mostly on on ends of sever urder at Bent 12. | those that get mo
al of the girders t | oisture on them. hat have now ex | % posed strands. | EZJ
OZk
TZC
rs. GID |
| Previous Ins
19/19/2012 -
19/27/2010 -
16/20/2008 -
18/17/2006 -
0/06/2004 -
0/21/2002 -
howing.
18/23/2000 -
2/11/1997 - | pection Notes: Minor cracks at Generally Good No change. None Same on the gi End of G2S12L None None | nd surface
d condition | spalls on ends . Some minor s | of seve
spalls an | nd cracking of | ders. Mostly on on ends of sever urder at Bent 12. | those that get mo
al of the girders t | oisture on them. hat have now ex | % posed strands. | EZJ
OZH
TZC
rs. GID
d IZH |
| Previous Ins
9/19/2012 -
9/27/2010 -
6/20/2008 -
8/17/2006 -
0/06/2004 -
0/21/2002 -
howing.
8/23/2000 -
2/11/1997 -
0/01/1995 - | pection Notes: Minor cracks at Generally Good No change. None Same on the gi End of G2S12L None None | nd surface
d condition
irder ends a
_ at Bent 12 | spalls on ends . Some minor s at Bent 11 and 2 and several g | of seve
spalls and
left end
irder en | of the left gu | ders. Mostly on on ends of sever urder at Bent 12. | those that get mo
al of the girders t | oisture on them. hat have now ex | % posed strands. | EZJ
OZŁ
TZC
rs. GID
d IZH
FIA |
| Previous Ins
19/19/2012 -
19/27/2010 -
19/20/2008 -
19/6/20/2006 -
0/06/2004 -
0/21/2002 -
19/20/2000 -
19/20/2000 -
2/11/1997 -
0/01/1995 - | pection Notes: Minor cracks at Generally Good No change. None Same on the gite End of G2S12L None None None None (6 * 321) (7 * 3 | nd surface
d condition
irder ends a
_ at Bent 12 | spalls on ends . Some minor s at Bent 11 and 2 and several g | of seve
spalls and
left end
irder en | of the left gu | ders. Mostly on on ends of sever urder at Bent 12. | those that get mo
al of the girders t | oisture on them. hat have now ex | % posed strands. | EZ. OZF TZC rs. GIC d IZH FIA |

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| | scription | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------|-------------------------------------------------|-----------------------|-------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 205 | 5 - R/Conc Colur | mn Bents 2 | 2 thru 13 | | | | | | | |
| | 1 | 2 | 28 | ea. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | I | | |
| 9/19/2012 ·
racks. | - Staining from jo | oint leakag | e on some. Cr | acks on | the columns | of Bent 2 and 3 | 3 with a small dela | aminated area. | Tight surface shrir | nkage ZZJ |
| ost everyth | Staining on tho
ning is superficia Same as previous | al and prob | ably caused by | | | | n noted in the wor | se areas of crac | king. Observed to | hat EZJ
OZK |
| 3/17/2006 | - None | · | | | | | | | | TZC |
| 0/06/2004 | - Sides of severa | al columns | have small spa | alling se | ction with eit | ner rebar chair f | eet or shallow reb | par; causing som | ne rust stains. Sm | nall GID |
| | several columns
- Minor scrapes | | | | | | | | | IZH. |
| 8/23/2000 | - None | | | | | | | | | |
| 2/11/1997 | - None | | | | | | | | | FKA |
| 0/01/1995 | - None | | | | | | | | | YDN |
| 9/01/1992 | - (4) locations wi | ith 3 colum | ns and (8) loca | tions wi | th 2 columns | | | | | REF |
| | | ment Abut | ment 1 and 22 | | | | | | | |
| nspection | Notes: 5 - R/Conc Abutr | ment Abuti | ment 1 and 22 | m. | | 95 | 5 | 0 | 0 | |
| | 5 - R/Conc Abutr | | | m. | | 95 | 5 % | 0 | 0 | |
| lement 215 | 5 - R/Conc Abutr
1 | | | m. | | | | | | |
| lement 215 | 5 - R/Conc Abutr
1
spection Notes : | 1 | 52 | | (2) girders | % | % | % | % | rings 77 |
| revious Ins | 5 - R/Conc Abutr
1
spection Notes :
- Abutment 1 hand of the bearings | s a crack b | 52
between the Rig | ht most | `, 0 | % Small spalls at | % | % | | , and the second |
| revious Ins
3/19/2012
teel portion | 5 - R/Conc Abutr
1
spection Notes :
- Abutment 1 had not the bearings
- Generally Good | s a crack be are rusty. | etween the Rig | tht most | previous insp | % Small spalls at opections. | %
the cap/backwall | %
area and near th | %
ne embedded bea | EZJ |
| revious Ins
9/19/2012
teel portior
9/27/2010
6/20/2008
oted on the | 5 - R/Conc Abutr
1
spection Notes :
- Abutment 1 had of the bearings
- Generally Good
- Same as past is a visible portion of | s a crack b
are rusty.
d condition | etween the Rig | tht most | previous insp | % Small spalls at opections. | %
the cap/backwall | %
area and near th | % | EZJ
oss OZk |
| revious Ins
3/19/2012
teel portion
9/27/2010
6/20/2008
oted on the
3/17/2006 | 5 - R/Conc Abutr
1
spection Notes :
- Abutment 1 had of the bearings
- Generally Good
- Same as past is a visible portion of | s a crack b
s are rusty.
d condition
inspections
of the beari | etween the Rig
. Same common. Crack at Abuings. | tht most
ents as
atment 1 | previous insp | % Small spalls at to pections. Right (2) girder | the cap/backwall | %
area and near th
ter in 2006. Som | ne embedded bea | EZJ
oss OZK
TZC |
| revious Ins
0/19/2012
eel portior
0/27/2010
6/20/2008
oted on the
0/06/2004
nbedded in | 5 - R/Conc Abutr 1 spection Notes: - Abutment 1 had of the bearings - Generally Good - Same as past is visible portion of None - None - Both Abutment hackwall concil | s a crack be are rusty. d condition inspections of the bearing taps have | etween the Rig . Same common. Crack at Abuings. | ght most
ents as
utment 1
racks w | previous inspondent between three ith effloresce | % Small spalls at to pections. Right (2) girder | the cap/backwall | %
area and near th
ter in 2006. Som | %
ne embedded bea | EZJ
oss OZK
TZC |
| ement 215 evious Ins 9/19/2012 eel portion 9/27/2010 6/20/2008 oted on the 8/17/2006 0/06/2004 nbedded in | 5 - R/Conc Abutr
1
spection Notes :
- Abutment 1 had of the bearings
- Generally Good
- Same as past is a visible portion of the concerning of the conc | s a crack be are rusty. d condition inspections of the bearing taps have | etween the Rig . Same common. Crack at Abuings. | ght most
ents as
utment 1
racks w | previous inspondent between three ith effloresce | % Small spalls at to pections. Right (2) girder | the cap/backwall | %
area and near th
ter in 2006. Som | ne embedded bea | EZJ
oss OZK
TZC
e GID |
| revious Ins
20/19/2012
deel portion
20/27/2010
6/20/2008
oted on the
8/17/2006
0/06/2004
mbedded in
0/21/2002 | 5 - R/Conc Abutr 1 spection Notes: - Abutment 1 han of the bearings - Generally Good - Same as past is exisible portion of None - None - Both Abutment of backwall conciling to the backwall conciling the concilin | s a crack be are rusty. d condition inspections of the bearing taps have | etween the Rig . Same common. Crack at Abuings. | ght most
ents as
utment 1
racks w | previous inspondent between three ith effloresce | % Small spalls at to pections. Right (2) girder | the cap/backwall | %
area and near th
ter in 2006. Som | ne embedded bea | EZJ
oss OZK
TZC
e GID
IZH
FIA |
| revious Ins
9/19/2012
teel portion
9/27/2010
6/20/2008
bited on the
8/17/2006
0/06/2004
mbedded in
0/21/2002
8/23/2000
2/11/1997 | 5 - R/Conc Abutr 1 spection Notes: - Abutment 1 had of the bearings - Generally Good - Same as past is visible portion of None - Both Abutment backwall concrete ok - None - None | s a crack be are rusty. d condition inspections of the bearing taps have | etween the Rig . Same common. Crack at Abuings. | ght most
ents as
atment 1
racks w | previous inspondent between three ith effloresce | % Small spalls at to pections. Right (2) girder | the cap/backwall | %
area and near th
ter in 2006. Som | ne embedded bea | EZJ
oss OZK
TZC
e GID
IZH
FIA
FKA |
| revious Ins
9/19/2012
teel portion
9/27/2010
6/20/2008
oted on the
8/17/2006
0/06/2004
mbedded in
0/21/2002
8/23/2000
2/11/1997 | 5 - R/Conc Abutr 1 spection Notes: - Abutment 1 had of the bearings - Generally Good - Same as past is visible portion of None - Both Abutment backwall concrete ok - None - None | s a crack be are rusty. d condition inspections of the bear t caps have rete. Minor | etween the Rig
. Same common.
c. Crack at Aburings.
e tight vertical correrosion on the | ght most
ents as
atment 1
racks w | previous inspondent between three ith effloresce | % Small spalls at to pections. Right (2) girder | the cap/backwall | %
area and near th
ter in 2006. Som | ne embedded bea | EZJ
OSS OZK
TZC
GID
IZH
FIA
FKA
YDN |
| revious Ins
9/19/2012
teel portion
9/27/2010
6/20/2008
oted on the
8/17/2006
0/06/2004
mbedded in
0/21/2002
8/23/2000
2/11/1997 | pection Notes: - Abutment 1 had of the bearings - Generally Good - Same as past is visible portion of None - Both Abutment backwall concrete None - None - None - None - None - None - None | s a crack be are rusty. d condition inspections of the bear t caps have rete. Minor | etween the Rig
. Same common.
c. Crack at Aburings.
e tight vertical correrosion on the | ght most
ents as
atment 1
racks w | previous inspondent between three ith effloresce | % Small spalls at to pections. Right (2) girder | the cap/backwall | %
area and near th
ter in 2006. Som | ne embedded bea | EZJ
oss OZK
TZC
e GID |

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| Smart Flag | scription | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------|
| _ | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| ement 234 | - R/Conc Cap | Bents 2 th | ıru 13 | | | | | | | |
| | 1 | 1 | 215 | m. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | | | |
| Small delan
9/27/2010 -
igeon nests
6/20/2008 -
hair feet. V
8/17/2006 -
0/06/2004 - | ninations on Ber Tight cracks ne and debris on to Tight vertical so Vorse rusty stair None Tight vertical co | nts 2, 3, and
ear steps of
tops of the
tress riser of
his and spal
racks unde | d 8's caps. In the caps. Lor caps. Cracks at the st I are under the r several of the | ts of sur
eps in t
leaky jo | face spalls che caps. Un bint caps. | on the underside
dersides of the c
and swallows are | of the caps from aps show surface | exposed rebar of expansion | joints. Dirt and deb
hair feet. Lots of
posed and rusty reba
nining under leaking | EZ.
ar OZŀ
TZC |
| | | | | | | exposed rebar chat Bent 11 from G | | | S. | IZH |
| 8/23/2000 - | | o o | ŭ | | · | | | | | |
| 2/11/1997 - | - None | | | | | | | | | FKA |
| 0/01/1995 - | - None | | | | | | | | | YDY |
| 0/04/4000 | | | | | | | | | | RE |
| Inspection I | | | | | | | | | | ILL. |
| nspection I | Notes:
5 - Assm Jt w/o S | Seal Finge | r Joints - 5, 8, a | | | 0.0 | | | | IVE. |
| Inspection I | Notes: | | | | | 80 | 10 | 10 | | IVE. |
| Inspection I | Notes:
5 - Assm Jt w/o \$ | Seal Finge | r Joints - 5, 8, a | | | 80 % | 10 | 10 | % | NL |
| Inspection I | Notes:
5 - Assm Jt w/o S | Seal Finge | r Joints - 5, 8, a | | | | | | % | NE. |
| element 305
Previous Ins | Notes: 5 - Assm Jt w/o S 1 pection Notes : - Joint at Bent 8 | Seal Finge 3 | r Joints - 5, 8, a 67 e section in the | m. | | | % | % | | ZZ |
| lement 305
revious Ins
9/19/2012 -
9-26-2012.
9/27/2010 - | Notes: 5 - Assm Jt w/o S 1 pection Notes : - Joint at Bent 8 Fixed loose se - Full and some | Seal Finge 3 has a loosection of the damage to | r Joints - 5, 8, 67 67 e section in the joint at Bent 8 the troughs. 6 | m.
Left lai | eft lane. | % | %
niantions along th | %
ne edges of the j | oints. | ZZ、 |
| lement 305
revious Ins
9/19/2012 -
9-26-2012.
9/27/2010 -
palls/delam | Notes: 5 - Assm Jt w/o S 1 Depection Notes: - Joint at Bent 8 Fixed loose se - Full and some sinations along the second se | Seal Finge 3 has a loose ction of the damage to he joint ste | r Joints - 5, 8, 8 67 e section in the joint at Bent 8 the troughs. Cel. | m.
Left lai | eft lane. | % palling and delan | %
niantions along th | %
ne edges of the j | oints. | ZZ |
| Previous Ins
9/19/2012 -
9-26-2012.
9/27/2010 -
palls/delam
6/20/2008 - | Notes: 1 Spection Notes: Joint at Bent 8 Fixed loose se Full and some inations along the | Seal Finge 3 has a loose ction of the damage to he joint ste | r Joints - 5, 8, 8 67 e section in the joint at Bent 8 the troughs. Cel. | m.
Left lai | eft lane. | % palling and delan | %
niantions along th | %
ne edges of the j | oints. | ZZ.
EZ:
OZI |
| Previous Ins
9/19/2012 -
9-26-2012 -
9/27/2010 -
palls/delam
6/20/2008 -
8/17/2006 - | Notes: 5 - Assm Jt w/o S 1 pection Notes: - Joint at Bent 8 Fixed loose se - Full and some hinations along the - Same as past if - None | Seal Finge 3 has a loose ction of the damage to he joint sterms the propertion of the damage to he joint sterms the properties of the pr | e section in the joint at Bent 8 the troughs. Cel. comments. | m.
Left lar
in the L
Good ali | Left lane.
gnment on fi | palling and delar | niantions along the | %
ne edges of the j
apped on and so | oints.
ome small | ZZ.
EZ.
OZ!
TZ(|
| Previous Ins
9/19/2012 -
9-26-2012.
9/27/2010 -
palls/delam
6/20/2008 -
8/17/2006 -
0/06/2004 - | Notes: 5 - Assm Jt w/o S 1 Pection Notes: - Joint at Bent 8 Fixed loose se - Full and some inations along the Same as past in the None - Minor spalling in the Same in | has a loose ction of the damage to he joint sterinspection of along the joint sterinspectic sterinspection of along the joint sterinspection of along the joint sterinspection o | e section in the joint at Bent 8 the troughs. Cel. comments. | m. Left lar in the L Good ali | Left lane.
gnment on fi | % palling and delan | niantions along the | %
ne edges of the j
apped on and so | oints.
ome small | ZZ.
EZ.
OZI
TZ(
GIE |
| Previous Ins
9/19/2012 -
99-26-2012.
9/27/2010 -
palls/delam
6/20/2008 -
8/17/2006 -
0/06/2004 -
0/21/2002 - | Notes: 1 Spection Notes: Joint at Bent 8 Fixed loose se Full and some inations along the Same as past in None Minor spalling in Also add that be | has a loose ction of the damage to he joint sterinspection of along the joint sterinspectic sterinspection of along the joint sterinspection of along the joint sterinspection o | e section in the joint at Bent 8 the troughs. Cel. comments. | m. Left lar in the L Good ali | Left lane.
gnment on fi | palling and delar | niantions along the | %
ne edges of the j
apped on and so | oints.
ome small | ZZ.
EZ.
OZI
TZ(
GIE
IZI- |
| Previous Ins
9/19/2012 -
9-26-2012 -
9/27/2010 -
9/27/2010 -
9/27/2010 -
0/20/2008 -
8/17/2006 -
0/06/2004 -
0/21/2002 -
8/23/2000 - | Notes: 5 - Assm Jt w/o S 1 1 1 1 1 1 1 1 1 1 1 1 1 | has a loosection of the damage to damage to inspection of along the jooth ends a | e section in the joint at Bent 8 the troughs. Comments. | m. Left lar in the L Good ali ger alig | eft lane.
gnment on fi
nment is Goo
rial. | palling and delar
ngers. Steel sou
od. Troughs are | niantions along the nds solid when to either plugged of | %
ne edges of the j
apped on and so
r missing on all o | oints. ome small of the joints. | ZZ.
EZ.
OZI
TZ.
GIE
IZ.
FIA |
| Previous Ins
9/19/2012 -
9-26-2012 -
9/27/2010 -
p/21/2008 -
8/17/2006 -
0/06/2004 -
0/21/2002 -
8/23/2000 -
2/11/1997 - | Notes: 5 - Assm Jt w/o S 1 Spection Notes: - Joint at Bent 8 Fixed loose se - Full and some interventions along the same as past in the same a | has a loosection of the damage to damage to inspection of along the jooth ends a | e section in the joint at Bent 8 the troughs. Comments. | m. Left lar in the L Good ali ger alig | eft lane.
gnment on fi
nment is Goo
rial. | palling and delar
ngers. Steel sou
od. Troughs are | niantions along the nds solid when to either plugged of | %
ne edges of the j
apped on and so
r missing on all o | oints.
ome small | ZZ.
EZ.
OZI
TZ(
GII
IZH
FIA
S FK/ |
| Previous Ins
9/19/2012 -
9-26-2012 -
9/27/2010 -
palls/delam
6/20/2008 -
8/17/2006 -
0/06/2004 -
0/21/2002 -
8/23/2000 -
2/11/1997 -
nto the cap
0/01/1995 - | Notes: 5 - Assm Jt w/o S 1 Spection Notes: - Joint at Bent 8 Fixed loose se - Full and some interventions along the same as past in the same a | has a loosection of the damage to he joint sterinspection of along the jooth ends at Bents 5, 8 | e section in the joint at Bent 8 the troughs. Cel. comments. | m. Left lar in the L Good ali ger alig | eft lane.
gnment on fi
nment is Goo
rial. | palling and delar
ngers. Steel sou
od. Troughs are | niantions along the nds solid when to either plugged of | %
ne edges of the j
apped on and so
r missing on all o | oints. ome small of the joints. | ZZ.
EZ.
OZ.
TZ.
GIC
IZ.
FIA |

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* * * * * * * * * Span : Appr-1 - P/S Concrete Spans 1 thru 13 and 20 (cont.) * * * * * * * *

| Element Des | scription | | <u> </u> | | ., | | 10 13 and 20 (CC | ····, | | |
|---------------------------|---------------------------------------------------------------|---------------|--------------------|-----------|----------------|---------------------|---------------------|---------------------|-------------------|--------------|
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | I - Moveable Be | aring Bent | ts 5, 8, 11, 14, a | nd Pier | 20 | | L | | | |
| | 1 | 2 | 49 | ea. | | 80 | 20 | 0 | | |
| | | | | | | % | % | % | % | 9/ |
| Previous Ins | spection Notes : | | | | | | | | | |
|
09/19/2012 - | - Alignment was | ok. Dirt, c | lebris, and bird | nest on | the bearing | s. Rust, scale, p | paint loss, and sta | aining. | | ZZJO |
| 09/27/2010 - | - Fair to Good a | lignment. I | Lots of debris or | n the be | arings. Sta | ining from leaky | joints above. Ru | st, scale, and pa | int loss. | EZJZ |
| 06/20/2008 - | - Rusty spots, pa | aint loss, a | nd debris. Aligr | nment a | ppeared to | be Good. | | | | OZKZ |
| 08/17/2006 - | - None | | | | | | | | | TZCZ |
| 10/06/2004 - | - Bent anchor bo | olts. Rusty | spots, scale, a | nd pittin | g on most o | f the bearings. I | Rest is from previ | ous reports whe | n viewed by binoc | culars. GIDZ |
| | - All have bent a | anchor bolts | s except at Pier | 20. All | show some | rust and minor p | paint loss with the | ose at Bent 11 bu | uried in sanding | IZHX |
| material.
08/23/2000 - | - Env. State 2 as | s under lea | kv ioints. Rust | and nitt | ina: rest is u | ınchanged | | | | FIAS |
| | | | • | | • | · · | bent over due to | excessive move | ement - see photo | |
| 10/01/1995 - | | | g | | | | | | | YDNF |
| | - (12) each at Be | ents 5, 8, a | nd 11 plus (6) a | it Bent 1 | 14 plus (7) a | nt Pier 20. | | | | REFI |
| Inspection I | ` ' | , , | 1 () | | 1 () | | | | | |
| Пореспол | 140103. | | | | | | | | | |
| | | | | | | | | | | |
| Element 313 | 3 - Fixed Bearing | Bent 2. 3 | 3. 4. 6. 7. 9. 10. | 12. and | 13 | | | | | |
| | 1 | 1 | 120 | | | 90 | 10 | 0 | | |
| | | | | | | % | | % | % | 9, |
| Drovious Inc | spection Notes : | | | | | 70 | ,0 | 70 | 70 | |
| | • | | a and dahria | | | | | | | ZZJO |
| | Spot rust, pain Rust, paint lost | | | hrio | | | | | | EZJZ |
| | - Rusty spots, pa | | | | utmont hoo | ringe | | | | OZKZ |
| 08/17/2006 · | | airit 1033, a | na debns. Diop | peu Ab | ulinent bea | riilgs. | | | | TZCZ |
| | | Initting S | ome dehris nea | r the he | aringes fron | n hird dehris whe | en viewed by bind | oculare | | GIDZ |
| | - Rust spots and
- Some rust, pitt | | | | • | ii biid debiis wiid | en viewed by binc | culais. | | IZHX |
| | - Some rust and | • | mor pame 1000 ti | nougne | ,at. | | | | | FIAS |
| 12/11/1997 - | | Pitting | | | | | | | | FKAR |
| 10/01/1995 · | | | | | | | | | | YDNF |
| | | nt 1, (7)at A | butment 21, plu | ıs (15) a | at Bent 2, (1 | 8) at Bent 3, (15 |) at Bent 4, (12) a | at Bent 6, 7, 9, 10 |), 12, and 13 | REFI |
| Inspection I | , , | | , , | , , | | | ,, | | | |
| Порссион | 140103. | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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* * * * * * * * * Span : Appr-1 - P/S Concrete Spans 1 thru 13 and 20 (cont.) * * * * * * * *

| Element Des | cription | | | | | | | <u> </u> | | |
|---------------|-------------------|-------------|----------------------|-----------|---------------|--------------------|----------------------|------------|---------------------|--------------|
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 331 | - Conc Bridge I | Railing Let | t and Right veh | icle rail | | | | | | |
| | 1 | 3 | 708 | m. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | Q |
| Previous Insp | pection Notes : | | | | | | | | | |
| 09/19/2012 - | Small spalls, de | elaminatior | ns, and popouts | through | hout. Barrie | r has a lot of sur | rface shrinkage c | racks. | | ZZJO |
| delamination | s on barrier in s | pots. | | - | | | | | tate 3 due to small | EZJZ
OZKZ |
| 08/17/2006 - | | S every 5 t | 0 4 IL WILLI IIIANIY | or the | CIACKS SHOW | nng sman spans | or delaminated a | ireas. | | TZCZ |
| | | vertical cr | acks every 3 to | 4 feet | | | | | | GIDZ |
| | | | I shrinkage crac | | | | | | | IZHX |
| 08/23/2000 - | • | | ago orac | | | | | | | FIAS |
| 12/11/1997 - | | | | | | | | | | FKAR |
| 10/01/1995 - | None | | | | | | | | | YDNF |
| 09/01/1992 - | 353.79 * 707.5 | 8m | | | | | | | | REFI |
| Element 334 | - Metal Rail Co | ated Right | t Pedestrian Ra | il
m. | | 90 | 10 | O | 0 | |
| | ' | 3 | 304 | 111. | | | | | | |
| Drovious Inc | pection Notes : | | | | | % | % | % | % | o d |
| <u> </u> | | and have | and fadad | naint th | roughout (| Shainlink fahria i | s in Good condition | 22 | | ZZJO |
| | | | r coat, and pain | • | | | s III Good condition | 511. | | EZJZ |
| | | | nd prime coat vi | | - | | | | | OZKZ |
| 08/17/2006 - | | , | | | a.g a | | | | | TZCZ |
| | | box beams | s show rust spot | s. Han | d rail on top | of the barrier ra | il has rust spots. | | | GIDZ |
| 10/21/2002 - | Add some scra | pes and m | inor paint loss. | | · | | · | | | IZHX |
| 08/23/2000 - | Some rust and | pitting. | | | | | | | | FIAS |
| 12/11/1997 - | None | | | | | | | | | FKAR |
| 10/01/1995 - | None | | | | | | | | | YDNF |
| 09/01/1992 - | Pedestrian rail | on the righ | t outside of the | bridge. | 353.79 * 1 | = 353.79m | | | | REFI |
| Inspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |



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| General Inspection Notes | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| • | 77 10 |
| 09/19/2012 - David Crumley was notified about the finger joint failing at Bent 8 on 09-18-2012. He set up a check for 09-21-2012 in the am with 31-01 and Bill Lay. He and 31-01's crew with Charlie and Henry repaired the joint on 09-26-2012. | ZZJO
EZJZ |
| From the 2011 underwater inspection by Infrastructure Engineers there is no change to the channel or scour conditions at this bridge. There is ight timber debris at the upstream nose of Piers 3 and 4. CRH | |
| 06/20/2008 - NBI 59, superstructure, rated a "6" due to broken or loose anchor bolts in the Main span. | OZKZ |
| 08/17/2006 - Per Infrastructure Engineers August 24, 2006 underwater inspection, There are no significant defects present below the high vaterline. There is no significant local or general scour present at the bridge site. There are no significant restrictions in the channel that will adversely impact flow. There is a local scour cone 5 feet in diameter by 3 feet deep at the upstream nose of pier 6. Construction debris at the upstream nose of pier 5 and the downstream nose of pier 4. Debris consists of rebar protruding from the mudline 3 feet high with a 55 gallon parrel along side of it. ITEM 61 CHANGED PER INFRASTRUCTURE ENGINEERS UNDERWATER INSPECTION. | TZCZ |
| 0/06/2004 - NBI 58, deck, rates at a "6" due to cracking in all spans and spalls along the joint edges. | GIDZ |
| NBI 60, substructure, rated at a "6" due to minor spalls on the underside of some caps and minor/tight cracks in the columns. | IZHX |
| 08/23/2000 - None | FIAS |
| 2/11/1997 - None | FKAR |
| 0/01/1995 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 3/11/97 10:45:22 Sufficiency Rating Calculation Accepted by ops\$u5963 at 2/26/97 10:59:10 Sufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:23:33 | YDNF |
| 09/01/1992 - | REFI |
| 01/01/1991 - Updated with tape 1993 | NB93 |
| 05/01/1989 - Updated with tape 1991 | NB91 |
| 04/01/1987 - Updated with tape 1989 | NB89 |
| 0/01/1984 - Updated with tape 1986 | NB86 |
| | |
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Location: GREAT FALLS Structure Name: GF Warden-EB

General Location Data

MDT Maintenance Section: 31-01 Great Falls

District Code, Number, Location: 03 Dist 3 GREAT FALLS Division Code, Location: 31 GREAT FALLS

County Code, Location: 013 CASCADE City Code, Location: 32800 GREAT FALLS

Kind fo Hwy Code, Description: 2 2 U.S. Numbered Hwy Signed Route Number: 00089

Str Owner Code, Description: 1 State Highway Agency Maintained by Code, Description: 1 State Highway Agency

Intersecting Feature: MISSOURI RV, U5205, BNSF Kilometer Post, Mile Post: 152.60 km 94.82

Structure on the State Highway System : X Latitude : 47°29'37"

Structure on the National Highway System : X Longitude : 111°18'39"

Str Meet or Exceed NBIS Bridge Length:

Construction Data

Construction Project Number : **FGU 388 1 2**Construction Station Number : **45+89.00**

Construction Drawing Number: 2926

Construction Year: 1951

Current ADT: 37,380 ADT Count Year: 2009 Percent Trucks: 2 % Reconstruction Year:

Structure Loading, Rating and Posting Data

Loading Data:

Traffic Data

| Design Loading : | | 5 MS 18 (HS 20) |
|-------------------------|-----------|------------------------|
| Inventory Load, Design: | 32.6 mton | B ASD Assigned |
| Operating Load, Design: | 32.6 mton | B ASD Assigned |
| Posting : | | 5 At/Above Legal Loads |

| Rating Data : | Operating | Inventory | Posting |
|--------------------|-----------|-----------|---------|
| Truck 1 Type 3: | | | |
| Truck 2 Type 3-S3: | | | |
| Truck 3 Type 3-3: | 86 | | |

Structure, Roadway and Clearance Data

Structure Deck, Roadway and Span Data:

Structure Length: 637.90 m

Deck Area: 6,960.00 m sq

Deck Roadway Width : 8.53 m
Approach Roadway Width : 10.90 m

Median Code, Description: 0 No median

Structure Vertical and Horizontal Clearance Data:

Vertical Clearance Over the Structure : 99.99 m

Reference Feature for Vertical Clearance: H Hwy beneath struct

Vertical Clearance Under the Structure: 5.49 m

Reference Feature for Lateral Underclearance : H Hwy beneath struct

Minimum Lateral Under Clearance Right : 3.50 m

Minimum Lateral Under Clearance Left : 0.00 m

Span Data

Main Span

Number Spans : 6

Material Type Code, Description : 4 Steel continuous

 $Span\ Design\ Code,\ Description: \textbf{3}\quad \textbf{Girder}\ \ \textbf{and}\ \ \textbf{Floorbeam}\ \ \textbf{System}$

Deck

Deck Structure Type: 1 Concrete Cast-in-Place

Deck Surfacing Type: 3 Latex Concrete or similar additive

Deck Protection Type : **0 None**Deck Membrain Type : **0 None**

Approach Span

Number of Spans: 21

Material Type Code, Description: 4 Steel continuous

Span Design Code, Description: 2 Stringer/Multi-beam or Girder

(52) Out-to-Out Width: 10.91 m

(50A) Curb Width: (50B) Curb Width: 1.19 m

Skew Angle: °

Structure Vertical and Horizontal Clearance Data Inventory Route:

| Over / Under Direction | Inventory | South, W | est or Bi-direction | nal Travel | North or East Travel | | | |
|------------------------|-----------|-----------|---------------------|------------|----------------------|----------|------------|--|
| Name | Route | Direction | Vertical | Horizontal | Direction | Vertical | Horizontal | |
| One Route Under | U05205 | Both | 5.49 m | 7.92 m | N/A | | | |
| RIVER ROAD / U05205 | | | | | | | | |
| Route On Structure | P00060 | N/A | 99.99 m | 8.53 m | East | | | |
| 10TH AVE. SOUTH - EB | | | | | | | | |



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Inspection Data

Sufficiency Rating: 75.7

Structure Status : Func Obs - Elg Rehab

Inspection Due Date : 05 September 2015

(91) Inspection Frequency (months) : **24**Next Fracture Critical Due Date : **05 Sep 2015**

Next Under Water Insp : **15 Nov 2016**Under Water Insp Type : **Type II**

Fracture Critical Detail: 1 or 2 Stl-girder systms **NBI Inspection Data** 05 September 2013 Charles Pepos - 107 (90) Date of Last Inspection: Last Inspected By (90) Inspection Date Inspected By (62) Culvert Rating : N (58) Deck Rating: 7 (36A) Bridge Rail Rating: (68) Deck Geometry: 3 (59) Superstructure Rating : 6 (36B) Transition Rating (61) Channel Rating: (67) Structure Rating: (71) Waterway Adequacy (60) Substructure Rating : 6 (36C) Approach Rail Rating (69) Under Clearance: (36D) End Rail Rating (113) Scour Critical: 5 (72) App Rdwy Align : 7 (41) Posting Status: **Unrepaired Spalls:** 0 m sq 0.00 in Deck Surfacing Depth:

Inspection Hours

| msp e ction mours | | |
|------------------------------|----|-----------------------------------|
| Crew Hours for inspection : | 35 | Snooper Required : Y |
| Helper Hours : | 0 | Snooper Hours for inspection : 17 |
| Special Crew Hours : | 12 | Flagger Hours : |
| Special Equipment Hours : | -1 | |

| Openial Olew I | 12 | 1 1 | | . lagger rieure | - | | |
|----------------------------------------------------------------------------------------------|------------------------------|--------------------------|---------------|-------------------------------|--------------------------|-----------------------------------------|--------------------------------|
| Special Equipment H | ours: -1 | | | | | | |
| Inspection Wor | k Candidates Date Requested | Status | Priority | Effected
Structure
Unit | Scope of
Work | Action | Covered
Condition
States |
| D31-FY2006-000012 | 19 October 2005 | Approved | Medium | All Spans | Bridge | Spot Paint (flex) | |
| Clean and paint the bea
18/27/2007 Blew off an
19/06/2011 Did this ag
approved. DRC | nd overcoat painted be | earings on Main Spa | an during sno | ooper inspection | n. | | |
| D31-FY2006-000014 | 19 October 2005 | Approved | High | M Main | 305 Assm Jt w/o Seal | Rehab Elem | |
| Repair the drain trough | under the linger joint | at bent 21. | | | | | |
| Approved. DRC | | | | | | | |
| пррготса. Впо | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| D31-FY2006-000011 | 19 October 2005 | Approved | Medium | A Approach | 205 R/Conc Column | Min Repair | |
| Repair spalling/delamin | atad concrete on Cali | | | 11111111 | | | |
| Kepali Spalling/delamin | aled concrete on Coll | allilis at Delits 3 alit | ı 4. | | | | |
| Approved DBC | | | | | | | |
| Approved. DRC | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| D31-FY2011-000135 | 07 February 2011 | Not Approved | Medium | All Spans | 107 Paint Stl Opn Girder | Min Repair | |
| Clean and paint the gird | • | | | | | | |
| Slean and paint the girt | deis as fieeded. | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| D31-FY2011-000134 | 07 February 2011 | Not Approved | Medium | All Spans | 334 Metal Rail Coated | Repl Paint | |
| | | | | III | | 110111111111111111111111111111111111111 | |
| Clean and paint the brid | ige rall. | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Late Reason:

Inspection Date: 09/05/2013



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Element Inspection Data

* * * * * * * * * * Span : Main-0 - Steel Girder - Spans 21 thru 26 * * * * * * * *

| Smart Flag | cription | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------|
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 12 - | Bare Concrete | Deck 201 | 1 Mill and Over | lay w∖ S | Silica Fume | 1 | | | <u> </u> | |
| | 1 | 3 | 3226 | sq.m. | X | 100 | 0 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | I | | | | |
| 9/05/2013 - | Mapping crack | s reflecting | up through the | 2011 o | verlay. No | delaminations fo | und during chain | ing in the closed | Right lane. | FPDZ |
| 9/06/2011 - | Removed and | replaced 2' | of the existing | surface | with Silica | Fume Concrete i | in June 2011. | | | GCC' |
| y Helena ea
8/27/2007 -
nore through
6/28/2005 -
se nearing th
17/24/2003 - | arlier this summer
Quick chain drant
evaluation. Do
Tight mapping
the 2 percent lim | er and their ag showed elaimantion cracks in a hit for Condous report. | r report is on file
delaminations on
ns/spalls concre
Il spans with so
ition State 2. V
Some delamin | e in Hele
or spalls
te at the
ome area
'ery little | ena.
s every 20 to
e joint ancho
as that are o
e ski resistar | o 30 ft or less that
orages. Rest of the
delaminated. So
nce remaining. (| an 10 percent for
he previous com
me areas of spal
295.66 * 10.91 = | Condition State ments still apply. ling along the ed 3225.65) Nate | Deck was evaluated 3; may be more with ges of the joints. In undeside od the december 2. | h a ZZBZ
Nay SZM |
| 9/27/2001 -
rith effloresc | | = 3346.64
der side of | Tight mapping the deck. Wea | | | | Minor spalling at | all the joints. So | ome cracks are wid | e NIBL
GKLI |
| | | oks unoug | nout the dook. | | | | | | | |
| 9/01/1992 - | None | | | | | | | | | REF |
| | | Giraei | | | | | | | | |
| | - Paint Stl Opn | | | | | | | | | |
| | 1 | 2 | 591 | m. | | 75 | 15 | 5 | 5 | |
| | 1 | | 591 | m. | | 75
% | 15 | 5 % | 5 % | |
| revious Ins | 1
pection Notes : | | 591 | m. | | | | | | |
| 9/05/2013 - | pection Notes : | 2
y paint. Ru | | | itting under | % | % | % | | e FPD. |
| 9/05/2013 -
ince the 201 | pection Notes :
Faded and dirty | y paint. Runab. | ıst blisters w∖ su | urface p | ŭ | % the blisters. Wo | %
orst areas are und | % | % | |
| 9/05/2013 -
ince the 201
9/06/2011 - | pection Notes :
Faded and dirt
11 deck/joint reh
No change fror | y paint. Runab. | ıst blisters w∖ su | urface p | tle more pai | % the blisters. Wo | %
orst areas are und | %
der leaking joints. | % Not much leakage | GCC |
| 9/05/2013 -
ince the 20°
9/06/2011 -
8/25/2009 -
iting under t
8/27/2007 - | pection Notes: Faded and dirty 11 deck/joint reh No change fror Paint is faded, the blisters. Bot G2 at Pier 26 h | y paint. Runab. In previous dirty, peeliitom flange has some d | inspections exc
inspections exc
ng, and scaling
top side is stick
eep surface col | urface p
cept alitt
in areas
sey from
rrosion, | tle more pair
s that moiston
the deicer
1/8 ", at the | the blisters. Wo nt loss and rust rure can get to the placed on the de | wrst areas are und
noted.
e girders. Lots of
eck.
tudinal stiffner. (| % der leaking joints. heavy rust bliste Dutside of the gir | % | GCC
face ZQD |
| 9/05/2013 -
nce the 20'
9/06/2011 -
8/25/2009 -
iting under the
8/27/2007 -
ints show the
6/28/2005 -
ave pack ru | Paction Notes: Faded and dirty 11 deck/joint ref No change fror Paint is faded, the blisters. Bot G2 at Pier 26 th ne worse paint I Rust, pack rust ast blisters, mos | y paint. Runab. In previous dirty, peelii tom flange has some doss and rut, pitting, pa | ist blisters w\ su
inspections exc
ng, and scaling
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l; especially | the blisters. Wo nt loss and rust r ure can get to the placed on the de lower web longi mag. chloride/sa under or near le | wrst areas are unconcted. e girders. Lots of eck. tudinal stiffner. (anding material heaky joints. Some | der leaking joints. heavy rust bliste Dutside of the gir as accumulated. e area on the low | % Not much leakage | GCC
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veb SZM |
| 9/05/2013 -
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7/24/2003 -
spections. | Faded and dirty 11 deck/joint ref No change fror Paint is faded, the blisters. Bot G2 at Pier 26 h ne worse paint I Rust, pack rust st blisters, most tte. Rusty spots wit | y paint. Runab. In previous dirty, peelintom flange has some doss and rutt, pitting, pattly still tight th pack rus | inspections exc
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aint peel
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the deicer
1/8", at the
n areas that
l; especially
de/dirt laying | the blisters. Wo nt loss and rust r ure can get to the placed on the de lower web longi mag. chloride/sa under or near le g on the outside of | orst areas are unconoted. e girders. Lots of eck. tudinal stiffner. Canding material hasky joints. Some of the girders on | der leaking joints. heavy rust bliste Dutside of the gir as accumulated. e area on the low | Not much leakage rs in areas with sur ders and under lea er portions of the w tom flange. (295.6 | GCC face ZQD ky ZZB reb SZM 6 * 2 |
| 9/05/2013 - ince the 20' 9/06/2011 - 8/25/2009 - iting under 18/27/2007 - 6/28/2005 - ave pack ru 591.32) Na 7/24/2003 - spections. 9/27/2001 - Rusty spots | Faded and dirty 11 deck/joint reh No change from Paint is faded, the blisters. Both G2 at Pier 26 hand the worse paint I Rust, pack rust ist blisters, most te. Rusty spots with 306.75 * 2 = 61 ander all the joint in the point | y paint. Runab. In previous dirty, peelintom flange has some doss and rutt, pitting, pattly still tight th pack rus | inspections exc
inspections exc
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top side is stick
eep surface cor
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aint loss, and pa
c, on them. Mag
t and minor sec | urface p
cept aliti
in areas
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de/dirt laying | the blisters. Wo nt loss and rust r ure can get to the placed on the de lower web longi mag. chloride/sa under or near le g on the outside of | orst areas are unconoted. e girders. Lots of eck. tudinal stiffner. Canding material hasky joints. Some of the girders on | der leaking joints. heavy rust bliste Dutside of the gir as accumulated. e area on the low the top of the bot | Not much leakage rs in areas with sur ders and under lea er portions of the w tom flange. (295.6 | GCC face ZQD ky ZZB reb SZM 6 * 2 YAD |
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1/8", at the
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de/dirt laying | the blisters. Wo nt loss and rust r ure can get to the placed on the de lower web longi mag. chloride/sa under or near le g on the outside o | orst areas are unconoted. e girders. Lots of eck. tudinal stiffner. Canding material hasky joints. Some of the girders on | der leaking joints. heavy rust bliste Dutside of the gir as accumulated. e area on the low the top of the bot | Not much leakage rs in areas with sur ders and under lea er portions of the w tom flange. (295.6 | GCC face ZQD ky ZZB yeb SZM 6*2 YAD NIBL |
| 9/05/2013 - 9/06/2011 - 9/06/2011 - 8/25/2009 - iting under t 8/27/2007 - ioints show ti 6/28/2005 - ave pack ru 591.32) Na 7/24/2003 - aspections. 9/27/2001 - lusty spots t 9/02/1998 - | Faded and dirty 11 deck/joint ref No change fror Paint is faded, the blisters. Bot G2 at Pier 26 h ne worse paint I Rust, pack rust sts blisters, most tte. Rusty spots wit 306.75 * 2 = 61 under all the join None None | y paint. Runab. In previous dirty, peelintom flange has some doss and rutt, pitting, pattly still tight th pack rus | inspections exc
inspections exc
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de/dirt laying | the blisters. Wo nt loss and rust r ure can get to the placed on the de lower web longi mag. chloride/sa under or near le g on the outside o | orst areas are unconoted. e girders. Lots of eck. tudinal stiffner. Canding material hasky joints. Some of the girders on | der leaking joints. heavy rust bliste Dutside of the gir as accumulated. e area on the low the top of the bot | Not much leakage rs in areas with sur ders and under lea er portions of the w tom flange. (295.6 | GCC
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ky ZZB
veb SZM |
| 9/05/2013 -
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8/25/2009 -
ting under to
8/27/2007 -
info show to
6/28/2005 -
ave pack ru
591.32) Na
7/24/2003 -
spections.
9/27/2001 -
usty spots to
9/02/1998 - | Faded and dirty 11 deck/joint ref No change fror Paint is faded, the blisters. Bot G2 at Pier 26 h ne worse paint I Rust, pack rust sts blisters, most tte. Rusty spots wit 306.75 * 2 = 61 under all the join None None | y paint. Runab. In previous dirty, peelintom flange has some doss and rutt, pitting, pattly still tight th pack rus | inspections exc
inspections exc
ng, and scaling
top side is stick
eep surface cor
st. Paint is very
aint loss, and pa
c, on them. Mag
t and minor sec | urface p
cept aliti
in areas
key from
rrosion,
y dirty in
aint peel
g chloric | tle more pair
s that moistun
the deicer
1/8", at the
n areas that
l; especially
de/dirt laying | the blisters. Wo nt loss and rust r ure can get to the placed on the de lower web longi mag. chloride/sa under or near le g on the outside o | orst areas are unconoted. e girders. Lots of eck. tudinal stiffner. Canding material hasky joints. Some of the girders on | der leaking joints. heavy rust bliste Dutside of the gir as accumulated. e area on the low the top of the bot | Not much leakage rs in areas with sur ders and under lea er portions of the w tom flange. (295.6 | GCC face ZQD ky ZZB. yeb SZW 6*2 YAD NIBI |

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Continue

* * * * * * * * * Span : Main-0 - Steel Girder - Spans 21 thru 26 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Quantity Element 113 - Paint Stl Stringer 1 887 m. 90 10 0 % % Previous Inspection Notes: 09/05/2013 - Some paint loss and peeling paint in areas. Generally in Good paint system. Stringers are dirty. 09/06/2011 - No change from previous inspections except alittle more paint loss and rust noted. 08/25/2009 - Paint is generally in good condition. Some rust and scale in area near joints. 08/27/2007 - Same as past comments on rust at the deck to stringer flange area. 06/28/2005 - Some rusty spots on the edges of the top flange where they meet the concrete deck. Some rusty spots and staining where the stringers are in the area of leaking joints. (295.66 * 3 = 886.98 07/24/2003 - Minor rusty spots on the underside of the flanges; mainly near concrete connections under and near leaking joints. 09/27/2001 - 3 * 306.75 = 920.25mMinor rust spots; mostly at the top flange to concrete connection and under the joints. 09/02/1998 Inspection Notes: Element 152 - Paint Stl Floor Beam 458 80 m. % % % % % Previous Inspection Notes: 09/05/2013 - Faded and dirty paint, rust blisters, and surface pitting in those areas of past leakage and where water can gather. 09/06/2011 - No change from previous inspections except alittle more paint loss and rust noted. 08/25/2009 - Floorbeams show dirty paint, some peeling, and rust blisters on those under the leaky joints. No change on 3rd floorbeam back from pier 25 on loose rivot. 08/27/2007 - Floorbeams under leaky joints show rust blisters, pitting, paint loss, and minor section loss in open rust blisters. 3rd floorbeam back of Pier 25 in span 24 has (1) loose rivet; not a problem. 06/28/2005 - Same comments with paint loss, pitting and some tight pack rust also noted and mostly near the leaking joints. 07/24/2003 - Rusty spots throughout the floorbeams. Worse rust is in areas under leaking joints. Those floorbeams under leaking joints show some minor rust blisters and pack rust at connections. 09/27/2001 - 10.91 * 42 = 458.22 m All are in contact with the steel stringers. Rusty spots; especially under the joints. Need to verify number when snooper inspected. 09/02/1998 - None Inspection Notes:



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| | cription | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------|-----------------------------------------|---------------------------------------|--------------------|------------------------------------------|-----------------|
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| ٠, | - R/Conc Colun | 1 | | | | | . 0. 0.0 | | · or orac | |
| | 1 | 3 | 8 | ea. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| rovious Inc | pection Notes : | <u> </u> | | | | 70 | 70 | 70 | 70 | |
| · | | | | h - ' h | | al Taki asala | · · · · · · · · · · · · · · · · · · · | | D' 00 1 00 | EDD: |
| | • | | 0 0 | ne ice c | oreaker's stee | ei. Tignt cracks | from corners of ic | e breakers steel | on Pier 22 and 23. | FPD2 |
| | No change from | • | • | | | | | | | GCC |
| reaker steel | l. | - | | | | | small delamination ice breaker. Rus | | nd scale on ice
out the ice breakers. | ZQD2
ZZB2 |
| eparating from | om the concrete | e at piers 3 | and 7. | | | ers August 24, 2
n the upstream i | | nspection, the ste | eel ice breakers are | SZM
YADZ |
| | ŭ | | | | • | • | or with a boat to | get closer to the | m | NIBL |
| | Two columns a | | | | | · | or with a boat to | get ologer to the | | GKL |
| | | t Don't Z7 (| Tomor opani, | J110 0010 | | 21 20. | | | | Orter |
| nspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | D/O O I D'' | O /F: 1 | D: 04 LOE | | | | | | | |
| lement 220 | - R/C Sub Pile | | | | | | | | | |
| | 1 | 3 | 2 | ea. | | 100 | 0 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | _ | | | | • | |
| 9/05/2013 - | Refer to UW IN | spection. | | | | | | | | FPD |
| | Per the 2011 u | nderwater | inspection repo | rt by Inf | rastructure E | Engineers there i | s no change to th | is element since | the 2006 inspection | n. GCC |
| :RH
8/25/2009 - | Information is in | n latest un | derwater insned | rtion | | | | | | ZQD |
| | Check on the la | | · | | | | | | | ZZB |
| | | | • | | Par Infrastr | ucture Engineer | s August 24, 2006 | S underwater incr | paction there is | SZN |
| nsuffiecient (| | osing seco | ndary rebar at t | he top o | of the footing | on the west side | | o underwater msp | dection, there is | YAD |
| 9/27/2001 - | None | | | | | | | | | NIBL |
| 9/02/1998 - | LW - Piers 4 & | 5 Underwa | ater Inspection | 7/15/98 | (Guthrie Div | ing Co) Expos | ed footings in goo | od condition | | GKL |
| Inspection N | Notes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| lement 227 | - R/C Submerg | ed Pile F | Pier 22 thru 26 | | | | | | | |
| | 1 | 3 | 5 | ea. | | 90 | 10 | 0 | 0 | |
| | | | | | | % | % | % | % | |
| rougious la s | naction Natar | <u> </u> | | | | /0 | /0 | /0 | 70 | |
| revious insp | pection Notes : | | | | | | | | | |
| 0/05/55: | Refer to UW IN | • | | | | | | | | FPD |
| | Per the 2011 u | | ers are separati | ing from | the concrete | ers spalling is pro
e at Piers 3 and | | rete and steel ice | breaker interfaces | of GCC
ZQD |
| 9/06/2011 -
ne substruct | | | underwater ins | | | | | | | |
| 9/06/2011 -
ne substruct
8/25/2009 - | tures. The steel | on the past | | • | | | | | | |
| 9/06/2011 -
ne substruct
8/25/2009 -
8/27/2007 - | tures. The steel
Information is on
Check on the la | on the past
atest Unde | rwater II report. | | Condition | states changed F | er Infrastructure | Engineers Augus | t 24. 2006 underwa | |
| 9/06/2011 -
ne substruct
8/25/2009 -
8/27/2007 -
6/28/2005 -
nspection. | tures. The steel
Information is on
Check on the language
Unchanged unto
Spalling is prese | on the past
atest Unde
til the next
ent at the co | rwater II report.
underwater insoncrete/steel in | pection. | of the subst | | er Infrastructure | Engineers Augus | t 24, 2006 underwa | iter SZN |
| 9/06/2011 -
ne substruct
8/25/2009 -
8/27/2007 -
6/28/2005 -
nspection. \$
7/24/2003 - | tures. The steel Information is of Check on the last Unchanged unto Spalling is present Information from | on the past
atest Unde
til the next
ent at the co | rwater II report.
underwater insoncrete/steel in | pection. | of the subst | | er Infrastructure | Engineers Augus | t 24, 2006 underwa | ter SZM
YAD |
| 9/06/2011 -
ne substruct
8/25/2009 -
8/27/2007 -
6/28/2005 -
nspection. \$
7/24/2003 - | tures. The steel Information is of Check on the late Unchanged unto Spalling is present Information from None | on the past
atest Unde
til the next
ent at the com
Guthrie l | rwater II report.
underwater ins
oncrete/steel in
Diving Co.'s und | pection.
terfaces
derwate | s of the subst
r report. | tructures. | | | | YAD
NIB |
| 9/06/2011 - ne substruct 8/25/2009 - 8/27/2007 - 6/28/2005 - spection. \$ 7/24/2003 - 9/27/2001 - 9/02/1998 - | tures. The steel Information is of Check on the late Unchanged unto Spalling is present Information from None | on the past
atest Unde
til the next
ent at the co
m Guthrie I | underwater insponderwater insponderwater insponderwater Inspenderwater Inspenderw | pection.
terfaces
derwate | s of the subst
r report. | tructures. | er Infrastructure l | | | iter SZM
YAD |

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* * * * * * * * * Span : Main-0 - Steel Girder - Spans 21 thru 26 (cont.) * * * * * * * *

| | cription | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------|---------------------------------|
| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| lement 234 | - R/Conc Cap | Pier 21 thi | ru 26 | | | | <u> </u> | | <u>. </u> | |
| | 1 | 2 | 65 | m. | | 90 | 5 | 5 | 0 | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | | | |
| 9/05/2013 - | Spall with expo | sed rebar | on centerline of | Pier 23 | 3's cap. Son | ne delaminations | s noted on all of th | ne caps; mostly s | small surface type. | FPDZ |
| 9/06/2011 - | No change from | m previous | inspections. Bl | lown of | f during the s | snooper inspection | ons. | | | GCC' |
| | | | | vith a c | ouple more o | of the caps show | ving some diagon | al cracks. Caps a | also have some | ZQDZ |
| | leaking deck o
Cap at Pier 24 | | | ebar o | n the Top-Le | ft side on the un | derside of the car | o. Cap at Pier 2 | 3 has a diagonal cr | ack ZZBZ |
| om G1 to th | ne column conn | ectiona are | a; digital photo | 2115. | | | · | • | J | |
| | • | | ends of severa | • | a of concret | e under leaking | iointo | | | SZM
YADZ |
| | 6 * 10.91 = 65. | • | reports. Some | o stanill | ig or concret | e under leaking | joints. | | | NIBL |
| linor crackir | ng on hammer h | neads. Nee | ed to be looked | at with | snooper. | | | | | |
| 9/02/1998 - | Some cracking | , but minor | at this time. | | | | | | | GKLI |
| 9/01/1992 - | None | | | | | | | | | REF |
| | | | | | | | | | | |
| Element 301 | - Pourable Joir | nt Seal Pie | er 22, 23, 25, ar | nd 26 | | | | | | |
| Element 301 | - Pourable Joir | nt Seal Pie | er 22, 23, 25, ar
44 | nd 26
m. | | 95 | 5 | 0 | | |
| Element 301 | | | | | | 95 | 5 % | 0 | % | |
| | | | | | | | | | % | |
| revious Insp
9/05/2013 - | 1
pection Notes : | 3 | 44 | m. | all area of P | % | % | % | % sound solid when | FPD2 |
| revious Ins
9/05/2013 -
apped on. | 1
pection Notes : | 3 erally in Go | 44
od condition wi | m. | all area of P | % | % | % | | FPD2
GCC |
| Previous Insp
9/05/2013 -
apped on.
9/06/2011 - | 1 Dection Notes : Sealant is general terms of the sealant in the | erally in Go | and condition wi | m.
th a sm | | %
ier 23's where th | % | %
e. Steel portions | | |
| Previous Ins
9/05/2013 -
apped on.
9/06/2011 -
8/25/2009 -
8/27/2007 - | Dection Notes : Sealant is general New sealant in Torn and missin All have torn or | erally in Go June 2011 ing sealant r missing se | ood condition wind in all joints. Sorealant with leak | m.
th a sm | lling and dela | % ier 23's where th | %
ne sealant is loose | % e. Steel portions joint steel. | sound solid when | GCC
ZQD |
| Previous Insp
9/05/2013 -
apped on.
9/06/2011 -
8/25/2009 -
8/27/2007 -
nchorages.
6/28/2005 - | Dection Notes: Sealant is generally New sealant in Torn and missing All have torn or Some nicks to Loose and torn | erally in Go June 2011 ing sealant r missing se the guard in sealant in | ood condition wind in all joints. Some alant with leak angles. all (4) joints. S | m. th a sm me spa age no ome di | lling and delated undernea | % ier 23's where the amination along ath. All have sor | ne sealant is loose
the edges of the
me delamiantions | %. Steel portions
joint steel.
/spalls in the cor | sound solid when | GCC
ZQD
ZZB: |
| Previous Insp
19/05/2013 -
apped on.
19/06/2011 -
18/25/2009 -
18/27/2007 -
Inchorages.
16/28/2005 -
Ingle anchol | Dection Notes: Sealant is generally New sealant in Torn and missing All have torn or Some nicks to Loose and torn | erally in Go June 2011 ing sealant r missing so the guard a sealant in ider the joir | ood condition will. in all joints. Sorealant with leak angles. | m. th a sm me spa age no ome di | lling and delated undernea | % ier 23's where the amination along ath. All have sor | ne sealant is loose
the edges of the
me delamiantions | %. Steel portions
joint steel.
/spalls in the cor | sound solid when | GCC
ZQD.
ZZB;
pint SZM |
| Previous Insp
19/05/2013 -
apped on.
19/06/2011 -
18/25/2009 -
18/27/2007 -
Inchorages.
16/28/2005 -
Ingle anchor
17/24/2003 -
19/27/2001 - | Dection Notes: Sealant is general New sealant in Torn and missing All have torn on Some nicks to Loose and torrages. Caps un Same as last red * 10.91 = 43. | erally in Go June 2011 ing sealant r missing se the guard a sealant in ider the joir eport. 64m | ood condition wind in all joints. Some alant with leak angles. all (4) joints. S | m.
me spa
age no
ome di
an ove | lling and delated underneart/debris in senight rain. | % ier 23's where the amination along ath. All have sor | ne sealant is loose
the edges of the
me delamiantions | %. Steel portions
joint steel.
/spalls in the cor | sound solid when | GCC
ZQD:
ZZB: |

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Continue

| | scription | | 2 | | | 5 / 6/ / 4 | 5 / 0/ / 0 | 5 , 0, , 0 | 5 (0) (4 | D + O+ + E |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------|-----------------------------------|--------------------|-------------------------------------------|--------------------|------------------------------------------------------|
| ١ | Scale Factor 3 - Assembly Join | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Herneni 303 | | | | | J Bent∠ <i>i</i> | 0.5 | | | | |
| | 1 | 3 | 22 | m. | | 95 | 5 | 0 | | |
| | | | | | | % | % | % | % | |
| revious Ins | pection Notes : | | | | | | | | | |
| 9/05/2013 | Small portion o | n the Left s | side of the joint | at Pier | 24's has bro | ken off. Gland a | ppears to be in G | lood condition. | | FPDZ |
| 9/06/2011 | - New joints in Ju | une 2011. | | | | | | | | GCCY |
| 8/25/2009 | - Tears in the gla | and in area | s, leakage, and | d some r | minor damag | ge to the joint sys | tem. Small delan | ninations and spa | alls along the edg | es. ZQDZ |
| 08/27/2007 oted. | - Tears and dam | age to the | joints themselv | ves. And | chorage con | crete has delami | antions or spalls. | Nicks to the me | etal anchorages al | lso ZZBZ |
| 6/28/2005
nights rain. | | | spalling along t | the joint | anchorages. | . Some areas wh | nere gland is pus | ned down. Leak | age evident after | |
| 7/24/2003 | - Same as last re | eport. | | | | | | | | YADZ |
| | - 2 * 10.91 =21.8
se anchorage pl | | | long the | anaharagaa | | | | | NIBL |
| 11645 01 100 | • . | ales. Con | hete spailing a | liong the | anchorages |). | | | | |
| Inspection | | Seal Finge | r Joint at Pior 3 | 21 | | | | | | |
| • | 5 - Assm Jt w/o S | | | | | ad | 10 | 0 | | |
| • | | Seal Finge | r Joint at Pier 2 | | | 90 | 10 | 0 | Q/ | |
| Element 305 | 5 - Assm Jt w/o S | | | | | 90 | 10 | 0 | % | |
| Element 305 | 5 - Assm Jt w/o S
1
spection Notes : | 3 | 11 | m. | | % | % | % | | |
| Previous Ins | 5 - Assm Jt w/o S 1 pection Notes : - Some spalling | 3 on the und | 11 erside of the de | m. | e joint. Stee | | % | % | | FPDZ |
| Previous Ins
9/05/2013 | 5 - Assm Jt w/o S 1 pection Notes: - Some spalling of the company of the compan | on the und | erside of the de inspections. | m.
eck at th | · | %
el sounds solid w | % hen tapped on. F | %
Finger alignment | looks Good. | FPDZ
GCCY |
| Previous Ins
9/05/2013
9/06/2011
18/25/2009
Frough under | 5 - Assm Jt w/o S 1 pection Notes: - Some spalling of the company of the compan | on the under the previous at on the fin and needs | erside of the de inspections. | m.
eck at th | d when tapp | % | % hen tapped on. F | %
Finger alignment | looks Good. | FPDZ
GCCY |
| Previous Ins
9/05/2013
99/06/2011
98/25/2009
Frough unde
18/27/2007 | 5 - Assm Jt w/o S 1 pection Notes: - Some spalling - No change from - Good alignment or joint is torn up - No change from | on the und
in previous
at on the fin
and needs
in the previous | erside of the de inspections. agers, steel sous some repair/nous reports. | m.
eck at th
unds soli
nodificat | d when tapp
ions. | %
el sounds solid w | % hen tapped on. F | %
Finger alignment
aminations along | looks Good. | FPDZ
GCCY
ZQDZ |
| revious Ins
9/05/2013
9/06/2011
8/25/2009
rough unde
8/27/2007 | 5 - Assm Jt w/o S 1 pection Notes: - Some spalling - No change from - Good alignment or joint is torn up - No change from | on the under previous and needs an the previous and delami | erside of the de inspections. Ingers, steel sous some repair/nous reports. Ination along the | m. eck at th unds soli | d when tapp
ions.
dges. Finge | % sounds solid wheel on, and some | % hen tapped on. F | %
Finger alignment
aminations along | looks Good. | FPDZ
GCCY
ZQDZ
ZZBZ
SZMI |
| Previous Ins
9/05/2013
9/06/2011
8/25/2009
rough unde
8/27/2007
6/28/2005 | 5 - Assm Jt w/o S 1 spection Notes: - Some spalling - No change from - Good alignment er joint is torn up - No change from - Minor spalling a | on the under previous and needs in the previous and delaminain system | erside of the de inspections. Ingers, steel sous some repair/nous reports. Ination along the | m. eck at th unds soli | d when tapp
ions.
dges. Finge | % sounds solid wheel on, and some | % hen tapped on. F | %
Finger alignment
aminations along | looks Good. | FPDZ
GCCY
ZQDZ
ZZBZ
SZMI |
| Previous Ins
19/05/2013
19/06/2011
18/25/2009
17/04/2005
17/24/2003
19/27/2001 | pection Notes: Some spalling No change from Good alignment or joint is torn up No change from Minor spalling a Trough and dra 10.91 * 1 = 10. | on the und
in previous
at on the fin
and needs
in the previous
and delamitation system
91m | erside of the de inspections. Ingers, steel sous some repair/nous reports. Ination along the is in need of clean | m. eck at th unds soli | d when tapp
ions.
dges. Finge | % sounds solid wheel on, and some | % hen tapped on. F | %
Finger alignment
aminations along | looks Good. | FPDZ
GCCY
ZQDZ
ZZBZ
SZMI
YADZ |
| lement 305
revious Ins
9/05/2013
9/06/2011
8/25/2009
rough unde
8/27/2007
6/28/2005
7/24/2003
9/27/2001
tusty areas | appection Notes: Some spalling No change from Good alignment or joint is torn up No change from Minor spalling a Trough and dra 10.91 * 1 = 10.1 Some spalling | on the und
in previous
at on the fin
and needs
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and delamitation system
91m | erside of the de inspections. Ingers, steel sous some repair/nous reports. Ination along the is in need of clean | m. eck at th unds soli | d when tapp
ions.
dges. Finge | % sounds solid wheel on, and some | % hen tapped on. F | %
Finger alignment
aminations along | looks Good. | FPDZ
GCCY
ZQDZ
ZZBZ
SZMI
YADZ
NIBL |

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| | | • | | | • | • | • | | |
|----------------------------------------------------------|---------------|-----------------|-----------|---------------|--------------------|--------------------|------------------|-------------------|--------------|
| Element Description | | | | | | | | | |
| Smart Flag Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 311 - Moveable Be | earing | | | | | | | | |
| 1 | 3 | 12 | ea. | | 90 | 10 | 0 | | |
| | | | | | % | % | % | % | |
| Previous Inspection Notes | : | | | | | | | | |
| 09/05/2013 - Spot rust and | paint loss. | Bearing alignm | nent was | to expansion | on slightly today; | 85F. | | | FPDZ |
| 09/06/2011 - No change fro | m previous | inspections. E | Blown off | f and overco | oat painted during | g the snooper ins | pection. | | GCCY |
| 08/25/2009 - Bearings were | e cleaned s | ome and spot p | ainted. I | Bearings at | Bent 27 tower sp | oan, are rocked to | owards expansio | n. Remaining bea | ring ZQDZ |
| allignments are good.
08/27/2007 - Bearings were | e blown off : | and overcoat pa | ainted di | uring the sno | ooper inspection | Alignment was | tolerable except | for those at Bent | ZZBZ |
| 27/Tower Span. These are | at maximu | m expansion/al | head on | | | | | | |
| 06/28/2005 - Rusty, pitting, | • | • | | | | | | | SZMI |
| 07/24/2003 - Rusty with son | | | and sand | ding materia | il. Some cleanin | g done when sno | oper inspection | was done. | YADZ |
| 09/27/2001 - Env. State #3
Debris from bird nests and | | 0, | ere visib | ole. Need to | verify numbers | and condition wh | en snoopered. | | NIBL |
| 09/02/1998 - None | | ŭ | | | | | · | | GKLH |
| 09/01/1992 - None | | | | | | | | | REFI |
| Element 313 - Fixed Bearin | | | | | 0.5 | F | 0 | | |
| 1 | 1 | 4 | ea. | | 95 | | 0 | | |
| | | | | | % | % | % | % | |
| Previous Inspection Notes | | | | | | | | | |
| 09/05/2013 - Steel portion i | | | | | | | | | FPDZ |
| 09/06/2011 - No change fro | | | | | • | g the snooper ins | pection. | | GCCY |
| 08/25/2009 - Spot rost and | | | | where able | to get at. | | | | ZQDZ |
| 08/27/2007 - Blown off and | • | | ed. | | | | | | ZZBZ |
| 06/28/2005 - Some rust, pit | | | a naar b | ooringo Co | omo olooning wo | a dana whan ana | oner innecetion | waa dana | SZMI
YADZ |
| 07/24/2003 - Some minor r
09/27/2001 - Rusty spots. | · · | | | Ŭ | · · | s done when sho | oper inpsection | was done. | NIBL |
| 09/02/1998 - None | NCEU IO VEI | my numbers an | a condit | ions whell s | поорегеи. | | | | GKLH |
| 09/01/1992 - None | | | | | | | | | REFI |
| Inspection Notes: | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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Continue

* * * * * * * * * Span : Main-0 - Steel Girder - Spans 21 thru 26 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Fnv Quantity Element 334 - Metal Rail Coated 3 591 m. 60 25 10 % % Previous Inspection Notes: 09/05/2013 - Rusty spots, thin paint, exposed base paint, rusted post webs at the curb line with section loss to the webs. On-going repairs to the rails. Delaminated and spalling on the curbs. 09/06/2011 - No change from previous inspections. Reapired some rail on the Left side in June 2011. Noted seveal posts and panels damaged over the Labor Day Weekend on the Rigth side near the West Abutment. 08/25/2009 - Same comments as past inspections. Several post have been repaired where webs have been rotted away. 08/27/2007 - 5th post from Pier 26 on the Right/Median side is broken loose from the concrete. One bent post in Span 23 on the Right side. Lots of rust in the lower rail post webs causing section loss. Posts have been hit and bent over as web crumples. Most of the top coat of paint is faded to the primer coat. 2007/09/10. Bent posts straightened and fixed today. 06/28/2005 - Faded paint and rust spots where paint is chipped off. Red primer coat is coming through in most of the rail. A couple of areas rattle under traffic. (295.66 * 2 = 591.32) Nate 07/24/2003 - Same as last report. 09/27/2001 - 306.75 * 2 = 613.50m Paint is chaulky and pitted from sanding material. Rusty spots throughout. Rattling with some loose areas noted when traffic is crossing. 09/02/1998 - Minor areas of rust throughout. 09/01/1992 - None Inspection Notes: Element 357 - Sup Pack Rust SmFlag none Χ 3 Χ 100 ea. % % % % Previous Inspection Notes: 09/05/2013 - Swelling between connection plates. No distress visible to the rivets. 09/06/2011 - No change from previous inspections. 08/25/2009 - Minor swelling between some of the conection plates exists. Inspection Notes: Element 358 - Deck Cracking SmFlag none X 3 Χ 100 ea. % % % Previous Inspection Notes: 09/05/2013 - Mapping cracks in all Spans. Condition State 2 due to quantity. 09/06/2011 - Removed and replaced 2" of the existing surface with Silica Fume Concrete in June 2011. 08/25/2009 - Added due to the quantity and size of cracking in this deck. Inspection Notes:

Inspection Notes:

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Continue

* * * * * * * * * Span : Main-0 - Steel Girder - Spans 21 thru 26 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 359 - Soffit Smart Flag X 100 1 ea. 0 0 % % % Previous Inspection Notes: 09/05/2013 - Spalling and deteriorated concrete throughout. Exposed and rusty rebar under post areas with delaminated concrete. 09/06/2011 - No change from previous inspections, but continueing to get worse. 08/25/2009 - Outlets on the drains show deteriorated and crumbling concrete with exposed and rusty reiforcing steel. Spalling and delaminated areas throughout underside of the curbs. 08/27/2007 - Same and lots of it throughout the bridge; see photos. 06/28/2005 - Unchanged from last report or maybe slightly more deterioration/spalling. 07/24/2003 - The outlets of the drain scuppers are deteriorating with some exposed and rusting reinforcing steel. Some deteriorating concrete is falling off and/or is loose. Inspection Notes: * * * * * * * * * Span : Appr-1 - Steel Girders - Spans 1 thru 20 * * * * * * * * Element Description Smart Flag | Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 12 - Bare Concrete Deck 3 3609 Χ 100 sq.m. 0 % % % % % Previous Inspection Notes: 09/05/2013 - (1) small delamination found along Bent 5 and Bent 9's joints. Deck looks Good with minor wear in the wheel paths. Lots of mapping cracks. 09/06/2011 - Removed and replaced 2" of the existing surface with Silica Fume Concrete in June 2011. 08/25/2009 - Poor skid resistance, and wear from studded tires. Helena did an indepth scan of delamination and spalling in the deck this past summer and their report is in Helena. 08/27/2007 - Quick chain drag showed delaminations or spalls every 30 to 40 ft or less than 10 percent for Condition State 3; may be more with a more through evaluation. Delaimantions/spalls concrete at the joint anchorages. Rest of the previous comments still apply. 06/28/2005 - Mapping cracks throughout all spans with some small areas of delamination and spalling; probably less than 2 percent. Very little skid resistance with wear in the wheel paths. (330.83 * 10.91 = 3609.36) Nate. 07/24/2003 - Same on deck comments and on scuppers. Wear on deck with some exposed aggregate. Tight mapping cracks throughout the deck. Soffitt smart flag for popouts around scuppers. 09/27/2001 - 331.12 * 10.91 = 3613.39 Cracking throughout. Some concrete is poping out under all drain scuppers with some exposed reinforcing steel. Some concrete popouts along the top flange of the main girders. 09/02/1998 - minor cracking throughout.

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Continue

* * * * * * * * * Span : Appr-1 - Steel Girders - Spans 1 thru 20 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 107 - Paint Stl Opn Girder 2 1323 m. 80 10 0 % % % Previous Inspection Notes: 09/05/2013 - Bottom flanges have rust blisters and minor pitting on their tops. Areas near the joints have heavy rust and paint loss from past leakage. Faded and dirty paint. 09/06/2011 - No change from previous inspections with a little more paint loss and rust noted. 08/25/2009 - Rust blisters with some minor surface pitting on the tops of the bottom flanges in areas that moisture is collecting. Rust and some cracking of the welds on the bottom cover plates in areas that water has gotten between the cover and bottom flange. 08/27/2007 - Spots of rust on the bottom flanges of the outside girders; especially where the drains are dumping water onto them. Rust blisters show surface pitting when cleaned off. Also the same as previous comments. 06/28/2005 - Rust and scale along the underside of the deck where the top flange is against the concrete. Areas under leaky joints are the worse. (4 * 330.83 = 1323.32) Nate. 07/24/2003 - Rusty spots along the upper flanges to concrete area. Ends of girders under leaking joints show some minor blistering rust. 09/27/2001 - 4 * 331.2m = 1324.8m Rusty spots under the joints with some rust spots at the top flange to concrete connection. 09/02/1998 -Inspection Notes: Element 178 - Painted Trans Girder Bent 21 3 11 80 15 m. % % Previous Inspection Notes : 09/05/2013 - Heavy rust, scale, rust blisters, and surface pitting where water can sit. 09/06/2011 - No change from previous inspections with a little more paint loss and rust noted. 08/25/2009 - Dirty. rust, scale and some acctive corrsion in areas that moisture is collecting. 08/27/2007 - Dirty, stained, and some rusty spots. 06/28/2005 - Same as last report. 07/24/2003 - Step up girder to make up difference in girder heights. (4) girders on top and supported by (2) bearings. Some areas of rust 09/27/2001 - 10.91 * 1 = 10.91m Env. State #3 as under an open joint. Rusty spots at the connections. Inspection Notes:

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Continue

* * Span : Appr-1 - Steel Girders - Spans 1 thru 20 (cont.) * * * * * * * * Element Description Smart Flag Scale Factor Env Quantity Units Insp Each Pct Stat 1 Pct Stat 2 Pct Stat 3 Pct Stat 4 Pct Stat 5 Element 205 - R/Conc Column Bent 2 thru 20 2 23 ea 85 10 % % % Previous Inspection Notes: 09/05/2013 - Spalling and delaminations on Bent 5's. Vertical cracking along edges on some. Surface spalls from shallow tie wire. Staining on those under leaky areas. 09/06/2011 - No change from previous inspections. 08/25/2009 - Delams and spalls on bent 5 about 6 feet up. Several with small spalls and staining on those that have some leakage from above. 08/27/2007 - 5 percent in Condition State 3 for exposed rebar chair feet. Also exposed rebar and rust at Bent 3 thru 5. Several have small delamianted areas. Bent 9's column has a spall on the Left corner. 06/28/2005 - Columns at Bents 3 thru 5 have some spalls on them. Rebar is rusted in these areas. Same on the shrinkage cracks. 07/24/2003 - Minor and tight shrinkage cracks on surface of concrete of most columns. Some scrapes on a couple of the columns from vehicle activity under the structure. 09/27/2001 - Minor cracking throughout. Minor shrinkage cracks. 09/02/1998 - 4 bents with 2 columns per (+) 15 bents with 1 column per = 23 Inspection Notes: Element 215 - R/Conc Abutment Abutment 1-East 2 % % % % Previous Inspection Notes: .09/05/2013 - Generally Good condition. Some tight cracks in the backwall concrete. Water leaking through the backwall to cap areas. Small spall on the Left wignwall edge at the groundline. 09/06/2011 - No change from previous inspections. 08/25/2009 - Tight cracks in abutment backwalls and wingwalls. Area is damp from leakage. All prior remarks still apply. 08/27/2007 - leaking at Abutment has area is damp. Lots of sanding material on the cap. Tight cracks in the Abutment's backwall and wingwalls. Some moderate erosion from under the Abutment towards Bent 2. 06/28/2005 - Same as last report and add some small spalls where the girders are embedded. 07/24/2003 - Minor and tight cracking in Abutment backwall. Some graffti painted on the backwall and girder ends. 09/27/2001 - 14.81 * 1 = 14.81m Minor cracking in the Abutment backwalls. 09/02/1998 -Inspection Notes:



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| Element Des | orintion | | · · · · · Span | : Appı | r-1 - Steel G | irders - Spans | 1 thru 20 (CONt. |) ^ ^ ^ ^ ^ ^ ^ ^ ^ | | |
|--------------------------------------|-----------------------------------|------------------------------|--------------------------------|-----------|------------------------------|------------------------------------|---------------------------|---------------------|----------------------------------------------------------------|------------|
| | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| | - R/Conc Cap | | , | Onno | mop Edon | r or orar r | r or orar 2 | . or orar o | 1 or orac 1 | |
| | 1 | 2 | 219 | m. | | 85 | 10 | 5 | 0 | |
| | | | | | | % | % | % | % | % |
| Previous Inst | pection Notes : | | | | | | | | | |
| | | | d leaking deck i | ninte (| Snalling from | shallow rehar o | hairs and tie wire | Cracks with eff | lorescence on end | ds of FPDZ |
| some of the o | | ations on B | ent 6, 9, and 15 | | Spannig Iron | i sitaliow repair o | nans and tie wire | . Oracks with on | oresective of ene | GCCY |
| 08/25/2009 - | Same commer | nts as prior | inspections. | | | | | | | ZQDZ |
| side's Left co
delamianted | rner. Bent 6 ha
area near cent | as a 2'(w) x
erline on th | 1'(h) delamina | tion und | der G1Ś6. B | ent 15's cap has | s a 1' x 1' spall on | the underside of | a spall on the Spa
the Right end and
Lots of staining un | da |
| 06/28/2005 - | Same as previ | ous reports | | | d of the caps | under the beari | ngs at Bents 3 an | d 4 show some o | cracking and spalli | ing SZMI |
| | ning from leaki
Same as previ | | ld that the south | n end of | f the cap at E | Bent 2 is cracked | d with delaminated | d concrete. Som | e minor delaminat | ions YADZ |
| also noted at | | n the colum | nn to cap conne | | | | | | | NIBL |
| Minor cracks | at ends of seve | eral caps. | Need to look at | with sn | ooper for co | ndition state. | | | | |
| 09/02/1998 - | Some cracking | g, but minoi | Ī | | | | | | | GKLH |
| Element 301 | - Pourable Joir | nt Seal Be | ents 3(skewed), | 5(Skev | ved), 6, 9, 12 | 2, 15, and 18 | | | | |
| | 1 | 3 | 82 | m. | | 95 | 5 | 0 | | |
| | | | | | | % | % | % | % | % |
| Previous Insp | ection Notes : | 1 | I. | | | | <u> </u> | | 1 | |
| | Generally in G | ood conditi | on. A couple o | f small | tears in the s | sealant at Bents | 3, 6, and 12. Sea | alant looks adher | ed in most of the a | areas FPDZ |
| of the joints.
09/06/2011 - | New Silicone s | sealant and | joints in June 2 | 2011. | | | | | | GCCY |
| 08/25/2009 - | Torn and miss | ing joint ma | aterial. Spalling | and de | laminations a | along edges of jo | oint steel. Most of | the steel sounde | ed solid when it wa | s ZQDZ |
| | Some loose or | missing jo | int material. So | me del | aminated co | ncrete along the | joint anchorages | , but the steel so | unds solid when | ZZBZ |
| tapped on.
06/28/2005 -
edges. | These joints co | ould be con | npression joint | glands. | Same as pr | revious reports w | vith loose material | l and dealaminat | ions along the join | t SZMI |
| | Leaking. Area | s of loose j | oint material. N | /linor sp | alling and d | elaminations alo | ng the joint ancho | orages. | | YADZ |
| 09/27/2001 -
Glands are u | (5 * 10.91) + (2
p & down with | 2 * 13.84) =
some tears | 82.23m (2) jo
in them. Leak | ints ske | ewed and (5)
ome concrete | are perpendicu
is spalled along | lar.
both sides of the | anchorages. | | NIBL |
| 09/02/1998 - | Sliding Plate J | oints at Be | nts 11, 14, 17, 2 | 20, 23, 2 | 24 & 26. | | | | | GKLH |
| Inspection N | lotes: | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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***** * * * * * Span : Appr-1 - Steel Girders - Spans 1 thru 20 (cont.) * * * * * * * *

| | Scription Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|----------------|--------------------------------------------|----------------------|--------------------|----------------------|---------------------------------------------------------|
| ٥ | - Moveable Bea | | Quantity | Office | пор Едоп | 1 of Otal 1 | 1 of Oldi 2 | 1 of Olar o | 1 of Olar 4 | 1 of Olar o |
| | 1 | 3 | 56 | ea. | | 80 | 15 | 5 | | |
| | | | | | | % | % | % | % | (|
| Previous Ins | pection Notes : | | | | | • • | | | | |
| | | arings are | at maximum m | novemer | nt with bendi | ng of the anchor | holts: 90F Dehr | ris faded naint r | rust, and scale on t | he FPDZ |
| earings. | · No change from | | | .0.0 | it with bond. | | 2010, 001 . 2021 | io, idaoa paint, i | dot, and codic on t | GCCY |
| 8/25/2009 | Some cleaning | and spot p | painting was do | ne durir | ng the snoop | er inspection. Le | eft 5 percent in sta | ate 3 for allignme | ent. | ZQDZ |
| | • | | | | | • | ted. Several of th | ne bearings are a | at maximum move | ment ZZBZ |
| | of the pins at G
Areas of rust, p | | | nments | on attached | paperwork. | | | | SZMI |
| 7/24/2003 - | Still need to ve | rify numbe | rs with next sno | oper in | spection. | | | | | YADZ |
| 9/27/2001 - | Rusty with som | ne debris. | Verify numbers | and co | ndition with s | snooper. | | | | NIBL |
| 9/02/1998 - | ·_ | | | | | | | | | GKLH |
| Inspection I | Notes: | | | | | | | | | |
| Inspection I | Notes: - Fixed Bearing | 1 | | | | | | | | |
| | | 3 | 56 | ea. | | 90 | 10 | 0 | | |
| | s - Fixed Bearing | , | 56 | ea. | | 90 | 10 | 0 | % | |
| Element 313 | s - Fixed Bearing | , | 56 | ea. | | | | | % | |
| lement 313 | s - Fixed Bearing
1 | 2 | | ea. | | | | | % | |
| Previous Ins | - Fixed Bearing
1
pection Notes : | 2
It loss, and | scale. | ea. | | | | | % | FPDZ |
| Previous Ins
9/05/2013 | 1 pection Notes: Dirty, rust, pain | 2
at loss, and
m previous | scale. | | ng and spot | % | | % | % | FPDZ
GCCY |
| Previous Ins
19/05/2013
19/06/2011
18/25/2009
18/27/2007
ome of the | pection Notes : Dirty, rust, pain No change fror Dirty, some rus 5 percent in Cobearings. | 2
at loss, and
in previous
at, debris, a | scale. inspections. and scale. Some | e cleanii | • | %
painting was dor | % ne during the snoo | % oper inspection. | % overcoat painting | FPDZ
GCCY
ZQDZ
of ZZBZ |
| Previous Ins
9/05/2013
9/06/2011
8/25/2009
8/27/2007
ome of the
6/28/2005 | pection Notes: Dirty, rust, pain No change fror Dirty, some rus 5 percent in Cobearings. Areas of rust, p | 2 at loss, and previous pt, debris, a pondition State paint loss, a | scale. inspections. and scale. Somete 3 due to ruse | e cleanii
t and pit | tting. Some | %
painting was dor | % ne during the snoo | % oper inspection. | | FPDZ
GCCY
ZQDZ
of ZZBZ
SZMI |
| Previous Ins
9/05/2013
9/06/2011
8/25/2009
8/27/2007
ome of the
6/28/2005 | pection Notes: Dirty, rust, pain No change fror Dirty, some rus 5 percent in Cobearings. Areas of rust, p Still need to ve | at loss, and
in previous
st, debris, a
paint loss, a
rify numbe | scale. inspections. and scale. Some ate 3 due to rus and debris. rs with next sno | e cleanii
t and pit | spection. | %
painting was dor
dirt and debris a | % ne during the snoo | % oper inspection. | | FPDZ
GCCY
ZQDZ
of ZZBZ
SZMI
YADZ |
| Previous Ins
9/05/2013
9/06/2011
8/25/2009
8/27/2007
ome of the
6/28/2005
7/24/2003 | pection Notes: Dirty, rust, pain No change fror Dirty, some rus 5 percent in Cobearings. Areas of rust, p Still need to ve | at loss, and
in previous
st, debris, a
paint loss, a
rify numbe | scale. inspections. and scale. Some ate 3 due to rus and debris. rs with next sno | e cleanii
t and pit | spection. | %
painting was dor | % ne during the snoo | % oper inspection. | | FPDZ
GCCY
ZQDZ
of ZZBZ
SZMI
YADZ
NIBL |
| Previous Ins
9/05/2013
9/06/2011
8/25/2009
8/27/2007
ome of the
6/28/2005 | pection Notes: Dirty, rust, pain No change fror Dirty, some rus 5 percent in Cobearings. Areas of rust, p Still need to ve | at loss, and
in previous
st, debris, a
paint loss, a
rify numbe | scale. inspections. and scale. Some ate 3 due to rus and debris. rs with next sno | e cleanii
t and pit | spection. | %
painting was dor
dirt and debris a | % ne during the snoo | % oper inspection. | | FPDZ
GCCY
ZQDZ
of ZZBZ
SZMI
YADZ |

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|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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| Smart Flag | Scale Factor | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 334 | I - Metal Rail Co | ated | | 1 | | · · | | 1 | 1 | |
| | 1 | 3 | 662 | m. | | 60 | 25 | 10 | 5 | |
| | | | | | | % | % | % | % | 9 |
| revious Ins | spection Notes : | | | | | | | | | |
| rails. Delam
09/06/2011
08/25/2009
still has rust
the web in tl
08/27/2007 | ninated and spall No change from Sanding materi minor paint loss ne rotted areas. | ing on the man previous ial packed s, and top on the lower ra | curbs. inspections. R in the posts we coat worn dowr | Replaced
ebs near to
n to a fade | rail posts a
the curbs ha
led primer c | nd panels in (2) a
as rusted and we
oat. Some posts | areas in June 20°
akened the posts
that were bent o | 11.
s. This span is in
ver have been re | n-going repairs to
the best condition
epaired by reinforce
les. Most of the to | GCCY
n, but ZQDZ
cing |
| 06/28/2005
330.83 * 2 :
07/24/2003
09/27/2001
Rusty spots | - Faded paint an
= 661.66) Nate.
- Same as previo
- 331.2 * 2 = 662
. Chaulky paint v | d rust whe
ous report.
2.4m
with some | re paint is chip | on the N | lorth side of | • | | | e Right rail near Be | YADZ
NIBL |
| 06/28/2005
(330.83 * 2 :
07/24/2003
09/27/2001
Rusty spots | - Faded paint an
= 661.66) Nate.
- Same as previo
- 331.2 * 2 = 662
Chaulky paint to
- Some rusing th | d rust whe
ous report.
2.4m
with some | re paint is chip | on the N | lorth side of | • | | | • | YADZ |
| 06/28/2005
(330.83 * 2 :
07/24/2003
09/27/2001
Rusty spots
09/02/1998 | - Faded paint an
= 661.66) Nate.
- Same as previo
- 331.2 * 2 = 662
Chaulky paint to
- Some rusing th | d rust whe
ous report.
2.4m
with some
iroughout. | re paint is chip | on the N | orth side of | the structure bea | ar Bent 2 under h | neavy loads in th | • | YADZ
NIBL |
| 06/28/2005
(330.83 * 2
07/24/2003
09/27/2001
Rusty spots
09/02/1998 | - Faded paint an
= 661.66) Nate.
- Same as previd
- 331.2 * 2 = 662
. Chaulky paint v
- Some rusing th
Notes: | d rust whe
ous report.
2.4m
with some
iroughout. | re paint is chip | on the N | orth side of | • | ar Bent 2 under h | neavy loads in th | • | YADZ
NIBL |
| 06/28/2005
(330.83 * 2
07/24/2003
09/27/2001
Rusty spots
09/02/1998
Inspection | - Faded paint an e 661.66) Nate Same as previor - 331.2 * 2 = 662. Chaulky paint - Some rusing the Notes: | d rust whe
ous report.
2.4m
with some
troughout. | re paint is chip | on the Noint system Span: | lorth side of
n.
Appr-2 - T | the structure beautiful the st | ar Bent 2 under h | neavy loads in th | e left traffic lane. | YADZ
NIBL
GKLH |
| 06/28/2005
330.83 * 2
07/24/2003
09/27/2001
Rusty spots
09/02/1998
Inspection | - Faded paint an e 661.66) Nate Same as previor 331.2 * 2 = 662. Chaulky paint to Some rusing the Notes: | d rust whe ous report. 2.4m with some roughout. * * | re paint is chip | on the Noint system Span: | orth side of | the structure bea | ar Bent 2 under h | neavy loads in th | • | YADZ
NIBL |
| 06/28/2005
330.83 * 2
07/24/2003
09/27/2001
Rusty spots
09/02/1998
Inspection | - Faded paint an e 661.66) Nate Same as previorable as a specific control of the control of t | d rust whe bus report. 2.4m with some iroughout. * * | re paint is chipped Rail is rattling chips in the paint | on the Notint system Span: | n. Appr-2 - T | Tower Abutment Pct Stat 1 | ar Bent 2 under h | ***** Pct Stat 3 | e left traffic lane. Pct Stat 4 | YADZ
NIBL
GKLH |
| 06/28/2005
330.83 * 2
07/24/2003
09/27/2001
Rusty spots
09/02/1998
Inspection | - Faded paint an e 661.66) Nate Same as previor 331.2 * 2 = 662. Chaulky paint to Some rusing the Notes: | d rust whe ous report. 2.4m with some roughout. * * | re paint is chipped Rail is rattling chips in the paint | on the Noint system Span: | lorth side of
n.
Appr-2 - T | the structure beautiful the st | ar Bent 2 under h | neavy loads in th | e left traffic lane. | YADZ
NIBL
GKLH |

08/27/2007 - 11.30 * 10.91 = 123.28 Some wear in the wheel paths with reduced skid resistance. Some delamianted concrete along the joint.

09/06/2011 - Removed and then replaced top 2" with Silica Fume Concrete in June 2011. 08/25/2009 - Wear from studded tires. Small delaminated area near the guard angle.

Some tight mapping cracks throughout.

Inspection Notes:

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* * * * * * * * * Span : Appr-2 - Tower Abutment - Span 27 (cont.) * * * * * * * *

| Element Description | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------|------------------------|------------------------------------------|
| | Env | Quantity | Units | Insp Each | Pct Stat 1 | Pct Stat 2 | Pct Stat 3 | Pct Stat 4 | Pct Stat 5 |
| Element 215 - R/Conc Abutmer | nt Abutn | nent 27 | | | | | | | |
| 1 | 2 | 33 | 3 m. | | 95 | 5 | 0 | 0 | |
| | | | | | % | % | % | % | |
| Previous Inspection Notes : | | | | | | ļ. | | | |
| 09/05/2013 - Some tight crackin | ng in are | as near the er | nd posts | . Face of the | e backwall has s | ome tight cracks. | | | FPD |
| 09/06/2011 - No change from p | Ŭ | | | | | J | | | GCC |
| 08/25/2009 - Minor and tight cra
area of the bearings. | | | ckwall. S | Some graffti ı | painted on the b | ackwall and girde | er ends. Some d | irt and debris sitting | j ZQD |
| 08/27/2007 - No change with so | ome san | ding material a | around t | he bearings. | | | | | ZZB |
| 06/28/2005 - Same as previous | s reports. | . No major pro | oblems r | noted. | | | | | SZN |
| 07/24/2003 - 11.38 11.50 11. | .50 = 33 | .38m Abutme | ent face | and u-style v | wingwalls. Tight | shrinkage cracks | on the Abutme | nt backwall face. | YAD |
| 09/27/2001 - 11.38 * 1 = 11.38n | m | | | | | | | | NIBI |
| 09/02/1998 - None | | | | | | | | | GKL |
| 09/01/1992 - None | | | | | | | | | REF |
| Inspection Notes: | | | | | | | | | |
| Inspection Notes: Element 334 - Metal Rail Coate | | | | | | | | | |
| Inspection Notes: | ed 3 | 22 | e m. | | 70 | 25 | 5 | 0 | |
| Inspection Notes: Element 334 - Metal Rail Coate | | 22 | 2 m. | | 70
% | 25
% | 55 | | |
| Inspection Notes: Element 334 - Metal Rail Coate | | 22 | 2 m. | | | | | | |
| Inspection Notes: Element 334 - Metal Rail Coate 1 Previous Inspection Notes: 09/05/2013 - Rusty spots, thin p | 3 | | | ed post web | % | % | % | % | rom FPD. |
| Inspection Notes: Element 334 - Metal Rail Coate 1 Previous Inspection Notes: 09/05/2013 - Rusty spots, thin poast traffic hits. | gaint, ex | posed base pa | | ed post web | % | % | % | % | rom FPD. |
| Inspection Notes: Element 334 - Metal Rail Coate 1 Previous Inspection Notes: 09/05/2013 - Rusty spots, thin poast traffic hits. 09/06/2011 - No change from p | paint, exprevious i | posed base pa | aint, rust | | %
s at the curb line | % with section loss | % s to the webs. S | % | |
| Inspection Notes: Element 334 - Metal Rail Coate 1 Previous Inspection Notes: 09/05/2013 - Rusty spots, thin poast traffic hits. 09/06/2011 - No change from poetal p | paint, exprevious in packed in packe | posed base painspections. In the posts we | aint, rust
ebs near | the curbs. C | s at the curb line Concrete end pos as rusted and we | with section loss | % s to the webs. S | % crapes and dings fr | GCC
ZQD |
| Inspection Notes: Element 334 - Metal Rail Coate 1 Previous Inspection Notes: 09/05/2013 - Rusty spots, thin past traffic hits. 09/06/2011 - No change from p. 08/25/2009 - Sanding material pout still has rust, minor paint los 06/28/2005 - Concrete end post | paint, exporevious in packed in pack | posed base painspections. In the posts we op coat worn citight shrinkage | eint, rust
ebs near
ebs near | the curbs. Contact the curbs had a faded prime | s at the curb line Concrete end pos as rusted and we ler coat. | % with section loss sts are in good coeakened the post | % s to the webs. Sondition. s. This span is i | % crapes and dings fi | GCC
ZQD
n, ZZB |
| Inspection Notes: Element 334 - Metal Rail Coate 1 Previous Inspection Notes: 19/05/2013 - Rusty spots, thin past traffic hits. 19/06/2011 - No change from p. 18/25/2009 - Sanding material p. 18/27/2007 - Sanding material p. 18/27/2007 - Sanding material p. 18/27/2007 - Concrete end post be steel in areas. (10.82 * 2 = | paint, exporevious in packed in pack | posed base painspections. In the posts we op coat worn citight shrinkage | eint, rust
ebs near
ebs near | the curbs. Contact the curbs had a faded prime | s at the curb line Concrete end pos as rusted and we ler coat. | % with section loss sts are in good coeakened the post | % s to the webs. Sondition. s. This span is i | % crapes and dings fi | GCC
ZQD
n, ZZB |
| Inspection Notes: Element 334 - Metal Rail Coate 1 Previous Inspection Notes: 09/05/2013 - Rusty spots, thin post traffic hits. 09/06/2011 - No change from post/25/2009 - Sanding material post still has rust, minor paint los 06/28/2005 - Concrete end post/he steel in areas. (10.82 * 2 = 07/24/2003 - Same as previous 09/27/2001 - 11.3 * 2 = 22.6m | paint, exporevious in packed in packed in packed in ss, and to sts have the 21.64) Not so report. | posed base painspections. In the posts we op coat worn clight shrinkage Nate. | ebs near
ebs near
down to
e cracks. | the curbs. Control the curbs has a faded prime. Rust and fa | s at the curb line Concrete end pos as rusted and we ler coat. | % with section loss sts are in good coeakened the post | % s to the webs. Sondition. s. This span is i | % crapes and dings fi | GCC
ZQD
n, ZZB
le on SZM |
| Previous Inspection Notes: 29/05/2013 - Rusty spots, thin post traffic hits. 29/06/2011 - No change from post/25/2009 - Sanding material post still has rust, minor paint los/26/28/2005 - Concrete end post/he steel in areas. (10.82 * 2 = 27/24/2003 - Same as previous | paint, exporevious in packed in packed in packed in ss, and to sts have the 21.64) Not so report. | posed base painspections. In the posts we op coat worn clight shrinkage Nate. | ebs near
ebs near
down to
e cracks. | the curbs. Control the curbs has a faded prime. Rust and fa | s at the curb line Concrete end pos as rusted and we ler coat. | % with section loss sts are in good coeakened the post | % s to the webs. Sondition. s. This span is i | % crapes and dings fi | GCC
ZQD
n, ZZB
le on SZM
YAD |

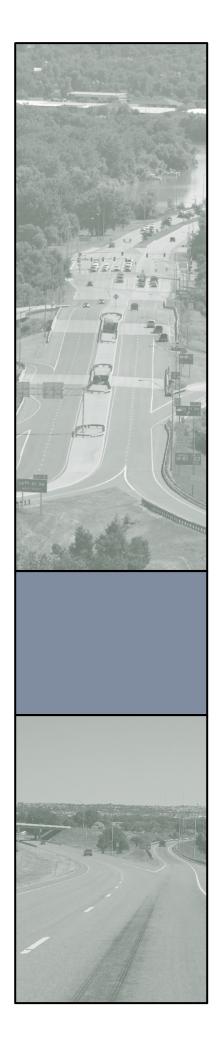


INITIAL ASSESSMENT FORM FOR STRUCTURE:

Page 17 of 17 Form: bms001d Printing Date : Thursday, May 22 2014

P00060094+08282 Continue

| General Inspection Notes | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 09/05/2013 - Snooper truck used on the River Spans and Havre bucket truck on the ground Spans. | FPDZ |
| 09/06/2011 - None | GCCY |
| 08/25/2009 - Paul from Helena Bridge and Crew checked this deck for delaminatin with groung penetrating radar and chain dragging this past summer. | ZQDZ |
| Watch the alignmnet or any more movement of the bearings on the West end as nearly touching the Tower Abutment wall. 08/27/2007 - None | ZZBZ |
| 06/28/2005 - NBI 58, deck, rated at a "5" due to delaminations and spalling of the deck surface; especially at the joints. NBI 60, substructure, rated at a "6" due to spalling and deteriorating concrete at columns for Bents 3 and 4. Also some spalling under bearings at Left-Outside of Bents 3 and 4. Per Infrastructure Engineers August 24, 2006 underwater inspection, the inspected substructure units are in satisfactory condition. There is no significant local or general scour present at the bridge site. There are no significant restrictions in the channel that will adversely impact flow. ITEM 61 CHANGED PER INFRASTRUCTURE ENGINEEERS UNDERWATER INSPECTION. 07/24/2003 - Some photos of rust blisters and section loss on the main span girder webs taken during FC inspection. | SZMI
YADZ |
| 09/27/2001 - Studded tire wear in the wheel paths. | NIBL |
| 09/02/1998 - None | GKLH |
| 09/01/1992 - Sufficiency Rating Calculation Accepted by ops\$u5963 at 2/26/97 11:10:39 Sufficiency Rating Calculation Accepted by ops\$u9004 at 2/19/97 14:23:34 | REFI |
| 01/01/1991 - Updated with tape 1994 | NB94 |
| 05/01/1989 - Updated with tape 1991 | NB91 |
| 04/01/1987 - Updated with tape 1989 | NB89 |
| 10/01/1984 - Updated with tape 1986 | NB86 |
| 02/01/1981 - Updated with tape 1984 | NB84 |
| | |
| | |
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| | |
| | |
| | |





APPENDIX B

Traffic Data Collection



Count Name: 01-TriHillFrontage_AirportRd TMC Site Code: TMC-01 Start Date: 07/16/2014 Page No: 1

Turning Movement Data

| | | | | | | j iviovcinc | in Data | | | | | | |
|------------------------|------|-------|-------|------------|------|-------------|----------|------------|------|-------|-------|------------|------------|
| | | Airpo | rt Rd | | | Tri Hill I | Frontage | | | | | | |
| 0 | | South | bound | | | North | bound | | | East | bound | | |
| Start Time | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 7:00 AM | 15 | 13 | 0 | 28 | 4 | 41 | 0 | 45 | 11 | 2 | 0 | 13 | 86 |
| 7:15 AM | 16 | 15 | 0 | 31 | 1 | 34 | 0 | 35 | 16 | 4 | 0 | 20 | 86 |
| 7:30 AM | 22 | 29 | 0 | 51 | 2 | 54 | 0 | 56 | 20 | 10 | 0 | 30 | 137 |
| 7:45 AM | 24 | 26 | 0 | 50 | 4 | 53 | 0 | 57 | 16 | 2 | 0 | 18 | 125 |
| Hourly Total | 77 | 83 | 0 | 160 | 11 | 182 | 0 | 193 | 63 | 18 | 0 | 81 | 434 |
| 8:00 AM | 26 | 19 | 0 | 45 | 2 | 36 | 0 | 38 | 19 | 2 | 0 | 21 | 104 |
| 8:15 AM | 25 | 14 | 0 | 39 | 1 | 46 | 0 | 47 | 28 | 5 | 0 | 33 | 119 |
| 8:30 AM | 31 | 13 | 0 | 44 | 0 | 34 | 0 | 34 | 15 | 5 | 0 | 20 | 98 |
| 8:45 AM | 26 | 6 | 0 | 32 | 0 | 50 | 0 | 50 | 8 | 2 | 0 | 10 | 92 |
| Hourly Total | 108 | 52 | 0 | 160 | 3 | 166 | 0 | 169 | 70 | 14 | 0 | 84 | 413 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 50 | 26 | 0 | 76 | 3 | 48 | 0 | 51 | 21 | 2 | 0 | 23 | 150 |
| 4:15 PM | 37 | 16 | 0 | 53 | 1 | 43 | 0 | 44 | 11 | 5 | 0 | 16 | 113 |
| 4:30 PM | 61 | 18 | 0 | 79 | 1 | 50 | 0 | 51 | 14 | 1 | 0 | 15 | 145 |
| 4:45 PM | 45 | 12 | 0 | 57 | 2 | 41 | 0 | 43 | 16 | 1 | 0 | 17 | 117 |
| Hourly Total | 193 | 72 | 0 | 265 | 7 | 182 | 0 | 189 | 62 | 9 | 0 | 71 | 525 |
| 5:00 PM | 46 | 21 | 0 | 67 | 3 | 31 | 0 | 34 | 33 | 1 | 0 | 34 | 135 |
| 5:15 PM | 55 | 19 | 0 | 74 | 3 | 38 | 0 | 41 | 12 | 4 | 0 | 16 | 131 |
| 5:30 PM | 57 | 16 | 0 | 73 | 4 | 38 | 0 | 42 | 12 | 2 | 0 | 14 | 129 |
| 5:45 PM | 51 | 19 | 0 | 70 | 2 | 35 | 0 | 37 | 14 | 5 | 0 | 19 | 126 |
| Hourly Total | 209 | 75 | 0 | 284 | 12 | 142 | 0 | 154 | 71 | 12 | 0 | 83 | 521 |
| Grand Total | 587 | 282 | 0 | 869 | 33 | 672 | 0 | 705 | 266 | 53 | 0 | 319 | 1893 |
| Approach % | 67.5 | 32.5 | - | - | 4.7 | 95.3 | - | - | 83.4 | 16.6 | - | - | - |
| Total % | 31.0 | 14.9 | - | 45.9 | 1.7 | 35.5 | - | 37.2 | 14.1 | 2.8 | - | 16.9 | - |
| Motorcycles | 17 | 2 | - | 19 | 0 | 14 | - | 14 | 1 | 1 | - | 2 | 35 |
| % Motorcycles | 2.9 | 0.7 | - | 2.2 | 0.0 | 2.1 | - | 2.0 | 0.4 | 1.9 | - | 0.6 | 1.8 |
| Cars | 325 | 168 | - | 493 | 13 | 343 | - | 356 | 154 | 15 | - | 169 | 1018 |
| % Cars | 55.4 | 59.6 | - | 56.7 | 39.4 | 51.0 | - | 50.5 | 57.9 | 28.3 | - | 53.0 | 53.8 |
| Light Goods Vehicles | 102 | 87 | - | 189 | 11 | 112 | - | 123 | 80 | 25 | - | 105 | 417 |
| % Light Goods Vehicles | 17.4 | 30.9 | - | 21.7 | 33.3 | 16.7 | - | 17.4 | 30.1 | 47.2 | - | 32.9 | 22.0 |
| Buses | 4 | 1 | - | 5 | 0 | 5 | - | 5 | 0 | 2 | - | 2 | 12 |
| % Buses | 0.7 | 0.4 | - | 0.6 | 0.0 | 0.7 | - | 0.7 | 0.0 | 3.8 | - | 0.6 | 0.6 |
| Single-Unit Trucks | 33 | 19 | - | 52 | 6 | 45 | - | 51 | 29 | 7 | - | 36 | 139 |
| % Single-Unit Trucks | 5.6 | 6.7 | - | 6.0 | 18.2 | 6.7 | - | 7.2 | 10.9 | 13.2 | - | 11.3 | 7.3 |
| Articulated Trucks | 105 | 5 | - | 110 | 0 | 153 | - | 153 | 2 | 3 | - | 5 | 268 |
| % Articulated Trucks | 17.9 | 1.8 | - | 12.7 | 0.0 | 22.8 | - | 21.7 | 0.8 | 5.7 | - | 1.6 | 14.2 |
| Bicycles on Road | 1 | 0 | - | 1 | 3 | 0 | - | 3 | 0 | 0 | - | 0 | 4 |
| % Bicycles on Road | 0.2 | 0.0 | - | 0.1 | 9.1 | 0.0 | - | 0.4 | 0.0 | 0.0 | - | 0.0 | 0.2 |

| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
|---------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | _ | - | - | - | - | _ | - | - | - | - | - | - | - |



Count Name: 01-TriHillFrontage_AirportRd TMC Site Code: TMC-01 Start Date: 07/16/2014 Page No: 3

| | | T |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| | Airport Rd [N] Out | |
| Alport Rd [W] Out In Total 2 2 2 4 181 182 380 98 105 380 98 105 319 624 74 74 315 319 624 0 25 0 0 53 266 P R L L | 07/16/2014 7:00 AM Ending AI 07/16/2014 6:00 PM Motorcycles Cass Light Goods Vehicles Buses Other | Fake Approach (E) Out In Total 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| | L T P 0 14 0 13 343 0 11 112 0 0 5 0 9 198 0 33 672 0 18 14 32 340 356 696 127 123 250 6 5 11 149 207 356 640 705 1345 Out In Total Tri Hill Frontage [S] | |

Turning Movement Data Plot



Count Name: 01-TriHillFrontage_AirportRd TMC Site Code: TMC-01 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

| | | | | i airiii ig i | VIOVCITICI | it i can i ic | on Data (| (1.30.7) | | | | | |
|------------------------|-------|----------|--------|---------------|------------|---------------|-----------|------------|-------|----------|--------|------------|------------|
| | | Airpo | ort Rd | | | Tri Hill F | Frontage | | | Airpo | ort Rd | | |
| Start Time | | South | bound | | | North | bound | | | Easth | bound | | |
| Start Time | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 7:30 AM | 22 | 29 | 0 | 51 | 2 | 54 | 0 | 56 | 20 | 10 | 0 | 30 | 137 |
| 7:45 AM | 24 | 26 | 0 | 50 | 4 | 53 | 0 | 57 | 16 | 2 | 0 | 18 | 125 |
| 8:00 AM | 26 | 19 | 0 | 45 | 2 | 36 | 0 | 38 | 19 | 2 | 0 | 21 | 104 |
| 8:15 AM | 25 | 14 | 0 | 39 | 1 | 46 | 0 | 47 | 28 | 5 | 0 | 33 | 119 |
| Total | 97 | 88 | 0 | 185 | 9 | 189 | 0 | 198 | 83 | 19 | 0 | 102 | 485 |
| Approach % | 52.4 | 47.6 | - | - | 4.5 | 95.5 | - | - | 81.4 | 18.6 | - | - | - |
| Total % | 20.0 | 18.1 | - | 38.1 | 1.9 | 39.0 | _ | 40.8 | 17.1 | 3.9 | - | 21.0 | - |
| PHF | 0.933 | 0.759 | - | 0.907 | 0.563 | 0.875 | - | 0.868 | 0.741 | 0.475 | - | 0.773 | 0.885 |
| Motorcycles | 1 | 0 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 |
| % Motorcycles | 1.0 | 0.0 | - | 0.5 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.2 |
| Cars | 56 | 56 | - | 112 | 3 | 91 | - | 94 | 34 | 5 | - | 39 | 245 |
| % Cars | 57.7 | 63.6 | - | 60.5 | 33.3 | 48.1 | - | 47.5 | 41.0 | 26.3 | - | 38.2 | 50.5 |
| Light Goods Vehicles | 15 | 26 | - | 41 | 4 | 44 | - | 48 | 31 | 9 | - | 40 | 129 |
| % Light Goods Vehicles | 15.5 | 29.5 | - | 22.2 | 44.4 | 23.3 | - | 24.2 | 37.3 | 47.4 | - | 39.2 | 26.6 |
| Buses | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 0 | 1 | - | 1 | 2 |
| % Buses | 0.0 | 1.1 | - | 0.5 | 0.0 | 0.0 | _ | 0.0 | 0.0 | 5.3 | - | 1.0 | 0.4 |
| Single-Unit Trucks | 8 | 3 | - | 11 | 2 | 14 | - | 16 | 17 | 3 | - | 20 | 47 |
| % Single-Unit Trucks | 8.2 | 3.4 | - | 5.9 | 22.2 | 7.4 | - | 8.1 | 20.5 | 15.8 | - | 19.6 | 9.7 |
| Articulated Trucks | 17 | 2 | - | 19 | 0 | 40 | _ | 40 | 1 | 1 | _ | 2 | 61 |
| % Articulated Trucks | 17.5 | 2.3 | - | 10.3 | 0.0 | 21.2 | - | 20.2 | 1.2 | 5.3 | - | 2.0 | 12.6 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | <u>-</u> | 0 | - | - | - | 0 | - | - | <u>-</u> | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 01-TriHillFrontage_AirportRd TMC Site Code: TMC-01 Start Date: 07/16/2014 Page No: 5

| | Airport Rd [N] Out In Total 0 1 1 125 112 237 75 41 116 0 1 1 72 30 102 272 185 457 0 1 0 0 56 56 0 26 15 0 1 0 0 5 25 0 88 97 0 R T P | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Author Rd (WI N Cross Color Rd (WI Color Rd | Peak Hour Data O7/16/2014 7:30 AM Ending At O7/16/2014 8:30 AM Motorcycles Cars Cars Ligo Goods Vehicles Buses Other | Fake Approach [E] Out In Total O |
| | L T P 0 0 0 0 3 91 0 4 44 0 0 0 0 0 2 54 0 9 188 0 1 0 1 61 94 155 24 48 72 1 0 1 29 56 85 116 198 314 Out In Total Tri Hill Frontage [S] | |

Turning Movement Peak Hour Data Plot (7:30 AM)



Count Name: 01-TriHillFrontage_AirportRd TMC Site Code: TMC-01 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:30 PM)

| | | | | *10 * 011101 | it i bait i ic | on Data (| (1.00 1 101) | | | | | |
|-------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| | Airpo | rt Rd | | | Tri Hill F | rontage | | | Airpo | ort Rd | | |
| | South | bound | | | North | bound | | | Easth | oound | | |
| Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 61 | 18 | 0 | 79 | 1 | 50 | 0 | 51 | 14 | 1 | 0 | 15 | 145 |
| 45 | 12 | 0 | 57 | 2 | 41 | 0 | 43 | 16 | 1 | 0 | 17 | 117 |
| 46 | 21 | 0 | 67 | 3 | 31 | 0 | 34 | 33 | 1 | 0 | 34 | 135 |
| 55 | 19 | 0 | 74 | 3 | 38 | 0 | 41 | 12 | 4 | 0 | 16 | 131 |
| 207 | 70 | 0 | 277 | 9 | 160 | 0 | 169 | 75 | 7 | 0 | 82 | 528 |
| 74.7 | 25.3 | - | - | 5.3 | 94.7 | - | - | 91.5 | 8.5 | - | - | - |
| 39.2 | 13.3 | - | 52.5 | 1.7 | 30.3 | _ | 32.0 | 14.2 | 1.3 | - | 15.5 | - |
| 0.848 | 0.833 | - | 0.877 | 0.750 | 0.800 | - | 0.828 | 0.568 | 0.438 | - | 0.603 | 0.910 |
| 10 | 0 | - | 10 | 0 | 3 | - | 3 | 0 | 0 | - | 0 | 13 |
| 4.8 | 0.0 | - | 3.6 | 0.0 | 1.9 | - | 1.8 | 0.0 | 0.0 | - | 0.0 | 2.5 |
| 115 | 42 | - | 157 | 5 | 88 | - | 93 | 53 | 3 | - | 56 | 306 |
| 55.6 | 60.0 | - | 56.7 | 55.6 | 55.0 | - | 55.0 | 70.7 | 42.9 | - | 68.3 | 58.0 |
| 42 | 17 | - | 59 | 2 | 14 | _ | 16 | 20 | 4 | - | 24 | 99 |
| 20.3 | 24.3 | - | 21.3 | 22.2 | 8.8 | - | 9.5 | 26.7 | 57.1 | - | 29.3 | 18.8 |
| 1 | 0 | - | 1 | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 2 |
| 0.5 | 0.0 | - | 0.4 | 0.0 | 0.6 | - | 0.6 | 0.0 | 0.0 | - | 0.0 | 0.4 |
| 8 | 9 | - | 17 | 2 | 14 | - | 16 | 2 | 0 | - | 2 | 35 |
| 3.9 | 12.9 | - | 6.1 | 22.2 | 8.8 | - | 9.5 | 2.7 | 0.0 | - | 2.4 | 6.6 |
| 31 | 2 | - | 33 | 0 | 40 | _ | 40 | 0 | 0 | _ | 0 | 73 |
| 15.0 | 2.9 | - | 11.9 | 0.0 | 25.0 | - | 23.7 | 0.0 | 0.0 | - | 0.0 | 13.8 |
| 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| - | <u>-</u> | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 61 45 46 55 207 74.7 39.2 0.848 10 4.8 115 55.6 42 20.3 1 0.5 8 3.9 31 15.0 0 0.0 | South Thru Right 61 18 45 12 46 21 55 19 207 70 74.7 25.3 39.2 13.3 0.848 0.833 10 0 4.8 0.0 115 42 55.6 60.0 42 17 20.3 24.3 1 0 0.5 0.0 8 9 3.9 12.9 31 2 15.0 2.9 0 0 0.0 0.0 | 61 18 0 45 12 0 46 21 0 55 19 0 207 70 0 74.7 25.3 - 39.2 13.3 - 0.848 0.833 - 10 0 - 4.8 0.0 - 115 42 - 55.6 60.0 - 42 17 - 20.3 24.3 - 1 0 0 - 0.5 0.0 - 8 9 - 3.9 12.9 - 31 2 - 15.0 2.9 - 0 0 0 - 0.0 0.0 - | Airport Rd Southbound Thru Right Peds App. Total 61 18 0 79 45 12 0 57 46 21 0 67 55 19 0 74 207 70 0 277 74.7 25.3 39.2 13.3 - 52.5 0.848 0.833 - 0.877 10 0 - 10 4.8 0.0 - 3.6 115 42 - 157 55.6 60.0 - 56.7 42 17 - 59 20.3 24.3 - 21.3 1 0 - 1 0.5 0.0 - 0.4 8 9 - 17 3.9 12.9 - 6.1 31 2 - 33 15.0 2.9 - 11.9 0 0 0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 | Airport Rd Southbound Thru Right Peds App. Total Left 61 18 0 79 1 45 12 0 57 2 46 21 0 67 3 55 19 0 74 3 207 70 0 277 9 74.7 25.3 | Airport Rd Southbound Thru Right Peds App. Total Left Thru 61 18 0 79 1 50 45 12 0 57 2 41 46 21 0 67 3 311 55 19 0 74 3 38 207 70 0 277 9 160 74.7 25.3 - 5.3 94.7 39.2 13.3 - 52.5 1.7 30.3 0.848 0.833 - 0.877 0.750 0.800 10 0 - 10 0 3 4.8 0.0 - 3.6 0.0 1.9 115 42 - 157 5 88 55.6 60.0 - 56.7 55.6 55.0 42 17 - 59 2 14 20.3 24.3 - 21.3 22.2 8.8 1 0 - 1 0 0 1 0.5 0.0 - 0.4 0.0 0.6 8 9 - 17 2 14 3.9 12.9 - 6.1 22.2 8.8 31 2 - 33 0 40 15.0 2.9 - 11.9 0.0 25.0 0 0 0 0 0 0 0 0 0 | Airport Rd Southbound Tri Hill Frontage Northbound Thru Right Peds App. Total Left Thru Peds 61 18 0 79 1 50 0 45 12 0 57 2 41 0 46 21 0 67 3 31 0 55 19 0 74 3 38 0 207 70 0 277 9 160 0 74.7 25.3 - - 5.3 94.7 - 39.2 13.3 - 52.5 1.7 30.3 - 0.848 0.833 - 0.877 0.750 0.800 - 10 0 - 10 0 3 - 4.8 0.0 - 3.6 0.0 1.9 - 115 42 - 157 5 88 | Northbound | Airport Rd Southbound Southbound Southbound Thru Right Peds App. Total Left Thru Peds App. Total Thru Thru | Airport Rd Southbound Thru Right Peds App. Total 18 0 79 1 50 0 51 14 15 14 1 14 1 14 1 14 1 15 14 15 15 15 15 15 15 15 15 15 15 15 15 15 | Airport Rd Southbound Sou | Airport Rd Southbound Rept |



Count Name: 01-TriHillFrontage_AirportRd TMC Site Code: TMC-01 Start Date: 07/16/2014 Page No: 7

| | | Airport Rd [N] Out In Total 3 10 13 141 157 298 34 59 93 1 1 2 56 50 106 235 277 512 | |
|---------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Arrort Rd [W] Out In Total 0 0 0 0 47 56 103 19 24 43 0 0 0 0 13 2 15 79 82 161 | 3 - 0 m 4 0 0 r m | Peak Hour Data O7/16/2014 4:30 PM Ending At O7/16/2014 5:30 PM Motorcycles Cars Light Goods Vehicles Buses Other | Fake Approach [E] Out In Total 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| | | L T P 0 3 0 0 5 88 0 0 2 14 0 0 0 1 0 0 2 54 0 9 9 160 0 10 3 13 118 93 211 46 16 62 1 1 2 2 39 56 95 214 169 383 Out In Total Tri Hill Frontage [S] | |

Turning Movement Peak Hour Data Plot (4:30 PM)



Count Name: 01-TriHillFrontage_AirportRd TMC Site Code: TMC-01 Start Date: 07/16/2014 Page No: 8



Count Name: 02-I15NB_AirportRd TMC Site Code: TMC-02 Start Date: 07/16/2014

Page No: 1

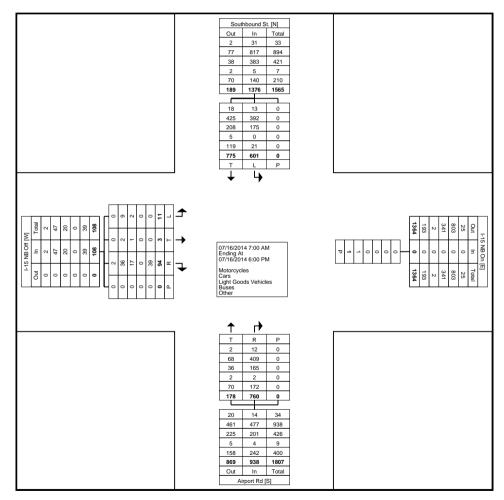
Turning Movement Data

| | | | | | ı | i uii | mig wio | VOITION L | Julu | | i | | | | | |
|------------------------|------|---------|----------|------------|-------|-------|---------|------------|------|------------|-------|------|-------------|------|------------|------------|
| | | Southbo | ound St. | | | Airpo | ort Rd | | I-15 | NB On | | | I-15 NB Off | | | |
| O:T | | South | bound | | | North | bound | | Wes | stbound | | | Eastbound | | | |
| Start Time | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 23 | 16 | 0 | 39 | 44 | 8 | 0 | 52 | 1 | 0 | 6 | 0 | 2 | 0 | 8 | 99 |
| 7:15 AM | 28 | 16 | 0 | 44 | 42 | 8 | 0 | 50 | 0 | 0 | 2 | 1 | 1 | 0 | 4 | 98 |
| 7:30 AM | 48 | 16 | 0 | 64 | 64 | 9 | 0 | 73 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 142 |
| 7:45 AM | 47 | 12 | 0 | 59 | 54 | 15 | 0 | 69 | 0 | 0 | 3 | 0 | 2 | 0 | 5 | 133 |
| Hourly Total | 146 | 60 | 0 | 206 | 204 | 40 | 0 | 244 | 1 | 0 | 15 | 1 | 6 | 0 | 22 | 472 |
| 8:00 AM | 43 | 28 | 0 | 71 | 47 | 8 | 0 | 55 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 128 |
| 8:15 AM | 35 | 23 | 0 | 58 | 57 | 17 | 0 | 74 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 137 |
| 8:30 AM | 33 | 17 | 0 | 50 | 40 | 10 | 0 | 50 | 0 | 0 | 8 | 0 | 1 | 0 | 9 | 109 |
| 8:45 AM | 29 | 19 | 0 | 48 | 44 | 13 | 0 | 57 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 108 |
| Hourly Total | 140 | 87 | 0 | 227 | 188 | 48 | 0 | 236 | 0 | 0 | 17 | 0 | 2 | 0 | 19 | 482 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 68 | 107 | 0 | 175 | 60 | 8 | 0 | 68 | 0 | 0 | 8 | 0 | 0 | 0 | 8 | 251 |
| 4:15 PM | 46 | 50 | 0 | 96 | 47 | 9 | 0 | 56 | 0 | 0 | 9 | 1 | 0 | 0 | 10 | 162 |
| 4:30 PM | 68 | 111 | 0 | 179 | 47 | 17 | 0 | 64 | 0 | 0 | 10 | 1 | 1 | 0 | 12 | 255 |
| 4:45 PM | 54 | 39 | 0 | 93 | 43 | 13 | 0 | 56 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 154 |
| Hourly Total | 236 | 307 | 0 | 543 | 197 | 47 | 0 | 244 | 0 | 0 | 31 | 2 | 2 | 0 | 35 | 822 |
| 5:00 PM | 63 | 53 | 0 | 116 | 55 | 8 | 0 | 63 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 184 |
| 5:15 PM | 66 | 44 | 0 | 110 | 39 | 12 | 0 | 51 | 0 | 0 | 7 | 0 | 1 | 0 | 8 | 169 |
| 5:30 PM | 65 | 29 | 0 | 94 | 39 | 11 | 0 | 50 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 151 |
| 5:45 PM | 59 | 21 | 0 | 80 | 38 | 12 | 0 | 50 | 0 | 0 | 12 | 0 | 0 | 0 | 12 | 142 |
| Hourly Total | 253 | 147 | 0 | 400 | 171 | 43 | 0 | 214 | 0 | 0 | 31 | 0 | 1 | 0 | 32 | 646 |
| Grand Total | 775 | 601 | 0 | 1376 | 760 | 178 | 0 | 938 | 1 | 0 | 94 | 3 | 11 | 0 | 108 | 2422 |
| Approach % | 56.3 | 43.7 | - | - | 81.0 | 19.0 | - | - | - | - | 87.0 | 2.8 | 10.2 | - | - | - |
| Total % | 32.0 | 24.8 | - | 56.8 | 31.4 | 7.3 | - | 38.7 | - | 0.0 | 3.9 | 0.1 | 0.5 | - | 4.5 | - |
| Motorcycles | 18 | 13 | - | 31 | 12 | 2 | - | 14 | - | 0 | 2 | 0 | 0 | - | 2 | 47 |
| % Motorcycles | 2.3 | 2.2 | - | 2.3 | 1.6 | 1.1 | - | 1.5 | - | - | 2.1 | 0.0 | 0.0 | - | 1.9 | 1.9 |
| Cars | 425 | 392 | - | 817 | 409 | 68 | - | 477 | - | 0 | 36 | 2 | 9 | - | 47 | 1341 |
| % Cars | 54.8 | 65.2 | - | 59.4 | 53.8 | 38.2 | - | 50.9 | - | - | 38.3 | 66.7 | 81.8 | - | 43.5 | 55.4 |
| Light Goods Vehicles | 208 | 175 | - | 383 | 165 | 36 | - | 201 | - | 0 | 17 | 1 | 2 | - | 20 | 604 |
| % Light Goods Vehicles | 26.8 | 29.1 | - | 27.8 | 21.7 | 20.2 | - | 21.4 | - | - | 18.1 | 33.3 | 18.2 | - | 18.5 | 24.9 |
| Buses | 5 | 0 | - | 5 | 2 | 2 | - | 4 | - | 0 | 0 | 0 | 0 | - | 0 | 9 |
| % Buses | 0.6 | 0.0 | - | 0.4 | 0.3 | 1.1 | - | 0.4 | - | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.4 |
| Single-Unit Trucks | 45 | 13 | - | 58 | 78 | 17 | - | 95 | - | 0 | 8 | 0 | 0 | - | 8 | 161 |
| % Single-Unit Trucks | 5.8 | 2.2 | - | 4.2 | 10.3 | 9.6 | - | 10.1 | - | - | 8.5 | 0.0 | 0.0 | - | 7.4 | 6.6 |
| Articulated Trucks | 72 | 8 | - | 80 | 94 | 53 | - | 147 | - | 0 | 31 | 0 | 0 | - | 31 | 258 |
| % Articulated Trucks | 9.3 | 1.3 | - | 5.8 | 12.4 | 29.8 | - | 15.7 | - | - | 33.0 | 0.0 | 0.0 | - | 28.7 | 10.7 |
| Bicycles on Road | 2 | 0 | - | 2 | 0 | 0 | - | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 2 |
| % Bicycles on Road | 0.3 | 0.0 | - | 0.1 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |

| Pedestrians | - | - | 0 | - | - | - | 0 | - | 1 | - | - | - | - | 0 | - | - |
|---------------|---|---|---|---|---|---|---|---|-------|---|---|---|---|---|---|---|
| % Pedestrians | _ | _ | - | _ | _ | _ | _ | _ | 100.0 | _ | _ | _ | _ | _ | | _ |



Count Name: 02-I15NB_AirportRd TMC Site Code: TMC-02 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



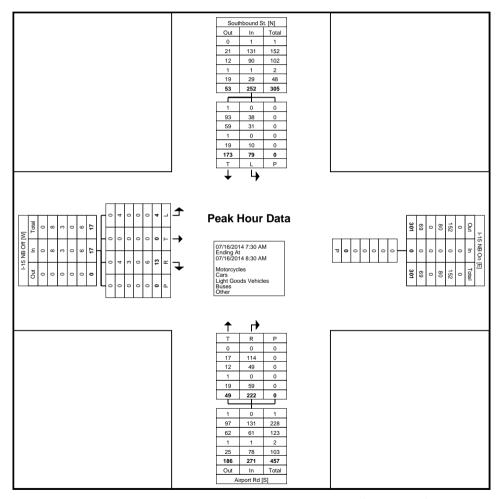
Count Name: 02-I15NB_AirportRd TMC Site Code: TMC-02 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

| i | | | | | ı anınış | g iviovoi | iloilt i o | ak i loui i | Julia (1. | .00 / ((1)) | | | | | | ı |
|------------------------|-------|---------|----------|------------|----------|-----------|------------|-------------|-----------|-------------|-------|-------|-------------|------|------------|------------|
| | | Southbo | ound St. | | | Airpo | ort Rd | | I-15 | NB On | | | I-15 NB Off | | | |
| Start Times | | South | bound | | | North | bound | | Wes | stbound | | | Eastbound | | | |
| Start Time | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:30 AM | 48 | 16 | 0 | 64 | 64 | 9 | 0 | 73 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 142 |
| 7:45 AM | 47 | 12 | 0 | 59 | 54 | 15 | 0 | 69 | 0 | 0 | 3 | 0 | 2 | 0 | 5 | 133 |
| 8:00 AM | 43 | 28 | 0 | 71 | 47 | 8 | 0 | 55 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 128 |
| 8:15 AM | 35 | 23 | 0 | 58 | 57 | 17 | 0 | 74 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 137 |
| Total | 173 | 79 | 0 | 252 | 222 | 49 | 0 | 271 | 0 | 0 | 13 | 0 | 4 | 0 | 17 | 540 |
| Approach % | 68.7 | 31.3 | - | - | 81.9 | 18.1 | - | - | - | - | 76.5 | 0.0 | 23.5 | - | - | - |
| Total % | 32.0 | 14.6 | - | 46.7 | 41.1 | 9.1 | - | 50.2 | - | 0.0 | 2.4 | 0.0 | 0.7 | - | 3.1 | - |
| PHF | 0.901 | 0.705 | - | 0.887 | 0.867 | 0.721 | - | 0.916 | - | 0.000 | 0.813 | 0.000 | 0.500 | - | 0.850 | 0.951 |
| Motorcycles | 1 | 0 | - | 1 | 0 | 0 | - | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Motorcycles | 0.6 | 0.0 | - | 0.4 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 | _ | 0.0 | - | 0.0 | 0.2 |
| Cars | 93 | 38 | - | 131 | 114 | 17 | - | 131 | - | 0 | 4 | 0 | 4 | - | 8 | 270 |
| % Cars | 53.8 | 48.1 | - | 52.0 | 51.4 | 34.7 | - | 48.3 | - | - | 30.8 | - | 100.0 | - | 47.1 | 50.0 |
| Light Goods Vehicles | 59 | 31 | - | 90 | 49 | 12 | - | 61 | - | 0 | 3 | 0 | 0 | - | 3 | 154 |
| % Light Goods Vehicles | 34.1 | 39.2 | - | 35.7 | 22.1 | 24.5 | - | 22.5 | - | - | 23.1 | - | 0.0 | - | 17.6 | 28.5 |
| Buses | 1 | 0 | - | 1 | 0 | 1 | - | 1 | - | 0 | 0 | 0 | 0 | - | 0 | 2 |
| % Buses | 0.6 | 0.0 | - | 0.4 | 0.0 | 2.0 | - | 0.4 | - | - | 0.0 | _ | 0.0 | - | 0.0 | 0.4 |
| Single-Unit Trucks | 12 | 4 | - | 16 | 33 | 5 | - | 38 | - | 0 | 1 | 0 | 0 | - | 1 | 55 |
| % Single-Unit Trucks | 6.9 | 5.1 | - | 6.3 | 14.9 | 10.2 | - | 14.0 | - | - | 7.7 | - | 0.0 | - | 5.9 | 10.2 |
| Articulated Trucks | 7 | 6 | - | 13 | 26 | 14 | - | 40 | - | 0 | 5 | 0 | 0 | - | 5 | 58 |
| % Articulated Trucks | 4.0 | 7.6 | - | 5.2 | 11.7 | 28.6 | - | 14.8 | - | - | 38.5 | - | 0.0 | - | 29.4 | 10.7 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 | _ | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | 0 | - | 1 | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | _ | | - | - | - | - | - | - | - | _ | - |



Count Name: 02-I15NB_AirportRd TMC Site Code: TMC-02 Start Date: 07/16/2014 Page No: 5



Turning Movement Peak Hour Data Plot (7:30 AM)



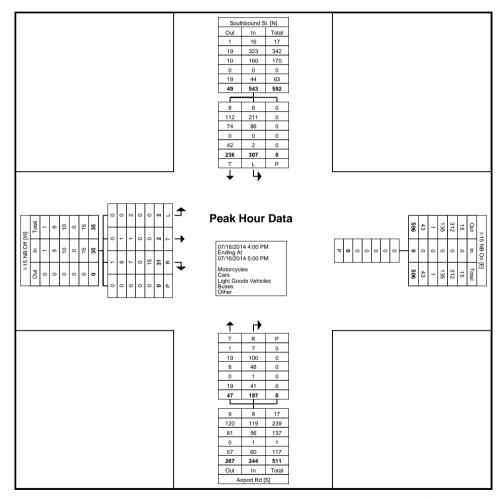
Count Name: 02-I15NB_AirportRd TMC Site Code: TMC-02 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:00 PM)

| i | | | | | ı anınış | g iviovoi | iloilt i o | ak i loui i | Julu (+. | .00 1 111) | | | | | | 1 |
|------------------------|-------|---------|----------|------------|----------|-----------|------------|-------------|----------|------------|-------|-------|-------------|------|------------|------------|
| | | Southbo | ound St. | | | Airpo | ort Rd | | I-15 | NB On | | | I-15 NB Off | | | 1 |
| Otant Time | | South | bound | | | North | bound | | Wes | tbound | | | Eastbound | | | |
| Start Time | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 4:00 PM | 68 | 107 | 0 | 175 | 60 | 8 | 0 | 68 | 0 | 0 | 8 | 0 | 0 | 0 | 8 | 251 |
| 4:15 PM | 46 | 50 | 0 | 96 | 47 | 9 | 0 | 56 | 0 | 0 | 9 | 1 | 0 | 0 | 10 | 162 |
| 4:30 PM | 68 | 111 | 0 | 179 | 47 | 17 | 0 | 64 | 0 | 0 | 10 | 1 | 1 | 0 | 12 | 255 |
| 4:45 PM | 54 | 39 | 0 | 93 | 43 | 13 | 0 | 56 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 154 |
| Total | 236 | 307 | 0 | 543 | 197 | 47 | 0 | 244 | 0 | 0 | 31 | 2 | 2 | 0 | 35 | 822 |
| Approach % | 43.5 | 56.5 | - | - | 80.7 | 19.3 | - | - | - | - | 88.6 | 5.7 | 5.7 | - | - | - |
| Total % | 28.7 | 37.3 | - | 66.1 | 24.0 | 5.7 | - | 29.7 | - | 0.0 | 3.8 | 0.2 | 0.2 | - | 4.3 | - |
| PHF | 0.868 | 0.691 | - | 0.758 | 0.821 | 0.691 | - | 0.897 | - | 0.000 | 0.775 | 0.500 | 0.500 | - | 0.729 | 0.806 |
| Motorcycles | 8 | 8 | - | 16 | 7 | 1 | - | 8 | - | 0 | 1 | 0 | 0 | - | 1 | 25 |
| % Motorcycles | 3.4 | 2.6 | - | 2.9 | 3.6 | 2.1 | - | 3.3 | - | - | 3.2 | 0.0 | 0.0 | - | 2.9 | 3.0 |
| Cars | 112 | 211 | - | 323 | 100 | 19 | - | 119 | - | 0 | 8 | 1 | 0 | - | 9 | 451 |
| % Cars | 47.5 | 68.7 | - | 59.5 | 50.8 | 40.4 | - | 48.8 | - | - | 25.8 | 50.0 | 0.0 | - | 25.7 | 54.9 |
| Light Goods Vehicles | 74 | 86 | - | 160 | 48 | 8 | - | 56 | - | 0 | 7 | 1 | 2 | - | 10 | 226 |
| % Light Goods Vehicles | 31.4 | 28.0 | - | 29.5 | 24.4 | 17.0 | - | 23.0 | - | - | 22.6 | 50.0 | 100.0 | - | 28.6 | 27.5 |
| Buses | 0 | 0 | - | 0 | 1 | 0 | - | 1 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Buses | 0.0 | 0.0 | _ | 0.0 | 0.5 | 0.0 | - | 0.4 | - | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Single-Unit Trucks | 12 | 2 | - | 14 | 13 | 5 | - | 18 | - | 0 | 2 | 0 | 0 | - | 2 | 34 |
| % Single-Unit Trucks | 5.1 | 0.7 | - | 2.6 | 6.6 | 10.6 | - | 7.4 | - | - | 6.5 | 0.0 | 0.0 | - | 5.7 | 4.1 |
| Articulated Trucks | 29 | 0 | - | 29 | 28 | 14 | - | 42 | - | 0 | 13 | 0 | 0 | - | 13 | 84 |
| % Articulated Trucks | 12.3 | 0.0 | - | 5.3 | 14.2 | 29.8 | - | 17.2 | - | - | 41.9 | 0.0 | 0.0 | - | 37.1 | 10.2 |
| Bicycles on Road | 1 | 0 | - | 1 | 0 | 0 | - | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.4 | 0.0 | - | 0.2 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | 0 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - |



Count Name: 02-I15NB_AirportRd TMC Site Code: TMC-02 Start Date: 07/16/2014 Page No: 7



Turning Movement Peak Hour Data Plot (4:00 PM)



Count Name: 02-I15NB_AirportRd TMC Site Code: TMC-02 Start Date: 07/16/2014 Page No: 8



Count Name: 03-I15SBOn_AirportRd TMC Site Code: TMC-03 Start Date: 07/16/2014 Page No: 1

Turning Movement Data

| Start Time | | | Airport Rd
Southbound | | 3 | | Airpo
Northi | | | | SB On
tbound | |
|------------------------|-------|------|--------------------------|------|------------|------|-----------------|------|------------|------|-----------------|------------|
| Start Time | Right | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Peds | App. Total | Int. Total |
| 7:00 AM | 0 | 41 | 0 | 0 | 41 | 5 | 5 | 0 | 10 | 0 | 0 | 51 |
| 7:15 AM | 1 | 44 | 0 | 0 | 45 | 4 | 5 | 0 | 9 | 0 | 0 | 54 |
| 7:30 AM | 1 | 63 | 0 | 0 | 64 | 5 | 5 | 0 | 10 | 0 | 0 | 74 |
| 7:45 AM | 1 | 61 | 0 | 0 | 62 | 9 | 9 | 0 | 18 | 0 | 0 | 80 |
| Hourly Total | 3 | 209 | 0 | 0 | 212 | 23 | 24 | 0 | 47 | 0 | 0 | 259 |
| 8:00 AM | 0 | 72 | 0 | 0 | 72 | 2 | 6 | 0 | 8 | 0 | 0 | 80 |
| 8:15 AM | 4 | 55 | 0 | 0 | 59 | 7 | 12 | 0 | 19 | 0 | . 0 | 78 |
| 8:30 AM | 1 | 55 | 1 | 0 | 57 | 6 | 5 | 0 | 11 | 0 | 0 | 68 |
| 8:45 AM | 2 | 48 | 0 | 0 | 50 | 8 | 5 | 0 | 13 | 0 | 0 | 63 |
| Hourly Total | 7 | 230 | 1 | 0 | 238 | 23 | 28 | 0 | 51 | 0 | . 0 | 289 |
| *** BREAK *** | - | | <u>-</u> | - | - | - | - | - | - | - | <u>-</u> | - |
| 4:00 PM | 5 | 175 | 0 | 0 | 180 | 4 | 3 | 0 | 7 | 0 | 0 | 187 |
| 4:15 PM | 3 | 94 | 0 | 0 | 97 | 4 | 5 | 0 | 9 | 0 | 0 | 106 |
| 4:30 PM | 2 | 182 | 0 | 0 | 184 | 6 | 10 | 0 | 16 | 0 | 0 | 200 |
| 4:45 PM | 4 | 91 | 0 | 0 | 95 | 7 | 7 | 0 | 14 | 0 | 0 | 109 |
| Hourly Total | 14 | 542 | 0 | 0 | 556 | 21 | 25 | 0 | 46 | 0 | 0 | 602 |
| 5:00 PM | 0 | 117 | 0 | 0 | 117 | 2 | 6 | 0 | 8 | 0 | 0 | 125 |
| 5:15 PM | 2 | 108 | 0 | 0 | 110 | 4 | 9 | 0 | 13 | 0 | 0 | 123 |
| 5:30 PM | 4 | 96 | 0 | 0 | 100 | 3 | 6 | 0 | 9 | 0 | 0 | 109 |
| 5:45 PM | 1 | 78 | 0 | 0 | 79 | 2 | 9 | 0 | 11 | 0 | 0 | 90 |
| Hourly Total | 7 | 399 | 0 | 0 | 406 | 11 | 30 | 0 | 41 | 0 | 0 | 447 |
| Grand Total | 31 | 1380 | 1 | 0 | 1412 | 78 | 107 | 0 | 185 | 0 | 0 | 1597 |
| Approach % | 2.2 | 97.7 | 0.1 | - | - | 42.2 | 57.8 | - | - | - | - | - |
| Total % | 1.9 | 86.4 | 0.1 | - | 88.4 | 4.9 | 6.7 | - | 11.6 | - | 0.0 | - |
| Motorcycles | 0 | 32 | 0 | - | 32 | 1 | 1 | - | 2 | - | 0 | 34 |
| % Motorcycles | 0.0 | 2.3 | 0.0 | - | 2.3 | 1.3 | 0.9 | - | 1.1 | - | - | 2.1 |
| Cars | 20 | 765 | 1 | - | 786 | 43 | 25 | - | 68 | - | 0 | 854 |
| % Cars | 64.5 | 55.4 | 100.0 | - | 55.7 | 55.1 | 23.4 | - | 36.8 | - | | 53.5 |
| Light Goods Vehicles | 9 | 432 | 0 | - | 441 | 22 | 21 | - | 43 | - | 0 | 484 |
| % Light Goods Vehicles | 29.0 | 31.3 | 0.0 | - | 31.2 | 28.2 | 19.6 | - | 23.2 | - | - | 30.3 |
| Buses | 0 | 2 | 0 | - | 2 | 0 | 0 | - | 0 | - | 0 | 2 |
| % Buses | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | 0.0 | - | 0.0 | - | | 0.1 |
| Single-Unit Trucks | 1 | 61 | 0 | - | 62 | 5 | 10 | - | 15 | - | 0 | 77 |
| % Single-Unit Trucks | 3.2 | 4.4 | 0.0 | - | 4.4 | 6.4 | 9.3 | - | 8.1 | - | - | 4.8 |
| Articulated Trucks | 1 | 85 | 0 | - | 86 | 7 | 49 | - | 56 | - | 0 | 142 |
| % Articulated Trucks | 3.2 | 6.2 | 0.0 | - | 6.1 | 9.0 | 45.8 | - | 30.3 | - | | 8.9 |
| Bicycles on Road | 0 | 3 | 0 | - | 3 | 0 | 1 | - | 1 | - | 0 | 4 |
| % Bicycles on Road | 0.0 | 0.2 | 0.0 | - | 0.2 | 0.0 | 0.9 | - | 0.5 | - | | 0.3 |

| Pedestrians | - | - | - | 0 | - | - | - | 0 | - | 0 | - | - |
|---------------|---|---|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 03-I15SBOn_AirportRd TMC Site Code: TMC-03 Start Date: 07/16/2014 Page No: 3

| | Airport Rd [N] Out In Total 1 32 33 43 786 829 22 441 463 0 2 2 12 151 163 78 1412 1490 0 32 0 0 20 765 1 0 9 432 0 0 0 2 0 0 2 149 0 0 31 1380 1 0 R T L P | |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1-15 589 On WI Out In Cotal Oct | 07/16/2014 7:00 AM
Ending At
07/16/2014 6:00 PM
Motorcycles
Cars
Light Goods Vehicles
Buses
Other | Fake Approach (E) Out In Total 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 |
| | L T P 1 1 0 25 43 0 21 22 0 0 0 0 0 60 12 0 107 78 0 L J J 32 2 34 765 68 833 432 43 475 2 0 2 149 72 221 1380 185 1865 Out In Total Airport Rd [S] | |

Turning Movement Data Plot



Count Name: 03-I15SBOn_AirportRd TMC Site Code: TMC-03 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

| | | | Airport Rd | | | | • | ort Rd | | I-15 | SB On | |
|------------------------|-------|-------|------------|------|------------|-------|-------|--------|------------|------|------------|------------|
| Start Time | | | Southbound | | | | North | bound | | Eas | tbound | |
| Start Time | Right | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Peds | App. Total | Int. Total |
| 7:30 AM | 1 | 63 | 0 | 0 | 64 | 5 | 5 | 0 | 10 | 0 | 0 | 74 |
| 7:45 AM | 1 | 61 | 0 | 0 | 62 | 9 | 9 | 0 | 18 | 0 | 0 | 80 |
| 8:00 AM | 0 | 72 | 0 | 0 | 72 | 2 | 6 | 0 | 8 | 0 | 0 | 80 |
| 8:15 AM | 4 | 55 | 0 | 0 | 59 | 7 | 12 | 0 | 19 | 0 | 0 | 78 |
| Total | 6 | 251 | 0 | 0 | 257 | 23 | 32 | 0 | 55 | 0 | 0 | 312 |
| Approach % | 2.3 | 97.7 | 0.0 | - | - | 41.8 | 58.2 | - | - | - | - | - |
| Total % | 1.9 | 80.4 | 0.0 | - | 82.4 | 7.4 | 10.3 | - | 17.6 | - | 0.0 | - |
| PHF | 0.375 | 0.872 | 0.000 | - | 0.892 | 0.639 | 0.667 | - | 0.724 | - | 0.000 | 0.975 |
| Motorcycles | 0 | 1 | 0 | - | 1 | 0 | 0 | - | 0 | - | 0 | 1 |
| % Motorcycles | 0.0 | 0.4 | - | - | 0.4 | 0.0 | 0.0 | - | 0.0 | - | - | 0.3 |
| Cars | 4 | 102 | 0 | - | 106 | 13 | 7 | - | 20 | - | 0 | 126 |
| % Cars | 66.7 | 40.6 | - | - | 41.2 | 56.5 | 21.9 | - | 36.4 | - | - | 40.4 |
| Light Goods Vehicles | 1 | 113 | 0 | - | 114 | 5 | 10 | - | 15 | - | 0 | 129 |
| % Light Goods Vehicles | 16.7 | 45.0 | - | - | 44.4 | 21.7 | 31.3 | - | 27.3 | - | - | 41.3 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | - | 0 | 0 |
| % Buses | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 |
| Single-Unit Trucks | 1 | 17 | 0 | - | 18 | 2 | 3 | - | 5 | - | 0 | 23 |
| % Single-Unit Trucks | 16.7 | 6.8 | - | - | 7.0 | 8.7 | 9.4 | - | 9.1 | - | - | 7.4 |
| Articulated Trucks | 0 | 18 | 0 | - | 18 | 3 | 11 | - | 14 | - | 0 | 32 |
| % Articulated Trucks | 0.0 | 7.2 | - | - | 7.0 | 13.0 | 34.4 | - | 25.5 | - | - | 10.3 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | - | 1 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 3.1 | - | 1.8 | - | - | 0.3 |
| Pedestrians | - | - | - | 0 | - | - | - | 0 | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 03-I15SBOn_AirportRd TMC Site Code: TMC-03 Start Date: 07/16/2014 Page No: 5

| | Airport Rd [N] Out In Total 0 1 1 13 106 119 5 114 119 0 0 0 0 5 36 41 23 257 280 0 1 0 0 0 4 102 0 0 1 113 0 0 0 1 1 35 0 0 6 251 0 0 R T L P | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 145 SB On [W] Out In Total 11 0 0 0 11 0 0 11 11 0 0 11 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Peak Hour Data O7/16/2014 7:30 AM Ending At O7/16/2014 8:30 AM Motorcycles Cars Light Goods Vehicles Buses Other | Fake Approach [E] Out In Total 0 |
| | L T P 0 0 0 0 7 13 0 10 5 0 0 0 0 15 5 0 32 23 0 1 1 0 1 102 20 122 113 15 128 0 0 0 0 35 20 55 251 55 306 Out In Total Airport Rd [S] | |

Turning Movement Peak Hour Data Plot (7:30 AM)



Count Name: 03-I15SBOn_AirportRd TMC Site Code: TMC-03 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:00 PM)

| | | | Airport Rd
Southbound | Ü | | | Airpo | ort Rd
bound | | | SB On | |
|------------------------|-------|----------|--------------------------|------|------------|-------|----------|-----------------|------------|------|------------|------------|
| Start Time | Right | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Peds | App. Total | Int. Total |
| 4:00 PM | 5 | 175 | 0 | 0 | 180 | 4 | 3 | 0 | 7 | 0 | 0 | 187 |
| 4:15 PM | 3 | 94 | 0 | 0 | 97 | 4 | 5 | 0 | 9 | 0 | 0 | 106 |
| 4:30 PM | 2 | 182 | 0 | 0 | 184 | 6 | 10 | 0 | 16 | 0 | 0 | 200 |
| 4:45 PM | 4 | 91 | 0 | 0 | 95 | 7 | 7 | 0 | 14 | 0 | 0 | 109 |
| Total | 14 | 542 | 0 | 0 | 556 | 21 | 25 | 0 | 46 | 0 | 0 | 602 |
| Approach % | 2.5 | 97.5 | 0.0 | - | - | 45.7 | 54.3 | - | - | - | - | - |
| Total % | 2.3 | 90.0 | 0.0 | - | 92.4 | 3.5 | 4.2 | - | 7.6 | - | 0.0 | - |
| PHF | 0.700 | 0.745 | 0.000 | - | 0.755 | 0.750 | 0.625 | - | 0.719 | - | 0.000 | 0.753 |
| Motorcycles | 0 | 16 | 0 | - | 16 | 0 | 1 | - | 1 | - | 0 | 17 |
| % Motorcycles | 0.0 | 3.0 | - | - | 2.9 | 0.0 | 4.0 | - | 2.2 | - | - | 2.8 |
| Cars | 9 | 331 | 0 | - | 340 | 10 | 6 | - | 16 | - | 0 | 356 |
| % Cars | 64.3 | 61.1 | - | - | 61.2 | 47.6 | 24.0 | - | 34.8 | - | - | 59.1 |
| Light Goods Vehicles | 5 | 154 | 0 | - | 159 | 7 | 2 | - | 9 | - | 0 | 168 |
| % Light Goods Vehicles | 35.7 | 28.4 | <u>-</u> | - | 28.6 | 33.3 | 8.0 | - | 19.6 | - | - | 27.9 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | - | 0 | 0 |
| % Buses | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 |
| Single-Unit Trucks | 0 | 17 | 0 | - | 17 | 1 | 5 | - | 6 | - | 0 | 23 |
| % Single-Unit Trucks | 0.0 | 3.1 | - | - | 3.1 | 4.8 | 20.0 | - | 13.0 | - | - | 3.8 |
| Articulated Trucks | 0 | 23 | 0 | - | 23 | 3 | 11 | _ | 14 | - | 0 | 37 |
| % Articulated Trucks | 0.0 | 4.2 | - | - | 4.1 | 14.3 | 44.0 | - | 30.4 | - | - | 6.1 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 0 | - | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.2 | | _ | 0.2 | 0.0 | 0.0 | _ | 0.0 | - | - | 0.2 |
| Pedestrians | - | <u>-</u> | <u>-</u> | 0 | - | - | <u>-</u> | 0 | - | 0 | <u>-</u> | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 03-I15SBOn_AirportRd TMC Site Code: TMC-03 Start Date: 07/16/2014 Page No: 7

| | Airport Rd [N] Out In Total 0 16 16 10 340 350 7 159 166 0 0 0 0 4 41 45 21 556 577 0 16 0 0 0 9 331 0 0 5 154 0 0 0 0 0 0 0 41 0 0 14 542 0 0 R T L P | |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1-15 SSB On MVI Out in Total 1 0 15 7 0 7 7 0 0 16 99 0 39 0 0 0 0 | Peak Hour Data O7/16/2014 4:00 PM Ending At O7/16/2014 5:00 PM Motorcycles Cars Light Goods Vehicles Buses Other | Fake Approach [E] Out In Total O 0 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 |
| | L T P 1 0 0 6 10 0 2 7 0 0 0 0 16 4 0 25 21 0 16 1 17 331 16 347 154 9 163 0 0 0 41 20 61 542 46 588 Out In Total Airport Rd [S] | |

Turning Movement Peak Hour Data Plot (4:00 PM)



Count Name: 03-I15SBOn_AirportRd TMC Site Code: TMC-03 Start Date: 07/16/2014 Page No: 8



Count Name: 04-I15SBOff_AirportRd_Frontage TMC Site Code: TMC-04 Start Date: 07/16/2014 Page No: 1

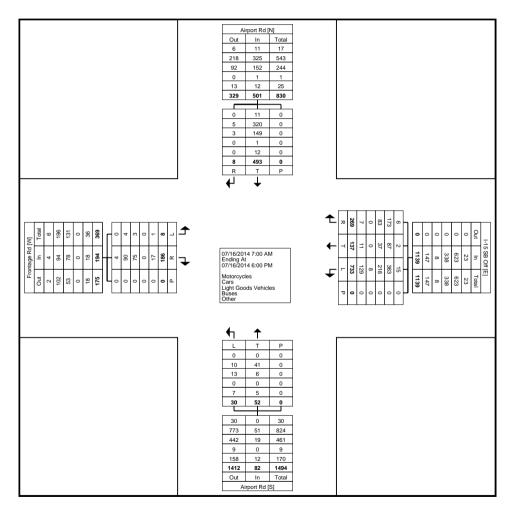
Turning Movement Data

| Chart Time | | | ort Rd
bound | | | | ort Rd
abound | 5 | | | I-15 SB Off
Westbound | | | | | age Rd
bound | | |
|------------------------|-------|------|-----------------|------------|------|------|------------------|------------|-------|------|--------------------------|------|------------|-------|------|-----------------|------------|------------|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 0 | 13 | 0 | 13 | 5 | 0 | 0 | 5 | 47 | 4 | . 22 | 0 | 73 | 5 | 0 | 0 | 5 | 96 |
| 7:15 AM | 1 | 9 | 0 | 10 | 4 | 0 | 0 | 4 | 34 | 13 | 31 | 0 | 78 | 5 | 1 | 0 | 6 | 98 |
| 7:30 AM | 0 | 9 | 0 | 9 | 3 | 2 | 0 | 5 | 18 | 13 | 43 | 0 | 74 | 12 | 0 | 0 | 12 | 100 |
| 7:45 AM | 1 | 9 | 0 | 10 | 4 | 5 | 0 | 9 | 28 | 15 | 49 | 0 | 92 | 6 | 3 | 0 | 9 | 120 |
| Hourly Total | 2 | 40 | 0 | 42 | 16 | 7 | 0 | 23 | 127 | 45 | 145 | 0 | 317 | 28 | 4 | 0 | 32 | 414 |
| 8:00 AM | 2 | 13 | 0 | 15 | 1 | 1 | 0 | 2 | 16 | 13 | 36 | 0 | 65 | 21 | 1 | 0 | 22 | 104 |
| 8:15 AM | 0 | 12 | 0 | 12 | 3 | 4 | 0 | 7 | 8 | 13 | 33 | 0 | 54 | 15 | 1 | 0 | 16 | 89 |
| 8:30 AM | 1 | 13 | 0 | 14 | 2 | 5 | 0 | 7 | 13 | 2 | 36 | 0 | 51 | 7 | 0 | 0 | 7 | 79 |
| 8:45 AM | 1 | 11 | 0 | 12 | 6 | 2 | 0 | 8 | 17 | 10 | 23 | 0 | 50 | 16 | 2 | 0 | 18 | 88 |
| Hourly Total | 4 | 49 | 0 | 53 | 12 | 12 | 0 | 24 | 54 | 38 | 128 | 0 | 220 | 59 | 4 | 0 | 63 | 360 |
| *** BREAK *** | - | - | _ | - | - | | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 0 | 101 | 0 | 101 | 2 | 3 | 0 | 5 | 13 | 4 | 61 | 0 | 78 | 19 | 0 | 0 | 19 | 203 |
| 4:15 PM | 0 | 44 | 0 | 44 | 3 | 1 | 0 | 4 | 10 | 7 | 37 | 0 | 54 | 14 | 0 | 0 | 14 | 116 |
| 4:30 PM | 1 | 105 | 0 | 106 | 5 | 3 | 0 | 8 | 7 | 6 | 65 | 0 | 78 | 14 | 0 | 0 | 14 | 206 |
| 4:45 PM | 0 | 36 | 0 | 36 | 5 | 1 | 0 | 6 | 17 | 9 | 54 | 0 | 80 | 8 | 0 | 0 | 8 | 130 |
| Hourly Total | 1 | 286 | 0 | 287 | 15 | 8 | 0 | 23 | 47 | 26 | 217 | 0 | 290 | 55 | 0 | 0 | 55 | 655 |
| 5:00 PM | 0 | 40 | 0 | 40 | 2 | 0 | 0 | 2 | 8 | 13 | 57 | 0 | 78 | 21 | 0 | 0 | 21 | 141 |
| 5:15 PM | 1 | 37 | 0 | 38 | 3 | 1 | 0 | 4 | 10 | 5 | 65 | 0 | 80 | 7 | 0 | 0 | 7 | 129 |
| 5:30 PM | 0 | 25 | 0 | 25 | 3 | 1 | 0 | 4 | 7 | 4 | 65 | 0 | 76 | 11 | 0 | 0 | 11 | 116 |
| 5:45 PM | 0 | 16 | 0 | 16 | 1 | 1 | 0 | 2 | 16 | 6 | 56 | 0 | 78 | 5 | 0 | 0 | 5 | 101 |
| Hourly Total | 1 | 118 | 0 | 119 | 9 | 3 | 0 | 12 | 41 | 28 | 243 | 0 | 312 | 44 | 0 | 0 | 44 | 487 |
| Grand Total | 8 | 493 | 0 | 501 | 52 | 30 | 0 | 82 | 269 | 137 | 733 | 0 | 1139 | 186 | 8 | 0 | 194 | 1916 |
| Approach % | 1.6 | 98.4 | - | - | 63.4 | 36.6 | - | - | 23.6 | 12.0 | 64.4 | - | - | 95.9 | 4.1 | - | - | - |
| Total % | 0.4 | 25.7 | - | 26.1 | 2.7 | 1.6 | - | 4.3 | 14.0 | 7.2 | 38.3 | - | 59.4 | 9.7 | 0.4 | - | 10.1 | - |
| Motorcycles | 0 | 11 | - | 11 | 0 | 0 | - | 0 | 6 | 2 | 15 | - | 23 | 4 | 0 | - | 4 | 38 |
| % Motorcycles | 0.0 | 2.2 | - | 2.2 | 0.0 | 0.0 | - | 0.0 | 2.2 | 1.5 | 2.0 | - | 2.0 | 2.2 | 0.0 | - | 2.1 | 2.0 |
| Cars | 5 | 320 | - | 325 | 41 | 10 | - | 51 | 173 | 87 | 363 | - | 623 | 90 | 4 | - | 94 | 1093 |
| % Cars | 62.5 | 64.9 | - | 64.9 | 78.8 | 33.3 | - | 62.2 | 64.3 | 63.5 | 49.5 | - | 54.7 | 48.4 | 50.0 | - | 48.5 | 57.0 |
| Light Goods Vehicles | 3 | 149 | - | 152 | 6 | 13 | - | 19 | 83 | 37 | 218 | - | 338 | 75 | 3 | - | 78 | 587 |
| % Light Goods Vehicles | 37.5 | 30.2 | - | 30.3 | 11.5 | 43.3 | - | 23.2 | 30.9 | 27.0 | 29.7 | - | 29.7 | 40.3 | 37.5 | - | 40.2 | 30.6 |
| Buses | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | 8 | - | 8 | 0 | 0 | - | 0 | 9 |
| % Buses | 0.0 | 0.2 | - | 0.2 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 1.1 | - | 0.7 | 0.0 | 0.0 | - | 0.0 | 0.5 |
| Single-Unit Trucks | 0 | 6 | - | 6 | 3 | 2 | - | 5 | 4 | 2 | 46 | - | 52 | 7 | 0 | - | 7 | 70 |
| % Single-Unit Trucks | 0.0 | 1.2 | - | 1.2 | 5.8 | 6.7 | - | 6.1 | 1.5 | 1.5 | 6.3 | - | 4.6 | 3.8 | 0.0 | - | 3.6 | 3.7 |
| Articulated Trucks | 0 | 3 | - | 3 | 2 | 5 | - | 7 | 3 | 7 | 83 | - | 93 | 10 | 1 | - | 11 | 114 |
| % Articulated Trucks | 0.0 | 0.6 | - | 0.6 | 3.8 | 16.7 | - | 8.5 | 1.1 | 5.1 | 11.3 | - | 8.2 | 5.4 | 12.5 | - | 5.7 | 5.9 |
| Bicycles on Road | 0 | 3 | - | 3 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 0 | 0 | - | 0 | 5 |
| % Bicycles on Road | 0.0 | 0.6 | | 0.6 | 0.0 | 0.0 | - | 0.0 | 0.0 | 1.5 | 0.0 | - | 0.2 | 0.0 | 0.0 | - | 0.0 | 0.3 |

| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | - | 0 | - | - | - | 0 | - | - |
|---------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | - | - | - | - | - | - | - | - | - | _ | _ | - | - | - | - | - | - | - |



Count Name: 04-I15SBOff_AirportRd_Frontage TMC Site Code: TMC-04 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



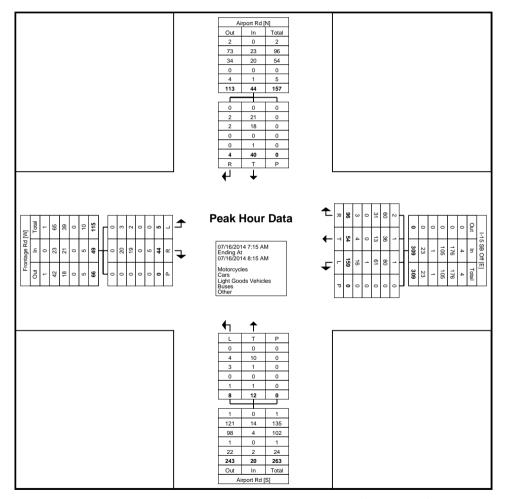
Count Name: 04-I15SBOff_AirportRd_Frontage TMC Site Code: TMC-04 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:15 AM)

| | | Airpo
South | | | | Airpo | | | | • | I-15 SB Off
Westbound | , | | | Fronta | age Rd
oound | | |
|------------------------|-------|----------------|------|------------|-------|-------|------|------------|-------|-------|--------------------------|------|------------|-------|--------|-----------------|------------|------------|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| 7.45.454 | Right | | | - '' | Iniu | | | App. Total | Ü | | - | | - '' | | Leit | | | |
| 7:15 AM | 1 | 9 | 0 | 10 | 4 | 0 | 0 | 4 | 34 | 13 | 31 | 0 | 78 | 5 | | . 0 | 6 | 98 |
| 7:30 AM | 0 | 9 | 0 | 9 | 3 | 2 | 0 | 5 | 18 | 13 | 43 | 0 | 74 | 12 | 0 | 0 | 12 | 100 |
| 7:45 AM | 1 | 9 | 0 | 10 | 4 | 5 | 0 | 9 | 28 | 15 | 49 | 0 | 92 | 6 | 3 | 0 | 9 | 120 |
| 8:00 AM | 2 | 13 | 0 | 15 | 1 | 1 | 0 | 2 | 16 | 13 | 36 | 0 | 65 | 21 | 1 | 0 | 22 | 104 |
| Total | 4 | 40 | 0 | 44 | 12 | 8 | 0 | 20 | 96 | 54 | 159 | 0 | 309 | 44 | 5 | 0 | 49 | 422 |
| Approach % | 9.1 | 90.9 | - | - | 60.0 | 40.0 | - | - | 31.1 | 17.5 | 51.5 | - | - | 89.8 | 10.2 | - | - | - |
| Total % | 0.9 | 9.5 | - | 10.4 | 2.8 | 1.9 | - | 4.7 | 22.7 | 12.8 | 37.7 | - | 73.2 | 10.4 | 1.2 | - | 11.6 | - |
| PHF | 0.500 | 0.769 | - | 0.733 | 0.750 | 0.400 | - | 0.556 | 0.706 | 0.900 | 0.811 | - | 0.840 | 0.524 | 0.417 | - | 0.557 | 0.879 |
| Motorcycles | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 2 | 1 | 1 | - | 4 | 0 | 0 | - | 0 | 4 |
| % Motorcycles | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 2.1 | 1.9 | 0.6 | - | 1.3 | 0.0 | 0.0 | - | 0.0 | 0.9 |
| Cars | 2 | 21 | - | 23 | 10 | 4 | - | 14 | 60 | 36 | 80 | - | 176 | 20 | 3 | - | 23 | 236 |
| % Cars | 50.0 | 52.5 | - | 52.3 | 83.3 | 50.0 | - | 70.0 | 62.5 | 66.7 | 50.3 | - | 57.0 | 45.5 | 60.0 | - | 46.9 | 55.9 |
| Light Goods Vehicles | 2 | 18 | - | 20 | 1 | 3 | - | 4 | 31 | 13 | 61 | - | 105 | 19 | 2 | - | 21 | 150 |
| % Light Goods Vehicles | 50.0 | 45.0 | - | 45.5 | 8.3 | 37.5 | - | 20.0 | 32.3 | 24.1 | 38.4 | - | 34.0 | 43.2 | 40.0 | - | 42.9 | 35.5 |
| Buses | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 1 |
| % Buses | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.6 | - | 0.3 | 0.0 | 0.0 | - | 0.0 | 0.2 |
| Single-Unit Trucks | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 | 0 | 6 | - | 7 | 3 | 0 | - | 3 | 10 |
| % Single-Unit Trucks | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 1.0 | 0.0 | 3.8 | - | 2.3 | 6.8 | 0.0 | - | 6.1 | 2.4 |
| Articulated Trucks | 0 | 1 | - | 1 | 1 | 1 | - | 2 | 2 | 4 | 10 | - | 16 | 2 | 0 | - | 2 | 21 |
| % Articulated Trucks | 0.0 | 2.5 | - | 2.3 | 8.3 | 12.5 | - | 10.0 | 2.1 | 7.4 | 6.3 | - | 5.2 | 4.5 | 0.0 | - | 4.1 | 5.0 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | | - | - | - | - | - |



Count Name: 04-I15SBOff_AirportRd_Frontage TMC Site Code: TMC-04 Start Date: 07/16/2014 Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)



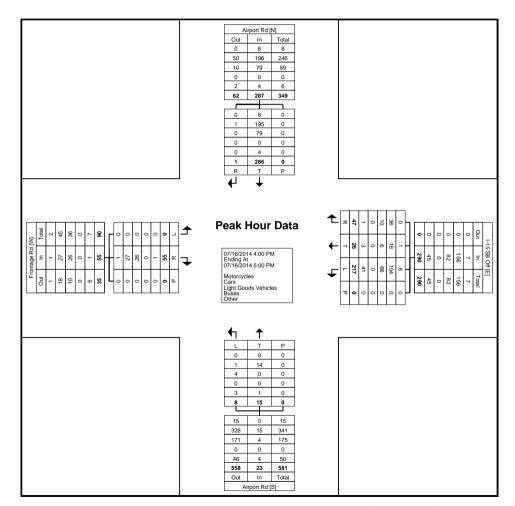
Count Name: 04-I15SBOff_AirportRd_Frontage TMC Site Code: TMC-04 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:00 PM)

| | | Airpo
Southl | | | Airport Rd
Northbound | | | | I-15 SB Off
Westbound | | | | | Frontage Rd Eastbound | | | | |
|------------------------|-------|-----------------|------|------------|--------------------------|-------|------|------------|--------------------------|-------|----------|------|------------|-----------------------|-------|------|------------|------------|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| 4:00 PM | 0 | 101 | 0 | 101 | 2 | 3 | 0 | 5 | 13 | 4 | 61 | 0 | 78 | 19 | 0 | 0 | 19 | 203 |
| 4:15 PM | 0 | 44 | 0 | 44 | 3 | 1 | 0 | 4 | 10 | 7 | 37 | 0 | 54 | 14 | 0 | 0 | 14 | 116 |
| 4:30 PM | 1 | 105 | 0 | 106 | 5 | 3 | 0 | 8 | 7 | 6 | 65 | 0 | 78 | 14 | 0 | 0 | 14 | 206 |
| 4:45 PM | 0 | 36 | 0 | 36 | 5 | 1 | 0 | 6 | 17 | 9 | 54 | 0 | 80 | 8 | 0 | 0 | 8 | 130 |
| Total | 1 | 286 | 0 | 287 | 15 | 8 | 0 | 23 | 47 | 26 | 217 | 0 | 290 | 55 | 0 | 0 | 55 | 655 |
| Approach % | 0.3 | 99.7 | - | - | 65.2 | 34.8 | - | - | 16.2 | 9.0 | 74.8 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | 0.2 | 43.7 | - | 43.8 | 2.3 | 1.2 | - | 3.5 | 7.2 | 4.0 | 33.1 | - | 44.3 | 8.4 | 0.0 | - | 8.4 | - |
| PHF | 0.250 | 0.681 | - | 0.677 | 0.750 | 0.667 | - | 0.719 | 0.691 | 0.722 | 0.835 | - | 0.906 | 0.724 | 0.000 | - | 0.724 | 0.795 |
| Motorcycles | 0 | 8 | - | 8 | 0 | 0 | - | 0 | 0 | 1 | 6 | - | 7 | 1 | 0 | - | 1 | 16 |
| % Motorcycles | 0.0 | 2.8 | - | 2.8 | 0.0 | 0.0 | - | 0.0 | 0.0 | 3.8 | 2.8 | - | 2.4 | 1.8 | - | - | 1.8 | 2.4 |
| Cars | 1 | 195 | - | 196 | 14 | 1 | - | 15 | 36 | 16 | 104 | - | 156 | 27 | 0 | - | 27 | 394 |
| % Cars | 100.0 | 68.2 | - | 68.3 | 93.3 | 12.5 | - | 65.2 | 76.6 | 61.5 | 47.9 | - | 53.8 | 49.1 | - | - | 49.1 | 60.2 |
| Light Goods Vehicles | 0 | 79 | - | 79 | 0 | 4 | - | 4 | 10 | 6 | 66 | - | 82 | 26 | 0 | - | 26 | 191 |
| % Light Goods Vehicles | 0.0 | 27.6 | - | 27.5 | 0.0 | 50.0 | - | 17.4 | 21.3 | 23.1 | 30.4 | - | 28.3 | 47.3 | - | - | 47.3 | 29.2 |
| Buses | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Buses | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Single-Unit Trucks | 0 | 2 | - | 2 | 1 | 0 | - | 1 | 0 | 1 | 15 | - | 16 | 0 | 0 | - | 0 | 19 |
| % Single-Unit Trucks | 0.0 | 0.7 | - | 0.7 | 6.7 | 0.0 | - | 4.3 | 0.0 | 3.8 | 6.9 | - | 5.5 | 0.0 | - | - | 0.0 | 2.9 |
| Articulated Trucks | 0 | 1 | - | 1 | 0 | 3 | - | 3 | 1 | 2 | 26 | - | 29 | 1 | 0 | - | 1 | 34 |
| % Articulated Trucks | 0.0 | 0.3 | - | 0.3 | 0.0 | 37.5 | - | 13.0 | 2.1 | 7.7 | 12.0 | - | 10.0 | 1.8 | - | - | 1.8 | 5.2 |
| Bicycles on Road | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.3 | - | 0.3 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.2 |
| Pedestrians | - | <u>-</u> | 0 | - | - | _ | 0 | - | - | - | <u>-</u> | 0 | | - | - | 0 | - | - |
| % Pedestrians | - | | - | - | - | | - | - | - | - | | - | - | - | - | - | - | - |



Count Name: 04-I15SBOff_AirportRd_Frontage TMC Site Code: TMC-04 Start Date: 07/16/2014 Page No: 7



Turning Movement Peak Hour Data Plot (4:00 PM)



Count Name: 04-I15SBOff_AirportRd_Frontage TMC Site Code: TMC-04 Start Date: 07/16/2014 Page No: 8



Count Name: 05-14thStSW_I315EB TMC Site Code: TMC-05 Start Date: 07/16/2014 Page No: 1

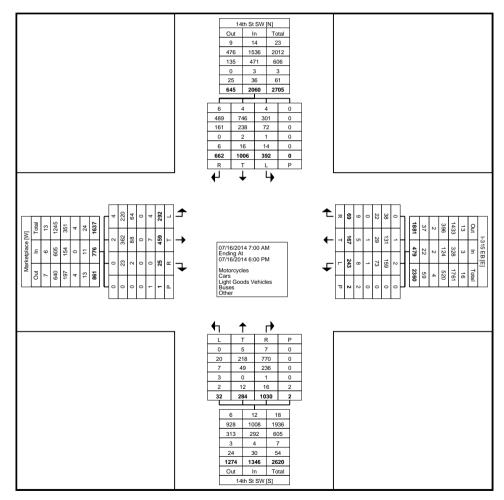
Turning Movement Data

| Start Time | | | 14th St SW
Southbound | | | | | 14th St SW
Northbound | J | | | | I-315 EB
Westbound | | | | | Marketplace
Eastbound | | | |
|---------------------------|-------|------|--------------------------|------|------------|-------|------|--------------------------|------|------------|-------|------|-----------------------|------|------------|-------|------|--------------------------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 15 | 18 | 26 | 0 | 59 | 52 | 15 | 2 | 0 | 69 | 1 | 4 | | 0 | . 8 | 0 | 6 | . 4 | 0 | 10 | 146 |
| 7:15 AM | 15 | 15 | 31 | 0 | 61 | 66 | 15 | 11 | 0 | 82 | 2 | 5 | 9 | 1 | 16 | 0 | 15 | 6 | 0 | 21 | 180 |
| 7:30 AM | 21 | 25 | 41 | 0 | 87 | 75 | 21 | 4 | 0 | 100 | 0 | 4 | 2 | 1 | 6 | 1 | 22 | 12 | 0 | 35 | 228 |
| 7:45 AM | 14 | 27 | 46 | 0 | 87 | 90 | 21 | 0 | 0 | 111 | 2 | 9 | . 5 | 0 | 16 | 1 | 17 | 16 | 0 | 34 | 248 |
| Hourly Total | 65 | 85 | 144 | 0 | 294 | 283 | 72 | 7 | 0 | 362 | 5 | 22 | 19 | 2 | 46 | 2 | 60 | 38 | 0 | 100 | 802 |
| 8:00 AM | 10 | 24 | 24 | 0 | 58 | 55 | 9 | 2 | 0 | 66 | 1 | 12 | 4 | 0 | 17 | 1 | 15 | 10 | 0 | 26 | 167 |
| 8:15 AM | 19 | 38 | 16 | 0 | 73 | 47 | 16 | . 1 | 0 | 64 | 4 | 3 | 9 | 0 | 16 | 0 | 15 | 12 | 0 | 27 | 180 |
| 8:30 AM | 25 | 36 | 19 | 0 | 80 | 59 | 19 | 1 | 0 | 79 | 6 | 9 | 10 | 0 | 25 | 0 | 13 | 8 | 0 | 21 | 205 |
| 8:45 AM | 37 | 48 | 22 | 0 | 107 | 55 | 16 | 0 | 0 | 71 | 4 | 6 | 17 | 0 | 27 | 0 | 20 | 8 | 0 | 28 | 233 |
| Hourly Total | 91 | 146 | 81 | 0 | 318 | 216 | 60 | 4 | 0 | 280 | 15 | 30 | 40 | 0 | 85 | 1 | 63 | 38 | 0 | 102 | 785 |
| *** BREAK *** | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | - | | - |
| 4:00 PM | 51 | 80 | 11 | 0 | 142 | 79 | 17 | 2 | 1 | 98 | 3 | 22 | 23 | 0 | 48 | 3 | 46 | 26 | 0 | 75 | 363 |
| 4:15 PM | 67 | 97 | 16 | 0 | 180 | 48 | 16 | 0 | 0 | 64 | 4 | 11 | 23 | 0 | 38 | 4 | 48 | 29 | 1 | 81 | 363 |
| 4:30 PM | 69 | 92 | 26 | 0 | 187 | 75 | 24 | 5 | 1 | 104 | 7 | 17 | 27 | 0 | 51 | 2 | 37 | 22 | 0 | 61 | 403 |
| 4:45 PM | 77 | 97 | 24 | 0 | 198 | 70 | 28 | 2 | 0 | 100 | 6 | 10 | 21 | 0 | 37 | 4 | 51 | 30 | 0 | 85 | 420 |
| Hourly Total | 264 | 366 | 77 | 0 | 707 | 272 | 85 | 9 | 2 | 366 | 20 | 60 | 94 | 0 | 174 | 13 | 182 | 107 | 1 | 302 | 1549 |
| 5:00 PM | 58 | 90 | 26 | 0 | 174 | 46 | 11 | 3 | 0 | 60 | 12 | 7 | 36 | 0 | 55 | 2 | 47 | 26 | 0 | 75 | 364 |
| 5:15 PM | 58 | 117 | 19 | 0 | 194 | 69 | 19 | 3 | 0 | 91 | 6 | 16 | 18 | 0 | 40 | 2 | 33 | 29 | 0 | 64 | 389 |
| 5:30 PM | 56 | 104 | 26 | 0 | 186 | 72 | 15 | 1 | 0 | 88 | 3 | 18 | 21 | 0 | 42 | 2 | 42 | 32 | 0 | 76 | 392 |
| 5:45 PM | 70 | 98 | 19 | 0 | 187 | 72 | 22 | 5 | 0 | 99 | 8 | 14 | 15 | 0 | 37 | 3 | 32 | 22 | 0 | 57 | 380 |
| Hourly Total | 242 | 409 | 90 | 0 | 741 | 259 | 67 | 12 | 0 | 338 | 29 | 55 | 90 | 0 | 174 | 9 | 154 | 109 | 0 | 272 | 1525 |
| Grand Total | 662 | 1006 | 392 | 0 | 2060 | 1030 | 284 | 32 | 2 | 1346 | 69 | 167 | 243 | 2 | 479 | 25 | 459 | 292 | 1 | 776 | 4661 |
| Approach % | 32.1 | 48.8 | 19.0 | - | - | 76.5 | 21.1 | 2.4 | - | - | 14.4 | 34.9 | 50.7 | - | - | 3.2 | 59.1 | 37.6 | - | - | - |
| Total % | 14.2 | 21.6 | 8.4 | - | 44.2 | 22.1 | 6.1 | 0.7 | - | 28.9 | 1.5 | 3.6 | 5.2 | - | 10.3 | 0.5 | 9.8 | 6.3 | - | 16.6 | - |
| Motorcycles | 6 | 4 | 4 | - | 14 | 7 | 5 | 0 | - | 12 | 0 | 1 | 2 | - | 3 | 0 | 2 | 4 | - | 6 | 35 |
| % Motorcycles | 0.9 | 0.4 | 1.0 | - | 0.7 | 0.7 | 1.8 | 0.0 | - | 0.9 | 0.0 | 0.6 | 0.8 | - | 0.6 | 0.0 | 0.4 | 1.4 | - | 0.8 | 0.8 |
| Cars | 489 | 746 | 301 | - | 1536 | 770 | 218 | 20 | - | 1008 | 38 | 131 | 159 | - | 328 | 23 | 362 | 220 | - | 605 | 3477 |
| % Cars | 73.9 | 74.2 | 76.8 | - | 74.6 | 74.8 | 76.8 | 62.5 | - | 74.9 | 55.1 | 78.4 | 65.4 | - | 68.5 | 92.0 | 78.9 | 75.3 | - | 78.0 | 74.6 |
| Light Goods Vehicles | 161 | 238 | 72 | - | 471 | 236 | 49 | 7 | - | 292 | 22 | 29 | 73 | - | 124 | 2 | 88 | 64 | - | 154 | 1041 |
| % Light Goods
Vehicles | 24.3 | 23.7 | 18.4 | - | 22.9 | 22.9 | 17.3 | 21.9 | - | 21.7 | 31.9 | 17.4 | 30.0 | - | 25.9 | 8.0 | 19.2 | 21.9 | - | 19.8 | 22.3 |
| Buses | 0 | 2 | 1 | - | 3 | 1 | 0 | 3 | - | 4 | 0 | 1 | 1 | - | 2 | 0 | 0 | 0 | - | 0 | 9 |
| % Buses | 0.0 | 0.2 | 0.3 | - | 0.1 | 0.1 | 0.0 | 9.4 | - | 0.3 | 0.0 | 0.6 | 0.4 | - | 0.4 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.2 |
| Single-Unit Trucks | 6 | 14 | 10 | - | 30 | 9 | 8 | 2 | - | 19 | 8 | 4 | 5 | - | 17 | 0 | 7 | 3 | - | 10 | 76 |
| % Single-Unit Trucks | 0.9 | 1.4 | 2.6 | - | 1.5 | 0.9 | 2.8 | 6.3 | - | 1.4 | 11.6 | 2.4 | 2.1 | - | 3.5 | 0.0 | 1.5 | 1.0 | - | 1.3 | 1.6 |
| Articulated Trucks | 0 | 1 | 4 | - | 5 | 7 | 3 | 0 | - | 10 | 1 | 1 | 3 | - | 5 | 0 | 0 | 1 | - | 1 | 21 |
| % Articulated Trucks | 0.0 | 0.1 | 1.0 | - | 0.2 | 0.7 | 1.1 | 0.0 | - | 0.7 | 1.4 | 0.6 | 1.2 | - | 1.0 | 0.0 | 0.0 | 0.3 | - | 0.1 | 0.5 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 2 |

| % Bicycles on Road | 0.0 | 0.1 | 0.0 | - | 0.0 | 0.0 | 0.4 | 0.0 | - | 0.1 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
|--------------------|-----|-----|-----|---|-----|-----|-----|-----|-------|-----|-----|-----|-----|-------|-----|-----|-----|-----|-------|-----|-----|
| Pedestrians | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 2 | - | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |



Count Name: 05-14thStSW_I315EB TMC Site Code: TMC-05 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



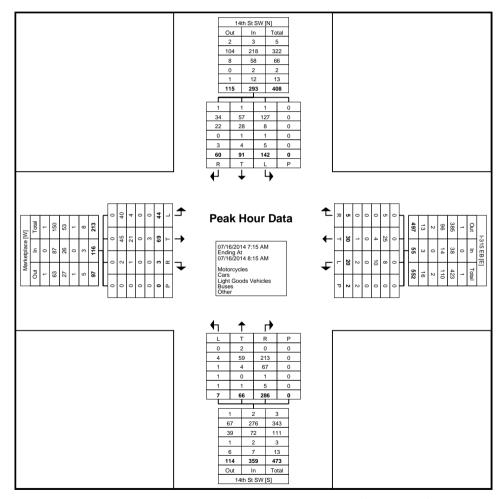
Count Name: 05-14thStSW_I315EB TMC Site Code: TMC-05 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:15 AM)

| | | | | | i | | 41111119 | , 111010 | 1110110 | ı canı | ioui D | ata (1. | 10 / (10) | '/ | i | | | | | | 1 |
|---------------------------|-------|-------|------------|------|------------|-------|----------|------------|---------|------------|--------|---------|-----------|-------|------------|-------|-------|-------------|------|------------|------------|
| | | | 14th St SW | | | | | 14th St SW | | | | | I-315 EB | | | | | Marketplace | | | [|
| Start Time | | | Southbound | | | | | Northbound | | | | | Westbound | | | | | Eastbound | | | [|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:15 AM | 15 | 15 | 31 | 0 | 61 | 66 | 15 | 1 | 0 | 82 | 2 | 5 | 9 | 1 | 16 | 0 | 15 | 6 | 0 | 21 | 180 |
| 7:30 AM | 21 | 25 | 41 | 0 | 87 | 75 | 21 | 4 | 0 | 100 | 0 | 4 | 2 | 1 | 6 | 1 | 22 | 12 | 0 | 35 | 228 |
| 7:45 AM | 14 | 27 | 46 | 0 | 87 | 90 | 21 | 0 | 0 | 111 | 2 | 9 | 5 | 0 | 16 | 1 | 17 | 16 | 0 | 34 | 248 |
| 8:00 AM | 10 | 24 | 24 | 0 | 58 | 55 | 9 | 2 | 0 | 66 | 1 | 12 | 4 | 0 | 17 | 1 | 15 | 10 | 0 | 26 | 167 |
| Total | 60 | 91 | 142 | 0 | 293 | 286 | 66 | 7 | 0 | 359 | 5 | 30 | 20 | 2 | 55 | 3 | 69 | 44 | 0 | 116 | 823 |
| Approach % | 20.5 | 31.1 | 48.5 | - | - | 79.7 | 18.4 | 1.9 | - | - | 9.1 | 54.5 | 36.4 | - | - | 2.6 | 59.5 | 37.9 | - | - | - |
| Total % | 7.3 | 11.1 | 17.3 | - | 35.6 | 34.8 | 8.0 | 0.9 | - | 43.6 | 0.6 | 3.6 | 2.4 | - | 6.7 | 0.4 | 8.4 | 5.3 | - | 14.1 | - |
| PHF | 0.714 | 0.843 | 0.772 | - | 0.842 | 0.794 | 0.786 | 0.438 | - | 0.809 | 0.625 | 0.625 | 0.556 | - | 0.809 | 0.750 | 0.784 | 0.688 | - | 0.829 | 0.830 |
| Motorcycles | 1 | 1 | 1 | - | 3 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 5 |
| % Motorcycles | 1.7 | 1.1 | 0.7 | - | 1.0 | 0.0 | 3.0 | 0.0 | - | 0.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.6 |
| Cars | 34 | 57 | 127 | - | 218 | 213 | 59 | 4 | - | 276 | 5 | 25 | 8 | - | 38 | 2 | 45 | 40 | - | 87 | 619 |
| % Cars | 56.7 | 62.6 | 89.4 | - | 74.4 | 74.5 | 89.4 | 57.1 | - | 76.9 | 100.0 | 83.3 | 40.0 | - | 69.1 | 66.7 | 65.2 | 90.9 | - | 75.0 | 75.2 |
| Light Goods Vehicles | 22 | 28 | 8 | - | 58 | 67 | 4 | 1 | - | 72 | 0 | 4 | 10 | - | 14 | 1 | 21 | 4 | - | 26 | 170 |
| % Light Goods
Vehicles | 36.7 | 30.8 | 5.6 | - | 19.8 | 23.4 | 6.1 | 14.3 | - | 20.1 | 0.0 | 13.3 | 50.0 | - | 25.5 | 33.3 | 30.4 | 9.1 | - | 22.4 | 20.7 |
| Buses | 0 | 1 | 1 | - | 2 | 1 | 0 | 1 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 4 |
| % Buses | 0.0 | 1.1 | 0.7 | - | 0.7 | 0.3 | 0.0 | 14.3 | - | 0.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.5 |
| Single-Unit Trucks | 3 | 4 | 3 | - | 10 | 5 | 1 | 1 | - | 7 | 0 | 0 | 2 | - | 2 | 0 | 3 | 0 | - | 3 | 22 |
| % Single-Unit Trucks | 5.0 | 4.4 | 2.1 | - | 3.4 | 1.7 | 1.5 | 14.3 | - | 1.9 | 0.0 | 0.0 | 10.0 | - | 3.6 | 0.0 | 4.3 | 0.0 | - | 2.6 | 2.7 |
| Articulated Trucks | 0 | 0 | 2 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 3 |
| % Articulated Trucks | 0.0 | 0.0 | 1.4 | - | 0.7 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 3.3 | 0.0 | - | 1.8 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.4 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | |



Count Name: 05-14thStSW_I315EB TMC Site Code: TMC-05 Start Date: 07/16/2014 Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)



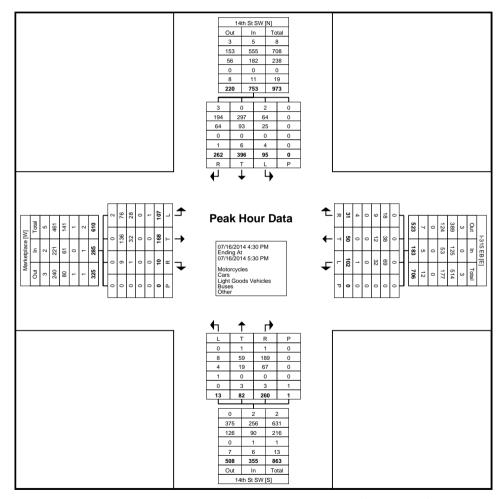
Count Name: 05-14thStSW_I315EB TMC Site Code: TMC-05 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:30 PM)

| | i | | | | i | • | ٠ | , | | · oan | | αια ₍ | 00 1 111 | , | i | | | | | | i . |
|---------------------------|-------|-------|------------|------|------------|-------|-------|------------|-------|------------|-------|------------------|-----------|------|------------|-------|-------|-------------|------|------------|------------|
| | | | 14th St SW | | | | | 14th St SW | | | | | I-315 EB | | | | | Marketplace | | | 1 |
| Start Time | | | Southbound | | | | | Northbound | | | | | Westbound | | | | | Eastbound | | | 1 |
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 4:30 PM | 69 | 92 | 26 | 0 | 187 | 75 | 24 | 5 | 1 | 104 | 7 | 17 | 27 | 0 | 51 | 2 | 37 | 22 | 0 | 61 | 403 |
| 4:45 PM | 77 | 97 | 24 | 0 | 198 | 70 | 28 | 2 | 0 | 100 | 6 | 10 | 21 | 0 | 37 | 4 | 51 | 30 | 0 | 85 | 420 |
| 5:00 PM | 58 | 90 | 26 | 0 | 174 | 46 | 11 | 3 | 0 | 60 | 12 | 7 | 36 | 0 | 55 | 2 | 47 | 26 | 0 | 75 | 364 |
| 5:15 PM | 58 | 117 | 19 | 0 | 194 | 69 | 19 | 3 | 0 | 91 | 6 | 16 | 18 | 0 | 40 | 2 | 33 | 29 | 0 | 64 | 389 |
| Total | 262 | 396 | 95 | 0 | 753 | 260 | 82 | 13 | 1 | 355 | 31 | 50 | 102 | 0 | 183 | 10 | 168 | 107 | 0 | 285 | 1576 |
| Approach % | 34.8 | 52.6 | 12.6 | - | - | 73.2 | 23.1 | 3.7 | - | | 16.9 | 27.3 | 55.7 | - | - | 3.5 | 58.9 | 37.5 | - | - | - |
| Total % | 16.6 | 25.1 | 6.0 | - | 47.8 | 16.5 | 5.2 | 0.8 | - | 22.5 | 2.0 | 3.2 | 6.5 | - | 11.6 | 0.6 | 10.7 | 6.8 | - | 18.1 | - |
| PHF | 0.851 | 0.846 | 0.913 | - | 0.951 | 0.867 | 0.732 | 0.650 | - | 0.853 | 0.646 | 0.735 | 0.708 | - | 0.832 | 0.625 | 0.824 | 0.892 | - | 0.838 | 0.938 |
| Motorcycles | 3 | 0 | 2 | - | 5 | 1 | 1 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 2 | - | 2 | 9 |
| % Motorcycles | 1.1 | 0.0 | 2.1 | - | 0.7 | 0.4 | 1.2 | 0.0 | - | 0.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 1.9 | - | 0.7 | 0.6 |
| Cars | 194 | 297 | 64 | - | 555 | 189 | 59 | 8 | - | 256 | 18 | 38 | 69 | - | 125 | 9 | 136 | 76 | - | 221 | 1157 |
| % Cars | 74.0 | 75.0 | 67.4 | - | 73.7 | 72.7 | 72.0 | 61.5 | - | 72.1 | 58.1 | 76.0 | 67.6 | - | 68.3 | 90.0 | 81.0 | 71.0 | - | 77.5 | 73.4 |
| Light Goods Vehicles | 64 | 93 | 25 | - | 182 | 67 | 19 | 4 | - | 90 | 9 | 12 | 32 | - | 53 | 1 | 32 | 28 | - | 61 | 386 |
| % Light Goods
Vehicles | 24.4 | 23.5 | 26.3 | - | 24.2 | 25.8 | 23.2 | 30.8 | - | 25.4 | 29.0 | 24.0 | 31.4 | - | 29.0 | 10.0 | 19.0 | 26.2 | - | 21.4 | 24.5 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Buses | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 7.7 | - | 0.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Single-Unit Trucks | 1 | 4 | 3 | - | 8 | 1 | 2 | 0 | - | 3 | 4 | 0 | 1 | - | 5 | 0 | 0 | 1 | - | 1 | 17 |
| % Single-Unit Trucks | 0.4 | 1.0 | 3.2 | - | 1.1 | 0.4 | 2.4 | 0.0 | - | 0.8 | 12.9 | 0.0 | 1.0 | - | 2.7 | 0.0 | 0.0 | 0.9 | - | 0.4 | 1.1 |
| Articulated Trucks | 0 | 1 | 1 | - | 2 | 2 | 0 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 4 |
| % Articulated Trucks | 0.0 | 0.3 | 1.1 | - | 0.3 | 0.8 | 0.0 | 0.0 | - | 0.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.3 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 2 |
| % Bicycles on Road | 0.0 | 0.3 | 0.0 | - | 0.1 | 0.0 | 1.2 | 0.0 | - | 0.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Pedestrians | - | - | _ | 0 | - | - | - | - | 1 | - | - | - | _ | 0 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | _ | - | 100.0 | - | - | - | - | - | - | - | _ | - | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | |



Count Name: 05-14thStSW_I315EB TMC Site Code: TMC-05 Start Date: 07/16/2014 Page No: 7



Turning Movement Peak Hour Data Plot (4:30 PM)



Count Name: 05-14thStSW_I315EB TMC Site Code: TMC-05 Start Date: 07/16/2014 Page No: 8



Count Name: 06-14thStSW_I315WB TMC Site Code: TMC-06 Start Date: 07/16/2014 Page No: 1

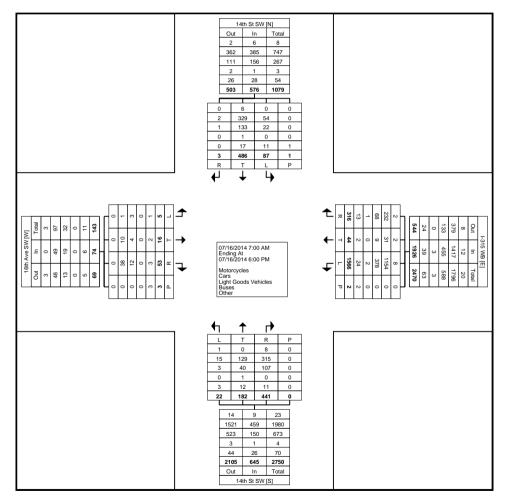
Turning Movement Data

| | | | 14th St SW | | | | | 14th St SW | Ū | | | | I-315 WB | | | | | 16th Ave SW | | | İ |
|---------------------------|-------|------|------------|------|------------|-------|------|------------|------|------------|-------|------|-----------|------|------------|-------|------|-------------|------|------------|------------|
| | | | Southbound | | | | | Northbound | | İ | | | Westbound | | | | | Eastbound | | | İ |
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 0 | 29 | 6 | 0 | 35 | 15 | 4 | 1 | 0 | 20 | 9 | 0 | 25 | 0 | 34 | 2 | 0 | 0 | 0 | 2 | 91 |
| 7:15 AM | 0 | 31 | 7 | 0 | 38 | 19 | 5 | 1 | 0 | 25 | 12 | 1 | 28 | 1 | 41 | 3 | 0 | 0 | 0 | 3 | 107 |
| 7:30 AM | 0 | 49 | 5 | 0 | 54 | 24 | 5 | 0 | 0 | 29 | 9 | 2 | 37 | 1 | 48 | 3 | 2 | 0 | 0 | 5 | 136 |
| 7:45 AM | 0 | 45 | 13 | 0 | 58 | 28 | 5 | 7 | 0 | 40 | 13 | 5 | 38 | 0 | 56 | 5 | 2 | 0 | 0 | 7 | 161 |
| Hourly Total | 0 | 154 | 31 | 0 | 185 | 86 | 19 | 9 | 0 | 114 | 43 | 8 | 128 | 2 | 179 | 13 | 4 | 0 | 0 | 17 | 495 |
| 8:00 AM | 0 | 24 | 7 | 0 | 31 | 14 | 6 | 1 | 0 | 21 | 10 | 5 | 31 | 0 | 46 | 2 | 1 | 0 | 0 | 3 | 101 |
| 8:15 AM | 0 | 18 | 1 | 0 | 19 | 24 | 1 | 3 | 0 | 28 | 6 | 4 | 56 | 0 | 66 | 5 | 2 | 0 | 1 | 7 | 120 |
| 8:30 AM | 0 | 23 | 6 | 0 | 29 | 24 | 11 | 0 | 0 | 35 | 6 | 0 | 53 | 0 | 59 | 4 | 1 | 1 | 0 | 6 | 129 |
| 8:45 AM | 0 | 23 | 4 | 0 | 27 | 18 | 8 | 0 | 0 | 26 | 11 | 0 | 80 | 0 | 91 | 3 | 1 | 0 | 0 | 4 | 148 |
| Hourly Total | 0 | 88 | 18 | 0 | 106 | 80 | 26 | 4 | 0 | 110 | 33 | 9 | 220 | 0 | 262 | 14 | 5 | 1 | 1 | 20 | 498 |
| *** BREAK *** | - | | | - | _ | • | - | - | - | - | - | - | - | - | - | - | | - | - | - | - |
| 4:00 PM | 0 | 18 | 4 | 0 | 22 | 33 | 10 | 2 | 0 | 45 | 20 | 3 | 121 | 0 | 144 | 1 | 1 | 0 | 0 | 2 | 213 |
| 4:15 PM | 0 | 30 | 2 | 0 | 32 | 33 | 14 | 0 | 0 | 47 | 25 | 6 | 145 | 0 | 176 | 2 | 1 | 0 | 0 | 3 | 258 |
| 4:30 PM | 0 | 37 | 5 | 0 | 42 | 29 | 21 | 2 | 0 | 52 | 24 | 3 | 156 | 0 | 183 | 2 | 0 | 1 | 0 | 3 | 280 |
| 4:45 PM | 1 | 41 | 5 | 0 | 47 | 38 | 22 | 2 | 0 | 62 | 32 | 9 | 148 | 0 | 189 | 2 | 3 | 1 | 1 | 6 | 304 |
| Hourly Total | 1 | 126 | 16 | 0 | 143 | 133 | 67 | 6 | 0 | 206 | 101 | 21 | 570 | 0 | 692 | 7 | 5 | 2 | 1 | 14 | 1055 |
| 5:00 PM | 0 | 28 | 3 | 0 | 31 | 37 | 20 | 2 | 0 | 59 | 41 | 1 | 161 | 0 | 203 | 6 | 1 | 0 | 0 | 7 | 300 |
| 5:15 PM | 1 | 27 | 8 | 0 | 36 | 32 | 21 | 1 | 0 | 54 | 40 | 0 | 159 | 0 | 199 | 4 | 0 | 2 | 0 | 6 | 295 |
| 5:30 PM | 0 | 35 | 6 | 0 | 41 | 39 | 13 | 0 | 0 | 52 | 29 | 2 | 170 | 0 | 201 | 7 | 1 | 0 | 0 | 8 | 302 |
| 5:45 PM | 1 | 28 | 5 | 1 | 34 | 34 | 16 | 0 | 0 | 50 | 29 | 3 | 158 | 0 | 190 | 2 | 0 | 0 | 1 | 2 | 276 |
| Hourly Total | 2 | 118 | 22 | 1 | 142 | 142 | 70 | 3 | 0 | 215 | 139 | 6 | 648 | 0 | 793 | 19 | 2 | 2 | 1 | 23 | 1173 |
| Grand Total | 3 | 486 | 87 | 1 | 576 | 441 | 182 | 22 | 0 | 645 | 316 | 44 | 1566 | 2 | 1926 | 53 | 16 | 5 | 3 | 74 | 3221 |
| Approach % | 0.5 | 84.4 | 15.1 | - | _ | 68.4 | 28.2 | 3.4 | - | - | 16.4 | 2.3 | 81.3 | - | - | 71.6 | 21.6 | 6.8 | - | - | - |
| Total % | 0.1 | 15.1 | 2.7 | - | 17.9 | 13.7 | 5.7 | 0.7 | - | 20.0 | 9.8 | 1.4 | 48.6 | - | 59.8 | 1.6 | 0.5 | 0.2 | - | 2.3 | - |
| Motorcycles | 0 | 6 | 0 | - | 6 | 8 | 0 | . 1 | - | 9 | 2 | 2 | 8 | - | 12 | 0 | 0 | 0 | - | 0 | 27 |
| % Motorcycles | 0.0 | 1.2 | 0.0 | - | 1.0 | 1.8 | 0.0 | 4.5 | - | 1.4 | 0.6 | 4.5 | 0.5 | - | 0.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.8 |
| Cars | 2 | 329 | 54 | - | 385 | 315 | 129 | 15 | - | 459 | 232 | 31 | 1154 | - | 1417 | 38 | 10 | 1 | - | 49 | 2310 |
| % Cars | 66.7 | 67.7 | 62.1 | - | 66.8 | 71.4 | 70.9 | 68.2 | - | 71.2 | 73.4 | 70.5 | 73.7 | - | 73.6 | 71.7 | 62.5 | 20.0 | - | 66.2 | 71.7 |
| Light Goods Vehicles | 1 | 133 | 22 | - | 156 | 107 | 40 | 3 | - | 150 | 68 | 9 | 378 | - | 455 | 12 | 4 | 3 | - | 19 | 780 |
| % Light Goods
Vehicles | 33.3 | 27.4 | 25.3 | - | 27.1 | 24.3 | 22.0 | 13.6 | - | 23.3 | 21.5 | 20.5 | 24.1 | - | 23.6 | 22.6 | 25.0 | 60.0 | - | 25.7 | 24.2 |
| Buses | 0 | 1 | 0 | - | 1 | 0 | 1 | 0 | - | 1 | 1 | 0 | 2 | - | 3 | 0 | 0 | 0 | - | 0 | 5 |
| % Buses | 0.0 | 0.2 | 0.0 | - | 0.2 | 0.0 | 0.5 | 0.0 | - | 0.2 | 0.3 | 0.0 | 0.1 | - | 0.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.2 |
| Single-Unit Trucks | 0 | 10 | 8 | - | 18 | 8 | 9 | 3 | - | 20 | 11 | 2 | 22 | - | 35 | 2 | 2 | 1 | - | 5 | 78 |
| % Single-Unit Trucks | 0.0 | 2.1 | 9.2 | - | 3.1 | 1.8 | 4.9 | 13.6 | - | 3.1 | 3.5 | 4.5 | 1.4 | - | 1.8 | 3.8 | 12.5 | 20.0 | - | 6.8 | 2.4 |
| Articulated Trucks | 0 | 5 | 1 | - | 6 | 3 | 2 | 0 | - | 5 | 2 | 0 | 2 | - | 4 | 1 | 0 | 0 | - | 1 | 16 |
| % Articulated Trucks | 0.0 | 1.0 | 1.1 | - | 1.0 | 0.7 | 1.1 | 0.0 | - | 0.8 | 0.6 | 0.0 | 0.1 | - | 0.2 | 1.9 | 0.0 | 0.0 | - | 1.4 | 0.5 |
| Bicycles on Road | 0 | 2 | 2 | - | 4 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 5 |

| % Bicycles on Road | 0.0 | 0.4 | 2.3 | - | 0.7 | 0.0 | 0.5 | 0.0 | - | 0.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.2 |
|--------------------|-----|-----|-----|-------|-----|-----|-----|-----|---|-----|-----|-----|-----|-------|-----|-----|-----|-----|-------|-----|-----|
| Pedestrians | - | - | - | 1 | - | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 3 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |



Count Name: 06-14thStSW_I315WB TMC Site Code: TMC-06 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



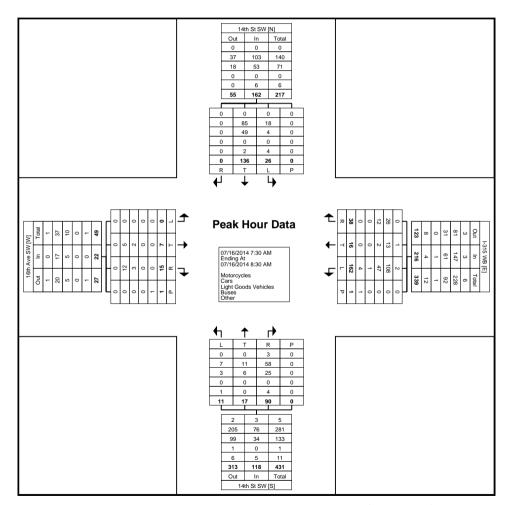
Count Name: 06-14thStSW_I315WB TMC Site Code: TMC-06 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

| | | | | | i | | 41111119 | , 141040 | ,,,,, | ı canı | ioui D | ata (1. | 00 / (11) | ') | i | | | | | | ı |
|---------------------------|-------|-------|------------|------|------------|-------|----------|------------|-------|------------|--------|---------|-----------|-------|------------|-------|-------|-------------|-------|------------|------------|
| | | | 14th St SW | | | | | 14th St SW | | | | | I-315 WB | | | | | 16th Ave SW | | | |
| Otant Time | | | Southbound | | | | | Northbound | | | | | Westbound | | | | | Eastbound | | | |
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:30 AM | 0 | 49 | 5 | 0 | 54 | 24 | 5 | 0 | 0 | 29 | 9 | 2 | 37 | 1 | 48 | 3 | 2 | 0 | 0 | 5 | 136 |
| 7:45 AM | 0 | 45 | 13 | 0 | 58 | 28 | 5 | 7 | 0 | 40 | 13 | 5 | 38 | 0 | 56 | 5 | 2 | 0 | 0 | 7 | 161 |
| 8:00 AM | 0 | 24 | 7 | 0 | 31 | 14 | 6 | 1 | 0 | 21 | 10 | 5 | 31 | 0 | 46 | 2 | 1 | 0 | 0 | 3 | 101 |
| 8:15 AM | 0 | 18 | 1 | 0 | 19 | 24 | 1 | 3 | 0 | 28 | 6 | 4 | 56 | 0 | 66 | 5 | 2 | 0 | 1 | 7 | 120 |
| Total | 0 | 136 | 26 | 0 | 162 | 90 | 17 | 11 | 0 | 118 | 38 | 16 | 162 | 1 | 216 | 15 | 7 | 0 | 1 | 22 | 518 |
| Approach % | 0.0 | 84.0 | 16.0 | - | - | 76.3 | 14.4 | 9.3 | - | - | 17.6 | 7.4 | 75.0 | - | - | 68.2 | 31.8 | 0.0 | - | - | - |
| Total % | 0.0 | 26.3 | 5.0 | - | 31.3 | 17.4 | 3.3 | 2.1 | - | 22.8 | 7.3 | 3.1 | 31.3 | - | 41.7 | 2.9 | 1.4 | 0.0 | - | 4.2 | - |
| PHF | 0.000 | 0.694 | 0.500 | - | 0.698 | 0.804 | 0.708 | 0.393 | - | 0.738 | 0.731 | 0.800 | 0.723 | - | 0.818 | 0.750 | 0.875 | 0.000 | - | 0.786 | 0.804 |
| Motorcycles | 0 | 0 | 0 | - | 0 | 3 | 0 | 0 | - | 3 | 0 | 1 | 2 | - | 3 | 0 | 0 | 0 | - | 0 | 6 |
| % Motorcycles | - | 0.0 | 0.0 | - | 0.0 | 3.3 | 0.0 | 0.0 | - | 2.5 | 0.0 | 6.3 | 1.2 | - | 1.4 | 0.0 | 0.0 | - | - | 0.0 | 1.2 |
| Cars | 0 | 85 | 18 | - | 103 | 58 | 11 | 7 | - | 76 | 26 | 13 | 108 | - | 147 | 12 | 5 | 0 | - | 17 | 343 |
| % Cars | - | 62.5 | 69.2 | - | 63.6 | 64.4 | 64.7 | 63.6 | - | 64.4 | 68.4 | 81.3 | 66.7 | - | 68.1 | 80.0 | 71.4 | - | - | 77.3 | 66.2 |
| Light Goods Vehicles | 0 | 49 | 4 | - | 53 | 25 | 6 | 3 | - | 34 | 12 | 2 | 47 | - | 61 | 3 | 2 | 0 | - | 5 | 153 |
| % Light Goods
Vehicles | - | 36.0 | 15.4 | - | 32.7 | 27.8 | 35.3 | 27.3 | - | 28.8 | 31.6 | 12.5 | 29.0 | - | 28.2 | 20.0 | 28.6 | - | - | 22.7 | 29.5 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | - | 0 | 1 |
| % Buses | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.6 | - | 0.5 | 0.0 | 0.0 | - | - | 0.0 | 0.2 |
| Single-Unit Trucks | 0 | 2 | 2 | - | 4 | 3 | 0 | 1 | - | 4 | 0 | 0 | 4 | - | 4 | 0 | 0 | 0 | - | 0 | 12 |
| % Single-Unit Trucks | - | 1.5 | 7.7 | - | 2.5 | 3.3 | 0.0 | 9.1 | - | 3.4 | 0.0 | 0.0 | 2.5 | - | 1.9 | 0.0 | 0.0 | - | - | 0.0 | 2.3 |
| Articulated Trucks | 0 | 0 | 0 | - | 0 | 1 | 0 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Articulated Trucks | - | 0.0 | 0.0 | - | 0.0 | 1.1 | 0.0 | 0.0 | - | 0.8 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.2 |
| Bicycles on Road | 0 | 0 | 2 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 2 |
| % Bicycles on Road | - | 0.0 | 7.7 | - | 1.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.4 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |
| | | | | | | | | | | | | | | | | | | | | | |



Count Name: 06-14thStSW_I315WB TMC Site Code: TMC-06 Start Date: 07/16/2014 Page No: 5



Turning Movement Peak Hour Data Plot (7:30 AM)



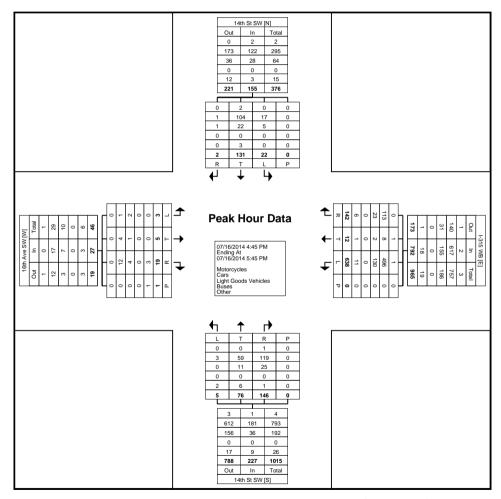
Count Name: 06-14thStSW_I315WB TMC Site Code: TMC-06 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:45 PM)

| | i | | | | i | | ~ <u>.</u> | , | | · oan i | | ~.~ (| | ٠, | i | | | | | | 1 |
|---------------------------|-------|-------|------------|------|------------|-------|------------|------------|------|------------|-------|-------|-----------|------|------------|-------|-------|-------------|-------|------------|------------|
| | | | 14th St SW | | | | | 14th St SW | | | | | I-315 WB | | | | | 16th Ave SW | ' | | 1 |
| Start Time | | | Southbound | | | | | Northbound | | | | | Westbound | | | | | Eastbound | | | 1 |
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 4:45 PM | 1 | 41 | 5 | 0 | 47 | 38 | 22 | 2 | 0 | 62 | 32 | 9 | 148 | 0 | 189 | 2 | 3 | 1 | 1 | 6 | 304 |
| 5:00 PM | 0 | 28 | 3 | 0 | 31 | 37 | 20 | 2 | 0 | 59 | 41 | 1 | 161 | 0 | 203 | 6 | 1 | 0 | 0 | 7 | 300 |
| 5:15 PM | 1 | 27 | 8 | 0 | 36 | 32 | 21 | 1 | 0 | 54 | 40 | 0 | 159 | 0 | 199 | 4 | 0 | 2 | 0 | 6 | 295 |
| 5:30 PM | 0 | 35 | 6 | 0 | 41 | 39 | 13 | 0 | 0 | 52 | 29 | 2 | 170 | 0 | 201 | 7 | 1 | 0 | 0 | 8 | 302 |
| Total | 2 | 131 | 22 | 0 | 155 | 146 | 76 | 5 | 0 | 227 | 142 | 12 | 638 | 0 | 792 | 19 | 5 | 3 | 1 | 27 | 1201 |
| Approach % | 1.3 | 84.5 | 14.2 | - | - | 64.3 | 33.5 | 2.2 | - | - | 17.9 | 1.5 | 80.6 | - | - | 70.4 | 18.5 | 11.1 | - | - | - |
| Total % | 0.2 | 10.9 | 1.8 | - | 12.9 | 12.2 | 6.3 | 0.4 | - | 18.9 | 11.8 | 1.0 | 53.1 | - | 65.9 | 1.6 | 0.4 | 0.2 | - | 2.2 | - |
| PHF | 0.500 | 0.799 | 0.688 | - | 0.824 | 0.936 | 0.864 | 0.625 | - | 0.915 | 0.866 | 0.333 | 0.938 | - | 0.975 | 0.679 | 0.417 | 0.375 | - | 0.844 | 0.988 |
| Motorcycles | 0 | 2 | 0 | - | 2 | 1 | 0 | 0 | - | 1 | 0 | 1 | 1 | - | 2 | 0 | 0 | 0 | - | 0 | 5 |
| % Motorcycles | 0.0 | 1.5 | 0.0 | - | 1.3 | 0.7 | 0.0 | 0.0 | - | 0.4 | 0.0 | 8.3 | 0.2 | - | 0.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.4 |
| Cars | 1 | 104 | 17 | - | 122 | 119 | 59 | 3 | - | 181 | 113 | 8 | 496 | - | 617 | 12 | 4 | 1 | - | 17 | 937 |
| % Cars | 50.0 | 79.4 | 77.3 | - | 78.7 | 81.5 | 77.6 | 60.0 | - | 79.7 | 79.6 | 66.7 | 77.7 | - | 77.9 | 63.2 | 80.0 | 33.3 | - | 63.0 | 78.0 |
| Light Goods Vehicles | 1 | 22 | 5 | - | 28 | 25 | 11 | 0 | - | 36 | 23 | 2 | 130 | - | 155 | 4 | 1 | 2 | - | 7 | 226 |
| % Light Goods
Vehicles | 50.0 | 16.8 | 22.7 | - | 18.1 | 17.1 | 14.5 | 0.0 | - | 15.9 | 16.2 | 16.7 | 20.4 | - | 19.6 | 21.1 | 20.0 | 66.7 | - | 25.9 | 18.8 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Buses | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Single-Unit Trucks | 0 | 2 | 0 | - | 2 | 1 | 5 | 2 | - | 8 | 4 | 1 | 10 | - | 15 | 2 | 0 | 0 | - | 2 | 27 |
| % Single-Unit Trucks | 0.0 | 1.5 | 0.0 | - | 1.3 | 0.7 | 6.6 | 40.0 | - | 3.5 | 2.8 | 8.3 | 1.6 | - | 1.9 | 10.5 | 0.0 | 0.0 | - | 7.4 | 2.2 |
| Articulated Trucks | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 2 | 0 | 1 | - | 3 | 1 | 0 | 0 | - | 1 | 5 |
| % Articulated Trucks | 0.0 | 0.8 | 0.0 | - | 0.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 1.4 | 0.0 | 0.2 | - | 0.4 | 5.3 | 0.0 | 0.0 | - | 3.7 | 0.4 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 1.3 | 0.0 | - | 0.4 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |
| | | | | | - | | | | | | | • | • | | | | | | | • | |



Count Name: 06-14thStSW_I315WB TMC Site Code: TMC-06 Start Date: 07/16/2014 Page No: 7



Turning Movement Peak Hour Data Plot (4:45 PM)



Count Name: 06-14thStSW_I315WB TMC Site Code: TMC-06 Start Date: 07/16/2014 Page No: 8



Count Name: 07-FoxFarm_I315 TMC Site Code: TMC-07 Start Date: 07/16/2014 Page No: 1

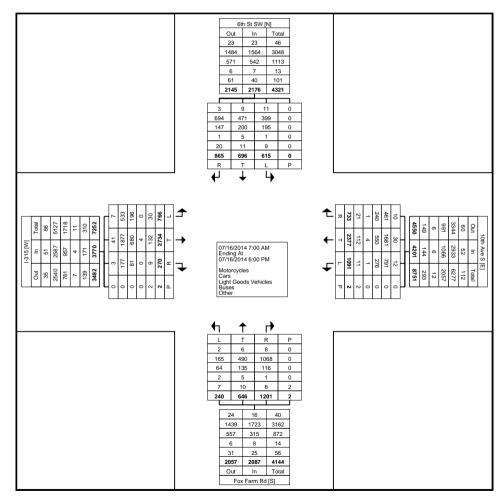
Turning Movement Data

| | | | 6th St SW | | | | | Fox Farm Rd | Ŭ | | | | 10th Ave S | | | | | I-315 | | | İ |
|---------------------------|-------|------|------------|------|------------|-------|------|-------------|------|------------|-------|------|------------|------|------------|-------|------|-----------|------|------------|------------|
| | | | Southbound | | | | | Northbound | | | | | Westbound | | | | | Eastbound | | | İ |
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 17 | 15 | 21 | 0 | 53 | 79 | 33 | 12 | 0 | 124 | 20 | 78 | 14 | 0 | 112 | 8 | 140 | 32 | 0 | 180 | 469 |
| 7:15 AM | 24 | 14 | 45 | 0 | 83 | 77 | 33 | 7 | 0 | 117 | 41 | 79 | 22 | 0 | 142 | 15 | 155 | 47 | 0 | 217 | 559 |
| 7:30 AM | 22 | 15 | 36 | 0 | 73 | 103 | 58 | 16 | 0 | 177 | 28 | 99 | 21 | 0 | 148 | 15 | 211 | 45 | 0 | 271 | 669 |
| 7:45 AM | 32 | 19 | 63 | 0 | 114 | 145 | 81 | 16 | 0 | 242 | 49 | 81 | 24 | 0 | 154 | 10 | 244 | 50 | 0 | 304 | 814 |
| Hourly Total | 95 | 63 | 165 | 0 | 323 | 404 | 205 | 51 | 0 | 660 | 138 | 337 | 81 | 0 | 556 | 48 | 750 | 174 | 0 | 972 | 2511 |
| 8:00 AM | 26 | 33 | 37 | 0 | 96 | 93 | 38 | 5 | 0 | 136 | 26 | 70 | 24 | 0 | 120 | 9 | 128 | 43 | 0 | 180 | 532 |
| 8:15 AM | 41 | 23 | 36 | 0 | 100 | 96 | 42 | 13 | 0 | 151 | 33 | 85 | 32 | 0 | 150 | 11 | 149 | 23 | 0 | 183 | 584 |
| 8:30 AM | 36 | 22 | 37 | 0 | 95 | 82 | 45 | 15 | 0 | 142 | 26 | 97 | 25 | 0 | 148 | 15 | 147 | 30 | 0 | 192 | 577 |
| 8:45 AM | 45 | 27 | 38 | 0 | 110 | 99 | 39 | 9 | 0 | 147 | 34 | 129 | 36 | 0 | 199 | 8 | 156 | 44 | 0 | 208 | 664 |
| Hourly Total | 148 | 105 | 148 | 0 | 401 | 370 | 164 | 42 | 0 | 576 | 119 | 381 | 117 | 0 | 617 | 43 | 580 | 140 | 0 | 763 | 2357 |
| *** BREAK *** | - | | - | - | _ | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 54 | 52 | 39 | 0 | 145 | 31 | 26 | 16 | 0 | 73 | 54 | 188 | 95 | 0 | 337 | 17 | 223 | 53 | 1 | 293 | 848 |
| 4:15 PM | 77 | 68 | 43 | 0 | 188 | 63 | 24 | 26 | 1 | 113 | 64 | 164 | 85 | 0 | 313 | 21 | 160 | 52 | 0 | 233 | 847 |
| 4:30 PM | 79 | 46 | 33 | 0 | 158 | 50 | 37 | 18 | 0 | 105 | 52 | 244 | 121 | 0 | 417 | 34 | 216 | 61 | 1 | 311 | 991 |
| 4:45 PM | 101 | 64 | 38 | 0 | 203 | 49 | 36 | 15 | 1 | 100 | 55 | 166 | 95 | 0 | 316 | 23 | 163 | 69 | 0 | 255 | 874 |
| Hourly Total | 311 | 230 | 153 | 0 | 694 | 193 | 123 | 75 | 2 | 391 | 225 | 762 | 396 | 0 | 1383 | 95 | 762 | 235 | 2 | 1092 | 3560 |
| 5:00 PM | 69 | 79 | 44 | 0 | 192 | 54 | 43 | 18 | 0 | 115 | 63 | 217 | 105 | 1 | 385 | 22 | 184 | 53 | 0 | 259 | 951 |
| 5:15 PM | 76 | 85 | 38 | 0 | 199 | 74 | 39 | 20 | 0 | 133 | 80 | 247 | 165 | 0 | 492 | 24 | 143 | 59 | 0 | 226 | 1050 |
| 5:30 PM | 84 | 74 | 40 | 0 | 198 | 58 | 34 | 18 | 0 | 110 | 60 | 217 | 94 | 1 | 371 | 13 | 166 | 53 | 0 | 232 | 911 |
| 5:45 PM | 82 | 60 | 27 | 0 | 169 | 48 | 38 | 16 | 0 | 102 | 48 | 216 | 133 | 0 | 397 | 25 | 149 | 52 | 0 | 226 | 894 |
| Hourly Total | 311 | 298 | 149 | 0 | 758 | 234 | 154 | 72 | 0 | 460 | 251 | 897 | 497 | 2 | 1645 | 84 | 642 | 217 | 0 | 943 | 3806 |
| Grand Total | 865 | 696 | 615 | 0 | 2176 | 1201 | 646 | 240 | 2 | 2087 | 733 | 2377 | 1091 | 2 | 4201 | 270 | 2734 | 766 | 2 | 3770 | 12234 |
| Approach % | 39.8 | 32.0 | 28.3 | - | - | 57.5 | 31.0 | 11.5 | - | - | 17.4 | 56.6 | 26.0 | - | - | 7.2 | 72.5 | 20.3 | - | | - |
| Total % | 7.1 | 5.7 | 5.0 | - | 17.8 | 9.8 | 5.3 | 2.0 | - | 17.1 | 6.0 | 19.4 | 8.9 | - | 34.3 | 2.2 | 22.3 | 6.3 | - | 30.8 | - |
| Motorcycles | 3 | 9 | 11 | - | 23 | 8 | 6 | 2 | - | 16 | 10 | 30 | 12 | - | 52 | 3 | 41 | 7 | - | 51 | 142 |
| % Motorcycles | 0.3 | 1.3 | 1.8 | - | 1.1 | 0.7 | 0.9 | 0.8 | - | 0.8 | 1.4 | 1.3 | 1.1 | - | 1.2 | 1.1 | 1.5 | 0.9 | - | 1.4 | 1.2 |
| Cars | 694 | 471 | 399 | - | 1564 | 1068 | 490 | 165 | - | 1723 | 461 | 1681 | 791 | - | 2933 | 177 | 1877 | 533 | - | 2587 | 8807 |
| % Cars | 80.2 | 67.7 | 64.9 | - | 71.9 | 88.9 | 75.9 | 68.8 | - | 82.6 | 62.9 | 70.7 | 72.5 | - | 69.8 | 65.6 | 68.7 | 69.6 | - | 68.6 | 72.0 |
| Light Goods Vehicles | 147 | 200 | 195 | - | 542 | 116 | 135 | 64 | - | 315 | 240 | 550 | 276 | - | 1066 | 81 | 680 | 196 | - | 957 | 2880 |
| % Light Goods
Vehicles | 17.0 | 28.7 | 31.7 | - | 24.9 | 9.7 | 20.9 | 26.7 | - | 15.1 | 32.7 | 23.1 | 25.3 | - | 25.4 | 30.0 | 24.9 | 25.6 | - | 25.4 | 23.5 |
| Buses | 1 | 5 | 1 | - | 7 | 1 | 5 | 2 | - | 8 | 1 | 4 | 1 | - | 6 | 0 | 4 | 0 | - | 4 | 25 |
| % Buses | 0.1 | 0.7 | 0.2 | - | 0.3 | 0.1 | 0.8 | 0.8 | - | 0.4 | 0.1 | 0.2 | 0.1 | - | 0.1 | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.2 |
| Single-Unit Trucks | 16 | 10 | 5 | - | 31 | 8 | 9 | 6 | - | 23 | 17 | 59 | 11 | - | 87 | 8 | 65 | 19 | - | 92 | 233 |
| % Single-Unit Trucks | 1.8 | 1.4 | 0.8 | - | 1.4 | 0.7 | 1.4 | 2.5 | - | 1.1 | 2.3 | 2.5 | 1.0 | - | 2.1 | 3.0 | 2.4 | 2.5 | - | 2.4 | 1.9 |
| Articulated Trucks | 4 | 1 | 4 | - | 9 | 0 | 0 | 1 | - | 1 | 4 | 53 | 0 | - | 57 | 0 | 67 | 11 | - | 78 | 145 |
| % Articulated Trucks | 0.5 | 0.1 | 0.7 | - | 0.4 | 0.0 | 0.0 | 0.4 | - | 0.0 | 0.5 | 2.2 | 0.0 | - | 1.4 | 0.0 | 2.5 | 1.4 | - | 2.1 | 1.2 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 1 | 0 | 0 | - | 1 | 2 |

| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.2 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.4 | 0.0 | 0.0 | - | 0.0 | 0.0 |
|--------------------|-----|-----|-----|---|-----|-----|-----|-----|-------|-----|-----|-----|-----|-------|-----|-----|-----|-----|-------|-----|-----|
| Pedestrians | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 2 | - | - | - | - | 2 | - | - |
| % Pedestrians | - | - | - | - | - | - | _ | - | 100.0 | - | - | - | _ | 100.0 | - | - | - | - | 100.0 | - | - |



Count Name: 07-FoxFarm_I315 TMC Site Code: TMC-07 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



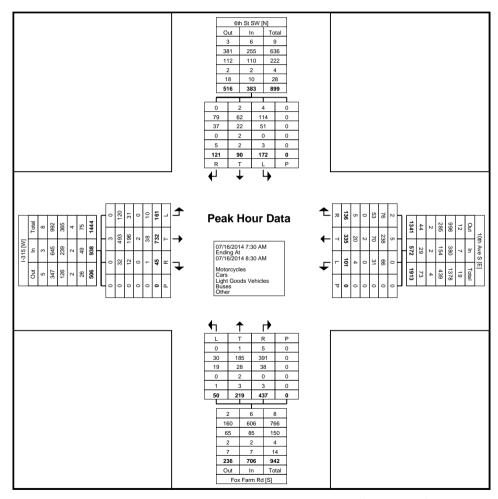
Count Name: 07-FoxFarm_I315 TMC Site Code: TMC-07 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

| | i | | | | i | • | ٠ | , | | | | αια (| 00 / | '/ | i | | | | | | i |
|---------------------------|-------|-------|------------|------|------------|-------|-------|-------------|------|------------|-------|-------|------------|------|------------|-------|-------|-----------|------|------------|------------|
| | | | 6th St SW | | | | | Fox Farm Ro | I | | | | 10th Ave S | | | | | I-315 | | | |
| Start Time | | | Southbound | | | | | Northbound | | | | | Westbound | | | | | Eastbound | | | |
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 7:30 AM | 22 | 15 | 36 | 0 | 73 | 103 | 58 | 16 | 0 | 177 | 28 | 99 | 21 | 0 | 148 | 15 | 211 | 45 | 0 | 271 | 669 |
| 7:45 AM | 32 | 19 | 63 | 0 | 114 | 145 | 81 | 16 | 0 | 242 | 49 | 81 | 24 | 0 | 154 | 10 | 244 | 50 | 0 | 304 | 814 |
| 8:00 AM | 26 | 33 | 37 | 0 | 96 | 93 | 38 | 5 | 0 | 136 | 26 | 70 | 24 | 0 | 120 | 9 | 128 | 43 | 0 | 180 | 532 |
| 8:15 AM | 41 | 23 | 36 | 0 | 100 | 96 | 42 | 13 | 0 | 151 | 33 | 85 | 32 | 0 | 150 | 11 | 149 | 23 | 0 | 183 | 584 |
| Total | 121 | 90 | 172 | 0 | 383 | 437 | 219 | 50 | 0 | 706 | 136 | 335 | 101 | 0 | 572 | 45 | 732 | 161 | 0 | 938 | 2599 |
| Approach % | 31.6 | 23.5 | 44.9 | - | - | 61.9 | 31.0 | 7.1 | - | - | 23.8 | 58.6 | 17.7 | - | - | 4.8 | 78.0 | 17.2 | - | - | - |
| Total % | 4.7 | 3.5 | 6.6 | - | 14.7 | 16.8 | 8.4 | 1.9 | - | 27.2 | 5.2 | 12.9 | 3.9 | - | 22.0 | 1.7 | 28.2 | 6.2 | - | 36.1 | - |
| PHF | 0.738 | 0.682 | 0.683 | - | 0.840 | 0.753 | 0.676 | 0.781 | - | 0.729 | 0.694 | 0.846 | 0.789 | - | 0.929 | 0.750 | 0.750 | 0.805 | - | 0.771 | 0.798 |
| Motorcycles | 0 | 2 | 4 | - | 6 | 5 | 1 | 0 | - | 6 | 2 | 5 | 0 | - | 7 | 0 | 3 | 0 | - | 3 | 22 |
| % Motorcycles | 0.0 | 2.2 | 2.3 | - | 1.6 | 1.1 | 0.5 | 0.0 | - | 8.0 | 1.5 | 1.5 | 0.0 | - | 1.2 | 0.0 | 0.4 | 0.0 | - | 0.3 | 0.8 |
| Cars | 79 | 62 | 114 | - | 255 | 391 | 185 | 30 | - | 606 | 76 | 238 | 66 | - | 380 | 32 | 493 | 120 | - | 645 | 1886 |
| % Cars | 65.3 | 68.9 | 66.3 | - | 66.6 | 89.5 | 84.5 | 60.0 | - | 85.8 | 55.9 | 71.0 | 65.3 | - | 66.4 | 71.1 | 67.3 | 74.5 | - | 68.8 | 72.6 |
| Light Goods Vehicles | 37 | 22 | 51 | - | 110 | 38 | 28 | 19 | - | 85 | 53 | 70 | 31 | - | 154 | 12 | 196 | 31 | - | 239 | 588 |
| % Light Goods
Vehicles | 30.6 | 24.4 | 29.7 | - | 28.7 | 8.7 | 12.8 | 38.0 | - | 12.0 | 39.0 | 20.9 | 30.7 | - | 26.9 | 26.7 | 26.8 | 19.3 | - | 25.5 | 22.6 |
| Buses | 0 | 2 | 0 | - | 2 | 0 | 2 | 0 | - | 2 | 0 | 2 | 0 | - | 2 | 0 | 2 | 0 | - | 2 | 8 |
| % Buses | 0.0 | 2.2 | 0.0 | - | 0.5 | 0.0 | 0.9 | 0.0 | - | 0.3 | 0.0 | 0.6 | 0.0 | - | 0.3 | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.3 |
| Single-Unit Trucks | 5 | 1 | 2 | - | 8 | 3 | 2 | 0 | - | 5 | 5 | 12 | 4 | - | 21 | 1 | 24 | 8 | - | 33 | 67 |
| % Single-Unit Trucks | 4.1 | 1.1 | 1.2 | - | 2.1 | 0.7 | 0.9 | 0.0 | - | 0.7 | 3.7 | 3.6 | 4.0 | - | 3.7 | 2.2 | 3.3 | 5.0 | - | 3.5 | 2.6 |
| Articulated Trucks | 0 | 1 | 1 | - | 2 | 0 | 0 | 1 | - | 1 | 0 | 8 | 0 | - | 8 | 0 | 14 | 2 | - | 16 | 27 |
| % Articulated Trucks | 0.0 | 1.1 | 0.6 | - | 0.5 | 0.0 | 0.0 | 2.0 | - | 0.1 | 0.0 | 2.4 | 0.0 | - | 1.4 | 0.0 | 1.9 | 1.2 | - | 1.7 | 1.0 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.5 | 0.0 | - | 0.1 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | _ | - |
| | • | | • | | | | | | | | | | | | | | • | | | | |



Count Name: 07-FoxFarm_I315 TMC Site Code: TMC-07 Start Date: 07/16/2014 Page No: 5



Turning Movement Peak Hour Data Plot (7:30 AM)



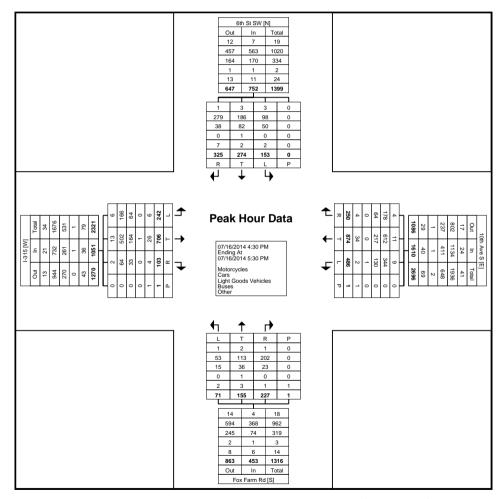
Count Name: 07-FoxFarm_I315 TMC Site Code: TMC-07 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:30 PM)

| | | | 6th St SW | | | | | Fox Farm Rd | | | | ` | 10th Ave S | , | | | | I-315 | | | |
|---------------------------|-------|-------|------------|------|------------|-------|-------|-------------|-------|------------|-------|-------|------------|-------|------------|-------|-------|-----------|-------|------------|------------|
| | | | Southbound | | | | | Northbound | | | | | Westbound | | | | | Eastbound | | | İ |
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 4:30 PM | 79 | 46 | 33 | 0 | 158 | 50 | 37 | 18 | 0 | 105 | 52 | 244 | 121 | 0 | 417 | 34 | 216 | 61 | 1 | 311 | 991 |
| 4:45 PM | 101 | 64 | 38 | 0 | 203 | 49 | 36 | 15 | 1 | 100 | 55 | 166 | 95 | 0 | 316 | 23 | 163 | 69 | 0 | 255 | 874 |
| 5:00 PM | 69 | 79 | 44 | 0 | 192 | 54 | 43 | 18 | 0 | 115 | 63 | 217 | 105 | 1 | 385 | 22 | 184 | 53 | 0 | 259 | 951 |
| 5:15 PM | 76 | 85 | 38 | 0 | 199 | 74 | 39 | 20 | 0 | 133 | 80 | 247 | 165 | 0 | 492 | 24 | 143 | 59 | 0 | 226 | 1050 |
| Total | 325 | 274 | 153 | 0 | 752 | 227 | 155 | 71 | 1 | 453 | 250 | 874 | 486 | 1 | 1610 | 103 | 706 | 242 | 1 | 1051 | 3866 |
| Approach % | 43.2 | 36.4 | 20.3 | - | - | 50.1 | 34.2 | 15.7 | - | - | 15.5 | 54.3 | 30.2 | - | - | 9.8 | 67.2 | 23.0 | - | - | - |
| Total % | 8.4 | 7.1 | 4.0 | - | 19.5 | 5.9 | 4.0 | 1.8 | - | 11.7 | 6.5 | 22.6 | 12.6 | - | 41.6 | 2.7 | 18.3 | 6.3 | - | 27.2 | - |
| PHF | 0.804 | 0.806 | 0.869 | - | 0.926 | 0.767 | 0.901 | 0.888 | - | 0.852 | 0.781 | 0.885 | 0.736 | - | 0.818 | 0.757 | 0.817 | 0.877 | - | 0.845 | 0.920 |
| Motorcycles | 1 | 3 | 3 | - | 7 | 1 | 2 | 1 | - | 4 | 4 | 11 | 9 | - | 24 | 2 | 13 | 6 | - | 21 | 56 |
| % Motorcycles | 0.3 | 1.1 | 2.0 | - | 0.9 | 0.4 | 1.3 | 1.4 | - | 0.9 | 1.6 | 1.3 | 1.9 | - | 1.5 | 1.9 | 1.8 | 2.5 | - | 2.0 | 1.4 |
| Cars | 279 | 186 | 98 | - | 563 | 202 | 113 | 53 | - | 368 | 178 | 612 | 344 | - | 1134 | 64 | 502 | 166 | - | 732 | 2797 |
| % Cars | 85.8 | 67.9 | 64.1 | - | 74.9 | 89.0 | 72.9 | 74.6 | - | 81.2 | 71.2 | 70.0 | 70.8 | - | 70.4 | 62.1 | 71.1 | 68.6 | - | 69.6 | 72.3 |
| Light Goods Vehicles | 38 | 82 | 50 | - | 170 | 23 | 36 | 15 | - | 74 | 64 | 217 | 130 | - | 411 | 33 | 164 | 64 | - | 261 | 916 |
| % Light Goods
Vehicles | 11.7 | 29.9 | 32.7 | - | 22.6 | 10.1 | 23.2 | 21.1 | - | 16.3 | 25.6 | 24.8 | 26.7 | - | 25.5 | 32.0 | 23.2 | 26.4 | - | 24.8 | 23.7 |
| Buses | 0 | 1 | 0 | - | 1 | 0 | 1 | 0 | - | 1 | 0 | 0 | 1 | - | 1 | 0 | 1 | 0 | - | 1 | 4 |
| % Buses | 0.0 | 0.4 | 0.0 | - | 0.1 | 0.0 | 0.6 | 0.0 | - | 0.2 | 0.0 | 0.0 | 0.2 | - | 0.1 | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.1 |
| Single-Unit Trucks | 4 | 2 | 0 | - | 6 | 1 | 3 | 2 | - | 6 | 3 | 19 | 2 | - | 24 | 3 | 13 | 4 | - | 20 | 56 |
| % Single-Unit Trucks | 1.2 | 0.7 | 0.0 | - | 0.8 | 0.4 | 1.9 | 2.8 | - | 1.3 | 1.2 | 2.2 | 0.4 | - | 1.5 | 2.9 | 1.8 | 1.7 | - | 1.9 | 1.4 |
| Articulated Trucks | 3 | 0 | 2 | - | 5 | 0 | 0 | 0 | - | 0 | 1 | 15 | 0 | - | 16 | 0 | 13 | 2 | - | 15 | 36 |
| % Articulated Trucks | 0.9 | 0.0 | 1.3 | - | 0.7 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.4 | 1.7 | 0.0 | - | 1.0 | 0.0 | 1.8 | 0.8 | - | 1.4 | 0.9 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 | 0 | 0 | - | 1 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 1.0 | 0.0 | 0.0 | - | 0.1 | 0.0 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 1 | - | - | - | | 1 | - | - | - | - | 1 | - | - |
| % Pedestrians | - | | _ | - | _ | - | _ | _ | 100.0 | _ | - | | | 100.0 | _ | - | _ | | 100.0 | - | - |



Count Name: 07-FoxFarm_I315 TMC Site Code: TMC-07 Start Date: 07/16/2014 Page No: 7



Turning Movement Peak Hour Data Plot (4:30 PM)



Count Name: 07-FoxFarm_I315 TMC Site Code: TMC-07 Start Date: 07/16/2014 Page No: 8



Count Name: 08-CentralAve_I15SB TMC Site Code: TMC-08 Start Date: 07/16/2014 Page No: 1

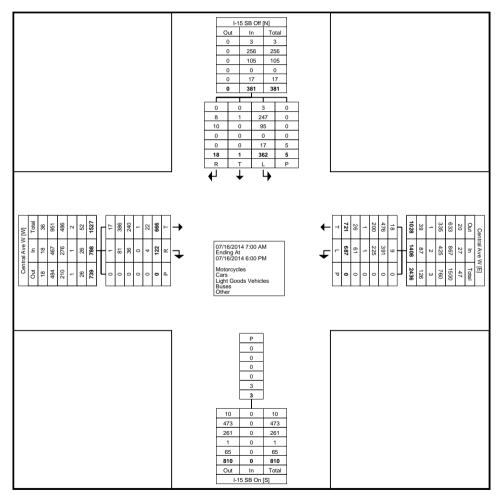
Turning Movement Data

| | | | I-15 SB Off
Southbound | | | I-15 SB On Central Ave W Northbound Westbound | | | | | | | Central Ave W Eastbound | | | | |
|------------------------|-------|-------|---------------------------|------|------------|------------------------------------------------|------------|------|------|------|------------|-------|-------------------------|------|------------|------------|--|
| Start Time | Right | Thru | Left | Peds | App. Total | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Int. Total | |
| 7:00 AM | 3 | 0 | 31 | 0 | 34 | 0 | 0 | 9 | 30 | 0 | 39 | 9 | 35 | 0 | 44 | 117 | |
| 7:15 AM | 1 | 0 | 37 | 0 | 38 | 0 | 0 | 19 | 28 | 0 | 47 | 13 | 33 | 0 | 46 | 131 | |
| 7:30 AM | 2 | 0 | 38 | 0 | 40 | 0 | 0 | 27 | 24 | 0 | 51 | 8 | 69 | 0 | 77 | 168 | |
| 7:45 AM | 1 | 0 | 35 | 0 | 36 | 0 | 0 | 22 | 40 | 0 | 62 | 12 | 47 | 0 | 59 | 157 | |
| Hourly Total | 7 | 0 | 141 | 0 | 148 | 0 | 0 | 77 | 122 | 0 | 199 | 42 | 184 | 0 | 226 | 573 | |
| 8:00 AM | 2 | 0 | 20 | 0 | 22 | 0 | 0 | 20 | 31 | 0 | 51 | 6 | 42 | 0 | 48 | 121 | |
| 8:15 AM | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 20 | 33 | 0 | 53 | 7 | 42 | 0 | 49 | 121 | |
| 8:30 AM | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 23 | 28 | 0 | 51 | 6 | 29 | 0 | 35 | 106 | |
| 8:45 AM | 0 | 0 | 20 | 0 | 20 | 2 | 0 | 21 | 35 | 0 | 56 | 7 | 33 | 0 | 40 | 116 | |
| Hourly Total | 2 | 0 | 79 | 0 | 81 | 2 | 0 | 84 | 127 | 0 | 211 | 26 | 146 | 0 | 172 | 464 | |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 4:00 PM | 1 | 1 | 26 | 0 | 28 | 0 | 0 | 59 | 46 | 0 | 105 | 10 | 44 | 0 | 54 | 187 | |
| 4:15 PM | 2 | 0 | 13 | 0 | 15 | 0 | 0 | 73 | 44 | 0 | 117 | 5 | 37 | 0 | 42 | 174 | |
| 4:30 PM | 0 | 0 | 23 | 0 | 23 | 0 | 0 | 68 | 53 | 0 | 121 | 7 | 49 | 0 | 56 | 200 | |
| 4:45 PM | 0 | 0 | 14 | 3 | 14 | 0 | 0 | 61 | 65 | 0 | 126 | 2 | 40 | 0 | 42 | 182 | |
| Hourly Total | 3 | 1 | 76 | 3 | 80 | 0 | 0 | 261 | 208 | 0 | 469 | 24 | 170 | 0 | 194 | 743 | |
| 5:00 PM | 2 | 0 | 16 | 0 | 18 | 0 | 0 | 75 | 52 | 0 | 127 | 7 | 40 | 0 | 47 | 192 | |
| 5:15 PM | 1 | 0 | 17 | 1 | 18 | 1 | 0 | 86 | 64 | 0 | 150 | 5 | 49 | 0 | 54 | 222 | |
| 5:30 PM | 1 | 0 | 15 | 0 | 16 | 0 | 0 | 66 | 64 | 0 | 130 | 9 | 43 | 0 | 52 | 198 | |
| 5:45 PM | 2 | 0 | 18 | 1 | 20 | 0 | 0 | 72 | 50 | 0 | 122 | 9 | 34 | 0 | 43 | 185 | |
| Hourly Total | 6 | 0 | 66 | 2 | 72 | 1 | 0 | 299 | 230 | 0 | 529 | 30 | 166 | 0 | 196 | 797 | |
| Grand Total | 18 | 1 | 362 | 5 | 381 | 3 | 0 | 721 | 687 | 0 | 1408 | 122 | 666 | 0 | 788 | 2577 | |
| Approach % | 4.7 | 0.3 | 95.0 | - | - | - | - | 51.2 | 48.8 | - | - | 15.5 | 84.5 | - | - | - | |
| Total % | 0.7 | 0.0 | 14.0 | - | 14.8 | - | 0.0 | 28.0 | 26.7 | - | 54.6 | 4.7 | 25.8 | - | 30.6 | - | |
| Motorcycles | 0 | 0 | 3 | - | 3 | - | 0 | 18 | 9 | - | 27 | 1 | 17 | - | 18 | 48 | |
| % Motorcycles | 0.0 | 0.0 | 0.8 | - | 0.8 | - | _ | 2.5 | 1.3 | - | 1.9 | 0.8 | 2.6 | - | 2.3 | 1.9 | |
| Cars | 8 | 1 | 247 | - | 256 | - | 0 | 476 | 391 | - | 867 | 81 | 386 | - | 467 | 1590 | |
| % Cars | 44.4 | 100.0 | 68.2 | - | 67.2 | - | _ | 66.0 | 56.9 | - | 61.6 | 66.4 | 58.0 | - | 59.3 | 61.7 | |
| Light Goods Vehicles | 10 | 0 | 95 | - | 105 | - | 0 | 200 | 225 | - | 425 | 36 | 240 | _ | 276 | 806 | |
| % Light Goods Vehicles | 55.6 | 0.0 | 26.2 | - | 27.6 | - | - | 27.7 | 32.8 | - | 30.2 | 29.5 | 36.0 | - | 35.0 | 31.3 | |
| Buses | 0 | 0 | 0 | - | 0 | - | 0 | 1 | 1 | - | 2 | 0 | 1 | - | . 1 | 3 | |
| % Buses | 0.0 | 0.0 | 0.0 | - | 0.0 | - | _ | 0.1 | 0.1 | - | 0.1 | 0.0 | 0.2 | _ | 0.1 | 0.1 | |
| Single-Unit Trucks | 0 | 0 | 7 | - | 7 | - | 0 | 13 | 28 | - | 41 | 4 | 10 | - | 14 | 62 | |
| % Single-Unit Trucks | 0.0 | 0.0 | 1.9 | - | 1.8 | - | _ | 1.8 | 4.1 | - | 2.9 | 3.3 | 1.5 | - | 1.8 | 2.4 | |
| Articulated Trucks | 0 | 0 | 10 | - | 10 | - | 0 | 13 | 33 | - | 46 | 0 | 12 | - | 12 | 68 | |
| % Articulated Trucks | 0.0 | 0.0 | 2.8 | - | 2.6 | - | - | 1.8 | 4.8 | - | 3.3 | 0.0 | 1.8 | - | 1.5 | 2.6 | |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | |

| Pedestrians | - | - | - | 5 | - | 3 | - | - | - | 0 | - | - | - | 0 | - | - |
|---------------|---|---|---|-------|---|-------|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | - | - | - | 100.0 | - | 100.0 | - | - | - | - | - | - | - | - | - | _ |



Count Name: 08-CentralAve_I15SB TMC Site Code: TMC-08 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



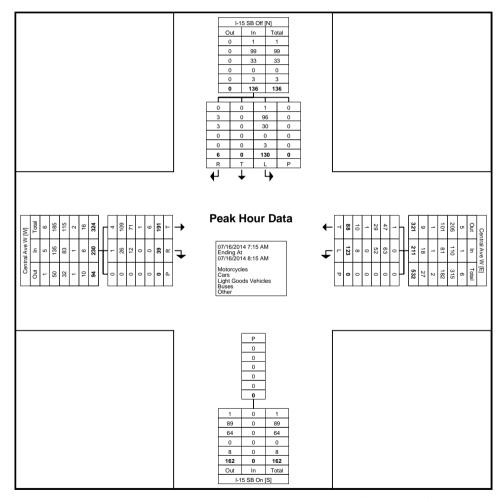
Count Name: 08-CentralAve_I15SB TMC Site Code: TMC-08 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:15 AM)

| i | I-15 SB Off I-15 SB On Central Ave W Central Ave W | | | | | | | | | | | | | | | |
|------------------------|----------------------------------------------------|----------|-------------|------|------------|------|------------|-------|--------|---------|------------|-------|--------|---------|------------|------------|
| | | | I-15 SB Off | | | I-15 | SB On | | Centra | l Ave W | | | Centra | I Ave W | | 1 |
| Start Time | | | Southbound | | | Nort | thbound | | West | bound | | | Eastl | oound | | 1 |
| Start Time | Right | Thru | Left | Peds | App. Total | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Int. Total |
| 7:15 AM | 1 | 0 | 37 | 0 | 38 | 0 | 0 | 19 | 28 | 0 | 47 | 13 | 33 | 0 | 46 | 131 |
| 7:30 AM | 2 | 0 | 38 | 0 | 40 | 0 | 0 | 27 | 24 | 0 | 51 | 8 | 69 | 0 | 77 | 168 |
| 7:45 AM | 1 | 0 | 35 | 0 | 36 | 0 | 0 | 22 | 40 | 0 | 62 | 12 | 47 | 0 | 59 | 157 |
| 8:00 AM | 2 | 0 | 20 | 0 | 22 | 0 | 0 | 20 | 31 | 0 | 51 | 6 | 42 | 0 | 48 | 121 |
| Total | 6 | 0 | 130 | 0 | 136 | 0 | 0 | 88 | 123 | 0 | 211 | 39 | 191 | 0 | 230 | 577 |
| Approach % | 4.4 | 0.0 | 95.6 | - | - | - | - | 41.7 | 58.3 | - | - | 17.0 | 83.0 | - | - | - |
| Total % | 1.0 | 0.0 | 22.5 | - | 23.6 | - | 0.0 | 15.3 | 21.3 | - | 36.6 | 6.8 | 33.1 | - | 39.9 | - |
| PHF | 0.750 | 0.000 | 0.855 | - | 0.850 | - | 0.000 | 0.815 | 0.769 | - | 0.851 | 0.750 | 0.692 | - | 0.747 | 0.859 |
| Motorcycles | 0 | 0 | 1 | - | 1 | - | 0 | 1 | 0 | - | 1 | 1 | 4 | - | 5 | 7 |
| % Motorcycles | 0.0 | _ | 0.8 | - | 0.7 | - | - | 1.1 | 0.0 | - | 0.5 | 2.6 | 2.1 | - | 2.2 | 1.2 |
| Cars | 3 | 0 | 96 | - | 99 | - | 0 | 47 | 63 | - | 110 | 26 | 109 | - | 135 | 344 |
| % Cars | 50.0 | - | 73.8 | - | 72.8 | - | - | 53.4 | 51.2 | - | 52.1 | 66.7 | 57.1 | - | 58.7 | 59.6 |
| Light Goods Vehicles | 3 | 0 | 30 | - | 33 | - | 0 | 29 | 52 | _ | 81 | 12 | 71 | _ | 83 | 197 |
| % Light Goods Vehicles | 50.0 | - | 23.1 | - | 24.3 | - | - | 33.0 | 42.3 | - | 38.4 | 30.8 | 37.2 | - | 36.1 | 34.1 |
| Buses | 0 | 0 | 0 | - | 0 | - | 0 | 1 | 0 | - | 1 | 0 | 1 | - | 1 | 2 |
| % Buses | 0.0 | _ | 0.0 | - | 0.0 | - | - | 1.1 | 0.0 | _ | 0.5 | 0.0 | 0.5 | _ | 0.4 | 0.3 |
| Single-Unit Trucks | 0 | 0 | 1 | - | 1 | - | 0 | 1 | 5 | - | 6 | 0 | 2 | - | 2 | 9 |
| % Single-Unit Trucks | 0.0 | - | 0.8 | - | 0.7 | - | - | 1.1 | 4.1 | - | 2.8 | 0.0 | 1.0 | - | 0.9 | 1.6 |
| Articulated Trucks | 0 | 0 | 2 | - | 2 | - | 0 | 9 | 3 | - | 12 | 0 | 4 | - | 4 | 18 |
| % Articulated Trucks | 0.0 | - | 1.5 | - | 1.5 | - | - | 10.2 | 2.4 | - | 5.7 | 0.0 | 2.1 | - | 1.7 | 3.1 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | <u>-</u> | 0.0 | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 0 | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 08-CentralAve_I15SB TMC Site Code: TMC-08 Start Date: 07/16/2014 Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)



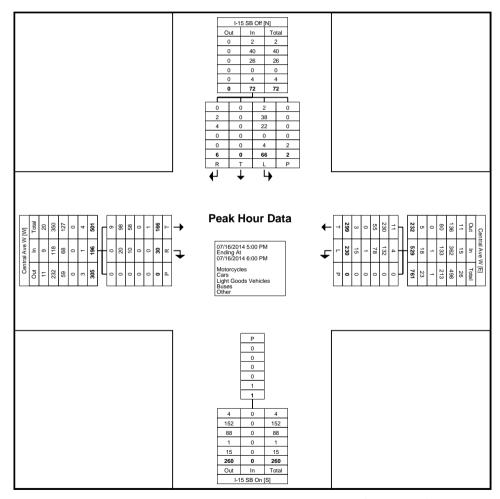
Count Name: 08-CentralAve_I15SB TMC Site Code: TMC-08 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

| 1 | I-15 SB Off I-15 SB On Central Ave W Central Ave W | | | | | | | | | | | | | | | |
|------------------------|----------------------------------------------------|-------|-------------|-------|------------|-------|------------|-------|---------|---------|------------|-------|-------|-------|------------|------------|
| | | | I-15 SB Off | | | I-15 | SB On | | Central | I Ave W | | | | | | |
| Start Time | | | Southbound | | | Nort | hbound | | West | bound | | | Eastl | oound | | |
| Start Time | Right | Thru | Left | Peds | App. Total | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Int. Total |
| 5:00 PM | 2 | 0 | 16 | 0 | 18 | 0 | 0 | 75 | 52 | 0 | 127 | 7 | 40 | 0 | 47 | 192 |
| 5:15 PM | 1 | 0 | 17 | 1 | 18 | 1 | 0 | 86 | 64 | 0 | 150 | 5 | 49 | 0 | 54 | 222 |
| 5:30 PM | 1 | 0 | 15 | 0 | 16 | 0 | 0 | 66 | 64 | 0 | 130 | 9 | 43 | 0 | 52 | 198 |
| 5:45 PM | 2 | 0 | 18 | 1 | 20 | 0 | 0 | 72 | 50 | 0 | 122 | 9 | 34 | 0 | 43 | 185 |
| Total | 6 | 0 | 66 | 2 | 72 | 1 | 0 | 299 | 230 | 0 | 529 | 30 | 166 | 0 | 196 | 797 |
| Approach % | 8.3 | 0.0 | 91.7 | - | - | - | - | 56.5 | 43.5 | - | - | 15.3 | 84.7 | - | - | - |
| Total % | 0.8 | 0.0 | 8.3 | - | 9.0 | - | 0.0 | 37.5 | 28.9 | - | 66.4 | 3.8 | 20.8 | - | 24.6 | - |
| PHF | 0.750 | 0.000 | 0.917 | - | 0.900 | - | 0.000 | 0.869 | 0.898 | - | 0.882 | 0.833 | 0.847 | - | 0.907 | 0.898 |
| Motorcycles | 0 | 0 | 2 | - | 2 | - | 0 | 11 | 4 | - | 15 | 0 | 9 | - | 9 | 26 |
| % Motorcycles | 0.0 | - | 3.0 | - | 2.8 | - | - | 3.7 | 1.7 | - | 2.8 | 0.0 | 5.4 | - | 4.6 | 3.3 |
| Cars | 2 | 0 | 38 | - | 40 | - | 0 | 230 | 132 | - | 362 | 20 | 98 | - | 118 | 520 |
| % Cars | 33.3 | - | 57.6 | - | 55.6 | - | - | 76.9 | 57.4 | - | 68.4 | 66.7 | 59.0 | - | 60.2 | 65.2 |
| Light Goods Vehicles | 4 | 0 | 22 | - | 26 | - | 0 | 55 | 78 | - | 133 | 10 | 58 | - | 68 | 227 |
| % Light Goods Vehicles | 66.7 | - | 33.3 | - | 36.1 | - | - | 18.4 | 33.9 | - | 25.1 | 33.3 | 34.9 | - | 34.7 | 28.5 |
| Buses | 0 | 0 | 0 | - | 0 | - | 0 | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 1 |
| % Buses | 0.0 | - | 0.0 | - | 0.0 | - | - | 0.0 | 0.4 | - | 0.2 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Single-Unit Trucks | 0 | 0 | 1 | - | 1 | - | 0 | 3 | 9 | - | 12 | 0 | 1 | - | 1 | 14 |
| % Single-Unit Trucks | 0.0 | - | 1.5 | - | 1.4 | - | - | 1.0 | 3.9 | - | 2.3 | 0.0 | 0.6 | - | 0.5 | 1.8 |
| Articulated Trucks | 0 | 0 | 3 | - | 3 | - | 0 | 0 | 6 | - | 6 | 0 | 0 | - | 0 | 9 |
| % Articulated Trucks | 0.0 | - | 4.5 | - | 4.2 | - | - | 0.0 | 2.6 | - | 1.1 | 0.0 | 0.0 | - | 0.0 | 1.1 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | - | 0.0 | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 2 | - | 1 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | 100.0 | - | - | - | | - | - | - | - | _ | - |



Count Name: 08-CentralAve_I15SB TMC Site Code: TMC-08 Start Date: 07/16/2014 Page No: 7



Turning Movement Peak Hour Data Plot (5:00 PM)



Count Name: 08-CentralAve_I15SB TMC Site Code: TMC-08 Start Date: 07/16/2014 Page No: 8



Count Name: 09-CentralAve_I15NB TMC Site Code: TMC-09 Start Date: 07/16/2014

Page No: 1

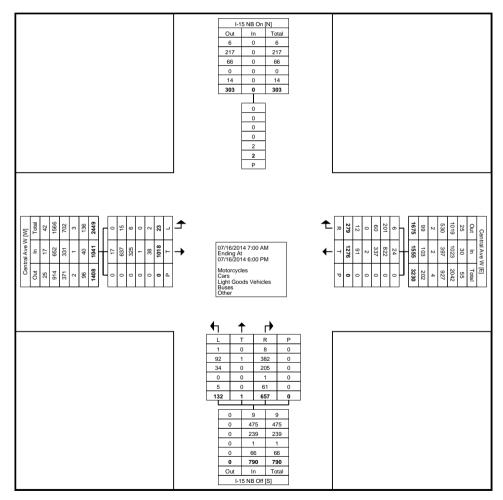
Turning Movement Data

| | | | | | | iai | Tilling Wick | V OILIOITE E | Julu | | - | | | | | |
|------------------------|------|------------|-------|-------|-------------|------|--------------|--------------|---------|-------|------------|------|-------|-------|------------|------------|
| | I-15 | NB On | | | I-15 NB Off | | _ | | Central | Ave W | | | | | | |
| | Sou | thbound | | | Northbound | | | | West | bound | | | Eastl | bound | | |
| Start Time | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 0 | 0 | 31 | 1 | 0 | 0 | 32 | 8 | 39 | 0 | 47 | 64 | 3 | 0 | 67 | 146 |
| 7:15 AM | 0 | 0 | 27 | 0 | 7 | 0 | 34 | 6 | 41 | 0 | 47 | 70 | 0 | 0 | 70 | 151 |
| 7:30 AM | 0 | 0 | 52 | 0 | 7 | 0 | 59 | 7 | 42 | 0 | 49 | 106 | 2 | 0 | 108 | 216 |
| 7:45 AM | 0 | 0 | 42 | 0 | 1 | 0 | 43 | 11 | 60 | 0 | 71 | 79 | 1 | 0 | 80 | 194 |
| Hourly Total | 0 | 0 | 152 | 1 | 15 | 0 | 168 | 32 | 182 | 0 | 214 | 319 | 6 | 0 | 325 | 707 |
| 8:00 AM | 0 | 0 | 39 | 0 | 3 | 0 | 42 | 11 | 52 | 0 | 63 | 61 | 1 | 0 | 62 | 167 |
| 8:15 AM | 0 | 0 | 44 | 0 | 4 | 0 | 48 | 15 | 48 | 0 | 63 | 59 | 2 | 0 | 61 | 172 |
| 8:30 AM | 0 | 0 | 32 | 0 | 3 | 0 | 35 | 11 | 45 | 0 | 56 | 54 | 0 | 0 | 54 | 145 |
| 8:45 AM | 0 | 0 | 34 | 0 | 9 | 0 | 43 | 4 | 49 | 0 | 53 | 50 | 0 | 0 | 50 | 146 |
| Hourly Total | 0 | 0 | 149 | 0 | 19 | 0 | 168 | 41 | 194 | 0 | 235 | 224 | 3 | 0 | 227 | 630 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 0 | 0 | 61 | 0 | 7 | 0 | 68 | 19 | 96 | 0 | 115 | 70 | 1 | 0 | 71 | 254 |
| 4:15 PM | 0 | 0 | 44 | 0 | 16 | 0 | 60 | 18 | 99 | 0 | 117 | 48 | 1 | 0 | 49 | 226 |
| 4:30 PM | 0 | 0 | 56 | 0 | 12 | 0 | 68 | 20 | 117 | 0 | 137 | 72 | 1 | 0 | 73 | 278 |
| 4:45 PM | 0 | 0 | 36 | 0 | 10 | 0 | 46 | 28 | 110 | 0 | 138 | 55 | 0 | 0 | 55 | 239 |
| Hourly Total | 0 | 0 | 197 | 0 | 45 | 0 | 242 | 85 | 422 | 0 | 507 | 245 | 3 | 0 | 248 | 997 |
| 5:00 PM | 0 | 0 | 35 | 0 | 15 | 0 | 50 | 34 | 118 | 0 | 152 | 58 | 1 | 0 | 59 | 261 |
| 5:15 PM | 1 | 0 | 43 | 0 | 20 | 0 | 63 | 31 | 126 | 0 | 157 | 64 | 3 | 0 | 67 | 287 |
| 5:30 PM | 0 | 0 | 47 | 0 | 8 | 0 | 55 | 30 | 124 | 0 | 154 | 60 | 1 | 0 | 61 | 270 |
| 5:45 PM | 1 | 0 | 34 | 0 | 10 | 0 | 44 | 26 | 110 | 0 | 136 | 48 | 6 | 0 | 54 | 234 |
| Hourly Total | 2 | 0 | 159 | 0 | 53 | 0 | 212 | 121 | 478 | 0 | 599 | 230 | 11 | 0 | 241 | 1052 |
| Grand Total | 2 | 0 | 657 | 1 | 132 | 0 | 790 | 279 | 1276 | 0 | 1555 | 1018 | 23 | 0 | 1041 | 3386 |
| Approach % | - | - | 83.2 | 0.1 | 16.7 | - | - | 17.9 | 82.1 | - | - | 97.8 | 2.2 | - | - | - |
| Total % | - | 0.0 | 19.4 | 0.0 | 3.9 | - | 23.3 | 8.2 | 37.7 | - | 45.9 | 30.1 | 0.7 | - | 30.7 | - |
| Motorcycles | - | 0 | 8 | 0 | 1 | - | 9 | 6 | 24 | - | 30 | 17 | 0 | - | 17 | 56 |
| % Motorcycles | - | - | 1.2 | 0.0 | 0.8 | - | 1.1 | 2.2 | 1.9 | - | 1.9 | 1.7 | 0.0 | - | 1.6 | 1.7 |
| Cars | - | 0 | 382 | 1 | 92 | - | 475 | 201 | 822 | - | 1023 | 637 | 15 | - | 652 | 2150 |
| % Cars | - | - | 58.1 | 100.0 | 69.7 | - | 60.1 | 72.0 | 64.4 | - | 65.8 | 62.6 | 65.2 | - | 62.6 | 63.5 |
| Light Goods Vehicles | - | 0 | 205 | 0 | 34 | - | 239 | 60 | 337 | - | 397 | 325 | 6 | - | 331 | 967 |
| % Light Goods Vehicles | - | - | 31.2 | 0.0 | 25.8 | - | 30.3 | 21.5 | 26.4 | - | 25.5 | 31.9 | 26.1 | - | 31.8 | 28.6 |
| Buses | - | 0 | 1 | 0 | 0 | - | 1 | 0 | 2 | - | 2 | 1 | 0 | - | 1 | 4 |
| % Buses | - | - | 0.2 | 0.0 | 0.0 | - | 0.1 | 0.0 | 0.2 | - | 0.1 | 0.1 | 0.0 | - | 0.1 | 0.1 |
| Single-Unit Trucks | - | 0 | 25 | 0 | 5 | - | 30 | 8 | 43 | - | 51 | 16 | 2 | - | 18 | 99 |
| % Single-Unit Trucks | - | - | 3.8 | 0.0 | 3.8 | - | 3.8 | 2.9 | 3.4 | - | 3.3 | 1.6 | 8.7 | - | 1.7 | 2.9 |
| Articulated Trucks | - | 0 | 36 | 0 | 0 | - | 36 | 4 | 47 | - | 51 | 19 | 0 | - | 19 | 106 |
| % Articulated Trucks | - | - | 5.5 | 0.0 | 0.0 | - | 4.6 | 1.4 | 3.7 | - | 3.3 | 1.9 | 0.0 | - | 1.8 | 3.1 |
| Bicycles on Road | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | - | 1 | 3 | 0 | - | 3 | 4 |
| % Bicycles on Road | - | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.1 | - | 0.1 | 0.3 | 0.0 | - | 0.3 | 0.1 |

| Pedestrians | 2 | - | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
|---------------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 09-CentralAve_I15NB TMC Site Code: TMC-09 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



Count Name: 09-CentralAve_I15NB TMC Site Code: TMC-09 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

| Visible 1 | | | | | | | | | | | | | | | |
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| I-15 | NB On | | | I-15 NB Off | | | | Central | Ave W | | | Central | Ave W | | |
| Sout | hbound | | | Northbound | | | | West | oound | | | Eastb | ound | | |
| Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 0 | 0 | 52 | 0 | 7 | 0 | 59 | 7 | 42 | 0 | 49 | 106 | 2 | 0 | 108 | 216 |
| 0 | 0 | 42 | 0 | 1 | 0 | 43 | 11 | 60 | 0 | 71 | 79 | 1 | 0 | 80 | 194 |
| 0 | 0 | 39 | 0 | 3 | 0 | 42 | 11 | 52 | 0 | 63 | 61 | 1 | 0 | 62 | 167 |
| 0 | 0 | 44 | 0 | 4 | 0 | 48 | 15 | 48 | 0 | 63 | 59 | 2 | 0 | 61 | 172 |
| 0 | 0 | 177 | 0 | 15 | 0 | 192 | 44 | 202 | 0 | 246 | 305 | 6 | 0 | 311 | 749 |
| - | - | 92.2 | 0.0 | 7.8 | - | - | 17.9 | 82.1 | - | - | 98.1 | 1.9 | - | - | - |
| - | 0.0 | 23.6 | 0.0 | 2.0 | - | 25.6 | 5.9 | 27.0 | - | 32.8 | 40.7 | 0.8 | - | 41.5 | - |
| - | 0.000 | 0.851 | 0.000 | 0.536 | - | 0.814 | 0.733 | 0.842 | - | 0.866 | 0.719 | 0.750 | - | 0.720 | 0.867 |
| - | 0 | 0 | 0 | 0 | - | 0 | 1 | 0 | - | 1 | 2 | 0 | - | 2 | 3 |
| - | - | 0.0 | _ | 0.0 | - | 0.0 | 2.3 | 0.0 | - | 0.4 | 0.7 | 0.0 | - | 0.6 | 0.4 |
| - | 0 | 89 | 0 | 11 | - | 100 | 23 | 120 | - | 143 | 185 | 3 | - | 188 | 431 |
| - | - | 50.3 | - | 73.3 | - | 52.1 | 52.3 | 59.4 | - | 58.1 | 60.7 | 50.0 | - | 60.5 | 57.5 |
| - | 0 | 69 | 0 | 4 | - | 73 | 14 | 57 | - | 71 | 108 | 2 | - | 110 | 254 |
| - | - | 39.0 | _ | 26.7 | - | 38.0 | 31.8 | 28.2 | - | 28.9 | 35.4 | 33.3 | - | 35.4 | 33.9 |
| - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | - | 1 | 1 | 0 | - | 1 | 2 |
| - | _ | 0.0 | _ | 0.0 | - | 0.0 | 0.0 | 0.5 | - | 0.4 | 0.3 | 0.0 | - | 0.3 | 0.3 |
| - | 0 | 7 | 0 | 0 | - | 7 | 3 | 10 | - | 13 | 2 | 1 | - | 3 | 23 |
| - | - | 4.0 | - | 0.0 | - | 3.6 | 6.8 | 5.0 | - | 5.3 | 0.7 | 16.7 | - | 1.0 | 3.1 |
| - | 0 | 12 | 0 | 0 | - | 12 | 3 | 13 | - | 16 | 4 | 0 | - | 4 | 32 |
| - | - | 6.8 | _ | 0.0 | - | 6.3 | 6.8 | 6.4 | - | 6.5 | 1.3 | 0.0 | - | 1.3 | 4.3 |
| - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | - | 1 | 3 | 0 | - | 3 | 4 |
| - | - | 0.0 | _ | 0.0 | - | 0.0 | 0.0 | 0.5 | _ | 0.4 | 1.0 | 0.0 | - | 1.0 | 0.5 |
| 0 | - | - | - | <u>-</u> | 0 | - | - | - | 0 | - | - | <u>-</u> | 0 | - | - |
| - | - | - | _ | _ | - | - | - | - | - | - | - | - | - | - | - |
| | Sout Peds 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Southbound Peds App. Total Right 0 0 52 0 0 42 0 0 39 0 0 44 0 0 177 - - 92.2 - 0.0 23.6 - 0.00 0.851 - 0 0 - 0.0 0 - 0.0 89 - - 50.3 - 0 69 - - 39.0 - 0 0 - 0.0 7 - 0.0 7 - - 4.0 - 0 0 - - 6.8 - 0.0 0 | Southbound Peds App. Total Right Thru 0 0 52 0 0 0 42 0 0 0 39 0 0 0 44 0 0 0 177 0 - - 92.2 0.0 - 0.00 23.6 0.0 - 0.00 0.851 0.000 - 0 0 0 - 0.0 0 - - 0 89 0 - 0 69 0 - 0 69 0 - 0 0 0 - 0 0 0 - 0 0 0 - 0 0 - - 0 0 - - 0 7 0 - | I-15 NB On Southbound Peds App. Total Right Thru Left | I-15 NB On Southbound Peds App. Total Right Thru Left Peds | I-15 NB On Southbound Right Thru Left Peds App. Total Right Thru Left Peds App. Total Right Thru Left Peds App. Total Right Thru Left Peds App. Total Right Thru Left Peds App. Total Right Thru Left Peds App. Total Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right 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Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right Right | I-15 NB On Southbound Peds App. Total Right Thru Left Peds App. Total Right Thru Left Peds App. Total Right Thru Left Peds App. Total Right Right Thru Left Peds App. Total Right Right Thru Left Peds App. Total Right Right Thru Left Peds App. Total Right Right Thru Left Peds App. Total Right Right Thru Left Peds App. Total Right Right Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru Thru 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Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fight Fig | North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound North-bound 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Count Name: 09-CentralAve_I15NB TMC Site Code: TMC-09 Start Date: 07/16/2014 Page No: 5

| | 1-15 NB On [N] | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Central Ave W [W] Out In Total Ou 2 2 131 188 319 61 110 171 1 1 2 24 10 34 217 311 528 0 185 3 0 186 2 0 1 0 0 0 108 2 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 | 07/16/2014 7:30 AM Ending At 07/16/2014 8:30 AM Motorcycles Care Light Coods Vehicles Buses Other L T R P 0 0 0 0 0 11 0 89 0 | Central Ave W E Out In Total 2 1 3 274 143 417 177 71 248 1 1 2 28 30 58 482 246 728 1 0 0 23 120 0 1 0 0 23 120 0 1 0 0 44 202 0 44 202 0 |
| | 4 0 69 0 0 0 0 0 0 0 19 0 15 0 177 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |

Turning Movement Peak Hour Data Plot (7:30 AM)



Count Name: 09-CentralAve_I15NB TMC Site Code: TMC-09 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:30 PM)

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|------------------------|-------|------------|-------|----------|-------------|-----------|------------|-------------|-----------|-----------|------------|-------|--------|---------|------------|------------|
| | I-15 | NB On | | | I-15 NB Off | | | | Central | Ave W | | | Centra | l Ave W | | |
| Start Time | Sout | hbound | | | Northbound | | | | West | oound | | | East | oound | | |
| Start Time | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 4:30 PM | 0 | 0 | 56 | 0 | 12 | 0 | 68 | 20 | 117 | 0 | 137 | 72 | 1 | 0 | 73 | 278 |
| 4:45 PM | 0 | 0 | 36 | 0 | 10 | 0 | 46 | 28 | 110 | 0 | 138 | 55 | 0 | 0 | 55 | 239 |
| 5:00 PM | 0 | 0 | 35 | 0 | 15 | 0 | 50 | 34 | 118 | 0 | 152 | 58 | 1 | 0 | 59 | 261 |
| 5:15 PM | 1 | 0 | 43 | 0 | 20 | 0 | 63 | 31 | 126 | 0 | 157 | 64 | 3 | 0 | 67 | 287 |
| Total | 1 | 0 | 170 | 0 | 57 | 0 | 227 | 113 | 471 | 0 | 584 | 249 | 5 | 0 | 254 | 1065 |
| Approach % | - | - | 74.9 | 0.0 | 25.1 | - | - | 19.3 | 80.7 | - | - | 98.0 | 2.0 | - | - | - |
| Total % | - | 0.0 | 16.0 | 0.0 | 5.4 | - | 21.3 | 10.6 | 44.2 | - | 54.8 | 23.4 | 0.5 | - | 23.8 | - |
| PHF | - | 0.000 | 0.759 | 0.000 | 0.713 | - | 0.835 | 0.831 | 0.935 | - | 0.930 | 0.865 | 0.417 | - | 0.870 | 0.928 |
| Motorcycles | - | 0 | 3 | 0 | 0 | - | 3 | 3 | 15 | - | 18 | 6 | 0 | - | 6 | 27 |
| % Motorcycles | - | - | 1.8 | - | 0.0 | - | 1.3 | 2.7 | 3.2 | - | 3.1 | 2.4 | 0.0 | _ | 2.4 | 2.5 |
| Cars | - | 0 | 106 | 0 | 43 | - | 149 | 92 | 315 | - | 407 | 156 | 4 | - | 160 | 716 |
| % Cars | - | - | 62.4 | - | 75.4 | - | 65.6 | 81.4 | 66.9 | - | 69.7 | 62.7 | 80.0 | - | 63.0 | 67.2 |
| Light Goods Vehicles | - | 0 | 49 | 0 | 13 | - | 62 | 17 | 119 | - | 136 | 82 | 1 | _ | 83 | 281 |
| % Light Goods Vehicles | - | - | 28.8 | _ | 22.8 | - | 27.3 | 15.0 | 25.3 | - | 23.3 | 32.9 | 20.0 | - | 32.7 | 26.4 |
| Buses | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Buses | - | - | 0.0 | _ | 0.0 | - | 0.0 | 0.0 | 0.0 | _ | 0.0 | 0.0 | 0.0 | _ | 0.0 | 0.0 |
| Single-Unit Trucks | - | 0 | 6 | 0 | 1 | - | 7 | 1 | 12 | - | 13 | 3 | 0 | - | 3 | 23 |
| % Single-Unit Trucks | - | - | 3.5 | - | 1.8 | - | 3.1 | 0.9 | 2.5 | - | 2.2 | 1.2 | 0.0 | - | 1.2 | 2.2 |
| Articulated Trucks | - | 0 | 6 | 0 | 0 | - | 6 | 0 | 10 | - | 10 | 2 | 0 | _ | 2 | 18 |
| % Articulated Trucks | - | - | 3.5 | _ | 0.0 | - | 2.6 | 0.0 | 2.1 | - | 1.7 | 0.8 | 0.0 | - | 0.8 | 1.7 |
| Bicycles on Road | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | - | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | 1 | - | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | 100.0 | - | - | <u>-</u> | | - | _ | - | - | - | - | - | - | | | - |



Count Name: 09-CentralAve_I15NB TMC Site Code: TMC-09 Start Date: 07/16/2014 Page No: 7

| | I-15 NB On [N] | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Central Ave W [W] Out in Total 15 6 21 328 160 518 132 83 215 0 0 0 0 0 158 4 0 158 4 0 158 4 0 158 4 0 158 0 0 158 1 0 158 0 0 158 0 0 158 0 0 158 0 0 158 0 0 158 0 0 158 0 0 158 0 0 158 0 0 158 0 | Peak Hour Data 07/16/2014 4:30 PM Ending At 07/16/2014 5:30 PM Motocycles Cars Cars Cars Code Busses Other 1 | Central Ave W [E] Out In Total 9 18 27 262 407 669 131 136 267 0 0 0 0 17 23 40 419 584 1003 |
| | L T R P 0 0 0 3 0 43 0 106 0 13 0 49 0 0 0 0 0 1 0 12 0 57 0 170 0 1 0 12 0 57 0 170 0 1 0 62 62 0 0 0 0 0 13 13 0 127 227 Out In Total I-15 NB Off [S] | |

Turning Movement Peak Hour Data Plot (4:30 PM)



Count Name: 09-CentralAve_I15NB TMC Site Code: TMC-09 Start Date: 07/16/2014 Page No: 8



Count Name: 10-CentralAve_VaughnRd TMC Site Code: TMC-10 Start Date: 07/16/2014 Page No: 1

Turning Movement Data

| Otari Tiran | | Vaugh
Southl | | | | | I Ave W
bound | | | | ll Ave W
bound | | |
|------------------------|-------|-----------------|------|------------|-------|------|------------------|------------|------|------|-------------------|------------|------------|
| Start Time | Right | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 10 | 17 | 0 | 27 | 9 | 39 | 0 | 48 | 73 | 13 | 0 | 86 | 161 |
| 7:15 AM | 13 | 13 | 0 | 26 | 10 | 33 | 0 | 43 | 95 | 12 | 0 | 107 | 176 |
| 7:30 AM | 14 | 19 | 0 | 33 | 17 | 35 | 0 | 52 | 128 | 20 | 0 | 148 | 233 |
| 7:45 AM | 16 | 25 | 0 | 41 | 21 | 54 | 0 | 75 | 110 | 21 | 0 | 131 | 247 |
| Hourly Total | 53 | 74 | 0 | 127 | 57 | 161 | 0 | 218 | 406 | 66 | 0 | 472 | 817 |
| 8:00 AM | 19 | 21 | 0 | 40 | 14 | 44 | 0 | 58 | 85 | 12 | 0 | 97 | 195 |
| 8:15 AM | 11 | 12 | 0 | 23 | 13 | 51 | 0 | 64 | 87 | 18 | 0 | 105 | 192 |
| 8:30 AM | 15 | 8 | 0 | 23 | 16 | 43 | 0 | 59 | 71 | 12 | 0 | 83 | 165 |
| 8:45 AM | 10 | 13 | 0 | 23 | 18 | 41 | 0 | 59 | 70 | 15 | 0 | 85 | 167 |
| Hourly Total | 55 | 54 | 0 | 109 | 61 | 179 | 0 | 240 | 313 | 57 | 0 | 370 | 719 |
| *** BREAK *** | - | <u>-</u> | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 27 | 19 | 0 | 46 | 19 | 90 | 0 | 109 | 99 | 30 | 0 | 129 | 284 |
| 4:15 PM | 24 | 18 | 0 | 42 | 25 | 96 | 0 | 121 | 77 | 15 | 0 | 92 | 255 |
| 4:30 PM | 32 | 26 | 0 | 58 | 12 | 104 | 0 | 116 | 111 | 17 | 0 | 128 | 302 |
| 4:45 PM | 30 | 13 | 1 | 43 | 17 | 106 | 0 | 123 | 74 | 22 | 0 | 96 | 262 |
| Hourly Total | 113 | 76 | 1 | 189 | 73 | 396 | 0 | 469 | 361 | 84 | 0 | 445 | 1103 |
| 5:00 PM | 31 | 18 | 0 | 49 | 26 | 119 | 0 | 145 | 71 | 16 | 0 | 87 | 281 |
| 5:15 PM | 28 | 11 | 0 | 39 | 21 | 133 | 0 | 154 | 95 | 11 | 0 | 106 | 299 |
| 5:30 PM | 34 | 20 | 1 | 54 | 18 | 116 | 0 | 134 | 87 | 19 | 0 | 106 | 294 |
| 5:45 PM | 33 | 11 | 0 | 44 | 15 | 101 | 0 | 116 | 62 | 14 | 0 | 76 | 236 |
| Hourly Total | 126 | 60 | 1 | 186 | 80 | 469 | 0 | 549 | 315 | 60 | 0 | 375 | 1110 |
| Grand Total | 347 | 264 | 2 | 611 | 271 | 1205 | 0 | 1476 | 1395 | 267 | 0 | 1662 | 3749 |
| Approach % | 56.8 | 43.2 | - | - | 18.4 | 81.6 | - | - | 83.9 | 16.1 | - | - | - |
| Total % | 9.3 | 7.0 | - | 16.3 | 7.2 | 32.1 | - | 39.4 | 37.2 | 7.1 | - | 44.3 | - |
| Motorcycles | 2 | 2 | - | 4 | 2 | 24 | _ | 26 | 22 | 2 | - | 24 | 54 |
| % Motorcycles | 0.6 | 0.8 | - | 0.7 | 0.7 | 2.0 | - | 1.8 | 1.6 | 0.7 | - | 1.4 | 1.4 |
| Cars | 190 | 179 | - | 369 | 169 | 765 | - | 934 | 890 | 146 | - | 1036 | 2339 |
| % Cars | 54.8 | 67.8 | - | 60.4 | 62.4 | 63.5 | - | 63.3 | 63.8 | 54.7 | - | 62.3 | 62.4 |
| Light Goods Vehicles | 139 | 70 | - | 209 | 82 | 338 | - | 420 | 402 | 99 | - | 501 | 1130 |
| % Light Goods Vehicles | 40.1 | 26.5 | - | 34.2 | 30.3 | 28.0 | - | 28.5 | 28.8 | 37.1 | - | 30.1 | 30.1 |
| Buses | 0 | 1 | - | 1 | 2 | 3 | - | 5 | 2 | 0 | - | 2 | 8 |
| % Buses | 0.0 | 0.4 | - | 0.2 | 0.7 | 0.2 | - | 0.3 | 0.1 | 0.0 | - | 0.1 | 0.2 |
| Single-Unit Trucks | 10 | 11 | - | 21 | 10 | 26 | - | 36 | 40 | 10 | - | 50 | 107 |
| % Single-Unit Trucks | 2.9 | 4.2 | - | 3.4 | 3.7 | 2.2 | - | 2.4 | 2.9 | 3.7 | - | 3.0 | 2.9 |
| Articulated Trucks | 6 | 1 | - | 7 | 6 | 48 | - | 54 | 37 | 10 | - | 47 | 108 |
| % Articulated Trucks | 1.7 | 0.4 | - | 1.1 | 2.2 | 4.0 | | 3.7 | 2.7 | 3.7 | - | 2.8 | 2.9 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 1 | - | 1 | 2 | 0 | - | 2 | 3 |
| % Bicycles on Road | 0.0 | 0.0 | _ | 0.0 | 0.0 | 0.1 | - | 0.1 | 0.1 | 0.0 | _ | 0.1 | 0.1 |

| Pedestrians | - | - | 2 | - | - | - | 0 | - | - | - | 0 | - | - |
|---------------|---|---|-------|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | _ | - | 100.0 | - | - | - | - | - | - | - | - | - | - |



Count Name: 10-CentralAve_VaughnRd TMC Site Code: TMC-10 Start Date: 07/16/2014 Page No: 3

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| M | Total | 20 | 1991 | 978 | 2 | 190 | 3214 | | ۲, | 7 | 146 | 66 | 0 | % | 267 | | 4 | • | | | | | | | t | 70 | 271 | 16 | 2 | 82 | 169 | 2 | ١ | 1650 | 2 4 | 2/4 | 470 | 1080 | 24 | 2 | c _e |
| Central Ave W [W] | Ē | 24 | 1036 | 501 | 2 | 66 | 1662 | - | Ļ | 77 | 830 | 402 | 2 | 07 | 1305 | 2 - | → | • | 07/16/2
Ending
07/16/2 | 2014
At
2014 | 7:00 | AM
PM | | | + | | 1205 | 75 | 3 | 338 | 765 | 24 | 1#/6 | 1476 | 2 0 | 1 420 | 420 | 03/ | 26 | 5 | Central Ave W [E] |
| Centr | Ont | 56 | 922 | 477 | 9 | 91 | 1552 | | Ļ | 0 | 0 | 0 | 0 | c | - | ۵. | | | Motorcy
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Other | ycles | 3 | | | | | ס | • | 0 | 0 | 0 | 0 | 0 | 5 | 3 6 | 1 a | 0 32 | 2003 | 2002 | 50 | Total | N E |
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Turning Movement Data Plot



Count Name: 10-CentralAve_VaughnRd TMC Site Code: TMC-10 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

| | | | | i airiii ig i | VIOVCITICI | it i can i ic | on Data (| 1.00 / ((1)) | - | | | | _ |
|------------------------|-------|-------|-------|---------------|------------|---------------|-----------|--------------|-------|--------|---------|------------|------------|
| | | Vaugl | hn Rd | _ | | Centra | l Ave W | | | Centra | I Ave W | | |
| Start Time | | South | bound | | | West | bound | | | Easth | bound | | |
| Start Time | Right | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 7:30 AM | 14 | 19 | 0 | 33 | 17 | 35 | 0 | 52 | 128 | 20 | 0 | 148 | 233 |
| 7:45 AM | 16 | 25 | 0 | 41 | 21 | 54 | 0 | 75 | 110 | 21 | 0 | 131 | 247 |
| 8:00 AM | 19 | 21 | 0 | 40 | 14 | 44 | 0 | 58 | 85 | 12 | 0 | 97 | 195 |
| 8:15 AM | 11 | 12 | 0 | 23 | 13 | 51 | 0 | 64 | 87 | 18 | 0 | 105 | 192 |
| Total | 60 | 77 | 0 | 137 | 65 | 184 | 0 | 249 | 410 | 71 | 0 | 481 | 867 |
| Approach % | 43.8 | 56.2 | - | - | 26.1 | 73.9 | - | - | 85.2 | 14.8 | - | - | - |
| Total % | 6.9 | 8.9 | - | 15.8 | 7.5 | 21.2 | - | 28.7 | 47.3 | 8.2 | _ | 55.5 | - |
| PHF | 0.789 | 0.770 | - | 0.835 | 0.774 | 0.852 | - | 0.830 | 0.801 | 0.845 | - | 0.813 | 0.878 |
| Motorcycles | 0 | 0 | - | 0 | 1 | 1 | - | 2 | 3 | 0 | - | 3 | 5 |
| % Motorcycles | 0.0 | 0.0 | - | 0.0 | 1.5 | 0.5 | - | 0.8 | 0.7 | 0.0 | _ | 0.6 | 0.6 |
| Cars | 29 | 49 | - | 78 | 36 | 92 | - | 128 | 255 | 35 | _ | 290 | 496 |
| % Cars | 48.3 | 63.6 | - | 56.9 | 55.4 | 50.0 | - | 51.4 | 62.2 | 49.3 | - | 60.3 | 57.2 |
| Light Goods Vehicles | 27 | 21 | - | 48 | 23 | 67 | - | 90 | 129 | 31 | _ | 160 | 298 |
| % Light Goods Vehicles | 45.0 | 27.3 | - | 35.0 | 35.4 | 36.4 | _ | 36.1 | 31.5 | 43.7 | | 33.3 | 34.4 |
| Buses | 0 | 0 | - | 0 | 1 | 2 | - | 3 | 1 | 0 | - | 1 | 4 |
| % Buses | 0.0 | 0.0 | - | 0.0 | 1.5 | 1.1 | - | 1.2 | 0.2 | 0.0 | _ | 0.2 | 0.5 |
| Single-Unit Trucks | 3 | 6 | - | 9 | 2 | 3 | _ | 5 | 10 | 2 | | 12 | 26 |
| % Single-Unit Trucks | 5.0 | 7.8 | - | 6.6 | 3.1 | 1.6 | - | 2.0 | 2.4 | 2.8 | - | 2.5 | 3.0 |
| Articulated Trucks | 1 | 1 | - | 2 | 2 | 18 | - | 20 | 11 | 3 | _ | 14 | 36 |
| % Articulated Trucks | 1.7 | 1.3 | - | 1.5 | 3.1 | 9.8 | - | 8.0 | 2.7 | 4.2 | - | 2.9 | 4.2 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 1 | - | 1 | 1 | 0 | - | 1 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.5 | - | 0.4 | 0.2 | 0.0 | _ | 0.2 | 0.2 |
| Pedestrians | - | _ | 0 | - | - | - | 0 | - | - | _ | 0 | - | - |
| % Pedestrians | - | _ | - | - | - | _ | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | |



Count Name: 10-CentralAve_VaughnRd TMC Site Code: TMC-10 Start Date: 07/16/2014 Page No: 5

Turning Movement Peak Hour Data Plot (7:30 AM)



Count Name: 10-CentralAve_VaughnRd TMC Site Code: TMC-10 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:30 PM)

| | | | | running | innovenner | ii r can i ii | Jui Dala (| (4.30 FIVI) | | | | | |
|------------------------|-------|-------|--------|------------|------------|---------------|------------|-------------|-------|--------|---------|------------|------------|
| | | Vaug | jhn Rd | | | Centra | l Ave W | | | Centra | I Ave W | | |
| Start Time | | South | nbound | | | West | tbound | | | East | bound | | |
| Start Time | Right | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 4:30 PM | 32 | 26 | 0 | 58 | 12 | 104 | 0 | 116 | 111 | 17 | 0 | 128 | 302 |
| 4:45 PM | 30 | 13 | 1 | 43 | 17 | 106 | 0 | 123 | 74 | 22 | 0 | 96 | 262 |
| 5:00 PM | 31 | 18 | 0 | 49 | 26 | 119 | 0 | 145 | 71 | 16 | 0 | 87 | 281 |
| 5:15 PM | 28 | 11 | 0 | 39 | 21 | 133 | 0 | 154 | 95 | 11 | 0 | 106 | 299 |
| Total | 121 | 68 | 1 | 189 | 76 | 462 | 0 | 538 | 351 | 66 | 0 | 417 | 1144 |
| Approach % | 64.0 | 36.0 | - | - | 14.1 | 85.9 | - | - | 84.2 | 15.8 | - | - | - |
| Total % | 10.6 | 5.9 | - | 16.5 | 6.6 | 40.4 | - | 47.0 | 30.7 | 5.8 | - | 36.5 | - |
| PHF | 0.945 | 0.654 | - | 0.815 | 0.731 | 0.868 | - | 0.873 | 0.791 | 0.750 | - | 0.814 | 0.947 |
| Motorcycles | 1 | 1 | - | 2 | 1 | 13 | - | 14 | 11 | 2 | - | 13 | 29 |
| % Motorcycles | 0.8 | 1.5 | - | 1.1 | 1.3 | 2.8 | - | 2.6 | 3.1 | 3.0 | - | 3.1 | 2.5 |
| Cars | 68 | 50 | - | 118 | 54 | 319 | - | 373 | 239 | 40 | - | 279 | 770 |
| % Cars | 56.2 | 73.5 | - | 62.4 | 71.1 | 69.0 | - | 69.3 | 68.1 | 60.6 | - | 66.9 | 67.3 |
| Light Goods Vehicles | 50 | 15 | - | 65 | 19 | 114 | - | 133 | 86 | 23 | - | 109 | 307 |
| % Light Goods Vehicles | 41.3 | 22.1 | - | 34.4 | 25.0 | 24.7 | - | 24.7 | 24.5 | 34.8 | - | 26.1 | 26.8 |
| Buses | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 | 0 | - | 1 | 1 |
| % Buses | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.1 |
| Single-Unit Trucks | 1 | 2 | - | 3 | 1 | 7 | - | 8 | 7 | 1 | - | 8 | 19 |
| % Single-Unit Trucks | 0.8 | 2.9 | - | 1.6 | 1.3 | 1.5 | - | 1.5 | 2.0 | 1.5 | - | 1.9 | 1.7 |
| Articulated Trucks | 1 | 0 | - | 1 | 1 | 9 | - | 10 | 7 | 0 | - | 7 | 18 |
| % Articulated Trucks | 0.8 | 0.0 | - | 0.5 | 1.3 | 1.9 | - | 1.9 | 2.0 | 0.0 | - | 1.7 | 1.6 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | _ | 1 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - |



Count Name: 10-CentralAve_VaughnRd TMC Site Code: TMC-10 Start Date: 07/16/2014 Page No: 7

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Other | ycles | s | | | | + | - | 462 0 | | H | 319 0 | Н | | 538 957 | 18 34 | 0 1 | 133 234 | 373 662 | 14 26 | In Total | é∀ |
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Turning Movement Peak Hour Data Plot (4:30 PM)



Count Name: 10-CentralAve_VaughnRd TMC Site Code: TMC-10 Start Date: 07/16/2014 Page No: 8



Count Name: 11-VaughnRd_I15SB TMC Site Code: TMC-11 Start Date: 07/16/2014

Page No: 1

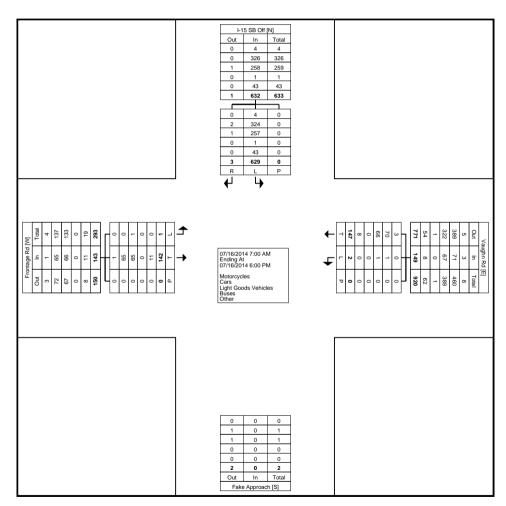
Turning Movement Data

| | i | | | i | , rumių | j moveme | iii Dala | | | | | | i |
|------------------------|-------|--------|--------|------------|---------|----------|----------|------------|------|--------|-------|------------|------------|
| | | I-15 S | SB Off | | | Vaug | jhn Rd | | | Fronta | ge Rd | | 1 |
| Ote at Time a | | South | bound | | | West | bound | | | Eastb | ound | | 1 |
| Start Time | Right | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 0 | 50 | 0 | 50 | 1 | 0 | 0 | 1 | 8 | 0 | 0 | 8 | 59 |
| 7:15 AM | 0 | 50 | 0 | 50 | 4 | 0 | 0 | 4 | 6 | 0 | 0 | 6 | 60 |
| 7:30 AM | 0 | 62 | 0 | 62 | 3 | 1 | 0 | 4 | 5 | 0 | 0 | 5 | 71 |
| 7:45 AM | 1 | 57 | 0 | 58 | 4 | 0 | 0 | 4 | 8 | 0 | 0 | 8 | 70 |
| Hourly Total | 1 | 219 | 0 | 220 | 12 | 1 | 0 | 13 | 27 | 0 | 0 | 27 | 260 |
| 8:00 AM | 0 | 37 | 0 | 37 | 7 | 0 | 0 | 7 | 7 | 0 | 0 | 7 | 51 |
| 8:15 AM | 0 | 38 | 0 | 38 | 8 | 0 | 0 | 8 | 6 | 0 | 0 | 6 | 52 |
| 8:30 AM | 0 | 37 | 0 | 37 | 13 | 0 | 0 | 13 | 7 | 0 | 0 | 7 | 57 |
| 8:45 AM | 1 | 35 | 0 | 36 | 4 | 0 | 0 | 4 | 9 | 0 | 0 | 9 | 49 |
| Hourly Total | 1 | 147 | 0 | 148 | 32 | 0 | 0 | 32 | 29 | 0 | 0 | 29 | 209 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 0 | 32 | 0 | 32 | 9 | 1 | 0 | 10 | 12 | 0 | 0 | 12 | 54 |
| 4:15 PM | 0 | 38 | 0 | 38 | 14 | 0 | 0 | 14 | 12 | 0 | 0 | 12 | 64 |
| 4:30 PM | 0 | 35 | 0 | 35 | 13 | 0 | 0 | 13 | 12 | 0 | 0 | 12 | 60 |
| 4:45 PM | 1 | 38 | 0 | 39 | 14 | 0 | 0 | 14 | 17 | 0 | 0 | 17 | 70 |
| Hourly Total | 1 | 143 | 0 | 144 | 50 | 1 | 0 | 51 | 53 | 0 | 0 | 53 | 248 |
| 5:00 PM | 0 | 23 | 0 | 23 | 14 | 0 | 0 | 14 | 8 | 1 | 0 | 9 | 46 |
| 5:15 PM | 0 | 29 | 0 | 29 | 16 | 0 | 0 | 16 | 7 | 0 | 0 | 7 | 52 |
| 5:30 PM | 0 | 35 | 0 | 35 | 11 | 0 | 0 | 11 | 6 | 0 | 0 | 6 | 52 |
| 5:45 PM | 0 | 33 | 0 | 33 | 12 | 0 | 0 | 12 | 12 | 0 | 0 | 12 | 57 |
| Hourly Total | 0 | 120 | 0 | 120 | 53 | 0 | 0 | 53 | 33 | 1 | 0 | 34 | 207 |
| Grand Total | 3 | 629 | 0 | 632 | 147 | 2 | 0 | 149 | 142 | 1 | 0 | 143 | 924 |
| Approach % | 0.5 | 99.5 | - | - | 98.7 | 1.3 | - | - | 99.3 | 0.7 | - | - | - |
| Total % | 0.3 | 68.1 | - | 68.4 | 15.9 | 0.2 | - | 16.1 | 15.4 | 0.1 | - | 15.5 | - |
| Motorcycles | 0 | 4 | - | 4 | 3 | 0 | - | 3 | 1 | 0 | - | 1 | 8 |
| % Motorcycles | 0.0 | 0.6 | - | 0.6 | 2.0 | 0.0 | - | 2.0 | 0.7 | 0.0 | - | 0.7 | 0.9 |
| Cars | 2 | 324 | - | 326 | 70 | 1 | - | 71 | 65 | 0 | - | 65 | 462 |
| % Cars | 66.7 | 51.5 | - | 51.6 | 47.6 | 50.0 | - | 47.7 | 45.8 | 0.0 | - | 45.5 | 50.0 |
| Light Goods Vehicles | 1 | 257 | - | 258 | 66 | 1 | - | 67 | 65 | 1 | - | 66 | 391 |
| % Light Goods Vehicles | 33.3 | 40.9 | - | 40.8 | 44.9 | 50.0 | - | 45.0 | 45.8 | 100.0 | - | 46.2 | 42.3 |
| Buses | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 |
| % Buses | 0.0 | 0.2 | - | 0.2 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Single-Unit Trucks | 0 | 27 | - | 27 | 6 | 0 | - | 6 | 7 | 0 | - | 7 | 40 |
| % Single-Unit Trucks | 0.0 | 4.3 | - | 4.3 | 4.1 | 0.0 | - | 4.0 | 4.9 | 0.0 | - | 4.9 | 4.3 |
| Articulated Trucks | 0 | 16 | - | 16 | 2 | 0 | - | 2 | 4 | 0 | - | 4 | 22 |
| % Articulated Trucks | 0.0 | 2.5 | - | 2.5 | 1.4 | 0.0 | - | 1.3 | 2.8 | 0.0 | - | 2.8 | 2.4 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| | | | | | | | | | | | | | |

| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
|---------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | _ | - | - | - | - | _ | - | - | - | - | - | - | - |



Count Name: 11-VaughnRd_I15SB TMC Site Code: TMC-11 Start Date: 07/16/2014 Page No: 3



Turning Movement Data Plot



Count Name: 11-VaughnRd_I15SB TMC Site Code: TMC-11 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:00 AM)

| | | I-15 S | SB Off | | | Vauq | | | | Fronta | age Rd | | |
|------------------------|-------|--------|--------|------------|-------|-------|-------|------------|-------|--------|--------|------------|------------|
| | | South | bound | | | West | bound | | | | oound | | |
| Start Time | Right | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 0 | 50 | 0 | 50 | 1 | 0 | 0 | 1 | 8 | 0 | 0 | 8 | 59 |
| 7:15 AM | 0 | 50 | 0 | 50 | 4 | 0 | 0 | 4 | 6 | 0 | 0 | 6 | 60 |
| 7:30 AM | 0 | 62 | 0 | 62 | 3 | 1 | 0 | 4 | 5 | 0 | 0 | 5 | 71 |
| 7:45 AM | 1 | 57 | 0 | 58 | 4 | 0 | 0 | 4 | 8 | 0 | 0 | . 8 | 70 |
| Total | 1 | 219 | 0 | 220 | 12 | 1 | 0 | 13 | 27 | 0 | 0 | 27 | 260 |
| Approach % | 0.5 | 99.5 | - | - | 92.3 | 7.7 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | 0.4 | 84.2 | - | 84.6 | 4.6 | 0.4 | - | 5.0 | 10.4 | 0.0 | - | 10.4 | - |
| PHF | 0.250 | 0.883 | - | 0.887 | 0.750 | 0.250 | - | 0.813 | 0.844 | 0.000 | - | 0.844 | 0.915 |
| Motorcycles | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 |
| % Motorcycles | 0.0 | 0.5 | - | 0.5 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.4 |
| Cars | 1 | 128 | - | 129 | 6 | 0 | - | 6 | 14 | 0 | - | 14 | 149 |
| % Cars | 100.0 | 58.4 | - | 58.6 | 50.0 | 0.0 | - | 46.2 | 51.9 | - | - | 51.9 | 57.3 |
| Light Goods Vehicles | 0 | 79 | - | 79 | 5 | 1 | - | 6 | 10 | 0 | - | 10 | 95 |
| % Light Goods Vehicles | 0.0 | 36.1 | - | 35.9 | 41.7 | 100.0 | - | 46.2 | 37.0 | - | - | 37.0 | 36.5 |
| Buses | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 |
| % Buses | 0.0 | 0.5 | - | 0.5 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.4 |
| Single-Unit Trucks | 0 | 5 | - | 5 | 1 | 0 | - | 1 | 2 | 0 | - | 2 | 8 |
| % Single-Unit Trucks | 0.0 | 2.3 | - | 2.3 | 8.3 | 0.0 | - | 7.7 | 7.4 | - | - | 7.4 | 3.1 |
| Articulated Trucks | 0 | 5 | - | 5 | 0 | 0 | - | 0 | 1 | 0 | - | 1 | 6 |
| % Articulated Trucks | 0.0 | 2.3 | - | 2.3 | 0.0 | 0.0 | - | 0.0 | 3.7 | - | - | 3.7 | 2.3 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 11-VaughnRd_I15SB TMC Site Code: TMC-11 Start Date: 07/16/2014 Page No: 5

| | 1-15 SB Off [N] | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prontage Rd IVI Out 1 Total 0 0 0 0 15 11 3 27 40 13 27 40 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Peak Hour Data 07/16/2014 7:00 AM Ending At 07/16/2014 8:00 AM Motorcycles Cars Light Goods Vehicles Buses Other | Vaughn Rd [5] Out in Total 1 0 1 142 6 95 1 0 1 14 246 13 259 0 0 0 0 5 1 0 0 0 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 |
| | 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | |

Turning Movement Peak Hour Data Plot (7:00 AM)



Count Name: 11-VaughnRd_I15SB TMC Site Code: TMC-11 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:00 PM)

| | | I-15 S | SB Off | ۱ | | Vaug | hn Rd | , | | Fronta | age Rd | | I |
|------------------------|-------|----------|--------|------------|-------|----------|-------|------------|-------|--------|--------|------------|------------|
| Start Time | | South | bound | | | Westl | oound | | | Easth | oound | | l |
| Start Time | Right | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 4:00 PM | 0 | 32 | 0 | 32 | 9 | 1 | 0 | 10 | 12 | 0 | 0 | 12 | 54 |
| 4:15 PM | 0 | 38 | 0 | 38 | 14 | 0 | 0 | 14 | 12 | 0 | 0 | 12 | 64 |
| 4:30 PM | 0 | 35 | 0 | 35 | 13 | 0 | 0 | 13 | 12 | 0 | 0 | 12 | 60 |
| 4:45 PM | 1 | 38 | 0 | 39 | 14 | . 0 | 0 | 14 | 17 | 0 | 0 | 17 | 70 |
| Total | 1 | 143 | 0 | 144 | 50 | 1 | 0 | 51 | 53 | 0 | 0 | 53 | 248 |
| Approach % | 0.7 | 99.3 | - | - | 98.0 | 2.0 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | 0.4 | 57.7 | - | 58.1 | 20.2 | 0.4 | - | 20.6 | 21.4 | 0.0 | | 21.4 | - |
| PHF | 0.250 | 0.941 | - | 0.923 | 0.893 | 0.250 | - | 0.911 | 0.779 | 0.000 | - | 0.779 | 0.886 |
| Motorcycles | 0 | 1 | - | 1 | 1 | 0 | - | 1 | 1 | 0 | - | 1 | 3 |
| % Motorcycles | 0.0 | 0.7 | - | 0.7 | 2.0 | 0.0 | - | 2.0 | 1.9 | - | | 1.9 | 1.2 |
| Cars | 1 | 68 | - | 69 | 27 | 1 | - | 28 | 23 | 0 | | 23 | 120 |
| % Cars | 100.0 | 47.6 | - | 47.9 | 54.0 | 100.0 | - | 54.9 | 43.4 | - | - | 43.4 | 48.4 |
| Light Goods Vehicles | 0 | 64 | - | 64 | 20 | 0 | - | 20 | 25 | 0 | | 25 | 109 |
| % Light Goods Vehicles | 0.0 | 44.8 | - | 44.4 | 40.0 | 0.0 | - | 39.2 | 47.2 | - | | 47.2 | 44.0 |
| Buses | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Buses | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | | 0.0 | 0.0 |
| Single-Unit Trucks | 0 | 7 | - | 7 | 2 | 0 | - | 2 | 3 | 0 | - | 3 | 12 |
| % Single-Unit Trucks | 0.0 | 4.9 | - | 4.9 | 4.0 | 0.0 | - | 3.9 | 5.7 | - | - | 5.7 | 4.8 |
| Articulated Trucks | 0 | 3 | _ | 3 | 0 | 0 | _ | 0 | 1 | 0 | _ | 1 | 4 |
| % Articulated Trucks | 0.0 | 2.1 | - | 2.1 | 0.0 | 0.0 | - | 0.0 | 1.9 | - | _ | 1.9 | 1.6 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Pedestrians | - | <u>-</u> | 0 | - | - | <u>-</u> | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 11-VaughnRd_I15SB TMC Site Code: TMC-11 Start Date: 07/16/2014 Page No: 7

| | L+15 SB Off N Out In Total O | |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------|
| 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Peak Hour Data O7716/2014 4:00 PM Ending At 07716/2014 5:00 PM Motorcycles Cars Light Goods Vehicles Buses Other | - Vaugh |
| | 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | |

Turning Movement Peak Hour Data Plot (4:00 PM)



Count Name: 11-VaughnRd_I15SB TMC Site Code: TMC-11 Start Date: 07/16/2014 Page No: 8



Count Name: 12-VaughnRd_I15NB TMC Site Code: TMC-12 Start Date: 07/16/2014 Page No: 1

Turning Movement Data

| | 1 | | 1 | runni | g woverne | ili Dala | 1 | | | | i |
|------------------------|------|------------|-------|----------|-----------|------------|------|-------|-------|------------|------------|
| | I-15 | NB On | | Vaug | hn Rd | | | Vaug | hn Rd | | |
| Start Time | Sout | thbound | | West | bound | | | Easth | oound | | |
| Start Time | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 7:00 AM | 1 | 0 | 16 | . 1 | 0 | 17 | 53 | 0 | 0 | 53 | 70 |
| 7:15 AM | 0 | 0 | 23 | 4 | 0 | 27 | 58 | 0 | 0 | 58 | 85 |
| 7:30 AM | 0 | 0 | 14 | 4 | 0 | 18 | 67 | 0 | 0 | 67 | 85 |
| 7:45 AM | 0 | 0 | 18 | 3 | 0 | 21 | 69 | 0 | 0 | 69 | 90 |
| Hourly Total | 1 | 0 | 71 | 12 | 0 | 83 | 247 | 0 | 0 | 247 | 330 |
| 8:00 AM | 0 | 0 | 21 | 8 | 0 | 29 | 43 | 0 | 0 | 43 | 72 |
| 8:15 AM | 0 | 0 | 19 | . 8 | 0 | 27 | 43 | 0 | 0 | 43 | 70 |
| 8:30 AM | 0 | 0 | 23 | 12 | 0 | 35 | 40 | 1 | 0 | 41 | 76 |
| 8:45 AM | 0 | 0 | 31 | 5 | 0 | 36 | 47 | 0 | 0 | 47 | 83 |
| Hourly Total | 0 | 0 | 94 | 33 | 0 | 127 | 173 | 1 | 0 | 174 | 301 |
| *** BREAK *** | - | - | - | <u>-</u> | - | <u>-</u> | - | _ | - | - | - |
| 4:00 PM | 0 | 0 | 61 | 10 | 0 | 71 | 47 | 0 | 0 | 47 | 118 |
| 4:15 PM | 0 | 0 | 51 | 14 | 0 | 65 | 47 | 0 | 0 | 47 | 112 |
| 4:30 PM | 0 | 0 | 72 | 14 | 0 | 86 | 48 | 0 | 0 | 48 | 134 |
| 4:45 PM | 0 | 0 | 73 | 14 | 0 | 87 | 55 | 0 | 0 | 55 | 142 |
| Hourly Total | 0 | 0 | 257 | 52 | 0 | 309 | 197 | 0 | 0 | 197 | 506 |
| 5:00 PM | 0 | 0 | 84 | 13 | 0 | 97 | 35 | 0 | 0 | 35 | 132 |
| 5:15 PM | 0 | 0 | 91 | 17 | 0 | 108 | 34 | 0 | 0 | 34 | 142 |
| 5:30 PM | 0 | 0 | 86 | 11 | 0 | 97 | 41 | 0 | 0 | 41 | 138 |
| 5:45 PM | 0 | 0 | 81 | 11 | 0 | 92 | 41 | 0 | 0 | 41 | 133 |
| Hourly Total | 0 | 0 | 342 | 52 | 0 | 394 | 151 | 0 | 0 | 151 | 545 |
| Grand Total | 1 | 0 | 764 | 149 | 0 | 913 | 768 | 1 | 0 | 769 | 1682 |
| Approach % | - | - | 83.7 | 16.3 | - | - | 99.9 | 0.1 | - | - | - |
| Total % | - | 0.0 | 45.4 | 8.9 | - | 54.3 | 45.7 | 0.1 | - | 45.7 | - |
| Motorcycles | - | 0 | 5 | 2 | - | 7 | 4 | 0 | - | 4 | 11 |
| % Motorcycles | - | - | 0.7 | 1.3 | - | 0.8 | 0.5 | 0.0 | - | 0.5 | 0.7 |
| Cars | - | 0 | 473 | 72 | - | 545 | 428 | 0 | - | 428 | 973 |
| % Cars | - | - | 61.9 | 48.3 | - | 59.7 | 55.7 | 0.0 | - | 55.7 | 57.8 |
| Light Goods Vehicles | - | 0 | 237 | 68 | - | 305 | 282 | 0 | - | 282 | 587 |
| % Light Goods Vehicles | - | - | 31.0 | 45.6 | - | 33.4 | 36.7 | 0.0 | - | 36.7 | 34.9 |
| Buses | - | 0 | 2 | 0 | - | 2 | 3 | 0 | - | 3 | 5 |
| % Buses | - | - | 0.3 | 0.0 | - | 0.2 | 0.4 | 0.0 | - | 0.4 | 0.3 |
| Single-Unit Trucks | - | 0 | 17 | 5 | - | 22 | 31 | 1 | - | 32 | 54 |
| % Single-Unit Trucks | - | - | 2.2 | 3.4 | - | 2.4 | 4.0 | 100.0 | - | 4.2 | 3.2 |
| Articulated Trucks | - | 0 | 30 | 2 | - | 32 | 20 | 0 | - | 20 | 52 |
| % Articulated Trucks | - | - | 3.9 | 1.3 | - | 3.5 | 2.6 | 0.0 | - | 2.6 | 3.1 |
| Bicycles on Road | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| | | | | | | | | | | | |

| Pedestrians | 1 | - | - | - | 0 | - | - | - | 0 | - | - |
|---------------|-------|---|---|---|---|---|---|---|---|---|---|
| % Pedestrians | 100.0 | | - | | - | - | - | - | - | - | - |



Count Name: 12-VaughnRd_I15NB TMC Site Code: TMC-12 Start Date: 07/16/2014 Page No: 3

| | | | | | | | | | | | | | | | | | | J. Out 5 473 237 2 48 765 | | B On In 0 0 0 0 0 0 0 0 0 1 1 P | 4
2 | otal 5 73 37 2 88 65 5 | | | | | | | | | | | | | | | | | |
|---------------|----------|---|----|------|---|-------|----------|---|-----|----------|---|---|---|-----|---|----|-----|-------------------------------------------|-------------|---------------------------------|--------|--------------------------------------|--|----------|---|---------|---|-----|---|---|-------------------------------|-----|------|-----|-----|---------|----|--------|---------------|
| Vaughn Rd [W] | ln Total | - | + | + | + | 52 59 | \dashv | [| 0 4 | <u> </u> | + | 0 | + | + | + | ┨. | O E | 7/16/20
nding 2
7/16/20 | 014 7
At | ::00 A | AM DAM | | | ← | H | 764 149 | + | 2 0 | + | + | $\ $ | 700 | + | + | + | 428 545 | | Out In | Vaughn Rd [E] |
| Vau | Ont | 2 | 72 | 88 0 | 1 | · ; | 149 | L | 0 | 0 | | 0 | | • • | ۵ | | M | lotorcy
ars
ight Go
uses
ther | cles | | | | | | ס | 0 | 0 | 0 | | 0 | ֧֧֖֭֭֭֭֭֭֭֓֞֡֟֝֟֝֓֓֓֟֟֟֟
֓ | 100 | 1681 | o o | 587 | 973 | 11 | Total | 1[E] |
| | | | | | | | | | | | | | | | | | | 0
0
0
0
0
0
0 | | 0
0
0
0
0
0 | To | 0
0
0
0
0
0
0
0 | | | | | | | | | | | | | | | | | |

Turning Movement Data Plot



Count Name: 12-VaughnRd_I15NB TMC Site Code: TMC-12 Start Date: 07/16/2014 Page No: 4

Turning Movement Peak Hour Data (7:15 AM)

| | | NB On
thbound | | - | hn Rd
bound | | | - | hn Rd
bound | | |
|------------------------|------|------------------|-------|-------|----------------|------------|-------|----------|----------------|------------|------------|
| Start Time | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 7:15 AM | 0 | 0 | 23 | 4 | 0 | 27 | 58 | 0 | 0 | 58 | 85 |
| 7:30 AM | 0 | 0 | 14 | 4 | 0 | 18 | 67 | 0 | 0 | 67 | 85 |
| 7:45 AM | 0 | 0 | 18 | 3 | 0 | 21 | 69 | 0 | 0 | 69 | 90 |
| 8:00 AM | 0 | 0 | 21 | 8 | 0 | 29 | 43 | 0 | 0 | 43 | 72 |
| Total | 0 | 0 | 76 | 19 | 0 | 95 | 237 | 0 | 0 | 237 | 332 |
| Approach % | - | - | 80.0 | 20.0 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | - | 0.0 | 22.9 | 5.7 | _ | 28.6 | 71.4 | 0.0 | _ | 71.4 | - |
| PHF | - | 0.000 | 0.826 | 0.594 | - | 0.819 | 0.859 | 0.000 | - | 0.859 | 0.922 |
| Motorcycles | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Motorcycles | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | <u>-</u> | _ | 0.0 | 0.0 |
| Cars | - | 0 | 40 | 7 | - | 47 | 139 | 0 | - | 139 | 186 |
| % Cars | - | - | 52.6 | 36.8 | - | 49.5 | 58.6 | - | - | 58.6 | 56.0 |
| Light Goods Vehicles | - | 0 | 25 | 11 | - | 36 | 85 | 0 | - | 85 | 121 |
| % Light Goods Vehicles | - | - | 32.9 | 57.9 | - | 37.9 | 35.9 | <u>.</u> | - | 35.9 | 36.4 |
| Buses | - | 0 | 0 | 0 | - | 0 | 1 | 0 | - | 1 | 1 |
| % Buses | - | - | 0.0 | 0.0 | - | 0.0 | 0.4 | - | - | 0.4 | 0.3 |
| Single-Unit Trucks | - | 0 | 5 | 1 | - | 6 | 6 | 0 | - | 6 | 12 |
| % Single-Unit Trucks | - | - | 6.6 | 5.3 | - | 6.3 | 2.5 | - | - | 2.5 | 3.6 |
| Articulated Trucks | - | 0 | 6 | 0 | - | 6 | 6 | 0 | - | 6 | 12 |
| % Articulated Trucks | - | - | 7.9 | 0.0 | - | 6.3 | 2.5 | <u>.</u> | - | 2.5 | 3.6 |
| Bicycles on Road | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Pedestrians | 0 | - | - | - | 0 | - | - | <u>-</u> | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - |



Count Name: 12-VaughnRd_I15NB TMC Site Code: TMC-12 Start Date: 07/16/2014 Page No: 5

| | I-15 NB On [N] | |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Vaaghn Rd IWI Out In Total Out In Total Out In Total II S S S S S S S S S S S S S S S S S S | Peak Hour Data 07/16/2014 7:15 AM Ending At 07/16/2014 8:15 AM Motorcycles Cars Light Coods Vehicles Buses Other | Vaughn Rd [E] Out In Total 0 0 0 0 0 0 0 0 139 47 198 85 36 121 11 12 12 12 24 237 95 332 O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | |

Turning Movement Peak Hour Data Plot (7:15 AM)



Count Name: 12-VaughnRd_I15NB TMC Site Code: TMC-12 Start Date: 07/16/2014 Page No: 6

Turning Movement Peak Hour Data (4:45 PM)

| | I-15 | NB On | | • | hn Rd | ai Bata (4.4 | | Vaug | hn Rd | | |
|------------------------|------|------------|-------|----------|-------|--------------|-------|-------|-------|------------|------------|
| | | hbound | | - | bound | | | - | oound | | |
| Start Time | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Int. Total |
| 4:45 PM | 0 | 0 | 73 | 14 | 0 | 87 | 55 | 0 | 0 | 55 | 142 |
| 5:00 PM | 0 | 0 | 84 | 13 | 0 | 97 | 35 | 0 | 0 | 35 | 132 |
| 5:15 PM | 0 | 0 | 91 | 17 | 0 | 108 | 34 | 0 | 0 | 34 | 142 |
| 5:30 PM | 0 | 0 | 86 | 11 | 0 | 97 | 41 | 0 | 0 | 41 | 138 |
| Total | 0 | 0 | 334 | 55 | 0 | 389 | 165 | 0 | 0 | 165 | 554 |
| Approach % | - | - | 85.9 | 14.1 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | - | 0.0 | 60.3 | 9.9 | - | 70.2 | 29.8 | 0.0 | _ | 29.8 | - |
| PHF | - | 0.000 | 0.918 | 0.809 | - | 0.900 | 0.750 | 0.000 | - | 0.750 | 0.975 |
| Motorcycles | - | 0 | 1 | 1 | - | 2 | 2 | 0 | - | 2 | 4 |
| % Motorcycles | - | - | 0.3 | 1.8 | - | 0.5 | 1.2 | - | - | 1.2 | 0.7 |
| Cars | - | 0 | 219 | 31 | - | 250 | 90 | 0 | - | 90 | 340 |
| % Cars | - | - | 65.6 | 56.4 | - | 64.3 | 54.5 | - | - | 54.5 | 61.4 |
| Light Goods Vehicles | - | 0 | 96 | 22 | - | 118 | 62 | 0 | _ | 62 | 180 |
| % Light Goods Vehicles | - | <u>-</u> | 28.7 | 40.0 | - | 30.3 | 37.6 | - | - | 37.6 | 32.5 |
| Buses | - | 0 | 2 | 0 | - | 2 | 1 | 0 | - | 1 | 3 |
| % Buses | - | - | 0.6 | 0.0 | - | 0.5 | 0.6 | - | - | 0.6 | 0.5 |
| Single-Unit Trucks | - | 0 | 5 | 1 | - | 6 | 9 | 0 | - | 9 | 15 |
| % Single-Unit Trucks | - | - | 1.5 | 1.8 | - | 1.5 | 5.5 | - | - | 5.5 | 2.7 |
| Articulated Trucks | - | 0 | 11 | 0 | - | 11 | 1 | 0 | - | 1 | 12 |
| % Articulated Trucks | - | - | 3.3 | 0.0 | - | 2.8 | 0.6 | - | - | 0.6 | 2.2 |
| Bicycles on Road | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Pedestrians | 0 | <u>-</u> | - | <u>-</u> | 0 | - | - | - | 0 | <u>-</u> | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - |



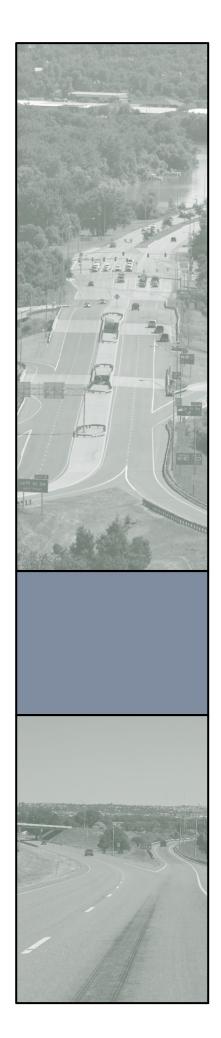
Count Name: 12-VaughnRd_I15NB TMC Site Code: TMC-12 Start Date: 07/16/2014 Page No: 7

| | | | | | | | | | | | | | | | | | | Out 1 219 96 2 2 16 334 | 3 On [| N] Total 1 219 96 2 16 334 | | | | | | | | | | | | | | | | | | |
|---------------|----------|-----|------|---|---|-----|-------------|---|---|---|----|---|----|-----|----------|----------|--|---------------------------------------------|-----------------------------------------|----------------------------|----|---|---|-----|----|---|----|-----|---|---|-----|----|----------|-----|-----|---|----------|---------------|
| [w] | Total | e 5 | 2 8 | - | 7 | 220 | \parallel | , | 0 | 0 | 0 | 0 | | | \vdash | <u></u> | | Peak | | | ta | t | R | 334 | 16 | 2 | 96 | 219 | | H | 165 | 10 | 4 | 62 | _ | 2 | Out | Vaug |
| Vaughn Rd [W] | \dashv | 2 8 | 8 8 | | 9 | Ť | \parallel | ۰ | 7 | 6 | 62 | - | 10 | 165 | F | → | | 07/16/2
Ending
07/16/2 | 45 PN
45 PN | И | | + | | 55 | 1 | 0 | 22 | 31 | | H | - | 4 | \dashv | _ | Ĭ | 4 | <u> </u> | Vaughn Rd [E] |
| | Ont | - 2 | 22 2 | 0 | - | 22 |] | 4 | | 0 | 0 | 0 | 0 | 0 | ۵ |] | | Motorc
Cars
Light G
Buses
Other | 'ehicle | es | | | ٦ | 0 | 0 | 0 | 0 | 0 | 0 | | 554 | 27 | ω | 180 | 340 | 4 | Total | |
| | | | | | | | | | | | | | | | | | | 0
0
0
0 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0
0
0
0 | | | | | | | | | | | | | | | | | | |

Turning Movement Peak Hour Data Plot (4:45 PM)



Count Name: 12-VaughnRd_I15NB TMC Site Code: TMC-12 Start Date: 07/16/2014 Page No: 8





APPENDIX C

Existing Conditions Traffic Data Analysis

| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | ΕT | |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed | Shane Forsy
9/15/2014 | the | Highway/Direction of Trave
From/To
Jurisdiction | I-15 to | astbound
14th Ave |
| Analysis Time Period Project Description I-15 (| AM Peak | | Analysis Year | 2014 | |
| ✓ Oper.(LOS) | Joinaol Glady | Пг | Des.(N) | □Pla | nning Data |
| Flow Inputs | | |)C3.(I 4) | | Timing Data |
| Volume, V | 530 | veh/h | Peak-Hour Factor, PHF | 0.87 | |
| AADT
Peak-Hr Prop. of AADT, K | | veh/day | %Trucks and Buses, P _T
%RVs, P _R | 6
0 | |
| Peak-Hr Direction Prop, D
DDHV = AADT x K x D | | veh/h | General Terrain: Grade % Length Up/Down % | Level
mi | |
| Calculate Flow Adjus | tments | | · | | |
| f _p | 1.00 | | E _R | 1.2 | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1)] <i>0.971</i> | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured) | 55.0 | mph | FFS | 55.0 | mph |
| Base free-flow Speed,
BFFS | | mph | | 00.0 | Шрп |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) | | | <u>Design (N)</u>
Design LOS | | |
| v _p = (V or DDHV) / (PHF x
x f _p) | | pc/h/ln | $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N x f _{HV} | pc/h/ln |
| S
D = v / S | 55.0
5.7 | mph | S | | mph |
| D = v _p / S | 5.7 | pc/mi/ln | $D = v_p / S$ | | pc/mi/ln |
| LOS | Α | | Required Number of Lane | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | /estbound
14th Ave |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 454 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.76
6
0
Level
mi | |
| Calculate Flow Adjus | tments | | Up/Down % | | |
| f _p | 1.00 | | E _R | 1.2 | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1)] 0.971 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 55.0 | mph
mph | FFS | 55.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times V)$ $x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 308
55.0
5.6
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| Shane Forsyt
9/15/2014
PM Peak
orridor Study | | Site Information Highway/Direction of Trave From/To Jurisdiction Analysis Year | el I-315 Ea
I-15 to 1
2014 | | | |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 9/15/2014
PM Peak
orridor Study | | From/To
Jurisdiction
Analysis Year | I-15 to 1 | | | |
| orridor Study | | • | 2077 | | | |
| | | A.D. | | | | |
| 675 | | Des.(N) | Plar | nning Data | | |
| 675 | | . , | | | | |
| 0/0 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R | 0.83
4
0 | | | |
| | veh/h | General Terrain:
Grade % Length
Up/Down % | Level
mi | | | |
| ments | | | | | | |
| 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
)] 0.980 | | | |
| E _T 1.5 Speed Inputs | | | Calc Speed Adj and FFS | | | |
| | ft
ft | | | mph | | |
| 2 | | | | mph | | |
| | ramps/mi | TRD Adjustment | | mph | | |
| 55.0 | mph
mph | FFS | 55.0 | mph | | |
| Measures | | Design (N) | | | | |
| I x f _{HV} 415 | pc/h/ln | I F | N x f _{HV} | pc/h/ln | | |
| 55.0
7.5
A | mph
pc/mi/ln | S
D = v _p / S | s, N | mph
pc/mi/ln | | |
| | | Factor Location | | | | |
| D - Densi
FFS - Free
BFFS - Bas | ty
-flow speed | f _p - Page 11-18 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 | | |
| | 1.00 1.5 2 55.0 Measures I x f _{HV} 415 55.0 7.5 A S - Speed D - Densit FFS - Free BFFS - Base | veh/day veh/h timents 1.00 1.5 ft ft 2 ramps/mi mph st. Measures I x f _{HV} 415 pc/h/ln 55.0 mph 7.5 pc/mi/ln A S - Speed D - Density FFS - Free-flow speed BFFS - Base free-flow nour volume | $ \begin{array}{c} \text{veh/day} \\ \text{veh/day} \\ \text{Wel/day} \\ \text{Mel/day} \\ \text{Wel/day} \\ \text{Wel/day} \\ \text{Wel/day} \\ \text{Wel/day} \\ \text{Mel/day} \\ \text{Wel/day} | $\begin{array}{c} \text{veh/day} & \% \text{Trucks and Buses, P}_{\text{T}} 4 \\ \% \text{RVs, P}_{\text{R}} 0 \\ \text{General Terrain:} Level \\ \text{Grade} \% \text{Length} mi \\ \text{Up/Down } \% \\ \\ \hline \text{Independents} \\ \hline 1.00 \qquad \qquad E_{\text{R}} \qquad \qquad 1.2 \\ 1.5 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ \hline \begin{array}{c} E_{\text{R}} \qquad \qquad 1.2 \\ \text{HV} = 1/[1+P_{\text{T}}(E_{\text{T}}-1)+P_{\text{R}}(E_{\text{R}}-1)] 0.980 \\ \hline \end{array} \\ \hline \begin{array}{c} \text{Calc Speed Adj and FFS} \\ \hline \\ \text{ft} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ \hline \text{ft} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ f_{\text{LW}} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ f_{\text{LW}} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ f_{\text{LW}} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ \hline \text{Solution} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ \hline \text{Measures} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ \hline \begin{array}{c} \text{Design (N)} \\ \text{Design LOS} \\ \text{Vp} = (\text{V or DDHV}) / (\text{PHF x N x f}_{\text{HV}}) \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{A} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ \hline \begin{array}{c} \text{Design (N)} \\ \text{Design LOS} \\ \text{Vp} = (\text{V or DDHV}) / (\text{PHF x N x f}_{\text{HV}}) \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\ \text{Solution} \\$ | | |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | estbound
14th Ave |
| Project Description <i>I-15</i> C | | | 7 thatyono 1 can | | |
| ✓ Oper.(LOS) | • | | Pes.(N) | Plar | nning Data |
| Flow Inputs | | | . , | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K | 646 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R | 0.93
5
0 | |
| Peak-Hr Direction Prop, D
DDHV = AADT x K x D | | veh/h | General Terrain:
Grade % Length
Up/Down % | Level
mi | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.976 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance | | ft
ft | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 55.0 | mph
mph | FFS | 55.0 | mph |
| LOS and Performanc | e Measures | } | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S | N x f _{HV} 356
55.0 | pc/h/ln
mph | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ | N x f _{HV} | pc/h/ln |
| D = v _p / S
LOS | 6.5
A | pc/mi/ln | S $D = v_p / S$ Required Number of Lanes | s, N | mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

HCS 2010TM Version 6.2

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| Shane Forsyth
9/15/2014
AM Peak
orridor Study
979 | | Site Information Highway/Direction of Trave From/To Jurisdiction Analysis Year Des.(N) Peak-Hour Factor, PHF | 14th Ave
2014 | stbound
to Fox Farm
ning Data |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9/15/2014
AM Peak
orridor Study | □ D | From/To Jurisdiction Analysis Year Des.(N) | 14th Ave
2014 | to Fox Farm |
| prridor Study | veh/h | Pes.(N) | | ning Data |
| | veh/h | | Plan | ning Data |
| 979 | veh/h | | | |
| 979 | _ | Peak-Hour Factor PHF | | |
| | verifically | %Trucks and Buses, P _T %RVs, P _R | 0.83
4
0 | |
| | veh/h | General Terrain:
Grade % Length
Up/Down % | Level
mi | |
| ments | | | | |
| 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
)] 0.980 | |
| | | Calc Speed Adj and I | FFS | |
| 2 | ft
ft
ramps/mi | f _{LW}
f _{LC}
TRD Adjustment | | mph
mph
mph |
| | mph | | 55.0 | mph |
| Measures | | Design (N) | | |
| x f _{HV} 602
55.0
10.9
A | pc/h/ln
mph
pc/mi/ln | x f _p) S D = v _p / S Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | | |
| D - Densit
FFS - Free-
BFFS - Bas | y
flow speed | f _p - Page 11-18 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| | 1.00 1.5 2 55.0 Measures x f _{HV} 602 55.0 10.9 A S - Speed D - Densit FFS - Free- BFFS - Baseour volume | ments 1.00 1.5 ft ft ft 2 ramps/mi mph mph Measures | $\begin{array}{c} \text{Measures} \\ \text{Veh/h} \\ \text{Veh/h} \\ \text{Seneral Terrain:} \\ \text{Grade} \\ \text{W} \\ \text{Length} \\ \text{Up/Down } \text{W} \\ \text{Measures} \\ \text{Calc Speed Adj and I} \\ \text{If} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{ft} \\ \text{fload Speed Adj and I} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{TRD Adjustment} \\ \text{FFS} \\ \text{PS eign (N)} \\ \text{Design (N)} \\ \text{Design LOS} \\ \text{V}_p = (\text{V or DDHV}) / (\text{PHF x} \\ \text{X f}_p) \\ \text{S} \\ \text{D = V}_p / \text{S} \\ \text{Required Number of Lanes} \\ \text{Factor Location} \\ \\ \text{S - Speed} \\ \text{D - Density} \\ \text{FFS - Free-flow speed} \\ \text{BFFS - Base free-flow} \\ \text{BFFS - Base free-flow} \\ \text{Dur volume} \\ \\ \text{DS, S, FFS, V}_p - \text{Exhibits} \\ \text{11-10, 11-11, fp - Page 11-18} \\ \text{LOS, S, FFS, V}_p - \text{Exhibits} \\ \text{11-3} \\ \\ \text{DS, S, FFS, V}_p - \text{Exhibits} \\ \text{11-3} \\ \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ \text{TRD Adjustment} \\ TRD Adjustm$ | $\begin{array}{c} \text{Ments} \\ \text{Veh/h} \\ \text{Weh/h} \\ \text{Grade} \\ \text{W} \\ \text{Length} \\ \text{Up/Down } \\ \text{Ments} \\ \text{1.00} \\ \text{1.5} \\ \text{II.5} \\ \text{Seped Adj and FFS} \\ \text{Calc Speed Adj and FFS} \\ \text{II.6} \\ \text{II.7} \\ \text{II.8} \\ \text{II.8} \\ \text{II.8} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text{II.9} \\ \text$ |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-----------------------------------------------------------------------------------------------|-------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | estbound
to Fox Farm |
| , | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ∐ Plaı | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 528 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.82
5
0
Level | |
| DDHV - AADIXKXD | | ven/n | Grade % Length Up/Down % | mi | |
| Calculate Flow Adjus | tments | | · · | | |
| f _p | 1.00 | | E _R | 1.2 | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1)] <i>0.976</i> | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured) | 55.0 | mph | FFS | 55.0 | mph |
| Base free-flow Speed,
BFFS | | mph | | | r |
| LOS and Performanc | e Measures | 1 | Design (N) | | |
| Operational (LOS)
v _p = (V or DDHV) / (PHF x | N x f _{uv} | | Design (N) Design LOS | | |
| x f _p) | 55.0 | pc/h/ln | $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N x t _{HV} | pc/h/ln |
| D = v _p / S | 6.0 | mph
pc/mi/ln | S | | mph |
| LOS | 0.0
A | ролили | $D = v_p / S$ | | pc/mi/ln |
| 200 | 7 | | Required Number of Lanes | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | | | HCS 2010 TM Version 6.2 | | rated: 9/15/2014 7:58 |

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| | BASIC FRI | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | astbound
re to Fox Farm |
| , | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 1044 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.90
3
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.985 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f | | mph |
| Number of Lanes, N | 2 | | f _{LW} | | mph |
| Total Ramp Density, TRD | | ramps/mi | f _{LC}
TRD Adjustment | | mph |
| FFS (measured) | 55.0 | mph | FFS | <i>EE</i> 0 | · |
| Base free-flow Speed,
BFFS | | mph | FF5 | 55.0 | mph |
| LOS and Performanc | e Measures | • | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times V)$ $x f_p$ S $D = v_p / S$ LOS | N x f _{HV} 589
55.0
10.7
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ | | pc/h/ln
mph
pc/mi/ln |
| | | | Required Number of Lane | S, IN | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | /estbound
re to Fox Farm |
| Project Description <i>I-15</i> C | | | 7 manyolo 1 oan | | |
| ✓ Oper.(LOS) | • | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | . , | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 1279 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.95
3
0
Level
mi | |
| DDHV - AADTX K X D | | venin | Grade % Length Up/Down % | 1111 | |
| Calculate Flow Adjus | tments | | <u> </u> | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.985 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f | | mph |
| Number of Lanes, N | 2 | ., | f _{LW} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 55.0 | mph
mph | FFS | 55.0 | mph |
| LOS and Performanc | e Measures | <u> </u> | Design (N) | | |
| Operational (LOS)
v _p = (V or DDHV) / (PHF x l | N x f _{HV} 683 | pc/h/ln | Design (N) Design LOS v _p = (V or DDHV) / (PHF x | N x f _{HV} | |
| x f _p)
S | 55.0 | mph | x f _p) | IIV | pc/h/ln |
| D = v _p / S
LOS | 12.4
B | pc/mi/ln | S $D = v_p / S$ Required Number of Lane | s, N | mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| Project Description I-15 C | Corridor Study | | • | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 334 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.83
7
0
Level | |
| DDHV = AADTX K X D | | veh/h | Grade % Length Up/Down % | mi | |
| Calculate Flow Adjus | tments | | <u> </u> | | |
| fp | 1.00 | | E _R | 1.2 | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1)] 0.966 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF x)$ $x f_p$ S $D = v_p / S$ LOS | N x f _{HV} 209
65.0
3.2
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ | | pc/h/ln
mph
pc/mi/ln |
| Classem | | | Required Number of Lane | 5, IN | |
| Glossary | <u> </u> | | Factor Location | | |
| N - Number of lanes V - Hourly volume v_p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| • | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ☐ Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 200 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.83
21
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | | | | | |
| f _p
E _T | 1.00
1.5 | | E_{R} $f_{HV} = 1/[1+P_{T}(E_{T}-1)+P_{R}(E_{R}-1)]$ | 1.2
1)] 0.905 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance | | ft
ft | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f_{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | } | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF x)$ $x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 133
65.0
2.0
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | 5, IV | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | DAGIC I IX | EEWAT SE | GMENTS WORKSHEE | . I | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central Ave |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | □Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 359 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.97
8
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.962 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance | | ft
ft | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | ; | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S LOS | N x f _{HV} 193
65.0
3.0
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central Ave |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | □Plaı | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D
DDHV = AADT x K x D | 309 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.79
14
0
Level
mi | |
| Calculate Flow Adjus | tmonts | | Up/Down % | | |
| f _p E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.935 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) Base free-flow Speed, | 2
65.0 | ft
ft
ramps/mi
mph | f _{LW}
f _{LC}
TRD Adjustment
FFS | 65.0 | mph
mph
mph
mph |
| BFFS | . 14 | mph | Decima (NI) | | |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 210
65.0
3.2
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | s
f Emerson Junction |
| • | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ∐Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 288 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.89
21
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.905 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | , | | |
| Rt-Side Lat. Clearance | | ft | f | | mph |
| Number of Lanes, N | 2 | | f _{LW} | | mph |
| Total Ramp Density, TRD | | ramps/mi | f _{LC}
TRD Adjustment | | • |
| FFS (measured) | 65.0 | mph | - | 05.0 | mph |
| Base free-flow Speed,
BFFS | 00.0 | mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 179
65.0
2.8
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ | N x f _{HV} | pc/h/ln
mph
pc/mi/ln |
| | | | Required Number of Lane | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | | | HCS 2010 TM Version 6.2 | | rated: 8/7/2014 11:21 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | t
f Emerson Junction |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ∐Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 548 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.87
6
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _⊤ | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.971 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f | | mph |
| Number of Lanes, N | 2 | | f _{LW} | | mph |
| Total Ramp Density, TRD | | ramps/mi | f _{LC}
TRD Adjustment | | · |
| FFS (measured) | 65.0 | mph | - | 05.0 | mph |
| Base free-flow Speed,
BFFS | 00.0 | mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 323
65.0
5.0
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Emerson Junction |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ∐ Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 696 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF %Trucks and Buses, P _T %RVs, P _R General Terrain: Grade % Length | 0.94
6
0
Level
mi | |
| Coloulata Flow Adius | tmonto | | Up/Down % | | |
| Calculate Flow Adjus | | | | | |
| f _p | 1.00 | | E _R | 1.2 | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1)] 0.971 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured) | 65.0 | mph | FFS | 65.0 | • |
| Base free-flow Speed,
BFFS | | mph | FFS | 05.0 | mph |
| LOS and Performanc | e Measures | } | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S LOS | N x f _{HV} 383
65.0
5.9
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Emerson Junction |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 456 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.88
13
0
Level
mi | |
| DDIIV - AADI XIXXD | | VCII/II | Up/Down % | 1111 | |
| Calculate Flow Adjus | tments | | · | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
0.939 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f | | mph |
| Number of Lanes, N | 2 | | f _{LW} | | • |
| Total Ramp Density, TRD | | ramps/mi | f _{LC} | | mph |
| FFS (measured) | 65.0 | mph | TRD Adjustment | | mph |
| Base free-flow Speed,
BFFS | 00.0 | mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x | N x f _{HV} 277 | pc/h/ln | Design (N) Design LOS v _p = (V or DDHV) / (PHF x | N x f _{HV} | |
| x f _p) | 0.7.0 | | x f _p) | | pc/h/ln |
| S
D = v / S | 65.0 | mph | s | | mph |
| D = v _p / S | 4.3 | pc/mi/ln | $D = v_p / S$ | | pc/mi/ln |
| LOS | Α | | Required Number of Lanes | s, N | · |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FRI | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed | Shane Forsy | the | Highway/Direction of Trave
From/To
Jurisdiction | North of | Gore Hill |
| Analysis Time Period Project Description I-15 C | AM Peak | | Analysis Year | 2014 | |
| ✓ Oper.(LOS) | ornaor Otaay | | Pes.(N) | □Plar | ning Data |
| Flow Inputs | | | , , , , , , , , , , , , , , , , , , , , | | g = a.ta |
| Volume, V
AADT | 517 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T | 0.90
16 | |
| Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D
DDHV = AADT x K x D | | veh/h | %RVs, P _R General Terrain: Grade -5.00% Length Up/Down % | 0
Grade
0.69mi
-5.00 | |
| Calculate Flow Adjus | tments | | Органии 70 | 0.00 | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2 | |
| Speed Inputs | 1.0 | | Calc Speed Adj and | | |
| Lane Width | | ft | Julio Opeca Auj alia i | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD FFS (measured) Base free-flow Speed, | 65.0 | ramps/mi
mph
mph | TRD Adjustment FFS | 65.0 | mph
mph |
| BFFS LOS and Performanc | o Moasuros | • | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) S D = v _p / S | | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x f}_p)$ S | N x f _{HV} | pc/h/ln
mph |
| LOS | Α | | D = v _p / S
Required Number of Lanes | s, N | pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description I-15 C | Corridor Study | | , | | |
| ✓ Oper.(LOS) | | | Pes.(N) | Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D | 458 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.85
7
0
Grade | |
| DDHV = AADT x K x D | | veh/h | Grade 5.00% Lengt Up/Down % | h <i>0.69mi</i>
5.00 | |
| Calculate Flow Adjus | tments | | | | |
| f _p | 1.00 | | E _R | 4.5 | |
| E _T | 2.8 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ |)] 0.891 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 303
65.0
4.7
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | o, IN | |
| Glossary | 0 0 | ٠ | actor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| | da All Dights Doso | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | ratad: 9/7/2014 11:17 |

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| | D/ (OIO I IX | LLWAI OL | GMENTS WORKSHEE | | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description I-15 C | Corridor Study | | · | | |
| ✓ Oper.(LOS) | | | Des.(N) | Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K | 722 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R | 0.80
10
0 | |
| Peak-Hr Direction Prop, D DDHV = AADT x K x D | | veh/h | General Terrain: Grade -5.00% Length Up/Down % | Grade
0.69mi
-5.00 | |
| Calculate Flow Adjus | tments | | | 0.00 | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
0.952 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | <u> </u> | | |
| Rt-Side Lat. Clearance
Number of Lanes, N | 2 | ft | f _{LW} | | mph |
| Total Ramp Density, TRD | _ | ramps/mi | f _{LC}
TRD Adjustment | | mph
mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x | N x f _{HV 4} 73 | pc/h/ln | Design (N) Design LOS v _n = (V or DDHV) / (PHF x | N x f _{HV} | |
| x f _p)
S
D = v _p / S
LOS | 65.0
7.3
A | mph
pc/mi/ln | $x f_p$) S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Agency or Company | | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | Gore Hill |
| Project Description <i>I-15</i> C | | | | | |
| ✓ Oper.(LOS) | · | | Des.(N) | Plar | nning Data |
| Flow Inputs | | | . , | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D | 630 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.93
10
0
Grade | |
| DDHV = AADT x K x D | | veh/h | | 5.00 | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
2.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 4.5
)] 0.870 | |
| Speed Inputs | | | Calc Speed Adj and I | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N | 2 | ft
ft | f _{LW} | | mph
mph |
| Total Ramp Density, TRD FFS (measured) Base free-flow Speed, BFFS | 65.0 | ramps/mi
mph
mph | TRD Adjustment | 65.0 | mph
mph |
| LOS and Performanc | e Measures | <u> </u> | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| וופטווטר - טוופטווטרומו design | TIOUI VOIUITIE | | , , , , , , , , , , , , , , , , , , , | | |

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| | | | GMENTS WORKSHEE | | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | South of | f Central |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | □Plar | ning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 321 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.89
14
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
)] 0.935 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance | | ft
ft | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f_{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | } | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) S D = v _p / S LOS | N x f _{HV} 193
65.0
3.0
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | 2710101111 | LLVVAI 3L | GMENTS WORKSHEE | . 1 | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Agency or Company Date Performed 8/7/2014 Analysis Time Period AM Peak | | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | □Plaı | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 352 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.94
8
0
Level
mi | |
| DDITV /VIDIATE | | VCIIIII | Up/Down % | ,,,, | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.962 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance | | ft
ft | | | |
| Number of Lanes, N | 2 | 10 | f _{LW} | | mph |
| Total Ramp Density, TRD | _ | ramps/mi | f _{LC} | | mph |
| FFS (measured)
Base free-flow Speed, | 65.0 | mph
mph | TRD Adjustment FFS | 65.0 | mph
mph |
| BFFS | | | | | |
| LOS and Performanc | e Measures | <u> </u> | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) | | pc/h/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N x f _{HV} | pc/h/ln |
| S
D = v _p / S
LOS | 65.0
3.0
A | mph
pc/mi/ln | S $D = v_p / S$ Required Number of Lanes | s, N | mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Agency or Company Date Performed 8/7/2014 Analysis Time Period PM Peak | | | el I-15 NB
South o
2014 | of Central Ave |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D
DDHV = AADT x K x D | 490 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.87
11
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.948 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft
ft | | | |
| Rt-Side Lat. Clearance | 2 | 11 | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f_{LC} | | mph |
| Total Ramp Density, TRD | 05.0 | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S LOS | N x f _{HV} 298
65.0
4.6
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ | N x f _{HV} | pc/h/ln
mph
pc/mi/ln |
| | | | Required Number of Lanes | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | da All Dights Doso | | , 100 0040TM . V 0.0 | | ratod: 9/7/2014 11:26 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central Ave |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 491 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.90
14
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.935 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance
Number of Lanes, N | 2 | ft
ft | f _{LW} | | mph
mph |
| Total Ramp Density, TRD
FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | ramps/mi
mph
mph | TRD Adjustment | 65.0 | mph
mph |
| LOS and Performanc | e Measures | } | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) S D = v _p / S LOS | N x f _{HV} 293
65.0
4.5
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | □Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 244 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.92
10
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.952 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance
Number of Lanes, N
Total Ramp Density, TRD | 2 | ft
ft
ramps/mi | f _{LW} | | mph
mph |
| FFS (measured) Base free-flow Speed, BFFS | 65.0 | mph
mph | TRD Adjustment | 65.0 | mph
mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) S D = v _p / S LOS | N x f _{HV} 139
65.0
2.1
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | ncy or Company Performed 8/7/2014 ysis Time Period AM Peak | | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | of Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 235 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF %Trucks and Buses, P _T %RVs, P _R General Terrain: Grade % Length | 0.79
20
0
Level
mi | |
| Calculate Flow Adjus | tments | | Up/Down % | | |
| f _p E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.909 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) Base free-flow Speed, BFFS | 2
70.0 | ft
ft
ramps/mi
mph
mph | f _{LW} f _{LC} TRD Adjustment FFS | 70.0 | mph
mph
mph
mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 163
70.0
2.3
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | gency or Company late Performed 8/7/2014 .nalysis Time Period PM Peak | | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ∐ Plar | nning Data |
| Flow Inputs Volume, V AADT | 249 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T | 0.96
12 | |
| Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D
DDHV = AADT x K x D | | veh/h | %RVs, P _R General Terrain: Grade % Length Up/Down % | 0
Level
mi | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.943 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width
Rt-Side Lat. Clearance
Number of Lanes, N
Total Ramp Density, TRD | 2 | ft
ft
ramps/mi | f _{LW}
f _{LC}
TRD Adjustment | | mph
mph
mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 138
65.0
2.1
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-11 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
8/7/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description <i>I-15</i> C | Corridor Study | | , | | |
| ✓ Oper.(LOS) | - | | es.(N) | Plai | nning Data |
| Flow Inputs | | | . , | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 365 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.89
6
0
Level
mi | |
| DDHV - AADTX K X D | | venin | Grade % Length Up/Down % | 1111 | |
| Calculate Flow Adjus | tments | | · | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.971 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | , , | | |
| Rt-Side Lat. Clearance | | ft | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f_{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS)
v _p = (V or DDHV) / (PHF x | N x f _{HV 040} | | Design (N) Design LOS | NI £ | |
| x f _p)
S | 65.0 | pc/h/ln | $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N X T _{HV} | pc/h/ln |
| S
D = v _p / S | 3.3 | mph
pc/mi/ln | S | | mph |
| LOS | 3.3
A | рс/пплп | $D = v_p / S$ | | pc/mi/ln |
| LO3 | A | | Required Number of Lane | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | | RAMP | S AND RAN | //P JUNCTI | ONS WO | RKS | HEET | | | |
|-------------------------------------|----------------------------------|--------------------------------|-------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|--------------------|-------------------|---------------------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | <u> </u> | Site Infor | | | | | | |
| Analyst
Agency or Company | | ne Forsythe | | reeway/Dir of Tr | avel | 10th Av | re NB Off-r | amp | | |
| Date Performed | 9/15/ | 2014 | | urisdiction | | i- io ali | u 1-515 | | | |
| Analysis Time Period | | | | nalysis Year | | 2014 | | | | |
| Project Description | | | | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | · · | ber of Lanes, N | 2 | | | | | Downstrea | ım Adj |
| □Yes □ | On | Ramp Numbe
Acceleration L | ane Length, L _A | 1 | | | | | Ramp
Yes | □On |
| ✓ No | Off | Deceleration I
Freeway Volu | ane Length L _D | 740
517 | | | | | ☑ No | Off |
| L _{up} = fi | t | Ramp Volume | e, V _R | 192 | | | | | L _{down} = | ft |
| V _u = ve | eh/h | 1 | reeway Free-Flow Speed, $S_{\rm FF}$ 65.0
amp Free-Flow Speed, $S_{\rm FR}$ 55.0 | | | | | | V _D = | veh/h |
| Conversion to | pc/h Uni | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 517 | 0.90 | Level | 16 | 0 | 0. | 926 | 1.00 | 62 | 22 |
| Ramp | 192 | 0.83 | Level | 3 | 0 | 0. | 985 | 1.00 | 23 | 36 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | | iverge Areas | | |
| Estimation of | v ₁₂ | | | | Estimat | ion o | f v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{FM}) | | | | | V ₁₂ = | V _R + (V _F - V _F | P _{FD} | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13-1 | |) |
| P _{FM} = | | Equation (| | | P _{FD} = | | | 000 using Equ | | |
| V ₁₂ = | pc/h | Equation (| -Americ 10 0) | | V ₁₂ = | | | 2 pc/h | iation (Exim | oit 10 1) |
| | • | Equation 12 | 14 or 12 17) | | | | | • | n 10 11 on | 10 17) |
| V ₃ or V _{av34} | | | -14 or 13-17) | | V ₃ or V _{av34} | . 0.7 | | pc/h (Equatio | 11 13-14 01 | 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | Is V_3 or $V_{av34} > 2,700$ pc/h? \square Yes \overrightarrow{V} No | | | | | |
| Is V_3 or $V_{av34} > 1.5$ * | | | | | Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ Yes \checkmark No pc/h (Equation 13-16, 13-18, or 13- | | | | | |
| If Yes,V _{12a} = | pc/h (
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | = | p
19 | | 13-16, 13- | 18, or 13- |
| Capacity Che | |) | | | Capacit | | | " | | |
| Capacity Cite | Actual | | apacity | LOS F? | Capacit | y Ciri | Actual | l Co. | pacity | LOS F? |
| | Actual | 1 1 | apacity | LUSF! | V _F | | 622 | Exhibit 13-8 | 1 | |
| ., | | | | | | | | | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - v _R | 386 | Exhibit 13-8 | | No |
| | | | | | V_R | | 236 | Exhibit 13-10 | 2200 | No |
| Flow Entering | g Merge In | fluence A | rea | | Flow Er | terin | g Dive | rge Influen | | |
| | Actual | | Desirable | Violation? | | / | \ctual | Max Desirab | le | Violation? |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | | 622 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | - | Level or | f Serv | rice De | termination | n (if not l | F) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | · 0.00627 L _Δ | | | D _R = 4 | .252 + 0 | .0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln | • • | 12 | ^ | | L | .9 (pc/r | | 12 | D | |
| LOS = (Exhibit | , | | | | I *** | | oit 13-2) | | | |
| | | | | | | - | | <u> </u> | | |
| Speed Detern | | | | | Speed L | | | | | |
| M _S = (Exibit 13 | 3-11) | | | | ľ | | xhibit 13- | - | | |
| S _R = mph (Exh | ibit 13-11) | | | | | | (Exhibit | | | |
| $S_0 = mph (Exh$ | ibit 13-11) | | | | $S_0 = N$ | /A mph | (Exhibit | 13-12) | | |
| | ibit 13-13) | | | | S = 60 | 0.6 mph | (Exhibit | 13-13) | | |
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| | | RAI | MPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | | |
|-----------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------|------------------------------|------------------------------|------------------|-------------------------------------------|------------------------------------|----------------------|-------------------------------------------------|---------------------|----------------------|
| General I | nform | | | | Site Infor | | | | | | |
| Analyst | | Shan | e Forsythe | Fr | reeway/Dir of Tr | avel | 10th Av | e NB On-ra | ımp | | |
| gency or Co | | | | Jι | unction | | I-15 and | d I-315 | | | |
| ate Performe | | 9/15/2 | | | urisdiction | | | | | | |
| nalysis Time | | AM P | 'eak | Aı | nalysis Year | | 2014 | | | | |
| roject Descri | ption | | | | | | | | | | |
| nputs | | | L | | | | | | | r | |
| Jpstream Adj | Ramp | | | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| | | | Ramp Numbe | r of Lanes, N | 1 | | | | | Ramp | |
| Yes | ☐ On | | Acceleration L | ane Length, L _A | 590 | | | | | □Yes | On |
| ✓ No | Off | | Deceleration L | ane Length L _D | | | | | |
 ✓ No | □ O# |
| | 0 | | Freeway Volu | me, V _F | 321 | | | | | ☑ No | Off |
| up = | ft | | Ramp Volume | | 167 | | | | | L _{down} = | ft |
| - F | | | | -Flow Speed, S _{FF} | 65.0 | | | | | L. | |
| ' _u = | veh/h | | | ow Speed, S _{ER} | 35.0 | | | | | $V_D =$ | veh/h |
| | : 4- | //- | | * 110 | 33.0 | | | | | | |
| onversi | UN TO | <u>ρς/π υπα</u>
'' | | Conditions | | | _ | Г | | ı | |
| (pc/h) | | v
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f_p | v = V/PHI | $= x f_{HV} x f_{p}$ |
| reeway | -+ | 321 | 0.89 | Level | 14 | 0 | 0.9 | 935 | 1.00 | | 385 |
| Ramp | $\neg +$ | 167 | 0.75 | Level | 7 | 0 | _ | 966 | 1.00 | | 232 |
| JpStream | | | | | · · | <u> </u> | " | | | | |
| DownStream | | | | | | | | | | | |
| | | ı | Merge Areas | | | | | D | verge Areas | | |
| stimatio | on of v | 12 | | | | Estimat | ion o | f v ₁₂ | | | |
| | | V ₁₂ = V _F | (P.,,) | | | | | V ₄₀ = V | _R + (V _F - V _R |)P _E D | |
| = | | | ation 13-6 or | 13-7) | | = | | | Equation 13- | | (3) |
| EQ = | | | | | | L _{EQ} =
D - | | | - | | |
| =
=
- | | | | ion (Exhibit 13-6) |) | P _{FD} = | | | sing Equatio | וו (באווטונו | J-1) |
| 12 = | | 385 p | | | | V ₁₂ = | | • | c/h | 10.1110 | |
| or V _{av34} | | - | | 13-14 or 13-17) |) | V ₃ or V _{av34} | | - | c/h (Equation 1 | 13-14 or 13-1 | 17) |
| | | pc/h? Yes | | | | | | |]Yes ☐ No | | |
| s V ₃ or V _{av34} | > 1.5 * V | 1 ₁₂ /2 □ Yes | | | | Is V ₃ or V _{av} | _{/34} > 1.5 | | Yes 🗌 No | | |
| Yes,V _{12a} = | | pc/h (
13-19) | | 3-16, 13-18, or | | If Yes,V _{12a} = | = | | c/h (Equatio
-19) | n 13-16, 1 | 3-18, or |
| Capacity | Chac | | | | | Capacit | | | -19) | | |
| upacity | Once | Actual | | apacity | LOS F? | Joupain | J | Actual | Car | pacity | LOS F? |
| | | 7101001 | l i | араону | 2001. | V _F | | 7101441 | Exhibit 13- | | 10011 |
| | | | | | | | \/ | | _ | | + |
| V_{FO} | | 617 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - v _R | | Exhibit 13- | | |
| | | | | | | V_R | | | Exhibit 13
10 | - | |
| low Ent | erina | Merae In | fluence A | rea | <u> </u> | Flow Fr | terin | a Diver | ge Influen | ce Area | |
| | <u> </u> | Actual | | Desirable | Violation? | 5 | _ | Actual | Max Desi | | Violation? |
| V _{R12} | - | 617 | Exhibit 13-8 | 4600:All | No | V ₁₂ | 1 | | Exhibit 13-8 | | |
| | Sorvic | | nination (i | | 110 | | f Son | vico Dot | erminatio | n (if not | <u> </u> |
| | | |).0078 V ₁₂ - 0.0 | | | + | | | | | 1) |
| | | ., | 7.0070 V ₁₂ - 0.0 | 0021 L _A | | | | | 0086 V ₁₂ - 0 | .ooa L _D | |
| ., | (pc/mi/ln) | | | | | 1 ., ,, | oc/mi/lr | • | | | |
| R = 6.5 | | -2) | | | | | Exhibit | | | | |
| OS = 6.5 | Exhibit 13 | | | | | Speed I | Deteri | minatio | n | | |
| _R = 6.5 | | nation | | | | Opoou - | | | | | |
| OS = 6.5
OS = A (E | etermi | | | | | ' | Exhibit 1 | 3-12) | | | |
| $R_{R} = 6.5$
$R_{R} = 6.5$
$R_{R} = 6.5$
$R_{R} = 6.5$
$R_{R} = 6.5$ | e termi
87 (Exibit | 13-11) | | | | $D_s = (E_s)$ | Exhibit 1 | 3-12)
ibit 13-12) | | | |
| $R_{R} = 6.5$
$R_{R} = 6.5$
$R_{R} = 6.5$
$R_{R} = 6.5$
$R_{R} = 6.5$ | e termi
87 (Exibit
4 mph (Ex | 13-11)
khibit 13-11) | | | | D _s = (E
S _R = m | Exhibit 13
ph (Exh | ibit 13-12) | | | |
| R = 6.5
OS = A (E
Opeed De
I _S = 0.28
R = 58.4
0 = N/A | e termi
87 (Exibit
4 mph (Ex
4 mph (Ex | 13-11) | | | | $D_s = (E_s)$ $S_R = m$ $S_0 = m$ | Exhibit 13
nph (Exh
nph (Exh | | | | |

| | | RAMP | S AND RAI | MP JUNCTION | ONS WO | RKS | HEET | | | |
|------------------------------------------------|----------------------|--------------------------------|---------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------|--------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | - / | Site Infori | | | · · · · · · | | | |
| Analyst
Agency or Company
Date Performed | Shan | e Forsythe | | Freeway/Dir of Tra
Junction
Jurisdiction | | 10th Av
I-15 an | ve SB Off-ra
d I-315 | amp | | |
| Analysis Time Period | | | | Analysis Year | | 2014 | | | | |
| Project Description | | | <u> </u> | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2
1 | | | | | Downstre:
Ramp | am Adj |
| □Yes | On | Acceleration L | ane Length, L _A | · | | | | | □Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | _ane Length L _D | 463
352 | | | | | ✓ No | Off |
| L _{up} = f | t | Ramp Volume | | 192 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | -Flow Speed, S_{FF}
ow Speed, S_{FR} | = 65.0
55.0 | | | | | V _D = | veh/h |
| Conversion t | o nc/h Und | | 111 | 00.0 | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 352 | 0.94 | Level | 8 | 0 | 0. | 962 | 1.00 | 3 | 91 |
| Ramp | 192 | 0.83 | Level | 3 | 0 | 0. | 985 | 1.00 | 2 | 36 |
| UpStream | | | | <u> </u> | | | | | | |
| DownStream | <u> </u> | l l
Merge Areas | | | | | | iverge Areas | | |
| Estimation of | | vierge Areas | | | Estimat | tion o | f V | iverge Areas | | |
| | | <u> </u> | | | Lotimat | | | \ | / \D | |
| | $V_{12} = V_F$ | | 40 => | | l. | | | V _R + (V _F - V | – | |
| - _{EQ} = | | tion 13-6 or | | | L _{EQ} = | | | Equation 13- | | |
| P _{FM} = | _ | Equation (| =xhibit 13-6) | | P _{FD} = | | | 000 using Ed | quation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 1 pc/h | | |
| V_3 or V_{av34} | | - | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equat | | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | Is V_3 or $V_{av34} > 2,700$ pc/h? \square Yes \checkmark No | | | | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ Yes \checkmark No pc/h (Equation 13-16, 13-18, or 13- | | | | | |
| If Yes,V _{12a} = | pc/h (l
13-19) | • | -16, 13-18, or | | If Yes,V _{12a} : | = | p
19 | | n 13-16, 13 | -18, or 13- |
| Capacity Che | | ' | | | Capacit | ty Ch | | <i>)</i> | | |
| Capacity Circ | Actual | | apacity | LOS F? | | . , | Actual | | apacity | LOS F? |
| | | | - | | V _F | | 391 | Exhibit 13 | - 1 | No |
| V _{FO} | | Exhibit 13-8 | | | V _{FO} = V _F | _ | 155 | Exhibit 13 | | No |
| PO | | | | | V _R | | 236 | Exhibit 13- | | No |
| Flow Entering | Morgo In | fluonco A | roa | | <u> </u> | | | rge Influei | | 110 |
| Flow Entering | Actual | v | Desirable | Violation? | FIOW EI | - 1 | Actual | Max Desira | | Violation? |
| V _{R12} | Notual | Exhibit 13-8 | Dodinablo | Violation: | V ₁₂ | | 391 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | | if not F) | | | | | terminatio | | |
| $D_R = 5.475 + 0.$ | | | | | | | | .0086 V ₁₂ - 0 | • | , |
| D _R = (pc/mi/ln | | 0.0070 112 | 0.000 2 7 | | | .4 (pc/r | | .0000 112 | ооо <u>-</u> Б | |
| LOS = (Exhibit | | | | | | | , | | | |
| | | | | | | | oit 13-2) | | | |
| Speed Deterr | | | | | Speed I | | | | | |
| $M_S = (Exibit 1)$ | | | | | D _s = 0.189 (Exhibit 13-12) | | | | | |
| | nibit 13-11) | | | | S _R = 60.6 mph (Exhibit 13-12) | | | | | |
| | nibit 13-11) | | | | S ₀ = N/A mph (Exhibit 13-12) | | | | | |
| · ` ` | nibit 13-13) | | | | | | (Exhibit | 13-13) | | |
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| | MPS AND | RAMP JUN | CTIONS W | | EET | | | | |
|-----------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------|---------------------|----------------|
| mation | | | Site Infor | mation | | | | | |
| Shan | ne Forsythe | Fr | eeway/Dir of Tr | | | | mp | | |
| | | | | | I-15 and | I-315 | | | |
| | 2014 | Ju | ırisdiction | | | | | | |
| l AM F | Peak | Ar | nalysis Year | | 2014 | | | | |
| | | | | | | | | | |
| | 1 | | | | | | | Y | |
| | Freeway Num | ber of Lanes, N | 2 | | | | | Downstre | am Adi |
| | Ramp Number | r of Lanes, N | 1 | | | | | Ramp | , |
| 1 | Acceleration L | ane Length, L | 1500 | | | | | □Voo | On |
| _ | 1 | ** | | | | | | | |
| İ | 1 | | 450 | | | | | ✓ No | |
| | | • | | | | | |
 . = | ft |
| | | 1. | 287 | | | | | -down | |
| | Freeway Free | -Flow Speed, S _{FF} | 65.0 | | | | | V _D = | veh/h |
| | Ramp Free-Flo | ow Speed, S _{FR} | 35.0 | | | | | " | |
| pc/h Und | der Base (| Conditions | | | | | | | |
| V | | | %Truck | % Pv | f | | f | v = V/PHI | F x f x f |
| | | | | | | | · ' | | <u>.</u> |
| 458 | 0.85 | Level | 7 | 0 | | | 1.00 | | 559 |
| 287 | 0.77 | Level | 5 | 0 | 0.9 | 76 | 1.00 | | 382 |
| | | | | | | | | | |
| | <u> </u> | | | | | | | | |
| | Merge Areas | | | Fatimest | ion of | Di | verge Areas | | |
| V ₁₂ | | | | Estimat | ion oi | V ₁₂ | | | |
| $V_{12} = V_{F}$ | (P _{FM}) | | | | | $V_{12} = V$ | R + (V _F - V _R |)P _{FD} | |
| (Equ | ation 13-6 or | 13-7) | | L _{EO} = | | (E | Equation 13- | 12 or 13-1 | 13) |
| 1.000 | using Fauat | ion (Exhibit 13-6) | | | | U | sing Equatio | n (Exhibit 1 | 3-7) |
| | | (=::::::::::::::::::::::::; | | 1 | | | | | , |
| | | 12 14 or 12 1 7) | | | | • | | 2 14 or 12 f | 17\ |
| - | | 13-14 01 13-17) | | | > 0.70 | - | | 3-14 01 13- | 17) |
| | | | | | | | | | |
| | | | | is V ₃ or V _{av} | _{/34} > 1.5 ^ | | | | |
| | | 3-16, 13-18, or | | If Yes,V _{12a} = | = | | | n 13-16, 1 | 3-18, or |
| |) | | | Canacit | v Cho | | 13) | | |
| | I c | anacity | LOS F2 | Capacit | J | | Car | nacity | LOS F |
| 7101441 | † | араону | | V | - | 7 totaai | | | 1 2001 |
| 1 | | | | | | | | | + |
| 941 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | | | |
| | | | | V _R | | | | - | |
| Morae Ir | fluonoo A | <u> </u> | | | otorine | Divor | | 00 Aros | |
| | | | \/iolation2 | FIOW EI | _ | | | | Violation |
| | 1 | | f | \/ | A | Juai | | lable | Violatioi |
| | | | INO | | | | | | <u> </u> |
| | | | | + | | | | | : F) |
| 0.00734 v _R + (| 0.0078 V ₁₂ - 0.0 | 00627 L _A | | | $D_R = 4.$ | 252 + 0.0 | 0086 V ₁₂ - 0 | .009 L _D | |
| | | | | $D_R = (p$ | oc/mi/ln |) | | | |
| ln) | | | | L | =vhihit / | 13-2) | | | |
| | | | | LOS = (E | | | | | |
| ln)
13-2) | | | | | | | n | | |
| ln)
13-2)
nination | | | | Speed L | Detern | ninatio | า | | |
| In) 13-2) nination bit 13-11) | | | | Speed L
D _s = (E | Detern
Exhibit 13 | nination
-12) | n | | |
| In) 13-2) nination bit 13-11) (Exhibit 13-11) | | | | Speed L
D _s = (E
S_R = m | Detern
Exhibit 13
oph (Exhil | nination
-12)
bit 13-12) | n | | |
| In) 13-2) nination bit 13-11) | | | | $\begin{array}{ccc} \textbf{Speed L} \\ \textbf{D}_{s} = & \textbf{(E} \\ \textbf{S}_{R} = & \textbf{m} \end{array}$ | Detern
Exhibit 13 | nination
-12)
bit 13-12) | n | | |
| | Shar 9/15/ AM F P P P P P P P P P P P P P | Shane Forsythe 9/15/2014 AM Peak Freeway Num Ramp Number Acceleration L Freeway Volun Ramp Volume Freeway Free- Ramp Free-Floope/h Under Base (V (Veh/hr) PHF 458 0.85 287 0.77 Merge Areas FV12 V12 = VF (PFM) (Equation 13-6 or 1.000 using Equation 13-6 or 1.000 using Equation 13-19) Cks Actual C 941 Exhibit 13-8 C Merge Influence A Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual Maximum Actual M | Shane Forsythe 9/15/2014 AM Peak Freeway Number of Lanes, N Ramp Number of Lanes, N Acceleration Lane Length, L _A Deceleration Lane Length L _D Freeway Volume, V _F Ramp Volume, V _R Freeway Free-Flow Speed, S _{FF} Ramp Free-Flow Speed, S _{FR} O pc/h Under Base Conditions V (Veh/hr) PHF Terrain 458 0.85 Level 287 0.77 Level Merge Areas FV12 V ₁₂ = V _F (P _{FM}) (Equation 13-6 or 13-7) 1.000 using Equation (Exhibit 13-6) 559 pc/h 0 pc/h (Equation 13-14 or 13-17) 0 pc/h? Yes No FV ₁₂ /2 Yes No pc/h (Equation 13-16, 13-18, or 13-19) cks Actual Capacity G Merge Influence Area Actual Max Desirable | Shane Forsythe Shane Forsythe | Shane Forsythe Freeway/Dir of Travel Junction 9/15/2014 Junisdiction AM Peak Analysis Year | Shane Forsythe | Shane Forsythe | Shane Forsythe | Shane Forsythe |

| | | RAMP | S AND RAM | /IP JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|----------------------------------|--------------------------|------------------------------|-----------------------------|--------------------------------------------------|--------------------------------------------------|-----------------|-----------------------------|---------------------|-----------------------------------------------|
| General Infor | mation | | <u> </u> | Site Infor | | | | | | |
| Analyst | Shar | ne Forsythe | | reeway/Dir of Tr | avel | | re NB Off-r | amp | | |
| Agency or Company Date Performed | | /2014 | | unction
urisdiction | | I-15 an | d I-315 | | | |
| Date Performed
Analysis Time Period | | /2014 | | unsdiction
Inalysis Year | | 2014 | | | | |
| Project Description | ı FIVI F | ean | | Mialysis Teal | | 2014 | | | | |
| Inputs | | | | | | | | | | |
| • | | Freeway Num | ber of Lanes, N | 2 | | | | | | |
| Upstream Adj R | amp | Ramp Numbe | | 1 | | | | | Downstrea
Ramp | m Adj |
| □Yes □ | On | l ' | ane Length, L _A | ı | | | | | Yes | On |
| ✓ No | Off | Deceleration I | ane Length L _D | 740 | | | | | ✓ No | Off |
| | | Freeway Volu | me, V _F | 722 | | | | | ™ INO | |
| L _{up} = f | t | Ramp Volume | e, V _R | 436 | | | | | L _{down} = | ft |
| | | Freeway Free | -Flow Speed, S _{FF} | 65.0 | | | | | · - | ln /ln |
| V _u = ve | eh/h | 1 | ow Speed, S _{FR} | 55.0 | | | | | V _D = | veh/h |
| Conversion to | o nc/h llni | 1 | 111 | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | fp | v = V/PHF | x f _{HV} x f _n |
| Freeway | 722 | 0.80 | Level | 10 | 0 | | 952 | 1.00 | 94 | |
| Ramp | 436 | 0.83 | Level | 3 | 0 | _ | 985 | 1.00 | 53 | |
| UpStream | 400 | 0.00 | LCVCI | | | - 0. | 300 | 1.00 | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | • | | | | iverge Areas | | |
| Estimation of | ^F V ₁₂ | | | | Estimation of v ₁₂ | | | | | |
| | V ₁₂ = V _F | (P.,,) | | | $V_{12} = V_R + (V_F - V_R)P_{FD}$ | | | | | |
| l = | 12 1 | ation 13-6 or | 13-7) | | l = | | | Equation 13-1 | | ١ |
| L _{EQ} =
P = | | Equation (| | | L _{EQ} =
P = | | | 000 using Equ | | |
| P _{FM} = | _ | Equation (t | _X11101(13-0) | | P _{FD} = | | | | iauon (Exili | JIL 13-7) |
| V ₁₂ = | pc/h | /F 1' 10 | 44 - 40 47) | | V ₁₂ = | | | 8 pc/h | 40.44 | 40.47) |
| V ₃ or V _{av34} | | | -14 or 13-17) | | V ₃ or V _{av34} | . 0.7 | | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | ☐Yes ☑ No | | |
| Is V ₃ or V _{av34} > 1.5 * | | | 10 10 10 | | Is V ₃ or V _{av} | , ₃₄ > 1.5 | | ☐Yes ☑ No | 10 10 10 | 10 10 |
| If Yes,V _{12a} = | pc/n (
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | = | p
19 | c/h (Equation | 13-16, 13- | 18, or 13- |
| Capacity Che | | / | | | Capacit | v Ch | | <i>-</i> | | |
| | Actual | | apacity | LOS F? | Jupasie | , | Actual | Car | pacity | LOS F? |
| | 7 101001 | † | apacity . | | V _F | | 948 | Exhibit 13-8 | 1 | No |
| V_{FO} | | Exhibit 13-8 | | | V _{FO} = V _F | - \/ | 415 | Exhibit 13-8 | | No |
| ▼FO | | LAHIDIC 13-0 | | | - | | | _ | | |
| | | | | | V _R | | 533 | Exhibit 13-10 | | No |
| Flow Entering | | 1 | | | Flow Er | - | | rge Influen | | T |
| | Actual | 1 | Desirable | Violation? | | | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 948 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | | | | | Level or | f Serv | <u>rice De</u> | terminatio | n (if not l | <u>5) </u> |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | 0.00627 L _A | | | $D_R = 4$ | .252 + 0 | .0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln |) | | | | $D_R = 5$ | .7 (pc/r | ni/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | LOS = A | (Exhib | oit 13-2) | | | |
| Speed Detern | | | | | Speed L | | | on . | | |
| | | | | | | | xhibit 13- | | | |
| M _S = (Exibit 1: | • | | | | | - | (Exhibit | * | | |
| | ibit 13-11) | | | | | - | • | · · | | |
| | ibit 13-11) | | | | 1 | - | (Exhibit | - | | |
| | ibit 13-13) | | | | | | (Exhibit | - | | |
| Copyright © 2012 Unive | ersity of Florida, | All Rights Reser | ved | | HCS2010 TM | Versio | n 6.41 | Ge | nerated: 9/15 | 2014 9:08 AM |

| | | | MPS AND | RAMP JUNG | | | <u>EEI</u> | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------|------------------------------|-----------------------------|-----------------|---------------------------------------------------|------------------------|------------------|--------------------------------------|---------------------|------------------------------------|
| General | Inforn | | | | Site Infor | | | | | | |
| Analyst | | Shan | e Forsythe | Fr | eeway/Dir of Tr | avel | 10th Ave | NB On-rar | np | | |
| gency or C | | | | | nction | | I-15 and | I-315 | | | |
| Oate Perform | | 9/15/ | | | risdiction | | | | | | |
| nalysis Tim | | PM P | eak | Ar | nalysis Year | | 2014 | | | | |
| roject Desc | cription | | | | | | | | | | |
| nputs | | | 1 | | | | | | | | |
| Jpstream Ad | dj Ramp | | Freeway Numb | er of Lanes, N | 2 | | | | | Downstre | am Adj |
| | | | Ramp Number | of Lanes, N | 1 | | | | | Ramp | • |
| Yes | ☐ On | | Acceleration La | ane Length, L _∆ | 590 | | | | | □Yes | ☐ On |
| A N I a | | | Deceleration La | ane Length L | | | | | | | |
| ✓ No | Off | | Freeway Volun | | 490 | | | | | ✓ No | Off |
| = | ft | | | | | | | | | L _{down} = | ft |
| up = | 10 | | Ramp Volume, | 1. | 262 | | | | | _aown | |
| / _u = | veh/h | | Freeway Free- | Flow Speed, S_{FF} | 65.0 | | | | | V _D = | veh/h |
| u | VC11/11 | | Ramp Free-Flo | w Speed, S _{FR} | 35.0 | | | | | | |
| onvers | sion to | pc/h Und | der Base C | Conditions | | | | | | | |
| (pc/h | n) | V | PHF | Terrain | %Truck | %Rv | f | HV | f _p | v = V/PHI | x f _{HV} x f _p |
| | '/ | (Veh/hr) | | | | | | | | | |
| reeway | \longrightarrow | 490 | 0.87 | Level | 11 | 0 | 0.9 | | 1.00 | | 596 |
| Ramp | | 262 | 0.92 | Level | 4 | 0 | 0.9 | 80 | 1.00 | | 290 |
| JpStream | | | | | | | + | | | | |
| DownStrear | m _ | | Morgo Aroso | | | | | Dis | erge Areas | | |
| stimat | ion of | | Merge Areas | | | Estimati | ion of | | erge Areas | | |
| .Sumat | 1011 01 | | | | | LSuman | 1011 01 | | | | |
| | | $V_{12} = V_{F}$ | (P _{FM}) | | | | | $V_{12} = V_{F}$ | R + (V _F - V _R |)P _{FD} | |
| EQ = | | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (E | quation 13- | 12 or 13-1 | 3) |
|) _{FM} = | | 1.000 | using Equati | on (Exhibit 13-6) | | P _{FD} = | | us | ing Equatio | n (Exhibit 1 | 3-7) |
| 12 = | | 596 p | | , | | V ₁₂ = | | рс | | ` | , |
| or V _{av34} | | - | | 3-14 or 13-17) | | V ₃ or V _{av34} | | • | /h (Equation 1 | 3_14 or 13_1 | 17) |
| | > 2 700 | pc/h? Yes | | 3-1 -1 01 13-17) | | | > 2.70 | - | | 0 14 01 10 | ''') |
| | | | | | | | | | Yes No | | |
| s v ₃ or v _{av3} | ₃₄ > 1.5 " \ | V ₁₂ /2 □ Ye: | | 10 10 10 | | | | | Yes No | . 10 10 1 | 0.40 |
| Yes,V _{12a} = | = | pc/n
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | • | рс
13- | /h (Equation | 1 13-16, 1 | 3-18, or |
| Capacit | v Chec | | | | | Capacit | v Che | | 10) | | |
| | , | Actual | Ca | apacity | LOS F? | | <u> </u> | Actual | Car | acity | LOS F? |
| | | | † Ť | | 1 | V _F | | | Exhibit 13-8 | _ | |
| | | | 1 1 | | | <u> </u> | \/ | | + | _ | _ |
| V_{FC} | о | 886 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - v _R | | Exhibit 13-8 | _ | |
| | | | | | | V_R | | | Exhibit 13- | · | |
| low En | nterina | Merge In | fluence A | roa | <u> </u> | Flow En | toring | Diver | e Influen | co Area | _ |
| .OW LII | icinig | Actual | | esirable | Violation? | , IOW EII | | ctual | Max Desi | | Violation |
| V _{R12} | _ | 886 | Exhibit 13-8 | 4600:All | No | V ₁₂ | ^ | | Exhibit 13-8 | 14010 | VIOIGIOII |
| | | | | | INU | | [Co:::: | | | n /if ===4 | L |
| | | | nination (i | | | | | | erminatio | | <u>r)</u> |
| 1)_ = | | | 0.0078 V ₁₂ - 0.0 | 0021 L _A | | | | | 086 V ₁₂ - 0. | υυ9 L _D | |
| | .6 (pc/mi/ln | 1) | | | | $D_R = (p$ | c/mi/ln |) | | | |
| R = 8. | | 3-2) | | | | LOS = (E | Exhibit ' | 13-2) | | | |
| _R = 8. | (Exhibit 13 | | | | | Speed D | Detern | nination |) | | |
| R = 8.0
OS = A | | ination | | | | ' | | | | | |
| os = 8.0
Speed D | Determ | | | | | $D_s = (E$ | :xhibit 13 | -12) | | | |
| $O_R = 8.0$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ | Determ
289 (Exibi | t 13-11) | | | | | xhibit 13
nh (Exhil | • | | | |
| $O_{R} = 8.0$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = $ | Determ
289 (Exibi
8.3 mph (E | t 13-11)
Exhibit 13-11) | | | | S _R = m _l | ph (Exhil | oit 13-12) | | | |
| $O_{R} = 8.0$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = A$ $OS = $ | Determ
289 (Exibi
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$S_0 = m_1$ | ph (Exhil
ph (Exhil | • | | | |

| <u> </u> | | RAMP | S AND RAI | //P JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|--------------------|---------------------------|--------------------------------------------------|------------------|-------------------------------------|--------------------|-------------------|-----------------------------|---------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | | ne Forsythe | | reeway/Dir of Tr | avel | 10th Av
I-15 an | re SB Off-r | amp | | |
| Date Performed | 9/15/ | 2014 | J | urisdiction | | | | | | |
| Analysis Time Period | PM F | Peak | <u> </u> | nalysis Year | | 2014 | | | | |
| Project Description | | | | | | | | | | |
| Inputs | | 1 | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N
r of Lanes, N | 2
1 | | | | | Downstrea
Ramp | ım Adj |
| □Yes | On | | ane Length, L _A | | | | | | □Yes | □On |
| ✓ No | Off | Freeway Volu | _ane Length L _D
me, V _F | 463
491 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | | 239 | | | | | L _{down} = | ft |
| V _u = ve | eh/h | 1 | -Flow Speed, S_{FF}
ow Speed, S_{FR} | 65.0
55.0 | | | | | V _D = | veh/h |
| Conversion to | pc/h Un | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 491 | 0.90 | Level | 14 | 0 | 0. | 935 | 1.00 | 58 | 36 |
| Ramp | 239 | 0.83 | Level | 7 | 0 | 0. | 966 | 1.00 | 29 | 9 |
| UpStream | | | | | | | | | | |
| DownStream | | <u> </u> | | | | | | \.\.\.\ | | |
| Estimation of | Merge Areas | | | | Ectimat | Diverge Areas | | | | |
| Estimation of | | | | | Estimation of v ₁₂ | | | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | V ₁₂ = | $V_R + (V_F - V_F)$ | P _{FD} | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13-1 | 2 or 13-13 |) |
| P _{FM} = | using | Equation (E | Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Equ | ıation (Exhil | bit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 58 | 6 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | 0 | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V ₃ or V _{av34} > 2,70 | 0 pc/h? | s 🗌 No | | | | 34 > 2,7 | 00 pc/h? | Yes ☑ No | | |
| Is V ₃ or V _{av34} > 1.5 * | | | | | | | | Yes ☑ No | | |
| If Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | | | c/h (Equation | 13-16, 13- | 18, or 13- |
| Capacity Che | cks | | | | Capacit | y Ch | ecks | | | |
| | Actual | C | apacity | LOS F? | | | Actual | Ca | pacity | LOS F? |
| | | | | | V _F | | 586 | Exhibit 13-8 | 4700 | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 287 | Exhibit 13-8 | 4700 | No |
| | | | | | V _R | | 299 | Exhibit 13-10 | 2200 | No |
| Flow Entering | n Merae In | fluence A | rea | | | | | rge Influenc | | <u> </u> |
| TOW ZINGINI | Actual | 1 | Desirable | Violation? | 7.01.27 | - | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 586 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Deterr | | if not F) | | | | | termination | | |
| $D_R = 5.475 + 0.$ | | | | | | | | .0086 V ₁₂ - 0.0 | _ |) |
| * * | | 0.0070 112 | 0.00027 L _A | | 1 | | | 12 0.0 | 200 ED | |
| | , | | | | l '' | .1 (pc/r | , | | | |
| LOS = (Exhibit | | | | | | | oit 13-2) | | | |
| Speed Detern | nination | | | | Speed L | | | | | |
| M _S = (Exibit 13 | 3-11) | | | | ľ | - | xhibit 13- | * | | |
| S _R = mph (Exh | ibit 13-11) | | | | 1 | - | (Exhibit | · · | | |
| $S_0 = mph (Exh$ | ibit 13-11) | | | | $S_0 = N$ | /A mph | (Exhibit | 13-12) | | |
| S = mph (Exh | ibit 13-13) | | | | S = 60 | 0.5 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, | All Rights Reser | ved | <u></u> | HCS2010 TM | Versio | n 6.41 | Gei | nerated: 9/15 | /2014 9:05 AI |

| | | | MPS AND | RAINIP JUNG | | | | | | | |
|--------------------------------------|-------------------------|-----------------------------|------------------------------|----------------------------|-----------------|---------------------------------------|---------------------|------------------------------|---------------------------------------------------|---------------------|--------------------------------------|
| General | Inforn | | | | Site Infor | | | | | | |
| nalyst | | Shan | e Forsythe | Fr | eeway/Dir of Tr | | | /e SB On-ra | mp | | |
| gency or Co | | | | | inction | | I-15 an | d I-315 | | | |
| ate Perform | | | 2014 | | risdiction | | | | | | |
| Analysis Tim | | PM F | Peak | Ar | nalysis Year | | 2014 | | | | |
| roject Desc | ription | | | | | | | | | | |
| nputs | | | ı | | | | | | | 1 | |
| Ipstream Ac | lj Ramp | | Freeway Numb | er of Lanes, N | 2 | | | | | Downstre | am Adj |
| | _ | | Ramp Number | of Lanes, N | 1 | | | | | Ramp | , |
| Yes | ☐ On | | Acceleration La | ne Length, L₄ | 1500 | | | | | □Yes | On |
| | o" | | Deceleration La | ,, | | | | | | | |
| ✓ No | Off | | Freeway Volun | | 630 | | | | | ✓ No | |
| _ | ft | | 1 | • | | | | | | L _{down} = | ft |
| up = | 10 | | Ramp Volume, | 11 | 384 | | | | | _aown | |
| ′ _u = | veh/h | | Freeway Free- | Flow Speed, S_{FF} | 65.0 | | | | | V _D = | veh/h |
| u | VC11/11 | | Ramp Free-Flo | w Speed, S _{FR} | 35.0 | | | | | | |
| Convers | ion to | pc/h Und | der Base C | Conditions | | | | | | | |
| (pc/h |) | V | PHF | Terrain | %Truck | %Rv | | f _{HV} | fp | v = V/PHI | F x f _{HV} x f _p |
| | ′ | (Veh/hr) | | | | | | | | | |
| reeway | | 630 | 0.93 | Level | 10 | 0 | _ | 952 | 1.00 | | 711 |
| Ramp | \longrightarrow | 384 | 0.94 | Level | 5 | 0 | 0. | 976 | 1.00 | | 419 |
| JpStream | | | - | | | | _ | | | | |
| DownStream | n | | Marria Araaa | | | | | <u> </u> | | | |
| ctimati | ion of | | Merge Areas | | | Ectimot | iono | | verge Areas | | |
| stimati | | 12 | | | | Estimat | ion o | ¹ V ₁₂ | | | |
| | | $V_{12} = V_{F}$ | (P _{FM}) | | | | | $V_{12} = V_{12}$ | ' _R + (V _F - V _R |)P _{FD} | |
| EQ = | | (Equ | ation 13-6 or | 13-7) | | L _{EQ} = | | (F | Equation 13- | 12 or 13-1 | 13) |
|) _{FM} = | | 1.000 | using Equation | on (Exhibit 13-6) | | P _{FD} = | | u | sing Equatio | n (Exhibit 1 | 3-7) |
| '12 = | | 711 p | | (=:::::::::::::::::::::::; | | V ₁₂ = | | | c/h | (= | - ' / |
| | | • | | 0 44 40 47) | | | | • | | 2 11 12 / | 17\ |
| or V _{av34} | . 0.700 | - | | 3-14 or 13-17) | | V ₃ or V _{av34} | . 0.7 | - | c/h (Equation 1 | 3-14 01 13- | 17) |
| | | pc/h? Ye | | | | 0 4 | • • | | Yes No | | |
| s V ₃ or V _{av3} | ₃₄ > 1.5 * \ | / ₁₂ /2 □ Ye | | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 | | Yes 🗌 No | | |
| Yes,V _{12a} = | | | | -16, 13-18, or | | If Yes,V _{12a} = | = | | c/h (Equation | n 13-16, 1 | 3-18, or |
| Capacity | | 13-19) | | | | | | | -19) | | |
| apacity | Criec | | 1 0. | | 1 100 50 | Capacit | y Cili | | 1 0 | | 1 100 50 |
| | | Actual | | pacity | LOS F? | · ., | - | Actual | _ | oacity | LOS F |
| | | | 1 1 | | | V _F | | | Exhibit 13-8 | 5 | |
| V_{FC} | , | 1130 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | Exhibit 13-8 | 3 | |
| | | | 1 1 | | | V _R | | | Exhibit 13 | - | |
| | | | | | | | | | 10 | | |
| low En | tering | | fluence A | | I .a | Flow En | _ | | ge Influen | | |
| | | Actual | | esirable | Violation? | | - / | Actual | Max Desi | rable | Violation |
| V_{R12} | 2 | 1130 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | | Exhibit 13-8 | | |
| evel of | Service | e Detern | nination (i | f not F) | | Level of | Serv | ice Det | erminatio | n (if not | : F) |
| | | | 0.0078 V ₁₂ - 0.0 | | | | | | 0086 V ₁₂ - 0. | | |
| | 7 (pc/mi/ln | | 12 | ,, | | | oc/mi/lı | | 14 | D | |
| | (Exhibit 13 | - | | | | | Exhibit | | | | |
| | | | | | | <u> </u> | | | - | | |
| peed D | eterm | ination | | | | Speed L | | | TI | | |
| | 228 (Exibi | 13-11) | | | | | xhibit 1 | • | | | |
| 1 _S = 0.2 | | vhihit 13 11\ | | | | S _R = m | ph (Exh | ibit 13-12) | | | |
| | .8 mph (E | ATTIDIT 13-11) | | | | | | | | | |
| S _R = 59 | | · · | | | | $S_0 = m$ | ph (Exh | ibit 13-12) | | | |
| R= 59
0= N/. | A mph (Ex | whibit 13-11) whibit 13-13) | | | | ľ | | ibit 13-12)
ibit 13-13) | | | |

| | | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|----------------------------------|----------------------------------------------|------------------------------|------------------|--------------------------------------|---------------------|----------------------|---------------------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | <u> </u> | Site Infor | | 11.10 | | | | |
| Analyst | | ne Forsythe | F | reeway/Dir of Tr | | 14th FF | 3 Off-ramp | | | |
| Agency or Company | Onai | 10 1 010/1110 | | unction | | I-315 | on ramp | | | |
| Date Performed | 9/15/ | 2014 | | urisdiction | | 1010 | | | | |
| Analysis Time Period | | | | nalysis Year | | 2014 | | | | |
| Project Description | | | | | | | | | | |
| Inputs | | | | | | | | | | |
| • | | Freeway Num | ber of Lanes, N | 2 | | | | | | |
| Upstream Adj R | amp | • | | | | | | | Downstrea | m Adj |
| □Yes□ | On | Ramp Numbe | | 1 | | | | | Ramp | |
| | 1011 | Acceleration L | ane Length, L _A | | | | | | Yes | On |
| ✓ No | Off | Deceleration I | ane Length L _D | 503 | | | | | ✓ No | Off |
| | | Freeway Volu | me, V₅ | 530 | | | | | ™ INO | ⊔Оπ |
| L _{up} = fi | t | Ramp Volume | | 55 | | | | | L _{down} = | ft |
| ир | | 1 | -Flow Speed, S _{FF} | | | | | | | |
| V,, = V6 | eh/h | 1 | | | | | | | $V_D =$ | veh/h |
| <u> </u> | | | ow Speed, S _{FR} | 35.0 | | | | | | |
| Conversion to | pc/h Un | der Base | Conditions | | | | | | | |
| (pc/h) | V | PHF | Terrain | %Truck | %Rv | | f_HV | f _p | v = V/PHF | x f _{uv} x f _n |
| , , | (Veh/hr) | | | | | _ | | - | | р |
| Freeway | 530 | 0.87 | Level | 6 | 0 | _ | 971 | 1.00 | 62 | .7 |
| Ramp | 55 | 0.83 | Level | 5 | 0 | 0. | 976 | 1.00 | 68 | 3 |
| UpStream | | | | <u> </u> | ļ | | | | | |
| DownStream | | <u>. </u> | | | <u> </u> | | | | | |
| - | | Merge Areas | | | - | | | iverge Areas | | |
| Estimation of | 'V ₁₂ | | | | Estimation of v ₁₂ | | | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | | V ₁₂ = | V _R + (V _F - V _R |)P _{ED} | |
| l = 0 = | 12 1 | ation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13-1 | | 1 |
| L _{EQ} = | | | | | | | - | - | | |
| P _{FM} = | _ | Equation (| EXHIBIT 13-0) | | P _{FD} = | | | 000 using Equ | iation (Exnit | olt 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 27 pc/h | | |
| V ₃ or V _{av34} | | | -14 or 13-17) | | V_3 or V_{av34} | | 0 | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V ₃ or V _{av34} > 2,70 | 0 pc/h? | s 🗌 No | | | Is V ₃ or V _{av} | ₃₄ > 2,7 | 00 pc/h? [| ☐Yes ☑ No | | |
| Is V ₃ or V _{av34} > 1.5 * | V ₁₂ /2 | s 🗌 No | | | Is V ₃ or V _{av} | ₃₄ > 1.5 | * V ₁₂ /2 | Yes ☑ No | | |
| | | | -16, 13-18, or | | 1 | | | c/h (Equation | 13-16, 13- | 18, or 13- |
| If Yes,V _{12a} = | 13-19) | | | | If Yes,V _{12a} = | _ | 19 | | • | · |
| Capacity Che | cks | | | | Capacit | y Ch | ecks | | | |
| S. | Actual | C | apacity | LOS F? | 1 | | Actual | Cap | pacity | LOS F? |
| | | | | | V _F | | 627 | Exhibit 13-8 | 4500 | No |
| V_{FO} | | Exhibit 13-8 | | | V _{FO} = V _F | - \/ | 559 | Exhibit 13-8 | 4500 | No |
| ▼FO | | LAHIDIL 13-0 | | | | · VR | | | | |
| | | | | | V_R | | 68 | Exhibit 13-10 | 2000 | No |
| Flow Entering | g Merge In | fluence A | rea | | Flow Er | terin | g Dive | rge Influenc | ce Area | |
| | Actual | Max | Desirable | Violation? | | I | Actual | Max Desirab | le | Violation? |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | | 627 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | <u> </u> | | f Sen | rice De | termination | ı (if not l | -) |
| $D_R = 5.475 + 0.1$ | | | | | i e | | | .0086 V ₁₂ - 0.0 | - | / |
| | • • | 0.0070 V ₁₂ | 0.00027 LA | | | | | .0000 v ₁₂ 0.0 | 503 L _D | |
| D _R = (pc/mi/ln | , | | | | I '' | .1 (pc/r | , | | | |
| LOS = (Exhibit ' | 13-2) | | | | LOS = A | (Exhib | oit 13-2) | | | |
| Speed Detern | nination | | | | Speed L | Deter | minatic | n | | |
| M _S = (Exibit 13 | | | | | $D_s = 0$ | 434 (E | xhibit 13- | ·12) | | |
| - | • | | | | | | (Exhibit | * | | |
| | ibit 13-11) | | | | | | - | | | |
| | ibit 13-11) | | | | 1 | - | (Exhibit | - | | |
| S = mph (Exh | ibit 13-13) | | | | S = 49 | 9.4 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, | All Rights Reser | ved | | HCS2010 TM | Versio | n 6.41 | Gei | nerated: 9/15/ | 2014 9:52 Al |

| | R/ | MPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | | |
|------------------------------------------------------|------------------------------------------|--------------------|------------------------------|------------------|--------------------------------------|---------------------|------------------------------|-------------------------------------------------|---------------------|----------------------|
| General In | | | | Site Infor | | | | | | |
| Analyst | Sha | ane Forsythe | Fr | eeway/Dir of Tra | avel | 14th St | EB On-ram | p | | |
| gency or Comp | any | | Ju | inction | | I-315 | | | | |
| ate Performed | | 5/2014 | | risdiction | | | | | | |
| nalysis Time Po | | Peak | Ar | nalysis Year | | 2014 | | | | |
| | on I-15 Corridor | Study | | | | | | | | |
| nputs | | le N | | | | | | | | |
| Jpstream Adj Ra | amp | • | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| Yes | 10- | Ramp Numbe | | 1 | | | | | Ramp | |
| _ Yes ∟ | On | Acceleration L | ane Length, L _A | 930 | | | | | □Yes | On |
| ✓ No | Off | Deceleration L | ane Length L _D | | | | | | | □ ○ " |
| | | Freeway Volui | me, V _F | 979 | | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | | 497 | | | | | L _{down} = | ft |
| | | 1 | -Flow Speed, S _{FF} | 55.0 | | | | | | |
| ' _u = ve | eh/h | 1 | ow Speed, S _{FR} | 35.0 | | | | | V _D = | veh/h |
| `a mi ra ra la | 40 0/b | 1 | . 117 | 35.0 | | | | | | |
| onversio | n to pc/h Ur | | Conditions | 1 | I | 1 | | | | |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | f | HV | f_p | v = V/PHI | $= x f_{HV} x f_{p}$ |
| reeway | 979 | 0.83 | Level | 4 | 0 | 0.9 | 80 | 1.00 | | 1205 |
| Ramp | 497 | 0.83 | Level | 3 | 0 | 0.9 | | 1.00 | | 608 |
| JpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | Di | verge Areas | | |
| stimation | of v ₁₂ | | | | Estimat | ion of | ^F V ₁₂ | | | |
| | V ₁₂ = V | (P _{EM}) | | | | | V ₁₂ = V | _R + (V _F - V _R |)P _{ED} | |
| _{EQ} = | | uation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13- | | 3) |
| FM = | | | ion (Exhibit 13-6) | | P _{FD} = | | | sing Equatio | | |
| ' = 12 | | pc/h | ion (Eximple 10 0) | | V ₁₂ = | | | c/h | rr (Extinoit i | 0 1 / |
| ¹²
′ ₃ or V _{av34} | | • | 12 14 or 12 1 7 \ | | | | • | c/h (Equation 1 | 2 14 or 12 f | 17\ |
| | | | 13-14 or 13-17) | | V ₃ or V _{av34} | > 0.70 | - | | J-14 01 1J- | 17) |
| | 2,700 pc/h? ☐ Y | | | | | | | Yes No | | |
| | 1.5 * V ₁₂ /2 □ Y | |) 16 12 19 or | | is v ₃ or v _{av} | 34 > 1.5 | | Yes No | - 10 16 1 | 2 10 00 |
| Yes,V _{12a} = | pc/r
13-19 | | 3-16, 13-18, or | | If Yes,V _{12a} = | = | | c/h (Equatio
-19) | n 13-16, 1 | 3-18, or |
| Capacity C | | -, | | | Capacit | v Che | | , | | |
| <u>, , , , , , , , , , , , , , , , , , , </u> | Actual | C | apacity | LOS F? | | | Actual | Car | acity | LOS F? |
| | | | | | V _F | | | Exhibit 13-8 | 3 | |
| W | 1012 | Fyb;b;t 12.0 | | No. | $V_{FO} = V_{F}$ | - V _D | | Exhibit 13-8 | 3 | |
| V_{FO} | 1813 | Exhibit 13-8 | | No | | ·R | | Exhibit 13- | | |
| | | | | | V _R | | | 10 | | |
| low Enter | ring Merge I | nfluence A | rea | | Flow En | tering | Diver | ge Influen | ce Area | |
| | Actual | Max | Desirable | Violation? | | A | ctual | Max Desi | rable | Violation? |
| V_{R12} | 1813 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | | Exhibit 13-8 | | |
| evel of Se | ervice Deter | mination (i | if not F) | | Level of | f Serv | ice Det | erminatio | n (if not | F) |
| | 75 + 0.00734 v _R + | | | | | D _P = 4. | 252 + 0.0 | 0086 V ₁₂ - 0. | .009 L _D | • |
| ** | oc/mi/ln) | 12 | ^ | | | oc/mi/ln | | 12 | Б | |
| | nibit 13-2) | | | | 1 ., " | Exhibit | • | | | |
| | · · · · · · · · · · · · · · · · · · · | | | | | | | | | |
| | ermination | | | | Speed L | | | 71 | | |
| 1 _S = 0.280 | (Exibit 13-11) | | | | * · | Exhibit 13 | • | | | |
| 0 | | ١ | | | $S_R = m$ | ph (Exhi | bit 13-12) | | | |
| | nph (Exhibit 13-11 |) | | | κ | | , | | | |
| _R = 51.4 n | ıph (Exhibit 13-11
ph (Exhibit 13-11) | • | | | | | bit 13-12) | | | |
| _R = 51.4 n
₀ = N/A m | | | | | $S_0 = m$ | ph (Exhi | • | | | |

| | | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | |
|-----------------------------------------------|----------------------------------|--------------------------|------------------------------|------------------|-------------------------------------|----------------------------------------------|-----------------|-----------------------------|---------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst | | ne Forsythe | F | reeway/Dir of Ti | | 14th W | B Off-ramp | <u> </u> | | |
| Agency or Company | Onai | io i oloyulo | | unction | 4701 | I-315 | D On ramp | | | |
| Date Performed | 9/15/ | /2014 | | urisdiction | | | | | | |
| Analysis Time Period | I AM F | Peak | А | nalysis Year | | 2014 | | | | |
| Project Description | | Study | | | | | | | | |
| Inputs | | · | | | | | | | | |
| Upstream Adj R | amp | 1 | ber of Lanes, N | 2 | | | | | Downstrea | m Adj |
| □Yes □ | 70- | Ramp Numbe | r of Lanes, N | 1 | | | | | Ramp | |
| ⊔ Yes ∟ | On | | ane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | | Lane Length L _D | 713 | | | | | ✓ No | Off |
| ء - ا | | Freeway Volu | | 528 | | | | | | ft |
| L _{up} = fi | L | Ramp Volume | | 216 | | | | | L _{down} = | 10 |
| V,, = V6 | eh/h | | -Flow Speed, S _{FF} | 55.0 | | | | | V _D = | veh/h |
| | | | ow Speed, S _{FR} | 35.0 | | | | | | |
| Conversion to | o pc/h Un | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 528 | 0.82 | Level | 1 | 0 | 0. | 995 | 1.00 | 64 | 5 |
| Ramp | 216 | 0.80 | Level | 0 | 0 | 1. | 000 | 1.00 | 26 | 9 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| - | | Merge Areas | | | | | | iverge Areas | | |
| Estimation of | ' V ₁₂ | | | | Estimation of v ₁₂ | | | | | |
| | V ₁₂ = V _F | (P _{FM}) | | | $V_{12} = V_R + (V_F - V_R)P_{FD}$ | | | | | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13-1 | 2 or 13-13 |) |
| P _{FM} = | | Equation (E | | | P _{FD} = | | | 000 using Equ | | |
| V ₁₂ = | pc/h | 1 (| , | | V ₁₂ = | | | 5 pc/h | | |
| V ₃ or V _{av34} | • | Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equatio | n 12 14 or | 12 17) |
| Is V ₃ or V _{av34} > 2,70 | | | -14 01 13-17) | | | > 2 7 | | | 11 13-14 01 | 13-17) |
| | | | | | | | | Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ * | | | 10 10 10 | | 1 | - | | Yes ✓ No | 10 10 10 | 10 10 |
| If Yes,V _{12a} = | pc/n (
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | = | p
19 | c/h (Equation | 13-16, 13- | 18, 01 13- |
| Capacity Che | | / | | | Capacit | v Ch | | , | | |
| | Actual | | apacity | LOS F? | | <u>, </u> | Actual | Car | pacity | LOS F? |
| | 7.0000 | İ | - aparony | | V _F | | 645 | Exhibit 13-8 | 1 | No |
| V | | Exhibit 13-8 | | | V _{FO} = V _F | - \/ | 376 | Exhibit 13-8 | + | _ |
| V_{FO} | | LAHIDIC 13-0 | | | | | | | + | No |
| | | | | | V _R | | 269 | Exhibit 13-10 | | No |
| Flow Entering | | 1 | | | Flow Er | - | | ge Influenc | | r |
| | Actual | | Desirable | Violation? | | | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 645 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | | | | | | | | terminatior | • | -) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | 0.00627 L _A | | | $D_R = 4$ | .252 + 0 | .0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln |) | | | | $D_R = 3$ | .4 (pc/r | ni/ln) | | | |
| LOS = (Exhibit ' | 13-2) | | | | LOS = A | (Exhib | oit 13-2) | | | |
| Speed Detern | | | | | Speed L | - | | n | | |
| | | | | | 1 - | | xhibit 13- | | | |
| M _S = (Exibit 13 | • | | | | | | (Exhibit | - | | |
| | ibit 13-11) | | | | | - | - | | | |
| • • • | ibit 13-11) | | | | 1 * | - | (Exhibit | - | | |
| S = mph (Exh | ibit 13-13) | | | | S = 49 | 9.1 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, | All Rights Reser | ved | | HCS2010 TM | l Versio | n 6.41 | Gei | nerated: 9/15/ | 2014 9:45 AI |

| ¬ | | MIPS AND | IVAIIII JUIN | | ORKSHI | <u> </u> | | | |
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| General Inform | | | | Site Infor | | | | | |
| nalyst | Shan | ne Forsythe | Fr | eeway/Dir of Tr | ravel | 14th St WB On | -ramp | | |
| gency or Company | | | | ınction | | I-315 | | | |
| ate Performed | 9/15/ | | | ırisdiction | | | | | |
| nalysis Time Period | AM P | | Ar | nalysis Year | | 2014 | | | |
| roject Description I | -15 Corridor S | tudy | | | | | | | |
| nputs | | | | | | | | | |
| pstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adj |
| | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | • |
| ☐ Yes ☐ On | | Acceleration L | ane Length, L₄ | 505 | | | | □Yes | ☐ On |
| - No | | Deceleration I | Lane Length L | | | | | | |
| ☑ No ☐ Off | | Freeway Volu | | 454 | | | | ✓ No | Off |
| n = ft | | | | | | | | L _{down} = | ft |
| _{up} = ft | | Ramp Volume | 11 | 123 | | | | -down | |
| u = veh/h | | Freeway Free | -Flow Speed, S _{FF} | 55.0 | | | | V _D = | veh/h |
| u VCII/II | | Ramp Free-Fl | ow Speed, S _{FR} | 35.0 | | | | ١٠ | |
| onversion to | pc/h Uno | der Base | Conditions | | | | | | |
| Î | V | PHF | | %Truck | %Rv | T f | f | v = V/PH | F x f _{HV} x f _r |
| (pc/h) | (Veh/hr) | <u> </u> | Terrain | | | f _{HV} | f _p | | |
| reeway | 454 | 0.76 | Level | 6 | 0 | 0.971 | 1.00 | | 614 |
| Ramp | 123 | 0.80 | Level | 5 | 0 | 0.976 | 1.00 | | 157 |
| JpStream | | | | | | | | | |
| ownStream | | | | | | | | | |
| | | Merge Areas | | | - | | Diverge Areas | 3 | |
| stimation of | v ₁₂ | | | | Estimati | ion of v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{FM}) | | | | V ₁₂ | = V _R + (V _F - \ | / _R)P _{FD} | |
| EQ = | (Equ | ation 13-6 or | r 13-7) | | L _{EQ} = | | (Equation 1 | 3-12 or 13- | 13) |
| EQ
FM = | | | tion (Exhibit 13-6) | | P _{FD} = | | using Equat | | |
| | 614 p | | HOTT (EXTIIDIT 10-0) | | | | | tion (Exhibit i | 51) |
| 12 = | • | | | | V ₁₂ = | | pc/h | 10.1110 | 4=\ |
| ₃ or V _{av34} | - | | 13-14 or 13-17) | | V_3 or V_{av34} | | pc/h (Equation | | 17) |
| s V ₃ or V _{av34} > 2,700 | | | | | | | ? ☐ Yes ☐ N | | |
| s V ₃ or V _{av34} > 1.5 * | V ₁₂ /2 □ Ye | s 🗹 No | | | Is V ₃ or V _{av3} | $_{34} > 1.5 * V_{12}/2$ | ☐Yes ☐ N | 0 | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | : | pc/h (Equat | ion 13-16, 1 | 3-18, or |
| | 13-19) |) | | | | | 13-19) | | |
| Capacity Chec | | | | | | v i bocke | | | |
| | | т . | | 1 | Capacity | | . 1 | | 1 |
| apacity circ | Actual | C | Capacity | LOS F? | | Actu | | Capacity | LOS F |
| | | C | Capacity | LOS F? | V _F | | al C | | LOS F |
| | Actual | | Capacity | | V _F | Actu | | 3-8 | LOS F |
| V _{FO} | | Exhibit 13-8 | Capacity | LOS F? | V_F $V_{FO} = V_F$ | Actu | Exhibit 1 | 3-8 | LOS F |
| V _{FO} | Actual
771 | Exhibit 13-8 | | | $\frac{V_F}{V_{FO} = V_F}$ | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 | 3-8
3-8
3- | |
| V _{FO} | Actual
771 | Exhibit 13-8 | | | $\frac{V_F}{V_{FO} = V_F}$ | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 | 3-8
3-8
3- | LOS F |
| V _{FO} | Actual
771 | Exhibit 13-8 | | | $V_{FO} = V_{FO}$ $V_{RO} = V_{FO}$ $V_{RO} = V_{FO}$ | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 rerge Influe | 3-8
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3- | |
| V _{FO} | Actual 771 Merge In | Exhibit 13-8 | lrea . | No | $\frac{V_F}{V_{FO} = V_F}$ | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 rerge Influe | 3-8
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| V _{FO} | Actual 771 Merge In Actual 771 | Exhibit 13-8 offluence A Max Exhibit 13-8 | Area
Desirable
4600:All | No Violation? | $V_{FO} = V_{F}$ V_{R} Flow En | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8
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esirable | Violation |
| V _{FO} low Entering V _{R12} evel of Servi | Actual 771 Merge In Actual 771 ce Determ | Exhibit 13-8 offluence A Max Exhibit 13-8 mination (| Area
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4600:All | No Violation? | $V_{FO} = V_{F}$ V_{R} Flow En V_{12} Level of | - V _R tering Div Actual Service D | Exhibit 1 Exhibit 1 Exhibit 1 10 Ererge Influe Max De Exhibit 13-8 | 3-8
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fon (if not | Violation |
| V _{FO} Flow Entering V _{R12} evel of Servi | 771 Merge In Actual 771 Ce Detern 0.00734 v R + 0 | Exhibit 13-8 offluence A Max Exhibit 13-8 | Area
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4600:All | No Violation? | $V_{FO} = V_{F}$ $V_{RO} = V_{RO}$ Flow En | Actual Tering Div Actual Service D DR = 4.252 + | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8
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4600:All | No Violation? | V_F $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ | Actual Tering Div Actual Actual F Service D Company Actual | Exhibit 1 Exhibit 1 Exhibit 1 10 Ererge Influe Max De Exhibit 13-8 | 3-8
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| V _{FO} V _{R12} evel of Servion D _R = 5.475 + 0 R _R = 8.3 (pc/mi/line) DS = A (Exhibit 1 | 771 Merge In Actual 771 Actual 771 Ce Detern 0.00734 v R + (| Exhibit 13-8 offluence A Max Exhibit 13-8 mination (| Area
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4600:All | No Violation? | V_F $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p$ $LOS = (E$ | Actual Tering Div Actual F Service D D R = 4.252 + D D C/mi/ln) Exhibit 13-2) | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Determination | 3-8
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| V _{FO} V _{R12} evel of Servi D _R = 5.475 + 0 R = 8.3 (pc/mi/lr | 771 Merge In Actual 771 Actual 771 Ce Detern 0.00734 v R + (| Exhibit 13-8 offluence A Max Exhibit 13-8 mination (| Area
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4600:All | No Violation? | V_F $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p$ $LOS = (E$ | Actual Tering Div Actual Actual F Service D Company Actual | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Determination | 3-8
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| V _{FO} Flow Entering V _{R12} evel of Servi D _R = 5.475 + 0 R _R = 8.3 (pc/mi/li DS = A (Exhibit 1) Epeed Determ | Actual 771 Merge In Actual 771 Ce Detern 0.00734 v R + (0n) 3-2) nination | Exhibit 13-8 offluence A Max Exhibit 13-8 mination (| Area
Desirable
4600:All | No Violation? | V_F $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p + 1)$ $D_R = (E + 1)$ $D_R = (E + 1)$ | Actual Tering Div Actual F Service D D R = 4.252 + D D C/mi/ln) Exhibit 13-2) | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Determination | 3-8
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ence Area
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fon (if not | Violation |
| V_{FO} Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + 0$ $C_R = 8.3 \text{ (pc/mi/lit})$ $C_S = A \text{ (Exhibit 1}$ Epeed Determing $C_S = 0.294 \text{ (Exib}$ | Actual 771 Merge In Actual 771 Ce Detern 0.00734 v R + (cn) 3-2) nination it 13-11) | Exhibit 13-8 offluence A Max Exhibit 13-8 mination (| Area
Desirable
4600:All | No Violation? | V _F V _{FO} = V _F V _R Flow En V ₁₂ Level of D _R = (p LOS = (E Speed E D _S = (E E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E Cos = (E C | Actual Tering Div Actual Actual F Service D D R = 4.252 + C/mi/ln) Exhibit 13-2) Determinate xhibit 13-12) | Exhibit 1 Exhibit 1 Exhibit 1 10 Exerge Influe Max De Exhibit 13-8 Determination tion | 3-8
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| V _{FO} Flow Entering V _{R12} evel of Servi D _R = 5.475 + 0 R = 8.3 (pc/mi/lr DS = A (Exhibit 1) Flowed Determing S = 0.294 (Exibuse R = 51.2 mph (Exibuse) | 771 Merge In Actual 771 Ce Detern 0.00734 v _R + 0 n) 3-2) nination it 13-11) Exhibit 13-11) | Exhibit 13-8 offluence A Max Exhibit 13-8 mination (| Area
Desirable
4600:All | No Violation? | V_F $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ $D_S = (E)$ $D_S = (E)$ $D_S = (E)$ $D_S = (E)$ $D_S = (E)$ $D_S = (E)$ | Actual - V _R Actual F Service D C (mi/ln) Exhibit 13-2) Determinate xhibit 13-12) ph (Exhibit 13-1 | Exhibit 1 Exhibit 1 Exhibit 1 10 Exhibit 1 10 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 1 | 3-8
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Desirable
4600:All | No Violation? | $\begin{array}{c} V_F \\ V_{FO} = V_F \\ V_R \end{array}$ $\begin{array}{c} Flow \ En \\ V_{12} \\ Level \ of \\ I \\ D_R = (p \\ LOS = (E \\ Speed \ E \\ S_R = m \\ S_0 = m \end{array}$ | Actual Tering Div Actual Actual F Service D D R = 4.252 + C/mi/ln) Exhibit 13-2) Determinate xhibit 13-12) | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max Do Exhibit 13-8 Determinati 0.0086 V ₁₂ - | 3-8
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| | | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|----------------------------------|--------------------------|------------------------------|--------------------------------------------------|---------------------------------------------------|-----------------------|----------------------|-----------------------------|---------------------|--------------------|
| General Infor | mation | | <u> </u> | Site Infor | | | | | | |
| Analyst | | ne Forsythe | F | reeway/Dir of Tr | | 14th FF | 3 Off-ramp | | | |
| Agency or Company | Onai | 10 1 010/1110 | | unction | | I-315 | on ramp | | | |
| Date Performed | 9/15/ | 2014 | | urisdiction | | | | | | |
| Analysis Time Period | PM F | Peak | А | nalysis Year | | 2014 | | | | |
| Project Description | I-15 Corridor S | Study | | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | - | ber of Lanes, N | 2 | | | | | Downstrea | m Adj |
| □Yes □ | On | Ramp Numbe | | 1 | | | | | Ramp | |
| | 1011 | Acceleration L | ane Length, L _A | | | | | | ☐Yes | On |
| ✓ No | Off | Deceleration I | ane Length L _D | 503 | | | | | ✓ No | Off |
| | | Freeway Volu | me, V _F | 675 | | | | | | |
| L _{up} = fi | | Ramp Volume | e, V _R | 183 | | | | | L _{down} = | ft |
| | | Freeway Free | -Flow Speed, S _{FF} | 55.0 | | | | | | 1.0 |
| $V_u = V_0$ | eh/h | 1 | ow Speed, S _{FR} | 35.0 | | | | | V _D = | veh/h |
| Conversion to | no/h Hn | | 111 | 00.0 | | | | | | |
| Conversion to | y pc/n one | der base | Conditions | Т | 1 | | <u> </u> | | | |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | | f_{HV} | f _p | v = V/PHF | $x f_{HV} x f_{p}$ |
| Freeway | 675 | 0.83 | Level | 4 | 0 | 0. | 980 | 1.00 | 83 | 0 |
| Ramp | 183 | 0.94 | Level | 3 | 0 | _ | 985 | 1.00 | 19 | |
| UpStream | | 100 | | | <u> </u> | + * | | | | |
| DownStream | | | | 1 | | | | | | |
| | | Merge Areas | | | | | | iverge Areas | | |
| Estimation of | V ₁₂ | | | | Estimation of v ₁₂ | | | | | |
| | V ₁₂ = V _F | (P) | | | $V_{12} = V_R + (V_F - V_R)P_{FD}$ | | | | | |
| | | 1 141 | 12 7) | | - | | | | | |
| L _{EQ} = | | ation 13-6 or | | | L _{EQ} = | | - | Equation 13-1 | | |
| P _{FM} = | _ | Equation (| =XNIDIT 13-6) | | P _{FD} = | | | 000 using Equ | ation (Exhib | oit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 83 | 0 pc/h | | |
| V ₃ or V _{av34} | | | -14 or 13-17) | | V_3 or V_{av34} | | 0 | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V ₃ or V _{av34} > 2,70 | 0 pc/h? 🗌 Ye | s 🗌 No | | | Is V ₃ or V _{av} | _{/34} > 2,7 | 00 pc/h? [| ☐Yes 🗹 No | | |
| Is V ₃ or V _{av34} > 1.5 * | V ₁₂ /2 | s 🗌 No | | | Is V ₃ or V _{av} | , ₃₄ > 1.5 | * V ₁₂ /2 |]Yes ☑ No | | |
| If Yes,V _{12a} = | pc/h (| Equation 13 | -16, 13-18, or | | If Yes,V _{12a} | = | р | c/h (Equation | 13-16, 13- | 18, or 13- |
| 1 | 13-19) | | | | | | 19 | 9) | | |
| Capacity Che | cks | | | | Capacit | y Ch | ecks | | | |
| | Actual | C | apacity | LOS F? | | | Actual | Car | pacity | LOS F? |
| | | | | | V_{F} | | 830 | Exhibit 13-8 | 4500 | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 632 | Exhibit 13-8 | 4500 | No |
| 10 | | | | | V _R | | 198 | Exhibit 13-10 | + | No |
| Class Cotorins | · Maraa Irr | fluoroo 1 | | | | | | | | 110 |
| Flow Entering | | 1 | | Violetian | FIOW ET | - | - | rge Influenc | | Violetiano |
| \ <u>'</u> | Actual | | Desirable | Violation? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 830 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | | | | | | | | terminatior | • | -) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | 0.00627 L _A | | | $D_R = 4$ | .252 + 0. | .0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln |) | | | | $D_R = 6$ | .9 (pc/r | ni/ln) | | | |
| LOS = (Exhibit ' | 13-2) | | | | LOS = A | (Exhib | oit 13-2) | | | |
| Speed Detern | | | | | Speed L | | | n | | |
| | | | | | ' | | xhibit 13- | | | |
| M _S = (Exibit 13 | • | | | | ľ | - | | - | | |
| $S_R^=$ mph (Exh | ibit 13-11) | | | | | - | (Exhibit | * | | |
| $S_0 = mph (Exh$ | ibit 13-11) | | | | $S_0 = N$ | /A mph | (Exhibit 1 | 13-12) | | |
| | ibit 13-13) | | | | S = 49 | 9.2 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, | All Rights Reser | ved | | HCS2010 TM | l Versio | n 6.41 | Ger | nerated: 9/15/ | 2014 9:55 Al |

| | RAI | MPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | | |
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| General Infort | | | | Site Infor | | | | | | |
| Analyst | Shan | ne Forsythe | Fr | eeway/Dir of Tr | | 14th St E | B On-ramp |) | | |
| Agency or Company | | | Ju | ınction | | I-315 | | | | |
| ate Performed | 9/15/ | | | ırisdiction | | | | | | |
| nalysis Time Period | | | Ar | nalysis Year | | 2014 | | | | |
| roject Description | I-15 Corridor S | tudy | | | | | | | | |
| nputs | | L | | | | | | | | |
| Jpstream Adj Ramp | | 1 | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| | | Ramp Numbe | r of Lanes, N | 1 | | | | | Ramp | |
| ☐ Yes ☐ On | | Acceleration L | ane Length, L _A | 930 | | | | | Yes | On |
| ☑ No ☐ Off | ; | Deceleration L | ane Length L _D | | | | | | | _ |
| | | Freeway Volu | me, V _F | 1044 | | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | | 523 | | | | | L _{down} = | ft |
| -r | | | -Flow Speed, S _{FF} | 55.0 | | | | | | |
| $v_{\rm u} = {\rm veh/h}$ | | | ow Speed, S _{FR} | 35.0 | | | | | $V_D =$ | veh/h |
| 2 | //- | | * 110 | 33.0 | | | | | | |
| Conversion to | T - | ger Base (| Conditions | 1 | 1 | 1 | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f⊦ | IV | f_p | v = V/PHI | $x f_{HV} x f_{p}$ |
| reeway | 1044 | 0.90 | Level | 3 | 0 | 0.98 | 5 | 1.00 | | 177 |
| Ramp | 523 | 0.94 | Level | 1 | 0 | 0.99 | | 1.00 | | 559 |
| JpStream | | 1 | | · · | <u> </u> | 1 0.00 | * | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | Div | erge Areas | | |
| stimation of | V ₁₂ | | | | Estimat | ion of | v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | | V ₄₀ = V ₅ | + (V _F - V _R) | P _{ED} | |
| = | | ation 13-6 or | 13-7) | | l = | | | quation 13- | | 3) |
| EQ = | | | | | L _{EQ} =
D - | | | - | | |
|) _{FM} = | | | ion (Exhibit 13-6) | | P _{FD} = | | | ing Equation | II (EXIIIDIL I | 5-7) |
| 12 = | 1177 | • | | | V ₁₂ = | | рс | | | _, |
| or V _{av34} | - | | 13-14 or 13-17) | | V ₃ or V _{av34} | 0 =00 | - | /h (Equation 1 | 3-14 or 13-1 | 7) |
| s V_3 or $V_{av34} > 2,70$ | | | | | | | | Yes 🗌 No | | |
| ls V ₃ or V _{av34} > 1.5 * | | | | | Is V ₃ or V _{av} | ₃₄ > 1.5 * | | Yes 🗌 No | | |
| Yes,V _{12a} = | pc/h (
13-19) | | 3-16, 13-18, or | | If Yes,V _{12a} = | = | рс
13- | /h (Equatior | า 13-16, 1 | 3-18, or |
| Capacity Che | |) | | | Capacit | v Che | | 19) | | |
| capacity cire | Actual | | apacity | LOS F? | Capacit | y Cried | Actual | Can | acity | LOS F? |
| | Actual | t ĭ | apacity | L001: | V _F | | Actual | Exhibit 13-8 | | LOGIE |
| | | | | | | ., | | + | + | + |
| | 1736 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - v _R | | Exhibit 13-8 | | |
| V_{FO} | 1 | | | | | | | Exhibit 13- | • | |
| V_{FO} | | | | | V_R | | | I 10 | | 1 |
| | Morgo In | fluonco | roa | | | toring | Divoro | 10 | co Aros | |
| | | | | Violation? | | _ | | e Influen | | |
| Flow Entering | Actual | Max | Desirable | Violation? | Flow En | _ | tual | e Influen
Max Desi | | Violation? |
| Flow Entering
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4600:All | Violation? | Flow En | Ac | tual | Max Desir
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| V _{R12} evel of Serv D _R = 5.475 + R = 12.9 (pc/m OS = B (Exhibit of Speed Detern Speed Detern R = 0.278 (Exit of Serve) R = 51.4 mph (Exit of Serve) OF = N/A mph (Exit of Serve) | Actual 1736 ice Detern 0.00734 v _R + 0 i/ln) 13-2) inination bit 13-11) | Max Exhibit 13-8 | Desirable
4600:All
if not F) | | V ₁₂ Level of V ₁₂ Level of Cos = (E Speed L Cos = (E Speed S _R = m S ₀ = m | F Servi D _R = 4.2 oc/mi/ln) Exhibit 1 Determ Exhibit 13- | tual | Max Desi
Exhibit 13-8
ermination
086 V ₁₂ - 0. | rable
n (if not | Violation' |

| | | RAMP | S AND RAI | MP JUNCTI | ONS WO | ORKS | HEET | | | |
|------------------------------------------------|----------------------|--------------------------------|------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------|----------------------|------------|---------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | - / IVAI | Site Infori | | | | | | |
| Analyst
Agency or Company
Date Performed | | e Forsythe | • | Freeway/Dir of Tra
Junction
Jurisdiction | | 14th W
I-315 | B Off-ramp |) | | |
| Analysis Time Period | | | | Analysis Year | | 2014 | | | | |
| Project Description | | tudy | | • | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2
1 | | | | | Downstrea
Ramp | am Adj |
| □Yes □ | On | Acceleration L | ane Length, L _A | · | | | | | □Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 713
1279 | | | | | ☑No | Off |
| L _{up} = fi | t | Ramp Volume | e, V _R | 792 | | | | | L _{down} = | ft |
| V _u = ve | eh/h | | -Flow Speed, S _{FI}
low Speed, S _{FR} | _F 55.0
35.0 | | | | | V _D = | veh/h |
| Conversion to | pc/h Und | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f_{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 1279 | 0.91 | Level | 3 | 0 | 0. | 985 | 1.00 | 14 | 27 |
| Ramp | 792 | 0.99 | Level | 2 | 0 | 0. | 990 | 1.00 | 8 | 10 |
| UpStream | | | | | | | | | | |
| DownStream | | l l
Verge Areas | | | - | | | iverge Areas | <u> </u> | |
| Estimation of | | vicige Alcas | | | Estima | tion o | f v | iverge Areas | | |
| | | / D \ | | | Estimation of V_{12}
$V_{12} = V_R + (V_F - V_R)P_{FD}$ | | | | | |
| | $V_{12} = V_F$ | | 40.7) | | _ | | | | – | , |
| L _{EQ} = | | tion 13-6 or | | | L _{EQ} = | | - | Equation 13-1 | | - |
| P _{FM} = | _ | Equation (| Exhibit 13-6) | | P _{FD} = | | | 000 using Eq | uation (Exh | bit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 27 pc/h | | |
| $V_3^{}$ or $V_{av34}^{}$ | | - | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equation | on 13-14 o | 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | ☐Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ * | | | | | Is V ₃ or V _{av} | _{v34} > 1.5 | | ☐Yes ☑ No | | |
| If Yes,V _{12a} = | | | -16, 13-18, or | | If Yes,V _{12a} | = | | c/h (Equation | 13-16, 13 | -18, or 13- |
| Capacity Che | 13-19) | | | | Capacit | | ocks | 9) | | |
| Capacity Cite | Actual | | apacity | LOS F? | Capacit | ly CII | Actual | Ca | pacity | LOS F? |
| | riotaai | Ì | rapaoity | 2001: | V _F | | 1427 | Exhibit 13- | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{I}$ | | 617 | Exhibit 13- | _ | No |
| *FO | | LXIIIDIL 13-0 | | | - | | | Exhibit 13-1 | | |
| | <u> </u> | <u> </u> | i | | V _R | | 810 | | | No |
| Flow Entering | | ir . | | Violetian | Flow El | | | rge Influen | | Violeties |
| V | Actual | | Desirable | Violation? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | Actual | Max Desiral | 1 | Violation? |
| V _{R12} | . 5 . | Exhibit 13-8 | · · · · · · · · | | V ₁₂ | | 1427 | Exhibit 13-8 | 4400:All | No No |
| Level of Serv | | | | | | | | terminatio | • | F) |
| D _R = 5.475 + 0. | | 0.0078 V ₁₂ - | 0.00627 L _A | | | | | .0086 V ₁₂ - 0. | .009 L _D | |
| D _R = (pc/mi/ln | | | | | I '' | 0.1 (pc | • | | | |
| LOS = (Exhibit ' | 13-2) | | | | LOS = B | (Exhil | oit 13-2) | | | |
| Speed Detern | nination | | | | Speed I | Deter | minatio | n | | |
| M _S = (Exibit 13 | 3-11) | | | | $D_s = 0$ | .501 (E | xhibit 13- | -12) | | |
| - | ibit 13-11) | | | | S _R = 4 | 8.5 mph | (Exhibit | 13-12) | | |
| | ibit 13-11) | | | | $S_0 = N$ | I/A mph | (Exhibit | 13-12) | | |
| | ibit 13-13) | | | | 1 | 8.5 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, A | All Rights Reser | ved | | HCS2010 ^{TN} | | | · · · · · · · · · · · · · · · · · · · | enerated: 9/15 | 5/2014 9:48 A |

| | | MPS AND | RAMP JUN | | | EET | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------|------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|---------------------------------------------------|---------------------|---------------|
| General Info | | | | Site Infor | | | | | | |
| Analyst | | ne Forsythe | | eeway/Dir of Tr | avel | 14th St W | /B On-ran | пр | | |
| gency or Company | | | | ınction | | I-315 | | | | |
| ate Performed | | /2014 | | ırisdiction | | | | | | |
| nalysis Time Perio | | | Ar | nalysis Year | | 2014 | | | | |
| roject Description | I-15 Corridor S | Study | | | | | | | | |
| nputs | | | | | | | | | í | |
| pstream Adj Ramp |) | Freeway Num | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| | | Ramp Number | r of Lanes, N | 1 | | | | | Ramp | - |
| ☐ Yes ☐ O | n | Acceleration L | ane Length, L₄ | 505 | | | | | □Yes | On |
| ZN- DO | ££ | Deceleration L | ane Length L | | | | | | | |
| ✓ No □ O | П | Freeway Volui | | 646 | | | | | ✓ No | Off |
| = ft | | | | | | | | | L _{down} = | ft |
| _{up} = ft | | Ramp Volume | 11 | 173 | | | | | down | ., |
| 'u = veh/l | h | Freeway Free | -Flow Speed, S _{FF} | 55.0 | | | | | V _D = | veh/h |
| u VOIII | • | Ramp Free-Fl | ow Speed, S _{FR} | 35.0 | | | | | | |
| conversion | to pc/h Un | der Base (| Conditions | | | | | | | |
| (pc/h) | V | PHF | Terrain | %Truck | %Rv | f _H | , | fp | v = V/PHI | |
| | (Veh/hr) | | | | | | | г | | |
| reeway | 646 | 0.93 | Level | 5 | 0 | 0.97 | | 1.00 | | 712 |
| Ramp | 173 | 0.99 | Level | 1 | 0 | 0.99 | 5 | 1.00 | | 176 |
| JpStream | | \longrightarrow | | | | | | | | |
|)ownStream | | | | | | | | | | |
| - 41 41 | | Merge Areas | | | F - 4' 4 | · | Di | verge Areas | | |
| stimation o | τν ₁₂ | | | | Estimat | ion ot | v ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | V ₁₂ = V | ' _R + (V _F - V _R |)P _{FD} | |
| EQ = | (Equ | ation 13-6 or | 13-7) | | L _{EQ} = | |
(E | Equation 13- | 12 or 13-1 | 3) |
| FM = | | | ion (Exhibit 13-6) | ١ | P _{FD} = | | | ·
sing Equatio | | |
| -M
-
12 = | 712 p | | ion (Exhibit 10 0) | | V ₁₂ = | | | c/h | ii (Exilibit i | 0 1) |
| | • | | 40.44 40.47 | | | | | | 0.44 40.4 | . |
| ₃ or V _{av34} | - | | 13-14 or 13-17) |) | V ₃ or V _{av34} | | | c/h (Equation 1 | 3-14 or 13-1 | 17) |
| s V_3 or $V_{av34} > 2.7$ | | | | | | | | Yes 🗌 No | | |
| s V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av} | , ₃₄ > 1.5 * ' | | Yes □ No | | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | = | | c/h (Equatio | n 13-16, 1 | 3-18, or |
| | 13-19) |) | | | | | | -19) | | |
| Capacity Ch | | | | 1 | Capacit | y Chec | | 1 ^ | | 1 |
| | Actual | | apacity | LOS F? | , | | Actual | | oacity | LOS F |
| | | | | | V_{F} | | | Exhibit 13-8 | 3 | |
| V_{FO} | 888 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | -V _R | | Exhibit 13-8 | 3 | |
| FO | | | | | V _R | | | Exhibit 13- | - [| |
| | <u> </u> | | | | | | | 10 | | |
| low Enterin | g Merge In | <u>ifluence A</u> | rea | | Flow Er | ntering | Diver | ge Influen | | |
| | Actual | | Desirable | Violation? | | Ac | tual | Max Desi | rable | Violation |
| V _{R12} | 888 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | | Exhibit 13-8 | | |
| | vice Detern | nination (i | if not F) | | Level of | f Servi | ce Det | erminatio | n (if not | <i>F</i>) |
| | + 0.00734 v _R + 0 | 0.0078 V ₁₂ - 0.0 | 00627 L _A | | | $D_{D} = 4.2$ | 252 + 0.0 | 0086 V ₁₂ - 0. | .009 L _D | |
| | | 12 | Α | | | oc/mi/ln) | | 12 | U | |
| D _R = 5.475 - | ı/ln) | | | | | , | 2 2) | | | |
| $D_{R} = 5.475 - 6.475 - 6.475 = 9.2 \text{ (pc/m}$ | = | | | | LOS = (E | Exhibit 1 | o-∠) | | | |
| $D_R = 5.475 - 6$
$D_R = 9.2 \text{ (pc/m)}$
DS = A (Exhibit) | t 13-2) | | | | | | | | | |
| $D_{R} = 5.475 - 6.475 = 0.2 \text{ (pc/m}$ | t 13-2) | | | | Speed L | Determ | inatio | n | | |
| $D_R = 5.475 - 6$ $D_R = 9.2 \text{ (pc/m}$ $D_R = 0.2 \text{ (pc/m}$ $D_R = 0.4 \text{ (Exhibit)}$ | t 13-2)
mination | | | | Speed L | Determ
Exhibit 13- | | n | | |
| $D_R = 5.475 \cdot C$ $D_R = 9.2 \text{ (pc/m}$ $DS = A \text{ (Exhibit)}$ $COS = A \text{ (Exhibit)}$ $COS = A \text{ (Exhibit)}$ $COS = A \text{ (Exhibit)}$ $COS = A \text{ (Exhibit)}$ | t 13-2)
mination
tibit 13-11) | | | | Speed L
D _s = (E | | 12) | n | | |
| $D_{R} = 5.475 - 6$ $D_{R} = 9.2 \text{ (pc/m}$ $D_{S} = A \text{ (Exhibit)}$ $D_{S} = A \text{ (Exhibit)}$ $D_{S} = 0.295 \text{ (Exhibit)}$ $D_{R} = 0.295 \text{ (Exhibit)}$ | t 13-2) mination tibit 13-11) (Exhibit 13-11) | | | | $\begin{array}{ccc} \textbf{Speed L} \\ \textbf{D}_{s} = & \textbf{(E} \\ \textbf{S}_{R} = & \textbf{m} \end{array}$ | Exhibit 13-
nph (Exhib | 12)
t 13-12) | n | | |
| $D_R = 5.475$ $R_R = 9.2 \text{ (pc/m}$ $DS = A \text{ (Exhibit)}$ $CS = Deter$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ $DS = 0.295 \text{ (Exhibit)}$ | t 13-2)
mination
tibit 13-11) | | | | $\begin{array}{ccc} \textbf{Speed L} \\ \textbf{D}_{\text{S}} = & (\textbf{E} \\ \textbf{S}_{\text{R}} = & \textbf{m} \\ \textbf{S}_{\text{0}} = & \textbf{m} \end{array}$ | Exhibit 13- | 12)
t 13-12)
t 13-12) | n | | |

| | | RAMP | S AND RAN | /IP JUNCTI | ONS WO | RKS | HEET | | | |
|--------------------------------------------------------------------------------------|----------------------------------|---------------------|-------------------------------------------------------------|-------------------|-------------------------------------|--------------------|-------------------|----------------------------------------|---------------------------------|------------------------------------|
| General Infor | mation | 2 w 11911 | | Site Infor | | | - • | | | |
| Analyst
Agency or Company | Shan | e Forsythe | J | reeway/Dir of Tra | | Central | Ave NB O | ff | | |
| Date Performed | 9/9/2 | | | lurisdiction | | 2014 | | | | |
| Analysis Time Period
Project Description | | | | Analysis Year | | 2014 | | | | |
| Inputs | 1-13 Corridor 3 | luuy | | | | | | | | |
| - | | Freeway Num | ber of Lanes, N | 2 | | | | | T | |
| Upstream Adj R | _ | Ramp Numbe | | 1 | | | | | Downstrea
Ramp | am Adj |
| ∐Yes L | J On | | ane Length, L _A | 4000 | | | | | □Yes | On |
| ✓ No | Off | Freeway Volu | Lane Length L _D
me, V _E | 1388
321 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 192 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | e-Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
45.0 | | | | | V _D = | veh/h |
| Conversion to | o nc/h Una | | 111 | 10.0 | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | T | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 321 | 0.89 | Level | 14 | 0 | 0 | 935 | 1.00 | | 86 |
| Ramp | 192 | 0.83 | Level | 10 | 0 | | 952 | 1.00 | | 44 |
| UpStream | 102 | 0.00 | 20701 | ., | Ť | " | 002 | 1.00 | <u> </u> | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | | iverge Areas | | |
| Estimation of | ^f v ₁₂ | | | | Estimati | ion o | f v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | | V ₁₂ = | · V _R + (V _F - V | ′ _D)P _{CD} | |
| L _{EQ} = | | tion 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13- | | 3) |
| P _{FM} = | | Equation (| | | P _{FD} = | | | 000 using Ed | | - |
| V ₁₂ = | pc/h | Equation (| EXHIBIT 10 0) | | V ₁₂ = | | | 86 pc/h | luation (Exi | ibit 10 1) |
| v ₁₂
V ₃ or V _{av34} | • | Equation 12 | -14 or 13-17) | | I '- | | | • | an 12 11 a | ~ 10 17) |
| v ₃ or v _{av34}
Is V ₃ or V _{av34} > 2,70 | | | -14 01 13-17) | | V ₃ or V _{av34} | × 2 7 | | pc/h (Equati | | 1 13-17) |
| | | | | | | | | Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | 16 12 19 or | | | | | Yes ☑ No | | 10 or 12 |
| If Yes,V _{12a} = | 13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | : | р
19 | c/h (Equation
9) | 1 13-10, 13 | - 10, 01 13- |
| Capacity Che | | | | | Capacity | v Ch | | - / | | |
| , , | Actual | | Capacity | LOS F? | 1 | | Actual | С | apacity | LOS F? |
| | | | | | V _F | | 386 | Exhibit 13- | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 142 | Exhibit 13- | 8 4700 | No |
| | | | | | V_R | | 244 | Exhibit 13- | 10 2100 | No |
| Flow Entering | a Merae In | fluence A | \rea | - | Flow En | terin | a Dive | rge Influer | ce Area | - |
| | Actual | | Desirable | Violation? | <u> </u> | _ | Actual | Max Desira | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 386 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | • | Level of | Ser | ∕ice De | terminatio | n (if not | .
F) |
| D _R = 5.475 + 0. | | | | | | | | .0086 V ₁₂ - 0 | | , |
| D _R = (pc/mi/ln | | 12 | A | | | .9 (pc/ | | 12 | D | |
| LOS = (Exhibit | | | | | l '' | | oit 13-2) | | | |
| • | | | | | | • | • | <u> </u> | | |
| Speed Detern | | | | | Speed D | | | | | |
| M _S = (Exibit 1: | | | | | 1 - | | xhibit 13- | - | | |
| | nibit 13-11) | | | | | - | (Exhibit | - | | |
| | nibit 13-11) | | | | l * | - | (Exhibit | • | | |
| S = mph (Exh | nibit 13-13) | | | | L | | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, A | All Rights Reser | ved | | HCS2010 [™] | ¹ Versi | on 6.41 | (| Generated: 9/9 | 9/2014 8:21 AI |

| 0 | | WPS AND | KAMP JUN | CTIONS W | | <u> </u> | | | |
|-----------------------------------------------|----------------------------|----------------------------|-----------------------------------------|------------------------|-------------------------------------|------------------------------------------------|----------------------------------------|---------------------------------|--------------------------------|
| General Infor | | | | Site Inform | | | _ | | |
| Analyst | Shan | e Forsythe | | reeway/Dir of Tra | avel | Central Ave NB | On | | |
| Agency or Company
Date Performed | 9/9/2 | 014 | | ınction
ırisdiction | | | | | |
| nalysis Time Period | | | | nalysis Year | | | | | |
| Project Description | | | | , | | | | | |
| nputs | | • | | | | | | | |
| Jpstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adi |
| potroum ray ramp | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | anninaj |
| ☐ Yes ☐ On | | Acceleration L | ane Length, L | 1491 | | | | □Yes | On |
| ✓ No 🔲 Off | | | ane Length L | | | | | | _ |
| ✓ No ☐ Off | | Freeway Volu | | 200 | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | ' | 50 | | | | L _{down} = | ft |
| ир | | | -Flow Speed, S _{FF} | 65.0 | | | | | |
| $v_{\rm u} = {\rm veh/h}$ | | | • • • • • • • • • • • • • • • • • • • • | | | | | $V_D =$ | veh/h |
|) | //- | | ow Speed, S _{FR} | 55.0 | | | | | |
| Conversion to | y pc/n Und | | Conditions | 1 | 1 | 1 | 1 | | |
| (pc/h) | v
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PHI | $F \times f_{HV} \times f_{p}$ |
| reeway | 200 | 0.83 | Level | 7 | 0 | 0.966 | 1.00 | | 249 |
| Ramp | 50 | 0.74 | Level | 40 | 0 | 0.833 | 1.00 | | 82 |
| JpStream | | | | | | | | | |
| DownStream | | | | | | | | | |
| atimatian af | | Merge Areas | | | Fatimati | | Diverge Areas | | |
| stimation of | | | | | Esumau | on of v ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | V ₁₂ = | · V _R + (V _F - V | ' _R)P _{FD} | |
| EQ = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 13 | 3-12 or 13-1 | 13) |
| _{FM} = | 1.000 | using Equat | ion (Exhibit 13-6) |) | P _{FD} = | | using Equat | ion (Exhibit 1 | 3-7) |
| 12 = | 249 p | c/h | | | V ₁₂ = | | pc/h | | |
| or V _{av34} | 0 pc/l | h (Equation | 13-14 or 13-17) |) | V ₃ or V _{av34} | | pc/h (Equation | 13-14 or 13- | 17) |
| s V_3 or $V_{av34} > 2,70$ | 0 pc/h? Ye | s 🗹 No | | | | ₃₄ > 2,700 pc/h? | ☐Yes ☐ No | 0 | |
| s V ₃ or V _{av34} > 1.5 * | | | | | | ,,
₃₄ > 1.5 * V ₁₂ /2 | | | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | ·- | pc/h (Equati | | 3-18, or |
| | 13-19) | | | | | | 13-19) | | |
| Capacity Che | | 1 - | | 1 | Capacity | / Checks | | | 1 |
| | Actual | | apacity | LOS F? | | Actua | | apacity | LOS F |
| | | | | | V _F | | Exhibit 13 | | |
| V_{FO} | 331 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 13 | | |
| | | | | | V _R | | Exhibit 1
10 | 3- | |
| low Entering | Morgo In | fluence A | roa | | Flow En | tering Dive | | nce Area | <u> </u> |
| TOW LINCINIS | Actual | 1 | Desirable | Violation? | 10W EII | Actual | Max De | | Violation |
| V _{R12} | 331 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | Exhibit 13-8 | | |
| evel of Servi | ice Detern | | | | | Service D | | | · F) |
| | 0.00734 v _R + 0 | | | | | $D_R = 4.252 + 0$ | | | - / |
| _R = -1.3 (pc/mi | | 3.3070 V ₁₂ 3.5 | 20027 L _A | | | c/mi/ln) | ······································ | o.ooo 2 _D | |
| | • | | | | | | | | |
| OS = A (Exhibit | <u> </u> | | | | - | xhibit 13-2) | · · · · · · · · · · · · · · · · · · · | | |
| Speed Detern | | | | | | eterminati | on | | |
| 1 _S = 0.162 (Exit | • | | | | , | xhibit 13-12) | | | |
| _R = 61.3 mph (| Exhibit 13-11) | | | | 1, | oh (Exhibit 13-12 | - | | |
| | | | | | S ₀ = mp | oh (Exhibit 13-12 |)) | | |
| ₀ = N/A mph (E | xhibit 13-11) | | | | r 0 ''' | JII (LAIIIDIL 10-12 | •) | | |
| | Exhibit 13-11) | | | | 1 - | oh (Exhibit 13-13 | - | | |

| | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------|------------------------------------------------------------------------|
| mation | 2 mmi | | | | | | | | |
| Shan | | Jı | reeway/Dir of Tra | | Central | Ave SB O | ff | | |
| | | | | , | 0044 | | | | |
| | | A | naiysis Year | | 2014 | | | | |
| 1-13 COITIGOL S | luuy | | | | | | | | |
| | Freeway Num | her of Lanes N | 2 | | | | | ĺ | |
| amp | | | 1 | | | | | Downstre
Ramp | am Adj |
| On | 1 | - 1 | | | | | | □Yes | On |
| Off | | 5 | | | | | | ☑ No | Off |
| | 1 | | 136 | | | | | L _{down} = | ft |
| eh/h | | | | | | | | V _D = | veh/h |
| nc/h l/n/ | | 111 | 43.0 | | | | | | |
| V | | | %Truck | %Rv | | funz | f_ | v = V/PHF | X funz X f |
| | | | | | _ | | · · | - | ну р
45 |
| | | | | | _ | | | | 62 |
| 100 | 0.00 | LOVOI | | <u> </u> | + | 300 | 1.00 | <u>'</u> | <u> </u> |
| | | | | | 1 | | | | |
| | Merge Areas | | | | | | iverge Areas | | |
| v ₁₂ | | | | Estimati | on o | f v ₁₂ | | | |
| V ₁₂ = V _F | (P _{EM}) | | | | | V ₁₂ = | V _R + (V _F - V | _R)P _{ED} | |
| | | 13-7) | | L _{EO} = | | | | | 3) |
| | | | | | | | - | | - |
| _ | | , | | | | | | • | , |
| • | Equation 13 | -14 or 13-17) | | | | | • | on 13-14 o | r 13-17) |
| | | , | | | , > 2,70 | | | | , |
| | | | | | | | | | |
| pc/h (| Equation 13 | -16, 13-18, or | | | | р | c/h (Equation | า 13-16, 13 | -18, or 13- |
| | | | | Capacity | / Che | | -, | | |
| Actual | C | apacity | LOS F? | <u> </u> | | Actual | C | apacity | LOS F? |
| | | | | V _F | | 445 | Exhibit 13- | 8 4700 | No |
| | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 283 | Exhibit 13- | 8 4700 | No |
| | | | | V _R | | 162 | Exhibit 13- | 10 2100 | No |
| Merge In | fluence A | rea | | Flow En | terin | g Dive | rge Influer | ce Area | |
| Actual | Max | Desirable | Violation? | | ļ | Actual | Max Desira | ble | Violation? |
| | Exhibit 13-8 | | | V ₁₂ | 4 | 445 | Exhibit 13-8 | 4400:All | No |
| ice Detern | nination (| if not F) | | Level of | Serv | vice De | terminatio | n (if not | F) |
| 00734 v _R + | 0.0078 V ₁₂ - | 0.00627 L _A | | | O _R = 4 | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | |
|) | | | | D _R = -2.5 | 2 (pc/ | mi/ln) | | | |
| 3-2) | | | | LOS = A | (Exhib | oit 13-2) | | | |
| nination | | | | Speed D | eteri | minatio | n | | |
| | | | | | | xhibit 13- | | | |
| 3-11) | | | | | , | | , | | |
| 3-11)
ihit 13-11) | | | | | .8 mph | (Exhibit | 13-12) | | |
| ibit 13-11) | | | | S _R = 57. | - | (Exhibit | - | | |
| | | | | $S_{R} = 57.$
$S_{0} = N/R$ | A mph | (Exhibit
(Exhibit
(Exhibit | 13-12) | | |
| | 9/9/2 AM F I-15 Corridor S amp On Off t eh/h O pc/h Und V (Veh/hr) 334 136 V12 V12 = VF (Equal using pc/h pc/h (0 pc/h? Yee pc/h (13-19)) Cks Actual | Shane Forsythe 9/9/2014 AM Peak I-15 Corridor Study amp Freeway Num Ramp Numbe Acceleration L Freeway Volu Ramp Volume Ramp Free-Fl D pc/h Under Base (V) (Veh/hr) PHF 334 0.83 136 0.85 Merge Areas FV12 V12 = VF (PFM) (Equation 13-6 or using Equation (Epc/h pc/h (Equation 13-6 or using Equation (Epc/h pc/h (Equation 13-13-19) CKS Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual CM Actual | Shane Forsythe Shane Forsythe 9/9/2014 AM Peak A I-15 Corridor Study Shamp Freeway Number of Lanes, N Ramp Number of Lanes, N Acceleration Lane Length, L Deceleration Lane Length, L Freeway Volume, V Ramp Volume, V Ramp Free-Flow Speed, S Ramp Free-Flow Speed, S PHF Terrain 334 0.83 Level 136 0.85 Level Merge Areas FV12 V12 = V V12 = V (Equation 13-6 or 13-7) using Equation (Exhibit 13-6) pc/h pc/h (Equation 13-14 or 13-17) 0 pc/h? Yes No 13-19) Cks Actual Capacity Exhibit 13-8 ice Determination (if not F) 00734 v R + 0.0078 V12 - 0.00627 L A) 13-2) | Site Information | Site Information Shane Forsythe Freeway/Dir of Travel Junction Shane Forsythe Freeway/Dir of Travel Junction Shane Forsythe Freeway/Dir of Travel Junction Shane Forsythe Junction Jurisdiction Am Peak Analysis Year Shane Foreway Number of Lanes, N 2 Ramp Number of Lanes, N 1 Acceleration Lane Length, L _A Dordon Deceleration Lane Length L _D 1144 Freeway Volume, V _F 334 Ramp Volume, V _F 334 Ramp Volume, V _F 136 Freeway Free-Flow Speed, S _{FF} 65.0 Ramp Free-Flow Speed, S _{FR} 45.0 Dordon Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Free Flow Speed, S _{FR} 45.0 Dordon Shane Fr | Site Information Shane Forsythe Freeway Dir of Travel Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction Junction J | Shane Forsythe | Site Information | Stane Forsythe Freeway/Dir of Travel Central Ave SB Off Junction |

| 0 | | MPS AND | RAMP JUN | | | ELI | | | |
|-----------------------------------------------|----------------------------|--------------------|------------------------------|------------------------|---------------------------------------|------------------------------------------|---------------------|---------------------|----------------------|
| General Infor | | | | Site Inform | | | _ | | |
| Analyst | Shan | e Forsythe | | eeway/Dir of Tra | avel | Central Ave SB (| On | | |
| gency or Company
ate Performed | 9/9/2 | 014 | | ınction
ırisdiction | | | | | |
| nalysis Time Period | | | | nalysis Year | | | | | |
| roject Description | | | | , | | | | | |
| nputs | | • | | | | | | | |
| pstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adi |
| potream ray ramp | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | arri 7 taj |
| ☐ Yes ☐ On | | Acceleration L | ane Length, L _Δ | 1379 | | | | Yes | |
| | | | ane Length L _D | | | | | | On |
| ☑ No ☐ Off | | Freeway Volu | | 352 | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | • | 162 | | | | L _{down} = | ft |
| ıp | | | 11 | | | | | down | |
| u = veh/h | | | -Flow Speed, S _{FF} | 65.0 | | | | $V_D =$ | veh/h |
| | | | ow Speed, S _{FR} | 45.0 | | | | | |
| conversion to | | der Base (| Conditions | 1 | · | 1 | 1 | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PHI | $= x f_{HV} x f_{p}$ |
| reeway | 352 | 0.94 | Level | 8 | 0 | 0.962 | 1.00 | | 389 |
| Ramp | 162 | 0.76 | Level | 5 | 0 | 0.976 | 1.00 | + | 217 |
| JpStream | | | | | | | | | |
| DownStream | | | | | | | | | |
| | | Merge Areas | | | F | | Diverge Areas | | |
| stimation of | v ₁₂ | | | | Estimati | on of v ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | V ₁₂ = | $V_R + (V_F - V_F)$ | R)P _{FD} | |
| EQ = | (Equ | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 13 | 3-12 or 13-1 | 3) |
| _{FM} = | 1.000 | using Equat | ion (Exhibit 13-6) | | P _{FD} = | | using Equat | ion (Exhibit 1 | 3-7) |
| ₁₂ = | 389 p | c/h | | | V ₁₂ = | | pc/h | | |
| ₃ or V _{av34} | | | 13-14 or 13-17) |) | V ₃ or V _{av34} | | pc/h (Equation | 13-14 or 13- | 17) |
| s V ₃ or V _{av34} > 2,70 | - | | , | | | ₃₄ > 2,700 pc/h? | | | , |
| s V ₃ or V _{av34} > 1.5 * | | | | | | ₃₄ > 1.5 * V ₁₂ /2 | | | |
| | | | 3-16, 13-18, or | | | ·- | pc/h (Equati | | 3-18, or |
| Yes,V _{12a} = | 13-19) | | | | If Yes,V _{12a} = | 1 | 3-19) | • | • |
| Capacity Che | r | _ | | | Capacity | / Checks | | | |
| | Actual | | apacity | LOS F? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Actual | | apacity | LOS F |
| | | | | | V _F | | Exhibit 13 | | |
| V_{FO} | 606 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 13 | | |
| | | | | | V _R | | Exhibit 1
10 | 3- | |
| low Entering | Merge In | fluence A | roa | | Flow En | tering Dive | | nco Aros | |
| TOW Emering | Actual | 1 | Desirable | Violation? | 1000 211 | Actual | Max De | | Violation |
| V _{R12} | 606 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | Exhibit 13-8 | | |
| evel of Serv | ice Detern | | | | | Service De | | | <i>F</i>) |
| | 0.00734 v _R + (| | | | 1 | $D_R = 4.252 + 0$ | | | - / |
| R = 1.5 (pc/mi/ | | 12 0.0 | A | | | c/mi/ln) | 12 | – | |
| | • | | | | | Exhibit 13-2) | | | |
| • | <u> </u> | | | | - | | <u> </u> | | |
| peed Detern | | | | | | eterminati | on | | |
| $I_{\rm S} = 0.204 (Exit)$ | oit 13-11) | | | | , | xhibit 13-12) | | | |
| | Exhibit 13-11) | | | | S _R = mp | oh (Exhibit 13-12 |) | | |
| $_{\rm R}$ = 60.3 mph (| , | | | | | | | | |
| | Exhibit 13-11) | | | | S ₀ = mp | oh (Exhibit 13-12 |) | | |
| = N/A mph (E | • | | | | | oh (Exhibit 13-12
oh (Exhibit 13-13 | • | | |

| | | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | |
|---------------------------------------------|----------------------------------|----------------------------------------------|------------------------------|-------------------------|--------------------------------------------------|---------------------|-----------------|----------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | Shan | e Forsythe | J | reeway/Dir of Trunction | | Central | Ave NB O | ff | | |
| Date Performed | 9/9/2 | | | urisdiction | | 0044 | | | | |
| Analysis Time Period
Project Description | | | Ρ | nalysis Year | | 2014 | | | | |
| Inputs | 1-13 Collidol S | luuy | | | | | | | | |
| - | | Freeway Num | ber of Lanes, N | 2 | | | | | Τ | |
| Upstream Adj R | amp | Ramp Numbe | | 1 | | | | | Downstre
Ramp | am Adj |
| □Yes | On | 1 | ane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 1388
490 | | | | | ✓No | Off |
| L _{up} = f | t | Ramp Volume | | 227 | | | | | L _{down} = | ft |
| V ₁₁ = v | eh/h | 1 | -Flow Speed, S _{FF} | 65.0 | | | | | V _D = | veh/h |
| | | | ow Speed, S _{FR} | 45.0 | | | | | | |
| Conversion to | o pc/n Und
 ∨ | | conaitions | T | 1 | | | | <u> </u> | |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 490 | 0.87 | Level | 11 | 0 | | 948 | 1.00 | | 94 |
| Ramp | 227 | 0.75 | Level | 6 | 0 | 0. | 971 | 1.00 | 3 | 13 |
| UpStream | | | | - | - | _ | | | - | |
| DownStream | | <u>I </u> | | | - | | | Diverge Areas | | |
| Estimation of | | merge Areas | | | Estimati | ion o | | Alverge Alcus | | |
| | | <u> </u> | | | | | | \(\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | () D | |
| _ | V ₁₂ = V _F | | 40.7) | | L _ | | | : V _R + (V _F - V | | |
| L _{EQ} = | | ition 13-6 or | | | L _{EQ} = | | | Equation 13- | | - |
| P _{FM} = | _ | Equation (| Exhibit 13-6) | | P _{FD} = | | | 000 using Ed | quation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 94 pc/h | | |
| V_3 or V_{av34} | | | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equati | | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | ☐Yes 🗹 No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 | | ☐Yes 🗹 No | | |
| If Yes,V _{12a} = | pc/h (
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | | p
19 | c/h (Equation | n 13-16, 13 | -18, or 13- |
| Capacity Che | | 1 | | | Capacity | | | 9) | | |
| Capacity One | Actual | | apacity | LOS F? | Capacity | <i>y 011</i> | Actual | | apacity | LOS F? |
| | riotaar | | apaoity | 20011 | V _F | | 594 | Exhibit 13 | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 281 | Exhibit 13 | | No |
| | | | | | V _R | | 313 | Exhibit 13- | 10 2100 | No |
| Flow Entering | g Merge In | fluence A | rea | | Flow En | terin | g Dive | rge Influer | nce Area | |
| | Actual | Max | Desirable | Violation? | | / | Actual | Max Desira | ıble | Violation? |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | | 594 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | • | Level of | Serv | /ice De | terminatio | n (if not | F) |
| D _R = 5.475 + 0. | 00734 v _R + | 0.0078 V ₁₂ - | 0.00627 L _A | | ı | D _R = 4 | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | - |
| D _R = (pc/mi/ln |) | | | | D _R = -3 | .1 (pc/ | mi/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | LOS = A | (Exhib | oit 13-2) | | | |
| Speed Determ | nination | | | | Speed D | eter | minatio | on . | | |
| $M_S = (Exibit 1)$ | | | | | | | xhibit 13- | | | |
| | ibit 13-11) | | | | | | (Exhibit | - | | |
| | iibit 13-11) | | | | | - | (Exhibit | - | | |
| | iibit 13-11) | | | | 1 | - | (Exhibit | • | | |
| Copyright © 2012 Unive | | All Rights Reser | ved | | HCS2010 ^{TN} | | - | · · · · · · · · · · · · · · · · · · · | Generated: 0/6 | 9/2014 8:34 A |
| 2012 UIIIVE | or or i fortua, i | I vigino i vesei | | | HC32010''' | versi | UI 0.47 | ' | Contrated. 9/ | , _ U I T U.U+ A |

| | | MPS AND | RAMP JUN | | | <u>= </u> | | | |
|-----------------------------------------------------|----------------------------------------------|------------------------------|---------------------------------------|------------------------|-------------------------------------|----------------------------------------------|----------------------------------------|---------------------------------|--------------------------------|
| General Infori | | | | Site Infor | | | | | |
| Analyst | Shan | ne Forsythe | | reeway/Dir of Tra | avel | Centrall NB On | | | |
| Igency or Company Oate Performed | 9/9/2 | 014 | | ınction
ırisdiction | | | | | |
| nalysis Time Period | | | | nalysis Year | | 2014 | | | |
| roject Description | | | | , | | | | | |
| nputs | | , | | | | | | | |
| Jpstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adi |
| policalii Auj Italiip | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | amiraj |
| ☐ Yes ☐ On | | | ane Length, L | 1491 | | | | | |
| | | | ane Length L _D | | | | | □Yes | On |
| ☑ No ☐ Off | | Freeway Volum | | 359 | | | | ✓ No | Off |
| _{up} = ft | | 1 | • | | | | | L _{down} = | ft |
| ıp ıt | | Ramp Volume | 11 | 118 | | | | down | |
| u = veh/h | | | -Flow Speed, S _{FF} | 65.0 | | | | $V_D =$ | veh/h |
| | | | ow Speed, S _{FR} | 55.0 | | | | | |
| onversion to | | der Base (| Conditions | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PH | $F \times f_{HV} \times f_{p}$ |
| reeway | 359 | 0.97 | Level | 8 | 0 | 0.962 | 1.00 | 1 | 385 |
| Ramp | 118 | 0.81 | Level | 1 | 0 | 0.995 | 1.00 | | 146 |
| JpStream | | | | | | | | | |
| ownStream | | | | | | | | | |
| | | Merge Areas | | | | | Diverge Areas | | |
| stimation of | v ₁₂ | | | | Estimati | ion of v ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | V ₁₂ = | = V _R + (V _F - V | ' _R)P _{FD} | |
| EQ = | (Equ | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 1 | 3-12 or 13-1 | 13) |
| _{FM} = | 1.000 | using Equat | ion (Exhibit 13-6) |) | P _{FD} = | | using Equat | ion (Exhibit 1 | 3-7) |
| 12 = | 385 p | | , | | V ₁₂ = | | pc/h | , | • |
| or V _{av34} | • | | 13-14 or 13-17) |) | V ₃ or V _{av34} | | pc/h (Equation | 13-14 or 13- | 17) |
| s V ₃ or V _{av34} > 2,700 | - | | , | | | ₃₄ > 2,700 pc/h? | | | , |
| s V ₃ or V _{av34} > 1.5 * | | | | | | ₃₄ > 1.5 * V ₁₂ /2 | | | |
| | | | 3-16, 13-18, or | | | | pc/h (Equati | | 3-18. or |
| Yes,V _{12a} = | 13-19) | | | | If Yes,V _{12a} = | | 13-19) | | , - |
| Capacity Che | cks | | | | Capacity | y Checks | | | |
| | Actual | C | apacity | LOS F? | | Actua | | apacity | LOS F |
| | | | | | V _F | | Exhibit 13 | | |
| V_{FO} | 531 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 13 | 3-8 | |
| . 0 | | | | | V _R | | Exhibit 1 | 3- | |
| F | . 1/ / | 51 | | | | | 10 | | |
| low Entering | Actual | 1 | Irea
Desirable | Violation? | Flow En | tering Div | e rge influe
Max De | | Violation |
| V | 531 | Exhibit 13-8 | 4600:All | No | V ₁₂ | Actual | Exhibit 13-8 | | Violation |
| V _{R12} | | | | NO | | i Convice D | | |
 |
| evel of Servi | | • | · · · · · · · · · · · · · · · · · · · | | 1 | Service D | | | <i>F)</i> |
| | | 0.0078 V ₁₂ - 0.0 | 10021 L _A | | | $D_{R} = 4.252 +$ | 0.0000 V ₁₂ - | 0.009 L _D | |
| R = 0.2 (pc/mi/l | • | | | | | c/mi/ln) | | | |
| OS = A (Exhibit 1 | | | | | | exhibit 13-2) | | | |
| Speed Detern | nination | | | | | Determinat | ion | | |
| | oit 13-11) | | | | $D_s = (E$ | xhibit 13-12) | | | |
| $_{S} = 0.164 $ (Exit | • | | | | S _R = m _l | ph (Exhibit 13-12 | 2) | | |
| • | Exhibit 13-11) | | | | PR− ''' | pii (=xiiibit 10 11 | -, | | |
| e 61.2 mph (| Exhibit 13-11)
Exhibit 13-11) | | | | | ph (Exhibit 13-12 | • | | |
| $_{\rm R}^{=}$ 61.2 mph ($_{\rm D}^{=}$ N/A mph (E | Exhibit 13-11) Exhibit 13-11) Exhibit 13-13) | | | | S ₀ = m _l | • | 2) | | |

| | | RAMP | S AND RAI | MP JUNCTI | ONS WO | RKS | HEET | | | |
|----------------------------------------|-----------------------------------------|--------------------------------|-------------------------------------------------------------|-------------------------------|--------------------------------------------------|------------------|-----------------|----------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | Shan | e Forsythe | J | reeway/Dir of Tr
lunction | | Centra | Ave SB O | ff | | |
| Date Performed
Analysis Time Period | 9/9/2
9 PM P | | | lurisdiction
Analysis Year | | 2014 | | | | |
| Project Description | | | , | tharysis i car | | 2014 | | | | |
| Inputs | 1 10 00111001 0 | luuj | | | | | | | | |
| Upstream Adj R | amp | 1 | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| □Yes | On | Ramp Numbe
Acceleration I | ane Length, L _A | 1 | | | | | Ramp
□Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 1144
309 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 72 | | | | | L _{down} = | ft |
| V _u = v | eh/h | 1 | e-Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
45.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Und | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 309 | 0.79 | Level | 14 | 0 | 0. | 935 | 1.00 | 4 | 19 |
| Ramp | 72 | 0.90 | Level | 6 | 0 | 0. | 971 | 1.00 | 8 | 32 |
| UpStream | | | | | | 4 | | | | |
| DownStream | | Marga Arasa | | | | | | Niverse Areas | | |
| Estimation of | | Merge Areas | | | Estimati | ion o | | Diverge Areas | | |
| <u> </u> | | | | | LStillati | 011 0 | | | | |
| _ | $V_{12} = V_F$ | | 40.7) | | L _ | | | : V _R + (V _F - V | | |
| L _{EQ} = | | ition 13-6 or | | | L _{EQ} = | | | Equation 13- | | - |
| P _{FM} = | _ | Equation (I | EXNIBIT 13-6) | | P _{FD} = | | | 000 using Ed | quation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 19 pc/h | | |
| V ₃ or V _{av34} | | | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equati | | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | ☐Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | 10 10 10 | | | | | ☐Yes ☑ No | | 40 40 |
| If Yes,V _{12a} = | pc/n (
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | | 19 | c/h (Equation | n 13-16, 13 | -18, Of 13- |
| Capacity Che | | ' | | | Capacity | v Ch | | <u> </u> | | |
| | Actual | | Capacity | LOS F? | 1 | | Actual | С | apacity | LOS F? |
| | | | | | V _F | | 419 | Exhibit 13 | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 337 | Exhibit 13- | -8 4700 | No |
| | | | | | V _R | | 82 | Exhibit 13- | 10 2100 | No |
| Flow Entering | a Merae In | fluence A | \rea | | | terin | a Dive | rge Influer | nce Area | |
| | Actual | | Desirable | Violation? | 1011 =11 | | Actual | Max Desira | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 419 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | • | Level of | Ser | /ice De | terminatio | n (if not | F) |
| D _R = 5.475 + 0. | | | | | + | | | .0086 V ₁₂ - 0 | | |
| D _R = (pc/mi/ln | • • • • • • • • • • • • • • • • • • • • | 12 | A | | | | mi/ln) | 12 | D | |
| LOS = (Exhibit | | | | | 1 '' | | oit 13-2) | | | |
| Speed Determ | | | | | Speed D | • | | on . | | |
| | | | | | | | xhibit 13- | | | |
| $M_S = (Exibit 1)$ | | | | | | | (Exhibit | - | | |
| | nibit 13-11) | | | | | | (Exhibit | - | | |
| | nibit 13-11)
nibit 13-13) | | | | 1 | - | (Exhibit | • | | |
| | | All Dialte D | | | | | - | · · · · · · · · · · · · · · · · · · · | Oamasstal 5 | 2/2044 - 2.22 - 1 |
| opyright © 2012 Unive | ersity of Florida, A | All Rights Reser | ved | | HCS2010 [™] | " Versi | on 6.41 | ' | Generated: 9/9 | 9/2014 8:32 A |

| | | RAI | MPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | | |
|----------------------------------------|-------------------------|-------------------------|------------------------------|-----------------------------|-------------------|---------------------------------------|---------------------------------------|-------------------|----------------------|---------------------|------------------------|
| General I | nforma | | | | Site Infor | | - | | | | |
| Analyst
Agency or Cor | mpany | Shan | e Forsythe | Jι | reeway/Dir of Tra | avel | Centrall SB | On | | | |
| Date Performe | | 9/9/2 | | | urisdiction | | 2211 | | | | |
| Analysis Time | | PM P | | Ar | nalysis Year | | 2014 | | | | |
| Project Descri
I nputs | puon 1-15 | Corridor S | ludy | | | | | | | | |
| • | _ | | Freeway Num | per of Lanes, N | 2 | | | | | | |
| Jpstream Adj | Ramp | | Ramp Number | | 1 | | | | | Downstre
Ramp | am Adj |
| □Yes | On | | | ane Length, L _A | 1379 | | | | | ' | _ |
| | | | | ane Length L _D | 1319 | | | | | □Yes | ☐ On |
| ✓ No | Off | | | | 404 | | | | | ✓ No | Off |
| = | ft | | Freeway Volui | | 491 | | | | | L _{down} = | ft |
| _up = | | | Ramp Volume | 1. | 260 | | | | | down | |
| √ _u = | veh/h | | | Flow Speed, S _{FF} | 65.0 | | | | | V _D = | veh/h |
| | | | Ramp Free-Fl | . 110 | 45.0 | | | | | | |
| Sonversi | on to p | <u>c∕n Unc</u>
∨ | der Base (| Conditions | 1 | | | | | | |
| (pc/h) | | v
Veh/hr) | PHF | Terrain | %Truck | %Rv | f _{HV} | | f _p | v = V/PHF | $x f_{HV} x f_{p}$ |
| Freeway | | 491 | 0.90 | Level | 14 | 0 | 0.935 | 1. | 00 | | 584 |
| Ramp | | 260 | 0.89 | Level | 6 | 0 | 0.971 | 1. | 00 | | 301 |
| UpStream | | | | | | | | | | | |
| DownStream | | | Marria Araaa | | | | | Divorse | A ==== | | |
| Estimatio | n of v | | Merge Areas | | | Fetimat | ion of v ₁ | Diverge | Areas | | |
| | ,,, o, v ₁ | | <u> </u> | | | LStillat | | | | | |
| | | $V_{12} = V_{F}$ | | | | [| V | $_{12} = V_R + ($ | | | |
| -EQ = | | | ation 13-6 or | | | L _{EQ} = | | | | 12 or 13-1 | |
| P _{FM} = | | | | on (Exhibit 13-6) |) | P _{FD} = | | _ | Equatio | n (Exhibit 1 | 3-7) |
| / ₁₂ = | | 584 p | | | | V ₁₂ = | | pc/h | | | |
| V_3 or V_{av34} | | - | | 13-14 or 13-17) |) | V ₃ or V _{av34} | | | | 3-14 or 13-1 | 7) |
| Is V ₃ or V _{av34} | | | | | | | ₃₄ > 2,700 pc | | | | |
| Is V ₃ or V _{av34} | > 1.5 * V ₁₂ | | | | | Is V ₃ or V _{av} | ₃₄ > 1.5 * V ₁₂ | | | | |
| f Yes,V _{12a} = | | pc/h (
13-19) | (Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | = | pc/h (t
13-19) | =quatioi | n 13-16, 1 | 3-18, or |
| Capacity | Check | | | | | Capacit | y Check | | | | |
| | | Actual | С | apacity | LOS F? | Τ΄ | | ctual | Cap | acity | LOS F? |
| | | | | | | V _F | | E | chibit 13-8 | 3 | |
| V_{FO} | | 885 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | E | chibit 13-8 | 3 | 1 |
| * FO | | 000 | EXHIBIT 10 0 | | 140 | | - 1 | Ex | chibit 13- | - | |
| | | | | | | V _R | | | 10 | | |
| Flow Ent | ering M | | fluence A | | 1 | Flow En | tering D | | | | |
| | | Actual | 1 | Desirable 4000 All | Violation? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Actua | | Max Desi | rable | Violation ⁴ |
| V _{R12} | <u> </u> | 885 | Exhibit 13-8 | 4600:All | No | V ₁₂ | 1 | | oit 13-8 | /:5 | <u></u> |
| | | | nination (i | | | 1 | Service | | | | <u>r)</u> |
| | | 1134 V _R + (| 0.0078 V ₁₂ - 0.0 | 10021 L _A | | | $D_R = 4.252$ | : + 0.0086 | v ₁₂ - 0. | ooa r ^D | |
| | (pc/mi/ln) | | | | | | oc/mi/ln) | | | | |
| | xhibit 13-2 | | | | | | Exhibit 13-2 | | | | |
| Speed De | etermin | ation | | | | - ' | Determin | | | | |
| $M_{\rm S} = 0.20$ | 06 (Exibit 13 | 3-11) | | | | , | Exhibit 13-12) | | | | |
| $S_{R} = 60.3$ | mph (Exh | ibit 13-11) | | | | l '' | ph (Exhibit 1 | • | | | |
| | mnh (Evhil | oit 13-11) | | | | $S_0 = m$ | ph (Exhibit 1 | 3-12) | | | |
| $S_0 = N/A$ | IIIhII (Exilii | JIC 10 11) | | | | U U | | , | | | |
| | mph (Exh | | | | | | ph (Exhibit 1 | • | | | |

| | | RAMPS AND | RAMP JUNG | CTIONS W | ORKSHI | EET | | | |
|---------------------------------------------|------------------|--------------------------------------------|------------------------------|-------------------------------------------|--------------------------------------|-----------------------------------------|---------------------------|------------------------|----------------------|
| General In | | | | Site Infor | | | | | |
| Analyst
Agency or Comp
Date Performed | oany | Shane Forsythe
9/9/2014 | Ju
Ju | eeway/Dir of Tr
Inction
Irisdiction | avel | Emerson Jun | ction NB On | | |
| Analysis Time P | | AM Peak | Ar | nalysis Year | | | | | |
| Project Descripti | ion I-15 Corri | dor Study | | | | | | | |
| nputs | | Erooway Num | ber of Lanes, N | | | | | | |
| Jpstream Adj Ra | amp | 1 | | 2 | | | | Downstre | am Adj |
| ☐ Yes ☐ | On | Ramp Numbe | | 1 | | | | Ramp | |
| | 011 | | ane Length, L _A | 980 | | | | □Yes | ☐ On |
| ✓ No | Off | | ane Length L _D | | | | | ✓ No | Off |
| _ £ | | Freeway Volu | | 288 | | | | = | ft |
| _{up} = ft | | Ramp Volume | 13 | 76 | | | | L _{down} = | 11 |
| / _u = ve | eh/h | | -Flow Speed, S _{FF} | 65.0 | | | | V _D = | veh/h |
| | | | ow Speed, S _{FR} | 55.0 | | | | | |
| Conversio | | Under Base | Conditions | , | | | | | |
| (pc/h) | V
(Veh/h | nr) PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PH | $F x f_{HV} x f_{p}$ |
| Freeway | 288 | 0.89 | Level | 21 | 0 | 0.905 | 1.00 | | 358 |
| Ramp | 76 | 0.83 | Level | 15 | 0 | 0.930 | 1.00 | | 99 |
| UpStream | | | | | | | | | |
| DownStream | | | | | | | | | |
| Ectimation | of v | Merge Areas | | | Ectimat | ion of v | Diverge Area | IS | |
| Stimation | | | | | ESumat | ion of v ₁ | | | |
| | | $= V_F (P_{FM})$ | | | | V_1 | $_{2} = V_{R} + (V_{F} -$ | | |
| ·EQ = | (| Equation 13-6 or | r 13-7) | | L _{EQ} = | | (Equation | 13-12 or 13-1 | 13) |
| P _{FM} = | 1.0 | 000 using Equat | ion (Exhibit 13-6) | | P _{FD} = | | using Equa | ation (Exhibit 1 | 3-7) |
| ′ ₁₂ = | 35 | 8 pc/h | | | V ₁₂ = | | pc/h | | |
| V_3 or V_{av34} | | pc/h (Equation | 13-14 or 13-17) | | V_3 or V_{av34} | | | on 13-14 or 13- | 17) |
| Is V_3 or V_{av34} > | | | | | | | h? □Yes □I | | |
| Is V_3 or V_{av34} > | | | | | Is V ₃ or V _{av} | ₃₄ > 1.5 * V ₁₂ / | ² □Yes □1 | | |
| f Yes,V _{12a} = | | oc/h (Equation 13
3-19) | 3-16, 13-18, or | | If Yes,V _{12a} = | = | pc/h (Equa
13-19) | ition 13-16, 1 | 3-18, or |
| Capacity C | | , 10) | | | Capacit | y Checks | | | |
| , , | Actu | al C | apacity | LOS F? | 1 | | | Capacity | LOS F? |
| | | | | | V _F | | Exhibit | 13-8 | |
| V_{FO} | 457 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit | 13-8 | |
| * FO | 407 | Exhibit 10 0 | | 140 | | | Exhibit | 13- | |
| | | | | | V _R | | 10 | | |
| low Enter | | e Influence A | | \" \ ' \ ' \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Flow En | | iverge Influ | | 1 |
| \/ | Actua | <u> </u> | Desirable 4600.All | Violation? | \/ | Actual | | Desirable
o | Violation |
| V _{R12} | 457 | Exhibit 13-8 | 4600:All | No | V ₁₂ | f Camaiaa | Exhibit 13- | | <u> </u> |
| | | termination (| | | 1 | | Determina | | (F) |
| | | _R + 0.0078 V ₁₂ - 0. | 00627 L _A | | | • • | + 0.0086 V ₁₂ | - 0.009 L _D | |
| | c/mi/ln) | | | | | oc/mi/ln) | ` | | |
| | hibit 13-2) | | | | | Exhibit 13-2 | - | | |
| Speed Det | erminatio | n | | | + | Determina | ation | | |
| M _S = 0.219 | (Exibit 13-11) | | | | , | Exhibit 13-12) | | | |
| S _R = 60.0 n | mph (Exhibit 13 | i-11) | | | 1, | ph (Exhibit 13 | • | | |
| $S_0 = N/A m$ | nph (Exhibit 13- | • | | | I * | ph (Exhibit 13 | • | | |
| S = 60.0 n | nph (Exhibit 13 | l-13) | | | S = m | ph (Exhibit 13 | 3-13) | | |
| | | | | | | | | | |

| | | RAMP | S AND RAM | MP JUNCTI | ONS WO | RKS | HEET | | | |
|--------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------|-------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------|--------------------|-----------------|--------------------------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company
Date Performed | Shan | e Forsythe | J | reeway/Dir of Tr
unction
urisdiction | | Emerso | on Junction | SB Off | | |
| Analysis Time Period | | | | nalysis Year | 2 | 2014 | | | | |
| Project Description | | | | | | | | | | |
| Inputs | | - | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | nber of Lanes, N | 2
1 | | | | | Downstre
Ramp | am Adj |
| □Yes □ | On | | ane Length, L _A | ' | | | | | Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 340
548 | | | | | ✓ No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 220 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | e-Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
50.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Und | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 548 | 0.87 | Level | 6 | 0 | 0. | 971 | 1.00 | 6 | 49 |
| Ramp | 220 | 0.88 | Level | 5 | 0 | 0. | 976 | 1.00 | 2 | 56 |
| UpStream | | | | | | _ | | | | |
| DownStream | | <u> </u> | | <u> </u> | | | | \' A | | |
| Estimation of | | Merge Areas | | | Estimati | on o | | Diverge Areas | | |
| LStillation of | | | | | LSumau | 011 0 | | | | |
| L _{EQ} = | V ₁₂ = V _F
(Fqua | (P _{FM})
ition 13-6 or | 13-7) | | L _{EQ} = | | | · V _R + (V _F - V
Equation 13- | | 8) |
| P _{FM} = | | Equation (I | | | P _{FD} = | | | 000 using Ed | | - |
| V ₁₂ = | pc/h | Equation (| EXHIBIT 10 0) | | V ₁₂ = | | | 19 pc/h | juation (Exi | ibit 10 1) |
| * ₁₂
V ₃ or V _{av34} | • | Equation 12 | -14 or 13-17) | | V ₁₂ -
V ₃ or V _{av34} | | | pc/h (Equati | on 12 11 o | ~ 10 1 7 \ |
| v ₃ or v _{av34}
Is V ₃ or V _{av34} > 2,70 | | | -14 01 13-17) | | | > 2 7 | | | 011 13-14 0 | 1 13-17) |
| | | | | | | | | Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ f
If Yes, $V_{12a} =$ | | Equation 13 | -16, 13-18, or | | If Yes, $V_{12a} =$ | | | ☐ Yes ☑ No
c/h (Equation | า 13-16, 13 | -18, or 13- |
| Capacity Che | | | | | Capacity | | | 9) | | |
| | Actual | | Capacity | LOS F? | | 7 0 | Actual | C | apacity | LOS F? |
| | 7.000. | | apacity | | V _F | | 649 | Exhibit 13- | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 393 | Exhibit 13- | 8 4700 | No |
| | | | | | V_R | | 256 | Exhibit 13- | 10 2100 | No |
| Flow Entering | g Merge In | fluence A | \rea | | Flow En | terin | g Dive | rge Influer | ice Area | _ |
| | Actual | | Desirable | Violation? | | | Actual | Max Desira | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 649 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | | Level of | Ser | /ice De | terminatio | n (if not | .
F) |
| D _R = 5.475 + 0. | | | | | [|) _R = 4 | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | , |
| D _R = (pc/mi/ln | | ,_ | ,, | | | . (pc/r | | .2 | 5 | |
| LOS = (Exhibit | • | | | | *** | | oit 13-2) | | | |
| Speed Determ | | | | | Speed D | • | | on . | | |
| | | | | | | | xhibit 13- | | | |
| M _S = (Exibit 1: | | | | | 1 | - | (Exhibit | - | | |
| | ibit 13-11) | | | | 1 | - | (Exhibit | · · | | |
| | iibit 13-11)
iibit 13-13) | | | | | - | (Exhibit | • | | |
| | | All Dialte D | | | | | - | · · · · · · · · · · · · · · · · · · · | Damas-1- 1 5" | 2/2014 - 2.25 |
| opyright © 2012 Unive | ersity of Florida, A | All Rights Reser | vea | | HCS2010 TM | ' Versi | on 6.41 | (| enerated: 9/9 | 9/2014 8:25 A |

| | RAI | MPS AND | RAMP JUN | CTIONS W | /ORKSHI | EET | | | |
|-------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------|--------------------------------------------------------|------------------------|----------------------------------------|---------------------------------|--------------------------------------|
| General Infor | | | | Site Infor | | | | | |
| Analyst
Agency or Company
Date Performed | Shan | e Forsythe | Jı | reeway/Dir of Tr
unction
urisdiction | | Emerson Junc | ion NB On | | |
| Analysis Time Period | | | | nalysis Year | | 2014 | | | |
| Project Description | | tudy | | , | | - | | | |
| Inputs | | | | | | | | | |
| Upstream Adj Ramp | | Freeway Num
Ramp Numbe | ber of Lanes, N
r of Lanes, N | 2
1 | | | | Downstre
Ramp | am Adj |
| ☐ Yes ☐ Or | 1 | Acceleration L | ane Length, L _A | 980 | | | | □Yes | □On |
| ☑ No ☐ Of | f | Deceleration I
Freeway Volu | Lane Length L _D
me, V _E | 696 | | | | ✓No | Off |
| - _{up} = ft | | Ramp Volume | 11 | 334 | | | | L _{down} = | ft |
| V _u = veh/h | l | | -Flow Speed, S_{FF} ow Speed, S_{FR} | 65.0
55.0 | | | | V _D = | veh/h |
| Conversion to | o pc/h Und | der Base | Conditions | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | | F x f _{HV} x f _p |
| Freeway | 696 | 0.94 | Level | 6 | 0 | 0.971 | 1.00 | _ | 763 |
| Ramp | 334 | 0.92 | Level | 5 | 0 | 0.976 | 1.00 | + | 373 |
| UpStream DownStream | | | | | | | | | |
| Downoueam | | I I
Merge Areas | | <u> </u> | | | Diverge Areas |
} | |
| Estimation of | | | | | Estimat | ion of v ₁₂ | | - | |
| | V ₁₂ = V _F | (P ₅₄) | | | | | = V _R + (V _F - \ | / _D)P _{ED} | |
| -o = | | ation 13-6 o | · 13-7) | | L _{EQ} = | * 12 | (Equation 1 | – | 13) |
| - _{EQ} =
P _{FM} = | | | ion (Exhibit 13-6 | ١ | P _{FD} = | | using Equa | | |
| ₁₂ = | 763 p | | IOTI (EXIIIDIL 13-0 |) | V ₁₂ = | | pc/h | tion (Exhibit i | 01) |
| ′12
/ ₃ or V _{av34} | • | | 13-14 or 13-17 | ١ | V ₁₂
V ₃ or V _{av34} | | • | n 13-14 or 13- | 17\ |
| v ₃ or v _{av34}
Is V ₃ or V _{av34} > 2,70 | - | | 13-14-01-13-17 |) | | > 2 700 pc/b | Pc/II (Equation | | 17) |
| Is V ₃ or V _{av34} > 2,70
Is V ₃ or V _{av34} > 1.5 * | | | | | | • • | : □ Yes □ N
□ Yes □ N | | |
| | | | 3-16, 13-18, or | | | | ⊢ Yes | | 3-18 or |
| f Yes,V _{12a} = | 13-19) | (Equation 10 | 7 10, 10 10, 01 | | If Yes,V _{12a} = | | 13-19) | | 0 10, 01 |
| Capacity Che | cks | | | | Capacit | y Checks | | | |
| | Actual | | apacity | LOS F? | | Actu | al (| Capacity | LOS F? |
| | | | | | V _F | | Exhibit 1 | 3-8 | |
| V_{FO} | 1136 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 1 | 3-8 | |
| . 0 | | | | | V_R | | Exhibit 1 | 13- | |
| Flow Entering | Morgo In | fluonco | roa | | | toring Div | rerge Influe | nco Aros | |
| -low Entering | Actual | ı · | Desirable | Violation? | FIOW EII | Actual | | esirable | Violation |
| V _{R12} | 1136 | Exhibit 13-8 | 4600:All | No | V ₁₂ | 7.00001 | Exhibit 13-8 | | 7101011 |
| Level of Serv | | | | <u> </u> | | Service I | Determinati | | <i>F</i>) |
| | 0.00734 v _R + 0 | | | | 1 | | · 0.0086 V ₁₂ - | | - / |
| O _R = 8.0 (pc/mi/ | • • • | IZ - | A | | 1 | oc/mi/ln) | 12 | D | |
| $_{R}$ 0.0 (pc/mi/
$_{L}$ OS = A (Exhibit | · · | | | | | Exhibit 13-2) | | | |
| Speed Detern | | | | | | | tion | | |
| • | | | | | + | Determina | uon | | |
| M _S = 0.225 (Exil | • | | | | , | Exhibit 13-12) | 10) | | |
| | (Exhibit 13-11) | | | | 1.5 | ph (Exhibit 13- | • | | |
| | Exhibit 13-11) | | | | 1 | ph (Exhibit 13- | | | |
| S = 59.8 mph (| (Exhibit 13-13) | | | | l . | ph (Exhibit 13- | - | | |
| opyright © 2012 Unive | ersity of Florida, A | All Rights Reserv | ved | | HCS2010 ^T | M Version 6.41 | | Generated: | 9/9/2014 8: |

| | | RAMP | S AND RAI | //P JUNCTI | ONS WO | RKS | HEET | | | |
|--------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------|-------------------------------------------------------------|--------------------------|--------------------------------------------------|-----------------|-----------------|------------------------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | <u> </u> | Site Infor | | | | | | |
| Analyst
Agency or Company
Date Performed | Shan | ne Forsythe | J | reeway/Dir of Traduction | | Emerso | n Junction | SB Off | | |
| Analysis Time Period | | | A | Analysis Year | 2 | 2014 | | | | |
| Project Description | | Study | | • | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2 | | | | | Downstre
Ramp | am Adj |
| □Yes □ | On | Acceleration L | ane Length, L _A | • | | | | | Yes | On |
| ☑ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 340
456 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 144 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | e-Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
50.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Uni | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 456 | 0.88 | Level | 13 | 0 | 0. | 939 | 1.00 | 5 | 52 |
| Ramp | 144 | 0.94 | Level | 7 | 0 | 0. | 966 | 1.00 | 1 | 59 |
| UpStream | | | | | | | | | | |
| DownStream | | <u>. </u> | | | | | | | | |
| Estimation of | | Merge Areas | | | Estimati | on o | | iverge Areas | | |
| Estimation of | V ₁₂ | | | | Estimati | on o | 1 12 | | | |
| L _{EQ} = | V ₁₂ = V _F
(Faus | (P _{FM})
ation 13-6 or | 13-7) | | L _{EQ} = | | | V _R + (V _F - V
Equation 13- | | 8) |
| P _{FM} = | | Equation (| | | P _{FD} = | | | 000 using Eq | | - |
| V ₁₂ = | pc/h | Equation (| EXHIBIT TO 0) | | V ₁₂ = | | | 62 pc/h | uation (Exi | ibit 10 1) |
| * ₁₂
V ₃ or V _{av34} | • | Equation 12 | -14 or 13-17) | | | | | • | on 12 11 o | - 10 1 7 \ |
| v ₃ or v _{av34}
Is V ₃ or V _{av34} > 2,70 | | | -14 01 13-17) | | V ₃ or V _{av34} | > 2 7 | | pc/h (Equati | 011 13-14 0 | 1 13-17) |
| | | | | | | | | Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ f
If Yes, $V_{12a} =$ | pc/h (| Equation 13 | -16, 13-18, or | | If Yes, $V_{12a} =$ | | р | ☐Yes ☑ No
c/h (Equatior | า 13-16, 13 | -18, or 13- |
| - | 13-19) | | | | | | 19 | 9) | | |
| Capacity Che | | 1 . | | 1 | Capacity | Ch | | 1 0 | | 1 |
| | Actual | | Capacity | LOS F? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | Actual | | apacity | LOS F? |
| V | | Exhibit 13-8 | | | V _F | - V | 552
393 | Exhibit 13- | | No
No |
| V _{FO} | | LAHIDIL 13-0 | | | $V_{FO} = V_{F}$ | *R | 159 | Exhibit 13- | | _ |
| | <u> </u> | <u> </u> | | | V _R | | | | | No |
| Flow Entering | | | | 1 Vr.1.60 | Flow En | _ | | ge Influer | | 1.7.1.20 |
| V _{R12} | Actual | Exhibit 13-8 | Desirable | Violation? | V ₁₂ | | Actual
552 | Max Desira
Exhibit 13-8 | 4400:All | Violation? |
| Level of Serv | ice Detern | nination (| if not F) | | Level of | Serv | vice De | terminatio | n (if not | F) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | [| $D_R = 4$ | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | - |
| D _R = (pc/mi/ln | | | | | D _R = 5.9 |) (pc/r | ni/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | I ''' |
(Exhil | oit 13-2) | | | |
| Speed Determ | | | | | Speed D | • | | n | | |
| | | | | | | | xhibit 13- | | | |
| M _S = (Exibit 1: | | | | | 1 * | | (Exhibit | • | | |
| | nibit 13-11) | | | | | - | (Exhibit | - | | |
| | nibit 13-11) | | | | 1 - | - | • | · · | | |
| , , , , , , , , , , , , , , , , , , , , | | | | | 2/2014 2 2 2 2 : | | | | | |
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| | | RAMP | S AND RAI | MP JUNCTI | ONS WO | RKS | HEET | | | |
|--------------------------------------|-----------------------------|------------------------|------------------------------|-------------------|---------------------------------------------------|--------------------|----------------------|---------------------------------------------------|---------------------|-----------------------------------------------|
| General Inf | formation | | | Site Infor | | | | | | |
| Analyst | | ne Forsythe | ı | Freeway/Dir of Tr | | Gore H | ill NB Off | | | |
| Agency or Compa | any | • | • | Junction | | | | | | |
| Date Performed | 9/9/2 | | | Jurisdiction | | | | | | |
| Analysis Time Pe | | Peak | | Analysis Year | 2 | 2014 | | | | |
| | on I-15 Corridor S | Study | | | | | | | | |
| Inputs | | I | | | | | | | ĺ | |
| Upstream Ad | dj Ramp | 1 | ber of Lanes, N | 2 | | | | | Downstrea | am Adj |
| | | Ramp Numbe | er of Lanes, N | 1 | | | | | Ramp | |
| Yes | ☐ On | Acceleration I | Lane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | Deceleration I | Lane Length L _n | 323 | | | | | | |
| INO | | Freeway Volu | ıme, V _r | 244 | | | | | ☑ No | Off |
| L _{up} = | ft | Ramp Volume | | 17 | | | | | L _{down} = | ft |
| ир | | 1 | e-Flow Speed, S _F | | | | | | | |
| V _u = | veh/h | 1 | • • | • | | | | | V _D = | veh/h |
| | | | low Speed, S _{FR} | 50.0 | | | | | | |
| Conversion | n to pc/h Un | der Base | Conditions | · · | 1 | _ | | | r | |
| (pc/h) | () (ab /b r) | PHF | Terrain | %Truck | %Rv | | f_{HV} | f_p | v = V/PHF | $x f_{HV} x f_{n}$ |
| Freeway | (Veh/hr)
244 | 0.92 | Level | 10 | 0 | + | 952 | 1.00 | | 78 |
| Ramp | 17 | 0.92 | | 35 | 0 | _ | 952
851 | 1.00 | 2 | |
| UpStream | 17 | 0.74 | Level | 35 | U | 0.0 | 001 | 1.00 | | .1 |
| DownStream | | + | | | | + | | | | |
| | · | Merge Areas | | | | | | iverge Areas | | |
| Estimation | | | | | Estimation | on o | | • | | |
| | | (D \ | | | | | | V _R + (V _F - V _F | \D | |
| _ | $V_{12} = V_F$ | | 40.7) | | _ | | | | | ` |
| - _{EQ} = | | ation 13-6 or | | | L _{EQ} = | | | Equation 13-1 | | |
| P _{FM} = | using | Equation (I | Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Equ | uation (Exhi | bit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 27 | '8 pc/h | | |
| V ₃ or V _{av34} | pc/h | (Equation 13 | 3-14 or 13-17) | | $ m V_3$ or $ m V_{av34}$ | | 0 | pc/h (Equation | on 13-14 or | · 13-17) |
| Is V_3 or $V_{av34} > 2$ | 2,700 pc/h? ☐ Y e | es 🗌 No | | | Is V ₃ or V _{av34} | > 2,7 | 00 pc/h? [|]Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1$ | 1.5 * V ₁₂ /2 Ye | es 🗌 No | | | Is V ₃ or V _{av34} | ₄ > 1.5 | * V ₁₂ /2 | ☐Yes ☑ No | | |
| f Yes,V _{12a} = | | | s-16, 13-18, or | | If Yes,V _{12a} = | | | c/h (Equation | 13-16, 13- | -18, or 13- |
| | 13-19 |) | | | | | 19 | 9) | | |
| Capacity C | hecks | | | | Capacity | Che | ecks | | | |
| | Actual | | Capacity | LOS F? | | | Actual | | pacity | LOS F? |
| | | | | | V_{F} | | 278 | Exhibit 13-8 | 3 4700 | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 251 | Exhibit 13-8 | 4700 | No |
| | | | | | V_R | | 27 | Exhibit 13-1 | 0 2100 | No |
| Flow Enter | ing Merge Ir | ofluence / | lroa | | | torin | a Divo | rge Influen | | |
| TOW LINE | Actual | 7 | Desirable | Violation? | I IOW LITE | 1 | Actual | Max Desirab | | Violation? |
| V _{R12} | 7 (Ctual | Exhibit 13-8 | Desirable | Violations | V ₁₂ | | 278 | Exhibit 13-8 | 4400:All | No |
| | muios Dotori | | if not E | | | | - | | | |
| | rvice Deteri | | | | | | | terminatio | | <u>r) </u> |
| | - 0.00734 v _R + | 0.0078 V ₁₂ | - 0.00627 L _A | | | • • | | .0086 V ₁₂ - 0. | 009 L _D | |
| D _R = (pc/m | i/ln) | | | | $D_R = 3.7$ | (pc/r | ni/ln) | | | |
| LOS = (Exhib | oit 13-2) | | | | LOS = A (| Exhib | oit 13-2) | | | |
| Speed Dete | ermination | | | | Speed D | eter | minatio | n | | |
| M _S = (Exibi | t 13-11) | | | | ' | | xhibit 13- | | | |
| | | | | | | | (Exhibit | - | | |
| | | | | | • | | | | | |
| S ₀ = mph (Exhibit 13-11) | | | | | - | • | • | | | |
| S = mph (Exhibit 13-13) | | | | | | | (Exhibit | · | | |
| pyright © 2012 U | Iniversity of Florida, | All Rights Reser | ved | | HCS2010 [™] | Versi | on 6.41 | G | enerated: 9/9 | /2014 8:17 |

| | | RAI | IPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | |
|---------------------------------------|----------------------|----------------------------|---------------|------------------------------|------------------------------|--------------------------------------|-------------------------------------------|----------------------------|----------------------|--------------------------------|
| General | Inform | | | | Site Inform | | · · · · · · · · · · · · · · · · · · · | | | |
| Analyst
Agency or Co | ompany | Shan | e Forsythe | Ju | reeway/Dir of Tra
unction | avel | Gore Hill NB C |)n | | |
| Date Perform | | 9/9/20 | | | urisdiction | | | | | |
| Analysis Time | | AM P | eak | A | nalysis Year | | | | | |
| Project Descr
Inputs | ription | | | | | | | | | |
| | | | Freeway Num | ber of Lanes, N | 2 | | | | | |
| Jpstream Ad | lj Ramp | | Ramp Numbe | | 1 | | | | Downstre
Ramp | am Adj |
| □Yes | On | | | | • | | | | ' | _ |
| | | | | ane Length, L _A | 1500 | | | | □Yes | On |
| ✓ No | Off | | l | ane Length L _D | 547 | | | | ✓ No | Off |
| = | ft | | Freeway Volu | | 517 | | | | L _{down} = | ft |
| _up = | 10 | | Ramp Volume | 11 | 301 | | | | down | |
| √ _u = | veh/h | | | -Flow Speed, S _{FF} | 65.0 | | | | $V_D =$ | veh/h |
| | | | - | ow Speed, S _{FR} | 50.0 | | | | | |
| Convers | ion to | pc/h Und | ler Base (| Conditions | 1 | | | _ | | |
| (pc/h) |) | v
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PH | $F \times f_{HV} \times f_{p}$ |
| Freeway | | 517 | 0.90 | Grade | 16 | 0 | 0.926 | 1.00 | | 620 |
| Ramp | | 301 | 0.82 | Level | 23 | 0 | 0.897 | 1.00 | | 407 |
| UpStream | | | | | | | | | | |
| DownStream | n | | | | | | | Diverse Avec | | |
| Estimati | on of | | Merge Areas | | | Fetimat | ion of v ₁₂ | Diverge Area | S | |
| LStillati | 011 01 | | (B) | | | LStimat | | | | |
| | | $V_{12} = V_F$ (| | | | | V ₁₂ | $= V_R + (V_F - V_F)$ | – | |
| - _{EQ} = | | | ation 13-6 or | | | L _{EQ} = | | | 13-12 or 13- | |
| P _{FM} = | | | | ion (Exhibit 13-6) | | P _{FD} = | | | ition (Exhibit 1 | 3-7) |
| V ₁₂ = | | 620 pc | | | | V ₁₂ = | | pc/h | | |
| V_3 or V_{av34} | | | | 13-14 or 13-17 |) | V ₃ or V _{av34} | | | on 13-14 or 13- | 17) |
| | - | pc/h? Yes | | | | | | ? □Yes □ N | | |
| Is V ₃ or V _{av3} | ₄ > 1.5 * | V ₁₂ /2 □ Yes | | | | Is V ₃ or V _{av} | _{/34} > 1.5 * V ₁₂ /2 | Yes I | | |
| f Yes,V _{12a} = | | pc/h (
13-19) | Equation 13 | 3-16, 13-18, or | | If Yes,V _{12a} : | = | pc/h (Equa
13-19) | tion 13-16, 1 | 3-18, or |
| Capacity | / Ched | | | | | Capacit | y Checks | 10 10) | | |
| , , | | Actual | C | apacity | LOS F? | , | Actu | ual | Capacity | LOS F? |
| | | | | | | V_{F} | | Exhibit ' | 13-8 | |
| V_{FO} | | 1027 | Exhibit 13-8 | | No | V _{FO} = V _F | V _R | Exhibit ' | 13-8 | |
| - FO | ' l | 1021 | Extribit 10 0 | | "" | V _R | | Exhibit | 13- | |
| | | | <u> </u> | | | | | 10 | | |
| Flow En | tering | Merge In | | | | Flow Er | | verge Influ | | • |
| \/ | - | Actual
1027 | Exhibit 13-8 | Desirable
4600:All | Violation?
No | V ₁₂ | Actual | | esirable
g | Violation [*] |
| V _{R12} | | ce Detern | | | INU | | f Consider l | Exhibit 13-
Determinat | |
 |
| | | | • | | | | | | | <i>F)</i> |
| | |).00734 v _R + 0 | | JUUZI LA | | | • • | + 0.0086 V ₁₂ - | 0.009 L _D | |
| | (pc/mi/li | - | | | | | oc/mi/ln) | | | |
| | Exhibit 1 | | | | | - | Exhibit 13-2) | 4! | | |
| Speed D | | | | | | - | Determina | tion | | |
| $M_{S} = 0.1$ | 182 (Exib | it 13-11) | | | | ٠ . | Exhibit 13-12) | | | |
| $S_R = 60.$ | .8 mph (E | Exhibit 13-11) | | | | 1. | nph (Exhibit 13- | • | | |
| | A mph (E | xhibit 13-11) | | | | S ₀ = m | nph (Exhibit 13- | 12) | | |
| | | | | | | | | | | |
| | .8 mph (E | Exhibit 13-13) | | | | S= m | nph (Exhibit 13- | 13) | | |

| | | RAMP | S AND RAM | IP JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|------------------------|--------------------------------|------------------------------------------------------------|--------------------------------------------|--------------------------------------------------|--------------------|-------------------|---------------------------------------|---------------------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company
Date Performed | Shan | e Forsythe | J | reeway/Dir of Tr
unction
urisdiction | | Gore H | ill SB Off | | | |
| Analysis Time Period | | | | nalysis Year | 2 | 2014 | | | | |
| Project Description | | | | . , | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2
1 | | | | | Downstre
Ramp | am Adj |
| □Yes □ | On | | ane Length, L _A | • | | | | | Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 358
458 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | | 309 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | -Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
50.0 | | | | | V _D = | veh/h |
| Conversion to | o nc/h Und | | 111 | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 458 | 0.85 | Grade | 7 | 0 | 0. | 891 | 1.00 | 6 | 05 |
| Ramp | 309 | 0.79 | Level | 7 | 0 | 0. | 966 | 1.00 | 4 | 03 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| - | | Merge Areas | | | - | | | Diverge Areas | | |
| Estimation of | ' V ₁₂ | | | | Estimati | on o | t v ₁₂ | | | |
| | $V_{12} = V_{F}$ | | | | | | V ₁₂ = | V _R + (V _F - V | ' _R)P _{FD} | |
| L _{EQ} = | (Equa | ition 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13- | 12 or 13-13 | 3) |
| P _{FM} = | using | Equation (| Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Ed | juation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 60 |)5 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | 0 | pc/h (Equati | on 13-14 o | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | 0 pc/h? | s \square No | | | | , > 2,7 | | ∐Yes ☑ No | | , |
| Is V_3 or $V_{av34} > 1.5$ | | | | | | | | ∃Yes ☑No | | |
| If Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | | | c/h (Equation | | -18, or 13- |
| Capacity Che | cks | | | | Capacity | / Ch | ecks | | | |
| | Actual | C | apacity | LOS F? | | | Actual | С | apacity | LOS F? |
| | | | | | V _F | | 605 | Exhibit 13- | | No |
| V _{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 202 | Exhibit 13- | | No |
| | | | | | V_R | | 403 | Exhibit 13- | 10 2100 | No |
| Flow Entering | g Merge In | fluence A | rea | | Flow En | terin | g Dive | rge Influer | ice Area | |
| | Actual | Max | Desirable | Violation? | | , | Actual | Max Desira | ble | Violation? |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | | 605 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | | Level of | Ser | vice De | terminatio | n (if not | F) |
| D _R = 5.475 + 0. | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | Г | O _R = 4 | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | |
| D _R = (pc/mi/ln |) | | | | $D_R = 6.2$ | 2 (pc/r | ni/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | LOS = A | (Exhil | oit 13-2) | | | |
| Speed Determ | nination | | | | Speed D | eter | minatio | on . | | |
| | | | | | | | xhibit 13- | | | |
| | ibit 13-11) | | | | | - | (Exhibit | - | | |
| | iibit 13-11) | | | | | - | (Exhibit | - | | |
| | iibit 13-11) | | | | 1 - | - | (Exhibit | • | | |
| Copyright © 2012 Unive | | All Dights Docor | wed | | | | - | · · · · · · · · · · · · · · · · · · · | Canaratad: 0# | 9/2014 8:19 A |
| ppyrigrit ⊌ ZU IZ UMIV€ | FISILY OF FIORIDA, A | - rignis Reser | veu | | HCS2010 TM | versi | on 6.41 | (| senerated: 9/9 | 012014 8:19/ |

| 011 5 | | WIPS AND | RAMP JUN | | | <u> </u> | | | |
|------------------------------------------------|----------------------------------|------------------------------|------------------------------|------------------------|---------------------------------------|------------------------------------------|--------------------------------------|----------------------|--------------------------------------|
| General Infor | | | | Site Inform | | | | | |
| Analyst | Shan | e Forsythe | | eeway/Dir of Tra | ivel | Gore Hill NB On | | | |
| Agency or Company Date Performed | 9/9/2 | 014 | | ınction
ırisdiction | | | | | |
| nalysis Time Period | | | | nalysis Year | | | | | |
| Project Description | | | Al | iaiysis reai | | | | | |
| nputs | 1-13 Comuci C | ntudy | | | | | | | |
| • | | Freeway Num | ber of Lanes, N | 2 | | | | Davisation | A al: |
| Jpstream Adj Ramp | | Ramp Numbe | | 1 | | | | Downstre
Ramp | am Adj |
| ☐ Yes ☐ On | | l ' | • | • | | | | 1 ' | |
| | | | ane Length, L _A | 1500 | | | | □Yes | ☐ On |
| ☑ No ☐ Off | | Deceleration L | ane Length L _D | | | | | ✓ No | Off |
| | | Freeway Volu | me, V _F | 235 | | | | | |
| _{up} = ft | | Ramp Volume | $, V_R$ | 38 | | | | L _{down} = | ft |
| | | Freeway Free | -Flow Speed, S _{FF} | 65.0 | | | | | |
| $v_{\rm u} = {\rm veh/h}$ | | 1 | ow Speed, S _{FR} | 50.0 | | | | $V_D =$ | veh/h |
| Conversion to | nc/h l In | | 111 | 00.0 | | | | | |
| | <i>γ γ γ γ</i> | | | 0/= : | 0/5 | <u>,</u> | ı. | \//D!! | |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PHI | - x t _{HV} x t _p |
| reeway | 235 | 0.79 | Level | 20 | 0 | 0.909 | 1.00 | | 327 |
| Ramp | 38 | 0.62 | Level | 40 | 0 | 0.833 | 1.00 | | 73 |
| JpStream | | | | | | | | | |
| DownStream | | | | | | | | | |
| | | Merge Areas | | | | | Diverge Areas | | |
| stimation of | V ₁₂ | | | | Estimat | ion of v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | V ₁₂ = | V _R + (V _F - V | D)PrD | |
| = | | ` 「™ /
ation 13-6 or | 13_7) | | l = | 12 | (Equation 13 | | 13) |
| EQ = | | | | | L _{EQ} = | | | | |
|) =
FM = | | | ion (Exhibit 13-6) | | P _{FD} = | | using Equati | IOII (EXIIIDIL I | 3-1) |
| ' ₁₂ = | 327 p | | | | V ₁₂ = | | pc/h | | |
| ′ ₃ or V _{av34} | - | | 13-14 or 13-17) |) | V ₃ or V _{av34} | | pc/h (Equation | | 17) |
| s V_3 or $V_{av34} > 2,70$ | 0 pc/h? 🗌 Ye | s 🗹 No | | | Is V ₃ or V _{av} | ₃₄ > 2,700 pc/h? | ☐ Yes ☐ No |) | |
| ls V ₃ or V _{av34} > 1.5 * | V ₁₂ /2 | s 🗹 No | | | Is V ₃ or V _{av} | ₃₄ > 1.5 * V ₁₂ /2 | ☐Yes ☐ No |) | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | : | pc/h (Equati | on 13-16, 1 | 3-18, or |
| | 13-19) | | | | - | | 13-19) | | |
| Capacity Che | | 1 ^ | 11 | | Capacit | y Checks | | 9 | 1 1005 |
| | Actual | | apacity | LOS F? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Actual | | apacity | LOS F |
| | | | | | V _F | | Exhibit 13 | _ | |
| V_{FO} | 400 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 13 | 3-8 | |
| | | | | | V _R | | Exhibit 1 | 3- | |
| | | <i>f</i> | | | | | 10 | | |
| low Entering | | 1 | | | Flow En | tering Dive | | | • |
| \/ | Actual | † | Desirable
4000-All | Violation? | \/ | Actual | Max De | Sirable | Violation |
| V _{R12} | 400 | Exhibit 13-8 | 4600:All | No | V ₁₂ | <u> </u> | Exhibit 13-8 | //5 | |
| evel of Servi | | • | | | | Service De | | | (F) |
| ** | | 0.0078 V ₁₂ - 0.0 |)0627 L _A | | | $D_R = 4.252 + 6$ | 0.0086 V ₁₂ - (| 0.009 L _D | |
| _R = -0.8 (pc/mi | /ln) | | | | D _R = (p | oc/mi/ln) | | | |
| OS = A (Exhibit | 13-2) | | | | LOS = (E | Exhibit 13-2) | | | |
| Speed Detern | <u> </u> | | | | Speed L | Determinati | on | | |
| • | | | | | - | Exhibit 13-12) | | | |
| l _S = 0.177 (Exit | - | | | | | ph (Exhibit 13-12 |) | | |
| | Exhibit 13-11) | | | | | | • | | |
| $S_0 = N/A \text{ mph } (E)$ | Exhibit 13-11) | | | | · · | ph (Exhibit 13-12 | • | | |
| | | | | | | | | | |
| | Exhibit 13-13) | | | | S= m | ph (Exhibit 13-13 |) | | |

| | | RAMP | S AND RAM | IP JUNCTI | ONS WO | RKS | HEET | | | |
|-----------------------------------------------|------------------------|--------------------------------|--------------------------------------------------|-----------------------------|--------------------------------------------------|--------------------|-------------------|----------------------------------------|---------------------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | Shan | e Forsythe | | reeway/Dir of Tr
unction | | Gore H | ill NB Off | | | |
| Date Performed | 9/9/2 | 014 | | urisdiction | | | | | | |
| Analysis Time Period | | | A | nalysis Year | - | 2014 | | | | |
| Project Description | I-15 Corridor S | tudy | | | | | | | | |
| Inputs | | le v | | | | | | | _ | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N
or of Lanes, N | 2
1 | | | | | Downstre
Ramp | am Adj |
| □Yes □ | On | 1 | Lane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D
me, V _⊏ | 323
249 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 35 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | Flow Speed, S_{FF}
low Speed, S_{FR} | 65.0
50.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Und | | 111 | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 249 | 0.96 | Level | 12 | 0 | 0. | 943 | 1.00 | 2 | 75 |
| Ramp | 35 | 0.74 | Level | 42 | 0 | 0. | 826 | 1.00 | | 57 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| Fatimatian at | | Merge Areas | | | Fatima ati | | | Diverge Areas | | |
| Estimation of | 1 ₂ | | | | Estimati | on o | τν ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | V ₁₂ = | · V _R + (V _F - V | ′ _R)P _{FD} | |
| L _{EQ} = | (Equa | ition 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13- | 12 or 13-13 | 3) |
| P _{FM} = | using | Equation (I | Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Ed | uation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 27 | 75 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | 0 | pc/h (Equati | on 13-14 o | r 13-17) |
| Is V ₃ or V _{av34} > 2,70 | | | , | | | ., > 2,7 | | Yes ☑ No | | - / |
| Is V_3 or $V_{av34} > 1.5$ | | | | | | | | ∃Yes ☑ No | | |
| f Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | | | c/h (Equation | | -18, or 13- |
| Capacity Che | cks | | | | Capacity | / Ch | | - 1 | | |
| | Actual | | apacity | LOS F? | | | Actual | C | apacity | LOS F? |
| | | | | | V _F | | 275 | Exhibit 13- | 8 4700 | No |
| V_{FO} | | Exhibit 13-8 | | | V _{FO} = V _F | - V _R | 218 | Exhibit 13- | 8 4700 | No |
| 10 | | | | | V _R | | 57 | Exhibit 13- | 10 2100 | No |
| Flow Entering | g Merge In | -1 | | | Flow En | terin | g Dive | rge Influer | ice Area | |
| | Actual | | Desirable | Violation? | | | Actual | Max Desira | ble | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 275 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | | Level of | Serv | ∕ice De | terminatio | n (if not | <i>F</i>) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | | O _R = 4 | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | |
| D _R = (pc/mi/ln |) | | | | $D_{R} = 3.7$ | 7 (pc/r | mi/ln) | | | |
| OS = (Exhibit | 13-2) | | | | |
(Exhil | oit 13-2) | | | |
| Speed Detern | | | | | Speed D | • | | n e | | |
| • | | | | | | | xhibit 13- | | | |
| $M_S = (Exibit 1)$ | | | | | 1 | - | (Exhibit | - | | |
| | ibit 13-11) | | | | | - | | | | |
| | ibit 13-11) | | | | l * | - | (Exhibit | - | | |
| | ibit 13-13) | | | | | | (Exhibit | · · · · · · · · · · · · · · · · · · · | | |
| opyright © 2012 Unive | ersity of Florida, A | All Rights Reser | ved | | HCS2010 TM | ¹ Versi | on 6.41 | (| Generated: 9/9 | 9/2014 8:37 A |

| | RAI | MPS AND | RAMP JUN | CTIONS W | ORKSHI | EET | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------|----------------------|------------------------------------|
| General Info | | | | Site Infor | | | | | |
| Analyst
Agency or Company
Date Performed | / | e Forsythe | Ju | reeway/Dir of Tra
unction
urisdiction | avel | Gore Hill NB Or | 1 | | |
| Date Performed
Analysis Time Perio | 9/9/2
d PM P | | | nalysis Year | | 2014 | | | |
| Project Description | | | 7.0 | naryoro roar | | 2014 | | | |
| nputs | | , | | | | | | | |
| Jpstream Adj Ramp |) | l ' | ber of Lanes, N | 2 | | | | Downstre | am Adj |
| □ Yes □ O | n | Ramp Numbe
Acceleration L | r of Lanes, N
.ane Length, L _A | 1
1500 | | | | Ramp
□Yes | On |
| ☑ No □ O | ff | | ane Length L _D | 700 | | | | ☑ No | Off |
| - _{up} = ft | | Freeway Volu | | 722
506 | | | | L _{down} = | ft |
| -up 10 | | Ramp Volume | ^{;, v} _R
-Flow Speed, S _{FF} | 506
65.0 | | | | | |
| $V_u = veh/l$ | 1 | | | 50.0 | | | | $V_D =$ | veh/h |
| Conversion | to no/h lln | | ow Speed, S _{FR} | 50.0 | | | | | |
| Conversion | o pc/n und | | | 1 | ı | Т. | Т. | T | |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 722 | 0.80 | Grade | 10 | 0 | 0.952 | 1.00 | | 948 |
| Ramp | 506 | 0.74 | Level | 9 | 0 | 0.957 | 1.00 | | 714 |
| UpStream
DownStream | | | | | | | | | |
| Downstream | <u> </u> | I I
Merge Areas | | | | | Diverge Areas |
} | |
| Estimation o | | | | | Estimat | ion of v ₁₂ | | | |
| | V ₁₂ = V _F | (P) | | | | | = V _R + (V _F - \ | /_\P | |
| _ _{EQ} = | | ation 13-6 or | 13-7) | | L _{EQ} = | * 12 | (Equation 1 | – | 3) |
| P _{FM} = | | | ion (Exhibit 13-6) | ١ | P _{FD} = | | using Equat | | |
| ₁₂ = | 948 p | | IOTI (EXTIIDIC 10-0) | 1 | V ₁₂ = | | pc/h | tion (Exmitted) | 01) |
| V_3 or V_{av34} | • | | 13-14 or 13-17 | ١ | V ₃ or V _{av34} | | • | n 13-14 or 13-1 | 17) |
| Is V ₃ or V _{av34} > 2,7 | - | | 10 14 01 10 17 | , | | ₃₄ > 2,700 pc/h? | | | ••• |
| Is V ₃ or V _{av34} > 1.5 | | | | | | ₃₄ > 1.5 * V ₁₂ /2 | | | |
| | | | 3-16, 13-18, or | | If Yes,V _{12a} = | | pc/h (Equat | | 3-18, or |
| f Yes,V _{12a} = | 13-19) | | | | | | 13-19) | | |
| Capacity Ch | T- | 1 - | | 1 | Capacit | y Checks | . 1 | | 1 |
| | Actual | | apacity | LOS F? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Actua | T T | Capacity | LOS F? |
| | | | | | V _F | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Exhibit 1 | | |
| V_{FO} | 1662 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 1 | | _ |
| | | | | | V _R | | Exhibit 1 | 13- | |
| Flow Enterin | a Merae In | fluence A | rea | <u>'</u> | Flow En | tering Div | | ence Area | |
| | Actual | ı . | Desirable | Violation? | | Actual | | esirable | Violation ⁴ |
| V _{R12} | 1662 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | Exhibit 13-8 | 3 | |
| Level of Serv | rice Detern | nination (| if not F) | | Level of | f Service D | eterminati | ion (if not | <i>F</i>) |
| | + 0.00734 v _R + 0 | 0.0078 V ₁₂ - 0.0 | 00627 L _A | | | D _R = 4.252 + | 0.0086 V ₁₂ - | 0.009 L _D | |
| $D_{R} = 5.475 -$ | i/ln) | | | | D _R = (p | oc/mi/ln) | | | |
| | VIII) | | | | l 00 /5 | b:b:t 40 0\ | | | |
| $O_{R} = 8.7 (pc/m)$ | · · | | | | LOS = (E | Exhibit 13-2) | | | |
| $D_{R} = 8.7 (\text{pc/m})$ | 13-2) | | | | | Determinat | ion | | |
| O _R = 8.7 (pc/m
LOS = A (Exhibit
Speed Determ | : 13-2)
mination | | | | Speed L | - | ion | | |
| O_R = 8.7 (pc/m
O_S = A (Exhibit
Speed Deter
M_S = 0.192 (Exhibit) | : 13-2)
mination
ibit 13-11) | | | | Speed D D _s = (E | Determinat | | | |
| D_R = 8.7 (pc/m
D_R = 8.7 (pc/m
D_R = 4 (Exhibit)
D_R = 0.192 (Exhibit)
D_R = 0.192 (Exhibit)
D_R = 60.6 mph | : 13-2)
mination
:ibit 13-11)
(Exhibit 13-11) | | | | Speed L $D_s = (E_s)^2$ $S_R = m$ | Determinat
Exhibit 13-12)
uph (Exhibit 13-12) | 2) | | |
| O_R = 8.7 (pc/m
O_R = 8.7 (pc/m
O_R = 4 (Exhibit)
O_R = 0.192 (Exhibit)
O_R = 0.192 (Exhibit)
O_R = 60.6 mph
O_R = N/A mph | : 13-2)
mination
ibit 13-11) | | | | $\begin{array}{ccc} \textbf{Speed L} \\ \textbf{D}_{\text{S}} = & (\textbf{E} \\ \textbf{S}_{\text{R}} = & \textbf{m} \\ \textbf{S}_{0} = & \textbf{m} \end{array}$ | Determinat
Exhibit 13-12) | 2)
2) | | |

| | | RAMP | S AND RAM | IP JUNCTI | ONS WO | RKS | HEET | | | |
|-------------------------------------|------------------------|--------------------------|-------------------------------------------------------------|-----------------------------|--------------------------------------------------|--------------------|-------------------|--------------------------------------|---------------------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | Shan | e Forsythe | J | reeway/Dir of Tr
unction | | Gore H | ill SB Off | | | |
| Date Performed | 9/9/2 | | | urisdiction | , | 2044 | | | | |
| Analysis Time Period | | | A | nalysis Year | 2 | 2014 | | | | |
| Project Description
Inputs | 1-15 Corridor S | luay | | | | | | | | |
| ιπραιδ | | Erooway Num | ber of Lanes, N | | | | | | Г | |
| Upstream Adj R | amp
- | Ramp Numbe | | 2
1 | | | | | Downstrea
Ramp | am Adj |
| | JOn | 1 | Lane Length, LA | 250 | | | | | □Yes | On |
| ☑ No □ | Off | Freeway Volu | Lane Length L _D
me, V _F | 358
630 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | | 290 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | e-Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
50.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Und | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 630 | 0.93 | Grade | 10 | 0 | 0. | 952 | 1.00 | 7 | 11 |
| Ramp | 290 | 0.80 | Level | 16 | 0 | 0. | 926 | 1.00 | 3 | 91 |
| UpStream | | | | | | | | | | |
| DownStream | | <u></u> | | | | | | | | |
| Fatimatian at | | Merge Areas | | | Fadimadi | | | iverge Areas | | |
| Estimation of | V ₁₂ | | | | Estimati | on o | τν ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | V ₁₂ = | V _R + (V _F - V | ′ _R)P _{FD} | |
| L _{EQ} = | (Equa | ition 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13- | 12 or 13-13 | 3) |
| P _{FM} = | using | Equation (I | Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Ed | uation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 71 | 1 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | 0 | pc/h (Equati | on 13-14 o | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | 0 pc/h? | s 🗌 No | | | Is V ₃ or V _{av3} | ₄ > 2,7 | |]Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | | - | | _
□Yes ☑ No | | |
| If Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | • | | c/h (Equation | | -18, or 13- |
| Capacity Che | cks | | | | Capacity | / Ch | ecks | | | |
| | Actual | | Capacity | LOS F? | | | Actual | C | apacity | LOS F? |
| | | | | | V _F | | 711 | Exhibit 13- | | No |
| V _{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 320 | Exhibit 13- | | No |
| | | | | | V_R | | 391 | Exhibit 13- | 10 2100 | No |
| Flow Entering | g Merge In | fluence A | \rea | | Flow En | terin | g Dive | rge Influer | ice Area | |
| | Actual | Max | Desirable | Violation? | | / | Actual | Max Desira | ble | Violation? |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | | 711 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Detern | nination (| if not F) | | Level of | Serv | vice De | terminatio | n (if not | F) |
| D _R = 5.475 + 0. | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | | O _R = 4 | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | |
| D _R = (pc/mi/ln |) | | | | D _R = 7.1 | l (pc/r | ni/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | | (Exhib | oit 13-2) | | | |
| Speed Detern | | | | | Speed D | • | | n | | |
| | | | | | | | xhibit 13- | | | |
| M _S = (Exibit 1: | | | | | | | (Exhibit | - | | |
| | ibit 13-11) | | | | | - | (Exhibit | - | | |
| | ibit 13-11) | | | | ľ | - | • | • | | |
| S = mph (Exhibit 13-13) | | | | | | | | | | |
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| | | MPS AND | RAMP JUNG | | | :E1 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------|
| General Informa | | | | Site Infor | | | | | |
| nalyst | Shan | e Forsythe | | eeway/Dir of Tra | avel (| Gore Hill SB On | | | |
| Igency or Company | 0/0/0 | 04.4 | | nction | | | | | |
| ate Performed | 9/9/20 | | | risdiction | • | 0014 | | | |
| nalysis Time Period
Project Description I-15 | PM P | | All | alysis Year | | 2014 | | | |
| nputs | Corridor S | ludy | | | | | | | |
| | | Erooway Num | ber of Lanes, N | 2 | | | | 1 | |
| pstream Adj Ramp | | 1 | | | | | | Downstre | am Adj |
| ☐Yes ☐ On | | Ramp Number | | 1 | | | | Ramp | |
| _ resOn | | Acceleration L | ane Length, L _A | 1500 | | | | □Yes | On |
| ✓ No ☐ Off | | Deceleration L | ane Length L _D | | | | | 1 | □ o" |
| | | Freeway Volui | me, V _E | 365 | | | | ☑ No | Off |
| up = ft | | Ramp Volume | | 39 | | | | L _{down} = | ft |
| ıμ | | | 13 | | | | | | |
| u = veh/h | | | -Flow Speed, S _{FF} | 65.0 | | | | $V_D =$ | veh/h |
| | | | ow Speed, S _{FR} | 50.0 | | | | | |
| onversion to p | c/h Unc | <u>der Base (</u> | Conditions | | | | | | |
| (pc/h) | \/ob/bs\ | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _n |
| | Veh/hr) | 0.02 | | | | | | | |
| reeway | 365 | 0.93 | Level | 6 | 0 | 0.971 | 1.00 | _ | 404 |
| Ramp | 39 | 0.65 | Level | 41 | 0 | 0.830 | 1.00 | | 72 |
| JpStream
DownStream | | \vdash | | | | | | | |
| ownStream | | I I
Merge Areas | | | <u> </u> | | <u>l</u>
Diverge Areas | | |
| stimation of v ₁ | | vierge Areas | | | Estimation | on of v | Diverge Areas | | |
| Sumation of v ₁ | | | | | LStillati | | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | V ₁₂ = | $V_R + (V_F - V_R)$ |)P _{FD} | |
| EQ = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 13- | 12 or 13-1 | 3) |
| _{FM} = | 1.000 | using Equat | ion (Exhibit 13-6) | | P _{FD} = | | using Equatio | n (Exhibit 1 | 3-7) |
| ₁₂ = | 404 pc | c/h | | | V ₁₂ = | | pc/h | | |
| or V _{av34} | • | | 13-14 or 13-17) | | V ₃ or V _{av34} | | pc/h (Equation 1 | 3-14 or 13-1 | 7) |
| s V ₃ or V _{av34} > 2,700 pc/ | - | | 10 11 01 10 17) | | | 2,700 pc/h? | | | • , |
| | | | | | | • | | | |
| s V ₃ or V _{av34} > 1.5 * V ₁₂ / | | | 3-16, 13-18, or | | | ₄ > 1.5 * V ₁₂ /2 | | n 12 16 1 | 2 10 or |
| Yes,V _{12a} = | 13-19) | | 5-10, 13-10, 01 | | If Yes,V _{12a} = | | pc/h (Equation 3-19) | 11 13-10, 1 | 3-10, UI |
| Capacity Checks | | | | | Capacity | | | | |
| | | | | | | | | pacity | LOS F |
| , , | Actual | I c | apacity | LOS F? | | Actual | I Car | | |
| | Actual | | apacity | LOS F? | V- | Actual | | | 1 |
| | | | apacity | | V _F | | Exhibit 13- | 8 | |
| V _{FO} | Actual
476 | Exhibit 13-8 | apacity | LOS F? | V_F $V_{FO} = V_F$ | | Exhibit 13-8 | 8 | |
| | | | apacity | | | | Exhibit 13-4 Exhibit 13-4 Exhibit 13-4 | 8 | |
| V _{FO} | 476 | Exhibit 13-8 | | | $V_{FO} = V_F - V_R$ | - V _R | Exhibit 13-6
Exhibit 13-6
Exhibit 13-10 | 8 8 | |
| V _{FO} | 476
lerge In | Exhibit 13-8 | rea | No | $V_{FO} = V_F - V_R$ | tering Dive | Exhibit 13-6 Exhibit 13-6 Exhibit 13-10 rge Influen | 8 8 8 Proce Area | |
| V _{FO} | 476
Ierge In
Actual | Exhibit 13-8 fluence A Max | rea
Desirable | No
Violation? | V _{FO} = V _F - V _R | - V _R | Exhibit 13-6 Exhibit 13-6 Exhibit 13-10 rge Influen Max Desi | 8 8 8 Proce Area | Violation |
| V _{FO} | 476 lerge In Actual 476 | Exhibit 13-8 Fluence A Max I Exhibit 13-8 | rea
Desirable
4600:All | No | $V_{FO} = V_F - V_R$ Flow Ent | tering Dive | Exhibit 13-6 Exhibit 13-6 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 | 8 B B B B B B B B B B B B B B B B B B B | Violation |
| V _{FO} Slow Entering M V _{R12} evel of Service | 476 lerge In Actual 476 Determ | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No
Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of | tering Dive Actual Service De | Exhibit 13-4 Exhibit 13-4 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 Eterminatio | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V _{FO} Flow Entering M V _{R12} evel of Service D _R = 5.475 + 0.00 | 476 lerge In Actual 476 Determ | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No
Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of | Actual Service De De De 20 Res 4.252 + 0 | Exhibit 13-6 Exhibit 13-6 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V _{FO} Flow Entering M V _{R12} evel of Service D _R = 5.475 + 0.00 | 476 lerge In Actual 476 Determ | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No
Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of $D_R = (po)$ | tering Dive Actual Service De O _R = 4.252 + 0 c/mi/ln) | Exhibit 13-4 Exhibit 13-4 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 Eterminatio | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V _{FO} V _{R12} evel of Service D _R = 5.475 + 0.00 R = -0.3 (pc/mi/ln) | 476 Actual 476 Determ 734 v _R + 0 | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No
Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of $D_R = (po)$ | Actual Service De De De 20 Res 4.252 + 0 | Exhibit 13-4 Exhibit 13-4 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 Eterminatio | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V _{FO} V _{R12} evel of Service D _R = 5.475 + 0.00 R _R = -0.3 (pc/mi/ln) OS = A (Exhibit 13-2) | 476 erge In Actual 476 Determ 1734 v R + 0 | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No
Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of $D_R = (pc)$ LOS = (Ex | tering Dive Actual Service De D _R = 4.252 + 0 C/mi/ln) xhibit 13-2) | Exhibit 13-4 Exhibit 13-4 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 Eterminatio 0.0086 V ₁₂ - 0.0 | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V_{FO} Flow Entering M V_{R12} Level of Service $D_R = 5.475 + 0.00$ $D_R = -0.3 \text{ (pc/mi/ln)}$ $D_R = -0.3 \text{ (pc/mi/ln)}$ $D_R = -0.3 \text{ (pc/mi/ln)}$ $D_R = -0.3 \text{ (pc/mi/ln)}$ $D_R = -0.3 \text{ (pc/mi/ln)}$ | 476 Lerge In Actual 476 Determ 734 v _R + 0 | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No
Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of $D_R = (pc)$ LOS = (Ex | Service De De Maio Maria (1988) Service De De Maria (1988) Service De De Maria (1988) Service De De Maria (1988) Service De De Maria (1988) Service De De Maria (1988) Service De De Maria (1988) Service De De De Maria (1988) Service De De De De De De De De De De De De De | Exhibit 13-4 Exhibit 13-4 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 Eterminatio 0.0086 V ₁₂ - 0.0 | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V _{FO} Flow Entering M V _{R12} evel of Service D _R = 5.475 + 0.00 R _R = -0.3 (pc/mi/ln) DS = A (Exhibit 13-2) Epeed Determination | 476 Lerge In Actual 476 Determ 1734 v R + 0 0 0 0 0 0 0 0 0 0 | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of $D_R = (pc)$ $LOS = (Ex)$ $D_S = (Ex)$ | tering Diversity Actual Service Decoration OR = 4.252 + Coc/mi/In) Exhibit 13-2) Setermination Children 13-12 | Exhibit 13-4 Exhibit 13-4 Exhibit 13-1 Exhibit 13-1 In Max Desi Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibi | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V _{FO} Flow Entering M V _{R12} Level of Service D _R = 5.475 + 0.00 R = -0.3 (pc/mi/ln) DS = A (Exhibit 13-2) Epeed Determination S = 0.177 (Exibit 13-2) R = 60.9 mph (Exhibit 13-2) | 476 Actual 476 Determ 1734 v R + 0 0 0 0 0 0 0 0 0 0 | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of $D_R = (pc)$ $LOS = (Ex)$ Speed Do $D_S = (Ex)$ $S_R = mp$ | tering Dive Actual Service De De 4.252 + Ce/mi/In) xhibit 13-2) etermination chibit 13-12) h (Exhibit 13-12) | Exhibit 13-4 Exhibit 13-4 Exhibit 13-10 rge Influen Max Desi Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |
| V _{FO} Flow Entering M V _{R12} evel of Service D _R = 5.475 + 0.00 R _R = -0.3 (pc/mi/ln) DS = A (Exhibit 13-2) Epeed Determination | 476 Actual 476 Determ 1734 v R + 0 0 0 0 0 0 0 0 0 0 | Exhibit 13-8 fluence A Max I Exhibit 13-8 | rea Desirable 4600:All | No Violation? | $V_{FO} = V_F - V_R$ Flow Ent V_{12} Level of $D_R = (po)$ $LOS = (Ex)$ Speed Do $D_S = (Ex)$ $S_R = mp$ $S_0 = mp$ | tering Diversity Actual Service Decoration OR = 4.252 + Coc/mi/In) Exhibit 13-2) Setermination Children 13-12 | Exhibit 13-4 Exhibit 13-4 Exhibit 13-1 Exhibit 13-1 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhibit 13-8 Exhib | 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Violation |



I-15 Corridor Study

Vistro File: F:\...\I-15 Corridor.vistropdb Report File: F:\...\LOS_Report_AM.pdf Scenario 1: AM Scenario

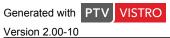
Scenario 1: 1: AM Scenario

9/15/2014

Intersection Analysis Summary

| ID | Intersection Name | Control Type | Method | Worst Mvmt | V/C | Delay (s/veh) | LOS |
|----|----------------------------------------|--------------|---------|------------|-------|---------------|-----|
| 1 | Tri Hill and Frontage Airport
Rd | Two-way stop | HCM2010 | NEBL | 0.202 | 13.5 | В |
| 2 | I-15 NB and Airport Rd | Two-way stop | HCM2010 | NEBT | 0.000 | 16.9 | С |
| 3 | I-15 SB On and Airport RD | Two-way stop | HCM2010 | NWBL | 0.046 | 8.6 | Α |
| 4 | I-15 SB Off and Airport RD
Frontage | Two-way stop | HCM2010 | SWBL | 0.272 | 12.7 | В |
| 5 | 14th St SW and I-315 EB | Signalized | HCM2010 | SBL | 0.175 | 14.4 | В |
| 6 | 14th St SW and I-315 WB | Signalized | HCM2010 | EBR | 0.254 | 23.0 | С |
| 7 | Fox Farm and I-315 | Signalized | HCM2010 | NEBL | 0.687 | 45.3 | D |
| 8 | Central Ave and I15 SB | Two-way stop | HCM2010 | SBL | 0.499 | 28.0 | D |
| 9 | Central Ave and I-15 NB | Two-way stop | HCM2010 | NBL | 0.080 | 19.9 | С |
| 10 | Central Ave and Vaughn Rd | Two-way stop | HCM2010 | SBL | 0.377 | 27.1 | D |
| 11 | Vaughn Rd and I-15 SB | Two-way stop | HCM2010 | SBL | 0.260 | 10.1 | В |
| 12 | Vaughn Rd and I-15 NB | Two-way stop | HCM2010 | EBL | 0.000 | 7.3 | Α |

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.



ersion 2.00-10

Intersection Level Of Service Report #1: Tri Hill and Frontage Airport Rd

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 13.5
Level Of Service: B
Volume to Capacity (v/c): 0.202

Scenario 1: 1: AM Scenario

Intersection Setup

| Name | | | | | | |
|------------------------|---------|---------|---------|----------|---------|----------|
| Approach | Northea | stbound | Northwe | estbound | Southea | astbound |
| Lane Configuration | - | r | ٦ | 1 | 1 | + |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30 | .00 | 30 | .00 | 30 | 0.00 |
| Grade [%] | 0. | 00 | 0. | 00 | 0. | .00 |
| Crosswalk | y | es | ye | es | у | es |

| Name | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 83 | 19 | 9 | 189 | 97 | 88 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 21.70 | 31.10 | 22.20 | 28.60 | 25.70 | 5.70 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 83 | 19 | 9 | 189 | 97 | 88 |
| Peak Hour Factor | 0.7410 | 0.4750 | 0.5630 | 0.8750 | 0.9330 | 0.7590 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 28 | 10 | 4 | 54 | 26 | 29 |
| Total Analysis Volume [veh/h] | 112 | 40 | 16 | 216 | 104 | 116 |
| Pedestrian Volume [ped/h] | | 0 | | 0 | | 0 |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | | 0 |

3



Version 2.00-10

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.20 | 0.05 | 0.01 | 0.00 | 0.00 | 0.00 | | | |
|------------------------------------|-------------|-------|------|------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 13.48 | 11.42 | 7.94 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | В | В | Α | A | A | A | | | |
| 95th-Percentile Queue Length [veh] | 0.99 | 0.99 | 0.04 | 0.00 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 24.73 24.73 | | 0.98 | 0.00 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 12 | 93 | 0. | 55 | 0. | 00 | | | |
| Approach LOS | E | 3 | , | A | A | | | | |
| d_I, Intersection Delay [s/veh] | | 3.47 | | | | | | | |
| Intersection LOS | | В | | | | | | | |

Shane Forsythe 9/15/2014



Intersection Level Of Service Report #2: I-15 NB and Airport Rd

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 16.9
Level Of Service: C
Volume to Capacity (v/c): 0.000

Scenario 1: 1: AM Scenario

4

Intersection Setup

| Name | | | | | | | | | | | | | |
|------------------------|--------|----------------|--------|--------|----------------|--------|--------|----------------|--------|--------|----------------|--------|--|
| Approach | No | Northeastbound | | | Southwestbound | | | Northwestbound | | | Southeastbound | | |
| Lane Configuration | | + | | | | | | F | | | 4 | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | | |
| Grade [%] | | 0.00 | | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | | yes | | | yes | | yes | | | yes | | | |

| Name | | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 4 | 0 | 13 | 0 | 0 | 0 | 0 | 49 | 222 | 79 | 173 | 0 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 0.00 | 0.00 | 46.20 | 2.00 | 2.00 | 2.00 | 2.00 | 38.80 | 26.60 | 12.70 | 10.90 | 2.00 | |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 4 | 0 | 13 | 0 | 0 | 0 | 0 | 49 | 222 | 79 | 173 | 0 | |
| Peak Hour Factor | 0.5000 | 1.0000 | 0.8130 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.7210 | 0.8670 | 0.7050 | 0.9010 | 1.0000 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 17 | 64 | 28 | 48 | 0 | |
| Total Analysis Volume [veh/h] | 8 | 0 | 16 | 0 | 0 | 0 | 0 | 68 | 256 | 112 | 192 | 0 | |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | | |



Version 2.00-10

Intersection Settings

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 |
|------------------------------------|-------|-------|-------|------|------|------|------|------|------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 14.89 | 16.91 | 10.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.38 | 0.00 | 0.00 |
| Movement LOS | В | С | В | | | | | Α | Α | Α | Α | |
| 95th-Percentile Queue Length [veh] | 0.13 | 0.13 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.03 | 1.03 | 0.00 |
| 95th-Percentile Queue Length [ft] | 3.34 | 3.34 | 3.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 25.85 | 25.85 | 0.00 |
| d_A, Approach Delay [s/veh] | | 11.69 | | 0.00 | | | 0.00 | | | | 3.09 | |
| Approach LOS | | В | | Α Α | | | | | | A | | |
| d_I, Intersection Delay [s/veh] | | 1.87 | | | | | | | | | | |
| Intersection LOS | | | | С | | | | | | | | |



Intersection Level Of Service Report #3: I-15 SB On and Airport RD

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 8.6
Level Of Service: A
Volume to Capacity (v/c): 0.046

Scenario 1: 1: AM Scenario

6

Intersection Setup

| Name | | | | | | | |
|------------------------|---------|----------------|--------|----------|----------------|--------|--|
| Approach | Northea | Northeastbound | | estbound | Southeastbound | | |
| Lane Configuration | | | + | 1 | F | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 12.00 | | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | .00 | |
| Grade [%] | 0. | 0.00 | | 0.00 | | 00 | |
| Crosswalk | y | yes | | es | yes | | |

| Name | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 0 | 0 | 32 | 23 | 251 | 6 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 43.80 | 21.70 | 14.00 | 16.70 | |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 0 | 0 | 32 | 23 | 251 | 6 | |
| Peak Hour Factor | 1.0000 | 1.0000 | 0.6670 | 0.6390 | 0.8720 | 0.3750 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 12 | 9 | 72 | 4 | |
| Total Analysis Volume [veh/h] | 0 | 0 | 48 36 | | 288 | 16 | |
| Pedestrian Volume [ped/h] | | 0 | | 0 | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | 0 0 | | | 0 | |



Version 2.00-10

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | | | |
|------------------------------------|------|-----------|------|------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 8.58 | | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | | | Α | А | Α | A | | | |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 6.49 | 6.49 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 0. | 00 | 4 | .90 | 0. | 00 | | | |
| Approach LOS | / | A | | A | A | | | | |
| d_I, Intersection Delay [s/veh] | | 1.06 | | | | | | | |
| Intersection LOS | | A | | | | | | | |



Intersection Level Of Service Report #4: I-15 SB Off and Airport RD Frontage

Control Type:Two-way stopDelay (sec / veh):12.7Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.272

Intersection Setup

| Name | | | | | | | | | | | | | |
|------------------------|--------|----------------|--------|--------|----------------|--------|--------|-----------|--------|----------------|--------|--------|--|
| Approach | No | Northeastbound | | | Southwestbound | | | rthwestbo | und | Southeastbound | | | |
| Lane Configuration | Ψ | | | 46 | | | 4 | | | H | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | | |
| Grade [%] | 0.00 | | | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | | yes | | | yes | | | yes | | | yes | | |

| Name | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 5 | 0 | 44 | 159 | 54 | 96 | 8 | 12 | 0 | 0 | 40 | 4 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 2.00 | 11.30 | 10.10 | 7.40 | 3.10 | 12.50 | 8.30 | 2.00 | 2.00 | 2.50 | 0.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 5 | 0 | 44 | 159 | 54 | 96 | 8 | 12 | 0 | 0 | 40 | 4 |
| Peak Hour Factor | 0.4170 | 1.0000 | 0.5240 | 0.8110 | 0.9000 | 0.7060 | 0.4000 | 0.7500 | 1.0000 | 1.0000 | 0.7690 | 0.5000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 0 | 21 | 49 | 15 | 34 | 5 | 4 | 0 | 0 | 13 | 2 |
| Total Analysis Volume [veh/h] | 12 | 0 | 84 | 196 | 60 | 136 | 20 | 16 | 0 | 0 | 52 | 8 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

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Intersection Settings

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.09 | 0.27 | 0.08 | 0.13 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|-------|------|------|-------|-------|-------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 10.78 | 0.00 | 9.10 | 12.67 | 12.44 | 8.90 | 7.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | В | | Α | В | В | Α | Α | Α | | | Α | Α |
| 95th-Percentile Queue Length [veh] | 0.34 | 0.00 | 0.34 | 1.59 | 1.59 | 0.44 | 0.07 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 8.59 | 0.00 | 8.59 | 39.68 | 39.68 | 11.00 | 1.87 | 1.87 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 9.31 | | | 11.33 | | | 4.15 | | | 0.00 | |
| Approach LOS | | Α | | | В | | | Α | | | Α | |
| d_I, Intersection Delay [s/veh] | | | | 9.39 | | | | | | | | |
| Intersection LOS | | | | | | E | 3 | | | | | |



Intersection Level Of Service Report #5: 14th St SW and I-315 EB

Control Type: Signalized
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 14.4
Level Of Service: B
Volume to Capacity (v/c): 0.175

Scenario 1: 1: AM Scenario

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------------|-------|---------------------|-----------|-------|--------|-----------|--------|
| Approach | ١ | Northboun | d | S | outhboun | d | I | Eastbound | d | ٧ | Vestbound | d |
| Lane Configuration | | left Thru Right | | | ٦١٢ | | | ٦١٢ | | | ٦١٢ | |
| Turning Movement | Left | | | | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | 100.00 100.00 100.0 | | | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | 0.00 | | | |
| Crosswalk | yes | | yes | | | yes | | | yes | | | |

| Name | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 7 | 66 | 286 | 142 | 91 | 60 | 44 | 69 | 3 | 20 | 30 | 5 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 14.30 | 1.50 | 1.70 | 3.50 | 4.40 | 5.00 | 0.00 | 4.30 | 0.00 | 10.00 | 3.30 | 0.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 7 | 66 | 286 | 142 | 91 | 60 | 44 | 69 | 3 | 20 | 30 | 5 |
| Peak Hour Factor | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 2 | 20 | 86 | 43 | 27 | 18 | 13 | 21 | 1 | 6 | 9 | 2 |
| Total Analysis Volume [veh/h] | 8 | 80 | 345 | 171 | 110 | 72 | 53 | 83 | 4 | 24 | 36 | 6 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | 0 | | | 0 | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| Located in CBD | no |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 2 | 3 | 0 | 6 | 7 | 7 | 4 | 0 | 3 | 8 | 0 |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 5 | 15 | 0 | 5 | 15 | 15 | 5 | 0 | 15 | 15 | 0 |
| Maximum Green [s] | 0 | 50 | 20 | 0 | 50 | 20 | 20 | 60 | 0 | 20 | 60 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 22 | 18 | 0 | 22 | 18 | 18 | 20 | 0 | 18 | 20 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 10 | 0 | 10 | 0 | 0 | 10 | 0 | 10 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Calculations

| Lane Group | L | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|------|------|-------|-------|------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 5.00 | 4.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 0.00 | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 15 | 15 | 34 | 15 | 15 | 33 | 28 | 12 | 12 | 28 | 10 | 10 |
| g / C, Green / Cycle | 0.24 | 0.24 | 0.57 | 0.24 | 0.24 | 0.54 | 0.47 | 0.20 | 0.20 | 0.47 | 0.17 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.04 | 0.22 | 0.13 | 0.06 | 0.05 | 0.03 | 0.05 | 0.00 | 0.02 | 0.02 | 0.00 |
| s, saturation flow rate [veh/h] | 1140 | 1872 | 1588 | 1294 | 1820 | 1538 | 1631 | 1822 | 1615 | 1432 | 1839 | 1615 |
| c, Capacity [veh/h] | 299 | 452 | 912 | 342 | 439 | 836 | 920 | 360 | 319 | 797 | 307 | 270 |
| d1, Uniform Delay [s] | 21.49 | 18.04 | 6.95 | 23.72 | 18.38 | 6.55 | 8.80 | 20.24 | 19.36 | 8.71 | 21.23 | 20.89 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.04 | 0.19 | 0.26 | 1.13 | 0.30 | 0.04 | 0.03 | 0.32 | 0.02 | 0.02 | 0.17 | 0.03 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.03 | 0.18 | 0.38 | 0.50 | 0.25 | 0.09 | 0.06 | 0.23 | 0.01 | 0.03 | 0.12 | 0.02 |
|------------------------------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|-------|-------|
| d, Delay for Lane Group [s/veh] | 21.52 | 18.22 | 7.21 | 24.85 | 18.67 | 6.60 | 8.83 | 20.56 | 19.38 | 8.72 | 21.39 | 20.92 |
| Lane Group LOS | С | В | Α | С | В | Α | Α | С | В | Α | С | С |
| Critical Lane Group | no | no | yes | no | no | no | no | no | no | no | yes | no |
| 50th-Percentile Queue Length [veh] | 0.09 | 0.84 | 1.92 | 2.26 | 1.18 | 0.37 | 0.33 | 0.94 | 0.04 | 0.15 | 0.42 | 0.07 |
| 50th-Percentile Queue Length [ft] | 2.32 | 20.94 | 47.91 | 56.41 | 29.43 | 9.15 | 8.37 | 23.62 | 1.09 | 3.74 | 10.46 | 1.72 |
| 95th-Percentile Queue Length [veh] | 0.17 | 1.51 | 3.45 | 4.06 | 2.12 | 0.66 | 0.60 | 1.70 | 0.08 | 0.27 | 0.75 | 0.12 |
| 95th-Percentile Queue Length [ft] | 4.18 | 37.70 | 86.24 | 101.54 | 52.97 | 16.46 | 15.06 | 42.51 | 1.95 | 6.74 | 18.82 | 3.09 |

Scenario 1: 1: AM Scenario Version 2.00-10

Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 21.52 | 18.22 | 7.21 | 24.85 | 18.67 | 6.60 | 8.83 | 20.56 | 19.38 | 8.72 | 21.39 | 20.92 | |
|---------------------------------|-------|-------|------|-------|-------|------|------|-------|-------|-------|-------|-------|--|
| Movement LOS | C B A | | | С | C B A | | | С | В | Α | С | С | |
| d_A, Approach Delay [s/veh] | | 9.51 | | | 19.20 | | | 16.09 | | 16.74 | | | |
| Approach LOS | А | | | | В | | | В | | | | | |
| d_I, Intersection Delay [s/veh] | | | | | | 14 | | | | | | | |
| Intersection LOS | | | | В | | | | | | | | | |
| Intersection V/C | | | | | | 0.1 | 175 | | | | | | |

Sequence

| | | _ | | | | | | | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 7 | 4 | ı | - | - | - | - | - | - | - | ı | - | - | - | ı |
| Ring 2 | 6 | 3 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Rina 4 | _ | _ | - | - | _ | - | - | - | - | - | - | - | - | - | - | - |





Intersection Level Of Service Report #6: 14th St SW and I-315 WB

Control Type: Signalized
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 23.0
Level Of Service: C
Volume to Capacity (v/c): 0.254

Scenario 1: 1: AM Scenario

14

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------------|-------|---------------|-----------|--------|--------|-----------|--------|
| Approach | ١ | lorthboun | d | S | outhboun | d | ı | Eastbound | d | V | Vestbound | d |
| Lane Configuration | | Left Thru Right | | | ٦ŀ | | | + | | | 4 | |
| Turning Movement | Left | | | | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | 100.00 100.00 | | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | | |
| Grade [%] | 0.00 | | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | yes | | | yes | | yes | | | yes | | | |

| Name | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 11 | 17 | 90 | 26 | 136 | 0 | 0 | 7 | 15 | 162 | 16 | 38 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 9.10 | 0.00 | 4.40 | 7.70 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 2.50 | 0.00 | 0.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 11 | 17 | 90 | 26 | 136 | 0 | 0 | 7 | 15 | 162 | 16 | 38 |
| Peak Hour Factor | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 5 | 28 | 8 | 42 | 0 | 0 | 2 | 5 | 50 | 5 | 12 |
| Total Analysis Volume [veh/h] | 14 | 21 | 112 | 32 | 169 | 0 | 0 | 9 | 19 | 201 | 20 | 47 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | 0 | | | 0 | | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | 0 | | 0 | | | | |



Version 2.00-10

Intersection Settings

| Located in CBD | yes |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 2 | 0 |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Maximum Green [s] | 0 | 35 | 40 | 0 | 35 | 0 | 0 | 25 | 0 | 0 | 40 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 25 | 19 | 0 | 25 | 0 | 0 | 16 | 0 | 0 | 19 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 9 | 7 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 11 | 7 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | | | no | | | no | |
| Maximum Recall | | no | no | | no | | | no | | | no | |
| Pedestrian Recall | | no | no | | no | | | no | | | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

I-15 Corridor Study Scenario 1: 1: AM Scenario

Lane Group Calculations

| Lane Group | L | С | R | L | С | С | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|-------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 11 | 11 | 27 | 11 | 11 | 2 | 11 | 11 |
| g / C, Green / Cycle | 0.19 | 0.19 | 0.45 | 0.19 | 0.19 | 0.03 | 0.18 | 0.18 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.01 | 0.08 | 0.03 | 0.10 | 0.02 | 0.14 | 0.03 |
| s, saturation flow rate [veh/h] | 1019 | 1710 | 1392 | 1181 | 1685 | 1527 | 1636 | 1454 |
| c, Capacity [veh/h] | 178 | 321 | 624 | 283 | 316 | 48 | 290 | 257 |
| d1, Uniform Delay [s] | 27.05 | 20.04 | 9.94 | 22.89 | 22.00 | 28.67 | 23.49 | 20.99 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.19 | 0.08 | 0.14 | 0.17 | 1.40 | 10.79 | 4.15 | 0.34 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.08 | 0.07 | 0.18 | 0.11 | 0.53 | 0.58 | 0.76 | 0.18 |
|------------------------------------|-------|-------|-------|-------|-------|-------|--------|-------|
| d, Delay for Lane Group [s/veh] | 27.24 | 20.13 | 10.07 | 23.06 | 23.41 | 39.47 | 27.64 | 21.33 |
| Lane Group LOS | С | С | В | С | С | D | С | С |
| Critical Lane Group | no | no | no | no | yes | yes | yes | no |
| 50th-Percentile Queue Length [veh] | 0.19 | 0.23 | 0.79 | 0.39 | 2.12 | 0.52 | 3.10 | 0.55 |
| 50th-Percentile Queue Length [ft] | 4.78 | 5.84 | 19.74 | 9.76 | 53.01 | 13.05 | 77.54 | 13.75 |
| 95th-Percentile Queue Length [veh] | 0.34 | 0.42 | 1.42 | 0.70 | 3.82 | 0.94 | 5.58 | 0.99 |
| 95th-Percentile Queue Length [ft] | 8.60 | 10.51 | 35.54 | 17.57 | 95.41 | 23.49 | 139.58 | 24.76 |

Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 27.24 | 20.13 | 10.07 | 23.06 | 23.41 | 23.41 | 39.47 | 39.47 | 39.47 | 27.64 | 27.64 | 21.33 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Movement LOS | С | С | В | С | С | С | D | D | D | С | С | С |
| d_A, Approach Delay [s/veh] | | 13.14 | | | 23.35 | | | 39.47 | | | 26.53 | |
| Approach LOS | | В | | | С | | | D | | | С | |
| d_I, Intersection Delay [s/veh] | | | | | | 23 | .05 | | | | | |
| Intersection LOS | С | | | | | | | | | | | |
| Intersection V/C | 0.254 | | | | | | | | | | | |

Sequence

| Ring 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | - | - | - | - | - | - | - | - | ı | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





Intersection Level Of Service Report #7: Fox Farm and I-315

Control Type: Signalized
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 45.3
Level Of Service: D
Volume to Capacity (v/c): 0.687

Scenario 1: 1: AM Scenario

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|---------------|--------------------|--------|--------|----------|--------|--------|-----------|--------|--------|-----------|--------|
| Approach | ١ | Northboun | d | S | outhboun | d | No | rtheastbo | und | Sou | ıthwestbo | und |
| Lane Configuration | | Left Thru Right | | | ۱۱۱۲ | | | Шь | | , | ıIIIr | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 2.00 12.00 12.00 1 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | |
| Grade [%] | 0.00 | | | 0.00 | | | | 0.00 | | | 0.00 | |
| Crosswalk | Crosswalk yes | | | yes | | | | yes | | | yes | |

| Name | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 50 | 219 | 437 | 172 | 90 | 121 | 161 | 732 | 45 | 101 | 335 | 136 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 0.90 | 0.70 | 1.80 | 2.20 | 4.10 | 6.20 | 5.20 | 2.20 | 4.00 | 6.00 | 3.70 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 50 | 219 | 437 | 172 | 90 | 121 | 161 | 732 | 45 | 101 | 335 | 136 |
| Peak Hour Factor | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 16 | 69 | 137 | 54 | 28 | 38 | 50 | 229 | 14 | 32 | 105 | 43 |
| Total Analysis Volume [veh/h] | 63 | 274 | 548 | 216 | 113 | 152 | 202 | 917 | 56 | 127 | 420 | 170 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | 0 | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | 0 | | |

Intersection Settings

| Located in CBD | no |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 150 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 1 | 8 | 0 | 3 | 6 | 6 | 4 | 0 | 8 | 2 | 5 |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 5 | 5 | 5 | 0 | 5 | 5 | 0 |
| Maximum Green [s] | 0 | 60 | 60 | 0 | 60 | 60 | 60 | 60 | 0 | 60 | 60 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 21 | 47 | 0 | 28 | 76 | 76 | 54 | 0 | 47 | 25 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| l2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Calculations

| Lane Group | С | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 3.00 | 3.00 | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 1.00 | 3.00 | 3.00 | 1.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 31 | 31 | 99 | 27 | 27 | 53 | 20 | 44 | 44 | 31 | 54 | 54 |
| g / C, Green / Cycle | 0.21 | 0.21 | 0.66 | 0.18 | 0.18 | 0.35 | 0.14 | 0.29 | 0.29 | 0.20 | 0.36 | 0.36 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.16 | 0.34 | 0.15 | 0.03 | 0.10 | 0.12 | 0.27 | 0.04 | 0.04 | 0.12 | 0.11 |
| s, saturation flow rate [veh/h] | 1793 | 1714 | 1604 | 1414 | 3540 | 1551 | 1704 | 3439 | 1580 | 3379 | 3413 | 1557 |
| c, Capacity [veh/h] | 370 | 353 | 1058 | 290 | 649 | 547 | 231 | 997 | 458 | 688 | 1222 | 557 |
| d1, Uniform Delay [s] | 48.99 | 56.26 | 13.19 | 60.81 | 51.67 | 34.87 | 63.55 | 51.55 | 39.19 | 49.42 | 35.26 | 34.71 |
| k, delay calibration | 0.11 | 0.11 | 0.35 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.22 | 3.68 | 1.29 | 3.78 | 0.13 | 0.27 | 9.88 | 4.00 | 0.12 | 0.13 | 0.17 | 0.31 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.17 | 0.78 | 0.52 | 0.74 | 0.17 | 0.28 | 0.87 | 0.92 | 0.12 | 0.18 | 0.34 | 0.30 |
|------------------------------------|-------|--------|--------|--------|-------|--------|--------|--------|-------|-------|--------|--------|
| d, Delay for Lane Group [s/veh] | 49.21 | 59.94 | 14.48 | 64.59 | 51.80 | 35.14 | 73.43 | 55.55 | 39.31 | 49.55 | 35.42 | 35.01 |
| Lane Group LOS | D | E | В | E | D | D | E | E | D | D | D | D |
| Critical Lane Group | no | no | yes | yes | no | no | no | yes | no | no | no | no |
| 50th-Percentile Queue Length [veh] | 1.99 | 10.20 | 9.77 | 8.38 | 1.83 | 4.11 | 8.23 | 17.25 | 1.56 | 2.01 | 5.74 | 4.60 |
| 50th-Percentile Queue Length [ft] | 49.82 | 255.07 | 244.37 | 209.46 | 45.76 | 102.67 | 205.68 | 431.14 | 39.12 | 50.27 | 143.52 | 114.99 |
| 95th-Percentile Queue Length [veh] | 3.59 | 15.44 | 14.90 | 13.13 | 3.29 | 7.39 | 12.93 | 24.06 | 2.82 | 3.62 | 9.67 | 8.12 |
| 95th-Percentile Queue Length [ft] | 89.67 | 386.04 | 372.56 | 328.14 | 82.36 | 184.80 | 323.28 | 601.41 | 70.42 | 90.48 | 241.76 | 202.92 |

Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 49.21 | 59.94 | 14.48 | 64.59 | 51.80 | 35.14 | 73.43 | 55.55 | 39.31 | 49.55 | 35.42 | 35.01 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Movement LOS | D | E | В | E | D | D | E | Е | D | D | D | D |
| d_A, Approach Delay [s/veh] | | 31.02 | | | 52.28 | | | 57.85 | | | 37.83 | |
| Approach LOS | | С | | | D | | | E | | | D | |
| d_I, Intersection Delay [s/veh] | | | | | | 45 | .33 | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.687 | | | | | | | | | | | |

Sequence

| F | Ring 1 | 1 | 3 | 8 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F | Ring 2 | | - | 6 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| F | Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| F | Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





Intersection Level Of Service Report #8: Central Ave and I15 SB

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 28.0
Level Of Service: D
Volume to Capacity (v/c): 0.499

Scenario 1: 1: AM Scenario

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|------------|--------|--------|-----------|--------|--------|-----------|--------|--------|----------------|--------|
| Approach | S | Southbound | | - | Eastbound | | | Westbound | | | Northwestbound | |
| Lane Configuration | | ጎተ | | ÎΓ | | 111 | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | |
| Grade [%] | | 0.00 | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | | yes | | yes | | yes | | | yes | | | |

| Name | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 130 | 0 | 6 | 0 | 191 | 39 | 123 | 88 | 0 | 0 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.30 | 0.00 | 0.00 | 2.00 | 3.10 | 0.00 | 6.50 | 11.30 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 130 | 0 | 6 | 0 | 191 | 39 | 123 | 88 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.8550 | 1.0000 | 0.7500 | 1.0000 | 0.6920 | 0.7500 | 0.7690 | 0.8150 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 38 | 0 | 2 | 0 | 69 | 13 | 40 | 27 | 0 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 152 | 0 | 8 | 0 | 276 | 52 | 160 | 108 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | | | 0 | | | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

Intersection Settings

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.50 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|-------|-------|------|------|------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 28.03 | 27.54 | 8.82 | 0.00 | 0.00 | 0.00 | 8.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | D | D | Α | | Α | Α | Α | Α | | | | |
| 95th-Percentile Queue Length [veh] | 2.63 | 2.63 | 0.03 | 0.00 | 0.00 | 0.00 | 0.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 65.65 | 65.65 | 0.64 | 0.00 | 0.00 | 0.00 | 10.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 27.07 | | | 0.00 | | | 4.94 | | 0.00 | | |
| Approach LOS | | D | | А | | | | Α | | А | | |
| d_I, Intersection Delay [s/veh] | 7.48 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |



Intersection Level Of Service Report #9: Central Ave and I-15 NB

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 19.9
Level Of Service: C
Volume to Capacity (v/c): 0.080

Scenario 1: 1: AM Scenario

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Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|------------|--------|--------|-----------|--------|--------|-----------|--------|--------|----------------|--------|
| Approach | ١ | Northbound | | - | Eastbound | | | Westbound | | | Southeastbound | |
| Lane Configuration | | ት | | | 1 | | | IIr | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | |
| Grade [%] | | 0.00 | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | | yes | | yes | | yes | | | yes | | | |

| Name | | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 15 | 0 | 177 | 6 | 305 | 0 | 0 | 202 | 44 | 0 | 0 | 0 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 0.00 | 0.00 | 10.80 | 16.70 | 2.00 | 2.00 | 2.00 | 11.40 | 13.60 | 2.00 | 2.00 | 2.00 | |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 15 | 0 | 177 | 6 | 305 | 0 | 0 | 202 | 44 | 0 | 0 | 0 | |
| Peak Hour Factor | 0.5360 | 1.0000 | 0.8510 | 0.7500 | 0.7190 | 1.0000 | 1.0000 | 0.8420 | 0.7330 | 1.0000 | 1.0000 | 1.0000 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 7 | 0 | 52 | 2 | 106 | 0 | 0 | 60 | 15 | 0 | 0 | 0 | |
| Total Analysis Volume [veh/h] | 28 | 0 | 208 | 8 | 424 | 0 | 0 | 240 | 60 | 0 | 0 | 0 | |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | | | 0 | | | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | | |

Intersection Settings

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.08 | 0.00 | 0.34 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 19.87 | 19.21 | 15.45 | 7.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | С | С | С | Α | Α | | | Α | Α | | | |
| 95th-Percentile Queue Length [veh] | 2.07 | 2.07 | 2.07 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 51.73 | 51.73 | 51.73 | 0.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 15.98 | | 0.15 | | | | 0.00 | | 0.00 | | |
| Approach LOS | | С | | | Α | | | Α | | | А | |
| d_I, Intersection Delay [s/veh] | 3.96 | | | | | | | | | | | |
| Intersection LOS | С | | | | | | | | | | | |



Intersection Level Of Service Report #10: Central Ave and Vaughn Rd

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 27.1
Level Of Service: D
Volume to Capacity (v/c): 0.377

Scenario 1: 1: AM Scenario

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Intersection Setup

| Name | | | | | | | |
|------------------------|--------|------------|--------|--------|------------|--------|--|
| Approach | South | nbound | East | bound | Westbound | | |
| Lane Configuration | - | r | - | 1 | T F | | |
| Turning Movement | Left | Left Right | | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | .00 | |
| Grade [%] | 0.00 | | 0 | .00 | 0.00 | | |
| Crosswalk | yes | | У | res | yes | | |

| Name | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 77 | 60 | 71 | 410 | 184 | 65 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 9.10 | 6.70 | 7.00 | 5.10 | 11.40 | 6.20 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 77 | 60 | 71 | 410 | 184 | 65 |
| Peak Hour Factor | 0.7700 | 0.7890 | 0.8450 | 0.8010 | 0.8520 | 0.7740 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 25 | 19 | 21 | 128 | 54 | 21 |
| Total Analysis Volume [veh/h] | 100 | 76 | 84 | 512 | 216 | 84 |
| Pedestrian Volume [ped/h] | | 0 | (|) | | 0 |
| Bicycle Volume [bicycles/h] | | 0 | (|) | | 0 |

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.38 | 0.10 | 0.07 | 0.01 | 0.00 | 0.00 | | | |
|------------------------------------|-------|----------|------|------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 27.07 | 18.19 | 8.13 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | D | С | Α | A | A | A | | | |
| 95th-Percentile Queue Length [veh] | 2.47 | 2.47 | 0.22 | 0.00 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 61.70 | 61.70 | 5.47 | 0.00 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 23 | .23 | 1. | 15 | 0. | 00 | | | |
| Approach LOS | (| <u> </u> | | A | , | 4 | | | |
| d_I, Intersection Delay [s/veh] | 4.45 | | | | | | | | |
| Intersection LOS | D | | | | | | | | |



Intersection Level Of Service Report #11: Vaughn Rd and I-15 SB

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 10.1
Level Of Service: B
Volume to Capacity (v/c): 0.260

Scenario 1: 1: AM Scenario

28

Intersection Setup

| Crosswalk | y | es | yes | | yes | |
|------------------------|--------|-------------|--------|-----------|--------|--------|
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | 0.00 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width [ft] | 12.00 | 12.00 12.00 | | 12.00 | 12.00 | 12.00 |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Configuration | Π | Ŧ | | | | |
| Approach | South | bound | East | Eastbound | | bound |
| Name | | | | | | |

| Name | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 219 | 1 | 0 | 27 | 12 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 4.60 | 0.00 | 2.00 | 11.10 | 8.30 | 2.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 219 | 1 | 0 | 27 | 12 | 0 |
| Peak Hour Factor | 0.8830 | 0.2500 | 1.0000 | 0.8440 | 0.7500 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 62 | 1 | 0 | 8 | 4 | 0 |
| Total Analysis Volume [veh/h] | 248 | 4 | 0 | 32 | 16 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | 0 | (|) |
| Bicycle Volume [bicycles/h] | | 0 | 0 | | (|) |

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|-------|-------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 10.11 | 9.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | В | A | | A | A | |
| 95th-Percentile Queue Length [veh] | 1.06 | 1.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 26.50 | 26.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 10 | .10 | 0. | .00 | 0. | 00 |
| Approach LOS | E | 3 | Α | | Α | |
| d_I, Intersection Delay [s/veh] | 8.49 | | | | | |
| Intersection LOS | В | | | | | |



Intersection Level Of Service Report

#12: Vaughn Rd and I-15 NB

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 7.3
Level Of Service: A
Volume to Capacity (v/c): 0.000

Scenario 1: 1: AM Scenario

Intersection Setup

| Name | | | | | | | |
|------------------------|--------|--------|--------|--------|----------------|--------|--|
| Approach | Eastl | bound | West | bound | Southeastbound | | |
| Lane Configuration | 1 | | ir | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | |
| Crosswalk | y | es | yes | | yes | | |

| Nama | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|
| Name | | | | | | 1 |
| Base Volume Input [veh/h] | 0 | 237 | 19 | 76 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 5.00 | 5.30 | 14.50 | 2.00 | 2.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 237 | 19 | 76 | 0 | 0 |
| Peak Hour Factor | 1.0000 | 0.8590 | 0.5940 | 0.8260 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 69 | 8 | 23 | 0 | 0 |
| Total Analysis Volume [veh/h] | 0 | 276 | 32 | 92 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | 0 | |) |
| Bicycle Volume [bicycles/h] | | 0 | 0 | | | 0 |

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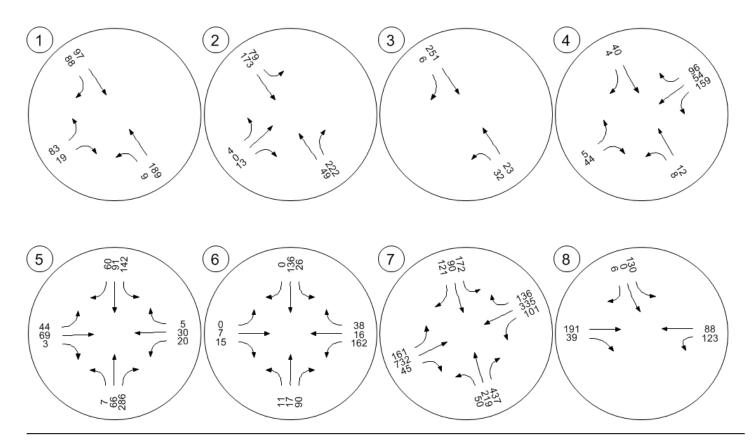
Intersection Settings

| Priority Scheme | Free | Free | Stop |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
|------------------------------------|------|------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 7.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | Α | A | Α | А | | | |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | 0. | 00 | 0 | .00 | 0. | 00 | |
| Approach LOS | , | A A | | | | А | |
| d_I, Intersection Delay [s/veh] | 0.00 | | | | | | |
| Intersection LOS | A | | | | | | |

Traffic Volume - Base Volume

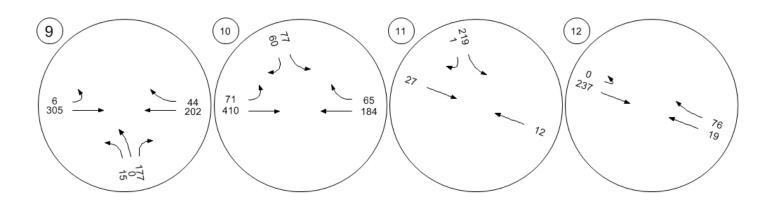




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Traffic Volume - Base Volume

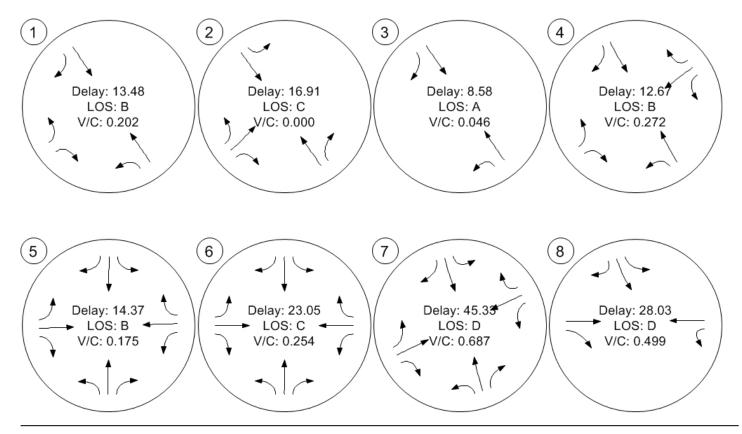




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Traffic Conditions

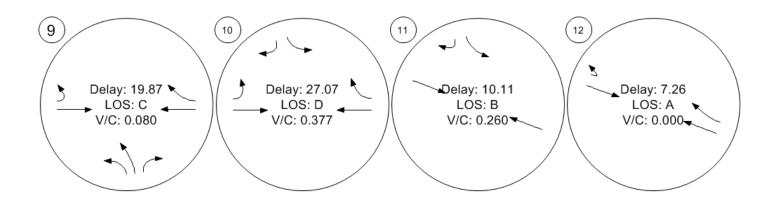




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Traffic Conditions





erated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

I-15 Corridor Study

Vistro File: F:\...\I-15 Corridor.vistropdb Report File: F:\...\LOS_Report_PM.pdf Scenario 2: PM Scenario

9/15/2014

Intersection Analysis Summary

| ID | Intersection Name | Control Type | Method | Worst Mvmt | V/C | Delay (s/veh) | LOS |
|----|----------------------------------------|--------------|---------|------------|-------|---------------|-----|
| 1 | Tri Hill and Frontage Airport
Rd | Two-way stop | HCM2010 | NEBL | 0.256 | 14.5 | В |
| 2 | I-15 NB and Airport Rd | Two-way stop | HCM2010 | NEBT | 0.053 | 55.4 | F |
| 3 | I-15 SB On and Airport RD | Two-way stop | HCM2010 | NWBL | 0.063 | 11.0 | В |
| 4 | I-15 SB Off and Airport RD
Frontage | Two-way stop | HCM2010 | SWBL | 0.660 | 35.3 | Е |
| 5 | 14th St SW and I-315 EB | Signalized | HCM2010 | NBL | 0.368 | 13.0 | В |
| 6 | 14th St SW and I-315 WB | Signalized | HCM2010 | EBR | 0.536 | 19.4 | В |
| 7 | Fox Farm and I-315 | Signalized | HCM2010 | NBT | 0.795 | 38.5 | D |
| 8 | Central Ave and I15 SB | Two-way stop | HCM2010 | SBL | 0.432 | 42.0 | Е |
| 9 | Central Ave and I-15 NB | Two-way stop | HCM2010 | NBL | 0.303 | 29.1 | D |
| 10 | Central Ave and Vaughn Rd | Two-way stop | HCM2010 | SBL | 0.576 | 65.0 | F |
| 11 | Vaughn Rd and I-15 SB | Two-way stop | HCM2010 | SBL | 0.177 | 10.1 | В |
| 12 | Vaughn Rd and I-15 NB | Two-way stop | HCM2010 | EBL | 0.000 | 7.3 | Α |

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #1: Tri Hill and Frontage Airport Rd

Control Type:Two-way stopDelay (sec / veh):14.5Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.256

Intersection Setup

| Name | | | | | | | |
|------------------------|---------|---------|---------|----------|----------------|----------|--|
| Approach | Northea | stbound | Northwe | estbound | Southeastbound | | |
| Lane Configuration | т | | ηİ | | 1 | + | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | |
| Crosswalk | y | es | yes | | yes | | |

| Name | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 75 | 7 | 9 | 160 | 207 | 70 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.70 | 0.00 | 22.20 | 33.80 | 18.90 | 15.80 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 75 | 7 | 9 | 160 | 207 | 70 |
| Peak Hour Factor | 0.5680 | 0.4380 | 0.7500 | 0.8000 | 0.8480 | 0.8330 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 33 | 4 | 3 | 50 | 61 | 21 |
| Total Analysis Volume [veh/h] | 132 | 16 | 12 | 200 | 244 | 84 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | | 0 |



Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.26 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | | |
|------------------------------------|-------------|-------|------|-----------|------|------|--|--|
| d_M, Delay for Movement [s/veh] | 14.52 12.30 | | 8.23 | 8.23 0.00 | | 0.00 | | |
| Movement LOS | В | В | А | A | Α | A | | |
| 95th-Percentile Queue Length [veh] | 1.12 | 1.12 | 0.03 | 0.00 | 0.00 | 0.00 | | |
| 95th-Percentile Queue Length [ft] | 28.04 | 28.04 | 0.81 | 0.00 | 0.00 | 0.00 | | |
| d_A, Approach Delay [s/veh] | 14 | .28 | 0. | 47 | 0.0 | 00 | | |
| Approach LOS | E | 3 | A | | | | | |
| d_I, Intersection Delay [s/veh] | 3.22 | | | | | | | |
| Intersection LOS | В | | | | | | | |

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #2: I-15 NB and Airport Rd

Control Type:Two-way stopDelay (sec / veh):55.4Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):0.053

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach | No | Northeastbound | | Sou | Southwestbound | | Northwestbound | | | Southeastbound | | |
| Lane Configuration | | + | | | | | F | | 4 | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | | 0.00 | | 0.00 | | 0.00 | | | | |
| Crosswalk | | yes | | | yes | | | yes | | yes | | |

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 2 | 2 | 31 | 0 | 0 | 0 | 0 | 47 | 197 | 307 | 236 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 0.00 | 47.40 | 2.00 | 2.00 | 2.00 | 2.00 | 40.40 | 20.80 | 0.70 | 17.40 | 2.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2 | 2 | 31 | 0 | 0 | 0 | 0 | 47 | 197 | 307 | 236 | 0 |
| Peak Hour Factor | 0.5000 | 0.5000 | 0.7750 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.6910 | 0.8210 | 0.6910 | 0.8680 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 1 | 10 | 0 | 0 | 0 | 0 | 17 | 60 | 111 | 68 | 0 |
| Total Analysis Volume [veh/h] | 4 | 4 | 40 | 0 | 0 | 0 | 0 | 68 | 240 | 444 | 272 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | • | | 0 | | 0 | | | 0 | | |

Version 2.00-10

Intersection Settings

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.05 | 0.05 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 | 0.00 | 0.00 |
|------------------------------------|-------|-------|-------|------|------|------|------|------|------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 48.66 | 55.37 | 12.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.40 | 0.00 | 0.00 |
| Movement LOS | E | F | В | | | | | Α | Α | Α | Α | |
| 95th-Percentile Queue Length [veh] | 0.56 | 0.56 | 0.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.74 | 3.74 | 0.00 |
| 95th-Percentile Queue Length [ft] | 13.96 | 13.96 | 13.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 93.56 | 93.56 | 0.00 |
| d_A, Approach Delay [s/veh] | | 19.19 | 0.00 | | | 0.00 | | | | 5.83 | | |
| Approach LOS | | С | | | Α Α | | | | | A | | |
| d_I, Intersection Delay [s/veh] | 4.75 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #3: I-15 SB On and Airport RD

Control Type:Two-way stopDelay (sec / veh):11.0Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.063

Intersection Setup

| Name | | | | | | | |
|------------------------|---------|----------|-----------|----------|----------------|--------|--|
| Approach | Northea | astbound | Northwe | estbound | Southeastbound | | |
| Lane Configuration | | | • | 1 | F | | |
| Turning Movement | Left | Right | Left Thru | | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 0.00 | 30.00 | | 30.00 | | |
| Grade [%] | 0. | .00 | 0.00 | | 0. | .00 | |
| Crosswalk | у | es | у | es | yes | | |

| Name | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 0 | 0 | 25 | 21 | 542 | 14 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 64.00 | 19.10 | 7.30 | 0.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 25 | 21 | 542 | 14 |
| Peak Hour Factor | 1.0000 | 1.0000 | 0.6250 | 0.7500 | 0.7450 | 0.7000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 10 | 7 | 182 | 5 |
| Total Analysis Volume [veh/h] | 0 | 0 | 40 | 28 | 728 | 20 |
| Pedestrian Volume [ped/h] | (| 0 | | 0 | | 0 |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | 0 |



Version 2.00-10

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | | | |
|------------------------------------|------|------|-------|-----------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 11.03 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | | | В | A | A | A | | | |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 0.36 | 0.36 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 8.91 | 8.91 8.91 | | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 0. | 00 | 6. | 49 | 0.00 | | | | |
| Approach LOS | / | A | , | , | 4 | | | | |
| d_I, Intersection Delay [s/veh] | 0.54 | | | | | | | | |
| Intersection LOS | В | | | | | | | | |

ith PTV VISTRO I-15 Corridor Study

Intersection Level Of Service Report #4: I-15 SB Off and Airport RD Frontage

Scenario 2: 2: PM Scenario

Control Type:Two-way stopDelay (sec / veh):35.3Analysis Method:HCM2010Level Of Service:EAnalysis Period:15 minutesVolume to Capacity (v/c):0.660

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------|----------|----------------|--------|--------|----------------|--------|--------|
| Approach | No | Northeastbound | | Sou | Southwestbound | | Northwestbound | | | Southeastbound | | |
| Lane Configuration | | T | | | 4 | | + | | F | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | 00 30.00 | | 30.00 | | 30.00 | | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | | 0.00 | | | | |
| Crosswalk | | yes | | | yes | | | yes | | yes | | |

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 0 | 0 | 55 | 217 | 26 | 47 | 8 | 15 | 0 | 0 | 286 | 1 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 2.00 | 1.80 | 18.90 | 11.50 | 2.10 | 37.50 | 6.70 | 2.00 | 2.00 | 1.00 | 0.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 55 | 217 | 26 | 47 | 8 | 15 | 0 | 0 | 286 | 1 |
| Peak Hour Factor | 1.0000 | 1.0000 | 0.7240 | 0.8350 | 0.7220 | 0.6910 | 0.6670 | 0.7500 | 1.0000 | 1.0000 | 0.6810 | 0.2500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 19 | 65 | 9 | 17 | 3 | 5 | 0 | 0 | 105 | 1 |
| Total Analysis Volume [veh/h] | 0 | 0 | 76 | 260 | 36 | 68 | 12 | 20 | 0 | 0 | 420 | 4 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | | | 0 | | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

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Intersection Settings

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.12 | 0.66 | 0.08 | 0.06 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|-------|-------|-------|--------|--------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 14.08 | 0.00 | 11.47 | 35.33 | 33.80 | 8.64 | 8.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | В | | В | E | D | Α | Α | Α | | | Α | Α |
| 95th-Percentile Queue Length [veh] | 0.41 | 0.00 | 0.41 | 5.82 | 5.82 | 0.21 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 10.19 | 0.00 | 10.19 | 145.42 | 145.42 | 5.15 | 2.56 | 2.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 11.47 | | | 30.19 | | | 3.29 | | | 0.00 | |
| Approach LOS | | В | | | D | | | Α | | A | | |
| d_I, Intersection Delay [s/veh] | | | | | 13.35 | | | | | | | |
| Intersection LOS | | | | | | E | Е | | | | | |

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #5: 14th St SW and I-315 EB

Control Type: Signalized Delay (sec / veh): 13.0
Analysis Method: HCM2010 Level Of Service: B
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.368

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|------------------------------|--------|--------|----------|--------|--------|-----------|--------|--------|-----------|--------|
| Approach | ١ | lorthboun | d | S | outhboun | d | E | Eastbound | d | ٧ | Vestbound | d |
| Lane Configuration | | 1 Pri Left Thru Right | | | חור | | | ٦١٢ | | | عاد | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | | |
| Grade [%] | 0.00 | | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | yes | | yes | | yes | | | yes | | | | |

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 13 | 82 | 260 | 95 | 396 | 262 | 107 | 168 | 10 | 102 | 50 | 31 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 2.40 | 1.20 | 4.30 | 1.30 | 0.40 | 0.90 | 0.00 | 0.00 | 1.00 | 0.00 | 12.90 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 82 | 260 | 95 | 396 | 262 | 107 | 168 | 10 | 102 | 50 | 31 |
| Peak Hour Factor | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 22 | 69 | 25 | 106 | 70 | 29 | 45 | 3 | 27 | 13 | 8 |
| Total Analysis Volume [veh/h] | 14 | 87 | 277 | 101 | 422 | 279 | 114 | 179 | 11 | 109 | 53 | 33 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate | / 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | 0 | | 0 | | | 0 | | | |
| Bicycle Volume [bicycles/h] | 0 | | | | 0 | | | 0 | | | 0 | |



Version 2.00-10

Intersection Settings

| Located in CBD | no |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 2 | 3 | 0 | 6 | 7 | 7 | 4 | 0 | 3 | 8 | 0 |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 5 | 15 | 0 | 5 | 15 | 15 | 5 | 0 | 15 | 15 | 0 |
| Maximum Green [s] | 0 | 50 | 20 | 0 | 50 | 20 | 20 | 45 | 0 | 20 | 45 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 22 | 18 | 0 | 22 | 18 | 18 | 20 | 0 | 18 | 20 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 10 | 0 | 10 | 0 | 0 | 10 | 0 | 10 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Scenario 2: 2: PM Scenario

Lane Group Calculations

| Lane Group | L | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|------|------|-------|-------|------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 3.00 | 3.00 | 5.00 | 5.00 | 4.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 0.00 | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 18 | 18 | 38 | 18 | 18 | 38 | 32 | 14 | 14 | 32 | 14 | 14 |
| g / C, Green / Cycle | 0.31 | 0.31 | 0.64 | 0.31 | 0.31 | 0.64 | 0.54 | 0.24 | 0.24 | 0.54 | 0.24 | 0.24 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.05 | 0.17 | 0.08 | 0.22 | 0.17 | 0.07 | 0.09 | 0.01 | 0.07 | 0.03 | 0.02 |
| s, saturation flow rate [veh/h] | 980 | 1855 | 1596 | 1276 | 1876 | 1609 | 1573 | 1900 | 1615 | 1497 | 1900 | 1430 |
| c, Capacity [veh/h] | 181 | 566 | 1018 | 416 | 572 | 1027 | 1004 | 459 | 390 | 897 | 459 | 345 |
| d1, Uniform Delay [s] | 26.77 | 15.19 | 4.75 | 19.22 | 18.69 | 4.75 | 6.76 | 19.06 | 17.38 | 6.92 | 17.75 | 17.67 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.18 | 0.12 | 0.14 | 0.30 | 1.88 | 0.14 | 0.05 | 0.54 | 0.03 | 0.06 | 0.11 | 0.12 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.08 | 0.15 | 0.27 | 0.24 | 0.74 | 0.27 | 0.11 | 0.39 | 0.03 | 0.12 | 0.12 | 0.10 |
|------------------------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| d, Delay for Lane Group [s/veh] | 26.95 | 15.32 | 4.89 | 19.52 | 20.56 | 4.89 | 6.81 | 19.60 | 17.41 | 6.98 | 17.86 | 17.79 |
| Lane Group LOS | С | В | Α | В | С | Α | Α | В | В | Α | В | В |
| Critical Lane Group | no | no | no | no | yes | yes | no | yes | no | no | no | no |
| 50th-Percentile Queue Length [veh] | 0.19 | 0.81 | 1.09 | 1.12 | 5.03 | 1.10 | 0.59 | 2.00 | 0.11 | 0.57 | 0.55 | 0.34 |
| 50th-Percentile Queue Length [ft] | 4.75 | 20.31 | 27.29 | 28.03 | 125.69 | 27.47 | 14.87 | 49.98 | 2.78 | 14.22 | 13.67 | 8.53 |
| 95th-Percentile Queue Length [veh] | 0.34 | 1.46 | 1.96 | 2.02 | 8.70 | 1.98 | 1.07 | 3.60 | 0.20 | 1.02 | 0.98 | 0.61 |
| 95th-Percentile Queue Length [ft] | 8.55 | 36.56 | 49.12 | 50.46 | 217.62 | 49.44 | 26.77 | 89.97 | 5.01 | 25.60 | 24.60 | 15.36 |



Version 2.00-10

Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 26.95 | 15.32 | 4.89 | 19.52 | 20.56 | 4.89 | 6.81 | 19.60 | 17.41 | 6.98 | 17.86 | 17.79 |
|---------------------------------|-------|-------|------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Movement LOS | С | C B A | | | С | Α | Α | В | В | Α | В | В |
| d_A, Approach Delay [s/veh] | | 8.11 | | | 14.98 | | | 14.72 | | 11.77 | | |
| Approach LOS | | А | | | В | | | В | | | | |
| d_I, Intersection Delay [s/veh] | | | | | | 13 | | | | | | |
| Intersection LOS | | | | | | I | 3 | | | | | |
| Intersection V/C | | | | 0.368 | | | | | | | | |

Sequence

| Ring 1 | 2 | 7 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 6 | 3 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #6: 14th St SW and I-315 WB

Control Type: Signalized Delay (sec / veh): 19.4
Analysis Method: HCM2010 Level Of Service: B
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.536

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------------|-------|-------|----------------------|-------|-------|------------|--------|
| Approach | ١ | lorthboun | d | S | Southboun | d | ı | Eastbound | d | ٧ | Vestbound | d |
| Lane Configuration | | Left Thru Right | | | ٦F | | | + | | | 4 r | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | | 100.00 100.00 100.00 | | | 100.00 | 100.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | | |
| Grade [%] | 0.00 | | 0.00 | | | | 0.00 | | 0.00 | | | |
| Crosswalk | yes | | yes | | | | yes | | yes | | | |

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 5 | 76 | 146 | 22 | 131 | 2 | 3 | 5 | 19 | 638 | 12 | 142 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 40.00 | 6.60 | 0.70 | 0.00 | 2.30 | 0.00 | 0.00 | 0.00 | 15.80 | 1.80 | 8.30 | 4.20 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 5 | 76 | 146 | 22 | 131 | 2 | 3 | 5 | 19 | 638 | 12 | 142 |
| Peak Hour Factor | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 19 | 37 | 6 | 33 | 1 | 1 | 1 | 5 | 161 | 3 | 36 |
| Total Analysis Volume [veh/h] | 5 | 77 | 148 | 22 | 133 | 2 | 3 | 5 | 19 | 646 | 12 | 144 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate | / 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | 0 | | 0 | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | | 0 | | | 0 | | | 0 | |



Intersection Settings

| Located in CBD | yes |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 2 | 0 |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Maximum Green [s] | 0 | 35 | 40 | 0 | 35 | 0 | 0 | 25 | 0 | 0 | 40 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 25 | 19 | 0 | 25 | 0 | 0 | 16 | 0 | 0 | 19 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 9 | 7 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 11 | 7 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | | | no | | | no | |
| Maximum Recall | | no | no | | no | | | no | | | no | |
| Pedestrian Recall | | no | no | | no | | | no | | | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Scenario 2: 2: PM Scenario

Lane Group Calculations

| Lane Group | L | С | R | L | С | С | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|-------|-------|------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 10 | 10 | 44 | 10 | 10 | 2 | 29 | 29 |
| g / C, Green / Cycle | 0.17 | 0.17 | 0.73 | 0.17 | 0.17 | 0.03 | 0.48 | 0.48 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.05 | 0.10 | 0.02 | 0.08 | 0.02 | 0.44 | 0.10 |
| s, saturation flow rate [veh/h] | 819 | 1604 | 1443 | 1209 | 1667 | 1514 | 1505 | 1395 |
| c, Capacity [veh/h] | 164 | 265 | 1050 | 223 | 275 | 46 | 721 | 668 |
| d1, Uniform Delay [s] | 27.03 | 21.97 | 2.49 | 25.56 | 22.75 | 28.72 | 14.48 | 9.09 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.19 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.07 | 0.60 | 0.06 | 0.19 | 1.35 | 11.38 | 8.39 | 0.16 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.03 | 0.29 | 0.14 | 0.10 | 0.49 | 0.59 | 0.91 | 0.22 |
|------------------------------------|-------|-------|-------|-------|-------|-------|--------|-------|
| d, Delay for Lane Group [s/veh] | 27.10 | 22.57 | 2.55 | 25.75 | 24.11 | 40.09 | 22.87 | 9.25 |
| Lane Group LOS | С | С | Α | С | С | D | С | Α |
| Critical Lane Group | no | no | no | no | yes | yes | yes | no |
| 50th-Percentile Queue Length [veh] | 0.07 | 0.94 | 0.29 | 0.29 | 1.72 | 0.51 | 8.46 | 0.96 |
| 50th-Percentile Queue Length [ft] | 1.71 | 23.40 | 7.27 | 7.21 | 43.07 | 12.75 | 211.56 | 24.03 |
| 95th-Percentile Queue Length [veh] | 0.12 | 1.68 | 0.52 | 0.52 | 3.10 | 0.92 | 13.23 | 1.73 |
| 95th-Percentile Queue Length [ft] | 3.07 | 42.12 | 13.09 | 12.99 | 77.53 | 22.96 | 330.84 | 43.26 |



Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 27.10 | 22.57 | 2.55 | 25.75 | 24.11 | 24.11 | 40.09 | 40.09 | 40.09 | 22.87 | 22.87 | 9.25 |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Movement LOS | С | С | Α | С | С | С | D | D | D | С | С | А |
| d_A, Approach Delay [s/veh] | | 9.78 | | | 24.34 | | | 40.09 | | | 20.42 | |
| Approach LOS | | Α | | | С | | | D | | | С | |
| d_I, Intersection Delay [s/veh] | | | | | | 19 | .35 | | | | | |
| Intersection LOS | В | | | | | | | | | | | |
| Intersection V/C | 0.536 | | | | | | | | | | | |

Sequence

| Ring 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | - | - | - | - | - | - | _ | - | - | - | - | - | - | - | 1 | - |
| Ring 3 | - | - | - | - | - | - | _ | - | - | - | - | - | - | - | 1 | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



nerated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #7: Fox Farm and I-315

Control Type:SignalizedDelay (sec / veh):38.5Analysis Method:HCM2010Level Of Service:DAnalysis Period:15 minutesVolume to Capacity (v/c):0.795

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------|--------|--------|-----------|--------|--------|-----------|--------|
| Approach | ١ | Northboun | d | S | outhboun | d | No | rtheastbo | und | Sou | ıthwestbo | und |
| Lane Configuration | | 117 | | | ۱۱۱۲ | | | Шь | | • | ıIIIr | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 0 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | |
| Grade [%] | 0.00 | | | | 0.00 | | | 0.00 | | | 0.00 | |
| Crosswalk | | yes | | | yes | | | yes | | | yes | |

Volumes

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 71 | 155 | 227 | 153 | 274 | 325 | 242 | 706 | 103 | 486 | 874 | 250 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.80 | 1.90 | 0.40 | 1.30 | 0.70 | 2.10 | 2.50 | 3.60 | 2.90 | 0.40 | 3.90 | 1.60 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 71 | 155 | 227 | 153 | 274 | 325 | 242 | 706 | 103 | 486 | 874 | 250 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 19 | 42 | 62 | 42 | 74 | 88 | 66 | 192 | 28 | 132 | 238 | 68 |
| Total Analysis Volume [veh/h] | 77 | 168 | 247 | 166 | 298 | 353 | 263 | 767 | 112 | 528 | 950 | 272 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate | / 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |



Intersection Settings

| Located in CBD | yes |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 1 | 8 | 0 | 3 | 6 | 6 | 4 | 0 | 8 | 2 | 5 |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 5 | 5 | 5 | 0 | 5 | 5 | 0 |
| Maximum Green [s] | 0 | 60 | 60 | 0 | 60 | 60 | 60 | 60 | 0 | 60 | 60 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 31 | 28 | 0 | 20 | 25 | 25 | 41 | 0 | 28 | 44 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| l2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

I-15 Corridor Study Scenario 2: 2: PM Scenario

Lane Group Calculations

| Lane Group | С | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 3.00 | 3.00 | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 1.00 | 3.00 | 3.00 | 1.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 16 | 16 | 75 | 25 | 25 | 55 | 25 | 42 | 42 | 24 | 40 | 40 |
| g / C, Green / Cycle | 0.13 | 0.13 | 0.62 | 0.21 | 0.21 | 0.46 | 0.21 | 0.35 | 0.35 | 0.20 | 0.34 | 0.34 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.11 | 0.17 | 0.13 | 0.09 | 0.25 | 0.17 | 0.24 | 0.08 | 0.17 | 0.30 | 0.19 |
| s, saturation flow rate [veh/h] | 1604 | 1527 | 1448 | 1279 | 3233 | 1424 | 1589 | 3143 | 1413 | 3150 | 3134 | 1431 |
| c, Capacity [veh/h] | 211 | 201 | 903 | 303 | 682 | 657 | 332 | 1093 | 491 | 624 | 1055 | 482 |
| d1, Uniform Delay [s] | 47.76 | 50.63 | 10.25 | 45.27 | 41.14 | 23.11 | 44.98 | 33.77 | 27.73 | 46.37 | 37.89 | 32.60 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.21 | 7.40 | 0.16 | 1.55 | 0.44 | 0.68 | 4.26 | 0.83 | 0.23 | 3.29 | 3.12 | 1.04 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.40 | 0.81 | 0.27 | 0.55 | 0.44 | 0.54 | 0.79 | 0.70 | 0.23 | 0.85 | 0.90 | 0.56 |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| d, Delay for Lane Group [s/veh] | 48.97 | 58.03 | 10.41 | 46.82 | 41.59 | 23.80 | 49.23 | 34.60 | 27.96 | 49.65 | 41.02 | 33.65 |
| Lane Group LOS | D | E | В | D | D | С | D | С | С | D | D | С |
| Critical Lane Group | no | no | yes | no | no | yes | yes | no | no | no | yes | no |
| 50th-Percentile Queue Length [veh] | 2.37 | 5.13 | 2.92 | 4.73 | 3.88 | 7.19 | 7.80 | 9.70 | 2.33 | 7.85 | 13.56 | 6.60 |
| 50th-Percentile Queue Length [ft] | 59.22 | 128.16 | 73.04 | 118.23 | 97.06 | 179.81 | 194.94 | 242.50 | 58.19 | 196.24 | 339.12 | 164.94 |
| 95th-Percentile Queue Length [veh] | 4.26 | 8.84 | 5.26 | 8.30 | 6.99 | 11.59 | 12.38 | 14.81 | 4.19 | 12.44 | 19.60 | 10.81 |
| 95th-Percentile Queue Length [ft] | 106.59 | 220.99 | 131.48 | 207.39 | 174.71 | 289.77 | 309.43 | 370.20 | 104.74 | 311.11 | 490.12 | 270.25 |

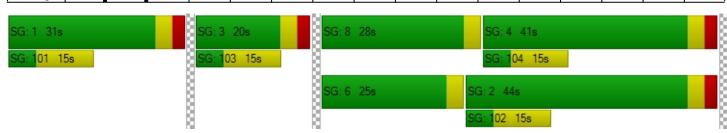


Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 48.97 | 57.68 | 10.41 | 46.82 | 41.59 | 23.80 | 49.23 | 34.60 | 27.96 | 49.65 | 41.02 | 33.65 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Movement LOS | D | E | В | D | D | С | D | С | С | D | D | С |
| d_A, Approach Delay [s/veh] | | 32.58 | | | 34.96 | | | 37.32 | | | 42.48 | |
| Approach LOS | | С | | | С | | | D | | | D | |
| d_I, Intersection Delay [s/veh] | | | | | | 38 | .46 | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.795 | | | | | | | | | | | |

Sequence

| F | Ring 1 | 1 | 3 | 8 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F | Ring 2 | | - | 6 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| F | Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| F | Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #8: Central Ave and I15 SB

Control Type:Two-way stopDelay (sec / veh):42.0Analysis Method:HCM2010Level Of Service:EAnalysis Period:15 minutesVolume to Capacity (v/c):0.432

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|-----------|--------|--------|----------|--------|--------|------------|--------|
| Approach | S | outhboun | d | | Eastbound | d | ١ | Vestboun | d | Nor | rthwestboo | und |
| Lane Configuration | | ጎፐ | | | ٦٢ | | | 1 | | | | |
| Turning Movement | Left | Left Thru Right | | | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30.00 | | | | 30.00 | | | 30.00 | | | 30.00 | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | | yes | | | yes | | | yes | | | yes | |

Volumes

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 66 | 0 | 6 | 0 | 166 | 30 | 230 | 299 | 0 | 0 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 6.00 | 0.00 | 0.00 | 2.00 | 0.60 | 0.00 | 6.50 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 66 | 0 | 6 | 0 | 166 | 30 | 230 | 299 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.9170 | 1.0000 | 0.7500 | 1.0000 | 0.8470 | 0.8330 | 0.8980 | 0.8690 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 18 | 0 | 2 | 0 | 49 | 9 | 64 | 86 | 0 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 72 | 0 | 8 | 0 | 196 | 36 | 256 | 344 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.43 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
|------------------------------------|-------|-------|-------|------|------|------|-------|------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 42.03 | 39.90 | 10.18 | 0.00 | 0.00 | 0.00 | 8.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | E | E | В | | Α | Α | Α | Α | | | | | |
| 95th-Percentile Queue Length [veh] | 1.96 | 1.96 | 0.03 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 48.88 | 48.88 | 0.86 | 0.00 | 0.00 | 0.00 | 17.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | | 38.84 | | 0.00 | | 3.54 | | | 0.00 | | | | |
| Approach LOS | | E | A | | | | | A | | | А | | |
| d_I, Intersection Delay [s/veh] | | 5.73 | | | | | | | | | | | |
| Intersection LOS | | | | | | - | E | | | | | | |

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #9: Central Ave and I-15 NB

Control Type:Two-way stopDelay (sec / veh):29.1Analysis Method:HCM2010Level Of Service:DAnalysis Period:15 minutesVolume to Capacity (v/c):0.303

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-----------|--------|--------|-----------|--------|-----------|--------|--------|----------------|--------|--------|
| Approach | ١ | Northboun | d | 1 | Eastbound | | Westbound | | | Southeastbound | | und |
| Lane Configuration | | † | | 1 | | lir | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | |
| Grade [%] | | 0.00 | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | | yes | | | yes | | yes | | | yes | | |

Volumes

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 57 | 0 | 170 | 5 | 249 | 0 | 0 | 471 | 113 | 0 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 1.80 | 0.00 | 7.00 | 0.00 | 2.00 | 2.00 | 2.00 | 4.60 | 0.90 | 2.00 | 2.00 | 2.00 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 57 | 0 | 170 | 5 | 249 | 0 | 0 | 471 | 113 | 0 | 0 | 0 |
| Peak Hour Factor | 0.7130 | 1.0000 | 0.7590 | 0.4170 | 0.8650 | 1.0000 | 1.0000 | 0.9350 | 0.8310 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 0 | 56 | 3 | 72 | 0 | 0 | 126 | 34 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 80 | 0 | 224 | 12 | 288 | 0 | 0 | 504 | 136 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | 0 | | 0 | | | 0 | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.30 | 0.00 | 0.30 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|-------|------------|-------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 29.07 | 27.04 | 20.30 | 8.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | D | D | С | Α | Α | | | Α | Α | | | |
| 95th-Percentile Queue Length [veh] | 3.98 | 3.98 | 3.98 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 99.39 | 99.39 | 99.39 | 0.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 22.61 0.34 | | 0.00 | | | 0.00 | | | | | |
| Approach LOS | | С | C A A | | | | | А | | | | |
| d_I, Intersection Delay [s/veh] | 5.61 | | | | | | | | | | | |
| Intersection LOS | | | | | | |) | | | | | |

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #10: Central Ave and Vaughn Rd

Control Type:Two-way stopDelay (sec / veh):65.0Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):0.576

Intersection Setup

| Name | | | | | | | |
|------------------------|--------|------------|--------|--------|-----------|--------|--|
| Approach | South | Southbound | | oound | Westbound | | |
| Lane Configuration | ₩. | | ٦ | 1 | i h | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | 0.00 | |
| Grade [%] | 0.00 | | 0. | 00 | 0.00 | | |
| Crosswalk | y | es | ye | es | yes | | |

Volumes

| Name | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 68 | 121 | 66 | 361 | 462 | 76 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.90 | 1.60 | 1.50 | 4.00 | 3.40 | 2.60 |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 68 | 121 | 66 | 361 | 462 | 76 |
| Peak Hour Factor | 0.6540 | 0.9450 | 0.7500 | 0.7910 | 0.8680 | 0.7310 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 26 | 32 | 22 | 114 | 133 | 26 |
| Total Analysis Volume [veh/h] | 104 | 128 | 88 | 456 | 532 | 104 |
| Pedestrian Volume [ped/h] | | 0 | | 0 | | 0 |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | | 0 |



Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.58 | 0.25 | 0.09 | 0.00 | 0.01 | 0.00 | |
|------------------------------------|--------|--------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 65.02 | 52.12 | 9.18 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | F | F | Α | A | А | Α | |
| 95th-Percentile Queue Length [veh] | 6.75 | 6.75 | 0.31 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 168.80 | 168.80 | 7.64 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | 57. | .91 | 1. | 48 | 0.0 | 00 | |
| Approach LOS | F | = | , | 4 | A | | |
| d_I, Intersection Delay [s/veh] | | | 10 | .09 | | | |
| Intersection LOS | | F | | | | | |

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #11: Vaughn Rd and I-15 SB

Control Type:Two-way stopDelay (sec / veh):10.1Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.177

Intersection Setup

| Name | | | | | | | |
|------------------------|--------|--------|--------|--------|-----------|--------|--|
| Approach | South | bound | Eastl | bound | Westbound | | |
| Lane Configuration | 1 | Ŧ | | | | 1 | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | 0.00 | |
| Grade [%] | 0.00 | | 0. | 0.00 | | .00 | |
| Crosswalk | у | es | y | es | yes | | |

Volumes

| Name | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 143 | 1 | 0 | 53 | 50 | 0 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 7.00 | 0.00 | 2.00 | 7.60 | 4.00 | 2.00 | |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 143 | 1 | 0 | 53 | 50 | 0 | |
| Peak Hour Factor | 0.9410 | 0.2500 | 1.0000 | 0.7790 | 0.8930 | 1.0000 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 38 | 1 | 0 | 17 | 14 | 0 | |
| Total Analysis Volume [veh/h] | 152 | 4 | 0 | 68 | 56 | 0 | |
| Pedestrian Volume [ped/h] | 0 | | | 0 | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | | 0 | |

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
|------------------------------------|-------|-------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 10.11 | 9.46 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | В | А | | А | А | | |
| 95th-Percentile Queue Length [veh] | 0.66 | 0.66 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 16.44 | 16.44 | 0.00 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | 10.09 | | 0.00 | | 0.00 | | |
| Approach LOS | E | 3 | A | | A | | |
| d_I, Intersection Delay [s/veh] | 5.62 | | | | | | |
| Intersection LOS | | | | В | | | |

Generated with PTV VISTRO I-15 Corridor Study Scenario 2: 2: PM Scenario

Intersection Level Of Service Report #12: Vaughn Rd and I-15 NB

Control Type:Two-way stopDelay (sec / veh):7.3Analysis Method:HCM2010Level Of Service:AAnalysis Period:15 minutesVolume to Capacity (v/c):0.000

Intersection Setup

| Name | | | | | | |
|------------------------|-----------|--------|-----------|--------|----------------|--------|
| Approach | Eastbound | | Westbound | | Southeastbound | |
| Lane Configuration | 1 | | 1 | ſ | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30 | 30.00 | | 30.00 | | .00 |
| Grade [%] | 0. | .00 | 0 | 0.00 | | 00 |
| Crosswalk | у | es | у | es | yes | |

Volumes

| Name | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 0 | 165 | 55 | 334 | 0 | 0 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 0.00 | 6.10 | 1.80 | 4.80 | 2.00 | 2.00 | |
| Growth Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [ve | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 0 | 165 | 55 | 334 | 0 | 0 | |
| Peak Hour Factor | 1.0000 | 0.7500 | 0.8090 | 0.9180 | 1.0000 | 1.0000 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 0 | 55 | 17 | 91 | 0 | 0 | |
| Total Analysis Volume [veh/h] | 0 | 220 | 68 | 364 | 0 | 0 | |
| Pedestrian Volume [ped/h] | - | 0 | 0 | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | 0 | |

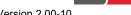


Intersection Settings

| Priority Scheme | Free | Free | Stop |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

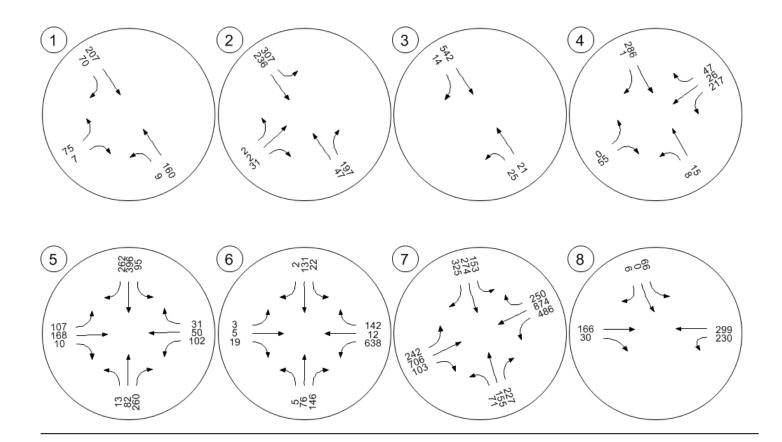
Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
|------------------------------------|------|------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 7.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | Α | А | Α | A | | | |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 0.00 | | |
| Approach LOS | , | 4 | A | | А | | |
| d_I, Intersection Delay [s/veh] | 0.00 | | | | | | |
| Intersection LOS | | | | A | | | |



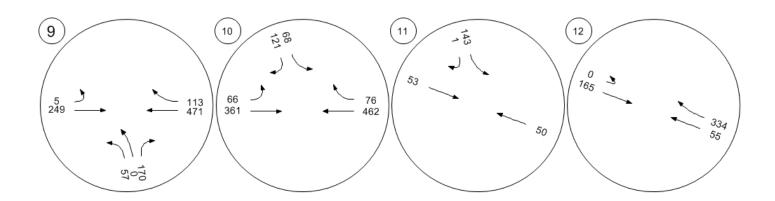
Traffic Volume - Base Volume





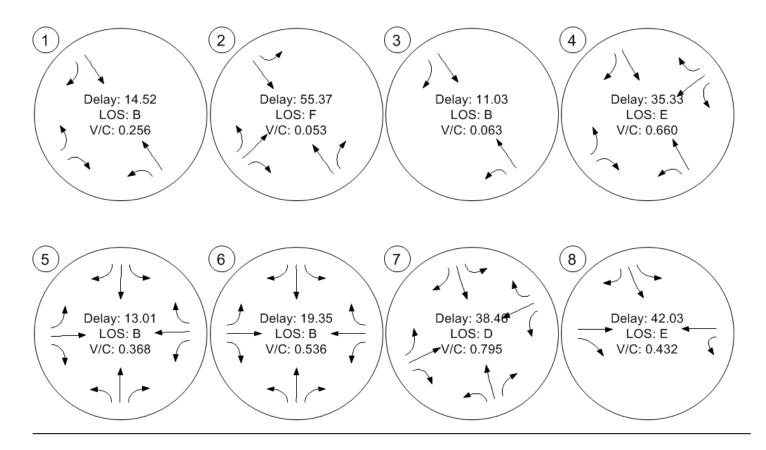
Traffic Volume - Base Volume





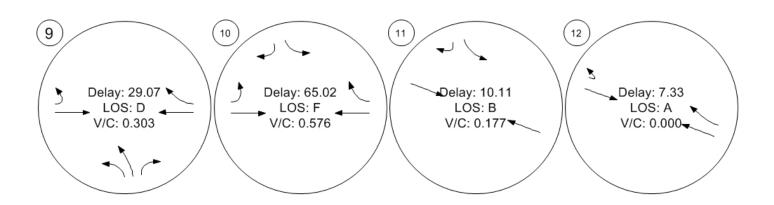
Traffic Conditions

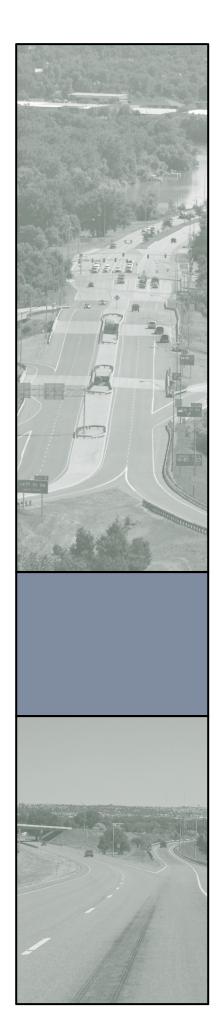




Traffic Conditions









APPENDIX D

Projected Conditions Traffic Data Analysis

| | BASIC FRI | EWAY SE | GMENTS WORKSHEE | ΕT | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsyl
9/15/2014
AM Peak | the | Highway/Direction of Trav
From/To
Jurisdiction
Analysis Year | el <i>I-315 E</i> | astbound |
| • | Corridor Study | | , | | |
| ✓ Oper.(LOS) | - | | Des.(N) | ☐ Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 627 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.87
6
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0 .971 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) | 2
55.0 | ft
ft
ramps/mi
mph | f _{LW} f _{LC} TRD Adjustment | | mph
mph
mph |
| Base free-flow Speed,
BFFS | | mph | FFS | 55.0 | mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times V)$ $x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 371
55.0
6.7
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \times x f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | /estbound
14th Ave |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | □Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 514 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.76
6
0
Level
mi | |
| Calculate Flow Adjus | tments | | Up/Down % | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.971 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) Base free-flow Speed, BFFS | 2
55.0 | ft
ft
ramps/mi
mph
mph | f _{LW} f _{LC} TRD Adjustment FFS | 55.0 | mph
mph
mph
mph |
| LOS and Performanc | e Measures | 5 | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF x)$ $x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 348
55.0
6.3
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FRI | EWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | astbound
14th Ave |
| Project Description I-15 C | Corridor Study | | . , | | |
| ✓ Oper.(LOS) | | | Des.(N) | Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D | 799 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.83
4
0
Level | |
| DDHV = AADT x K x D | | veh/h | Grade % Length Up/Down % | mi | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.980 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance | | ft
ft | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f_{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 55.0 | mph
mph | FFS | 55.0 | mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) | - | pc/h/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N x f _{HV} | pc/h/ln |
| S
D = v _p / S
LOS | 55.0
8.9
A | mph
pc/mi/ln | S $D = v_p / S$ Required Number of Lanes | s, N | mph
pc/mi/ln |
| Glossary | - | - | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| Information ray/Direction of Travel <i>I-315 Westbound</i> To |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To |
| Planning Data Hour Factor, PHF 0.93 cks and Buses, P _T 5 c, P _R 0 ral Terrain: Level e % Length mi Up/Down % 1.2 1/[1+P _T (E _T -1)+P _R (E _R -1)] 0.976 |
| Hour Factor, PHF 0.93 cks and Buses, P _T 5 s, P _R 0 ral Terrain: Level e % Length mi Up/Down % 1.2 1/[1+P _T (E _T -1)+P _R (E _R -1)] 0.976 |
| Hour Factor, PHF 0.93 cks and Buses, P _T 5 s, P _R 0 ral Terrain: Level e % Length mi Up/Down % 1.2 1/[1+P _T (E _T -1)+P _R (E _R -1)] 0.976 |
| cks and Buses, P _T 5 s, P _R 0 ral Terrain: Level e % Length mi Up/Down % 1.2 1/[1+P _T (E _T -1) + P _R (E _R -1)] 0.976 |
| 2 % Length <i>mi</i> Up/Down % 1.2 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.976 |
| 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] <i>0.976</i> |
| 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] <i>0.976</i> |
| |
| Speed Adj and FFS |
| mph |
| mph |
| Adjustment mph |
| 55.0 mph |
| gn (N) |
| n (N)
n LOS
/ or DDHV) / (PHF x N x f _{HV} pc/h/ln |
| mph pc/mi/ln red Number of Lanes, N |
| or Location |
| |
| i |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | astbound
re to Fox Farm |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ∐Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 979 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.83
4
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _⊤ | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.980 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | - | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured) | 55.0 | mph | FFS | 55 O | · |
| Base free-flow Speed,
BFFS | | mph | irro | 55.0 | mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF x)$ $x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 602
55.0
10.9
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| • | e enca | | i dotoi Eocation | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|--------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | estbound
to Fox Farm |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ∐ Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 585 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF %Trucks and Buses, P _T %RVs, P _R General Terrain: Grade % Length | 0.82
5
0
Level
mi | |
| DDIIV - MADI XIX D | | VCIIIII | Up/Down % | 1111 | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.976 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f | | mnh |
| Number of Lanes, N | 2 | | f _{LW} | | mph |
| Total Ramp Density, TRD | _ | ramps/mi | f _{LC} | | mph |
| FFS (measured) | 55.0 | mph | TRD Adjustment | 55.0 | mph |
| Base free-flow Speed,
BFFS | 00.0 | mph | FFS | 55.0 | mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S | N x f _{HV} 366
55.0
6.7 | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ | N x f _{HV} | pc/h/ln
mph
pc/mi/ln |
| LOS | Α | | Required Number of Lane | s, N | pomimi |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | | | HCS 2010 TM Version 6.2 | | rated: 9/15/2014 8:07 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | astbound
re to Fox Farm |
| Project Description I-15 C | Corridor Study | | | | |
| ☑ Oper.(LOS) | | | Des.(N) | □Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 1216 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.90
3
0
Level
mi | |
| | | | Up/Down % | | _ |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.985 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft
ft | | | |
| Rt-Side Lat. Clearance | 2 | 11 | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | 55.0 | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 55.0 | mph
mph | FFS | 55.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times V)$ $x f_p$ S $D = v_p / S$ LOS | N x f _{HV} 686
55.0
12.5
B | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ | N x f _{HV} | pc/h/ln
mph
pc/mi/ln |
| - | | | Required Number of Lanes | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| Convigat © 2010 University of Floric | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | rated: 0/15/2014 9:11 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | ΕT | |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/15/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | Vestbound
ve to Fox Farm |
| Project Description <i>I-15</i> (| Corridor Study | | | | |
| ✓ Oper.(LOS) | - | | Des.(N) | □Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 1418 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.95
3
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.985 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | <u> </u> | | |
| Rt-Side Lat. Clearance
Number of Lanes, N | 2 | ft | f _{LW} | | mph |
| · | 2 | romno/mi | f _{LC} | | mph |
| Total Ramp Density, TRD
FFS (measured)
Base free-flow Speed,
BFFS | 55.0 | ramps/mi
mph
mph | TRD Adjustment | 55.0 | mph
mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) | N x f _{HV} 758 | pc/h/ln | Design (N) Design LOS v _p = (V or DDHV) / (PHF x | N x f _{HV} | pc/h/ln |
| S
D = v _p / S
LOS | 55.0
13.8
B | mph
pc/mi/ln | $x f_p$) S $D = v_p / S$ Required Number of Lane | s, N | mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design Copyright © 2010 University of Floric | | rved | | | erated: 9/15/2014 8 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ☐ Plaı | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D | 384 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.83
7
0
Level | |
| DDHV = AADT x K x D | | veh/h | Grade % Length Up/Down % | mi | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.966 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width
Rt-Side Lat. Clearance | | ft
ft | , | | |
| Number of Lanes, N | 2 | 11 | f _{LW} | | mph |
| Total Ramp Density, TRD | 2 | romno/mi | f _{LC} | | mph |
| , , | 65.0 | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS)
v _p = (V or DDHV) / (PHF x l | N x f _{HV} | | Design (N) Design LOS | News | |
| x f _p)
S | 65.0 | pc/h/ln
mph | $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N X T _{HV} | pc/h/ln |
| D = v _p / S | 3.7 | pc/mi/ln | S | | mph |
| LOS | 3.7
A | релили | $D = v_p / S$ | | pc/mi/ln |
| LO3 | A | | Required Number of Lane | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | □Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 230 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.83
21
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.905 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N | 2 | ft
ft | f _{LW} | | mph
mph |
| Total Ramp Density, TRD
FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | ramps/mi
mph
mph | TRD Adjustment FFS | 65.0 | mph
mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) S D = v _p / S LOS | N x f _{HV} 153
65.0
2.4
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | ^f Central |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 413 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.97
8
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.962 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N | 2 | ft
ft | f _{LW} | | mph |
| Total Ramp Density, TRD FFS (measured) Base free-flow Speed, BFFS | 65.0 | ramps/mi
mph
mph | f _{LC}
TRD Adjustment
FFS | 65.0 | mph
mph
mph |
| LOS and Performanc | e Measures | ; | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) S D = v _p / S LOS | | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FRI | EWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed | Shane Forsy | the | Highway/Direction of Trave
From/To
Jurisdiction | North o | f Central |
| Analysis Time Period Project Description I-15 C | PM Peak
Corridor Study | | Analysis Year | 2035 | |
| ✓ Oper.(LOS) | Joinadi Ciady | | Pes.(N) | □Plai | nning Data |
| Flow Inputs | | | | | g |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 356 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.79
14
0
Level
mi | |
| DDIIV /VIDIXIX D | | VCIIIII | Up/Down % | **** | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.935 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) Base free-flow Speed, BFFS | 2
65.0 | ft
ft
ramps/mi
mph
mph | f _{LW} f _{LC} TRD Adjustment FFS | 65.0 | mph
mph
mph
mph |
| LOS and Performanc | e Measures | i | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S LOS | N x f _{HV} 241
65.0
3.7
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Emerson Junction |
| Project Description I-15 (| Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 351 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.89
21
0
Level
mi | |
| 70.51 X 10.75 | | VOII/II | Up/Down % | **** | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.905 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft
ft | | | |
| Rt-Side Lat. Clearance
Number of Lanes, N | 2 | 11 | f _{LW} | | mph |
| · | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | 65.0 | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | ; | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x | N x f _{HV} 218 | pc/h/ln | Design (N) Design LOS v _p = (V or DDHV) / (PHF x | N x f.n. | |
| x f _p)
S | 65.0 | mph | x f _p) S | HV | pc/h/ln |
| D = v _p / S | 3.4 | pc/mi/ln | | | mph
pc/mi/ln |
| LOS | Α | | $D = v_p / S$
Required Number of Lanes | s, N | рс/пп/п |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | | | F | | orated: 0/9/2014 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Emerson Junction |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 669 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.87
6
0
Level
mi | |
| Calculate Flow Adjus | tments | | Up/Down % | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.971 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) Base free-flow Speed, BFFS | 2
65.0 | ft
ft
ramps/mi
mph
mph | f _{LW} f _{LC} TRD Adjustment FFS | 65.0 | mph
mph
mph
mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | _ |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 396
65.0
6.1
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | | nuad | 11-3 | Con | erated: 9/8/2014 2: |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | t
f Emerson Junction |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Pes.(N) | ☐ Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 776 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.94
6
0
Level
mi | |
| DDIIV - AADI XIXX | | VCII/II | Up/Down % | 1111 | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2 | |
| Speed Inputs | 1.0 | | Calc Speed Adj and | | |
| Lane Width | | ft | Caic Speed Auj and | 113 | |
| Rt-Side Lat. Clearance | | ft | | | ma m h |
| Number of Lanes, N | 2 | 11 | f _{LW} | | mph |
| Total Ramp Density, TRD | _ | ramps/mi | f _{LC} | | mph |
| FFS (measured) | 65.0 | · | TRD Adjustment | | mph |
| Base free-flow Speed,
BFFS | 03.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x | N x f _{HV 425} | pc/h/ln | Design (N) Design LOS v _p = (V or DDHV) / (PHF x | N v f | |
| x f _p)
S | 65.0 | mph | $x f_p$ | HV HV | pc/h/ln |
| $D = v_p / S$ | 6.5 | pc/mi/ln | S | | mph |
| Los | Α | · | $D = v_p / S$
Required Number of Lane | s, N | pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | | | , , , , , , , , , , , , , , , , , , , | | orated: 0/9/2014 2:1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Emerson Junction |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | □Plaı | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D | 557 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.88
13
0
Level | |
| DDHV = AADT x K x D | | veh/h | Grade % Length Up/Down % | mi | |
| Calculate Flow Adjus | tments | | · | | |
| fp | 1.00 | | E _R | 1.2 | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1)] 0.939 | |
| Speed Inputs | | | Calc Speed Adj and | | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured) | 65.0 | mph | FFS | 65.0 | mph |
| Base free-flow Speed,
BFFS | | mph | | 00.0 | тірп |
| LOS and Performanc | e Measures | 5 | Design (N) | | |
| Operational (LOS)
v _p = (V or DDHV) / (PHF x | N x f | | <u>Design (N)</u>
Design LOS | | |
| x f _p)
S | 65.0 | pc/h/ln | $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N x f _{HV} | pc/h/ln |
| | 5.2 | mph | S | | mph |
| D = v _p / S | | pc/mi/ln | $D = v_p / S$ | | pc/mi/ln |
| LOS | Α | | Required Number of Lanes | s, N | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| BAS | IC FREEWAY SE | GMENTS WORKSHEE | Т | |
|-----------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| eral Information | | Site Information | | |
| | ne Forsythe | Highway/Direction of Trave
From/To
Jurisdiction | | Gore Hill |
| | Peak | Analysis Year | 2035 | |
| ct Description I-15 Corrido ✓ Oper.(LOS) | | Des.(N) | □Plan | ning Data |
| / Inputs | | 500.(14) | | ming Bata |
| ne, V 803
T | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T | 0.90
16 | |
| Hr Prop. of AADT, K Hr Direction Prop, D / = AADT x K x D | veh/h | %RVs, P _R General Terrain: Grade -5.00% Length Up/Down % | 0
Grade
0.69mi
-5.00 | |
| ulate Flow Adjustme | its | | 0.00 | |
| 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
10.926 | |
| ed Inputs | | Calc Speed Adj and I | | |
| Width | ft | - Caro opoda 7 kaj arra 1 | | |
| de Lat. Clearance | ft | f _{LW} | | mph |
| per of Lanes, N 2 | | f _{LC} | | mph |
| Ramp Density, TRD | ramps/mi | TRD Adjustment | | mph |
| measured) 65.0 free-flow Speed, | mph
mph | FFS | 65.0 | mph |
| and Performance Me | asures | Design (N) | | |
| ational (LOS)
V or DDHV) / (PHF x N x f _H | , | Design (N)
Design LOS | | |
| , , , | | $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N x f _{HV} | pc/h/ln |
| , / S | 65.0 mph
7.4 pc/mi/ln | s | | mph |
| ,,, | A po//////// | $D = v_p / S$
Required Number of Lanes | s, N | pc/mi/ln |
| sary | | Factor Location | | |
| Hourly volume D Flow rate F - Level of service B | - Speed - Density -S - Free-flow speed -FS - Base free-flow | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| | olume | LOS, S, FFS, v _p - Exhibits | 11-2, | |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ☐ Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 712 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade 5.00% Lengt | 0.85
7
0
<i>Grade</i>
h 0.69 <i>mi</i> | |
| | | | Up/Down % | 5.00 | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
2.8 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 4.5
1)] 0.891 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) Base free-flow Speed, | 2
65.0 | ft
ft
ramps/mi
mph | f _{LW} f _{LC} TRD Adjustment FFS | 65.0 | mph
mph
mph
mph |
| BFFS | | mph | | | |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S LOS | N x f _{HV} 470
65.0
7.2
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FRI | EEWAT SE | GMENTS WORKSHEE | | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| | Corridor Study | | Alialysis Teal | 2033 | |
| ✓ Oper.(LOS) | | | Des.(N) | ☐ Plar | nning Data |
| Flow Inputs | | | | | _ |
| Volume, V
AADT | 1122 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T | 0.80
10 | |
| Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D
DDHV = AADT x K x D | | veh/h | %RVs, P _R
General Terrain:
Grade -5.00%
Length | 0
Grade
0.69mi | |
| | | | Up/Down % | -5.00 | |
| Calculate Flow Adjus | tments | | | | |
| f_p | 1.00 | | E_R | 1.2 | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ |)] 0.952 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width | | ft | | | |
| Rt-Side Lat. Clearance | | ft | f_LW | | mph |
| Number of Lanes, N | 2 | | f_{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) | N v f | | Design (N) Design LOS | | |
| v _p = (V or DDHV) / (PHF x I
x f _p)
S | 65.0 | pc/h/ln | $v_p = (V \text{ or DDHV}) / (PHF x x f_p)$ | N x f _{HV} | pc/h/ln |
| D = v _p / S | 11.3 | mph
pc/mi/ln | S | | mph |
| LOS | В | ролтип | D = v _p / S
Required Number of Lanes | s, N | pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description I-15 C | Corridor Study | | • | | |
| ✓ Oper.(LOS) | | | Pes.(N) | ☐ Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D | 979 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain: | 0.93
10
0
Grade | |
| DDHV = AADT x K x D | | veh/h | Grade 5.00% Lengtl Up/Down % | h 0.69mi
5.00 | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
2.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 4.5 | |
| Speed Inputs | 2.0 | | Calc Speed Adj and I | | |
| | | ft | Odic Opeca Auj ana i | 10 | |
| Lane Width Rt-Side Lat. Clearance | | ft | f | | mph |
| Number of Lanes, N | 2 | | f _{LW}
f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 6 | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times V)$ $x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 605
65.0
9.3
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ | | pc/h/ln
mph
pc/mi/ln |
| Glassami | | | Required Number of Lanes | 5, IN | |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| DDHV - Directional design | da All Dights Doso | | , , , , , , , , , , , , , , , , , , , | | orated: 0/8/2014 2:17 l |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | 3
of Central |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 519 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.89
14
0
Level
mi | |
| Calculate Flow Adjus | tments | | Up/Down % | | |
| f _p E _T | 1.00
1.5 | | E_R $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.935 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N Total Ramp Density, TRD FFS (measured) Base free-flow Speed, BFFS | 2
65.0 | ft
ft
ramps/mi
mph
mph | f _{LW} f _{LC} TRD Adjustment FFS | 65.0 | mph
mph
mph
mph |
| LOS and Performanc | e Measures | S | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 312
65.0
4.8
A | pc/h/ln
mph
pc/mi/ln | $\frac{\text{Design (N)}}{\text{Design LOS}}$ $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| Speed DDHV - Directional design Copyright © 2010 University of Flori | | nved. | | | erated: 9/8/2014 : |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 569 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.94
8
0
Level
mi | |
| Calculate Flow Adjus | tmonts | | Up/Down % | | |
| | 1.00 | | E _R | 1.2 | |
| f _p | | | | | |
| E _T | 1.5 | | $f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance | | ft
ft | f_{LW} | | mph |
| Number of Lanes, N | 2 | | f_{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 315
65.0
4.8
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | es.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V
AADT
Peak-Hr Prop. of AADT, K
Peak-Hr Direction Prop, D
DDHV = AADT x K x D | 792 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.87
11
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | | | _ | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.948 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance Number of Lanes, N | 2 | ft
ft | f _{LW} | | mph |
| Total Ramp Density, TRD | 2 | ramps/mi | f _{LC} | | mph |
| FFS (measured) Base free-flow Speed, BFFS | 65.0 | mph
mph | TRD Adjustment | 65.0 | mph
mph |
| LOS and Performanc | e Measures | 3 | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S LOS | N x f _{HV} 480
65.0
7.4
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x})$ $x f_p$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FRE | EWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsyt
9/8/2014
PM Peak | he | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Central |
| Project Description I-15 (| Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | ☐ Plaı | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 793 | veh/h
veh/day | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.90
14
0
Level
mi | |
| 70.51 X 11 X 15 | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f_p E_T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.935 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance
Number of Lanes, N
Total Ramp Density, TRD | 2 | ft
ft
ramps/mi | f _{LW} | | mph
mph |
| FFS (measured) Base free-flow Speed, BFFS | 65.0 | mph
mph | TRD Adjustment | 65.0 | mph
mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x x f _p) S D = v _p / S LOS | N x f _{HV} 471
65.0
7.2
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |
| LOS - Level of service | hour volume | | LOS, S, FFS, v _p - Exhibits | | erated: 9/8 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | of Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 297 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.92
10
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.952 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance
Number of Lanes, N
Total Ramp Density, TRD | 2 | ft
ft
ramps/mi | f _{LW}
f _{LC}
TRD Adjustment | | mph
mph
mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | S | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times I)$ $x f_p)$ S $D = v_p / S$ LOS | N x f _{HV} 169
65.0
2.6
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x} f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FRI | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
AM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | □Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 286 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.79
20
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.909 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance | | ft
ft | f _{LW} | | mph |
| Number of Lanes, N | 2 | | f _{LC} | | mph |
| Total Ramp Density, TRD | | ramps/mi | TRD Adjustment | | mph |
| FFS (measured)
Base free-flow Speed,
BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x l x f _p) S D = v _p / S LOS | N x f _{HV} 199
65.0
3.1
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E _R - Exhibits 11-10, 11-12
E _T - Exhibits 11-10, 11-11,
f _p - Page 11-18
LOS, S, FFS, v _p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | T | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | f Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ☑ Oper.(LOS) | | | es.(N) | □Plar | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 303 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.96
12
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.943 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width Rt-Side Lat. Clearance | | ft
ft | | | |
| Number of Lanes, N | 2 | 10 | f _{LW} | | mph |
| Total Ramp Density, TRD | _ | ramps/mi | f _{LC} | | mph |
| FFS (measured) Base free-flow Speed, BFFS | 65.0 | mph
mph | TRD Adjustment | 65.0 | mph
mph |
| LOS and Performanc | e Measures | | Design (N) | | |
| Operational (LOS) v _p = (V or DDHV) / (PHF x I x f _p) S D = v _p / S LOS | N x f _{HV} 167
65.0
2.6
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lanes | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11,
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

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| | BASIC FR | EEWAY SE | GMENTS WORKSHEE | Т | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| General Information | | | Site Information | | |
| Analyst
Agency or Company
Date Performed
Analysis Time Period | Shane Forsy
9/8/2014
PM Peak | the | Highway/Direction of Trave
From/To
Jurisdiction
Analysis Year | | of Gore Hill |
| Project Description I-15 C | Corridor Study | | | | |
| ✓ Oper.(LOS) | | | Des.(N) | □Pla | nning Data |
| Flow Inputs | | | | | |
| Volume, V AADT Peak-Hr Prop. of AADT, K Peak-Hr Direction Prop, D DDHV = AADT x K x D | 444 | veh/h
veh/day
veh/h | Peak-Hour Factor, PHF
%Trucks and Buses, P _T
%RVs, P _R
General Terrain:
Grade % Length | 0.89
6
0
Level
mi | |
| | | | Up/Down % | | |
| Calculate Flow Adjus | tments | | | | |
| f _p
E _T | 1.00
1.5 | | E_R
$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ | 1.2
1)] 0.971 | |
| Speed Inputs | | | Calc Speed Adj and | FFS | |
| Lane Width
Rt-Side Lat. Clearance
Number of Lanes, N
Total Ramp Density, TRD | 2 | ft
ft
ramps/mi | f _{LW}
f _{LC}
TRD Adjustment | | mph
mph
mph |
| FFS (measured) Base free-flow Speed, BFFS | 65.0 | mph
mph | FFS | 65.0 | mph |
| LOS and Performanc | e Measures | <u> </u> | Design (N) | | |
| Operational (LOS) $v_p = (V \text{ or DDHV}) / (PHF \times I)$ $x f_p$) S $D = v_p / S$ LOS | N x f _{HV} 257
65.0
4.0
A | pc/h/ln
mph
pc/mi/ln | Design (N) Design LOS $v_p = (V \text{ or DDHV}) / (PHF \text{ x} \text{ x } f_p)$ S $D = v_p / S$ Required Number of Lane | | pc/h/ln
mph
pc/mi/ln |
| Glossary | | | Factor Location | | |
| N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service speed DDHV - Directional design | BFFS - Ba | | E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits
11-3 | , 11-13 | f _{LW} - Exhibit 11-8
f _{LC} - Exhibit 11-9
TRD - Page 11-1 |

HCS 2010TM Version 6.2

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| | | RAMP | S AND RAI | MP JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|----------------------|--------------------------------|--------------------------------------------------|------------------------------------------------|--------------------------------------|----------------------|------------------------|----------------------------------------|----------------------|------------------------------------|
| General Infor | mation | | - / IVA | Site Infor | | | · · · · · · | | | |
| Analyst
Agency or Company
Date Performed | | e Forsythe | | Freeway/Dir of Tra
Junction
Jurisdiction | | 10th Av
I-15 an | /e NB Off-r
d I-315 | amp | | |
| Analysis Time Period | d AM P | eak | , | Analysis Year | | 2035 | | | | |
| Project Description | | | | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2
1 | | | | | Downstre
Ramp | am Adj |
| □Yes | On | Acceleration L | ane Length, L _A | • | | | | | □Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | _ane Length L _D
me. V ₌ | 740
803 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 206 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | -Flow Speed, S_{Fl}
ow Speed, S_{FR} | _F 65.0
55.0 | | | | | V _D = | veh/h |
| Conversion t | o pc/h Und | | 111 | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 803 | 0.90 | Level | 16 | 0 | 0. | 926 | 1.00 | Ę | 167 |
| Ramp | 206 | 0.83 | Level | 3 | 0 | 0. | 985 | 1.00 | 2 | 253 |
| UpStream | | | | | | _ | | | | |
| DownStream | | l l
Merge Areas | | | | | | Diverge Areas | | |
| Estimation of | | vierge Areas | | | Estimat | tion o | fv | iverge Areas | | |
| <u> </u> | | | | | LStimat | | | | | |
| | $V_{12} = V_{F}$ | | | | | | | · V _R + (V _F - ' | | |
| L _{EQ} = | | tion 13-6 or | | | L _{EQ} = | | | Equation 13 | | |
| P _{FM} = | using | Equation (| Exhibit 13-6) | | P _{FD} = | | 1. | 000 using E | quation (Ext | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 96 | 67 pc/h | | |
| $V_3^{}$ or $V_{av34}^{}$ | | | -14 or 13-17) | | V_3 or V_{av34} | | | pc/h (Equa | | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | , u | | | ∃Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av} | _{v34} > 1.5 | | ∃Yes 🗹 No | | |
| If Yes,V _{12a} = | | • | -16, 13-18, or | | If Yes,V _{12a} | = | | c/h (Equatio | on 13-16, 13 | -18, or 13- |
| Capacity Che | 13-19) | | | | Capacit | | ncks | 9) | | |
| capacity che | Actual | | apacity | LOS F? | Capacit | y Cir | Actual | | Capacity | LOS F? |
| | 7101001 | Ĭ | apaoity | 20011 | V _F | | 967 | Exhibit 13 | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{FO}$ | _ | 714 | Exhibit 13 | _ | No |
| *FO | | EXHIBIT 13-0 | | | | | | Exhibit 13 | | _ |
| | <u> </u> | <u> </u> | | | V _R | | 253 | | | No |
| Flow Entering | | ir . | | Violeties | Flow El | | | rge Influe | | \/inlatian2 |
| \/ | Actual | Exhibit 13-8 | Desirable | Violation? | \/ | | Actual | Max Desir | | Violation? |
| V _{R12} | . 5 (| | · · · · · · · · | | V ₁₂ | | 967 | Exhibit 13-8 | | No No |
| Level of Serv | | | | | | | | terminati | • | <i>F)</i> |
| $D_R = 5.475 + 0.$ | | 0.0078 V ₁₂ - | 0.00627 L _A | | | | | .0086 V ₁₂ - | 0.009 L _D | |
| D _R = (pc/mi/ln | | | | | ., | .9 (pc/r | , | | | |
| LOS = (Exhibit | | | | | | | oit 13-2) | | | |
| Speed Detern | nination | | | | Speed I | Deter | minatic | on | | |
| M _S = (Exibit 1 | 3-11) | | | | $D_s = 0$ | .191 (E | xhibit 13- | -12) | | |
| | ibit 13-11) | | | | S _R = 6 | 0.6 mph | (Exhibit | 13-12) | | |
| | ibit 13-11) | | | | $S_0 = N$ | I/A mph | (Exhibit | 13-12) | | |
| | ibit 13-13) | | | | S = 6 | 0.6 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, A | All Rights Reser | ved | | HCS2010 ^{TN} | | | - | Generated: 9/1 | 5/2014 8:56 A |

| | | RAI | MPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------|------------------------------|-----------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------|---------------------------------------------------|---------------------|----------------------|
| General In | nformat | | | | Site Infor | | | | | | |
| Analyst | | | e Forsythe | F | reeway/Dir of Tra | | 10th A | ve NB On-ra | amp | | |
| Agency or Com | | | | Jı | unction | | I-15 ar | nd I-315 | | | |
| ate Performed | | 9/15/2 | | | urisdiction | | | | | | |
| nalysis Time F | | AM P | 'eak | A | nalysis Year | | 2035 | | | | |
| roject Descrip | otion | | | | | | | | | | |
| nputs | | | L | | | | | | | T | |
| Jpstream Adj F | Ramp | | • | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| | | | Ramp Number | r of Lanes, N | 1 | | | | | Ramp | |
| Yes | On | | Acceleration L | ane Length, L _A | 590 | | | | | □Yes | On |
| ✓ No | Off | | Deceleration L | ane Length L _D | | | | | | Z Na | □ o# |
| | _ 0 | | Freeway Volui | me, V _F | 519 | | | | | ✓ No | Off |
| . _{up} = 1 | ft | | Ramp Volume | • | 175 | | | | | L _{down} = | ft |
| | | | | Flow Speed, S _{FF} | | | | | | l. | |
| ' _u = v | /eh/h | | | ow Speed, S _{FR} | 35.0 | | | | | $V_D =$ | veh/h |
|) <i>!</i> - | 4 | //2 | | * 111 | 33.0 | | | | | | |
| onversio | on to pc | <u>'n Unc</u> | der Base (| Conditions | 1 | 1 | | 1 | | 1 | |
| (pc/h) | ſ٧ | v
eh/hr) | PHF | Terrain | %Truck | %Rv | | f_{HV} | f_p | v = V/PHI | $F x f_{HV} x f_{p}$ |
| Freeway | | 519 | 0.89 | Level | 14 | 0 | n | .935 | 1.00 | | 623 |
| Ramp | | 75 | 0.75 | Level | 7 | 0 | _ | .966 | 1.00 | _ | 243 |
| JpStream | | | " | 2010. | | Ť | ╅ | | | | |
| DownStream | | | | | | | | Ì | | | |
| | | ı | Merge Areas | | | | | D | iverge Areas | | |
| stimatio | n of v ₁₂ | | | | | Estimat | tion c | of v ₁₂ | | | |
| | | V ₁₂ = V _F | (P _{EM}) | | | | | V ₄₀ = \ | / _R + (V _F - V _F |)P _{-D} | |
| = | | | ation 13-6 or | 13-7) | |
 = | | | Equation 13 | | 13) |
| EQ = | | | | ion (Exhibit 13-6 | ١ | L _{EQ} =
P = | | | ising Equation | | |
|) _{FM} =
' – | | | | IOIT (EXTIIDIT 13-0 |) | P _{FD} = | | | | JII (EXIIIDIL I | J-1) |
| ' ₁₂ = | | 623 p | | | | V ₁₂ = | | • | oc/h | 40.44 . 40.4 | 17\ |
| or V _{av34} | 0.700 # | - | | 13-14 or 13-17 |) | V ₃ or V _{av34} | | - | oc/h (Equation | | 17) |
| s V ₃ or V _{av34} > | | | | | | | | |]Yes ☐ No | | |
| ls V ₃ or V _{av34} > | > 1.5 * V ₁₂ /2 | | | | | Is V ₃ or V _{av} | _{/34} > 1.5 | |]Yes ☐ No | | |
| Yes,V _{12a} = | | pc/h (
13-19) | | 3-16, 13-18, or | | If Yes,V _{12a} : | = | | oc/h (Equatio
3-19) | n 13-16, 1 | 3-18, or |
| Capacity (| Checks | 13-13) | | | | Capacit | ty Ch | | 5-19) | | |
| upacity | | Actual | I c | apacity | LOS F? | Capacit | . y | Actual | Ca | pacity | LOS F? |
| | | totaai | l i | араону | 20011 | V _F | \neg | 7101441 | Exhibit 13- | | 2001. |
| | | | | | | | 1/ | | _ | | |
| V_{FO} | | 866 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - v _R | | Exhibit 13- | | |
| | | | | | | V_R | | | Exhibit 13
10 | i- | |
| low Ente | ring Me | rae In | fluence A | rea | | Flow Fr | nterir | na Diver | ge Influer | nce Area | |
| TOW LINE | | ctual | | Desirable | Violation? | 1 10W L1 | _ | Actual | Max Des | | Violation? |
| V _{R12} | | 366 | Exhibit 13-8 | 4600:All | No | V ₁₂ | \top | / totadi | Exhibit 13-8 | | Violation |
| *R12 | | | | | 140 | 1 | f Cor | vice De | terminatio | n /if not | <u> </u> |
| aval of S | | | | | | 1 | | | | | <i>F)</i> |
| | | 34 V _R + C |).0076 v ₁₂ - 0.0 | 10021 L _A | | | | | 0086 V ₁₂ - 0 | .009 L _D | |
| D _R = 5.4 | | | | | | | pc/mi/l | • | | | |
| $D_{R} = 5.4$ | pc/mi/ln) | | | | | | Evhibi | t 13-2) | | | |
| $D_{R} = 5.4$ $O_{R} = 8.4 (\mu$ | | | | | | LOS = (I | -XIIIDI | 10 2) | | | |
| D _R = 5.4
Θ _R = 8.4 (β
OS = A (Ε) | pc/mi/ln)
xhibit 13-2) | tion | | | | Speed I | | | n | | |
| 0 _R = 8.4 (p
0S = A (Ex
Speed De | pc/mi/ln)
xhibit 13-2)
atermina | | | | | Speed I | | minatio | n | | |
| $D_{R} = 5.4$
$D_{R} = 8.4$ (FOS = A (EXID)
Speed De
$D_{S} = 0.289$ | pc/mi/ln)
xhibit 13-2)
termina
9 (Exibit 13- | 11) | | | | Speed I
D _s = (E | Deter
Exhibit | minatio
13-12) | n | | |
| $D_{R} = 5.4$
$D_{R} = 8.4$ (FOS = A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXIDER) A (EXID | pc/mi/ln) xhibit 13-2) termina 9 (Exibit 13- mph (Exhib | 11)
it 13-11) | | | | Speed L $D_s = (E_s)^T$ $S_R = m$ | Deter
Exhibit f
nph (Exl | rminatio
13-12)
hibit 13-12) | n | | |
| $D_{R} = 5.4$ $D_{R} = 8.4$ (FOS = A (EXIDER) $D_{R} = 0.289$ $D_{R} = 0.289$ $D_{R} = 0.289$ $D_{R} = 0.4$ $D_{R} = 0.4$ | pc/mi/ln)
xhibit 13-2)
termina
9 (Exibit 13- | 11)
it 13-11)
i 13-11) | | | | $\begin{array}{ccc} \textbf{Speed I} \\ \textbf{D}_{\text{S}} = & \text{(E} \\ \textbf{S}_{\text{R}} = & \text{m} \\ \textbf{S}_{\text{0}} = & \text{n} \end{array}$ | Deter
Exhibit on
the ph (Exhipping) | minatio
13-12) | n | | |

| | | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | | | | |
|-----------------------------------------------------------------------------|------------------------------|---------------------------|------------------------------------------------------------|-------------------------|-------------------------------------|----------------------------------------------|------------------------|---------------------------------------------------|---------------------|------------------------------------|--|--|--|
| General Infor | mation | | | Site Infor | | | | | | | | | |
| Analyst
Agency or Company | Shar | ne Forsythe | | reeway/Dir of Trunction | | 10th Av
I-15 an | ve SB Off-r
d I-315 | amp | | | | | |
| Date Performed | 9/15/ | /2014 | J | urisdiction | | | | | | | | | |
| Analysis Time Period | d AM F | Peak | A | nalysis Year | | 2035 | | | | | | | |
| Project Description | | | | | | | | | | | | | |
| Inputs | | 1 | | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N
or of Lanes, N | 2
1 | | | | | Downstrea
Ramp | ım Adj | | | |
| □Yes | On | | ane Length, L _A | | | | | | □Yes | □On | | | |
| ✓ No | Off | Preeway Volu | Lane Length L _D
me, V _F | 463
671 | | | | | ✓No | Off | | | |
| L _{up} = f | t | Ramp Volume | | 206 | | | | | L _{down} = | ft | | | |
| V _u = ve | eh/h | | -Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
55.0 | | | | | V _D = | veh/h | | | |
| Conversion to | o pc/h Un | der Base | Conditions | | | | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p | | | |
| Freeway | 671 | 0.94 | Level | 8 | 0 | 0. | 962 | 1.00 | 74 | 16 | | | |
| Ramp | 206 | 0.83 | Level | 3 | 0 | 0. | 985 | 1.00 | 25 | 53 | | | |
| UpStream | | | | | | | | | | | | | |
| DownStream | | | | | | | | | Jiverge Areas | | | | |
| - | | Merge Areas | | | | | | Diverge Areas | | | | | |
| Estimation of | 1 ₂ | | | | Estimat | ion o | τν ₁₂ | | | | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | V ₁₂ = | V _R + (V _F - V _F | R)P _{FD} | | | | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13-1 | 2 or 13-13 |) | | | |
| P _{FM} = | using | Equation (| Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Equ | uation (Exhil | bit 13-7) | | | |
| V ₁₂ = | pc/h | | , | | V ₁₂ = | | | l6 pc/h | (| , | | | |
| V ₃ or V _{av34} | • | Fauation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equatio | n 13-14 or | 13_17) | | | |
| Is V ₃ or V _{av34} > 2,70 | | | 14 01 10 17) | | | > 2 7 | | Yes ☑ No | 11 13-14 01 | 10-17) | | | |
| | | | | | | | | | | | | | |
| Is V ₃ or V _{av34} > 1.5 *
If Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} : | - | | Yes VNo
c/h (Equation | 13-16, 13- | 18, or 13- | | | |
| Capacity Che | | / | | | Capacit | v Ch | | <i>-</i> | | | | | |
| | Actual | | apacity | LOS F? | | <u>, </u> | Actual | Ca | pacity | LOS F? | | | |
| | 7101001 | İ | - aparony | | V _F | | 746 | Exhibit 13-8 | 1 | No | | | |
| V_{FO} | | Exhibit 13-8 | | | V _{FO} = V _F | - V | 493 | Exhibit 13-8 | | No | | | |
| ▼FO | | LAHIDIC 13-0 | | | | | | Exhibit 13-10 | | | | | |
| | <u> </u> | | | | V _R | | 253 | | | No | | | |
| Flow Entering | | 1 | | 1 1/2-1-60 | Flow Er | - | | rge Influen | | 1.75.1.60 | | | |
| | Actual | | Desirable | Violation? | ., | | Actual | Max Desirab | | Violation? | | | |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 746 | Exhibit 13-8 | 4400:All | No | | | |
| Level of Serv | | | | | + | | | terminatio | | F) | | | |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | | $D_R = 4$ | 1.252 + 0 | .0086 V ₁₂ - 0.0 | 009 L _D | | | | |
| D _R = (pc/mi/ln |) | | | | $D_R = 6$ | .5 (pc/r | mi/ln) | | | | | | |
| LOS = (Exhibit | 13-2) | | | | LOS = A | (Exhib | oit 13-2) | | | | | | |
| Speed Detern | nination | | | | Speed L | - | | on . | | | | | |
| $M_S = (Exibit 1)$ | | | | | | | xhibit 13- | | | | | | |
| - | ibit 13-11) | | | | | | (Exhibit | · · | | | | | |
| | • | | | | | - | (Exhibit | • | | | | | |
| | iibit 13-11)
iibit 13-13) | | | | 1 - | - | • | • | | | | | |
| | • | A II D = | | | 1 | | (Exhibit | - | | 10011 | | | |
| Copyright © 2012 University of Florida, All Rights Reserved | | | | | HCS2010 [™] | Versio | n 6.41 | Ge | nerated: 9/15 | /2014 9:03 Al | | | |

| | RA | MPS AND | RAMP JUN | | | EET | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------|-----------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------|---------------------|--------------------------------------|
| General Info | rmation | | | Site Infor | mation | | | | | |
| Analyst | | ne Forsythe | Fr | eeway/Dir of Tr | avel | 10th Av | sB On-ra | mp | | |
| gency or Company | / | | Ju | inction | | I-15 and | I-315 | | | |
| ate Performed | 9/15/ | /2014 | Ju | risdiction | | | | | | |
| nalysis Time Perio | d AM F | Peak | Ar | nalysis Year | | 2035 | | | | |
| roject Description | | | | | | | | | | |
| nputs | | | | | | | | | | |
| lpstream Adj Ramp |) | Freeway Num | ber of Lanes, N | 2 | | | | | Downstre | am Adi |
| , | | Ramp Number | of Lanes, N | 1 | | | | | Ramp | , |
| Yes O | n | Acceleration L | ane Length, L₄ | 1500 | | | | | □Ves | |
| | | | ane Length L _D | | | | | | Yes | ☐ On |
| ✓ No □ Of | ff | | | 740 | | | | | ✓ No | Off |
| - ft | | Freeway Volui | • | 713 | | | | | = | ft |
| _{up} = ft | | Ramp Volume | 13 | 339 | | | | | L _{down} = | 11 |
| ' = veh/l | 2 | Freeway Free | Flow Speed, S _{FF} | 65.0 | | | | | V _D = | veh/h |
| u = veh/h | 1 | Ramp Free-Flo | ow Speed, S _{FR} | 35.0 | | | | | I, D | 1011111 |
| onversion t | to pc/h Uni | der Base (| Conditions | | | | | | | |
| | V | | | 0/ Taylold | 0/ Dv | 1 4 | | f | v = V/DU | Evf vf |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | | HV | f _p | v – v/Fni | F x f _{HV} x f _p |
| reeway | 713 | 0.85 | Level | 7 | 0 | 0.9 | 66 | 1.00 | | 870 |
| Ramp | 339 | 0.77 | Level | 5 | 0 | 0.9 | 76 | 1.00 | | 451 |
| JpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | _ | Di | verge Areas | | |
| stimation o | f v ₁₂ | | | | Estimat | ion of | V ₁₂ | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | | V ₁₂ = V | ' _R + (V _F - V _F |)P _{ED} | |
| EQ = | | ation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13 | | 13) |
| | | | ion (Exhibit 13-6) | | | | | sing Equatio | | |
| FM = | | | IOIT (EXIIIDIL 10-0) | | P _{FD} = | | | | ו ווטונ ו | J-1) |
| 12 = | 870 p | | | | V ₁₂ = | | | c/h | | |
| or V _{av34} | - | | 13-14 or 13-17) | 1 | V ₃ or V _{av34} | | - | c/h (Equation | | 17) |
| $V_3 \text{ or } V_{av34} > 2,70$ | | | | | Is V ₃ or V _{av} | ₃₄ > 2,70 | 0 pc/h? | Yes □ No | | |
| s V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av} | ₃₄ > 1.5 ³ | V ₁₂ /2 | Yes 🗌 No | | |
| Yes,V _{12a} = | | | -16, 13-18, or | | If Yes,V _{12a} = | = | | c/h (Equatio | n 13-16, 1 | 3-18, or |
| .20 | 13-19) |) | | | | | | -19) | | |
| Capacity Che | | 1 . | | T | Capacit | y Che | | | | 1 |
| | Actual | C | apacity | LOS F? | . | _ | Actual | _ | pacity | LOS F? |
| | | | | | V _F | | | Exhibit 13- | 8 | |
| V_{FO} | 1321 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | Exhibit 13- | 8 | |
| FO | | | | | \ <u>/</u> | | | Exhibit 13 | i- | |
| | | | | | V _R | | | 10 | | |
| | a Merae In | ifluence A | rea | | Flow En | tering | g Diver | ge Influer | nce Area | 1 |
| low Enterin | y o. y o | Movi | Desirable | Violation? | 1 | A | ctual | Max Des | irable | Violation |
| | Actual | IVIAX | | i | | | Г | Exhibit 13-8 | I | I |
| V _{R12} | | Exhibit 13-8 | 4600:All | No | V ₁₂ | | ı | EXHIDIT 19-0 | l . | |
| V _{R12} | Actual
1321 | Exhibit 13-8 | 4600:All | No | |
F Serv | ice Det | | n (if not | ! F) |
| V _{R12}
evel of Serv | Actual
1321
vice Determ | Exhibit 13-8 | 4600:All f not F) | No | Level of | | | erminatio | | : F) |
| V _{R12}
.evel of Serv
D _R = 5.475 + | Actual
1321
vice Determ
+ 0.00734 v _R + (| Exhibit 13-8 | 4600:All f not F) | No | Level of | D _R = 4. | 252 + 0.0 | | | : F) |
| V_{R12} Level of Serv $D_R = 5.475 + 6.2 \text{ (pc/miss}$ | Actual
1321
Vice Determ
+ 0.00734 v _R + 0 | Exhibit 13-8 | 4600:All f not F) | No | Level of | D _R = 4.
oc/mi/ln | 252 + 0.(
) | erminatio | | : F) |
| D _R = $5.475 + 6.2$ (pc/mi)
OS = A (Exhibit | Actual
1321
Vice Detern
0.00734 v _R + 0
i/ln)
13-2) | Exhibit 13-8 | 4600:All f not F) | No | D _R = (p | D _R = 4.
oc/mi/In
Exhibit | 252 + 0.(
)
13-2) | erminatio
0086 V ₁₂ - 0 | | (:F) |
| V_{R12} Level of Serv $D_R = 5.475 + 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ | Actual
1321
Vice Detern
0.00734 v _R + 0
i/ln)
13-2) | Exhibit 13-8 | 4600:All f not F) | No | Level of | D _R = 4.
oc/mi/In
Exhibit | 252 + 0.(
)
13-2) | erminatio
0086 V ₁₂ - 0 | | : F) |
| V_{R12} Level of Serv $D_R = 5.475 + 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ | Actual 1321 rice Determ 0.00734 v R + (i/ln) 13-2) mination | Exhibit 13-8 | 4600:All f not F) | No | D _R = (p
LOS = (E | D _R = 4.
oc/mi/In
Exhibit | 252 + 0.0
)
13-2)
ninatio | erminatio
0086 V ₁₂ - 0 | | (F) |
| V_{R12} Level of Serv $D_R = 5.475 + 6.2 \text{ (pc/mi)}$ $OS = A \text{ (Exhibit)}$ Speed Determine $S_R = 0.231 \text{ (Exhibit)}$ | Actual 1321 Vice Detern 0.00734 v R + 0 13-2) mination ibit 13-11) | Exhibit 13-8 | 4600:All f not F) | No | D _R = (p
LOS = (E
Speed L
D _s = (E | D _R = 4.
oc/mi/ln
Exhibit
Detern
Exhibit 13 | 252 + 0.0
)
13-2)
ninatio
i-12) | erminatio
0086 V ₁₂ - 0 | | F) |
| V _{R12} .evel of Serv D _R = 5.475 + R = 6.2 (pc/mi OS = A (Exhibit Speed Deteri S _S = 0.231 (Ex | Actual 1321 Fice Determ 0.00734 v R + 0 13-2) mination ibit 13-11) (Exhibit 13-11) | Exhibit 13-8 | 4600:All f not F) | No | $\begin{array}{c} \textbf{Level of} \\ \textbf{D}_{\textbf{R}} = & (\textbf{p} \\ \textbf{LOS} = & (\textbf{E} \\ \textbf{Speed L} \\ \textbf{D}_{\textbf{S}} = & (\textbf{E} \\ \textbf{S}_{\textbf{R}} = & \textbf{m} \\ \end{array}$ | D _R = 4.
Dc/mi/ln
Exhibit
Detern
Exhibit 13
ph (Exhi | 252 + 0.0
)
13-2)
nination
-12)
bit 13-12) | erminatio
0086 V ₁₂ - 0 | | F) |
| V_{R12} Level of Serv $D_R = 5.475 + 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 \text{ (pc/mi)}$ $D_R = 6.2 $ | Actual 1321 Vice Detern 0.00734 v R + 0 13-2) mination ibit 13-11) | Exhibit 13-8 | 4600:All f not F) | No | $\begin{array}{cccc} \textbf{Level of} \\ \textbf{D}_{R} = & (\textbf{p} \\ \textbf{LOS} = & (\textbf{E} \\ \textbf{Speed L} \\ \textbf{D}_{s} = & (\textbf{E} \\ \textbf{S}_{R} = & \textbf{m} \\ \textbf{S}_{0} = & \textbf{m} \end{array}$ | D _R = 4.
Dc/mi/ln
Exhibit
Detern
Exhibit 13
ph (Exhi
ph (Exhi | 252 + 0.0
)
13-2)
ninatio
i-12) | erminatio
0086 V ₁₂ - 0 | | F) |

| | | RAMP | S AND RAI | /P JUNCTI | ONS WO | RKS | HEET | | | |
|-----------------------------------------------------------------------------|------------------------|--------------------------------|------------------------------------------------------------|------------------|--------------------------------------------------|---------------------|-------------------|-----------------------------|-------------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | | ne Forsythe | | reeway/Dir of Tr | | 10th Av | re NB Off-r | amp | | |
| Date Performed | 9/15/ | /2014 | | urisdiction | | 1 10 011 | 41010 | | | |
| Analysis Time Period | I PM F | Peak | A | Analysis Year | | 2035 | | | | |
| Project Description | | | | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2 | | | | | Downstrea
Ramp | ım Adj |
| □Yes | On | 1 ' | ane Length, L _A | ' | | | | | Yes | □On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D
me, V₌ | 740
1122 | | | | | ✓No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 543 | | | | | L _{down} = | ft |
| V _u = ve | eh/h | | -Flow Speed, S _{FF}
low Speed, S _{FR} | 55.0
55.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Un | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 1122 | 0.80 | Level | 10 | 0 | 0. | 952 | 1.00 | 14 | 73 |
| Ramp | 543 | 0.83 | Level | 3 | 0 | 0. | 985 | 1.00 | 66 | 64 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | ļ | | | | | |
| - | | Merge Areas | | | F - 4: 4 | · · · · · | | iverge Areas | | |
| Estimation of | · V ₁₂ | | | | Estimat | ion o | t v ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | V ₁₂ = | $V_R + (V_F - V_F)$ | R)P _{FD} | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13-1 | 2 or 13-13 |) |
| P _{FM} = | | Equation (| | | P _{FD} = | | | 000 using Equ | | |
| V ₁₂ = | pc/h | , , | , | | V ₁₂ = | | | 73 pc/h | | , |
| V ₃ or V _{av34} | • | Fauation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equatio | n 13-14 or | 13_17) |
| Is V ₃ or V _{av34} > 2,70 | | | -14-01-10-17) | | | > 2 7 | | Yes ☑ No | 11 13-1 4 01 | 13-17) |
| | | | | | | | | | | |
| Is V ₃ or V _{av34} > 1.5 *
If Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} : | | | Yes Mo
c/h (Equation | 13-16, 13- | 18, or 13- |
| Capacity Che | | / | | | Capacit | tv Ch | | , | | |
| | Actual | | apacity | LOS F? | Joupaon | .) | Actual | Car | pacity | LOS F? |
| | 7101001 | İ | - aparony | | V _F | | 1473 | Exhibit 13-8 | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | | 809 | Exhibit 13-8 | | No |
| ▼FO | | LAHIDIL 13-0 | | | | | | | | |
| | | | | | V _R | | 664 | Exhibit 13-10 | | No |
| Flow Entering | | 1 | | | Flow Er | | | rge Influen | | |
| | Actual | | Desirable | Violation? | | | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | 1 | 473 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Deterr | nination (| if not F) | | Level of | f Serv | <u>rice De</u> | terminatior | n (if not l | F) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | | $D_R = 4$ | .252 + 0 | .0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln |) | | | | D _R = 1 | 0.3 (pc | /mi/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | LOS = B | (Exhib | oit 13-2) | | | |
| Speed Detern | | | | | Speed L | | | n | | |
| | | | | | | | xhibit 13- | | | |
| $M_S = (Exibit 1)$ | • | | | | ľ | | | - | | |
| | ibit 13-11) | | | | | - | (Exhibit | | | |
| | ibit 13-11) | | | | 1 | - | (Exhibit | • | | |
| S = mph (Exh | ibit 13-13) | | | | S = 59 | 9.8 mph | (Exhibit | 13-13) | | |
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| | RA | MPS AND | RAMP JUNG | CTIONS W | ORKSH | EET | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------|---------------------|----------------------|
| General Inf | | | | Site Infor | | | | | | |
| Analyst | | ne Forsythe | Fr | eeway/Dir of Tr | | 10th A | ve NB On-ra | ımp | | |
| gency or Compa | any | | Ju | inction | | I-15 ar | nd I-315 | | | |
| ate Performed | | 5/2014 | | risdiction | | | | | | |
| nalysis Time Pe | | Peak | Ar | nalysis Year | | 20 | | | | |
| roject Descriptio | n | | | | | | | | | |
| nputs | | 1 | | | | | | | | |
| Jpstream Adj Ra | mp | 1 | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| | _ | Ramp Numbe | r of Lanes, N | 1 | | | | | Ramp | |
| Yes | On | Acceleration L | ane Length, L _A | 590 | | | | | □Yes | On |
| ✓ No | Off | Deceleration L | ane Length L _D | | | | | | | |
| <u> </u> | Oii | Freeway Volui | me, V _E | 792 | | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | | 274 | | | | | L _{down} = | ft |
| ap | | | -Flow Speed, S _{FF} | 65.0 | | | | | | |
| $v_{\rm u}$ = vel | h/h | | ow Speed, S _{ER} | | | | | | V _D = | veh/h |
| | | | - 111 | 35.0 | | | | | | |
| onversion | to pc/h Un | der Base (| Conditions | 1 | 1 | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f_p | v = V/PHF | $= x f_{HV} x f_{p}$ |
| reeway | 792 | 0.87 | Level | 11 | 0 | 0 | .948 | 1.00 | | 963 |
| Ramp | 274 | 0.92 | Level | 4 | 0 | | .980 | 1.00 | | 304 |
| JpStream | | 0.02 | 20101 | <u> </u> | Ť | Ť | .000 | 1.00 | | 001 |
| DownStream | | | | | | | | | | |
| | - | Merge Areas | | | | | D | verge Areas | • | |
| stimation | of v ₁₂ | | | | Estimat | ion c | of v ₁₂ | | | |
| | V ₁₂ = V _F | (P.,,) | | | | | | _R + (V _F - V _F | .)P | |
| = | | . ៶ · ⊦м /
ıation 13-6 or | · 13_7) | | l <u>-</u> | | | Equation 13 | | 3) |
| EQ = | | | | | L _{EQ} = | | | - | | |
|) _{FM} =
' – | | | ion (Exhibit 13-6) | | P _{FD} = | | | sing Equatio | וו (באוווטונו | 5-1) |
| ' ₁₂ = | 963 p | | | | V ₁₂ = | | • | c/h | | _, |
| or V _{av34} | - | | 13-14 or 13-17) | | V ₃ or V _{av34} | | - | c/h (Equation | 13-14 or 13-1 | 7) |
| | 2,700 pc/h? ☐ Ye | | | | | | | Yes 🗌 No | | |
| s V ₃ or V _{av34} > 1 | .5 * V ₁₂ /2 Ye | | | | Is V ₃ or V _{av} | , ₃₄ > 1.5 | |]Yes 🗌 No | | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | = | | c/h (Equatio | n 13-16, 1 | 3-18, or |
| Capacity C | 13-19 | <u>) </u> | | | Capacit | | | -19) | | |
| араспу С | Actual | T c | apacity | LOS F? | Capacit | y Cii | Actual | | pacity | LOS F? |
| | Actual | | ναρασιιγ | LUGF! | V _F | - | nulual | Exhibit 13- | | LUST |
| | | | | | | ., | | _ | _ | + |
| V_{FO} | 1267 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | Exhibit 13- | | |
| | | | | | V_R | | | Exhibit 13
10 | - | |
| | ina Morao Ir | nfluonco A | roa | | Flow Fr | torir | na Divor | ge Influer | on Arna | |
| Jow Entor | ng weige n | | Desirable | Violation? | I IOW LI | - | Actual | Max Des | | Violation |
| low Enteri | Actual | | | | V ₁₂ | + | , totalii | Exhibit 13-8 | | violation |
| Flow Enter | Actual | | 4600·AII | | | 1 | | ∟VIIINIſ 19-0 | | |
| V _{R12} | 1267 | Exhibit 13-8 | 4600:All | No | | £ Ca. | viaa Dad | | /:E4 | <i>_</i> \ |
| V _{R12}
.evel of Se | 1267
rvice Deteri | Exhibit 13-8 | if not F) | NO | Level or | | | erminatio | | <i>F</i>) |
| V _{R12}
Level of Se
D _R = 5.47 | 1267
rvice Deteri
5 + 0.00734 v _R + | Exhibit 13-8 | if not F) | NO NO | Level or | D _R = 4 | 1.252 + 0. | erminatio
0086 V ₁₂ - 0 | | <i>F</i>) |
| V _{R12} Level of Se D _R = 5.47 | 1267
rvice Deteri
5 + 0.00734 v _R + c/mi/ln) | Exhibit 13-8 | if not F) | NO | D _R = (p | D _R = 4
oc/mi/l | 4.252 + 0.0
n) | | | <i>F</i>) |
| V _{R12} Level of Se D _R = 5.47 | 1267
rvice Deteri
5 + 0.00734 v _R + | Exhibit 13-8 | if not F) | NO NO | D _R = (p | D _R = 4
oc/mi/l | 1.252 + 0. | | | <i>F</i>) |
| V _{R12} Level of Se D _R = 5.47 d _R = 11.5 (p OS = B (Exhi | 1267
rvice Deteri
5 + 0.00734 v _R +
c/mi/ln)
bit 13-2) | Exhibit 13-8 | if not F) | No | D _R = (p | D _R = 4
oc/mi/l
Exhibit | 4.252 + 0.0
n)
: 13-2) | 0086 V ₁₂ - 0 | | <u>F)</u> |
| V _{R12} Level of Se D _R = 5.47: D _R = 11.5 (p OS = B (Exhi | 1267
rvice Deteri
5 + 0.00734 v _R +
c/mi/ln)
bit 13-2)
ermination | Exhibit 13-8 | if not F) | No | D _R = (F
LOS = (F
Speed L | D _R = 4
oc/mi/l
Exhibit | 4.252 + 0.4
n)
: 13-2)
:minatio | 0086 V ₁₂ - 0 | | <i>F</i>) |
| V _{R12} Level of Se D _R = 5.47 D _R = 11.5 (p OS = B (Exhi Speed Dete | 1267 rvice Deteri 5 + 0.00734 v _R + c/mi/ln) bit 13-2) ermination Exibit 13-11) | Exhibit 13-8 mination (10.0078 V ₁₂ - 0.0 | if not F) | No | D _R = (p
LOS = (E
Speed L
D _s = (E | D _R = 4
oc/mi/l
Exhibit
Deter
Exhibit | 4.252 + 0.0
n)
: 13-2)
: minatio
(3-12) | 0086 V ₁₂ - 0 | | <u>F)</u> |
| V _{R12} Level of Se D _R = 5.47 D _R = 11.5 (p OS = B (Exhi Speed Dete | 1267 rvice Deteri 5 + 0.00734 v _R + c/mi/ln) bit 13-2) ermination Exibit 13-11) ph (Exhibit 13-11) | Exhibit 13-8 mination (10.0078 V ₁₂ - 0.0 | if not F) | No | $\begin{array}{c} \textbf{Level of} \\ \textbf{D}_{\textbf{R}} = & (\textbf{p} \\ \textbf{LOS} = & (\textbf{E} \\ \textbf{Speed L} \\ \textbf{D}_{\textbf{S}} = & (\textbf{E} \\ \textbf{S}_{\textbf{R}} = & \textbf{m} \\ \end{array}$ | D _R = 4
Dc/mi/l
Exhibit
Deter
Exhibit 1 | 4.252 + 0.4
n)
: 13-2)
minatio
(3-12)
nibit 13-12) | 0086 V ₁₂ - 0 | | <i>F</i>) |
| V _{R12} Level of Se D _R = 5.47 D _R = 11.5 (p OS = B (Exhi Speed Dete 1 _S = 0.294 (R = 58.2 m 0 = N/A mp | 1267 rvice Deteri 5 + 0.00734 v _R + c/mi/ln) bit 13-2) ermination Exibit 13-11) | Exhibit 13-8
mination (1
0.0078 V ₁₂ - 0.0 | if not F) | No | $\begin{array}{c} \textbf{Level of} \\ \textbf{D}_{\textbf{R}} = & (\textbf{p} \\ \textbf{LOS} = & (\textbf{E} \\ \textbf{Speed L} \\ \textbf{D}_{\textbf{S}} = & (\textbf{E} \\ \textbf{S}_{\textbf{R}} = & \textbf{m} \\ \textbf{S}_{\textbf{0}} = & \textbf{m} \end{array}$ | D _R = 4
pc/mi/l
Exhibit
Deter
Exhibit
aph (Exl | 4.252 + 0.0
n)
: 13-2)
: minatio
(3-12) | 0086 V ₁₂ - 0 | | <i>F</i>) |

| | | RAMP | S AND RAM | IP JUNCTI | ONS WO | RKS | HEET | | | | | |
|-------------------------------------------------------------|-------------------------|----------------------------------------|------------------------------------------------------------|-------------------------|--------------------------------------|-----------------------|------------------------|-----------------------------|---------------------|------------------------------------|--|--|
| General Infor | mation | | <u> </u> | Site Infor | | | | | | | | |
| Analyst
Agency or Company | Shar | ne Forsythe | | reeway/Dir of Trunction | avel | 10th Av
I-15 an | ve NB Off-r
d I-315 | amp | | | | |
| Date Performed | 9/15/ | /2014 | | urisdiction | | | | | | | | |
| Analysis Time Period | l PM F | Peak | A | nalysis Year | | 2035 | | | | | | |
| Project Description | | | | | | | | | | | | |
| Inputs | | <u> </u> | | | | | | ĺ | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N
or of Lanes, N | 2
1 | | | | | Downstrea
Ramp | am Adj | | |
| □Yes □ | On | | ane Length, L _A | | | | | | □Yes | □On | | |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D
me, V _E | 463
936 | | | | | ✓ No | Off | | |
| L _{up} = f | t | Ramp Volume | e, V _R | 256 | | | | | L _{down} = | ft | | |
| V _u = ve | eh/h | | -Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
55.0 | | | | | V _D = | veh/h | | |
| Conversion to | o pc/h Un | der Base | Conditions | | | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p | | |
| Freeway | 936 | 0.90 | Level | 14 | 0 | 0. | 935 | 1.00 | 11 | 18 | | |
| Ramp | 256 | 0.83 | Level | 7 | 0 | 0. | 966 | 1.00 | 32 | 20 | | |
| UpStream | | | | | | | | | | | | |
| DownStream | | ــــــــــــــــــــــــــــــــــــــ | | | | | | | γοταο Δτορε | | | |
| Estimation of | | Merge Areas | | | Ectimat | ion o | | iverge Areas | | | | |
| Estimation of | | | | | Estimat | 1011 0 | | | | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | | $V_R + (V_F - V_F)$ | | | | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13-1 | 2 or 13-13 |) | | |
| P _{FM} = | using | Equation (| Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Equ | ıation (Exhi | bit 13-7) | | |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 11 | 18 pc/h | | | | |
| V ₃ or V _{av34} | pc/h (| (Equation 13 | -14 or 13-17) | | V_3 or V_{av34} | | 0 | pc/h (Equatio | n 13-14 or | 13-17) | | |
| Is V ₃ or V _{av34} > 2,70 | 0 pc/h? | s 🗌 No | | | Is V ₃ or V _{av} | _{/34} > 2,7 | 00 pc/h? [| ☐Yes ☑ No | | | | |
| Is V ₃ or V _{av34} > 1.5 * | 'V ₁₂ /2 ∐Ye | s 🗌 No | | | Is V ₃ or V _{av} | , ₃₄ > 1.5 | * V ₁₂ /2 | Yes ☑ No | | | | |
| If Yes,V _{12a} = | pc/h (
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | = | p
19 | c/h (Equation
9) | 13-16, 13- | -18, or 13- | | |
| Capacity Che | cks | | | | Capacit | y Ch | ecks | | | | | |
| | Actual | C | apacity | LOS F? | | | Actual | Ca | pacity | LOS F? | | |
| | | | | | V_{F} | | 1118 | Exhibit 13-8 | 4700 | No | | |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 798 | Exhibit 13-8 | 4700 | No | | |
| | | | | | V_R | | 320 | Exhibit 13-10 | 2200 | No | | |
| Flow Entering | a Merae Ir | fluence A | rea | | Flow Er | nterin | a Dive | ge Influen | ce Area | | | |
| | Actual | 1 | Desirable | Violation? | | - | Actual | Max Desirab | | Violation? | | |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | 1 | 1118 | Exhibit 13-8 | 4400:All | No | | |
| Level of Serv | ice Deterr | nination (| if not F) | | | f Serv | ∕ice De | terminatio | n (if not | .
F) | | |
| D _R = 5.475 + 0. | | | | | | | | .0086 V ₁₂ - 0.0 | • | | | |
| D _R = (pc/mi/ln | 7.7 | 12 | ^ | | L | .7 (pc/r | | 12 | D | | | |
| LOS = (Exhibit | • | | | | 1 | ** | oit 13-2) | | | | | |
| Speed Detern | | | | | Speed L | - | | n n | | | | |
| | | | | | 1 - | | xhibit 13- | | | | | |
| M _S = (Exibit 13 | • | | | | | | | - | | | | |
| | ibit 13-11) | | | | | - | (Exhibit | | | | | |
| | ibit 13-11) | | | | 1 * | - | (Exhibit | • | | | | |
| . ` | ibit 13-13) | | | | 1 | | (Exhibit | - | | | | |
| Copyright © 2012 University of Florida, All Rights Reserved | | | | | HCS2010 [™] | l Versio | n 6.41 | Ge | nerated: 9/15 | /2014 9:06 Af | | |

| 0 | | RAMPS AND | RAMP JUN | | | == 1 | | | | |
|-------------------------------------|----------------------------|---------------------------------------------|----------------------------|------------------------|---------------------------------------------------|------------------------------------------|--------------------------|--------------------------------------|------------|--|
| | nformation | | | Site Infor | | | | | | |
| nalyst | | Shane Forsythe | | eeway/Dir of Tr | | 10th Ave SB | • | | | |
| igency or Com
Date Performed | | 0/45/0044 | | ınction
ırisdiction | | I-15 and I-315 |) | | | |
| nalysis Time I | | 9/15/2014
PM Peak | | nalysis Year | | 2035 | | | | |
| Project Descrip | | Wil eak | 74 | idiyələ i cai | | 2000 | | | | |
| nputs | 70011 | | | | | | | | | |
| • | Domn | Freeway Num | ber of Lanes, N | 2 | | | | Downet | room Adi | |
| Ipstream Adj F | катр | Ramp Number | | 1 | | | | Ramp | ream Adj | |
| Yes | On | · · | ane Length, L _Δ | 1500 | | | | ' | | |
| | _ | | ane Length L _D | 1300 | | | | □Yes | ☐ On | |
| ✓ No | Off | | | 004 | | | | ✓ No | Off | |
| | ft | Freeway Volui | • | 981 | | | | L _{down} = | ft | |
| up = | 10 | Ramp Volume | 11 | 453 | | | | -down | | |
| ′ _u = | veh/h | | Flow Speed, S_{FF} | 65.0 | | | | V _D = | veh/h | |
| | | | ow Speed, S _{FR} | 35.0 | | | | | | |
| Conversion | | <u>Under Base (</u> | Conditions | 1 | 1 | | | | | |
| (pc/h) | V
(Veh/h | r) PHF | Terrain | %Truck | %Rv | f_{HV} | fp | f_p $v = V/PHF \times f_{HV}$ | | |
| reeway | 981 | 0.93 | Level | 10 | 0 | 0.952 | 1.00 | | 1108 | |
| Ramp | 453 | 0.94 | Level | 5 | 0 | 0.976 | 1.00 | | 494 | |
| JpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| • | | Merge Areas | | | | | Diverge A | reas | | |
| stimatio | n of v ₁₂ | | | | Estimati | ion of v ₁₂ | ? | | | |
| | V ₁₂ : | = V _F (P _{FM}) | | | | V ₁₂ | $_{2} = V_{R} + (V_{F})$ | - V _R)P _{FD} | | |
| EQ = | (1 | Equation 13-6 or | 13-7) | | L _{EQ} = | | (Equatio | n 13-12 or 13 | -13) | |
|) _{FM} = | 1.0 | 00 using Equat | ion (Exhibit 13-6) | 1 | P _{FD} = | | using Ed | quation (Exhibit | 13-7) | |
| ' ₁₂ = | 110 | 08 pc/h | | | V ₁₂ = | | pc/h | | | |
| / ₃ or V _{av34} | 0 | pc/h (Equation | 13-14 or 13-17) |) | V ₃ or V _{av34} | | pc/h (Equ | ation 13-14 or 13 | 3-17) | |
| | > 2,700 pc/h? | | , | | | ₃₄ > 2,700 pc/l | | | , | |
| | > 1.5 * V ₁₂ /2 | | | | | ₃₄ > 1.5 * V ₁₂ /2 | | | | |
| Yes,V _{12a} = | | c/h (Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | | | uation 13-16, | 13-18, or | |
| | | -19) | | | | | 13-19) | | | |
| Capacity | | | | | Capacit | y Checks | Ď. | | | |
| | Actua | al C | apacity | LOS F? | ļ ,, | Act | | Capacity | LOS F? | |
| | | | | | V _F | | | bit 13-8 | | |
| V_{FO} | 1602 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | bit 13-8 | | |
| | | | | | V _R | | | bit 13- | | |
| Jow Ente | oring Mora | e Influence A | <u>roa</u> | | | torina Di | | 10
Tuence Are | <u> </u> | |
| TOW LITTE | Actua | | Desirable | Violation? | I IOW LII | Actual | | x Desirable | Violation? | |
| V _{R12} | 1602 | Exhibit 13-8 | 4600:All | No | V ₁₂ | 7101001 | Exhibit | | violation: | |
| | | ermination (i | | 110 | | Service | | ation (if no |) | |
| | | _R + 0.0078 V ₁₂ - 0.0 | | | | | | ₁₂ - 0.009 L _D | <i>(</i>) | |
| ., | pc/mi/ln) | R · 0.0070 V ₁₂ 0.0 | 70027 LA | | | | . 0.0000 1 | 12 0.000 LD | | |
| | • | | | | | c/mi/ln) | | | | |
| | xhibit 13-2) | | | | | xhibit 13-2 | | | | |
| speed De | eterminatio | <u>n</u> | | | ' | <u>Determina</u> | ition | | | |
| | 5 (Exibit 13-11) | | | | | xhibit 13-12) | | | | |
| N _S = 0.23 | 3 (EXIDIT 13-11) | | | | | 1 /5 1 11 11 40 | 40\ | | | |
| ū | mph (Exhibit 13- | -11) | | | I | ph (Exhibit 13 | • | | | |
| S _R = 59.6 | | • | | | | ph (Exhibit 13
ph (Exhibit 13 | • | | | |

| | | RAMP | S AND RAI | MP JUNCTI | ONS WO | ORKS | HEET | | | |
|------------------------------------------------|----------------------|--------------------------------|--------------------------------------------------|------------------------------------------------|--------------------------------------|----------------------|-----------------|---------------------------|----------------------------------------------|------------------------------------|
| General Infor | mation | . W 11111 | - / IVA | Site Infor | | | · · · | | | |
| Analyst
Agency or Company
Date Performed | | e Forsythe | | Freeway/Dir of Tra
Junction
Jurisdiction | | 14th EI
I-315 | 3 Off-ramp | | | |
| Analysis Time Period | I AM P | eak | , | Analysis Year | | 2035 | | | | |
| Project Description | I-15 Corridor S | tudy | | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N
r of Lanes. N | 2
1 | | | | | Downstrea
Ramp | am Adj |
| □Yes □ | On | Acceleration L | ane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | ∟ane Length L _D
me, V _⊏ | 503
627 | | | | | ☑No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 68 | | | | | L _{down} = | ft |
| V _u = ve | eh/h | | -Flow Speed, S_{Fl}
ow Speed, S_{FR} | _F 55.0
35.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Und | | 111 | | | | | | <u>. </u> | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 627 | 0.87 | Level | 6 | 0 | 0. | 971 | 1.00 | 7 | 42 |
| Ramp | 68 | 0.83 | Level | 5 | 0 | 0. | 976 | 1.00 | 3 | 34 |
| UpStream | | | | | | _ | | | | |
| DownStream | | l l
Merge Areas | | | | | | iverge Areas | | |
| Estimation of | | vierge Areas | | | Estima | tion o | fv | iverge Areas | | |
| L3timation of | | | | | LStilla | | | | | |
| | $V_{12} = V_F$ | | | | | | | $V_R + (V_F - V_I)$ | – | |
| L _{EQ} = | | tion 13-6 or | | | L _{EQ} = | | - | Equation 13-1 | | |
| P _{FM} = | _ | Equation (| Exhibit 13-6) | | P _{FD} = | | | 000 using Eq | uation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 2 pc/h | | |
| $V_3^{}$ or $V_{av34}^{}$ | | | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equation | on 13-14 o | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | ☐Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av} | _{v34} > 1.5 | | ☐Yes ☑ No | | |
| If Yes,V _{12a} = | | | -16, 13-18, or | | If Yes,V _{12a} | = | | c/h (Equation | 13-16, 13 | -18, or 13- |
| Capacity Che | 13-19) | | | | Capacit | | 19
ocks | ") | | |
| Capacity Cite | Actual | | apacity | LOS F? | Capacit | y Cir | Actual | Ca | pacity | LOS F? |
| | 7 totaai | Ì | αρασιτή | 20011 | V _F | | 742 | Exhibit 13-8 | | No |
| V_{FO} | | Exhibit 13-8 | | | V _{FO} = V _I | _ | 658 | Exhibit 13-8 | _ | No |
| *FO | | EXHIBIT 13-0 | | | | | | Exhibit 13-1 | | _ |
| | <u> </u> | <u> </u> | | | V _R | | 84 | | | No |
| Flow Entering | | ir . | | Violetian | Flow El | | | ge Influen | | Violeties |
| V | Actual | Exhibit 13-8 | Desirable | Violation? | \/ | | Actual | Max Desiral | 1 | Violation? |
| V _{R12} | . 5 (| | · · · · · · · · | | V ₁₂ | | 742 | Exhibit 13-8 | 4400:All | No No |
| Level of Serv | | | | | | | | terminatio | • | F) |
| $D_R = 5.475 + 0.$ | | 0.0078 V ₁₂ - | 0.00627 L _A | | | | | 0086 V ₁₂ - 0. | .009 L _D | |
| D _R = (pc/mi/ln | | | | | l '' | .1 (pc/r | , | | | |
| LOS = (Exhibit | | | | | | | oit 13-2) | | | |
| Speed Detern | nination | | | | Speed I | Deter | <u>minatio</u> | n | | |
| M _S = (Exibit 1: | 3-11) | | | | $D_s = 0$ | .436 (E | xhibit 13- | 12) | | |
| - | ibit 13-11) | | | | S _R = 4 | 9.3 mph | (Exhibit | 13-12) | | |
| | ibit 13-11) | | | | $S_0 = N$ | I/A mph | (Exhibit 1 | 13-12) | | |
| | ibit 13-13) | | | | S = 4 | 9.3 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, A | All Rights Reser | ved | | HCS2010 ^{TN} | | | • | enerated: 9/15 | 5/2014 9:53 A |

| | | MPS AND | RAMP JUN | | | ET | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------|-----------------------------|-----------------|--------------------------------------------------|-----------------------------------------------|----------------------------|----------------------------------------------|
| General Info | rmation | | | Site Infor | mation | | | |
| Analyst | | ne Forsythe | Fr | eeway/Dir of Tr | avel 1 | 14th St EB On-ra | mp | |
| gency or Compan | • | | | inction | ļ | -315 | | |
| ate Performed | | 5/2014 | | risdiction | | | | |
| nalysis Time Peri | | Peak | Ar | nalysis Year | 2 | 2035 | | |
| roject Description | I-15 Corridor S | Study | | | | | | |
| nputs | | | | | | | | r |
| Jpstream Adj Ram | р | Freeway Numb | per of Lanes, N | 2 | | | | Downstream Adj |
| | | Ramp Number | of Lanes, N | 1 | | | | Ramp |
| □ Yes □ C | n | Acceleration L | ane Length, L _A | 930 | | | | □Yes □On |
| ☑No □C | vee. | Deceleration L | ane Length L | | | | | |
| ✓ No □ C | лі
- | Freeway Volur | 5 | 1140 | | | | ☑ No ☐ Off |
| _{-up} = ft | | Ramp Volume | | 617 | | | | L _{down} = ft |
| up | | | 11 | | | | | down |
| / _u = veh/ | /h | | Flow Speed, S _{FF} | 55.0 | | | | $V_D = veh/h$ |
| u - | | Ramp Free-Flo | ow Speed, S _{FR} | 35.0 | | | | |
| Conversion | to pc/h Un | der Base (| Conditions | | | | | - |
| (pc/h) | V () (= - () | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v = V/PHF x f _{HV} x f _p |
| | (Veh/hr) | + | | | | ļ | <u> </u> | r |
| Freeway | 1140 | 0.83 | Level | 4 | 0 | 0.980 | 1.00 | 1403 |
| Ramp | 617 | 0.83 | Level | 3 | 0 | 0.985 | 1.00 | 755 |
| JpStream | + | ++ | | | | 1 | | |
| DownStream | | Merge Areas | | | | | L
Diverge Areas | <u> </u> |
| stimation o | | Weige Aleas | | | Estimation | on of v ₁₂ | Diverge Areas | |
| -Sumation C | | | | | LStillati | | | |
| | $V_{12} = V_{F}$ | | | | | | $V_R + (V_F - V_F)$ | · 15 |
| EQ = | (Equ | uation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 13 | -12 or 13-13) |
| P _{FM} = | 1.000 | using Equati | on (Exhibit 13-6) | | P _{FD} = | | using Equation | on (Exhibit 13-7) |
| ′ ₁₂ = | 1403 | pc/h | | | V ₁₂ = | | pc/h | |
| ′ ₃ or V _{av34} | 0 pc/ | h (Equation 1 | 3-14 or 13-17) | | V ₃ or V _{av34} | | pc/h (Equation | 13-14 or 13-17) |
| s V ₃ or V _{av34} > 2,7 | | | , | | | 4 > 2,700 pc/h? [| | |
| Is V ₃ or V _{av34} > 1.5 | | | | | | ₄ > 1.5 * V ₁₂ /2 [| | |
| | | | -16, 13-18, or | | | · · · · · · · · · · · · · · · · · · · | | on 13-16, 13-18, or |
| Yes,V _{12a} = | 13-19 | | -10, 15-10, 01 | | If Yes,V _{12a} = | | 3-19) | JII 13-10, 13-10, OI |
| Capacity Ch | ecks | | | | Capacity | Checks | , | |
| • | Actual | C | apacity | LOS F? | | Actual | Ca | pacity LOS F? |
| | | | | | V _F | | Exhibit 13- | .8 |
| | | | | l | $V_{FO} = V_F$ | - \/ | Exhibit 13- | |
| V_{FO} | 2158 | Exhibit 13-8 | | No | | *R | Exhibit 13 | |
| | | | | | V_R | | 10 |)- |
| low Enterin | na Merae Ir | nfluence A | rea | | Flow Ent | tering Dive | | nce Area |
| | Actual | | Desirable | Violation? | 7.01. | Actual | Max Des | |
| V _{R12} | 2158 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | Exhibit 13-8 | |
| | | | | 1 | 1 | Service De | | on (if not F) |
| aval of Sar | | • | | | | $O_{R} = 4.252 + 0$ | | |
| | + 0.00734 V R + | 0.0076 V ₁₂ - 0.0 | 0027 L _A | | | | 7.0000 V ₁₂ - 0 | 009 L _D |
| D _R = 5.475 | | | | | | c/mi/ln) | | |
| $D_{R} = 5.475$
$D_{R} = 16.1 \text{ (pc/)}$ | • | | | | LOS = (E) | xhibit 13-2) | | |
| $D_{R} = 5.475$
$D_{R} = 16.1 \text{ (pc/)}$ | • | | | | LOO - (L. | | | |
| O _R = 16.1 (pc/ | it 13-2) | | | | | etermination | on | |
| $D_R = 5.475$ $D_R = 16.1 \text{ (pc/OS} = B \text{ (Exhib)}$ | it 13-2)
rmination | | | | Speed D | | on | |
| $D_{R} = 5.475$ $D_{R} = 16.1 \text{ (pc/OS} = B \text{ (Exhibited)}$ $D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} = D_{S} $ | rmination
xibit 13-11) | | | | Speed D D _s = (Ex | etermination | | |
| $D_{R} = 5.475$ $D_{R} = 16.1 \text{ (pc/OS} = B \text{ (Exhib)}$ $D_{S} = 0.290 \text{ (Exhib)}$ $D_{R} = 0.290 \text{ (Exhib)}$ $D_{R} = 0.290 \text{ (Exhib)}$ | it 13-2) rmination xibit 13-11) n (Exhibit 13-11) | | | | Speed D $D_s = (Ex \\ S_R = mp$ | etermination whibit 13-12) wh (Exhibit 13-12) |) | |
| $D_{\rm R} = 5.475$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS})$ $D_{\rm R} = 16.1 ({\rm pc}/{\rm oS}$ | rmination
xibit 13-11) | | | | Speed D $D_{s} = (Ex)$ $S_{R} = mp$ $S_{0} = mp$ | etermination |) | |

| | | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | |
|-------------------------------------|----------------------------------|-----------------------------|------------------------------|------------------|--------------------------------------------------|-----------------------|-------------------|---------------------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | <u> </u> | Site Infor | | | | | | |
| Analyst | | ne Forsythe | F | reeway/Dir of Ti | | 14th W | B Off-ramp | 1 | | |
| Agency or Company | | | | unction | | I-315 | | | | |
| Date Performed | | /2014 | | urisdiction | | | | | | |
| Analysis Time Period | | | A | nalysis Year | | 2035 | | | | |
| Project Description | I-15 Corridor S | Study | | | | | | | | |
| Inputs | | <u> </u> | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2
1 | | | | | Downstrea
Ramp | m Adj |
| □Yes □ | On | 1 ' | ane Length, L _A | ı | | | | I | Yes | On |
| ✓ No | Off | | Lane Length L _D | 713 | | | | | ☑ No | Off |
| L _{up} = f | t | Freeway Volu
Ramp Volume | | 585
251 | | | | | L _{down} = | ft |
| up. | | | -Flow Speed, S _{FF} | | | | | | | |
| V _u = ve | eh/h | | low Speed, S _{FR} | 35.0 | | | | | V _D = | veh/h |
| Conversion to | o pc/h Un | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f_{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 585 | 0.82 | Level | 1 | 0 | 0. | 995 | 1.00 | 71 | 4 |
| Ramp | 251 | 0.80 | Level | 0 | 0 | 1. | 000 | 1.00 | 31 | 2 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | | iverge Areas | | |
| Estimation of | ^f V ₁₂ | | | | Estimat | ion o | f v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | | V ₁₂ = | V _R + (V _F - V _R |)P _{ED} | |
| L _{EQ} = | 12 1 | ation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13-1 | | |
| _ | | Equation (| | | P _{FD} = | | | 000 using Equ | | |
| P _{FM} =
W - | _ | Equation (| _xilibit 10 0) | | | | | | iation (Exilia | nt 13-1) |
| V ₁₂ = | pc/h | /F (; 40 | 44 40 47) | | V ₁₂ = | | | 4 pc/h | | |
| V ₃ or V _{av34} | | | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | Yes ✓ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av} | , ₃₄ > 1.5 | | ☐Yes 🗹 No | | |
| If Yes,V _{12a} = | pc/h (
13-19) | | -16, 13-18, or | | If Yes,V _{12a} = | = | | c/h (Equation | 13-16, 13- | 18, or 13- |
| Capacity Che | |) | | | Capacit | | 19
ncks | <u>"</u> | | |
| Capacity Cite | Actual | | apacity | LOS F? | Capacit | y Circ | Actual | l Cor | pacity | LOS F? |
| | Actual | | apacity | LUSF! | V _F | | 714 | Exhibit 13-8 | 1 | |
| ., | | | | | | | | | | No |
| V _{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | | 402 | Exhibit 13-8 | + | No |
| | | | | | V_R | | 312 | Exhibit 13-10 | 2000 | No |
| Flow Entering | g Merge In | ifluence A | rea | | Flow Er | iterin | g Dive | rge Influend | | |
| | Actual | | Desirable | Violation? | | 1 | \ctual | Max Desirab | le | Violation? |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | | 714 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Deterr | nination (| if not F) | | Level or | f Serv | vice De | termination | if not F | -) |
| D _R = 5.475 + 0. | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | | D _R = 4 | .252 + 0 | .0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln | | | | | D _R = 4. | .0 (pc/r | ni/ln) | · <u>-</u> | - | |
| LOS = (Exhibit | , | | | | 1 | | oit 13-2) | | | |
| Speed Detern | | | | | Speed L | | | n . | | |
| | | | | | | | xhibit 13- | | | |
| $M_S = (Exibit 1)$ | • | | | | ľ | - | | - | | |
| | ibit 13-11) | | | | | - | (Exhibit | * | | |
| | ibit 13-11) | | | | 1 * | - | (Exhibit ' | • | | |
| S = mph (Exh | ibit 13-13) | | | | S = 49 | 9.1 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Unive | ersity of Florida, | All Rights Reser | ved | | HCS2010 TM | Versio | n 6.41 | Ger | nerated: 9/15/ | 2014 9:46 Al |

| | | MPS AND | RAMP JUNG | | | <u>EET</u> | | | | |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------|-----------------|--------------------------------------------------|-------------------------|------------------|------------------------------------|---------------------|------------------------------------|
| General Inf | | | | Site Infor | | | | | | |
| nalyst | | ne Forsythe | Fr | eeway/Dir of Tr | avel | 14th St WE | 3 On-ramp | | | |
| gency or Compa | | | | ınction | | I-315 | | | | |
| ate Performed | | 5/2014 | | risdiction | | | | | | |
| nalysis Time Pe | | Peak | Ar | nalysis Year | | 2014 | | | | |
| | n I-15 Corridor | Study | | | | | | | | |
| nputs | | 1 | | | | | | | | |
| pstream Adj Rai | mp | Freeway Num | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| | | Ramp Numbe | r of Lanes, N | 1 | | | | | Ramp | , |
| ☐ Yes ☐ | On | Acceleration L | ane Length, L₄ | 505 | | | | | □Yes | On |
| ZN | 0,11 | Deceleration L | ane Length L _D | | | | | | | |
| ✓ No | Off | Freeway Volu | 5 | 514 | | | | | ✓ No | Off |
| n = ft | | 1 | • | | | | | | L _{down} = | ft |
| _{up} = ft | | Ramp Volume | 11 | 142 | | | | | down | |
| u = vel | n/h | 1 | -Flow Speed, S _{FF} | 55.0 | | | | | V _D = | veh/h |
| u VO | 711 | Ramp Free-Fl | ow Speed, S _{FR} | 35.0 | | | | | | |
| onversion | to pc/h Un | der Base (| Conditions | | | | | | | |
| (pc/h) | V | PHF | Terrain | %Truck | %Rv | f _{HV} | , | f _p | v = V/PHI | x f _{HV} x f _r |
| | (Veh/hr) | | TCITAIII | | | | | г | | |
| reeway | 514 | 0.76 | Level | 6 | 0 | 0.971 | | 1.00 | | 696 |
| Ramp | 142 | 0.80 | Level | 5 | 0 | 0.976 | | 1.00 | | 181 |
| JpStream | | | | | | | _ | | | |
| ownStream | | | | | | | | | | |
| 'atimatian | -f . , | Merge Areas | | | Catingat | ion of . | DIVE | erge Areas | | |
| stimation | or v ₁₂ | | | | Estimat | ion or v | 12 | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | , | $V_{12} = V_{R}$ | + (V _F - V _R |)P _{FD} | |
| _{EQ} = | (Equ | uation 13-6 or | 13-7) | | L _{EQ} = | | (Ec | uation 13- | 12 or 13-1 | 3) |
| FM = | 1.000 | using Equat | ion (Exhibit 13-6) | | P _{FD} = | | | ng Equatio | | |
| 12 = | 696 p | | (=:::::::::::::::::::::::; | | V ₁₂ = | | pc/ | | (= | / |
| ₃ or V _{av34} | | | 12 14 or 12 1 7 \ | | | | |
h (Equation 1 | 2 11 or 12 1 | 7 \ |
| | - | | 13-14 or 13-17) | | V ₃ or V _{av34} | > 0.700 | | | 3-14 01 13-1 | 11) |
| | ,700 pc/h? ☐ Y€ | | | | | | | ′es □ No | | |
| s V ₃ or V _{av34} > 1 | .5 * V ₁₂ /2 \(\sum \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdo | | | | Is V ₃ or V _{av} | ₃₄ > 1.5 * V | | ′es ☐ No | | |
| Yes,V _{12a} = | pc/h
13-19 | | 3-16, 13-18, or | | If Yes,V _{12a} = | = | pc/
13-1 | h (Equation | า 13-16, 1 | 3-18, or |
| Capacity C | | ') | | | Capacit | | | 9) | | |
| apacity of | Actual | 1 ^ | apacity | LOS F? | Jupach | | Actual | Car | acity | LOS F |
| | rioluai | | apaony | 2001: | \/ | | Totalai | Exhibit 13-8 | | 1 2001 |
| | | | | | V _F | | | | | + |
| V_{FO} | 877 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | Exhibit 13-8 | _ | |
| | | | | | V _R | | | Exhibit 13- | · | |
| Tarre Fratari | | | | | | 40 11 10 01 | Discourse | 10 | | |
| iow Enteri | ng Merge II | | | \/iolotion? | FIOW EN | | | e Influen | | |
| 1/ | Actual | | Desirable
4600-All | Violation? | 1/ | Actu | | Max Desi | ianie | Violation |
| V _{R12} | 877 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | | xhibit 13-8 | | _ |
| | rvice Deteri | | | | | | | rminatio | | <i>F</i>) |
| $D_{R} = 5.47$ | 5 + 0.00734 v _R + | 0.0078 V ₁₂ - 0.0 | 00627 L _A | | | $D_{R} = 4.25$ | 52 + 0.00 |)86 V ₁₂ - 0. | 009 L _D | |
| _R = 9.1 (pc/ | mi/ln) | | | | $D_R = (p$ | oc/mi/ln) | | | | |
| | bit 13-2) | | | | | Exhibit 13 | -2) | | | |
| peed Dete | | | | | Speed D | | | | | |
| Peca Dele | | | | | | | | | | |
| _ | Exibit 13-11) | | | | | xhibit 13-1 | • | | | |
| | | | | | E = 100 | ph (Exhibit | 13-12) | | | |
| • | oh (Exhibit 13-11) | | | | | | • | | | |
| R= 51.2 m _β | oh (Exhibit 13-11)
h (Exhibit 13-11) | | | | | ph (Exhibit | • | | | |
| = 51.2 mp
= N/A mp | | | | | $S_0 = m$ | | 13-12) | | | |

| | | RAMP | S AND RAM | IP JUNCTI | ONS WO | RKS | HEET | | | |
|-----------------------------------------------------------------|------------------------|--------------------------|------------------------------|------------------|--------------------------------------------------|------------------|-----------------|----------------------------|---------------------|--------------|
| General Infor | mation | | <u> </u> | Site Infor | | | | | | |
| Analyst | | ne Forsythe | F | reeway/Dir of Ti | | 14th FF | 3 Off-ramp | | | |
| Agency or Company | Onai | io i orojalo | | unction | | I-315 | on ramp | | | |
| Date Performed | 9/15/ | /2014 | | urisdiction | | | | | | |
| Analysis Time Period | l PM F | Peak | А | nalysis Year | | 2035 | | | | |
| Project Description | I-15 Corridor S | Study | | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | | ber of Lanes, N | 2 | | | | | Downstrea | m Adj |
| □Yes □ | On | Ramp Numbe | • | 1 | | | | | Ramp | |
| | 1011 | 1 | ane Length, L _A | | | | | | ☐Yes | On |
| ✓ No | Off | Deceleration I | Lane Length L _D | 503 | | | | | ✓ No | Off |
| | | Freeway Volu | me, V _F | 799 | | | | | | |
| L _{up} = fi | t | Ramp Volume | e, V _R | 226 | | | | | L _{down} = | ft |
| ., | | Freeway Free | -Flow Speed, S _{FF} | 55.0 | | | | Į, | \/ - | vob/b |
| V _u = ve | eh/h | | low Speed, S _{FR} | 35.0 | | | | | V _D = | veh/h |
| Conversion to | o nc/h Hn | 1 | 111 | | | | | | | |
| (pc/h) | <i>∨ ∨</i> | PHF | Terrain | %Truck | %Rv | | f | f | v = V/PHF | v f v f |
| . , | (Veh/hr) | ГПГ | Terrain | /0 ITUCK | /0T\V | _ | f _{HV} | f _p | v — v/i i ii | ^ 'HV ^ 'p |
| Freeway | 799 | 0.83 | Level | 4 | 0 | _ | 980 | 1.00 | 98 | 2 |
| Ramp | 226 | 0.94 | Level | 3 | 0 | 0. | 985 | 1.00 | 24 | 4 |
| UpStream | | | | <u> </u> | | | | | | |
| DownStream | | Merge Areas | | | | | | iverge Areas | | |
| Estimation of | | | | Fetimat | ion o | | iverge Areas | | | |
| LStillation of | | | | | Estimation of v ₁₂ | | | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | $V_{12} = V_R + (V_F - V_R)P_{FD}$ | | | | | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (I | Equation 13-1 | 2 or 13-13) | |
| P _{FM} = | using | Equation (| Exhibit 13-6) | | P _{FD} = | | 1.0 | 000 using Equ | ation (Exhib | it 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 98 | 2 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | 0 | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V ₃ or V _{av34} > 2,70 | | | | | | .24 > 2,7 | | Yes ☑ No | | |
| Is V ₃ or V _{av34} > 1.5 * | | | | | | | | Yes ☑ No | | |
| | | | -16, 13-18, or | | 1 | - | | c/h (Equation | 13-16. 13- | 18. or 13- |
| If Yes,V _{12a} = | 13-19 | | ,, | | If Yes,V _{12a} = | = | 19 | | , | , |
| Capacity Che | cks | | | | Capacit | y Ch | ecks | | | |
| | Actual | C | apacity | LOS F? | | | Actual | Car | pacity | LOS F? |
| | | | | | V _F | | 982 | Exhibit 13-8 | 4500 | No |
| V_{FO} | | Exhibit 13-8 | | | V _{FO} = V _F | - V _D | 738 | Exhibit 13-8 | 4500 | No |
| 10 | | | | | V _R | | 244 | Exhibit 13-10 | + | No |
| Class Cotorins | | -fl | | | | | | | | INO |
| Flow Entering | | 1 | | \/iolotion? | FIOW ET | - | | rge Influenc | | \/iolotion? |
| | Actual | | Desirable | Violation? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 982 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | | | | | | | | terminatior | • | -) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | | $D_R = 4$ | 1.252 + 0. | 0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln |) | | | | $D_R = 8$ | .2 (pc/r | ni/ln) | | | |
| LOS = (Exhibit ' | 13-2) | | | | LOS = A | (Exhib | oit 13-2) | | | |
| Speed Detern | nination | | | | Speed L | Deter | minatio | n | | |
| M _S = (Exibit 13 | | | | | 1 - | | xhibit 13- | | | |
| - | ibit 13-11) | | | | | | (Exhibit | • | | |
| | - | | | | | - | (Exhibit | • | | |
| S ₀ = mph (Exhibit 13-11)
S = mph (Exhibit 13-13) | | | | | 1 * | - | • | • | | |
| . , | | | | | 1 | | (Exhibit | | | |
| Copyright © 2012 Unive | ersity of Florida, | All Rights Reser | ved | | HCS2010 [™] | l Versio | n 6.41 | Ger | nerated: 9/15/ | 2014 9:56 Al |

| | RA | MPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------|------------------------------|-----------------|---------------------------------------------------------------|----------------------------------------------------|------------------------------------|---------------------------------------------------|---------------------|----------------------|
| General Info | | | | Site Infor | | | | | | |
| Analyst | Shar | ne Forsythe | Fr | eeway/Dir of Tr | | 14th S | t EB On-ram | ıp | | |
| gency or Compar | ıy | | Jι | ınction | | I-315 | | | | |
| ate Performed | | /2014 | | ırisdiction | | | | | | |
| nalysis Time Peri | | | Aı | nalysis Year | | 2014 | | | | |
| roject Description | I-15 Corridor S | 3tudy | | | | | | | | |
| nputs | | <u>l</u> | | | | | | | 1 | |
| Jpstream Adj Ram | р | 1 | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| | | Ramp Number | r of Lanes, N | 1 | | | | | Ramp | |
| Yes C | n | Acceleration L | ane Length, L _A | 930 | | | | | □Yes | On |
| ✓ No 🔲 C |)ff | Deceleration L | ane Length L _D | | | | | | | |
| | 711 | Freeway Volui | me, V _F | 1216 | | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | | 648 | | | | | L _{down} = | ft |
| | | | -Flow Speed, S _{FF} | 55.0 | | | | | | |
| $v_{\rm u} = {\rm veh}$ | ⁄h | 1 | ow Speed, S _{FR} | 35.0 | | | | | V _D = | veh/h |
| 2 | 40 //- 11 | | * 110 | 33.0 | | | | | | |
| Conversion | to pc/n Und | der Base (| Conditions | 1 | | | 1 | | 1 | |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f_p | v = V/PHF | $= x f_{HV} x f_{p}$ |
| Freeway | 1216 | 0.90 | Level | 3 | 0 | 0 | .985 | 1.00 | , | 1371 |
| Ramp | 648 | 0.94 | Level | 1 | 0 | | .995 | 1.00 | | 693 |
| UpStream | + | | | | | Ť | 1 | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | D | iverge Areas | | |
| stimation o | of v ₁₂ | | | | Estimat | tion c | of v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | | V ₄₀ = \ | / _R + (V _F - V _R |)P _E D | |
| . _{EQ} = | | ation 13-6 or | 13-7) | | l = | | .= | Equation 13- | | 3) |
| | | | ion (Exhibit 13-6) | | L _{EQ} =
P = | | | sing Equatio | | |
|) _{FM} =
/ _ | | | IOTT (EXTIIDIT 13-0) | 1 | P _{FD} = | | | | MI (EXIIIDIL I | J-1) |
| ' ₁₂ = | 1371 | • | 10 11 10 17 | | V ₁₂ = | | • | c/h | 10.44 40.4 | . 7 \ |
| or V _{av34} | - | | 13-14 or 13-17) |) | V ₃ or V _{av34} | | - | c/h (Equation 1 | 13-14 OF 13-1 | 17) |
| $ s V_3 \text{ or } V_{av34} > 2,$ | | | | | | | | Yes No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av} | _{v34} > 1.5 | | Yes ☐ No | | |
| Yes,V _{12a} = | pc/h
13-19) | | 3-16, 13-18, or | | If Yes,V _{12a} | = | | c/h (Equatio
-19) | n 13-16, 1 | 3-18, or |
| Capacity Ch | |) | | | Capacit | ty Ch | | -13) | | |
| apaony on | Actual | | apacity | LOS F? | Jupaon | . , | Actual | Ca | pacity | LOS F? |
| | 7 totali | † | араону | 20011 | V _F | \neg | riotaar | Exhibit 13- | | 1 2001. |
| | | | | | | 1/ | | _ | _ | + |
| V_{FO} | 2064 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - v _R | | Exhibit 13- | | |
| | | | | | V_R | | | Exhibit 13
10 | - | |
| low Enterii | na Merae Ir | fluence A | rea | | Flow Fr | nterir | na Diver | ge Influen | ce Area | |
| | Actual | | Desirable | Violation? | 5.7 - | | Actual | Max Des | | Violation |
| V _{R12} | 2064 | Exhibit 13-8 | 4600:All | No | V ₁₂ | \top | | Exhibit 13-8 | | |
| | | | | 110 | | f Sor | vice Det | erminatio | n (if not | <u></u> |
| | | | | | | | | 0086 V ₁₂ - 0 | | 1) |
| evel of Ser | . 0 0072/1 | 0.0076 V ₁₂ - 0.0 | 0027 L _A | | | | | 0000 v ₁₂ - 0 | .009 L _D | |
| D _R = 5.475 | + 0.00734 v _R + 0 | | | | $D_R = ($ | pc/mi/l | n) | | | |
| D _R = 5.475
$D_R = 15.4 \text{ (pc.)}$ | /mi/ln) | | | | 1 ., ,, | | | | | |
| evel of Ser $D_R = 5.475$ $D_R = 15.4 \text{ (pc.)}$ $OS = B \text{ (Exhib)}$ | /mi/ln)
it 13-2) | | | | 1 ., ,, | Exhibi | 13-2) | | | |
| D _R = 5.475
$D_R = 15.4 \text{ (pc.)}$ | /mi/ln)
it 13-2) | | | | LOS = (I | | t 13-2)
minatio | n | | |
| D _R = 5.475 D _R = 15.4 (pc. OS = B (Exhib | /mi/ln)
it 13-2)
rmination | | | | LOS = (I
Speed L | | minatio | n | | |
| $D_{R} = 5.475$ $D_{R} = 15.4 \text{ (pc. OS} = B \text{ (Exhib})$ $D_{R} = 0.287 \text{ (Exhib}$ | /mi/ln) it 13-2) rmination xibit 13-11) | | | | LOS = (I
Speed I
D _s = (E | Deter
Exhibit | minatio | n | | |
| $D_{R} = 5.475$ $D_{R} = 15.4 \text{ (pc. OS} = B \text{ (Exhib})$ $D_{R} = 0.287 \text{ (Exhip}$ $D_{R} = 0.287 \text{ (Exhip}$ $D_{R} = 0.287 \text{ (Exhip}$ | /mi/ln) it 13-2) rmination xibit 13-11) n (Exhibit 13-11) | | | | $LOS = (I)$ Speed I $D_s = (I)$ $S_R = m$ | Deter
Exhibit on
Sph (Exh | rminatio
13-12)
nibit 13-12) | n | | |
| $D_{R} = 5.475$ $D_{R} = 15.4 \text{ (pc. OS} = B \text{ (Exhib})$ $D_{S} = 0.287 \text{ (Exhib})$ $D_{S} = 0.287 \text{ (Exhib})$ $D_{S} = 0.287 \text{ (Exhib})$ $D_{S} = 0.287 \text{ (Exhib})$ $D_{S} = 0.287 \text{ (Exhib})$ $D_{S} = 0.287 \text{ (Exhib})$ | /mi/ln) it 13-2) rmination xibit 13-11) | | | | $LOS = (I)$ $Speed LOS = (I)$ $D_S = (I)$ $S_R = m$ $S_0 = m$ | Deter
Exhibit on
the ph (Exhaps) | minatio
13-12) | n | | |

| | | RAMP | S AND RAN | IP JUNCTI | ONS WO | RKS | HEET | | | |
|-------------------------------------------------------------|----------------------------------|--------------------------------|------------------------------------------------------------|-------------------------|--------------------------------------------------|--------------------------------------------------|-------------------|---------------------------------------------------|---------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | | ne Forsythe | | reeway/Dir of Trunction | | 14th W
I-315 | B Off-ramp | | | |
| Date Performed | 9/15/ | /2014 | | urisdiction | | | | | | |
| Analysis Time Period | l PM F | Peak | Δ | nalysis Year | | 2035 | | | | |
| Project Description | I-15 Corridor S | Study | | | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj R | amp | Freeway Num
Ramp Numbe | ber of Lanes, N | 2 | | | | | Downstrea
Ramp | m Adj |
| □Yes | On | 1 ' | ane Length, L _A | ' | | | | | Yes | □On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D
me, V₌ | 713
1418 | | | | | ☑ No | Off |
| L _{up} = f | t | Ramp Volume | e, V _R | 919 | | | | | L _{down} = | ft |
| V _u = ve | eh/h | | -Flow Speed, S _{FF}
low Speed, S _{FR} | 55.0
35.0 | | | | , | V _D = | veh/h |
| Conversion to | o pc/h Un | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 1418 | 0.91 | Level | 3 | 0 | 0. | 985 | 1.00 | 158 | 32 |
| Ramp | 919 | 0.99 | Level | 2 | 0 | 0. | 990 | 1.00 | 93 | 9 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| - | Merge Areas | | | | - | | | iverge Areas | | |
| Estimation of | ' V ₁₂ | | | | Estimat | ion o | t v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{FM}) | | | | | V ₁₂ = | V _R + (V _F - V _R |)P _{FD} | |
| L _{EQ} = | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13-1 | 2 or 13-13) | |
| P _{FM} = | | Equation (| | | P _{FD} = | | | 000 using Equ | | |
| V ₁₂ = | pc/h | 1 (| , | | V ₁₂ = | | | 82 pc/h | | , |
| V ₃ or V _{av34} | • | Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equatio | n 12 14 or | 12 17) |
| Is V ₃ or V _{av34} | | | -14 01 13-17) | | | > 2 7 | | | 11 13-14 01 | 13-17) |
| | | | | | | | | Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | 10 10 10 | | | - | | Yes ✓ No | 10 10 10 | 10 10 |
| If Yes,V _{12a} = | pc/n (
13-19 | | -16, 13-18, or | | If Yes,V _{12a} = | = | p
19 | c/h (Equation | 13-16, 13- | 18, OF 13- |
| Capacity Che | | / | | | Capacit | v Ch | | -, | | |
| | Actual | | apacity | LOS F? | | , | Actual | Car | pacity | LOS F? |
| | | | | | V _F | | 1582 | Exhibit 13-8 | 1 | No |
| V | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - \/ | 643 | Exhibit 13-8 | + | |
| V _{FO} | | LAHIDIL 13-0 | | | | | | _ | + | No |
| | | | | | V _R | | 939 | Exhibit 13-10 | | No |
| Flow Entering | | 1 | | _ | Flow Er | - | | ge Influenc | | |
| | Actual | | Desirable | Violation? | | | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | 1 | 1582 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | ice Deterr | nination (| if not F) | | Level of | f Serv | ∕ice De | terminatior | n (if not F | -) |
| $D_R = 5.475 + 0.$ | 00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | | $D_R = 4$ | .252 + 0 | 0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi/ln |) | | | | $D_R = 1$ | 1.4 (pc | /mi/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | LOS = B | (Exhib | oit 13-2) | | | |
| Speed Detern | | | | | Speed L | - | | n | | |
| | | | | | | | xhibit 13- | | | |
| $M_S = (Exibit 1)$ | • | | | | ľ | | | • | | |
| | ibit 13-11) | | | | | - | (Exhibit | * | | |
| | ibit 13-11) | | | | 1 | - | (Exhibit | - | | |
| S = mph (Exh | ibit 13-13) | | | | S = 4 | 8.3 mph | (Exhibit | 13-13) | | |
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| | | WII O AIND | INAMI JUN | | ORKSHE | <u>= E I </u> | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------|
| General Infor | | | | Site Infor | | | | | |
| nalyst | Shan | ne Forsythe | Fr | eeway/Dir of Tr | avel | 14th St WB On | -ramp | | |
| gency or Company | | | | ınction | | I-315 | | | |
| ate Performed | 9/15/ | | | ırisdiction | | | | | |
| nalysis Time Period | | | Ar | nalysis Year | | 2035 | | | |
| roject Description | I-15 Corridor S | Study | | | | | | | |
| nputs | | | | | | | | | |
| pstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adj |
| | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | • |
| ☐ Yes ☐ On | I | Acceleration L | ane Length, L₄ | 505 | | | | □Yes | On |
| | _ | 1 | ane Length L | | | | | 1 163 | |
| ✓ No ☐ Off | | Freeway Volu | | 728 | | | | ✓ No | Off |
| = ft | | 1 | | | | | | L _{down} = | ft |
| _{ip} = ft | | Ramp Volume | 13 | 201 | | | | -down | |
| u = veh/h | | Freeway Free | -Flow Speed, S _{FF} | 55.0 | | | | V _D = | veh/h |
| u Venin | | Ramp Free-Fl | ow Speed, S _{FR} | 35.0 | | | | ا ا | |
| conversion to | pc/h Und | der Base | Conditions | | | | | | |
| | V | PHF | Terrain | %Truck | %Rv | f | f | v = \//PH | F x f _{HV} x f _p |
| (pc/h) | (Veh/hr) | <u> </u> | ı Ulalı | | | f _{HV} | f _p | | |
| reeway | 728 | 0.93 | Level | 5 | 0 | 0.976 | 1.00 | | 802 |
| Ramp | 201 | 0.99 | Level | 1 | 0 | 0.995 | 1.00 | | 204 |
| JpStream | | igsquare | | | | | | | |
|)ownStream | | لـــــــــــــــــــــــــــــــــــــ | | | | | <u> </u> | | |
| | | Merge Areas | | | - | | Diverge Areas | <u> </u> | |
| stimation of | V ₁₂ | | | | Estimati | ion of v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{EM}) | | | | V ₁₂ | = V _R + (V _F - \ | / _R)P _{FD} | |
| EQ = | (Eau | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 1 | 3-12 or 13- | 13) |
| FM = | | | ion (Exhibit 13-6) | | P _{FD} = | | using Equat | | |
| | 802 p | | ion (Exhibit 10-0) | | | | | ion (Exhibit i | 01) |
| 12 = | • | | | | V ₁₂ = | | pc/h | | 4> |
| ₃ or V _{av34} | - | | 13-14 or 13-17) | | V_3 or V_{av34} | | pc/h (Equation | | 17) |
| $V_3 \text{ or } V_{av34} > 2,70$ | | | | | | | Yes □ N | | |
| s V_3 or $V_{av34} > 1.5 *$ | V ₁₂ /2 | s 🗹 No | | | Is V ₃ or V _{av3} | $_{34} > 1.5 * V_{12}/2$ | ☐Yes ☐ N | 0 | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | : | pc/h (Equat | ion 13-16, 1 | 3-18, or |
| | 13-19) |) | | | | | 13-19) | | |
| Capacity Che | rke | | | | Capacity | y Checks | | | |
| | | T - | . ,, | 1.00.50 | \ '' | | . 1 | | 1 |
| | Actual | C | apacity | LOS F? | | Actu | | Capacity | LOS F |
| | | C | Capacity | LOS F? | V _F | Actu | Exhibit 1 | | LOS F |
| V _{EO} | Actual | | Capacity | | V_F $V_{FO} = V_F$ | | | 3-8 | LOS F |
| V _{FO} | | Exhibit 13-8 | Capacity | LOS F? | $V_{FO} = V_{F}$ | | Exhibit 1 | 3-8 | LOS F? |
| | Actual
1006 | Exhibit 13-8 | | | $V_{FO} = V_{F}$ V_{R} | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 | 3-8
3-8
3- | |
| | Actual
1006 | Exhibit 13-8 | | | $V_{FO} = V_{F}$ V_{R} | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe | 3-8
3-8
3-
3-
ence Area | |
| low Entering | Actual
1006 | Exhibit 13-8 | | | $V_{FO} = V_F$ V_R Flow En | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe | 3-8
3-8
3- | |
| low Entering | Actual 1006 g Merge In | Exhibit 13-8 | Irea | No | $V_{FO} = V_{F}$ V_{R} | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe | 3-8
3-8
3-
ence Area
esirable | |
| Flow Entering | Actual 1006 Merge In Actual 1006 | Exhibit 13-8 offluence A Max Exhibit 13-8 | Area
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4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En | - V _R | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8
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ance Area
esirable | Violation |
| Flow Entering V _{R12} evel of Servi | Actual 1006 7 Merge In Actual 1006 ice Determ | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A) | Area Desirable 4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of | - V _R tering Div Actual Service D | Exhibit 1 Exhibit 1 Exhibit 1 10 Eerge Influe Max De Exhibit 13-8 | 3-8
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| V _{R12}
evel of Server D _R = 5.475 + | Actual 1006 Actual 1006 ice Detern 0.00734 v R + C | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A) | Area Desirable 4600:All | No Violation? | V _{FO} = V _F V _R Flow En V ₁₂ Level of | tering Div Actual F Service D D R = 4.252 + | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8
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esirable | Violation |
| Flow Entering V_{R12} evel of Servi $D_{R} = 5.475 + 10.1 \text{ (pc/m)}$ | Actual 1006 7 Merge In Actual 1006 ice Detern 0.00734 v R + 0 | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A) | Area Desirable 4600:All | No Violation? | $V_{FO} = V_{F}$ V_{R} Flow En V_{12} Level of $D_{R} = (p)$ | Actual F Service D D R = 4.252 + oc/mi/ln) | Exhibit 1 Exhibit 1 Exhibit 1 10 Eerge Influe Max De Exhibit 13-8 | 3-8
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ence Area
esirable | Violation |
| Flow Entering V_{R12} Evel of Servi $D_{R} = 5.475 + 10.1 \text{ (pc/m)}$ $DS = B \text{ (Exhibit } 10.1 \text{ (pc.)}$ | Actual 1006 7 Merge In Actual 1006 ice Detern 0.00734 v _R + 0 i/ln) 13-2) | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A) | Area Desirable 4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ LOS = (E | tering Div Actual F Service D D R = 4.252 + ac/mi/ln) Exhibit 13-2) | Exhibit 1 Exhibit 1 Exhibit 1 10 erge Influe Max De Exhibit 13-8 Determinati 0.0086 V ₁₂ - | 3-8
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esirable | Violation |
| Flow Entering V_{R12} evel of Servi $D_{R} = 5.475 + 10.1 \text{ (pc/m)}$ | Actual 1006 7 Merge In Actual 1006 ice Detern 0.00734 v _R + 0 i/ln) 13-2) | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A) | Area Desirable 4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ LOS = (E | Actual F Service D D R = 4.252 + oc/mi/ln) | Exhibit 1 Exhibit 1 Exhibit 1 10 erge Influe Max De Exhibit 13-8 Determinati 0.0086 V ₁₂ - | 3-8
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ence Area
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| V _{R12} vevel of Servi D _R = 5.475 + R = 10.1 (pc/m DS = B (Exhibit | Actual 1006 Actual 1006 ice Detern 0.00734 v R + 0 i/ln) 13-2) | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A | Area Desirable 4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ LOS = (E Speed D | tering Div Actual F Service D D R = 4.252 + ac/mi/ln) Exhibit 13-2) | Exhibit 1 Exhibit 1 Exhibit 1 10 erge Influe Max De Exhibit 13-8 Determinati 0.0086 V ₁₂ - | 3-8
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esirable | Violation |
| Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + 10.1 \text{ (pc/m)}$ $DS = B \text{ (Exhibit of Speed Detern)}$ $S = 0.296 \text{ (Exit)}$ | Actual 1006 7 Merge In Actual 1006 ice Detern 0.00734 v _R + 0 i/ln) 13-2) nination pit 13-11) | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A | Area Desirable 4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ $LOS = (E)$ Speed D $D_S = (E)$ | Actual F Service D Comi/In) Exhibit 13-2) Determinate Exhibit 13-12) | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Determinati 0.0086 V ₁₂ - | 3-8
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ence Area
esirable | Violation |
| Flow Entering V_{R12} Evel of Serving $D_R = 5.475 + 10.1 \text{ (pc/m)}$ $DS = B \text{ (Exhibit of Speed Deternity)}$ $S = 0.296 \text{ (Exitor)}$ $R = 51.1 \text{ mph (properties)}$ | Actual 1006 7 Merge In Actual 1006 ice Detern 0.00734 v _R + 0 i/ln) 13-2) nination bit 13-11) Exhibit 13-11) | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A | Area Desirable 4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ $LOS = (E)$ Speed D $D_S = (E)$ $S_R = mp$ | Actual F Service D R = 4.252 + bc/mi/ln) Exhibit 13-12) Peterminat xhibit 13-12) ph (Exhibit 13-1 | Exhibit 1 Exhibit 1 Exhibit 1 10 Eerge Influe Max De Exhibit 13-8 Determination 0.0086 V ₁₂ - | 3-8
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| Flow Entering V_{R12} evel of Servi $D_R = 5.475 + $ $R = 10.1 \text{ (pc/m}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ $R = 10.296 \text{ (Exit)}$ | Actual 1006 7 Merge In Actual 1006 ice Detern 0.00734 v _R + 0 i/ln) 13-2) nination pit 13-11) | Exhibit 13-8 Influence A Max Exhibit 13-8 Influence (A | Area Desirable 4600:All | No Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ $LOS = (E)$ Speed D $D_S = (E)$ $S_R = m_F$ $S_0 = m_F$ | Actual F Service D Comi/In) Exhibit 13-2) Determinate Exhibit 13-12) | Exhibit 1 Exhibit 1 Exhibit 1 10 Erge Influe Max Do Exhibit 13-8 Determinati 0.0086 V ₁₂ - | 3-8
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ion (if no | Violation |

| | | RAMP | S AND RAI | /IP JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|-------------------------|--------------------------|---------------------------------------------------|------------------------------------------------|---------------------------------------|---------------------|-----------------|--------------------------------------|---------------------|------------------------------------|
| General Info | rmation | | | Site Infor | | | | | | |
| Analyst
Agency or Company
Date Performed | Shar | ne Forsythe | J | Freeway/Dir of Tra
lunction
lurisdiction | | Centra | Ave NB O | ff | | |
| Date Performed
Analysis Time Perio | 9/9/2
d AM F | | | Analysis Year | | 2035 | | | | |
| Project Description | u AIVIT | can | | anarysis rear | | 2000 | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj F | Ramp | Freeway Num | nber of Lanes, N | 2 | | | | | Downstre | am Adi |
| | On | Ramp Numbe | | 1 | | | | | Ramp | - |
| | | | Lane Length, L _A | 4200 | | | | | □Yes | On |
| ✓ No | Off | Freeway Volu | Lane Length L _D
ime. V ₌ | 1388
519 | | | | | ✓ No | Off |
| L _{up} = | ft | Ramp Volume | • | 315 | | | | | L _{down} = | ft |
| V,, = v | reh/h | | e-Flow Speed, S _{FF} | | | | | | V _D = | veh/h |
| | | | low Speed, S _{FR} | 45.0 | | | | | | |
| Conversion t | o pc/n Und | | conaitions | 1 | 1 | _ | | | 1 | |
| (pc/h) | v
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 519 | 0.89 | Level | 14 | 0 | 0. | 935 | 1.00 | 6 | 24 |
| Ramp | 315 | 0.83 | Level | 10 | 0 | 0. | 952 | 1.00 | 4 | 00 |
| UpStream | | | | | | _ | | | | |
| DownStream | nStream | | | | | | | iverge Areas | | |
| Estimation o | Merge Areas | | | | Estimat | ion o | | iverge Areas | | |
| | | | | | Lotinati | 1011 0 | | | | |
| | $V_{12} = V_F$ | | 40.7) | | _ | | | V _R + (V _F - V | | |
| - _{EQ} = | | ation 13-6 or | | | L _{EQ} = | | | Equation 13- | | - |
| P _{FM} = | _ | Equation (I | Exhibit 13-6) | | P _{FD} = | | | 000 using Ed | luation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 24 pc/h | | |
| V_3 or V_{av34} | | | s-14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equati | on 13-14 o | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | ☐Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 | | ☐Yes ☑ No | | |
| f Yes,V _{12a} = | pc/h (
13-19) | | s-16, 13-18, or | | If Yes,V _{12a} = | • | p
19 | c/h (Equation | า 13-16, 13 | -18, or 13- |
| Capacity Che | | | | | Capacit | | | <i>5)</i> | | |
| capacity circ | Actual | | Capacity | LOS F? | | , | Actual | C | apacity | LOS F? |
| | | | | | V _F | | 624 | Exhibit 13- | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | -V _R | 224 | Exhibit 13- | 8 4700 | No |
| | | | | | V_R | | 400 | Exhibit 13- | 10 2100 | No |
| Flow Enterin | g Merge In | -1 | | | Flow En | _ | | rge Influer | | |
| | Actual | | Desirable | Violation? | | | Actual | Max Desira | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 624 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | | | | | | | | terminatio | | <i>F</i>) |
| $D_R = 5.475 + 0$ | .00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | ' | D _R = 4 | 1.252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | |
| D _R = (pc/mi/lr | 1) | | | | $D_R = -2$ | .9 (pc/ | mi/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | | • | oit 13-2) | | | |
| Speed Determination | | | | | Speed D | Deter | minatic | n | | |
| M _S = (Exibit 1 | 3-11) | | | | $D_s = 0.5$ | 334 (E | xhibit 13- | 12) | | |
| | nibit 13-11) | | | | | - | (Exhibit | - | | |
| S ₀ = mph (Ext | nibit 13-11) | | | | $S_0 = N$ | /A mph | (Exhibit | 13-12) | | |
| S = mph (Ext | nibit 13-13) | | | | S = 57 | 7.3 mph | (Exhibit | 13-13) | | |
| Copyright © 2012 Univ | ersity of Florida, | All Rights Reser | ved | | HCS2010 ^{TN} | ^M Versi | on 6.41 | (| Generated: 9/9 | 9/2014 9:59 A |

9/9/2014

| 0 | | MPS AND | RAMP JUN | | | <u> </u> | | | |
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| General Inform | | | | Site Infor | | <u> </u> | | | |
| Analyst | Shan | ne Forsythe | | eeway/Dir of Tr | avel | Central NB On | | | |
| Agency or Company Date Performed | 9/9/2 | · ∩1 / | | ınction
ırisdiction | | | | | |
| Analysis Time Period | AM P | | | nalysis Year | | 2035 | | | |
| Project Description | AIVI F | Can | | idiyələ i cai | | 2000 | | | |
| nputs | | | | | | | | | |
| • | | Freeway Num | ber of Lanes, N | 2 | | | | Downstroom | ۸di |
| Jpstream Adj Ramp | | Ramp Numbe | • | 1 | | | | Downstream
Ramp | Adj |
| Yes On | | 1 ' | | • | | | | ' | |
| | | 1 | Lane Length, L _A | 1491 | | | | □Yes □ | On |
| ✓ No ☐ Off | | 1 | Lane Length L _D | | | | | ☑ No □ | Off |
| | | Freeway Volu | me, V _F | 230 | | | | | _ |
| _{up} = ft | | Ramp Volume | e, V _R | 82 | | | | L _{down} = f | τ |
| / - | | Freeway Free | -Flow Speed, S _{FF} | 65.0 | | | | $V_D = V$ | eh/h |
| ' _u = veh/h | | Ramp Free-F | low Speed, S _{FR} | 55.0 | | | | V _D – v | CII/II |
| Conversion to | pc/h Und | | 111 | | | | | | |
| (pc/h) | V | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v = V/PHF x | f _{LN} , x f _r |
| " , | (Veh/hr) | 1000 | | | | | <u> </u> | | - ' |
| reeway | 230 | 0.83 | Level | 7 | 0 | 0.966 | 1.00 | 287 | |
| Ramp | 82 | 0.74 | Level | 14 | 0 | 0.935 | 1.00 | 119 | |
| JpStream
DownStream | | | | | | + | | + | |
| JownStream | | Merge Areas | | <u> </u> | <u> </u> | | Diverge Areas | | |
| stimation of | | | | | Estimati | ion of v ₁₂ | | | |
| | V ₁₂ = V _F | / D \ | | | | | = V _R + (V _F - V | ' \D | |
| _ | | | . 40. 7) | | | v 12 – | | | |
| EQ = | | ation 13-6 or | | | L _{EQ} = | | | 3-12 or 13-13) | |
| P _{FM} = | | | tion (Exhibit 13-6) | | P _{FD} = | | | ion (Exhibit 13-7) | |
| 12 = | 287 p | c/h | | | V ₁₂ = | | pc/h | | |
| ′ ₃ or V _{av34} | 0 pc/h | h (Equation | 13-14 or 13-17) |) | $\mathrm{V_3}$ or $\mathrm{V_{av34}}$ | | | 13-14 or 13-17) | |
| s V_3 or $V_{av34} > 2,700$ | pc/h? TYe | s 🗹 No | | | Is V ₃ or V _{av3} | ₃₄ > 2,700 pc/h? | ☐Yes ☐ No | o | |
| s V ₃ or V _{av34} > 1.5 * | V ₁₂ /2 □ Ye | s 🗹 No | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 * V ₁₂ /2 | ☐Yes ☐ No | o | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | | | on 13-16, 13-1 | 8, or |
| | 13-19) |) | | | | | 13-19) | | |
| Capacity Chec | | Т . | No. 10 10 | 1.00.50 | Capacity | y Checks | . 1 ^ | | 100 50 |
| | Actual | 1 1 | Capacity | LOS F? | \/ | Actua | | apacity | LOS F |
| | | | | | V _F | | Exhibit 13 | | |
| | 406 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 13 | | |
| V_{FO} | | | | | V_R | | Exhibit 1 | 3- | |
| v _{FO} | | | | | | | 10 | | |
| | Mareralie | fluores (| \ | | | toring Dive | | A | |
| | | 1 | | Violation? | | tering Dive | erge Influe | | Violation |
| Flow Entering | Actual | Max | Desirable | Violation? | Flow En | tering Dive | erge Influe
Max De | sirable | Violation |
| Flow Entering
V _{R12} | Actual
406 | Max
Exhibit 13-8 | Desirable
4600:All | Violation? | Flow En | Actual | erge Influe
Max De
Exhibit 13-8 | esirable | |
| Flow Entering V _{R12} Level of Servi | Actual
406
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mination (| Desirable
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if not F) | 1 | Flow En V ₁₂ Level of | Actual Service D | erge Influe
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Exhibit 13-8
eterminati | on (if not F) | |
| V _{R12}
Level of Servi | Actual
406
ce Detern
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Exhibit 13-8
mination (| Desirable
4600:All
if not F) | 1 | Flow En | Actual Service D OR = 4.252 + | erge Influe
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eterminati | on (if not F) | Violation |
| V _{R12} Level of Servi D _R = 5.475 + 0 R = -0.8 (pc/mi/ | Actual
406
ce Detern
0.00734 v _R + 0 | Max
Exhibit 13-8
mination (| Desirable
4600:All
if not F) | 1 | Flow En V ₁₂ Level of D _R = (p | Actual Service D C C C C C C Minute Actual | erge Influe
Max De
Exhibit 13-8
eterminati | on (if not F) | |
| Flow Entering V_{R12} Level of Servi $D_{R} = 5.475 + 0$ $V_{R} = -0.8 \text{ (pc/mi/OS} = A \text{ (Exhibit 1)}$ | Actual
406
ce Detern
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mination (| Desirable
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if not F) | 1 | Flow En V ₁₂ Level of D _R = (p LOS = (E | Actual Service D C C C C C C C C C C C C C | Max De Exhibit 13-8 etermination 0.0086 V ₁₂ - | on (if not F) | |
| V _{R12} Level of Servi D _R = 5.475 + 0 R = -0.8 (pc/mi/ | Actual
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mination (| Desirable
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if not F) | 1 | Flow En V ₁₂ Level of D _R = (p LOS = (E | Actual Service D C C C C C C Minute Actual | Max De Exhibit 13-8 etermination 0.0086 V ₁₂ - | on (if not F) | |
| Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + 0$ $C_R = -0.8 \text{ (pc/mi/OS} = A \text{ (Exhibit 1)}$ Speed Determine | Actual
406
ce Detern
0.00734 v _R + 0
In)
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sination | Max
Exhibit 13-8
mination (| Desirable
4600:All
if not F) | 1 | V ₁₂ Level of | Actual Service D C C C C C C C C C C C C C | Max De Exhibit 13-8 etermination 0.0086 V ₁₂ - | on (if not F) | |
| Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + 0$ $R = -0.8 \text{ (pc/mi/OS} = A \text{ (Exhibit 1)}$ Speed Determing $S_S = 0.163 \text{ (Exib}$ | Actual
406
ce Detern
0.00734 v _R + 0
In)
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sination
it 13-11) | Max
Exhibit 13-8
mination (| Desirable
4600:All
if not F) | 1 | V ₁₂ Level of | Actual Service D C C C C C C C C C C C C C | erge Influe Max De Exhibit 13-8 eterminati 0.0086 V ₁₂ - | on (if not F) | |
| Flow Entering V_{R12} Level of Servi $D_R = 5.475 + 0$ $R = -0.8 \text{ (pc/mi/}$ $OS = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A \text{ (Exhibit 1)}$ $Cos = A (Exh$ | Actual 406 ce Detern 0.00734 v _R + 0 In) 3-2) iination it 13-11) Exhibit 13-11) | Max
Exhibit 13-8
mination (| Desirable
4600:All
if not F) | 1 | V ₁₂ Level of | Actual Service D C C C C C C C C C C C C C | Max De Exhibit 13-8 etermination | on (if not F) | |
| Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + 0$ $D_R = 0.8 \text{ (pc/mi/OS} = A \text{ (Exhibit 1)}$ Expeed Determing $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ $D_R = 0.163 \text{ (Exhibit 1)}$ | Actual
406
ce Detern
0.00734 v _R + 0
In)
3-2)
sination
it 13-11) | Max
Exhibit 13-8
mination (| Desirable
4600:All
if not F) | 1 | Flow En V_{12} Level of $D_R = (p)$ LOS = (E Speed D $D_S = (E)$ $S_R = mp$ $S_0 = mp$ | Actual Service D C C C/mi/ln) Exhibit 13-2) Determination | Max De Exhibit 13-8 etermination 0.0086 V ₁₂ - 1 ion | on (if not F) | |

| | | RAMP | S AND RAI | /IP JUNCTI | ONS WC | RKS | HEET | | | |
|------------------------------------------------|---------------------------|--------------------------------|-------------------------------------------------------------|-----------------------------------------------|--------------------------------------|----------------------|----------------------|----------------------------|---------------------|------------------------------------|
| General Info | rmation | | | Site Infor | | | | | | |
| Analyst
Agency or Company
Date Performed | Shan | e Forsythe | J | reeway/Dir of Tra
lunction
lurisdiction | | Centra | Ave SB Of | f | | |
| Analysis Time Perio | | | A | Analysis Year | | 2035 | | | | |
| Project Description | | | | | | | | | | |
| Inputs | | 1 | | | | | | - i | | |
| Upstream Adj F | Ramp | Freeway Num
Ramp Numbe | nber of Lanes, N
er of Lanes, N | 2
1 | | | | | Downstrea
Ramp | m Adj |
| □Yes | On | Acceleration I | ane Length, L _A | | | | | | Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 1144
376 | | | | | ✓ No | Off |
| L _{up} = | ft | Ramp Volume | | 191 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | e-Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
45.0 | | | | | V _D = | veh/h |
| Conversion t | to nc/h Hn/ | | 111 | TO.0 | | | | | | |
| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 376 | 0.83 | Level | 21 | 0 | 0. | 905 | 1.00 | 50 | 1 |
| Ramp | 191 | 0.85 | Level | 2 | 0 | 0. | 990 | 1.00 | 22 | 7 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| Fatimatian a | | Merge Areas | | | Catimat | ·: | | iverge Areas | | |
| Estimation o | 7 V ₁₂ | | | | Estimat | ion c | 7 V ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | $V_{12} = V_R + (V_F - V_R)P_{FD}$ | | | | | |
| L _{EQ} = | (Equa | ition 13-6 or | 13-7) | | L _{EQ} = | | (E | Equation 13-1 | 2 or 13-13) |) |
| P _{FM} = | using | Equation (I | Exhibit 13-6) | | P _{FD} = | | 1.0 | 000 using Equ | ation (Exhib | oit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 50 | 1 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | 0 | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V ₃ or V _{av34} > 2,70 | 00 pc/h? 🗌 Ye: | s 🗌 No | | | Is V ₃ or V _{av} | _{/34} > 2,7 | 00 pc/h? | Yes ☑ No | | |
| Is V ₃ or V _{av34} > 1.5 | * V ₁₂ /2 Yes | s 🗌 No | | | Is V ₃ or V _{av} | _{/34} > 1.5 | * V ₁₂ /2 | Yes ☑ No | | |
| If Yes,V _{12a} = | pc/h (
13-19) | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} | | 19 | c/h (Equation
)) | 13-16, 13- | 18, or 13- |
| Capacity Che | ecks | | | | Capacit | ty Ch | ecks | | | |
| | Actual | | Capacity | LOS F? | | | Actual | Ca | oacity | LOS F? |
| | | | | | V_{F} | | 501 | Exhibit 13-8 | 4700 | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 274 | Exhibit 13-8 | 4700 | No |
| | | | | | V_R | | 227 | Exhibit 13-10 | 2100 | No |
| Flow Enterin | a Merae In | fluence A | \rea | | | | a Diver | ge Influen | ce Area | |
| | Actual | 1 | Desirable | Violation? | - 1011 =1 | | Actual | Max Desirab | | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 501 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | rice Detern | nination (| if not F) | | | f Ser | vice De | terminatio | if not F | =) |
| $D_R = 5.475 + 0$ | | | | | | | | 0086 V ₁₂ - 0.0 | | , |
| D _R = (pc/mi/lr | | 12 | A | | | к
1.7 (рс/ | | 12 | U U | |
| LOS = (Exhibit | | | | | | | oit 13-2) | | | |
| Speed Deteri | | | | | Speed I | - | | n | | |
| | | | | | | | | | | |
| M _S = (Exibit 1 | | | | | ľ | , | xhibit 13- | * | | |
| | nibit 13-11) | | | | | | (Exhibit | · · | | |
| | nibit 13-11) | | | | ľ | - | (Exhibit 1 | • | | |
| | nibit 13-13) | | | | | | (Exhibit | 13-13) | | |
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| | RAI | MPS AND | RAMP JUN | CTIONS W | ORKSH | EET | | | | |
|-----------------------------------------------|----------------------------------|-------------------------------------|------------------------------|-----------------------------|----------------------------------------|--------------------|----------|--------------------------------------|----------------------|------------------------------------|
| General Infor | | 571115 | 0011 | Site Infor | | | | | | |
| Analyst
Agency or Company | | e Forsythe | Ju | reeway/Dir of Tr | avel | Central SI | 3 On | | | |
| Date Performed
Analysis Time Period | 9/9/2
AM P | | | urisdiction
nalysis Year | | 2035 | | | | |
| Project Description | AIVI F | tak | A | ilalysis i cal | | 2033 | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | | Downstre | am Adi |
| | | Ramp Numbe | r of Lanes, N | 1 | | | | | Ramp | am / taj |
| ☐ Yes ☐ Or | 1 | Acceleration I | ane Length, L _A | 1144 | | | | | □Yes | ☐ On |
| ☑ No ☐ Of | f | Deceleration I | Lane Length L _D | | | | | | 1 | |
| E 140 | ı | Freeway Volu | me, V _F | 671 | | | | | ☑ No | Off |
| _{-up} = ft | | Ramp Volume | e, V _R | 228 | | | | | L _{down} = | ft |
| | | Freeway Free | -Flow Speed, S _{FF} | 65.0 | | | | | V _D = | veh/h |
| $V_{\rm u} = {\rm veh/h}$ | | Ramp Free-F | ow Speed, S _{FR} | 45.0 | | | | | V _D - | VEII/II |
| Conversion to | o pc/h Und | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f _H | v | f _p | v = V/PHI | x f _{HV} x f _p |
| Freeway | 671 | 0.94 | Level | 8 | 0 | 0.962 | 2 | 1.00 | | 742 |
| Ramp | 228 | 0.76 | Level | 5 | 0 | 0.97 | ĵ | 1.00 | | 306 |
| UpStream | | | | | | | | | | |
| DownStream | | Merge Areas | | | | | | verge Areas | | |
| Estimation of | | werge Areas | | | Estimat | tion of | | verge Areas | | |
| | V ₁₂ = V _F | (D) | | | | | | R + (V _F - V _F | /D | |
| = | | (' _{FM} /
ation 13-6 o | r 13 7) | | _ | | | R ' (VF - VF
Equation 13 | | 3) |
| - _{EQ} =
P _{FM} = | | | tion (Exhibit 13-6) | ١ | L _{EQ} =
P _{FD} = | | - | sing Equation | | |
| У ₁₂ = | 742 p | | IOTT (EXTIIDIT 13-0) |) | V ₁₂ = | | | c/h | JII (EXIIIDIC I | 01) |
| V ₃ or V _{av34} | • | | 13-14 or 13-17 |) | V ₃ or V _{av34} | | • | c/h (Equation | 13-14 or 13-1 | 17) |
| Is V ₃ or V _{av34} > 2,70 | - | | 10-14-01-10-17 | , | | · > 2.700 | - | Yes □ No | | ,, |
| Is V_3 or $V_{av34} > 1.5$ | | | | | | | | Yes □ No | | |
| f Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} | | | c/h (Equatio | | 3-18, or |
| | 13-19) | | | | | | | -19) | | |
| Capacity Che | T . | 1 / | | 1 100 50 | Capacit | | | 1 ^ | ., | 1 |
| | Actual | | Capacity | LOS F? | V _F | | Actual | Exhibit 13- | pacity | LOS F? |
| | | | | | | \ <u></u> | | _ | | + |
| V_{FO} | 1048 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | · · V _R | | Exhibit 13- | | |
| | | | | | V _R | | | 10 | <u>'</u> | |
| Flow Entering | g Merge In | fluence A | rea | - | Flow Er | ntering | Diver | ge Influer | nce Area | ! |
| | Actual | Max | Desirable | Violation? | | Act | 1 | Max Des | | Violation' |
| V _{R12} | 1048 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | | Exhibit 13-8 | | |
| Level of Serv | ice Detern | nination (| if not F) | | 1 | | | erminatio | | <i>F</i>) |
| $D_R = 5.475 +$ | 0.00734 v _R + 0 | 0.0078 V ₁₂ - 0. | 00627 L _A | | | $D_{R} = 4.2$ | 52 + 0.0 | 0086 V ₁₂ - 0 | 0.009 L _D | |
| $D_R = 6.3 \text{ (pc/mi/s)}$ | ľn) | | | | $D_R = (I$ | pc/mi/ln) | | | | |
| OS = A (Exhibit | | | | | | Exhibit 13 | | | | |
| Speed Detern | nination | | | | Speed I | Determ | inatio | n | | |
| M _S = 0.229 (Exi | bit 13-11) | | | | $D_s = (E_s)^T$ | Exhibit 13-1 | 12) | | | |
| | (Exhibit 13-11) | | | | 1.5 | nph (Exhibit | t 13-12) | | | |
| | Exhibit 13-11) | | | | $S_0 = m$ | nph (Exhibit | t 13-12) | | | |
| | (Exhibit 13-13) | | | | S = m | nph (Exhibit | t 13-13) | | | |
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| | | | | | | | | | | |

| | | RAMP | S AND RAI | MP JUNCTI | ONS WO | RKS | HEET | | | |
|------------------------------------------------|------------------------------|--------------------------------|-------------------------------------------------------------|------------------------------------------------|--------------------------------------------------|---------------------|-----------------|---------------------------------------|---------------------|------------------------------------|
| General Info | rmation | | | Site Infor | | | | | | |
| Analyst
Agency or Company
Date Performed | Shar | ne Forsythe | J | Freeway/Dir of Tra
lunction
lurisdiction | | Centra | Ave NB O | ff | | |
| Analysis Time Perio | | | | Analysis Year | | 2035 | | | | |
| Project Description | | | | , | | | | | | |
| Inputs | | | | | | | | | | |
| Upstream Adj F | Ramp | Freeway Num
Ramp Numbe | nber of Lanes, N | 2
1 | | | | | Downstre
Ramp | am Adj |
| □Yes | On | · ' | Lane Length, L _A | ' | | | | | Yes | On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 1388
792 | | | | | ☑ No | Off |
| L _{up} = | ft | Ramp Volume | e, V _R | 372 | | | | | L _{down} = | ft |
| V _u = v | eh/h | | e-Flow Speed, S _{FF}
low Speed, S _{FR} | 65.0
45.0 | | | | | V _D = | veh/h |
| Conversion t | to pc/h Uni | | 111 | | | | | | <u> </u> | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 792 | 0.87 | Level | 11 | 0 | 0. | 948 | 1.00 | 9 | 60 |
| Ramp | 372 | 0.75 | Level | 6 | 0 | 0. | 971 | 1.00 | 5 | 13 |
| UpStream | | | | | | _ | | | ļ | |
| DownStream | | | | | | | | Niverse Areas | | |
| Estimation o | | Werge Areas | | | Estimati | ion o | | Diverge Areas | | |
| <u> </u> | | | | | LStillati | | | | | |
| | $V_{12} = V_{F}$ | | | | $V_{12} = V_R + (V_F - V_R)P_{FD}$ | | | | | |
| L _{EQ} = | | ation 13-6 or | | | L _{EQ} = | | | Equation 13- | | - |
| P _{FM} = | _ | Equation (I | Exhibit 13-6) | | P _{FD} = | | | 000 using Ed | uation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 60 pc/h | | |
| V_3 or V_{av34} | | | 3-14 or 13-17) | | V_3 or V_{av34} | | | pc/h (Equati | | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | | | | | | ☐Yes 🗹 No | | |
| Is V_3 or $V_{av34} > 1.5$ | | | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 | | ☐Yes ☑ No | | |
| If Yes,V _{12a} = | pc/h (
13-19) | | 3-16, 13-18, or | | If Yes,V _{12a} = | | p
19 | c/h (Equation | า 13-16, 13 | -18, or 13- |
| Capacity Che | |) | | | Capacity | | | 9) | | |
| Capacity One | Actual | Τ | Capacity | LOS F? | Capacity | , 011 | Actual | | apacity | LOS F? |
| | 7 totaai | † | Japaony | 2001. | V _F | | 960 | Exhibit 13- | | No |
| V _{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V_ | 447 | Exhibit 13- | | No |
| * FO | | LAIIIDIC 10 0 | | | | *R | 513 | Exhibit 13- | _ | _ |
| | <u> </u> | <u> </u> | 1 | | V _R | | | | | No |
| Flow Enterin | | -1 | | Violetiano | Flow En | -ir | | rge Influer | | Violetie - O |
| V _{R12} | Actual | Exhibit 13-8 | Desirable | Violation? | V ₁₂ | | Actual
960 | Max Desira
Exhibit 13-8 | 4400:All | Violation? |
| Level of Serv | rice Detern | nination (| if not F) | | Level of | Ser | ∕ice De | terminatio | n (if not | <i>F</i>) |
| D _R = 5.475 + 0 | .00734 v _R + | 0.0078 V ₁₂ - | - 0.00627 L _A | | [| D _R = 4 | .252 + 0 | .0086 V ₁₂ - 0 | .009 L _D | |
| D _R = (pc/mi/lr | ۱) | | | | $D_R = 0.0$ | 0 (pc/r | mi/ln) | | | |
| LOS = (Exhibit | 13-2) | | | | 1 | (Exhil | oit 13-2) | | | |
| Speed Deteri | | | | | Speed D | • | • | on . | | |
| | | | | | | | xhibit 13- | | | |
| M _S = (Exibit 1 | | | | | | | (Exhibit | - | | |
| | nibit 13-11) | | | | | | (Exhibit | - | | |
| | nibit 13-11)
nibit 13-13) | | | | 1 | - | • | - | | |
| | | All District | | | | | (Exhibit | · · · · · · · · · · · · · · · · · · · | | 10044 10 55 |
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| | | MIPS AND | RAMP JUNG | | | :E1 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------|------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------|
| General Infort | mation | | | Site Infor | mation | | | | |
| Analyst | Shan | ne Forsythe | Fre | eeway/Dir of Ti | avel (| Central NB On | | | |
| gency or Company | 0.10.10 | | | nction | | | | | |
| ate Performed | 9/9/2 | | | risdiction | , | 2025 | | | |
| nalysis Time Period | l PM P | ² eak | An | alysis Year | | 2035 | | | |
| roject Description nputs | | | | | | | | | |
| | | Freeway Num | ber of Lanes, N | 2 | | | | <u> </u> | |
| Jpstream Adj Ramp | | 1 | | | | | | Downstre | am Adj |
| ☐Yes ☐ On | ì | Ramp Number | | 1 | | | | Ramp | |
| _ 100 _ 011 | ı | | ane Length, L _A | 1491 | | | | □Yes | ☐ On |
| ☑ No ☐ Off | F | | ane Length L _D | | | | | ✓ No | Off |
| | | Freeway Volur | me, V _F | 413 | | | | | _ |
| _{up} = ft | | Ramp Volume | , V _R | 193 | | | | L _{down} = | ft |
| | | Freeway Free | Flow Speed, S _{FF} | 65.0 | | | | V _D = | vah/h |
| u = veh/h | | | ow Speed, S _{FR} | 55.0 | | | | V _D - | veh/h |
| onversion to | o pc/h Und | | 111 | | | | | | |
| | V | | | 0/ Truck | 0/ Dv | l f | f f | V = V/DHI | Evf vf |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v - v/Pni | F x f _{HV} x f _p |
| reeway | 413 | 0.97 | Level | 8 | 0 | 0.962 | 1.00 | | 443 |
| Ramp | 193 | 0.81 | Level | 1 | 0 | 0.995 | 1.00 | | 239 |
| JpStream | | \longmapsto | | | | | | | |
| ownStream | | M | | | | | <u> </u> | | |
| stimation of | | Merge Areas | | | Ectimati | on of v ₁₂ | Diverge Areas | <u> </u> | |
| .sumation of | | | | | LSuman | | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | V ₁₂ = | $V_R + (V_F - V_F)$ | / _R)P _{FD} | |
| EQ = | (Equ | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 1 | 3-12 or 13-1 | 13) |
| _{FM} = | 1.000 | using Equat | ion (Exhibit 13-6) | | P _{FD} = | | using Equat | tion (Exhibit 1 | 3-7) |
| ₁₂ = | 443 p | oc/h | | | V ₁₂ = | | pc/h | | |
| or V _{av34} | 0 pc/ | h (Equation ' | 13-14 or 13-17) | | V ₃ or V _{av34} | | pc/h (Equation | n 13-14 or 13-1 | 17) |
| s V ₃ or V _{av34} > 2,70 | - | | , | | | 4 > 2,700 pc/h? | | | • |
| s V ₃ or V _{av34} > 1.5 * | | | | | | 4 > 1.5 * V ₁₂ /2 | | | |
| | | | 3-16, 13-18, or | | | | pc/h (Equat | | 3-18, or |
| Yes,V _{12a} = | 13-19) | | | | If Yes,V _{12a} = | 1 | 3-19) | | , - |
| apacity Che | | | | | Capacity | / Checks | | | |
| | Actual | C | apacity | LOS F? | | Actual | | Capacity | LOS F |
| | | | | 1 | | | E 1 1 1 4 | 3 Q I | • |
| | | | | | V_{F} | | Exhibit 1 | 3-0 | Į |
| V _{EO} | 682 | Exhibit 13-8 | | No | <u> </u> | - V _R | Exhibit 1 | | |
| V_{FO} | 682 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | - | 3-8 | |
| | | | | No | $V_{FO} = V_{F}$ | | Exhibit 1
Exhibit 1
10 | 3-8 | |
| | g Merge In | nfluence A | | | $V_{FO} = V_{F}$ | tering Dive | Exhibit 1 Exhibit 1 10 Erge Influe | 3-8
 3-
 ence Area | |
| low Entering | g Merge In
Actual | nfluence A | Desirable | Violation? | $V_{FO} = V_{F}$ V_{R} Flow En | | Exhibit 1 Exhibit 1 10 Erge Influe Max De | 3-8 3- ence Area | Violation |
| Flow Entering | g Merge In
Actual
682 | Max I
Exhibit 13-8 | Desirable
4600:All | | $V_{FO} = V_F$ V_R Flow Enterty | tering Dive | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8 3- ence Area esirable | Violation |
| V _{R12}
evel of Servi | Merge In Actual 682 ice Determ | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow Enter V_{12} Level of | tering Dive | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8 3- ence Area esirable ion (if not | Violation |
| low Entering V _{R12} evel of Servi | Merge In Actual 682 ice Determ | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow Enter V_{12} Level of | tering Dive | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8 3- ence Area esirable ion (if not | Violation |
| V _{R12} evel of Servi | Actual 682 ice Determ 0.00734 v R + (| Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | V _{FO} = V _F · V _R Flow Entire V ₁₂ Level of | tering Dive | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8 3- ence Area esirable ion (if not | Violation |
| V _{R12} evel of Servi D _R = 5.475 + R = 1.3 (pc/mi/l | Actual 682 ice Detern 0.00734 v R + 0 | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_{F}$ V_{R} Flow End V_{12} Level of $D_{R} = (percentage)$ | Actual Service De | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 | 3-8 3- ence Area esirable ion (if not | Violation |
| Flow Entering V_{R12} Evel of Servi $D_{R} = 5.475 + 1.3 \text{ (pc/mi/}$ $OS = A \text{ (Exhibit }$ | Actual 682 ice Detern 0.00734 v R + 0 | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow Entropy V_{12} Level of $D_R = (percent level of level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level level le$ | Actual Service De O _R = 4.252 + 0 c/mi/ln) | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Exermination | 3-8 3- ence Area esirable ion (if not | Violation |
| V _{R12} vevel of Servi D _R = 5.475 + R = 1.3 (pc/mi/l OS = A (Exhibit | Actual 682 ice Detern 0.00734 v R + ((in)) 13-2) mination | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_{F}$ V_{R} Flow End V_{12} Level of $D_{R} = (p_{0}$ LOS = (E Speed D | Actual Service De O _R = 4.252 + (c/mi/ln) xhibit 13-2) | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Exermination | 3-8 3- ence Area esirable ion (if not | Violation |
| Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + 1.3 \text{ (pc/mi//} 20S = A \text{ (Exhibit of Speed Deterning)}$ $C_S = 0.165 \text{ (Exitor)}$ | Merge In Actual 682 ice Detern 0.00734 v R + ((In)) 13-2) mination bit 13-11) | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | V _{FO} = V _F · V _R Flow Ent V ₁₂ Level of D _R = (po LOS = (E Speed D D _S = (E) | Actual Service De O _R = 4.252 + (c/mi/ln) xhibit 13-2) Setermination xhibit 13-12) | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Etermination 20086 V ₁₂ - | 3-8 3- ence Area esirable ion (if not | Violation |
| Flow Entering V_{R12} evel of Servi $D_R = 5.475 + $ $R = 1.3 \text{ (pc/mi/l})$ $R = 0.165 \text{ (Exiting Signature)}$ $R = 0.165 \text{ (Exiting Signature)}$ $R = 0.165 \text{ (Exiting Signature)}$ | Actual 682 ice Detern 0.00734 v R + (In) 13-2) inination bit 13-11) (Exhibit 13-11) | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | V _{FO} = V _F · V _R V _R Flow Ent V ₁₂ Level of D _R = (po LOS = (E) Speed D D _S = (E) S _R = mp | Actual Service De O _R = 4.252 + (c/mi/ln) xhibit 13-2) etermination khibit 13-12 ch (Exhibit 13-12) | Exhibit 1 Exhibit 1 10 Exhibit 1 Rege Influe Max De Exhibit 13-8 Exermination 10.0086 V ₁₂ - | 3-8 3- ence Area esirable ion (if not | Violation |
| V _{R12} vevel of Servi D _R = 5.475 + R = 1.3 (pc/mi/l) OS = A (Exhibit of Speed Deternorm) S = 0.165 (Exitory) R = 61.2 mph (Company) | Merge In Actual 682 ice Detern 0.00734 v R + ((In)) 13-2) mination bit 13-11) | Max I
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow Entirely V_{12} Level of $D_R = (p_1 + p_2)$ $LOS = (E)$ Speed D $D_S = (E)$ $S_R = (E)$ $S_R = (E)$ $S_R = (E)$ $S_R = (E)$ $S_R = (E)$ $S_R = (E)$ | Actual Service De O _R = 4.252 + (c/mi/ln) xhibit 13-2) Setermination xhibit 13-12) | Exhibit 1 Exhibit 1 10 Erge Influe Max De Exhibit 13-8 Exermination 0.0086 V ₁₂ - | 3-8 3- ence Area esirable ion (if not | Violation |

| | | RAMP | S AND RAI | MP JUNCTI | ONS WOF | RKSI | HEET | | | |
|-------------------------------------|--------------------------|------------------------------|----------------------------|-------------------|---------------------------------------------------|------------------|-------------------|----------------------------|-------------------------------|--------------------|
| General In | formation | | | Site Infor | | | | | | |
| Analyst | | hane Forsythe | | Freeway/Dir of Tr | avel C | Central | Ave SB O | ff | | |
| Agency or Comp | - | | | Junction | | | | | | |
| Date Performed | | /9/2014 | | Jurisdiction | • | | | | | |
| Analysis Time Po | | M Peak | | Analysis Year | 2 | 035 | | | | |
| Project Descripti | on | | | | | | | | | |
| Inputs | | Francisco Nicor | shar of Lanca N | | | | | | 1 | |
| Upstream A | dj Ramp | | ber of Lanes, N | 2 | | | | | Downstrea | am Adj |
| □Vas | On | Ramp Numbe | - | 1 | | | | | Ramp | |
| □Yes | | Acceleration I | ane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | Deceleration I | Lane Length L _D | 1144 | | | | | ✓No | Off |
| | | Freeway Volu | me, V _F | 348 | | | | | I | |
| L _{up} = | ft | Ramp Volume | e, V _R | 101 | | | | | L _{down} = | ft |
| | | Freeway Free | Flow Speed, S _F | 65.0 | | | | | \ | |
| $V_u =$ | veh/h | | low Speed, S _{FR} | 45.0 | | | | | V _D = | veh/h |
| Conversio | n to nc/h l | Inder Base | 111 | | | | | | | |
| | 11 to peni e | | | | 1 | Π. | . 1 | | | |
| (pc/h) | (Veh/hr) |) PHF | Terrain | %Truck | %Rv | 1 | HV | f_p | v = V/PHF | $x t_{HV} x t_{p}$ |
| Freeway | 348 | 0.79 | Level | 14 | 0 | 0.9 | 935 | 1.00 | 4 | 71 |
| Ramp | 101 | 0.90 | Level | 6 | 0 | 0.9 | 971 | 1.00 | 1 | 15 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| - 4: 4: | | Merge Areas | | | F - 4: 4:- | | | iverge Areas | | |
| Estimation | 1 of V ₁₂ | | | | Estimation | on o | r v ₁₂ | | | |
| | V ₁₂ = | $V_F(P_{FM})$ | | | | | V ₁₂ = | $V_R + (V_F - V_F)$ | _R)P _{FD} | |
| - _{EQ} = | (Ed | quation 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13-1 | 12 or 13-13 |) |
| P _{FM} = | usi | ng Equation (I | Exhibit 13-6) | | P _{FD} = | | 1.0 | 000 using Eq | uation (Exhi | bit 13-7) |
| V ₁₂ = | pc/ | | , | | V ₁₂ = | | | '1 pc/h | , | , |
| √ ₃ or V _{av34} | • | h (Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equation | on 13 ₋ 14 or | · 13_17\ |
| | 2,700 pc/h? | | 14 61 16 17) | | | > 2.70 | | Yes ☑ No |) 10-1 4 0 | 13-17) |
| | 1.5 * V ₁₂ /2 | | | | | | | | | |
| 0 4.0. | | Yes □ No
′h (Equation 13 | _16 13_18 or | | | 1.0 | | ☐Yes ☑ No
c/h (Equation | 13_16 13. | 18 or 13. |
| f Yes,V _{12a} = | 13- | | -10, 13-10, 01 | | If Yes,V _{12a} = | | 19 | | 1 10-10, 10- | 10, 01 13 |
| Capacity C | Checks | • | | | Capacity | Che | ecks | , | | |
| | Actual | C | Capacity | LOS F? | 1 | | Actual | Ca | pacity | LOS F |
| | | | | | V _F | | 471 | Exhibit 13-8 | 3 4700 | No |
| V_{FO} | | Exhibit 13-8 | | | V _{FO} = V _F - | - V _D | 356 | Exhibit 13-8 | 3 4700 | No |
| FU | | | | | V _R | R | 115 | Exhibit 13-1 | | No |
| Classe Codes | rina Mara | Influence | \ | | | <u> </u> | | | | 110 |
| Flow Enter | | Influence A | | \/iolotion2 | Flow Ent | | | rge Influen | | Violetion |
| 1/ | Actual | | Desirable | Violation? | \/ | | ctual | Max Desirat | 1 | Violation? |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 71 | Exhibit 13-8 | 4400:All | No No |
| | | ermination (| | | | | | terminatio | | F) |
| | • | + 0.0078 V ₁₂ - | - 0.00627 L _A | | | | | .0086 V ₁₂ - 0. | 009 L _D | |
| $D_R = (pc/m)$ | ni/ln) | | | | $D_{R} = -2.0$ |) (pc/ı | mi/ln) | | | |
| _OS = (Exhi | bit 13-2) | | | | LOS = A (I | Exhib | it 13-2) | | | |
| Speed Det | ermination |) | | | Speed De | eteri | ninatio | n | | |
| | it 13-11) | | | | ' | | chibit 13- | | | |
| | | ` | | | | | (Exhibit | • | | |
| | Exhibit 13-11 | | | | | - | (Exhibit 1 | • | | |
| • | Exhibit 13-11 | | | | | - | | • | | |
| • • • | Exhibit 13-13 | , | | | | | (Exhibit | · | | |
| opyright © 2012 I | University of Florid | da, All Rights Reser | ved | | HCS2010 TM | Version | 1 6.41 | Ge | enerated: 9/9/2 | 2014 12:37 |

| <u> </u> | 1 1 F . | | III O AIID | RAMP JUN | | | <u> </u> | | | | |
|-----------------------------------------|-------------|---------------------------------------|------------------------------|------------------------------|------------------------|-------------------------------------|---------------------|--------------|--------------------------------------|---------------------|--------------------------------------|
| General | Inforn | | | | Site Infor | | | 25.6 | | | |
| Analyst | `amna=: | Shan | e Forsythe | | eeway/Dir of Tranction | avel | Central | SB On | | | |
| Agency or C
Date Perfori | | 9/9/2 | 014 | | risdiction | | | | | | |
| Analysis Tin | | PM P | | | nalysis Year | | 2035 | | | | |
| Project Des | | 1 101 1 | Cak | 711 | laryoio i cai | | 2000 | | | | |
| nputs | оприон | | | | | | | | | | |
| | I' D | | Freeway Num | ber of Lanes, N | 2 | | | | | D | A al: |
| Jpstream A | aj Ramp | | Ramp Number | | 1 | | | | | Downstre
Ramp | am Adj |
| Yes | On | | · · | | • | | | | | | |
| | | | | ane Length, L _A | 1144 | | | | | ☐Yes | On |
| ✓ No | | | | ane Length L _D | | | | | | ✓ No | Off |
| | | | Freeway Volui | | 936 | | | | | | £. |
| _up = | ft | | Ramp Volume | $, V_R$ | 366 | | | | | L _{down} = | ft |
| <i>,</i> – | vah/h | | Freeway Free | -Flow Speed, S _{FF} | 65.0 | | | | | V _D = | veh/h |
| / _u = | veh/h | | Ramp Free-Flo | ow Speed, S _{ER} | 45.0 | | | | | v D _ | VCII/II |
| Convers | sion to | pc/h Und | der Base (| Conditions | | | | | | | |
| | | V | PHF | Terrain | %Truck | %Rv | T f | T | f | v – V/DH | F x f _{HV} x f _r |
| (pc/l | ''/ | (Veh/hr) | | i ci i aii i | | | | HV | F | | [|
| Freeway | | 936 | 0.90 | Level | 14 | 0 | 0.9 | | 1.00 | | 1113 |
| Ramp | | 366 | 0.89 | Level | 6 | 0 | 0.9 | 71 | 1.00 | | 423 |
| UpStream | | | - | | | | | | | | |
| DownStrea | m | | Merge Areas | | | | | | verge Areas | | |
| Estimat | ion of | · · · · · · · · · · · · · · · · · · · | werge Areas | | | Estimat | ion of | · V | verge Areas | | |
| _3111141 | 1011 01 | | | | | LStillat | 1011 01 | | | | |
| | | $V_{12} = V_{F}$ | (P _{FM}) | | | | | $V_{12} = V$ | R + (V _F - V _R | P _{FD} | |
| - _{EQ} = | | (Equa | ation 13-6 or | 13-7) | | L _{EQ} = | | (E | Equation 13- | 12 or 13-1 | 13) |
| P _{FM} = | | 1.000 | using Equat | ion (Exhibit 13-6) | | P _{FD} = | | u | sing Equatio | n (Exhibit 1 | 3-7) |
| / ₁₂ = | | 1113 | pc/h | | | V ₁₂ = | | p | c/h | | |
| / ₃ or V _{av34} | | 0 pc/h | n (Equation [•] | 13-14 or 13-17) | | V ₃ or V _{av34} | | p | c/h (Equation 1 | 3-14 or 13- | 17) |
| | ., > 2.700 | pc/h? Yes | | , | | | ر
مر > 2.70 | - | Yes No | | , |
| | | V ₁₂ /2 □ Yes | | | | | | | Yes No | | |
| | | | | s-16, 13-18, or | | | | | c/h (Equation | 13-16. 1 | 3-18. or |
| f Yes,V _{12a} = | = | 13-19) | | ,, | | If Yes,V _{12a} = | = | | -19) | | , |
| Capacit | y Chec | ks | | | | Capacit | y Che | cks | | | |
| | | Actual | C | apacity | LOS F? | | | Actual | Cap | acity | LOS F |
| | | | | | | V _F | | | Exhibit 13-8 | 3 | |
| V _F | _ | 1536 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | Exhibit 13-8 | 3 | |
| *F0 | 0 | 1000 | EXHIBIT 10 0 | | 110 | | - `` | | Exhibit 13- | | |
| | | | | | | V _R | | | 10 | | |
| low Er | ntering | Merge In | fluence A | rea | | Flow Er | tering | Diver | ge Influen | | |
| | | Actual | 1 | Desirable | Violation? | | A | ctual | Max Desi | rable | Violation |
| V_{R1} | 2 | 1536 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | | Exhibit 13-8 | | |
| | | ce Detern | nination (i | if not F) | | Level or | f Serv | ice Det | erminatio | n (if not | : F) |
| | | | 0.0078 V ₁₂ - 0.0 | | | | D _R = 4. | 252 + 0.0 | 0086 V ₁₂ - 0. | 009 L _D | |
| • • • • • • • • • • • • • • • • • • • • | 0.1 (pc/mi/ | • • • | 14 | | | | oc/mi/ln | | 12 | 5 | |
| •• | (Exhibit 1 | • | | | | | Exhibit ′ | | | | |
| | | ination | | | | Speed L | | | <u> </u> | | |
| • | | | | | | | | | 1 | | |
| • | .236 (Exibi | t 13-11) | | | | , | Exhibit 13 | • | | | |
| S _R = 59 | 9.6 mph (E | Exhibit 13-11) | | | | l '' | | oit 13-12) | | | |
| | /A mph (E | xhibit 13-11) | | | | $S_0 = m$ | ph (Exhil | oit 13-12) | | | |
| | | | | | | h | | 140 40 | | | |
| | 9.6 mph (E | Exhibit 13-13) | | | | S = m | ıpn (Exnii | oit 13-13) | | | |

| 0 | | WIPS AND | RAMP JUN | | | EEI | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------------|----------------------------|--------------------------------------------------------------------|------------------------------------------|----------------------------------------|----------------------|--------------------------------------|
| General Inform | | F " | | Site Infor | | | ND 0 | | |
| Analyst
Agency or Company | Shan | e Forsythe | | eeway/Dir of Tr
inction | avel | Emerson Junction | on NB On | | |
| Date Performed | 9/9/2 | 014 | | risdiction | | | | | |
| nalysis Time Period | AM F | | | nalysis Year | | 2035 | | | |
| roject Description | | | | , | | | | | |
| nputs | | | | | | | | | |
| Jpstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adj |
| | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | , |
| Yes On | | Acceleration L | ane Length, L _A | 980 | | | | □Yes | On |
| ✓ No ☐ Off | | Deceleration L | ane Length L _D | | | | | | |
| ¥ 140 🗀 OII | | Freeway Volu | me, V _F | 351 | | | | ✓No | Off |
| up = ft | | Ramp Volume | , V _D | 104 | | | | L _{down} = | ft |
| | | | Flow Speed, S _{FF} | 65.0 | | | | | |
| u = veh/h | | 1 | ow Speed, S _{FR} | 55.0 | | | | $V_D =$ | veh/h |
| Conversion to | nc/h Hn | | 111 | 00.0 | | | | | |
| | γ ρε/π οπο
∀ | | | 0/= : | 0/5 | | , | = \//D!!! | Tyf of |
| (pc/h) | (Veh/hr) | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v = V/PHI | F x f _{HV} x f _p |
| reeway | 351 | 0.89 | Level | 21 | 0 | 0.905 | 1.00 | | 436 |
| Ramp | 104 | 0.83 | Level | 15 | 0 | 0.930 | 1.00 | | 135 |
| JpStream | | | | | | | | | |
| OownStream | | | | | | | Diverge Areas | <u> </u> | |
| stimation of | | merge Areas | | | Estimati | ion of v ₁₂ | Diverge Areas | • | |
| | | / D \ | | | | | - \ / | / \D | |
| _ | $V_{12} = V_F$ | | 40.7) | | _ | v ₁₂ - | = V _R + (V _F - \ | | 10) |
| EQ = | | ation 13-6 or | | | L _{EQ} = | | (Equation 1 | | |
| _{FM} = | | | ion (Exhibit 13-6) | | P _{FD} = | | using Equa | tion (Exhibit 1 | 3-7) |
| 12 = | 436 p | | | | V ₁₂ = | | pc/h | | |
| ₃ or V _{av34} | - | | 13-14 or 13-17) | | V ₃ or V _{av34} | | | n 13-14 or 13-1 | 17) |
| $s V_3 \text{ or } V_{av34} > 2,700$ | | | | | | ₃₄ > 2,700 pc/h? | | | |
| s V_3 or $V_{av34} > 1.5 *$ | | | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 * V ₁₂ /2 | | | |
| Yes,V _{12a} = | pc/h
13-19) | | 3-16, 13-18, or | | If Yes,V _{12a} = | : | pc/h (Equat
13-19) | ion 13-16, 1 | 3-18, or |
| Capacity Chec | | <i></i> | | | Capacit | y Checks | 10 10) | | |
| , , | Actual | С | apacity | LOS F? | | Actua | (| Capacity | LOS F |
| | | | | | V _F | | Exhibit 1 | | |
| V | 571 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _D | Exhibit 1 | 3-8 | |
| V_{FO} | 3/1 | EXHIDIC 13-0 | | INO | | N . | Exhibit 1 | | |
| | | | | | V _R | | 10 | | |
| low Entering | Merge In | fluence A | rea | | Flow En | tering Dive | | | 1 |
| | Actual | i r | Desirable | Violation? | | Actual | 1 | esirable | Violation |
| V _{R12} | 571 | Exhibit 13-8 | 4600:All | No | V ₁₂ | 1 | Exhibit 13-8 | | <u> </u> |
| evel of Servi | | • | | | _ | Service D | | | : <i>F</i>) |
| * * | | 0.0078 V ₁₂ - 0.0 | 00627 L _A | | | $D_R = 4.252 +$ | 0.0086 V ₁₂ - | 0.009 L _D | |
| R = 3.7 (pc/mi/li | n) | | | | $D_R = (p$ | c/mi/ln) | | | |
| | 3-2) | | | | LOS = (E | xhibit 13-2) | | | |
| OS = A (Exhibit 1 | ination | | | | Speed D | Peterminati | ion | | |
| OS = A (Exhibit 1
Speed Determ | <u>a</u> c.o | | | | $D_s = (E$ | xhibit 13-12) | | | |
| peed Determ | | | | | Fs (- | | | | |
| Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determine Speed Determin | it 13-11) | | | | | ph (Exhibit 13-12 | 2) | | |
| Speed Determ S = 0.220 (Exib R = 59.9 mph (I | it 13-11)
Exhibit 13-11) | | | | S _R = m _l | ph (Exhibit 13-12 | - | | |
| Speed Determ S = 0.220 (Exib R = 59.9 mph (I D = N/A mph (E | it 13-11) | | | | S _R = m _l
S ₀ = m _l | • | 2) | | |

| | | RAMP | S AND RAI | MP JUNCTI | ONS WOF | RKSI | IEET | | | |
|-------------------------------------|--------------------------|-----------------------------------|-----------------------------|-------------------|-------------------------------------|-------------------|------------------------------|---------------------------------------------------|-------------------------------|--------------------|
| General In: | formation | | | Site Infor | | | | | | |
| Analyst | | hane Forsythe | | Freeway/Dir of Tr | avel E | merso | n Junction | SB Off | | |
| Agency or Comp | - | | | Junction | | | | | | |
| Date Performed | | /9/2014 | | Jurisdiction | | | | | | |
| Analysis Time Po | | M Peak | | Analysis Year | 2 | 2035 | | | | |
| Project Descripti | on | | | | | | | | | |
| Inputs | | Francisco Nicia | har of Lanca N | | | | | | 1 | |
| Upstream A | dj Ramp | 1 | ber of Lanes, N | 2 | | | | | Downstrea | am Adj |
| □Vaa | On | Ramp Numbe | - | 1 | | | | | Ramp | |
| □Yes | □ On | Acceleration L | ane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | Deceleration I | Lane Length L _D | 340 | | | | | ✓No | Off |
| | | Freeway Volu | me, V _F | 673 | | | | | I ™ NO | |
| L _{up} = | ft | Ramp Volume | e, V _D | 299 | | | | | L _{down} = | ft |
| | | | -Flow Speed, S _F | 65.0 | | | | | , | |
| $V_u =$ | veh/h | | low Speed, S _{FR} | 50.0 | | | | | V _D = | veh/h |
| Convorcio | n to no/h l | | 111 | | | | | | | |
| | <i>11 to pc/11 c</i> | Inder Base | Conditions | | Ĭ | 1 | | | ī | |
| (pc/h) | (Veh/hr |) PHF | Terrain | %Truck | %Rv | f | HV | f_p | v = V/PHF | $x f_{HV} x f_{p}$ |
| Freeway | 673 | 0.87 | Level | 6 | 0 | 0.9 | 71 | 1.00 | 7: | 97 |
| Ramp | 299 | 0.88 | Level | 5 | 0 | 0.9 | 76 | 1.00 | 34 | 48 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | | iverge Areas | | |
| Estimation | of v ₁₂ | | | | Estimation | on of | ^F V ₁₂ | | | |
| | V ₁₂ = | V _F (P _{FM}) | | | | | V ₁₂ = | V _R + (V _F - V _F | _B)P _{ED} | |
| - _{EQ} = | | quation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13-1 | – | 3 |
| P _{FM} = | · · | ng Equation (I | | | P _{FD} = | | | 000 using Eq | | • |
| FM
/ ₁₂ = | pc/ | | _XIIIDIL 10-0) | | | | | | uation (Exil | DIL 13-1) |
| | • | | 11 10 17) | | V ₁₂ = | | | 7 pc/h | 40.44 | 40.47) |
| V ₃ or V _{av34} | | h (Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | . 0.70 | | pc/h (Equatio | on 13-14 oi | r 13-17) |
| Is V_3 or $V_{av34} >$ | | | | | | • | | Yes ✓ No | | |
| Is V_3 or V_{av34} > | | | 10 10 10 | | | 1.5 ¹ | | Yes ☑ No | 10 10 10 | 10 10 |
| f Yes,V _{12a} = | рс/
13- | h (Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | | p
19 | c/h (Equation | 13-16, 13 | -18, or 13- |
| Capacity C | | 10) | | | Capacity | Che | | <i>)</i> | | |
| oupuony c | Actual | | apacity | LOS F? | Gupuony | 7 | Actual | Ca | pacity | LOS F |
| | 7101001 | | rapaorty | 20011 | V _F | | 797 | Exhibit 13-8 | | No |
| V | | Exhibit 13-8 | | | | 1/ | 449 | Exhibit 13-8 | + | No |
| V_{FO} | | EXHIBIT 13-0 | | | $V_{FO} = V_{F}$ | VR . | | _ | | _ |
| | | | | | V _R | | 348 | Exhibit 13-1 | | No |
| Flow Enter | | Influence A | | | Flow Ent | | | rge Influen | | • |
| | Actual | | Desirable | Violation? | | | ctual | Max Desiral | 1 | Violation |
| V _{R12} | | Exhibit 13-8 | | | V ₁₂ | | 97 | Exhibit 13-8 | 4400:All | No |
| | | ermination (| | | | | | terminatio | | <i>F</i>) |
| $D_R = 5.475 -$ | + 0.00734 v _R | + 0.0078 V ₁₂ - | - 0.00627 L _A | | D | _R = 4. | 252 + 0. | .0086 V ₁₂ - 0. | 009 L _D | |
| O _R = (pc/m | ni/ln) | | | | $D_{R} = 8.0$ | (pc/m | ıi/ln) | | | |
| | bit 13-2) | | | | | Exhib | it 13-2) | | | |
| | ermination |) | | | Speed De | | | n | | |
| - | | - | | | + ' | | | | | |
| • | it 13-11) | | | | 1 - | | hibit 13- | • | | |
| | Exhibit 13-11 | | | | | - | (Exhibit | • | | |
| • | Exhibit 13-11 | | | | , and | - | Exhibit 1 | • | | |
| S = mph (| Exhibit 13-13 |) | | | S = 58.9 | 9 mph | (Exhibit | 13-13) | | |
| | | da, All Rights Reser | | | HCS2010 TM | | | | enerated: 9/9/ | |

| Canaral lafa | | WIF 3 AND | RAMP JUN | | | <u> </u> | | | |
|-----------------------------------------------|----------------------------------|------------------------------|-----------------------------|------------------------|--------------------------------------------------|------------------------------------------|----------------------------------------|---------------------|--------------------------------|
| General Infori | | F " | | Site Infor | | - | ND 0 | | |
| Analyst
Agency or Company | Shan | e Forsythe | | eeway/Dir of Tranction | avel | Emerson Juncti | on NB On | | |
| late Performed | 9/9/2 | 014 | | ırisdiction | | | | | |
| nalysis Time Period | | | | nalysis Year | | 2035 | | | |
| roject Description | | - | <u> </u> | | | | | | |
| nputs | | | | | | | | | |
| pstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adi |
| potrodiii / taj / tailip | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | |
| ☐ Yes ☐ On | | Acceleration L | ane Length, L _Δ | 980 | | | | □Yes | On |
| ZNa 🗆 O# | | 1 | ane Length L | | | | | | _ |
| ☑ No ☐ Off | | Freeway Volu | | 849 | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | ' | 458 | | | | L _{down} = | ft |
| ıp | | | Flow Speed, S _{FF} | | | | | down | |
| u = veh/h | | 1 | | 65.0 | | | | $V_D =$ | veh/h |
| | | | ow Speed, S _{FR} | 55.0 | | | | | |
| Conversion to | y pc/n Uni | der Base (| Conditions | | Ι | | | | |
| (pc/h) | v
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PH | $F \times f_{HV} \times f_{p}$ |
| reeway | 849 | 0.94 | Level | 6 | 0 | 0.971 | 1.00 | | 930 |
| Ramp | 458 | 0.92 | Level | 5 | 0 | 0.976 | 1.00 | | 511 |
| JpStream | | | | | | | | | |
| ownStream | | | | | | | <u> </u> | | |
| otimotion of | | Merge Areas | | | Catinasti | ion of w | Diverge Areas | 8 | |
| stimation of | V ₁₂ | | | | Estimati | ion of v ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | V ₁₂ = | = V _R + (V _F - \ | $/_{R})P_{FD}$ | |
| _{EQ} = | (Equ | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 1 | 3-12 or 13-1 | 13) |
| _{FM} = | 1.000 | using Equat | ion (Exhibit 13-6) | | P _{FD} = | | using Equa | tion (Exhibit 1 | 3-7) |
| ₁₂ = | 930 p | c/h | | | V ₁₂ = | | pc/h | | |
| or V _{av34} | 0 pc/l | h (Equation | 13-14 or 13-17) |) | V ₃ or V _{av34} | | pc/h (Equation | n 13-14 or 13- | 17) |
| s V ₃ or V _{av34} > 2,700 | - | | , | | | ₃₄ > 2,700 pc/h? | | | • |
| s V ₃ or V _{av34} > 1.5 * | | | | | | ₃₄ > 1.5 * V ₁₂ /2 | | | |
| Yes,V _{12a} = | | | 3-16, 13-18, or | | If Yes,V _{12a} = | | pc/h (Equat | | 3-18, or |
| | 13-19) |) | | | | | 13-19) | | |
| apacity Che | | 1 0 | | 1 100 50 | Capacity | y Checks | | , | 1 |
| | Actual | | apacity | LOS F? | \/ | Actua | | Capacity | LOS F |
| | | | | | V _F | | Exhibit 1 | _ | |
| V_{FO} | 1441 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 1 | | |
| | | | | | V_R | | Exhibit 10 | 13- | |
| low Entering | Merge In | fluence 4 | rea | | Flow En | tering Div | | ence Area |) |
| ion Lincinig | Actual | 1 | Desirable | Violation? | 1011 211 | Actual | | esirable | Violation |
| V _{R12} | 1441 | Exhibit 13-8 | 4600:All | No | V ₁₂ | | Exhibit 13-8 | 3 | |
| evel of Servi | ce Detern | nination (| if not F) | <u> </u> | | Service D | | | : F) |
| | | 0.0078 V ₁₂ - 0.0 | | | | $D_R = 4.252 +$ | | | - / |
| R = 10.3 (pc/mi | | 12 | -д | | | c/mi/ln) | 12 | о.ооо -Б | |
| | • | | | | | | | | |
| OS = B (Exhibit 1 | | | | | | exhibit 13-2) | | | |
| peed Determ | | | | | + | eterminat | ion | | |
| $I_{S} = 0.230 \text{ (Exit)}$ | • | | | | , | xhibit 13-12) | ٥, | | |
| R= 59.7 mph (| Exhibit 13-11) | | | | S _R = m | ph (Exhibit 13-1 | - | | |
| R 33.7 mpm (| | | | | | | | | |
| | Exhibit 13-11) | | | | $S_0 = m_1$ | ph (Exhibit 13-1 | 2) | | |
| = N/A mph (E | Exhibit 13-11)
Exhibit 13-13) | | | | 1 - | oh (Exhibit 13-1
oh (Exhibit 13-1 | • | | |

| | | RAMP | S AND RAI | MP JUNCTI | ONS WO | RKS | HEET | | | |
|----------------------------------------------|----------------------------------|--------------------------------|------------------------------|----------------------------------------------|---------------------------|--------------------|-------------------|---------------------------------------------------|--------------------|------------------------------------|
| General Info | ormation | | | Site Infor | | | | | | |
| Analyst
Agency or Compa
Date Performed | iny
9/9/2 | | | reeway/Dir of Tr
Junction
Jurisdiction | | | on Junction | SB Off | | |
| Analysis Time Per
Project Description | | Peak | | Analysis Year | | 2035 | | | | |
| Inputs | [] | | | | | | | | | |
| | : D | Freeway Num | ber of Lanes, N | 2 | | | | I, | D | A -I' |
| Upstream Ad | j Ramp | Ramp Numbe | | 1 | | | | | Downstrea
Ramp | m Adj |
| □Yes | On | Acceleration L | ane Length, L _A | · | | | | | □Yes | □On |
| ✓ No | Off | Deceleration I
Freeway Volu | Lane Length L _D | 340
560 | | | | | ✓No | Off |
| L _{up} = | ft | Ramp Volume | e, V _R | 195 | | | | L | -down = | ft |
| V,, = | veh/h | 1 | -Flow Speed, S _{FF} | 65.0 | | | | \ | √ _D = | veh/h |
| ű | | | low Speed, S _{FR} | 50.0 | | | | | | |
| Conversion | to pc/h Un | der Base | Conditions | _ | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f _{HV} | f _p | / = V/PHF | x f _{HV} x f _p |
| Freeway | 560 | 0.88 | Level | 13 | 0 | _ | 939 | 1.00 | 67 | |
| Ramp | 195 | 0.94 | Level | 7 | 0 | 0. | 966 | 1.00 | 21 | 6 |
| UpStream
DownStream | - | | | + | | + | | | | |
| Downoucum | | Merge Areas | | | | | D | verge Areas | | |
| Estimation | of v ₁₂ | | | | Estimati | ion o | f v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{rw}) | | | | | | V _R + (V _F - V _R |)P _{ED} | |
| L _{EQ} = | | ation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13-12 | | |
| P _{FM} = | | Equation (| | | P _{FD} = | | • | 00 using Equ | • | |
| V ₁₂ = | pc/h | 1 (| , | | V ₁₂ = | | | 3 pc/h | (| , |
| V ₃ or V _{av34} | • | Equation 13 | -14 or 13-17) | | V_3 or V_{av34} | | | pc/h (Equatio | n 13-14 or | 13-17) |
| Is V ₃ or V _{av34} > 2 | | - | , | | | , > 2,7 | | Yes ☑ No | | - , |
| | .5 * V ₁₂ /2 Ye | | | | | | | Yes ☑ No | | |
| If Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | | | h (Equation | 13-16, 13- | 18, or 13- |
| Capacity Cl | hecks | | | | Capacity | y Ch | ecks | | | |
| | Actual | C | apacity | LOS F? | | | Actual | Cap | acity | LOS F? |
| | | | | | V_{F} | | 678 | Exhibit 13-8 | 4700 | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 462 | Exhibit 13-8 | 4700 | No |
| | | | | | V_R | | 216 | Exhibit 13-10 | 2100 | No |
| Flow Enteri | ng Merge In | fluence A | rea | | Flow En | terin | g Diver | ge Influenc | e Area | |
| | Actual | Max | Desirable | Violation? | | , | Actual | Max Desirabl | е | Violation? |
| V_{R12} | | Exhibit 13-8 | | | V ₁₂ | | 678 | Exhibit 13-8 | 4400:All | No |
| | rvice Detern | | | | | | | ermination | • | -) |
| | 0.00734 v $_{R}$ + | 0.0078 V ₁₂ - | 0.00627 L _A | | | D _R = 4 | 1.252 + 0.0 | 0086 V ₁₂ - 0.0 | 009 L _D | |
| D _R = (pc/mi | /ln) | | | | $D_R = 7.0$ | 0 (pc/r | mi/ln) | | | |
| LOS = (Exhib | oit 13-2) | | | | LOS = A | (Exhil | oit 13-2) | | | |
| Speed Dete | rmination | | | | Speed D | eter | minatio | n | | |
| M _S = (Exibit | : 13-11) | | | | $D_{s} = 0.2$ | 252 (E | xhibit 13- | 12) | | |
| ŭ | xhibit 13-11) | | | | S _R = 59 | 9.2 mph | (Exhibit 1 | 13-12) | | |
| | xhibit 13-11) | | | | $S_0 = N/$ | 'A mph | (Exhibit 1 | 3-12) | | |
| | xhibit 13-13) | | | | S = 59 | 9.2 mph | (Exhibit 1 | 13-13) | | |
| Copyright © 2012 Ur | niversity of Florida, | All Rights Reser | ved | | HCS2010 [™] | Versio | n 6.41 | Gen | nerated: 9/9/2 | 014 12:39 F |

| | | RAMP | S AND RAM | IP JUNCTI | ONS WO | RKS | HEET | | | |
|-----------------------------------------------------------|----------------------------------|------------------------|---------------------------------------------|-----------------------------|--------------------------------------------------|---------------------|-------------------|--------------------------------------|---------------------|------------------------|
| General Infor | mation | 2 w 11911 | | Site Infor | | | | | | |
| Analyst
Agency or Company | | e Forsythe | Jı | reeway/Dir of Tr
unction | | Gore H | ill NB Off | | | |
| Date Performed | 9/9/2 | | | urisdiction | _ | | | | | |
| Analysis Time Period | l AM P | 'eak | A | nalysis Year | | 2035 | | | | |
| Project Description
Inputs | | | | | | | | | | |
| • | | Erooway Num | ber of Lanes, N | 2 | | | | | | |
| Upstream Adj R | amp | Ramp Numbe | | 1 | | | | | Downstre
Ramp | am Adj |
| □Yes □ | On | | ane Length, L | ı | | | | | Yes | On |
| ✓ No | Off | | Lane Length L _D | 323 | | | | | ✓ No | |
| | | Freeway Volu | me, V _F | 442 | | | | | I NO | Off |
| L _{up} = f | t | Ramp Volume | | 33 | | | | | L _{down} = | ft |
| V _u = ve | eh/h | | Flow Speed, S_{FF}
low Speed, S_{FR} | 65.0
50.0 | | | | | V _D = | veh/h |
| Conversion to | n nc/h l ln/ | | 111 | 50.0 | | | | | | |
| (pc/h) | V | PHF | Terrain | %Truck | %Rv | | f _{HV} | fp | v = V/PHF | x f _{inv} x f |
| Freeway | (Veh/hr)
442 | 0.92 | Level | 10 | 0 | - | 952 | 1.00 | | 04 |
| Ramp | 33 | 0.74 | Level | 35 | 0 | _ | 851 | 1.00 | | 52 |
| UpStream | | • | | | Ť | † | - | | | <u> </u> |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | | iverge Areas | | |
| Estimation of | ^r v ₁₂ | | | | Estimati | on o | f v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{FM}) | | | | | V ₁₂ = | V _R + (V _F - V | R)P _{FD} | |
| L _{EQ} = | (Equa | ition 13-6 or | 13-7) | | L _{EQ} = | | (1 | Equation 13- | 12 or 13-13 | 3) |
| P _{FM} = | using | Equation (| Exhibit 13-6) | | P _{FD} = | | 1.0 | 000 using Eq | uation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | | 4 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | V ₃ or V _{av34} | | | pc/h (Equation | on 13-14 o | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | | | • | | | ₄ > 2,70 | | Yes ☑ No | | , |
| Is V_3 or $V_{av34} > 1.5$ | | | | | | - | | Yes ☑ No | | |
| If Yes,V _{12a} = | | Equation 13 | -16, 13-18, or | | If Yes,V _{12a} = | | | c/h (Equatior | n 13-16, 13 | -18, or 13- |
| Capacity Che | | | | | Capacity | / Che | | - / | | |
| | Actual | C | apacity | LOS F? | | | Actual | Ca | apacity | LOS F? |
| | | | | | V _F | | 504 | Exhibit 13- | 8 4700 | No |
| V _{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - V _R | 452 | Exhibit 13- | | No |
| | | | | | V _R | | 52 | Exhibit 13-1 | | No |
| Flow Entering | | -1 | | VE-1-E0 | Flow En | _ | | ge Influen | | V. L. C. O |
| V _{R12} | Actual | Exhibit 13-8 | Desirable | Violation? | V ₁₂ | | Actual
504 | Max Desira
Exhibit 13-8 | 4400:All | Violation? |
| Level of Serv | ico Dotorn | | if not E) | | | | | terminatio | | |
| D _R = 5.475 + 0. | | | | | | | | .0086 V ₁₂ - 0 | | <i>r)</i> |
| D _R = 0.475 · 0.
D _R = (pc/mi/ln | 7.7 | 0.0070 V ₁₂ | 0.00027 L _A | | L | R - ¬
7 (pc/n | | 0000 v ₁₂ 0 | .000 L _D | |
| LOS = (Exhibit | • | | | | | | oit 13-2) | | | |
| Speed Detern | | | | | Speed D | • | | n | | |
| - | | | | | | | xhibit 13- | | | |
| $M_S^{} = (Exibit 13)$
$S_R^{} = mph (Exh)$ | ibit 13-11) | | | | | | (Exhibit | - | | |
| | | | | | | - | - | | | |
| S₁= mnh /⊏vh | IDIT 13-111 | | | | S ₀ = N/A mph (Exhibit 13-12) | | | | | |
| S_0 = mph (Exh
S = mph (Exh | ibit 13-11)
ibit 13-13) | | | | 1 - | - | (Exhibit | - | | |

| O a marral 1 to f | | MPS AND | IVAIIII JUIN | | | <u>- </u> | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------|----------------------|
| General Infori | | | | Site Infor | | | | | |
| Analyst | Shan | e Forsythe | | eeway/Dir of Tranction | avel (| Gore Hill NB On | 1 | | |
| Agency or Company Date Performed | 9/9/2 | 014 | | risdiction | | | | | |
| analysis Time Period | AM P | | | nalysis Year | 2 | 2035 | | | |
| Project Description | | | | , | | | | | |
| nputs | | | | | | | | | |
| Jpstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adi |
| potroum raj ramp | | Ramp Numbe | r of Lanes, N | 1 | | | | Ramp | u, .u.j |
| ☐ Yes ☐ On | | Acceleration L | ane Length, L₄ | 1500 | | | | □Yes | On |
| □Na □o# | | 1 | ane Length L | | | | | | _ |
| ✓ No ☐ Off | | Freeway Volu | | 803 | | | | ✓ No | Off |
| _{up} = ft | | Ramp Volume | | 572 | | | | L _{down} = | ft |
| ир | | | ·, * _R
-Flow Speed, S _{FF} | 65.0 | | | | | |
| $v_{\rm u} = {\rm veh/h}$ | | 1 | | | | | | $V_D =$ | veh/h |
| | | | ow Speed, S _{FR} | 50.0 | | | | | |
| Conversion to | pc/n Und | ger Base (| Conditions | 1 | | 1 | 1 | | |
| (pc/h) | v
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | v = V/PHI | $= x f_{HV} x f_{p}$ |
| reeway | 803 | 0.90 | Grade | 16 | 0 | 0.926 | 1.00 | 1 | 964 |
| Ramp | 572 | 0.82 | Level | 23 | 0 | 0.897 | 1.00 | | 774 |
| JpStream | | | | - | | | | | |
| DownStream | | | | | | | | | |
| | | Merge Areas | | | | | Diverge Areas | 5 | |
| stimation of | V ₁₂ | | | | Estimati | ion of v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{FM}) | | | | V ₁₂ = | = V _R + (V _F - \ | / _R)P _{FD} | |
| EQ = | (Equa | ation 13-6 or | r 13-7) | | L _{EQ} = | | (Equation 1 | 3-12 or 13-1 | 3) |
|) =
FM = | | | ion (Exhibit 13-6) | | P _{FD} = | | using Equa | | |
| ' ₁₂ = | 964 p | | (=/ | | V ₁₂ = | | pc/h | | / |
| ¹²
¹² or V _{av34} | • | | 13-14 or 13-17) | | V ₃ or V _{av34} | | • | n 13-14 or 13-1 | 7) |
| s V ₃ or V _{av34} > 2,700 | - | | 13-14-01-13-17) | 1 | | ₃₄ > 2,700 pc/h? | | | 11) |
| | | | | | | | | | |
| s V ₃ or V _{av34} > 1.5 * | | | 3-16, 13-18, or | | | ₃₄ > 1.5 * V ₁₂ /2 | ⊢ Yes | | 3_18 or |
| Yes,V _{12a} = | 13-19) | | J-10, 13-10, 01 | | If Yes,V _{12a} = | | 13-19) | 1011 13-10, 1 | J- 10, UI |
| Capacity Che | cks | | | | Capacity | y Checks | , | | |
| | Actual | C | apacity | LOS F? | | Actua | ıl (| Capacity | LOS F |
| | | | | | | | I | | |
| | | | | | V _F | | Exhibit 1 | 3-8 | |
| V=0 | 1738 | Exhibit 13-8 | | No | | - V _R | Exhibit 1 Exhibit 1 | | + |
| V_{FO} | 1738 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | | 3-8 | |
| | | | | No | $V_{FO} = V_{F}$ V_{R} | | Exhibit 1 Exhibit 1 | 3-8 | |
| | Merge In | fluence A | | | $V_{FO} = V_{F}$ V_{R} | tering Dive | Exhibit 1 Exhibit 1 10 erge Influe | 3-8
13-
ence Area | |
| Flow Entering | Merge In | fluence A | Desirable | Violation? | V _{FO} = V _F V _R | | Exhibit 1 Exhibit 1 10 erge Influe | 3-8 3- ence Area esirable | Violation |
| Flow Entering
V _{R12} | Merge In Actual 1738 | Max Exhibit 13-8 | Desirable
4600:All | | $V_{FO} = V_{F}$ V_{R} Flow En | tering Dive | Exhibit 1 Exhibit 1 10 erge Influe Max D Exhibit 13-8 | 3-8
13-
ence Area
esirable | Violation |
| Flow Entering V _{R12} Level of Servi | Merge In Actual 1738 Ce Detern | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of | Actual Service D | Exhibit 1 Exhibit 1 10 erge Influe Max Di Exhibit 13-8 eterminati | 3-8 3-8 ence Area esirable sion (if not | Violation |
| Flow Entering V _{R12} Level of Servi | Merge In Actual 1738 Ce Detern | Max Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of | tering Dive | Exhibit 1 Exhibit 1 10 erge Influe Max Di Exhibit 13-8 eterminati | 3-8 3-8 ence Area esirable sion (if not | Violation |
| V _{R12} .evel of Servi | Merge In Actual 1738 Ce Detern 0.00734 v R + C | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | V _{FO} = V _F V _R Flow En V ₁₂ Level of | Actual Service D | Exhibit 1 Exhibit 1 10 erge Influe Max Di Exhibit 13-8 eterminati | 3-8 3-8 ence Area esirable sion (if not | Violation |
| Flow Entering V_{R12} Evel of Servi $D_{R} = 5.475 + 0$ $P_{R} = 9.3 \text{ (pc/mi/l)}$ | Actual 1738 CCE Detern 0.00734 v R + Con) | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ | Actual Service D OR = 4.252 + | Exhibit 1 Exhibit 1 10 erge Influe Max Di Exhibit 13-8 eterminati | 3-8 3-8 ence Area esirable sion (if not | Violation |
| Flow Entering V_{R12} Evel of Servi $D_{R} = 5.475 + 0$ $P_{R} = 9.3 \text{ (pc/mi/l}$ | Merge In Actual 1738 Ce Detern 0.00734 v _R + 0 n) 3-2) | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | V _{FO} = V _F V _R Flow End V ₁₂ Level of D _R = (pi LOS = (E | Actual Service D Red 4.252 + c/mi/ln) Exhibit 13-2) | Exhibit 1 Exhibit 1 10 erge Influe Max D Exhibit 13-8 eterminat 0.0086 V ₁₂ - | 3-8 3-8 ence Area esirable sion (if not | Violation |
| Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + (1.8) = 9.3 \text{ (pc/mi/l}$ $OS = A \text{ (Exhibit 1)}$ Speed Determ | Actual 1738 CCE Detern 0.00734 v R + (n) 3-2) nination | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow En V_{12} Level of $D_R = (p)$ $LOS = (E)$ Speed D | Actual Service D CR = 4.252 + c/mi/ln) Exhibit 13-2) Determinate | Exhibit 1 Exhibit 1 10 erge Influe Max D Exhibit 13-8 eterminat 0.0086 V ₁₂ - | 3-8 3-8 ence Area esirable sion (if not | Violation |
| Flow Entering V_{R12} Evel of Servi $D_R = 5.475 + 0$ $R = 9.3 (pc/mil/l)$ $OS = A (Exhibit 1)$ Speed Determing $S = 0.193 (Exib)$ | Merge In Actual 1738 Ce Detern 0.00734 v R + Con 3-2) 0.00734 v R + Con 13-2) 0.00734 v R + Con 13-2) 0.00734 v R + Con 13-2) | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | V _{FO} = V _F V _R Flow End V ₁₂ Level of D _R = (p) LOS = (E) Speed D D _S = (E) | Actual Service D Complete A.252 + c/mi/ln) Exhibit 13-2) Determination Actual | Exhibit 1 Exhibit 1 10 erge Influe Max D Exhibit 13-8 eterminat 0.0086 V ₁₂ - | 3-8 3-8 ence Area esirable sion (if not | Violation |
| Flow Entering V_{R12} Level of Servi $D_R = 5.475 + 0$ $R = 9.3 \text{ (pc/mi/l)}$ $OS = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ $Cos = A \text{ (Exhibit 1}$ | Actual 1738 CCE Detern 0.00734 v R + Con) 3-2) Innation it 13-11) Exhibit 13-11) | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $V_{FO} = V_F$ V_R Flow End V_{12} Level of $D_R = (p)$ $LOS = (E)$ Speed D $D_S = (E)$ $S_R = (E)$ | Actual Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service D Capacita Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Se | Exhibit 1 Exhibit 1 10 erge Influe Max D Exhibit 13-8 eterminat 0.0086 V ₁₂ - | 3-8 3-8 ence Area esirable sion (if not | Violation |
| Flow Entering V_{R12} Level of Servi $D_R = 5.475 + 0$ $D_R = 9.3 \text{ (pc/mi/l})$ $D_R = 0.3 \text{ (pc/mi/l})$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ $D_R = 0.493 \text{ (Exhibit 1)}$ | Merge In Actual 1738 Ce Detern 0.00734 v R + Con 3-2) 0.00734 v R + Con 13-2) 0.00734 v R + Con 13-2) 0.00734 v R + Con 13-2) | Max
Exhibit 13-8 | Desirable
4600:All
if not F) | Violation? | $\begin{array}{c} V_{FO} = V_F \\ \hline V_R \\ \hline \end{array}$ | Actual Service D Complete A.252 + c/mi/ln) Exhibit 13-2) Determination Actual | Exhibit 1 Exhibit 1 10 Erge Influe Max D Exhibit 13-8 Etermination 2) | 3-8 3-8 ence Area esirable sion (if not | Violation |

| | | RAMP | S AND RAI | //P JUNCTI | ONS WO | RKS | HEET | | | |
|-------------------------------------|----------------------|--------------------------|------------------------------|------------------------------|---------------------------------------|-------------------------|----------------------|----------------------------------------|---------------------------------|------------------------------------|
| General Infor | mation | | | Site Infor | | | | | | |
| Analyst
Agency or Company | Shan | e Forsythe | J | reeway/Dir of Tr
lunction | | Gore H | ill SB Off | | | |
| Date Performed | 9/9/2 | | | Jurisdiction | | | | | | |
| Analysis Time Period | d AM F | 'eak | <i>F</i> | Analysis Year | | 2035 | | | | |
| Project Description Inputs | | | | | | | | | | |
| <u>.</u> | | Erooway Num | ber of Lanes, N | 2 | | | | | | |
| Upstream Adj R | lamp | 1 | | | | | | | Downstre | am Adj |
| □Yes□ | On | Ramp Numbe | | 1 | | | | | Ramp | |
| | _ 0 | | ane Length, L _A | | | | | | □Yes | On |
| ✓ No | Off | | Lane Length L _D | 358 | | | | | ☑ No | Off |
| 1 - 4 | 1 | Freeway Volu | | 713 | | | | | = | ft |
| L _{up} = f | τ | Ramp Volume | | 686 | | | | | L _{down} – | 10 |
| V,, = v | eh/h | | -Flow Speed, S _{FF} | 65.0 | | | | | V _D = | veh/h |
| | | | low Speed, S _{FR} | 50.0 | | | | | | |
| Conversion t | | der Base | Conditions | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f_{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 713 | 0.85 | Grade | 7 | 0 | 0. | 891 | 1.00 | 9 | 42 |
| Ramp | 686 | 0.79 | Level | 7 | 0 | 0. | 966 | 1.00 | 8 | 94 |
| UpStream | | | | | | | | | | |
| DownStream | | | | | | | | | | |
| Fatimatian a | | Merge Areas | | | Catina at | | | Diverge Areas | | |
| Estimation of | 12 | | | | Estimati | ion o | 7 V ₁₂ | | | |
| | $V_{12} = V_{F}$ | (P _{FM}) | | | | | V ₁₂ = | : V _R + (V _F - V | ′ _R)P _{FD} | |
| L _{EQ} = | (Equa | ition 13-6 or | 13-7) | | L _{EQ} = | | (| Equation 13- | 12 or 13-13 | 3) |
| P _{FM} = | using | Equation (| Exhibit 13-6) | | P _{FD} = | | 1. | 000 using Ed | quation (Exh | ibit 13-7) |
| V ₁₂ = | pc/h | | | | V ₁₂ = | | 94 | 12 pc/h | | |
| V ₃ or V _{av34} | pc/h (| Equation 13 | -14 or 13-17) | | ${ m V_3}$ or ${ m V_{av34}}$ | | 0 | pc/h (Equati | on 13-14 o | r 13-17) |
| Is V_3 or $V_{av34} > 2,70$ | 00 pc/h? | s 🗌 No | | | Is V ₃ or V _{av3} | ₃₄ > 2,7 | 00 pc/h? [|]Yes ☑ No | | |
| Is V_3 or $V_{av34} > 1.5$ | * V ₁₂ /2 | s 🗌 No | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 | * V ₁₂ /2 | ∃Yes ☑ No | | |
| If Yes,V _{12a} = | | | -16, 13-18, or | | If Yes,V _{12a} = | : | | c/h (Equation | n 13-16, 13 | -18, or 13- |
| | 13-19) | | | | | | 19 | 9) | | |
| Capacity Che | Actual | | apacity | LOS F? | Capacity | y CIII | Actual | | apacity | LOS F? |
| | Actual | † Ť | σαρασιτή | LOGIT | V _F | | 942 | Exhibit 13- | | No No |
| | | Fvb:bit 12 0 | | | - | \/ | | Exhibit 13 | | _ |
| V _{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - v _R | 48 | _ | _ | No |
| | <u> </u> | | | | V _R | | 894 | Exhibit 13- | | No |
| Flow Entering | T - | | | 1 15 1 5 0 | Flow En | _ | | rge Influer | | 1 1 1 1 1 0 |
| \/ | Actual | | Desirable | Violation? | \/ | \neg | Actual | Max Desira | | Violation? |
| V _{R12} | . 5 . | Exhibit 13-8 | · · · · · · · · · | | V ₁₂ | | 942 | Exhibit 13-8 | 4400:All | No |
| Level of Serv | | | | | | | | terminatio | | F) |
| $D_R = 5.475 + 0.$ | | 0.0078 V ₁₂ - | · 0.00627 L _A | | | | | .0086 V ₁₂ - 0 | .009 L _D | |
| D _R = (pc/mi/ln | 1) | | | | l '' | 1 (pc/r | , | | | |
| LOS = (Exhibit | | | | | | • | oit 13-2) | | | |
| Speed Deterr | nination | | | | Speed D | eter | minatio | on | | |
| M _S = (Exibit 1 | 3-11) | | | | $D_s = 0.3$ | 313 (E | xhibit 13- | -12) | | |
| | nibit 13-11) | | | | S _R = 57 | '.8 mph | (Exhibit | 13-12) | | |
| | nibit 13-11) | | | | $S_0 = N/$ | 'A mph | (Exhibit | 13-12) | | |
| | nibit 13-13) | | | | S = 57 | '.8 mph | (Exhibit | 13-13) | | |
| `apyriaht @ 2012 Hniy | ersity of Florida | All Rights Reser | ved | | HCS2010 [™] | 1 Versi | on 6 41 | (| Generated: 9/9 | 9/2014 9:56 A |

| 0 | | WIPS AND | RAMP JUN | | | EEI | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------|------------------------------|------------------------|--------------------------------------------------------------------|------------------------------------------|----------------------------------------|---------------------------------|------------------------------------|
| General Inform | | | | Site Infor | | | | | |
| Analyst | Shan | e Forsythe | | eeway/Dir of Tra | avel | Gore Hill SB On | l | | |
| Agency or Company Date Performed | 9/9/2 | 014 | | ınction
ırisdiction | | | | | |
| nalysis Time Period | AM P | | | nalysis Year | | 2035 | | | |
| roject Description | 7 (1) 1 | Car | 74 | iaryolo i cai | | 2000 | | | |
| nputs | | | | | | | | | |
| Ipstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstre | am Adi |
| pstream Auj Ramp | | Ramp Numbe | r of Lanes. N | 1 | | | | Ramp | aiii Auj |
| ☐ Yes ☐ On | | 1 ' | ane Length, L _Δ | 1500 | | | | 1 ' | |
| | | 1 | ane Length L _D | 1300 | | | | □Yes | ☐ On |
| ✓ No ☐ Off | | 1 | | 000 | | | | ✓ No | Off |
| = ft | | Freeway Volui | | 286 | | | | L _{down} = | ft |
| _{up} = ft | | Ramp Volume | 11 | 81 | | | | -down | |
| veh/h | | 1 | -Flow Speed, S _{FF} | 65.0 | | | | V _D = | veh/h |
| | | | ow Speed, S _{FR} | 50.0 | | | | | |
| conversion to | <u> </u> | der Base (| Conditions | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v = V/PHI | x f _{HV} x f _p |
| reeway | 286 | 0.79 | Level | 20 | 0 | 0.909 | 1.00 | | 398 |
| Ramp | 81 | 0.62 | Level | 40 | 0 | 0.833 | 1.00 | | 157 |
| JpStream | | **** | | | | 1.000 | | | |
| DownStream | | | | | | | | | |
| | | Merge Areas | | | | | Diverge Areas | 3 | |
| stimation of | V ₁₂ | | | | Estimati | ion of v ₁₂ | | | |
| | V ₁₂ = V _F | (P _{FM}) | | | | V ₁₂ = | = V _R + (V _F - \ | / _R)P _{FD} | |
| EQ = | (Equ | ation 13-6 or | 13-7) | | L _{EQ} = | | (Equation 1 | 3-12 or 13-1 | 3) |
|) =
FM = | | | ion (Exhibit 13-6) | | P _{FD} = | | using Equat | | |
| ' ₁₂ = | 398 p | | , | | V ₁₂ = | | pc/h | , | , |
| ' ₃ or V _{av34} | • | | 13-14 or 13-17) | \ | V ₃ or V _{av34} | | pc/h (Equation | n 13-14 or 13-1 | 7 |
| s V ₃ or V _{av34} > 2,700 | - | | 10-14-01-10-17) | | | ₃₄ > 2,700 pc/h? | | | 11) |
| ls V ₃ or V _{av34} > 1.5 * | | | | | | ₃₄ > 1.5 * V ₁₂ /2 | | | |
| | | | 3-16, 13-18, or | | | | pc/h (Equat | | 3-18 or |
| Yes,V _{12a} = | 13-19) | | 7 10, 10 10, 01 | | If Yes,V _{12a} = | • | 13-19) | 1011 10 10, 1 | 0 10, 01 |
| Capacity Chec | cks | | | | Capacity | y Checks | | | |
| | Actual | C | apacity | LOS F? | | Actua | | Capacity | LOS F |
| | | | | | V_{F} | | Exhibit 1 | 3-8 | |
| V_{FO} | 555 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 1 | 3-8 | |
| FO | | | | | V _R | | Exhibit 1 | 3- | |
| | | <u> </u> | | | | | 10 | | |
| low Entering | | 1 | | 1 15 1 5 0 | Flow En | tering Div | | | |
| ., | Actual | i r | Desirable 4000 All | Violation? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Actual | | esirable | Violation |
| V _{R12} | 555 | Exhibit 13-8 | 4600:All | No | V ₁₂ | <u> </u> | Exhibit 13-8 | | L |
| evel of Servi | | • | · · | | | Service D | | <u> </u> | <i>F)</i> |
| | | 0.0078 V ₁₂ - 0.0 | 00627 L _A | | | D _R = 4.252 + | 0.0086 V ₁₂ - | 0.009 L _D | |
| _R = 0.3 (pc/mi/li | · · | | | | | c/mi/ln) | | | |
| Κ | 3-2) | | | | LOS = (E | Exhibit 13-2) | | | |
| | • • | | | | Speed D | Determinat | ion | | |
| | unation | | | | D - /F | xhibit 13-12) | | | |
| OS = A (Exhibit 1 | | | | | | .XIIIDIL 10-12) | | | |
| OS = A (Exhibit 1 Speed Determ S = 0.178 (Exib | it 13-11) | | | | , | ph (Exhibit 13-12) | 2) | | |
| SS = A (Exhibit 1) Speed Determination of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of | it 13-11)
Exhibit 13-11) | | | | S _R = m _l | ph (Exhibit 13-1 | • | | |
| OS = A (Exhibit 1) Speed Determination of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the c | it 13-11) | | | | S _R = m _l
S ₀ = m _l | • | 2) | | |

| Gore Hill NI 2035 Rv f _{HV} 0.943 0.826 | f _p | Downstre
Ramp
☐ Yes
☑ No
L _{down} =
V _D = | eam Adj On Off ft veh/h |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------|
| Gore Hill NI 2035 Rv f _{HV} 0.943 | fp | Ramp ☐ Yes ☑ No L _{down} = V _D = | □ On □ Off |
| Rv f _{HV} 0.943 | ` | Ramp ☐ Yes ☑ No L _{down} = V _D = | □ On □ Off |
| Rv f _{HV} 0.943 | ` | Ramp ☐ Yes ☑ No L _{down} = V _D = | □ On □ Off |
| Rv f _{HV} 0.943 | ` | Ramp ☐ Yes ☑ No L _{down} = V _D = | □ On □ Off |
| 0.943 | ` | Ramp ☐ Yes ☑ No L _{down} = V _D = | □ On □ Off |
| 0.943 | | Ramp ☐ Yes ☑ No L _{down} = V _D = | □ On □ Off |
| 0.943 | | Ramp ☐ Yes ☑ No L _{down} = V _D = | □ On □ Off |
| 0.943 | | Yes Volume V _D = | ☐ Off
ft |
| 0.943 | | ✓ No L _{down} = V _D = | ☐ Off
ft |
| 0.943 | | ✓ No L _{down} = V _D = | ☐ Off
ft |
| 0.943 | | L _{down} = V _D = | ft |
| 0.943 | | V _D = | |
| 0.943 | | | veh/h |
| 0.943 | | | veh/h |
| 0.943 | | v = V/PHI | |
| 0.943 | | v = V/PHI | |
| 0.943 | | v = V/PHI | · · |
| | 1.00 | I | $F x f_{HV} x f_{p}$ |
| | | | 498 |
| | 1.00 | | 109 |
| | | | |
| | | | |
| | Diverge Area | as | |
| nation of v | 12 | | |
| | $V_{12} = V_R + (V_F)$ | - V _P)P _{ED} | |
| | | 13-12 or 13-1 | 3) |
| | | Equation (Ext | - |
| | 498 pc/h | Equation (Ex | |
| av34 | • | otion 12 14 c | r 10 17\ |
| | | iation 13-14 c | 113-17) |
| | c/h? ☐ Yes ☑ I | | |
| | 2/2 ☐ Yes ☑ I | No
tion 13-16, 13 | 2 10 or 12 |
| / _{12a} = | 19) | 11011 13-10, 13 |)-10, UI 13- |
| acity Check | | | |
| | Actual | Capacity | LOS F? |
| | | | No |
| | | | No |
| | | | |
| | | | No |
| | | | |
| i | | | Violation |
| | | | No |
| | | | <i>F</i>) |
| $D_{R} = 4.25$ | 2 + 0.0086 V ₁₂ | - 0.009 L _D | |
| 5.6 (pc/mi/lr | 1) | | |
| A (Exhibit 1 | 3-2) | | |
| | | | |
| u Determin | | | |
| | | | |
| 0.243 (Exhib | - | | |
| 0.243 (Exhib
59.4 mph (Ex | nidit 13-12) | | |
| 0.243 (Exhib
59.4 mph (Ex
N/A mph (Ex | | | |
| | V _F - V _R V _R V _R V _R Actual 498 498 4.25 5.6 (pc/mi/ling A (Exhibit 1 of Determination 0.243 (Exhibit 59.4 mph (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (Exhibit 1 of Determination 0.243 (| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | V _F - V _R 389 |

9/9/2014

| <u> </u> | | MPS AND | RAMP JUNG | | | ET | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------|------------------------------------|
| General Info | ormation | | | Site Infor | mation | | | | |
| Analyst
Agency or Compai | ny | ne Forsythe | Ju | eeway/Dir of Tranction | avel (| Gore Hill NB On | | | |
| Date Performed | 9/9/2 | | | risdiction | | | | | |
| Analysis Time Peri | | Peak | An | alysis Year | - 2 | 2035 | | | |
| Project Description
Proputs | 1 | | | | | | | | |
| • | | Erooway Num | nber of Lanes, N | 2 | | | | 1 | |
| Jpstream Adj Ram | np | 1 | | | | | | Downstrea | am Adj |
| ☐ Yes ☐ (| On | Ramp Numbe | | 1 | | | | Ramp | |
| | | 1 | Lane Length, L _A | 1500 | | | | □Yes | ☐ On |
| ☑ No 🔲 (| Off | | Lane Length L _D | | | | | ✓No | Off |
| | | Freeway Volu | | 1122 | | | | | £L. |
| _{up} = ft | | Ramp Volume | 11 | 961 | | | | L _{down} = | ft |
| / _u = veh | ı/h | Freeway Free | e-Flow Speed, S _{FF} | 65.0 | | | | V _D = | veh/h |
| u ven | W11 | Ramp Free-Fl | low Speed, S _{FR} | 50.0 | | | | " | |
| Conversion | to pc/h Un | der Base | Conditions | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f _{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| Freeway | 1122 | 0.80 | Grade | 10 | 0 | 0.952 | 1.00 | 1 | 473 |
| Ramp | 961 | 0.74 | Level | 9 | 0 | 0.957 | 1.00 | 1 | 357 |
| JpStream | | | | | | | | | |
| DownStream | | Marria Araaa | | | | | Diverse Asses | | |
| Stimation | of v | Merge Areas | | | Estimatio | on of v ₁₂ | Diverge Areas | | |
| .sumation (| | | | | LStillati | | | | |
| | $V_{12} = V_{F}$ | | | | | V ₁₂ = | V _R + (V _F - V _F | | |
| EQ = | | ation 13-6 o | | | L _{EQ} = | | (Equation 13 | | |
|) _{FM} = | | | tion (Exhibit 13-6) | | P _{FD} = | | using Equation | on (Exhibit 13 | 3-7) |
| ′ ₁₂ = | 1473 | pc/h | | | V ₁₂ = | | pc/h | | |
| V_3 or $V_{ m av34}$ | - | | 13-14 or 13-17) | | $ m V_3$ or $ m V_{av34}$ | | pc/h (Equation | | 7) |
| | ,700 pc/h? □Ye | | | | | • | ☐Yes ☐ No | | |
| Is V_3 or $V_{av34} > 1$. | .5 * V ₁₂ /2 | | | | Is V ₃ or V _{av34} | ₄ > 1.5 * V ₁₂ /2 | ☐Yes ☐ No | | |
| Yes,V _{12a} = | pc/h | (Equation 13 | 3-16, 13-18, or | | If Yes,V _{12a} = | , | pc/h (Equatio | on 13-16, 1 | 3-18, or |
| Capacity Ch | 13-19) |) | | | Capacity | | 13-19) | | |
| bapacity Of | Actual | | Capacity | LOS F? | | Actual | l Ca | pacity | LOS F? |
| | Hotaai | | Supudity | 20011 | V _F | riotaai | Exhibit 13- | | 1 2001 |
| | | | | | $V_{FO} = V_F$ | - \/ | Exhibit 13- | | |
| ., | | Exhibit 13-8 | | No | | *R | Exhibit 13 | | |
| V_{FO} | 2830 | | | 1 | V_R | | |) ⁻ | |
| V_{FO} | 2030 | | | | *R | | 10 | | |
| | ng Merge In | nfluence A | Area | | | tering Dive | erge Influer | nce Area | |
| Flow Enteri | | | Area
Desirable | Violation? | Flow Ent | tering Dive | | | Violation |
| | ng Merge In | | | Violation? | | | erge Influer | | Violation |
| Flow Enterion | ng Merge In | Max
Exhibit 13-8 | Desirable
4600:All | î e | Flow Ent | Actual | erge Influer
Max Des | sirable | |
| Flow Enterion V _{R12} Level of Ser | ng Merge In
Actual
2830 | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | Flow Ent | Actual Service De | Max Des
Exhibit 13-8 | irable
on (if not | |
| V _{R12}
Level of Ser | Actual 2830 rvice Deterr 5+0.00734 v R + | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | Flow Ent | Actual Service De | erge Influer Max Des Exhibit 13-8 etermination | irable
on (if not | |
| V _{R12} Level of Ser D _R = 5.475 D _R = 17.5 (pc | Actual 2830 rvice Deterr 5 + 0.00734 v R + 10000000000000000000000000000000000 | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | Flow Ent | Actual Service De O _R = 4.252 + 6 c/mi/ln) | erge Influer Max Des Exhibit 13-8 etermination | irable
on (if not | |
| Flow Entering V_{R12} Level of Ser $D_R = 5.475$ $D_R = 17.5$ (pc $D_R = 17.5$) $D_R = 17.5$ (pc $D_R = 17.5$) | Actual 2830 rvice Determ 5 + 0.00734 v R + 4 c/mi/ln) oit 13-2) | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | V ₁₂ Level of D _R = (pc LOS = (E: | Actual Service Do R = 4.252 + 6 c/mi/ln) xhibit 13-2) | Max Des
Exhibit 13-8
eterminatio
0.0086 V ₁₂ - 0 | irable
on (if not | |
| Flow Entering V_{R12} Level of Ser $D_R = 5.475$ $D_R = 17.5 \text{ (pc)}$ $OS = B \text{ (Exhibit)}$ Speed Determine $OS = OS = OS = OS = OS = OS = OS = OS $ | Actual 2830 rvice Deterr 5 + 0.00734 v R + 10000000000000000000000000000000000 | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | Flow End V ₁₂ Level of D _R = (po LOS = (E: | Actual Service Do OR = 4.252 + (c/mi/ln) xhibit 13-2) eterminati | Max Des
Exhibit 13-8
eterminatio
0.0086 V ₁₂ - 0 | irable
on (if not | |
| Flow Entering V_{R12} Level of Ser $D_R = 5.475$ $O_R = 17.5$ (pc $OS = B$ (Exhibit Speed Determine) $O_R = 0.237$ (E | Actual 2830 rvice Determ 5 + 0.00734 v R + 10 c/mi/ln) pit 13-2) rmination Exibit 13-11) | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | V ₁₂ Level of D _R = (pc LOS = (E: Speed D D _S = (Ex | Actual Service Do OR = 4.252 + 0 c/mi/In) xhibit 13-2) eterminati khibit 13-12) | erge Influer Max Des Exhibit 13-8 eterminatio 0.0086 V ₁₂ - 0 | irable
on (if not | |
| Flow Entering V_{R12} Level of Ser $D_R = 5.475$ $O_R = 17.5$ (pc $O_S = B$ (Exhibitable) (Exhibitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = 0.237$ (Exhipitable) $O_S = $ | Actual 2830 rvice Deterr 5 + 0.00734 v _R + 10 c/mi/ln) bit 13-2) rmination Exibit 13-11) bh (Exhibit 13-11) | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | Flow Entire V ₁₂ Level of C D _R = (pot LOS = (Ex Speed D D _S = (Ex S _R = mp | Actual Service Do R = 4.252 + 6 c/mi/ln) xhibit 13-2) eterminati khibit 13-12) th (Exhibit 13-12) | erge Influer Max Des Exhibit 13-8 etermination 0.0086 V ₁₂ - 0 | irable
on (if not | |
| Flow Entering V_{R12} Level of Ser $D_R = 5.475$ $D_R = 17.5$ (pc $OS = B$ (Exhibit Speed Determine $M_S = 0.237$ (E $S_R = 59.5$ mp $S_D = N/A$ mph | Actual 2830 rvice Determ 5 + 0.00734 v R + 10 c/mi/ln) pit 13-2) rmination Exibit 13-11) | Max
Exhibit 13-8
mination (| Desirable
4600:All
(if not F) | î e | Flow End V_{12} Level of $D_R = (po$ $LOS = (E:$ Speed D $D_S = (Ex)$ $S_R = (Ex)$ $S_R = (Ex)$ $S_R = (Ex)$ $S_R = (Ex)$ $S_R = (Ex)$ $S_R = (Ex)$ $S_R = (Ex)$ | Actual Service Do OR = 4.252 + 0 c/mi/In) xhibit 13-2) eterminati khibit 13-12) | erge Influer Max Des Exhibit 13-8 etermination 0.0086 V ₁₂ - 0 | irable
on (if not | Violation |

| | | RAMP | S AND RAM | IP JUNCTI | ons wo | RKS | HEET | | | |
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| General Inf | ormation | | | Site Infor | | | | | | |
| Analyst | Shar | ne Forsythe | Fı | eeway/Dir of Tr | avel | Gore H | ill SB Off | | | |
| Agency or Compa | iny | • | Jι | ınction | | | | | | |
| ate Performed | 9/9/2 | 2014 | Jı | ırisdiction | | | | | | |
| analysis Time Per | | Peak | Aı | nalysis Year | | 2035 | | | | |
| Project Descriptio | n | | | | | | | | | |
| nputs | | | | | | | | | TC | |
| Upstream Ad | lj Ramp | 1 | ber of Lanes, N | 2 | | | | | Downstre | am Adj |
| □Yes | On | Ramp Numbe | • | 1 | | | | | Ramp | |
| | | 1 | Lane Length, L _A
Lane Length L _D | 358 | | | | | □Yes | On |
| ✓ No | ☐ Off | Freeway Volu | | 981 | | | | | ☑ No | Off |
| L _{up} = | ft | Ramp Volume | • | 644 | | | | | L _{down} = | ft |
| · | | 1 | -Flow Speed, S _{FF} | 65.0 | | | | | , | |
| $V_u =$ | veh/h | | low Speed, S _{FR} | 50.0 | | | | | V _D = | veh/h |
| Conversion | to pc/h Un | | 111 | | | | | | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | | f_{HV} | f _p | v = V/PHF | x f _{HV} x f _p |
| reeway | 981 | 0.93 | Grade | 10 | 0 | 0. | 870 | 1.00 | 1: | 213 |
| Ramp | 644 | 0.80 | Level | 16 | 0 | 0. | 926 | 1.00 | 8 | 67 |
| JpStream | | 1 1 | | | | | | | | |
| DownStream | | | | | | | | | | |
| | | Merge Areas | | | | | | Diverge Areas | | |
| stimation | of v ₁₂ | | | | Estimati | ion o | f v ₁₂ | | | |
| | V ₁₂ = V _E | (P _{FM}) | | | | | V ₁₂ = | · V _R + (V _F - V _F | P _{ED} | |
| EQ = | | ation 13-6 or | 13-7) | | L _{EQ} = | | | Equation 13-1 | | 3) |
| EQ
FM = | | Equation (I | | | P _{FD} = | | | 000 using Eq | | • |
| гм
12 = | pc/h | Lquation (i | Exhibit 10 0) | | V ₁₂ = | | | | uation (Ex | iibit 10 1) |
| | • | (Cauction 12 | 14 or 12 17) | | | | | 213 pc/h | 40 44 - | - 40 4 7) |
| ₃ or V _{av34} | - | | -14 or 13-17) | | V ₃ or V _{av34} | . 0.7 | | pc/h (Equation | on 13-14 o | r 13-17) |
| | ,700 pc/h? Ye | | | | | | | ☐Yes ☑ No | | |
| s V ₃ or V _{av34} > 1 | .5 * V ₁₂ /2 Ye | | | | Is V ₃ or V _{av3} | ₃₄ > 1.5 | | ☐Yes ☑ No | | |
| Yes,V _{12a} = | pc/h (
13-19 | | -16, 13-18, or | | If Yes,V _{12a} = | : | p
19 | c/h (Equation | 13-16, 13 | 3-18, or 13- |
| Capacity Ci | |) | | | Capacit | | | 9) | | |
| apacity of | Actual | | Capacity | LOS F? | Capacity | <i>y 011</i> | Actual | Ca | pacity | LOS F |
| | Actual | | papacity | LOGITE | V _F | | 1213 | Exhibit 13-8 | | |
| ., | | E 1 " " 40 0 | | | <u> </u> | ., | | | | No |
| V_{FO} | | Exhibit 13-8 | | | $V_{FO} = V_{F}$ | - v _R | 346 | Exhibit 13-8 | | No |
| | | | | | V _R | | 867 | Exhibit 13-1 | | No |
| | ing Merge Ir | ī | | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Flow En | | | rge Influen | | N. 1 |
| low Enteri | | | | | | | Actual | Max Desiral | ole | Violation' |
| | Actual | | Desirable | Violation? | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | | | ı | I |
| V _{R12} | | Exhibit 13-8 | | Violation? | V ₁₂ | · | 1213 | Exhibit 13-8 | 4400:All | No |
| V _{R12}
.evel of Se | rvice Deteri | Exhibit 13-8 | if not F) | Violation? | Level of | Ser | 213
/ice De | Exhibit 13-8
terminatio | 4400:All
n (if not | - |
| V _{R12}
.evel of Se
D _R = 5.475 + | | Exhibit 13-8 | if not F) | Violation? | Level of | Serv
D _R = 4 | 213
/ice De
1.252 + 0 | Exhibit 13-8 | 4400:All
n (if not | |
| V _{R12}
.evel of Se
D _R = 5.475 + | <i>rvice Deteri</i>
0.00734 v _R + | Exhibit 13-8 | if not F) | Violation? | Level of | Serv
D _R = 4 | 213
/ice De | Exhibit 13-8
terminatio | 4400:All
n (if not | |
| V _{R12}
.evel of Se
D _R = 5.475 + | <i>rvice Deteri</i>
0.00734 v _R + | Exhibit 13-8 | if not F) | Violation? | Level of I D _R = 11 | D _R = 4 | 213
/ice De
1.252 + 0 | Exhibit 13-8
terminatio | 4400:All
n (if not | |
| Level of Se
$D_R = 5.475 + 6$
$D_R = 6.475 + 6$ | rvice Deteri
0.00734 v _R +
/ln)
bit 13-2) | Exhibit 13-8 | if not F) | Violation? | Level of I D _R = 11 | D _R = 4
.5 (pc.
(Exhib | /ice De
1.252 + 0
/mi/ln)
bit 13-2) | Exhibit 13-8 terminatio 0086 V ₁₂ - 0. | 4400:All
n (if not | |
| V_{R12} Level of Se $D_R = 5.475 + 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R = 0$ $D_R =$ | rvice Deteri
0.00734 v _R +
/ln)
bit 13-2) | Exhibit 13-8 | if not F) | Violation? | Level of D _R = 11 LOS = B Speed L | D _R = 4
.5 (pc.
(Exhib | /ice De
1.252 + 0
/mi/ln)
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| General Inform | | | | Site Infor | | <u> </u> | | |
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| roject Description | 1 1011 | Can | 74 | iaryolo i cai | | 2000 | | |
| nputs | | | | | | | | |
| pstream Adj Ramp | | Freeway Num | ber of Lanes, N | 2 | | | | Downstream Adj |
| pstream Auj Ramp | | Ramp Numbe | r of Lanes. N | 1 | | | | Ramp |
| ☐ Yes ☐ On | | 1 ' | ane Length, L _Δ | 1500 | | | | · ' |
| _ | | 1 | Lane Length L _D | 1000 | | | | ☐Yes ☐On |
| ✓ No ☐ Off | | 1 | | 444 | | | | ☑ No ☐ Off |
| = ft | | Freeway Volu | | 444 | | | | L _{down} = ft |
| _{up} = ft | | Ramp Volume | 11 | 83 | | | | -down |
| veh/h | | 1 | -Flow Speed, S _{FF} | 65.0 | | | | $V_D = veh/h$ |
| | | | ow Speed, S _{FR} | 50.0 | | | | |
| conversion to | <u> </u> | der Base | Conditions | | | _ | | |
| (pc/h) | V
(Veh/hr) | PHF | Terrain | %Truck | %Rv | f_{HV} | f _p | $v = V/PHF \times f_{HV} \times f_{p}$ |
| reeway | 444 | 0.89 | Level | 6 | 0 | 0.971 | 1.00 | 514 |
| Ramp | 83 | 0.65 | Level | 41 | 0 | 0.830 | 1.00 | 153 |
| JpStream | | | | | | | | |
| DownStream | | | | | | | | |
| | | Merge Areas | | | | | Diverge Areas | S |
| stimation of | v ₁₂ | | | | Estimati | ion of v ₁₂ | ? | |
| | V ₁₂ = V _F | (P _{FM}) | | | | V ₁₂ | $_{\rm p} = V_{\rm R} + (V_{\rm F} - V_{\rm F})$ | $V_R)P_{FD}$ |
| EQ = | (Equa | ation 13-6 or | r 13-7) | | L _{EQ} = | - | (Equation 1 | 3-12 or 13-13) |
| | | | tion (Exhibit 13-6) | | P _{FD} = | | | tion (Exhibit 13-7) |
| 12 = | 514 p | | (, | | V ₁₂ = | | pc/h | , |
| or V _{av34} | • | | 13-14 or 13-17) | \ | V ₃ or V _{av34} | | • | n 13-14 or 13-17) |
| s V ₃ or V _{av34} > 2,700 | | | 10-14-01-10-17) | | | > 2 700 nc/h | n? □Yes □ N | · · |
| s V ₃ or V _{av34} > 2,760
s V ₃ or V _{av34} > 1.5 * | | | | | | | ¹¹ □ res □ N
2 □ Yes □ N | |
| | | | 3-16, 13-18, or | | | | | tion 13-16, 13-18, or |
| Yes,V _{12a} = | 13-19) | | 7 10, 10 10, 01 | | If Yes,V _{12a} = | | 13-19) | 1011 10 10, 10 10, 01 |
| Capacity Chec | cks | | | | Capacity | y Checks | | |
| | Actual | | Capacity | LOS F? | | Act | | Capacity LOS F |
| | | | | | V_{F} | | Exhibit 1 | 3-8 |
| V_{FO} | 667 | Exhibit 13-8 | | No | $V_{FO} = V_{F}$ | - V _R | Exhibit 1 | 3-8 |
| FO | | | | | V _R | | Exhibit 1 | 13- |
| | | | | | *R | | 10 | |
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8/19/2014

Vistro File: F:\...\I-15 Corridor.vistropdb

Report File: F:\...\Future_LOS_Report_AM.pdf

Scenario 3: Future AM Scenario

8/19/2014

Intersection Analysis Summary

| ID | Intersection Name | Control Type | Method | Worst Mvmt | V/C | Delay (s/veh) | LOS |
|----|----------------------------------------|--------------|---------|------------|-------|---------------|-----|
| 1 | Tri Hill and Frontage Airport
Rd | Two-way stop | HCM2010 | NEBL | 0.514 | 27.3 | D |
| 2 | I-15 NB and Airport Rd | Two-way stop | HCM2010 | NEBT | 0.000 | 44.2 | Е |
| 3 | I-15 SB On and Airport RD | Two-way stop | HCM2010 | NWBL | 0.133 | 10.4 | В |
| 4 | I-15 SB Off and Airport RD
Frontage | Two-way stop | HCM2010 | SWBL | 0.947 | 121.8 | F |
| 5 | 14th St SW and I-315 EB | Signalized | HCM2010 | SBL | 0.218 | 13.3 | В |
| 6 | 14th St SW and I-315 WB | Signalized | HCM2010 | EBR | 0.295 | 22.2 | С |
| 7 | Fox Farm and I-315 | Signalized | HCM2010 | NEBL | 0.760 | 39.0 | D |
| 8 | Central Ave and I15 SB | Two-way stop | HCM2010 | SBL | 1.188 | 178.9 | F |
| 9 | Central Ave and I-15 NB | Two-way stop | HCM2010 | NBL | 0.274 | 113.1 | F |
| 10 | Central Ave and Vaughn Rd | Two-way stop | HCM2010 | SBL | 1.518 | 406.0 | F |
| 11 | Vaughn Rd and I-15 SB | Two-way stop | HCM2010 | SBL | 0.361 | 11.0 | В |
| 12 | Vaughn Rd and I-15 NB | Two-way stop | HCM2010 | EBL | 0.000 | 7.3 | Α |

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Generated with PTV VISTRO 2 8/19/2014

Intersection Level Of Service Report #1: Tri Hill and Frontage Airport Rd

Control Type:Two-way stopDelay (sec / veh):27.3Analysis Method:HCM2010Level Of Service:DAnalysis Period:15 minutesVolume to Capacity (v/c):0.514

Intersection Setup

| Name | | | | | | | |
|------------------------|-------------|---------|---------|----------|----------------|--------|--|
| Approach | Northea | stbound | Northwe | estbound | Southeastbound | | |
| Lane Configuration | 1 | r | + | ıİ | F | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 12.00 | | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | .00 | 30.00 | | 30.00 | | |
| Grade [%] | 0. | 0.00 | | 0.00 | | 00 | |
| Crosswalk | ye | es | у | es | yes | | |

| Name | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 83 | 19 | 9 | 189 | 97 | 88 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 21.70 | 31.10 | 22.20 | 28.60 | 25.70 | 5.70 |
| Growth Rate | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 141 | 32 | 15 | 321 | 165 | 150 |
| Peak Hour Factor | 0.7410 | 0.4750 | 0.5630 | 0.8750 | 0.9330 | 0.7590 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 48 | 17 | 7 | 92 | 44 | 49 |
| Total Analysis Volume [veh/h] | 190 | 67 | 27 | 367 | 177 | 198 |
| Pedestrian Volume [ped/h] | | 0 | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | 0 | | 0 | |

8/19/2014



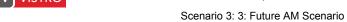
Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.51 | 0.10 | 0.02 | 0.00 | 0.00 | 0.00 | |
|------------------------------------|-------|-------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 27.25 | 22.66 | 8.42 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | D | С | Α | A | Α | А | |
| 95th-Percentile Queue Length [veh] | 3.94 | 3.94 | 0.08 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 98.56 | 98.56 | 1.92 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | 26 | .06 | 0. | 58 | 0.0 | 00 | |
| Approach LOS | [| D A | | | | 4 | |
| d_I, Intersection Delay [s/veh] | 6.75 | | | | | | |
| Intersection LOS | D | | | | | | |

Version 2.00-10



Intersection Level Of Service Report #2: I-15 NB and Airport Rd

8/19/2014

Control Type:Two-way stopDelay (sec / veh):44.2Analysis Method:HCM2010Level Of Service:EAnalysis Period:15 minutesVolume to Capacity (v/c):0.000

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|----------------|--------|--------|----------------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach | No | Northeastbound | | Sou | Southwestbound | | Northwestbound | | | Southeastbound | | und |
| Lane Configuration | + | | | | | F | | | 4 | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | | 0.00 | | | | |
| Crosswalk | | yes | | | yes | | yes | | | yes | | |

| Name | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 4 | 0 | 13 | 0 | 0 | 0 | 0 | 49 | 222 | 79 | 173 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 0.00 | 46.20 | 2.00 | 2.00 | 2.00 | 2.00 | 38.80 | 26.60 | 12.70 | 10.90 | 2.00 |
| Growth Rate | 1.90 | 1.90 | 1.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 8 | 0 | 25 | 0 | 0 | 0 | 0 | 93 | 422 | 150 | 329 | 0 |
| Peak Hour Factor | 0.5000 | 1.0000 | 0.8130 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.7210 | 0.8670 | 0.7050 | 0.9010 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 0 | 8 | 0 | 0 | 0 | 0 | 32 | 122 | 53 | 91 | 0 |
| Total Analysis Volume [veh/h] | 16 | 0 | 31 | 0 | 0 | 0 | 0 | 129 | 487 | 213 | 365 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.12 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 |
|------------------------------------|-------|-------|-------|------|------|------|------|------|------|--------|--------|------|
| d_M, Delay for Movement [s/veh] | 34.72 | 44.22 | 13.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.13 | 0.00 | 0.00 |
| Movement LOS | D | E | В | | | | | Α | Α | В | Α | |
| 95th-Percentile Queue Length [veh] | 0.61 | 0.61 | 0.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.65 | 4.65 | 0.00 |
| 95th-Percentile Queue Length [ft] | 15.29 | 15.29 | 15.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 116.18 | 116.18 | 0.00 |
| d_A, Approach Delay [s/veh] | | 20.93 | | 0.00 | | | | 0.00 | | | 3.73 | |
| Approach LOS | | С | | A A | | | | | | Α | | |
| d_I, Intersection Delay [s/veh] | | 2.53 | | | | | | | | | | |
| Intersection LOS | | | | | E | | | | | | | |

Version 2.00-10

8/19/2014 Scenario 3: 3: Future AM Scenario

Intersection Level Of Service Report #3: I-15 SB On and Airport RD

Control Type: Two-way stop Delay (sec / veh): 10.4 Analysis Method: HCM2010 Level Of Service: В Analysis Period: 15 minutes Volume to Capacity (v/c): 0.133

Intersection Setup

| Crosswalk | У | res . | y | es | yes | | |
|------------------------|---------|----------|---------|----------|----------------|--------|--|
| Grade [%] | 0 | .00 | 0. | 0.00 | | .00 | |
| Speed [mph] | 30 | 0.00 | 30 | 30.00 | | 0.00 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Configuration | | | • | 1 | | | |
| Approach | Northea | astbound | Northwe | estbound | Southeastbound | | |
| Name | | | | | | | |

| Name | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 0 | 0 | 32 | 23 | 251 | 6 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 43.80 | 21.70 | 14.00 | 16.70 | |
| Growth Rate | 1.00 | 1.00 | 2.12 | 2.12 | 2.12 | 2.12 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 0 | 0 | 68 | 49 | 532 | 13 | |
| Peak Hour Factor | 1.0000 | 1.0000 | 0.6670 | 0.6390 | 0.8720 | 0.3750 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 25 | 19 | 153 | 9 | |
| Total Analysis Volume [veh/h] | 0 | 0 | 102 | 77 | 610 | 35 | |
| Pedestrian Volume [ped/h] | | 0 | 0 | | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | 0 | | |

enerated with PTV VISTRO 7 8/19/2014

Scenario 3: 3: Future AM Scenario

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.13 | 0.00 | 0.01 | 0.00 |
|------------------------------------|------|------|-------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 10.39 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | В | A | A | A |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 0.90 | 0.90 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 22.46 | 22.46 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0. | .00 | 5 | .92 | 0. | 00 |
| Approach LOS | | A | | A | | A |
| d_I, Intersection Delay [s/veh] | | | 1 | .29 | | |
| Intersection LOS | | | | В | | |

Version 2.00-10

Scenario 3: 3: Future AM Scenario

8/19/2014

Intersection Level Of Service Report #4: I-15 SB Off and Airport RD Frontage

Control Type:Two-way stopDelay (sec / veh):121.8Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):0.947

Intersection Setup

| Name | | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------------|-------|-------|----------|--------|----------------------|----------------|-------|--|
| Approach | No | rtheastboo | und | Sou | uthwestbo | und | Noi | thwestbo | und | Sou | Southeastbound | | |
| Lane Configuration | | т | | | 44 | | | 4 | | | H | | |
| Turning Movement | Left | | | | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | | 100.00 | 100.00 | 100.00 100.00 100.00 | | | |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | | |
| Grade [%] | 0.00 | | | | 0.00 | | | 0.00 | | 0.00 | | | |
| Crosswalk | | yes | | | yes | | | yes | | yes | | | |

| • | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Name | | | | | | | | | | | | |
| Base Volume Input [veh/h] | 5 | 0 | 44 | 159 | 54 | 96 | 8 | 12 | 0 | 0 | 40 | 4 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 2.00 | 11.30 | 10.10 | 7.40 | 3.10 | 12.50 | 8.30 | 2.00 | 2.00 | 2.50 | 0.00 |
| Growth Rate | 2.22 | 1.00 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 | 1.00 | 1.00 | 2.22 | 2.22 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 11 | 0 | 98 | 353 | 120 | 213 | 18 | 27 | 0 | 0 | 89 | 9 |
| Peak Hour Factor | 0.4170 | 1.0000 | 0.5240 | 0.8110 | 0.9000 | 0.7060 | 0.4000 | 0.7500 | 1.0000 | 1.0000 | 0.7690 | 0.5000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 0 | 47 | 109 | 33 | 75 | 11 | 9 | 0 | 0 | 29 | 5 |
| Total Analysis Volume [veh/h] | 26 | 0 | 187 | 435 | 133 | 302 | 45 | 36 | 0 | 0 | 116 | 18 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | - | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

8/19/2014

9 Scenario 3: 3: Future AM Scenario

Intersection Settings

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.07 | 0.00 | 0.21 | 0.95 | 0.22 | 0.29 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|-------|-------|-------|--------|--------|-------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 16.59 | 0.00 | 10.80 | 121.78 | 119.80 | 9.92 | 7.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | С | | В | F | F | Α | Α | Α | | | Α | Α |
| 95th-Percentile Queue Length [veh] | 1.14 | 0.00 | 1.14 | 20.41 | 20.41 | 1.22 | 0.19 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 28.44 | 0.00 | 28.44 | 510.19 | 510.19 | 30.56 | 4.64 | 4.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 11.50 | | | 82.65 | | | 4.27 | | | 0.00 | |
| Approach LOS | | В | | | F | | | Α | | | Α | |
| d_I, Intersection Delay [s/veh] | | | | | | 57 | .55 | | | | | |
| Intersection LOS | | | | | F | | | | | | | |

Version 2.00-10

Scenario 3: 3: Future AM Scenario

8/19/2014

Intersection Level Of Service Report #5: 14th St SW and I-315 EB

Control Type:SignalizedDelay (sec / veh):13.3Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.218

Intersection Setup

| Name | | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------------|-------|-------|-----------|--------|-----------------------|-------|-------|--|
| Approach | ١ | Northboun | d | S | outhboun | d | I | Eastbound | d t | Westbound | | | |
| Lane Configuration | | Teft Thru Right | | | ٦١٢ | | | ٦١٢ | | 710 | | | |
| Turning Movement | Left | | | | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | | 100.00 | 100.00 | 0 100.00 100.00 100.0 | | | |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | | |
| Grade [%] | 0.00 | | | | 0.00 | | | 0.00 | | 0.00 | | | |
| Crosswalk | | yes | | | yes | | yes | | | yes | | | |

| Name | | | | | | • | | | | | • | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 7 | 66 | 286 | 142 | 91 | 60 | 44 | 69 | 3 | 20 | 30 | 5 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 14.30 | 1.50 | 1.70 | 3.50 | 4.40 | 5.00 | 0.00 | 4.30 | 0.00 | 10.00 | 3.30 | 0.00 |
| Growth Rate | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 9 | 82 | 355 | 176 | 113 | 74 | 55 | 86 | 4 | 25 | 37 | 6 |
| Peak Hour Factor | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 25 | 107 | 53 | 34 | 22 | 17 | 26 | 1 | 8 | 11 | 2 |
| Total Analysis Volume [veh/h] | 11 | 99 | 428 | 212 | 136 | 89 | 66 | 104 | 5 | 30 | 45 | 7 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| G | | |
|---------------------------|---------------------------------|--|
| Located in CBD | no | |
| Signal Coordination Group | - | |
| Cycle Length [s] | 60 | |
| Coordination Type | Time of Day Pattern Coordinated | |
| Actuation Type | Semi-actuated | |
| Offset [s] | 0.0 | |
| Offset Reference | LeadGreen | |
| Permissive Mode | SingleBand | |
| Lost time [s] | 0.00 | |
| | | |

8/19/2014

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 2 | 3 | 0 | 6 | 7 | 7 | 4 | 0 | 3 | 8 | 0 |
| Lead / Lag | - | - | - | - | _ | - | Lead | - | - | Lead | - | _ |
| Minimum Green [s] | 0 | 5 | 15 | 0 | 5 | 15 | 15 | 5 | 0 | 15 | 15 | 0 |
| Maximum Green [s] | 0 | 50 | 20 | 0 | 50 | 20 | 20 | 60 | 0 | 20 | 60 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 22 | 18 | 0 | 22 | 18 | 18 | 20 | 0 | 18 | 20 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 10 | 0 | 10 | 0 | 0 | 10 | 0 | 10 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

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Scenario 3: 3: Future AM Scenario

Lane Group Calculations

| Lane Group | L | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|------|------|-------|-------|------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 5.00 | 4.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 0.00 | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 17 | 17 | 37 | 17 | 17 | 36 | 29 | 12 | 12 | 29 | 11 | 11 |
| g / C, Green / Cycle | 0.28 | 0.28 | 0.62 | 0.28 | 0.28 | 0.60 | 0.49 | 0.21 | 0.21 | 0.49 | 0.19 | 0.19 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.05 | 0.27 | 0.17 | 0.07 | 0.06 | 0.04 | 0.06 | 0.00 | 0.02 | 0.02 | 0.00 |
| s, saturation flow rate [veh/h] | 1114 | 1872 | 1588 | 1272 | 1820 | 1538 | 1616 | 1822 | 1615 | 1422 | 1839 | 1615 |
| c, Capacity [veh/h] | 334 | 530 | 979 | 387 | 515 | 920 | 948 | 376 | 333 | 816 | 346 | 304 |
| d1, Uniform Delay [s] | 19.78 | 16.28 | 6.04 | 22.47 | 16.66 | 5.14 | 8.16 | 20.04 | 18.95 | 8.07 | 20.26 | 19.85 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.04 | 0.17 | 0.31 | 1.21 | 0.27 | 0.05 | 0.03 | 0.39 | 0.02 | 0.02 | 0.17 | 0.03 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.03 | 0.19 | 0.44 | 0.55 | 0.26 | 0.10 | 0.07 | 0.28 | 0.01 | 0.04 | 0.13 | 0.02 |
|------------------------------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|-------|-------|
| d, Delay for Lane Group [s/veh] | 19.82 | 16.44 | 6.35 | 23.68 | 16.93 | 5.19 | 8.20 | 20.43 | 18.97 | 8.08 | 20.43 | 19.88 |
| Lane Group LOS | В | В | А | С | В | Α | Α | С | В | Α | С | В |
| Critical Lane Group | no | no | yes | no | no | no | no | no | no | no | yes | no |
| 50th-Percentile Queue Length [veh] | 0.12 | 0.97 | 2.14 | 2.75 | 1.37 | 0.37 | 0.40 | 1.18 | 0.05 | 0.18 | 0.51 | 0.08 |
| 50th-Percentile Queue Length [ft] | 3.03 | 24.30 | 53.51 | 68.66 | 34.27 | 9.31 | 9.90 | 29.58 | 1.34 | 4.43 | 12.70 | 1.94 |
| 95th-Percentile Queue Length [veh] | 0.22 | 1.75 | 3.85 | 4.94 | 2.47 | 0.67 | 0.71 | 2.13 | 0.10 | 0.32 | 0.91 | 0.14 |
| 95th-Percentile Queue Length [ft] | 5.46 | 43.75 | 96.31 | 123.59 | 61.69 | 16.75 | 17.82 | 53.25 | 2.41 | 7.97 | 22.86 | 3.49 |



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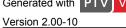
Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 19.82 | 16.44 | 6.35 | 23.68 | 16.93 | 5.19 | 8.20 | 20.43 | 18.97 | 8.08 | 20.43 | 19.88 |
|---------------------------------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|-------|
| Movement LOS | В | В | Α | С | В | Α | Α | С | В | Α | С | В |
| d_A, Approach Delay [s/veh] | | 8.48 | | | 17.81 | | | 15.78 | | | 15.87 | |
| Approach LOS | | Α | | | В | | | В | | | В | |
| d_I, Intersection Delay [s/veh] | | | 13.32 | | | | | | | | | |
| Intersection LOS | | | | | | E | 3 | | | | | |
| Intersection V/C | 0.218 | | | | | | | | | | | |

Sequence

| Ring 1 | 2 | 7 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 6 | 3 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | _ | - | - | - | - | - | - | - | - | - |





Scenario 3: 3: Future AM Scenario Intersection Level Of Service Report #6: 14th St SW and I-315 WB

8/19/2014

Control Type:SignalizedDelay (sec / veh):22.2Analysis Method:HCM2010Level Of Service:CAnalysis Period:15 minutesVolume to Capacity (v/c):0.295

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|----------|--------|--------|-----------|--------|--------|-----------|--------|--------|-----------|--------|
| Approach | ١ | orthboun | d | S | Southboun | d | E | Eastbound | d t | V | Vestbound | t |
| Lane Configuration | | nir | | | ٦F | | | + | | - dr | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | |
| Grade [%] | | 0.00 | | 0.00 | | | | 0.00 | | 0.00 | | |
| Crosswalk | | yes | | yes | | | yes | | | yes | | |

| Name | | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 11 | 17 | 90 | 26 | 136 | 0 | 0 | 7 | 15 | 162 | 16 | 38 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 9.10 | 0.00 | 4.40 | 7.70 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 2.50 | 0.00 | 0.00 | |
| Growth Rate | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 13 | 20 | 104 | 30 | 158 | 0 | 0 | 8 | 17 | 188 | 19 | 44 | |
| Peak Hour Factor | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | 0.8040 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 4 | 6 | 32 | 9 | 49 | 0 | 0 | 2 | 5 | 58 | 6 | 14 | |
| Total Analysis Volume [veh/h] | 16 | 25 | 129 | 37 | 197 | 0 | 0 | 10 | 21 | 234 | 24 | 55 | |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no | |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pedestrian Volume [ped/h] | 0 | | 0 | | | | 0 | | 0 | | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | | |

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Version 2.00-10

Scenario 3: 3: Future AM Scenario

Intersection Settings

| Located in CBD | yes |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 2 | 0 |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Maximum Green [s] | 0 | 35 | 40 | 0 | 35 | 0 | 0 | 25 | 0 | 0 | 40 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 25 | 19 | 0 | 25 | 0 | 0 | 16 | 0 | 0 | 19 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 9 | 7 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 11 | 7 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | | | no | | | no | |
| Maximum Recall | | no | no | | no | | | no | | | no | |
| Pedestrian Recall | | no | no | | no | | | no | | | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

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Scenario 3: 3: Future AM Scenario

8/19/2014

Lane Group Calculations

| Lane Group | L | С | R | L | С | С | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|-------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 13 | 13 | 30 | 13 | 13 | 2 | 12 | 12 |
| g / C, Green / Cycle | 0.21 | 0.21 | 0.49 | 0.21 | 0.21 | 0.03 | 0.20 | 0.20 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.01 | 0.09 | 0.03 | 0.12 | 0.02 | 0.16 | 0.04 |
| s, saturation flow rate [veh/h] | 994 | 1710 | 1392 | 1176 | 1685 | 1527 | 1636 | 1454 |
| c, Capacity [veh/h] | 183 | 356 | 686 | 305 | 350 | 52 | 329 | 292 |
| d1, Uniform Delay [s] | 26.76 | 19.09 | 8.52 | 21.98 | 21.31 | 28.58 | 22.73 | 19.90 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.20 | 0.08 | 0.13 | 0.18 | 1.41 | 10.57 | 4.12 | 0.31 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.09 | 0.07 | 0.19 | 0.12 | 0.56 | 0.60 | 0.78 | 0.19 |
|------------------------------------|-------|-------|-------|-------|--------|-------|--------|-------|
| d, Delay for Lane Group [s/veh] | 26.96 | 19.18 | 8.65 | 22.16 | 22.72 | 39.15 | 26.86 | 20.21 |
| Lane Group LOS | С | В | А | С | С | D | С | С |
| Critical Lane Group | no | no | no | no | yes | yes | yes | no |
| 50th-Percentile Queue Length [veh] | 0.22 | 0.27 | 0.82 | 0.44 | 2.44 | 0.57 | 3.57 | 0.62 |
| 50th-Percentile Queue Length [ft] | 5.43 | 6.74 | 20.40 | 11.02 | 60.90 | 14.26 | 89.30 | 15.53 |
| 95th-Percentile Queue Length [veh] | 0.39 | 0.49 | 1.47 | 0.79 | 4.38 | 1.03 | 6.43 | 1.12 |
| 95th-Percentile Queue Length [ft] | 9.77 | 12.13 | 36.71 | 19.83 | 109.62 | 25.67 | 160.74 | 27.96 |



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Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 26.96 | 19.18 | 8.65 | 22.16 | 22.72 | 22.72 | 39.15 | 39.15 | 39.15 | 26.86 | 26.86 | 20.21 |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Movement LOS | С | В | Α | С | С | С | D | D | D | С | С | С |
| d_A, Approach Delay [s/veh] | | 11.92 | | | 22.63 | | | 39.15 | | | 25.69 | |
| Approach LOS | | В | | | С | | | D | | | С | |
| d_I, Intersection Delay [s/veh] | | | | | | 22 | .16 | | | | | |
| Intersection LOS | | | | | | (|) | | | | | |
| Intersection V/C | | | | | | 0.2 | 95 | | | | | |

Sequence

| Ring 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | _ | - | - | - | - | - | - | - | - | - |



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Scenario 3: 3: Future AM Scenario Intersection Level Of Service Report #7: Fox Farm and I-315

Control Type:SignalizedDelay (sec / veh):39.0Analysis Method:HCM2010Level Of Service:DAnalysis Period:15 minutesVolume to Capacity (v/c):0.760

Intersection Setup

Version 2.00-10

| Name | | | | | | | | | | | | | |
|------------------------|--------|------------|--------|--------|----------------------|-------|-------|------------|--------|----------------------|----------------|-------|--|
| Approach | ١ | Northbound | | | outhboun | d | No | rtheastboo | und | Sou | Southwestbound | | |
| Lane Configuration | | 117 | | | <u>1 (</u> | | | Шь | | ١١١١٢ | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | | 100.00 | 100.00 | 100.00 100.00 100.00 | | | |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | | 0.00 | | 0.00 | | | | 0.00 | | 0.00 | | | |
| Crosswalk | | yes | | yes | | | | yes | | yes | | | |

| Name | | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 50 | 219 | 437 | 172 | 90 | 121 | 161 | 732 | 45 | 101 | 335 | 136 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 2.00 | 0.90 | 0.70 | 1.80 | 2.20 | 4.10 | 6.20 | 5.20 | 2.20 | 4.00 | 6.00 | 3.70 | |
| Growth Rate | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 59 | 256 | 511 | 201 | 105 | 142 | 188 | 856 | 53 | 118 | 392 | 159 | |
| Peak Hour Factor | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | 0.7980 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 18 | 80 | 160 | 63 | 33 | 44 | 59 | 268 | 17 | 37 | 123 | 50 | |
| Total Analysis Volume [veh/h] | 74 | 321 | 640 | 252 | 132 | 178 | 236 | 1073 | 66 | 148 | 491 | 199 | |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no | |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pedestrian Volume [ped/h] | 0 | | 0 | | | | 0 | | 0 | | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | | |

Intersection Settings

| Located in CBD | no |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 140 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 1 | 8 | 0 | 3 | 6 | 6 | 4 | 0 | 8 | 2 | 5 |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 5 | 5 | 5 | 0 | 5 | 5 | 0 |
| Maximum Green [s] | 0 | 60 | 60 | 0 | 60 | 60 | 60 | 60 | 0 | 60 | 60 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 20 | 41 | 0 | 33 | 67 | 67 | 46 | 0 | 41 | 20 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

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Scenario 3: 3: Future AM Scenario

8/19/2014

Lane Group Calculations

| Lane Group | С | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 3.00 | 3.00 | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 1.00 | 3.00 | 3.00 | 1.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 31 | 31 | 97 | 25 | 25 | 52 | 22 | 47 | 47 | 31 | 56 | 56 |
| g / C, Green / Cycle | 0.22 | 0.22 | 0.69 | 0.18 | 0.18 | 0.37 | 0.16 | 0.34 | 0.34 | 0.22 | 0.40 | 0.40 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.19 | 0.40 | 0.14 | 0.04 | 0.11 | 0.14 | 0.31 | 0.04 | 0.04 | 0.14 | 0.13 |
| s, saturation flow rate [veh/h] | 1793 | 1714 | 1604 | 1778 | 3540 | 1551 | 1704 | 3439 | 1580 | 3379 | 3413 | 1557 |
| c, Capacity [veh/h] | 405 | 387 | 1160 | 365 | 727 | 618 | 268 | 1167 | 536 | 750 | 1378 | 629 |
| d1, Uniform Delay [s] | 43.76 | 51.63 | 8.93 | 51.50 | 45.91 | 28.61 | 57.70 | 44.43 | 31.90 | 44.32 | 29.06 | 28.52 |
| k, delay calibration | 0.11 | 0.11 | 0.41 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.21 | 4.62 | 1.56 | 2.33 | 0.12 | 0.25 | 9.13 | 3.49 | 0.10 | 0.13 | 0.16 | 0.29 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

| X, volume / capacity | 0.18 | 0.83 | 0.55 | 0.69 | 0.18 | 0.29 | 0.88 | 0.92 | 0.12 | 0.20 | 0.36 | 0.32 |
|------------------------------------|-------|--------|--------|--------|-------|--------|--------|--------|-------|-------|--------|--------|
| d, Delay for Lane Group [s/veh] | 43.98 | 56.25 | 10.49 | 53.83 | 46.03 | 28.87 | 66.82 | 47.91 | 32.00 | 44.45 | 29.22 | 28.81 |
| Lane Group LOS | D | E | В | D | D | С | E | D | С | D | С | С |
| Critical Lane Group | no | no | yes | yes | no | no | no | yes | no | no | no | no |
| 50th-Percentile Queue Length [veh] | 2.13 | 11.29 | 10.10 | 9.13 | 2.00 | 4.36 | 8.87 | 18.35 | 1.59 | 2.14 | 5.88 | 4.71 |
| 50th-Percentile Queue Length [ft] | 53.34 | 282.26 | 252.44 | 228.16 | 49.99 | 109.09 | 221.67 | 458.87 | 39.66 | 53.49 | 147.02 | 117.63 |
| 95th-Percentile Queue Length [veh] | 3.84 | 16.80 | 15.31 | 14.08 | 3.60 | 7.79 | 13.75 | 25.38 | 2.86 | 3.85 | 9.86 | 8.26 |
| 95th-Percentile Queue Length [ft] | 96.01 | 420.02 | 382.72 | 352.03 | 89.98 | 194.73 | 343.76 | 634.52 | 71.39 | 96.29 | 246.44 | 206.56 |



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Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 43.98 | 56.25 | 10.49 | 53.83 | 46.03 | 28.87 | 66.82 | 47.91 | 32.00 | 44.45 | 29.22 | 28.81 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Movement LOS | D | E | В | D | D D C | | | D | С | D | С | |
| d_A, Approach Delay [s/veh] | | 27.07 | | | 44.09 | | | 50.39 | | 31.81 | | |
| Approach LOS | | С | | | D | | | D | | | | |
| d_I, Intersection Delay [s/veh] | | | | | | 39 | .04 | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.760 | | | | | | | | | | | |

Sequence

| Ring 1 | 1 | 3 | 8 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | - | - | 6 | 2 | - | - | - | - | - | - | - | - | - | - | • | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | _ | - | - | - | - | - | - | - | - | - |





8/19/2014 Scenario 3: 3: Future AM Scenario

Intersection Level Of Service Report #8: Central Ave and I15 SB

Control Type: Two-way stop Delay (sec / veh): 178.9 Analysis Method: HCM2010 Level Of Service: F Analysis Period: 15 minutes Volume to Capacity (v/c): 1.188

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|-----------|--------|--------|----------|--------|--------|------------|--------|
| Approach | S | outhboun | ıd | 1 | Eastbound | d | ١ | Vestboun | d | Nor | rthwestboo | und |
| Lane Configuration | | eft Thru Right | | | ٦ſ | | | 111 | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | | 0.00 | | 0.00 | | |
| Crosswalk | | yes | | yes | | | | yes | | yes | | |

| • | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Name | | | | | | | | | | | | |
| Base Volume Input [veh/h] | 130 | 0 | 6 | 0 | 191 | 39 | 123 | 88 | 0 | 0 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.30 | 0.00 | 0.00 | 2.00 | 3.10 | 0.00 | 6.50 | 11.30 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Rate | 1.41 | 1.41 | 1.41 | 1.00 | 1.41 | 1.41 | 1.41 | 1.41 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 183 | 0 | 8 | 0 | 269 | 55 | 173 | 124 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.8550 | 1.0000 | 0.7500 | 1.0000 | 0.6920 | 0.7500 | 0.7690 | 0.8150 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 0 | 3 | 0 | 97 | 18 | 56 | 38 | 0 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 214 | 0 | 11 | 0 | 389 | 73 | 225 | 152 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | - | | 0 | - | | 0 | - | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

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23 Scenario 3: 3: Future AM Scenario

Intersection Settings

Version 2.00-10

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 1.19 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
|------------------------------------|--------|--------|------|------|------|------|-------|------|------|------|------|------|--|--|
| d_M, Delay for Movement [s/veh] | 178.88 | 176.96 | 9.05 | 0.00 | 0.00 | 0.00 | 8.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Movement LOS | F | F | Α | | Α | Α | Α | Α | | | | | | |
| 95th-Percentile Queue Length [veh] | 11.32 | 11.32 | 0.04 | 0.00 | 0.00 | 0.00 | 0.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 95th-Percentile Queue Length [ft] | 282.97 | 282.97 | 0.93 | 0.00 | 0.00 | 0.00 | 18.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| d_A, Approach Delay [s/veh] | | 170.57 | | | 0.00 | | | 5.32 | | | 0.00 | | | |
| Approach LOS | | F | | | Α | | | Α | | | А | | | |
| d_I, Intersection Delay [s/veh] | | | | | | 37 | .95 | | | | | | | |
| Intersection LOS | | | | | | ı | F | | | | | | | |

Scenario 3: 3: Future AM Scenario

Intersection Level Of Service Report #9: Central Ave and I-15 NB

Control Type:Two-way stopDelay (sec / veh):113.1Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):0.274

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|-----------|--------|--------|----------|--------|--------|-----------|--------|
| Approach | ١ | lorthboun | d | | Eastbound | d | ١ | Vestboun | d | Sou | utheastbo | und |
| Lane Configuration | | Ť | | | 1 | | | Πr | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | | 0.00 | | 0.00 | | |
| Crosswalk | | yes | | yes | | | | yes | | yes | | |

| Name | | | | | | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 15 | 0 | 177 | 6 | 305 | 0 | 0 | 202 | 44 | 0 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 0.00 | 10.80 | 16.70 | 2.00 | 2.00 | 2.00 | 11.40 | 13.60 | 2.00 | 2.00 | 2.00 |
| Growth Rate | 1.64 | 1.64 | 1.64 | 1.64 | 1.64 | 1.00 | 1.00 | 1.64 | 1.64 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 25 | 0 | 290 | 10 | 500 | 0 | 0 | 331 | 72 | 0 | 0 | 0 |
| Peak Hour Factor | 0.5360 | 1.0000 | 0.8510 | 0.7500 | 0.7190 | 1.0000 | 1.0000 | 0.8420 | 0.7330 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 0 | 85 | 3 | 174 | 0 | 0 | 98 | 25 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 47 | 0 | 341 | 13 | 695 | 0 | 0 | 393 | 98 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | | 0 | • | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | | | | 0 | | 0 | | |

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Scenario 3: 3: Future AM Scenario

Intersection Settings

Version 2.00-10

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.27 | 0.00 | 0.80 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|--------|--------|--------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 113.09 | 109.47 | 100.54 | 8.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | F | F | F | Α | Α | | | Α | А | | | |
| 95th-Percentile Queue Length [veh] | 13.79 | 13.79 | 13.79 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 344.63 | 344.63 | 344.63 | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 102.06 | | | 0.15 | | 0.00 | | | 0.00 | | |
| Approach LOS | | F | | | Α | | | Α | | | А | |
| d_I, Intersection Delay [s/veh] | | 25.02 | | | | | | | | | | |
| Intersection LOS | | | | | | F | = | | | | | |

8/19/2014 Scenario 3: 3: Future AM Scenario

Intersection Level Of Service Report #10: Central Ave and Vaughn Rd

Control Type: Two-way stop Delay (sec / veh): 406.0 Analysis Method: HCM2010 Level Of Service: F Analysis Period: 15 minutes Volume to Capacity (v/c): 1.518

Intersection Setup

Version 2.00-10

| Crosswalk | y | es | у | es | yes | | |
|------------------------|--------|------------|--------|-----------|--------|------------------|--|
| Grade [%] | 0. | 0.00 0.00 | | 00 | 0.00 | | |
| Speed [mph] | 30 | .00 | 30 | 30.00 | | 0.00 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Configuration | ٦ | Ψ. | | ٦İ | | | |
| Approach | South | Southbound | | Eastbound | | bound | |
| Name | | | | | | | |

Volumes

| Name | | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 77 | 60 | 71 | 410 | 184 | 65 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 9.10 | 6.70 | 7.00 | 5.10 | 11.40 | 6.20 | |
| Growth Rate | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 126 | 98 | 116 | 668 | 300 | 106 | |
| Peak Hour Factor | 0.7700 | 0.7890 | 0.8450 | 0.8010 | 0.8520 | 0.7740 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 41 | 31 | 34 | 208 | 88 | 34 | |
| Total Analysis Volume [veh/h] | 164 | 124 | 137 | 834 | 352 | 137 | |
| Pedestrian Volume [ped/h] | | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | 0 | | 0 | | |

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27 Scenario 3: 3: Future AM Scenario

Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 1.52 | 0.20 | 0.13 | 0.01 | 0.00 | 0.00 | |
|------------------------------------|--------|--------|-------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 405.95 | 378.42 | 8.95 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | F | F | А | Α | Α | A | |
| 95th-Percentile Queue Length [veh] | 20.34 | 20.34 | 0.45 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 508.50 | 508.50 | 11.23 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | 394 | 1.10 | 1. | 26 | 0.00 | | |
| Approach LOS | F | = | , | 4 | A | 4 | |
| d_I, Intersection Delay [s/veh] | | 65.63 | | | | | |
| Intersection LOS | | F | | | | | |

Scenario 3: 3: Future AM Scenario

Intersection Level Of Service Report #11: Vaughn Rd and I-15 SB

Control Type:Two-way stopDelay (sec / veh):11.0Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.361

Intersection Setup

| Name | | | | | | |
|------------------------|--------|--------|--------|--------|--------|--------|
| Approach | South | nbound | East | bound | West | bound |
| Lane Configuration | - | т | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30 | 0.00 | 30 | 30.00 | | 0.00 |
| Grade [%] | 0 | 0.00 | | 0.00 | | .00 |
| Crosswalk | У | res | yes | | yes | |

Volumes

| Name | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 219 | 1 | 0 | 27 | 12 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 4.60 | 0.00 | 2.00 | 11.10 | 8.30 | 2.00 |
| Growth Rate | 1.36 | 1.36 | 1.00 | 1.36 | 1.36 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 298 | 1 | 0 | 37 | 16 | 0 |
| Peak Hour Factor | 0.8830 | 0.2500 | 1.0000 | 0.8440 | 0.7500 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 84 | 1 | 0 | 11 | 5 | 0 |
| Total Analysis Volume [veh/h] | 337 | 4 | 0 | 44 | 21 | 0 |
| Pedestrian Volume [ped/h] | | 0 | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | (| 0 0 | | 0 | | |

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Intersection Settings

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
|------------------------------------|-------|-------|------|------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 11.04 | 10.58 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | В | В | | A | A | | | | |
| 95th-Percentile Queue Length [veh] | 1.68 | 1.68 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 42.07 | 42.07 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 11. | .04 | 0 | .00 | 0. | 00 | | | |
| Approach LOS | E | 3 | | A | 1 | A | | | |
| d_I, Intersection Delay [s/veh] | | 9.27 | | | | | | | |
| Intersection LOS | | | | В | В | | | | |

8/19/2014 Scenario 3: 3: Future AM Scenario

Intersection Level Of Service Report #12: Vaughn Rd and I-15 NB

Control Type: Two-way stop Delay (sec / veh): 7.3 Analysis Method: HCM2010 Level Of Service: Α Analysis Period: 15 minutes Volume to Capacity (v/c): 0.000

Intersection Setup

| Name | | | | | | |
|------------------------|--------|---------------|--------|-----------|--------|----------|
| Approach | East | Eastbound Wes | | Westbound | | astbound |
| Lane Configuration | 4 Ir | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 30 | .00 | 30 | 30.00 | | 0.00 |
| Grade [%] | 0. | 0.00 0.00 | | 0.00 | | |
| Crosswalk | y | es | yes | | yes | |

Volumes

| Name | | | | | | |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 0 | 237 | 19 | 76 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 5.00 | 5.30 | 14.50 | 2.00 | 2.00 |
| Growth Rate | 1.37 | 1.37 | 1.37 | 1.37 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 325 | 26 | 104 | 0 | 0 |
| Peak Hour Factor | 1.0000 | 0.8590 | 0.5940 | 0.8260 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 95 | 11 | 31 | 0 | 0 |
| Total Analysis Volume [veh/h] | 0 | 378 | 44 | 126 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | 0 | | 0 | |



Generated with PTV VISTRO 31 8/19/2014

Intersection Settings

| Priority Scheme | Free | Free | Stop |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

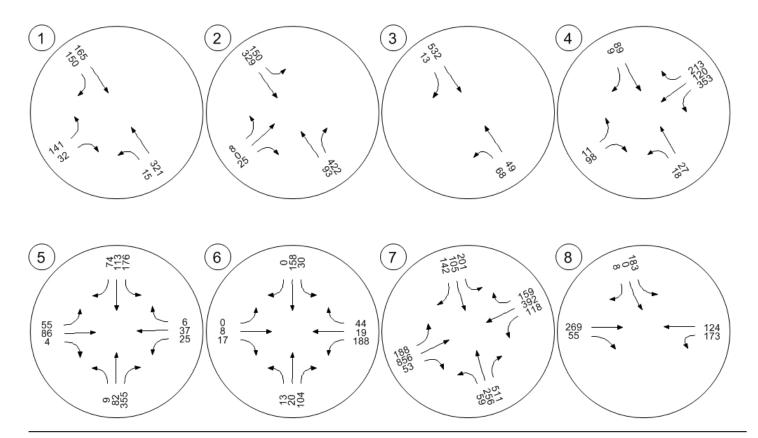
Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
|------------------------------------|------|------|------|------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 7.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | Α | A | A | A | | | | | |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 0. | 00 | C | 0.00 | 0.00 | | | | |
| Approach LOS | , | A | | A | F | 4 | | | |
| d_I, Intersection Delay [s/veh] | 0.00 | | | | | | | | |
| Intersection LOS | A | | | | | | | | |

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Traffic Volume - Future Total Volume

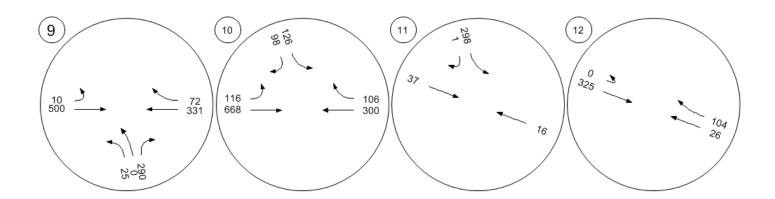




Shane Forsythe
Robert Peccia and Associates

Traffic Volume - Future Total Volume

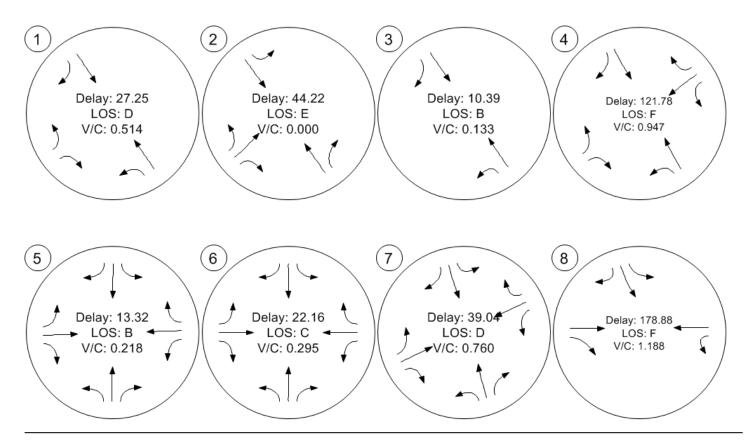




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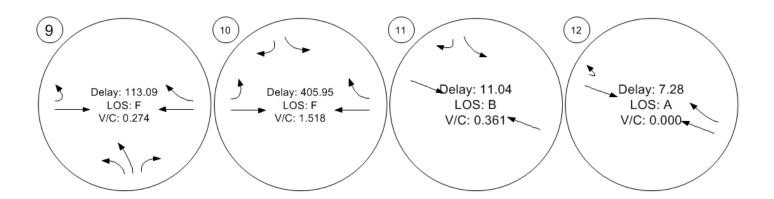
Traffic Conditions





Traffic Conditions





I-15 Corridor Study

Vistro File: F:\...\I-15 Corridor.vistropdb

Scenario 4: Future PM Scenario 9/15/2014

Report File: F:\...\Future_LOS_Report_PM.pdf

Intersection Analysis Summary

| ID | Intersection Name | Control Type | Method | Worst Mvmt | V/C | Delay (s/veh) | LOS |
|----|----------------------------------------|--------------|---------|------------|-------|---------------|-----|
| 1 | Tri Hill and Frontage Airport
Rd | Two-way stop | HCM2010 | NEBL | 0.713 | 43.7 | Е |
| 2 | I-15 NB and Airport Rd | Two-way stop | HCM2010 | NEBR | 0.159 | 10,000.0 | F |
| 3 | I-15 SB On and Airport RD | Two-way stop | HCM2010 | NWBL | 0.305 | 23.5 | С |
| 4 | I-15 SB Off and Airport RD
Frontage | Two-way stop | HCM2010 | SWBL | 7.378 | 3,138.9 | F |
| 5 | 14th St SW and I-315 EB | Signalized | HCM2010 | NBL | 0.457 | 12.4 | В |
| 6 | 14th St SW and I-315 WB | Signalized | HCM2010 | EBR | 0.621 | 19.6 | В |
| 7 | Fox Farm and I-315 | Signalized | HCM2010 | NBT | 0.891 | 35.6 | D |
| 8 | Central Ave and I15 SB | Two-way stop | HCM2010 | SBL | 1.339 | 314.9 | F |
| 9 | Central Ave and I-15 NB | Two-way stop | HCM2010 | NBL | 1.211 | 445.2 | F |
| 10 | Central Ave and Vaughn Rd | Two-way stop | HCM2010 | SBL | 3.231 | 1,422.7 | F |
| 11 | Vaughn Rd and I-15 SB | Two-way stop | HCM2010 | SBL | 0.254 | 11.0 | В |
| 12 | Vaughn Rd and I-15 NB | Two-way stop | HCM2010 | EBL | 0.000 | 7.4 | Α |

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report #1: Tri Hill and Frontage Airport Rd

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 43.7
Level Of Service: E
Volume to Capacity (v/c): 0.713

Intersection Setup

| Name | | | | | | | | |
|------------------------|-------------|---------|---------|----------|----------------|--------|--|--|
| Approach | Northea | stbound | Northwe | estbound | Southeastbound | | | |
| Lane Configuration | 1 | r | + | ıİ | + | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | | |
| Lane Width [ft] | 12.00 12.00 | | 12.00 | 12.00 | 12.00 | 12.00 | | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | | |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | | | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | | |
| Crosswalk | ye | es | у | yes | | yes | | |

Volumes

| Name | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 75 | 7 | 9 | 160 | 207 | 70 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 2.70 | 0.00 | 22.20 | 33.80 | 18.90 | 15.80 | |
| Growth Rate | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [ve | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 128 | 12 | 15 | 272 | 352 | 119 | |
| Peak Hour Factor | 0.5680 | 0.4380 | 0.7500 | 0.8000 | 0.8480 | 0.8330 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 56 | 7 | 5 | 85 | 104 | 36 | |
| Total Analysis Volume [veh/h] | 225 | 27 | 20 | 340 | 415 | 143 | |
| Pedestrian Volume [ped/h] | 0 | | | 0 | ō | | |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | 0 | | |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.71 | 0.05 | 0.02 | 0.00 | 0.00 | 0.00 | | | | |
|------------------------------------|---------------|----------|------|------|------|------|--|--|--|--|
| d_M, Delay for Movement [s/veh] | 43.71 38.46 | | 9.00 | 0.00 | 0.00 | 0.00 | | | | |
| Movement LOS | E E | | Α | A | Α | A | | | | |
| 95th-Percentile Queue Length [veh] | 5.93 | 5.93 | 0.07 | 0.00 | 0.00 | 0.00 | | | | |
| 95th-Percentile Queue Length [ft] | 148.33 148.33 | | 1.67 | 0.00 | 0.00 | 0.00 | | | | |
| d_A, Approach Delay [s/veh] | 43 | .15 | 0. | 50 | 0.0 | 00 | | | | |
| Approach LOS | E | = | , | 4 | A | 4 | | | | |
| d_I, Intersection Delay [s/veh] | | 9.45 | | | | | | | | |
| Intersection LOS | E | | | | | | | | | |



Intersection Level Of Service Report #2: I-15 NB and Airport Rd

Control Type:Two-way stopDelay (sec / veh):10,000.0Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):0.159

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|----------------|--------|--------|-----------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach | No | Northeastbound | | | ıthwestbo | und | Northwestbound | | | Southeastbound | | |
| Lane Configuration | + | | | | | | F | | | + | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | 0.00 | | | 0.00 | | | |
| Crosswalk | | yes | | | yes | | yes | | | yes | | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 2 | 2 | 31 | 0 | 0 | 0 | 0 | 47 | 197 | 307 | 236 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 0.00 | 47.40 | 2.00 | 2.00 | 2.00 | 2.00 | 40.40 | 20.80 | 0.70 | 17.40 | 2.00 |
| Growth Rate | 1.90 | 1.90 | 1.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 4 | 59 | 0 | 0 | 0 | 0 | 89 | 374 | 583 | 448 | 0 |
| Peak Hour Factor | 0.5000 | 0.5000 | 0.7750 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.6910 | 0.8210 | 0.6910 | 0.8680 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 2 | 2 | 19 | 0 | 0 | 0 | 0 | 32 | 114 | 211 | 129 | 0 |
| Total Analysis Volume [veh/h] | 8 | 8 | 76 | 0 | 0 | 0 | 0 | 129 | 456 | 844 | 516 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | | | 0 | | | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | • | | 0 | • |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.85 | 0.01 | 0.00 |
|------------------------------------|---------|----------|---------|-------|------|------|------|------|------|---------|---------|------|
| d_M, Delay for Movement [s/veh] | 10000.0 | 10000.0 | 10000.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 24.83 | 0.00 | 0.00 |
| Movement LOS | F | F | F | | | | | Α | Α | С | Α | |
| 95th-Percentile Queue Length [veh] | 13.97 | 13.97 | 13.97 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 54.79 | 54.79 | 0.00 |
| 95th-Percentile Queue Length [ft] | 349.24 | 349.24 | 349.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1369.74 | 1369.74 | 0.00 |
| d_A, Approach Delay [s/veh] | | 10000.00 | 0.00 | | | | 0.00 | | | 15.41 | | |
| Approach LOS | | F | | A A F | | | | | F | | | |
| d_I, Intersection Delay [s/veh] | 461.93 | | | | | | | | | | | |
| Intersection LOS | | F | | | | | | | | | | |

Intersection Level Of Service Report #3: I-15 SB On and Airport RD

Control Type:Two-way stopDelay (sec / veh):23.5Analysis Method:HCM2010Level Of Service:CAnalysis Period:15 minutesVolume to Capacity (v/c):0.305

Intersection Setup

| Name | | | | | | | |
|------------------------|----------------|--------|---------------|----------|----------------|-------|--|
| Approach | Northeastbound | | Northwe | estbound | Southeastbound | | |
| Lane Configuration | | | | 1 | F | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 12.00 | | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 100.00 | | 100.00 100.00 | | |
| Speed [mph] | 30 | 30.00 | | 30.00 | | 0.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | |
| Crosswalk | у | yes | | yes | | res | |

Volumes

Robert Peccia And Associates

| Name | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 0 | 0 | 25 | 21 | 542 | 14 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 64.00 | 19.10 | 7.30 | 0.00 |
| Growth Rate | 1.00 | 1.00 | 2.12 | 2.12 | 2.12 | 2.12 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 53 | 45 | 1149 | 30 |
| Peak Hour Factor | 1.0000 | 1.0000 | 0.6250 | 0.7500 | 0.7450 | 0.7000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 21 | 15 | 386 | 11 |
| Total Analysis Volume [veh/h] | 0 | 0 | 85 | 60 | 1542 | 43 |
| Pedestrian Volume [ped/h] | (| 0 | | 0 | | 0 |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | | 0 |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.30 | 0.00 | 0.02 | 0.00 | | | |
|------------------------------------|------|------|-------|-------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 23.48 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | | | С | A | A | A | | | |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 2.79 | 2.79 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 69.68 | 69.68 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 0. | 00 | 10 | 3.76 | 0. | 00 | | | |
| Approach LOS | , | A | | В | , | 4 | | | |
| d_I, Intersection Delay [s/veh] | | | 1.15 | | | | | | |
| Intersection LOS | С | | | | | | | | |



Intersection Level Of Service Report #4: I-15 SB Off and Airport RD Frontage

Control Type:Two-way stopDelay (sec / veh):3,138.9Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):7.378

Intersection Setup

| Name | | | | | | | | | | | | | |
|------------------------|--------|------------|--------|--------|-----------|--------|--------|-----------|--------|--------|----------------|--------|--|
| Approach | No | rtheastboo | und | Sou | ıthwestbo | und | No | rthwestbo | und | Sou | Southeastbound | | |
| Lane Configuration | Ψ. | | | | 46 | | | 4 | | + | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | | |
| Grade [%] | 0.00 | | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | | yes | | yes | | | | yes | | yes | | | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 0 | 0 | 55 | 217 | 26 | 47 | 8 | 15 | 0 | 0 | 286 | 1 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 2.00 | 1.80 | 18.90 | 11.50 | 2.10 | 37.50 | 6.70 | 2.00 | 2.00 | 1.00 | 0.00 |
| Growth Rate | 2.22 | 1.00 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 | 1.00 | 1.00 | 2.22 | 2.22 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 122 | 482 | 58 | 104 | 18 | 33 | 0 | 0 | 635 | 2 |
| Peak Hour Factor | 1.0000 | 1.0000 | 0.7240 | 0.8350 | 0.7220 | 0.6910 | 0.6670 | 0.7500 | 1.0000 | 1.0000 | 0.6810 | 0.2500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 42 | 144 | 20 | 38 | 7 | 11 | 0 | 0 | 233 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 169 | 577 | 80 | 151 | 27 | 44 | 0 | 0 | 932 | 8 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Stop | Free | Free |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.53 | 7.38 | 0.38 | 0.15 | 0.04 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | |
|------------------------------------|-------|---------|-------|---------|---------|-------|-------|------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 47.75 | 0.00 | 27.94 | 3138.95 | 3109.90 | 9.11 | 11.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | E | | D | F | F | Α | В | Α | | | Α | Α | |
| 95th-Percentile Queue Length [veh] | 2.88 | 0.00 | 2.88 | 74.83 | 74.83 | 0.52 | 0.40 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 72.12 | 0.00 | 72.12 | 1870.70 | 1870.70 | 12.88 | 9.95 | 9.95 | 0.00 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | | 27.94 | | | 2551.16 | | | 4.28 | | | 0.00 | | |
| Approach LOS | | D | | | F | | | Α | | А | | | |
| d_I, Intersection Delay [s/veh] | | 1039.42 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | | |

Intersection Level Of Service Report #5: 14th St SW and I-315 EB

Control Type:SignalizedDelay (sec / veh):12.4Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.457

Intersection Setup

| Name | | | | | | | | | | | | | |
|------------------------|--------|------------|--------|--------|----------|--------|--------|-----------|--------|--------|-----------|--------|--|
| Approach | ١ | Northbound | | | outhboun | d | I | Eastbound | d | ٧ | Westbound | | |
| Lane Configuration | חור | | | | Пr | | | ٦١٢ | | ПİГ | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | 30.00 | | | |
| Grade [%] | 0.00 | | | 0.00 | | | | 0.00 | | 0.00 | | | |
| Crosswalk | | yes | | | yes | | | yes | | yes | | | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 13 | 82 | 260 | 95 | 396 | 262 | 107 | 168 | 10 | 102 | 50 | 31 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 2.40 | 1.20 | 4.30 | 1.30 | 0.40 | 0.90 | 0.00 | 0.00 | 1.00 | 0.00 | 12.90 |
| Growth Rate | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 16 | 102 | 322 | 118 | 491 | 325 | 133 | 208 | 12 | 126 | 62 | 38 |
| Peak Hour Factor | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 | 0.9380 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 27 | 86 | 31 | 131 | 87 | 35 | 55 | 3 | 34 | 17 | 10 |
| Total Analysis Volume [veh/h] | 17 | 109 | 343 | 126 | 523 | 346 | 142 | 222 | 13 | 134 | 66 | 41 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate | / 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| Located in CBD | no |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 2 | 3 | 0 | 6 | 7 | 7 | 4 | 0 | 3 | 8 | 0 |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 5 | 15 | 0 | 5 | 15 | 15 | 5 | 0 | 15 | 15 | 0 |
| Maximum Green [s] | 0 | 50 | 20 | 0 | 50 | 20 | 20 | 45 | 0 | 20 | 45 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 22 | 18 | 0 | 22 | 18 | 18 | 20 | 0 | 18 | 20 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 10 | 0 | 10 | 0 | 0 | 10 | 0 | 10 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| l2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Calculations

| Lane Group | L | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|------|------|-------|-------|------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 | 3.00 | 3.00 | 5.00 | 5.00 | 4.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 0.00 | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 21 | 21 | 41 | 21 | 21 | 41 | 33 | 15 | 15 | 33 | 15 | 15 |
| g / C, Green / Cycle | 0.35 | 0.35 | 0.68 | 0.35 | 0.35 | 0.68 | 0.55 | 0.25 | 0.25 | 0.55 | 0.25 | 0.25 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.06 | 0.21 | 0.10 | 0.28 | 0.22 | 0.09 | 0.12 | 0.01 | 0.09 | 0.03 | 0.03 |
| s, saturation flow rate [veh/h] | 893 | 1855 | 1596 | 1251 | 1876 | 1609 | 1564 | 1900 | 1615 | 1472 | 1900 | 1430 |
| c, Capacity [veh/h] | 183 | 647 | 1089 | 469 | 654 | 1097 | 998 | 466 | 396 | 872 | 466 | 351 |
| d1, Uniform Delay [s] | 26.40 | 13.51 | 3.86 | 17.33 | 17.64 | 3.86 | 6.75 | 19.34 | 17.22 | 7.01 | 17.69 | 17.58 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.20 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.22 | 0.12 | 0.16 | 0.30 | 2.31 | 0.30 | 0.06 | 0.75 | 0.03 | 0.08 | 0.14 | 0.15 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

Robert Peccia And Associates

| X, volume / capacity | 0.09 | 0.17 | 0.32 | 0.27 | 0.80 | 0.32 | 0.14 | 0.48 | 0.03 | 0.15 | 0.14 | 0.12 |
|------------------------------------|-------|-------|-------|-------|--------|-------|-------|--------|-------|-------|-------|-------|
| d, Delay for Lane Group [s/veh] | 26.62 | 13.63 | 4.03 | 17.63 | 19.95 | 4.16 | 6.82 | 20.09 | 17.25 | 7.09 | 17.83 | 17.73 |
| Lane Group LOS | С | В | Α | В | В | Α | Α | С | В | Α | В | В |
| Critical Lane Group | no | no | no | no | yes | yes | no | yes | no | no | no | no |
| 50th-Percentile Queue Length [veh] | 0.23 | 0.94 | 1.10 | 1.32 | 6.19 | 1.15 | 0.74 | 2.53 | 0.13 | 0.70 | 0.68 | 0.42 |
| 50th-Percentile Queue Length [ft] | 5.73 | 23.57 | 27.43 | 32.90 | 154.65 | 28.69 | 18.54 | 63.35 | 3.27 | 17.48 | 17.01 | 10.58 |
| 95th-Percentile Queue Length [veh] | 0.41 | 1.70 | 1.97 | 2.37 | 10.26 | 2.07 | 1.33 | 4.56 | 0.24 | 1.26 | 1.22 | 0.76 |
| 95th-Percentile Queue Length [ft] | 10.31 | 42.42 | 49.37 | 59.22 | 256.62 | 51.65 | 33.37 | 114.02 | 5.88 | 31.46 | 30.62 | 19.05 |

Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 26.62 | 13.63 | 4.03 | 17.63 | 19.95 | 4.16 | 6.82 | 20.09 | 17.25 | 7.09 | 17.83 | 17.73 |
|---------------------------------|-------|-------|------|-------|-------|------|------|-------|-------|------|-------|-------|
| Movement LOS | С | В | Α | В | В | Α | Α | С | В | Α | В | В |
| d_A, Approach Delay [s/veh] | | 7.08 | | | 14.16 | | | 15.00 | | | 11.84 | |
| Approach LOS | | Α | | | В | | | В | | | В | |
| d_I, Intersection Delay [s/veh] | | | | | | 12 | .45 | | | | | |
| Intersection LOS | В | | | | | | | | | | | |
| Intersection V/C | 0.457 | | | | | | | | | | | |

Sequence

Robert Peccia And Associates

| Ring 1 | 2 | 7 | 4 | 1 | - | - | - | - | - | - | - | ı | - | - | - | ı |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 6 | 3 | 8 | - | _ | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | _ | - | - | _ | - | - | _ | - | - | - | - | - | - | - | |



Intersection Level Of Service Report #6: 14th St SW and I-315 WB

Control Type:SignalizedDelay (sec / veh):19.6Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.621

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|-------------------|-----------------|--------|--------|----------|--------|--------|-----------|--------|--------|-----------|--------|
| Approach | ١ | lorthboun | d | S | outhboun | d | ı | Eastbound | d | V | Vestbound | d |
| Lane Configuration | | ٦١٢ | | | ٦ŀ | | | + | | | 4 | |
| Turning Movement | Left | Left Thru Right | | | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | |
| Grade [%] | 0.00 | | | | 0.00 | | | 0.00 | | | 0.00 | |
| Crosswalk | | yes | | | yes | | | yes | | | yes | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | | | | | | |
|------------------------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 5 | 76 | 146 | 22 | 131 | 2 | 3 | 5 | 19 | 638 | 12 | 142 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 40.00 | 6.60 | 0.70 | 0.00 | 2.30 | 0.00 | 0.00 | 0.00 | 15.80 | 1.80 | 8.30 | 4.20 |
| Growth Rate | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 6 | 88 | 169 | 26 | 152 | 2 | 3 | 6 | 22 | 740 | 14 | 165 |
| Peak Hour Factor | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 | 0.9880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 2 | 22 | 43 | 7 | 38 | 1 | 1 | 2 | 6 | 187 | 4 | 42 |
| Total Analysis Volume [veh/h] | 6 | 89 | 171 | 26 | 154 | 2 | 3 | 6 | 22 | 749 | 14 | 167 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate | / 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | n Volume [ped/h] | | | | 0 | - | | 0 | | | 0 | - |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| Located in CBD | yes |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

Robert Peccia And Associates

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 2 | 0 |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Maximum Green [s] | 0 | 35 | 40 | 0 | 35 | 0 | 0 | 25 | 0 | 0 | 40 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 25 | 19 | 0 | 25 | 0 | 0 | 16 | 0 | 0 | 19 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 9 | 7 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 11 | 7 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | | | no | | | no | |
| Maximum Recall | | no | no | | no | | | no | | | no | |
| Pedestrian Recall | | no | no | | no | | | no | | | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Calculations

| Lane Group | L | С | R | L | С | С | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|-------|-------|------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 11 | 11 | 49 | 11 | 11 | 2 | 33 | 33 |
| g / C, Green / Cycle | 0.18 | 0.18 | 0.81 | 0.18 | 0.18 | 0.03 | 0.54 | 0.54 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.06 | 0.12 | 0.02 | 0.09 | 0.02 | 0.51 | 0.12 |
| s, saturation flow rate [veh/h] | 804 | 1604 | 1443 | 1196 | 1668 | 1513 | 1505 | 1395 |
| c, Capacity [veh/h] | 167 | 290 | 1168 | 234 | 301 | 51 | 820 | 760 |
| d1, Uniform Delay [s] | 26.79 | 21.32 | 1.24 | 25.10 | 22.21 | 28.59 | 12.61 | 7.06 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.27 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.09 | 0.59 | 0.06 | 0.21 | 1.37 | 11.05 | 11.60 | 0.14 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

Robert Peccia And Associates

| X, volume / capacity | 0.04 | 0.31 | 0.15 | 0.11 | 0.52 | 0.61 | 0.93 | 0.22 |
|------------------------------------|-------|-------|------|-------|-------|-------|--------|-------|
| d, Delay for Lane Group [s/veh] | 26.88 | 21.91 | 1.30 | 25.31 | 23.59 | 39.64 | 24.21 | 7.20 |
| Lane Group LOS | С | С | Α | С | С | D | С | Α |
| Critical Lane Group | no | no | no | no | yes | yes | yes | no |
| 50th-Percentile Queue Length [veh] | 0.08 | 1.06 | 0.08 | 0.34 | 1.97 | 0.58 | 9.92 | 0.92 |
| 50th-Percentile Queue Length [ft] | 2.04 | 26.57 | 1.93 | 8.44 | 49.22 | 14.38 | 247.97 | 23.06 |
| 95th-Percentile Queue Length [veh] | 0.15 | 1.91 | 0.14 | 0.61 | 3.54 | 1.04 | 15.08 | 1.66 |
| 95th-Percentile Queue Length [ft] | 3.67 | 47.82 | 3.47 | 15.19 | 88.60 | 25.89 | 377.09 | 41.51 |

Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 26.88 | 21.91 | 1.30 | 25.31 | 23.59 | 23.59 | 39.64 | 39.64 | 39.64 | 24.21 | 24.21 | 7.20 |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Movement LOS | С | С | Α | С | С | С | D | D | D | С | С | Α |
| d_A, Approach Delay [s/veh] | | 8.77 | | | 23.83 | | | 39.64 | | | 21.15 | |
| Approach LOS | | Α | | | С | | | D | | | С | |
| d_I, Intersection Delay [s/veh] | | | | | | 19 | .57 | | | | | |
| Intersection LOS | В | | | | | | | | | | | |
| Intersection V/C | 0.621 | | | | | | | | | | | |

Sequence

Robert Peccia And Associates

| | - | | | | | | | | | | | | | | | | |
|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | Ring 1 | 1 | 2 | 3 | ı | ı | - | - | - | - | - | - | ı | ı | - | - | ı |
| | Ring 2 | | - | - | - | - | - | _ | - | - | - | - | - | - | - | - | - |
| I | Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ī | Ring 4 | - | - | - | - | _ | _ | _ | _ | - | _ | - | - | - | - | - | _ |



35.6

D

0.891

Intersection Level Of Service Report #7: Fox Farm and I-315

Control Type:SignalizedDelay (sec / veh):Analysis Method:HCM2010Level Of Service:Analysis Period:15 minutesVolume to Capacity (v/c):

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|-----------------|-------------------|--------|--------|----------|--------|--------|-----------|--------|--------|-----------|--------|
| Approach | ١ | Northboun | d | S | outhboun | d | No | rtheastbo | und | Sou | ıthwestbo | und |
| Lane Configuration | | 117 | | | ۱۱۱۲ | | | Шь | | • | ıIIIr | |
| Turning Movement | Left Thru Right | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | |
| Grade [%] | 0.00 | | | | 0.00 | | | 0.00 | | | 0.00 | |
| Crosswalk | yes | | | | yes | | | yes | | | yes | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 71 | 155 | 227 | 153 | 274 | 325 | 242 | 706 | 103 | 486 | 874 | 250 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.80 | 1.90 | 0.40 | 1.30 | 0.70 | 2.10 | 2.50 | 3.60 | 2.90 | 0.40 | 3.90 | 1.60 |
| Growth Rate | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 83 | 181 | 266 | 179 | 321 | 380 | 283 | 826 | 121 | 569 | 1023 | 293 |
| Peak Hour Factor | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 | 0.9200 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 23 | 49 | 72 | 49 | 87 | 103 | 77 | 224 | 33 | 155 | 278 | 80 |
| Total Analysis Volume [veh/h] | 90 | 197 | 289 | 195 | 349 | 413 | 308 | 898 | 132 | 618 | 1112 | 318 |
| Presence of On-Street Parking | no | | no | no | | no | no | | no | no | | no |
| On-Street Parking Maneuver Rate | / 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | - | | 0 | | | 0 | - |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

| Located in CBD | yes |
|---------------------------|---------------------------------|
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Semi-actuated Semi-actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

Phasing & Timing

Robert Peccia And Associates

| Control Type | Permiss | Permiss | Overlap | Permiss | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group | 0 | 1 | 8 | 0 | 3 | 6 | 6 | 4 | 0 | 8 | 2 | 5 |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 5 | 5 | 0 | 5 | 5 | 5 | 5 | 0 | 5 | 5 | 0 |
| Maximum Green [s] | 0 | 60 | 60 | 0 | 60 | 60 | 60 | 60 | 0 | 60 | 60 | 0 |
| Amber [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Split [s] | 0 | 35 | 26 | 0 | 20 | 23 | 23 | 39 | 0 | 26 | 42 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 3.0 | 1.0 | 0.0 | 3.0 | 1.0 | 1.0 | 3.0 | 0.0 | 1.0 | 3.0 | 0.0 |
| Minimum Recall | | no | no | | no | no | no | no | | no | no | |
| Maximum Recall | | no | no | | no | no | no | no | | no | no | |
| Pedestrian Recall | | no | no | | no | no | no | no | | no | no | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Calculations

| Lane Group | С | С | R | L | С | R | L | С | R | L | С | R |
|-----------------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L, Total Lost Time per Cycle [s] | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 3.00 | 3.00 | 5.00 | 5.00 | 3.00 | 5.00 | 5.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 3.00 | 3.00 | 0.00 | 3.00 | 3.00 | 0.00 | 1.00 | 3.00 | 3.00 | 1.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 18 | 18 | 82 | 28 | 28 | 61 | 28 | 47 | 47 | 27 | 47 | 47 |
| g / C, Green / Cycle | 0.15 | 0.15 | 0.68 | 0.24 | 0.24 | 0.51 | 0.23 | 0.40 | 0.40 | 0.23 | 0.39 | 0.39 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.12 | 0.20 | 0.12 | 0.11 | 0.29 | 0.19 | 0.29 | 0.09 | 0.20 | 0.35 | 0.22 |
| s, saturation flow rate [veh/h] | 1604 | 1527 | 1448 | 1608 | 3233 | 1424 | 1589 | 3143 | 1413 | 3150 | 3134 | 1431 |
| c, Capacity [veh/h] | 243 | 231 | 985 | 380 | 764 | 729 | 371 | 1245 | 559 | 719 | 1224 | 559 |
| d1, Uniform Delay [s] | 46.00 | 49.37 | 7.66 | 39.82 | 39.22 | 20.15 | 43.70 | 30.64 | 24.14 | 44.46 | 34.54 | 28.65 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.15 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.06 | 7.18 | 0.16 | 1.07 | 0.43 | 0.96 | 4.79 | 0.80 | 0.21 | 3.15 | 2.94 | 0.91 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Lane Group Results

Robert Peccia And Associates

| X, volume / capacity | 0.40 | 0.82 | 0.29 | 0.51 | 0.46 | 0.57 | 0.83 | 0.72 | 0.24 | 0.86 | 0.91 | 0.57 |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| d, Delay for Lane Group [s/veh] | 47.07 | 56.55 | 7.83 | 40.89 | 39.65 | 21.11 | 48.50 | 31.44 | 24.35 | 47.61 | 37.48 | 29.57 |
| Lane Group LOS | D | Е | Α | D | D | С | D | С | С | D | D | С |
| Critical Lane Group | no | yes | no | no | no | yes | yes | no | no | no | yes | no |
| 50th-Percentile Queue Length [veh] | 2.70 | 5.98 | 2.86 | 5.12 | 4.46 | 7.98 | 9.16 | 10.99 | 2.55 | 9.09 | 15.51 | 7.26 |
| 50th-Percentile Queue Length [ft] | 67.38 | 149.57 | 71.39 | 127.98 | 111.45 | 199.62 | 228.90 | 274.66 | 63.65 | 227.31 | 387.83 | 181.61 |
| 95th-Percentile Queue Length [veh] | 4.85 | 9.99 | 5.14 | 8.83 | 7.92 | 12.62 | 14.12 | 16.42 | 4.58 | 14.04 | 21.97 | 11.68 |
| 95th-Percentile Queue Length [ft] | 121.29 | 249.86 | 128.51 | 220.75 | 198.02 | 315.47 | 352.97 | 410.56 | 114.57 | 350.95 | 549.31 | 292.12 |

Movement, Approach, & Intersection Results

| d_M, Delay for Movement [s/veh] | 47.07 | 56.22 | 7.83 | 40.89 | 39.65 | 21.11 | 48.50 | 31.44 | 24.35 | 47.61 | 37.48 | 29.57 |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Movement LOS | D | E | Α | D | D | С | D | С | С | D | D | С |
| d_A, Approach Delay [s/veh] | | 30.51 | | | 31.90 | | | 34.67 | | | 39.31 | |
| Approach LOS | | С | | | С | | | С | | | | |
| d_I, Intersection Delay [s/veh] | | | | | | 35 | .58 | | | | | |
| Intersection LOS | | | | | | [|) | | | | | |
| Intersection V/C | | | | | | 3.0 | 391 | | | | | |

Sequence

Robert Peccia And Associates

| F | Ring 1 | 1 | 3 | 8 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F | Ring 2 | | - | 6 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| F | Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| F | Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



314.9

F

1.339

Intersection Level Of Service Report #8: Central Ave and I15 SB

Control Type: Two-way stop Delay (sec / veh):

Analysis Method: HCM2010 Level Of Service:

Analysis Period: 15 minutes Volume to Capacity (v/c):

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------------|-------|-------|----------|--------|--------|-----------|--------|
| Approach | S | Southboun | d | 1 | Eastbound | d | \ | Vestboun | d | Nor | rthwestbo | und |
| Lane Configuration | | left Thru Right | | | 17 | | | 1 | | | | |
| Turning Movement | Left | Left Thru Right | | | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | | 0.00 | | 0.00 | | | 0.00 | | |
| Crosswalk | yes | | | yes | | yes | | | yes | | | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 66 | 0 | 6 | 0 | 166 | 30 | 230 | 299 | 0 | 0 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 6.00 | 0.00 | 0.00 | 2.00 | 0.60 | 0.00 | 6.50 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Rate | 1.41 | 1.41 | 1.41 | 1.00 | 1.41 | 1.41 | 1.41 | 1.41 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 93 | 0 | 8 | 0 | 234 | 42 | 324 | 422 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.9170 | 1.0000 | 0.7500 | 1.0000 | 0.8470 | 0.8330 | 0.8980 | 0.8690 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 25 | 0 | 3 | 0 | 69 | 13 | 90 | 121 | 0 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 101 | 0 | 11 | 0 | 276 | 50 | 361 | 486 | 0 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 1.34 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|------------------------------------|--------|--------|-------|------|------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 314.89 | 307.18 | 11.27 | 0.00 | 0.00 | 0.00 | 8.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | F | F | В | | Α | Α | Α | Α | | | | |
| 95th-Percentile Queue Length [veh] | 7.96 | 7.96 | 0.06 | 0.00 | 0.00 | 0.00 | 1.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft] | 198.90 | 198.90 | 1.44 | 0.00 | 0.00 | 0.00 | 29.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | | 285.07 | | | 0.00 | | | 3.83 | | | 0.00 | |
| Approach LOS | | F | | | Α | | | Α | | | А | |
| d_I, Intersection Delay [s/veh] | | | | | | 27 | .37 | | | | | |
| Intersection LOS | | | | | | · | = | | | | | |



Intersection Level Of Service Report #9: Central Ave and I-15 NB

Control Type:Two-way stopDelay (sec / veh):445.2Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):1.211

Intersection Setup

| Name | | | | | | | | | | | | |
|------------------------|--------|-------------------|--------|--------|----------------------|-------|-------|----------------------|-------|-------|-----------|--------|
| Approach | ١ | Northboun | d | 1 | Eastbound | i | \ | Vestboun | d | Sou | utheastbo | und |
| Lane Configuration | | ት | | | 1 | | | IIr | | | | |
| Turning Movement | Left | Left Thru Right | | | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 12.00 12.00 | | | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 100.00 100.00 | | | 100.00 100.00 100.00 | | | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 30.00 | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | | 0.00 | | 0.00 | | | 0.00 | | |
| Crosswalk | yes | | | yes | | | yes | | | yes | | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 57 | 0 | 170 | 5 | 249 | 0 | 0 | 471 | 113 | 0 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 1.80 | 0.00 | 7.00 | 0.00 | 2.00 | 2.00 | 2.00 | 4.60 | 0.90 | 2.00 | 2.00 | 2.00 |
| Growth Rate | 1.64 | 1.64 | 1.64 | 1.64 | 1.64 | 1.00 | 1.00 | 1.64 | 1.64 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 93 | 0 | 279 | 8 | 408 | 0 | 0 | 772 | 185 | 0 | 0 | 0 |
| Peak Hour Factor | 0.7130 | 1.0000 | 0.7590 | 0.4170 | 0.8650 | 1.0000 | 1.0000 | 0.9350 | 0.8310 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 33 | 0 | 92 | 5 | 118 | 0 | 0 | 206 | 56 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 130 | 0 | 368 | 19 | 472 | 0 | 0 | 826 | 223 | 0 | 0 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Free | Free | Stop |
|------------------------------------|------|------|------|------|
| Flared Lane | no | | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 1.21 | 0.00 | 0.63 | 0.02 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | |
|------------------------------------|--------|--------|--------|------|------|------|------|------|------|------|------|------|--|
| d_M, Delay for Movement [s/veh] | 445.19 | 435.47 | 417.85 | 9.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Movement LOS | F | F | F | Α | Α | | | Α | Α | | | | |
| 95th-Percentile Queue Length [veh] | 33.98 | 33.98 | 33.98 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 95th-Percentile Queue Length [ft] | 849.39 | 849.39 | 849.39 | 1.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| d_A, Approach Delay [s/veh] | | 424.99 | | | 0.37 | | | 0.00 | | 0.00 | | | |
| Approach LOS | | F | | | Α | | | Α | | | А | | |
| d_I, Intersection Delay [s/veh] | 103.94 | | | | | | | | | | | | |
| Intersection LOS | | F | | | | | | | | | | | |



Intersection Level Of Service Report #10: Central Ave and Vaughn Rd

Control Type:Two-way stopDelay (sec / veh):1,422.7Analysis Method:HCM2010Level Of Service:FAnalysis Period:15 minutesVolume to Capacity (v/c):3.231

Intersection Setup

| Crosswalk | y | es | yes | | yes | | |
|------------------------|--------|------------|--------|--------|-----------|--------|--|
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | |
| Speed [mph] | 30 | .00 | 30 | 30.00 | | 0.00 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Configuration | ₩. | | ٦ | Ī | IF. | | |
| Approach | South | Southbound | | ound | Westbound | | |
| Name | | | | | | | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 68 | 121 | 66 | 361 | 462 | 76 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 2.90 | 1.60 | 1.50 | 4.00 | 3.40 | 2.60 | |
| Growth Rate | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [v | e 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 111 | 197 | 108 | 588 | 753 | 124 | |
| Peak Hour Factor | 0.6540 | 0.9450 | 0.7500 | 0.7910 | 0.8680 | 0.7310 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 42 | 52 | 36 | 186 | 217 | 42 | |
| Total Analysis Volume [veh/h] | 170 | 208 | 144 | 743 | 868 | 170 | |
| Pedestrian Volume [ped/h] | Ö | | | 0 | 0 | | |
| Bicycle Volume [bicycles/h] | | 0 | | 0 | 0 | | |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 3.23 | 0.66 | 0.21 | 0.01 | 0.01 | 0.00 | | | |
|------------------------------------|---------|---------|-------|------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 1422.75 | 1365.77 | 11.82 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | F | F | В | A | А | A | | | |
| 95th-Percentile Queue Length [veh] | 38.77 | 38.77 | 0.81 | 0.00 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 969.13 | 969.13 | 20.22 | 0.00 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 139 | 1.39 | 1. | 92 | 0.00 | | | | |
| Approach LOS | F | = | , | 4 | A | | | | |
| d_I, Intersection Delay [s/veh] | 229.11 | | | | | | | | |
| Intersection LOS | F | | | | | | | | |

Intersection Level Of Service Report #11: Vaughn Rd and I-15 SB

Control Type:Two-way stopDelay (sec / veh):11.0Analysis Method:HCM2010Level Of Service:BAnalysis Period:15 minutesVolume to Capacity (v/c):0.254

Intersection Setup

| Name | | | | | | | |
|------------------------|--------|------------|--------|--------|-----------|--------|--|
| Approach | South | Southbound | | bound | Westbound | | |
| Lane Configuration | Ψ. | | 1 | | | 1 | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Speed [mph] | 30 | 0.00 | 30 | 30.00 | | 0.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | |
| Crosswalk | у | yes | | yes | | res | |

Volumes

Robert Peccia And Associates

| Name | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--|
| Base Volume Input [veh/h] | 143 | 1 | 0 | 53 | 50 | 0 | |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Heavy Vehicles Percentage [%] | 7.00 | 0.00 | 2.00 | 7.60 | 4.00 | 2.00 | |
| Growth Rate | 1.36 | 1.36 | 1.00 | 1.36 | 1.36 | 1.00 | |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Existing Site Adjustment Volume [ve | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Hourly Volume [veh/h] | 194 | 1 | 0 | 72 | 68 | 0 | |
| Peak Hour Factor | 0.9410 | 0.2500 | 1.0000 | 0.7790 | 0.8930 | 1.0000 | |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| Total 15-Minute Volume [veh/h] | 52 | 1 | 0 | 23 | 19 | 0 | |
| Total Analysis Volume [veh/h] | 206 | 4 | 0 | 92 | 76 | 0 | |
| Pedestrian Volume [ped/h] | | 0 | | 0 | Ö | | |
| Bicycle Volume [bicycles/h] | | 0 | (| 0 | 0 | | |

Intersection Settings

Robert Peccia And Associates

| Priority Scheme | Stop | Free | Free |
|------------------------------------|------|------|------|
| Flared Lane | no | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | no | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
|------------------------------------|-------|-------|------|------|------|------|--|--|--|
| d_M, Delay for Movement [s/veh] | 10.97 | 10.17 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Movement LOS | В | В | | A | Α | | | | |
| 95th-Percentile Queue Length [veh] | 1.03 | 1.03 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| 95th-Percentile Queue Length [ft] | 25.74 | 25.74 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| d_A, Approach Delay [s/veh] | 10 | .96 | 0.00 | | 0.00 | | | | |
| Approach LOS | E | 3 | , | 4 | A | | | | |
| d_I, Intersection Delay [s/veh] | 6.09 | | | | | | | | |
| Intersection LOS | В | | | | | | | | |

Intersection Level Of Service Report #12: Vaughn Rd and I-15 NB

Control Type: Two-way stop
Analysis Method: HCM2010
Analysis Period: 15 minutes

Delay (sec / veh): 7.4
Level Of Service: A
Volume to Capacity (v/c): 0.000

Intersection Setup

| Name | | | | | | | | |
|------------------------|-----------|--------|--------|-----------|--------|----------|--|--|
| Approach | Eastbound | | Wes | Westbound | | astbound | | |
| Lane Configuration | 1 | | 1 | ſ | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right | | |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | | |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | | |
| Speed [mph] | 30 | .00 | 30 | 30.00 | | 30.00 | | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | | | |
| Crosswalk | ye | es | У | yes | | yes | | |

Volumes

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| Name | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h] | 0 | 165 | 55 | 334 | 0 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 0.00 | 6.10 | 1.80 | 4.80 | 2.00 | 2.00 |
| Growth Rate | 1.37 | 1.37 | 1.37 | 1.37 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [ve | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 226 | 75 | 458 | 0 | 0 |
| Peak Hour Factor | 1.0000 | 0.7500 | 0.8090 | 0.9180 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 75 | 23 | 125 | 0 | 0 |
| Total Analysis Volume [veh/h] | 0 | 301 | 93 | 499 | 0 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

Intersection Settings

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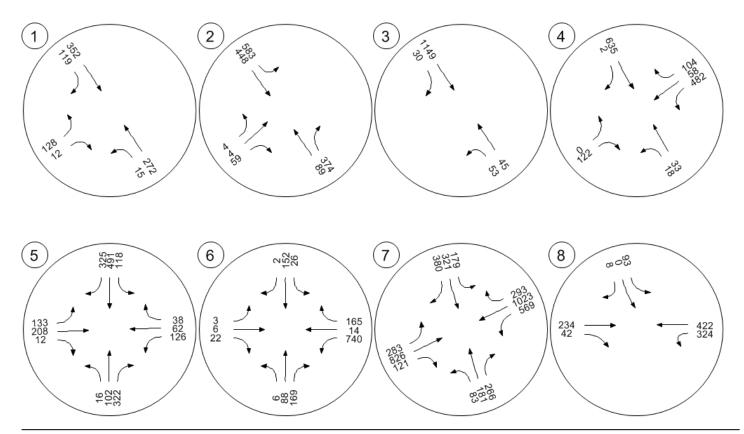
| Priority Scheme | Free | Free | Stop |
|------------------------------------|------|------|------|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

Movement, Approach, & Intersection Results

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
|------------------------------------|------|------|------|------|------|------|--|--|
| d_M, Delay for Movement [s/veh] | 7.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Movement LOS | Α | A | Α | A | | | | |
| 95th-Percentile Queue Length [veh] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 95th-Percentile Queue Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.00 | | 0.00 | | | |
| Approach LOS | A | | A | | А | | | |
| d_I, Intersection Delay [s/veh] | 0.00 | | | | | | | |
| Intersection LOS | A | | | | | | | |

Traffic Volume - Future Total Volume



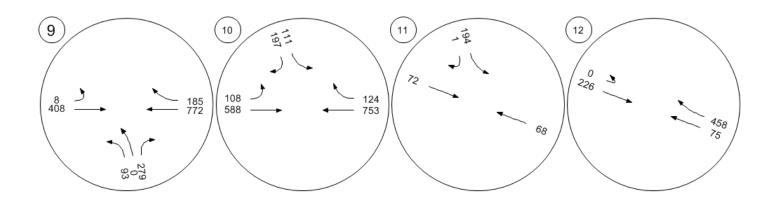


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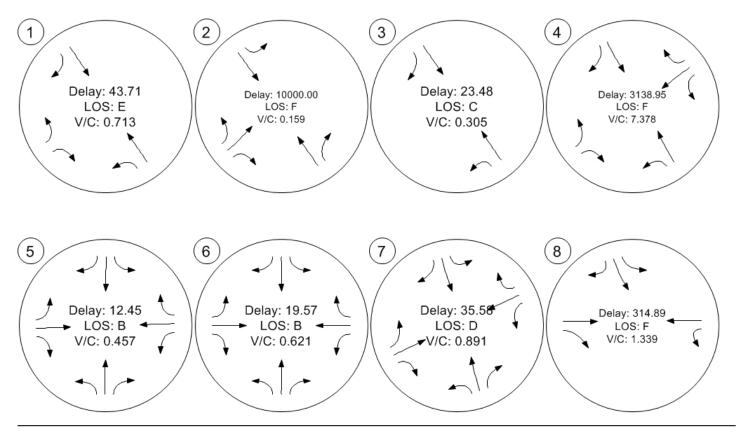
Traffic Volume - Future Total Volume





Traffic Conditions





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