

Capacity Analyses of Interchange Ramp Intersections and Influencing Intersections (HCS 2000, Patch F)
Mill Creek Expressway (HAM-75-2.30)

		Baseline Condition		5/4 Lane		Town Closed + 4/5 Lane		Local Access + 4/5 Lane		No Local Access + 4/5 Lane	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Paddock - Existing Geometrics	Paddock & I-75 SB ramps	65.1 E	30.0 C	72.7 E	33.0 C	72.7 E	33.0 C	No Change	No Change		
	Paddock & I-75 NB exit ramp & Summit	17.6 B	34.8 C	19.1 B	31.2 C	19.8 B	74.3 E				
	Paddock & Seymour	19.3 B	19.6 B	19.8 B	19.9 B	23.9 C	52.4 D				
	Paddock & North Bend	- F*	41.2 E*	- F*	37.4 E*	- F*	37.4 E*				
	Paddock & Vine	36.6 D	25.1 C	31.0 C	23.7 C	31.0 C	23.7 C				
	Vine & North Bend	13.5 B	14.2 B	13.6 B	14.4 B	13.6 B	14.4 B				
Paddock - New Seymore Ramp	Paddock & I-75 SB ramps			25.8 C	25.6 C	25.8 C	25.6 C	No Change	No Change		
	Paddock & I-75 NB exit ramp & Summit			17.1 B	29.8 C	18.8 B	42.3 D				
	Paddock & Seymour			19.9 B	19.4 B	22.1 C	47.9 D				
	Seymore and NB Exit ramp			11.2 B*	11.3 B	11.2 B*	11.3 B*				
Towne Street	Towne and I-75 NB ramps	14.9 B*	118.6 F*	13.7 B*	70.5 F*			No Change	No Change		
	Towne & Paddock	13.5 B	16.4 B	13.6 B	17.0 B	14.0 B	14.9 B				
	Towne & Chestnut	20.2 C	21.5 C	19.9 B	21.1 C	19.8 B	20.1 C				
	Towne & Vine	15.2 B	14.4 B	14.9 B	13.9 B	14.7 B	13.5 B				
Norwood Lateral	Paddock & SR 562 EB ramps	18.1 B	34.6 C	15.9 B	32.6 C	15.7 B	33.2 C	No Change	No Change		
	Paddock & SR 562 WB ramps	20.3 C	25.4 C	19.6 B	24.5 C	23.5 C	27.3 C				
Mitchell Avenue - Existing Geometric	Mitchell & I-75 NB ramps	39.7 D	39.9 D	38.4 D	41.2 D	No Change					
	Mitchell & I-75 SB ramps	67.1 E	69.2 E	71.3 E	70.9 E						
	Mitchell & Vine	24.9 C	33.5 C	27.6 C	32.7 C						
	Mitchell & Kenard	26.9 C	70.4 E	27.0 C	70.7 E						
	Mitchell & Spring Grove	65.5 E	114.2 F	63.2 E	120.9 F						
Mitchell- Tight Urban Diamond	Mitchell & I-75 NB ramps					No Change					
	Mitchell & I-75 SB ramps										
Mitchell- Minimal Build	Mitchell & I-75 NB ramps			27.0 C	29.8 C	No Change					
	Mitchell & I-75 SB ramps			31.3 C	23.8 C						
I-74 Area	Colerain & Elmore	13.2 B	13.4 B	13.0 B	13.4 B	No Change	** (See note below)				
	Colerain & Spring Grove	14.9 B	12.1 B	14.5 B	11.8 B						
	Elmore & William Dooley	15.1 B	21.8 C	148 B	23.4 C						
	Spring Grove & Ludlow & Hoffner & Old Ludlow	24.8 C	37.5 D	26.2 C	35.6 D						
	Ludlow & Central Pkwy	20.2 C	17.4 B	19.1 B	17.9 B						
	Colerain & I-74 WB Exit & Powers	12.8 B	12.8 B	12.6 B	12.6 B						
Colerain and Montana	Montana & I-74 WB ramps	31.5 C	49.8 D	30.7 C	49.3 D	No Change					
	Colerain & I-74 WB Exit	16.0 B	22.5 C	15.9 B	22.6 C						
	Colerain & West Fork & Virginia	100.3 F	41.1 D	99.1 F	42.1 D						
	Elmore & Beekman	17.1 B	24.2 C	16.7 B	22.7 C						
Colerain A Build Alternative (Low Impact)	Colerain and Beekman							27.1 C	24.4 C	28.9 C	20.3 C
	Beekman and I-74 WB Exit Ramp							19.6 B	29.0 C	20.0 B	24.2 C
	Beekman and I-74 EB Exit Ramp							19.0 B	38.3 D	15.3 B	22.0 C
	Central and New Connector							24.0 C	20.0 C		
Hopple Street - Existing Geometrics	Bates & Central Pkwy	13.5 B	23.3 C	13.4 B	23.5 C	No Change					
	Hopple & Central & MLK	34.5 C	62.0 E	35.1 D	66.7 E						
	Hopple & I-75 NB and SB ramps	22.2 C	17.1 B	24.1 C	17.4 B						
	Hopple & Colerain	18.1 B	194.8 F	13.9 B	201.2 F						
Hopple C Build Alternative	Hopple and Colerain							22.2 C	122.3 F	19.7 B	132.1 F
	Hopple & I-75 NB exit ramp and Connection Road							43.4 D	50.7 D	50.2 D	48.9 D
	Hopple & I-75 SB ramps							27.3 C	28.3 C	28.2 C	33.8 C
	Connection Road & Central							33.8 C	25.0 C	16.9 B	25.0 C

* Worst approach of and unsignalized intersection
- Minor improvement can get the intersection to LOS D.

Capacity Analyses of Ramp Junctions (HCS 2000, Patch F)

Mill Creek Expressway (HAM-75-2.30)

				I-75 Southbound						
Location	Time	Base	5/4 Lane	Towne Closed	With Local	Without Local				
Paddock Entrance Ramp	AM	49.5 F	27.4 F	27.4 F	Same as 5/4 Lane Condition					
	PM	45.0 F	27.4 F	27.4 F						
Norwood Lateral Exit Ramp	AM	43.3 F	49.2 F	-4.6 F						
	PM	41.6 F	45.8 F	-7.2 F						
Norwood Lateral Entrance Ramp	AM	48.7 F	24.0 F	24.0 F	Same as 5/4 Lane Condition					
	PM	48.5 F	22.9 F	22.9 F						
Mitchell Exit Ramp	AM	42.4 F	43.0 F	43.2 F						
	PM	41.1 F	39.5 F	40.4 F						
Mitchell Entrance Ramp	AM	39.5 F	25.0 C	24.8 C	Same as 5/4 Lane Condition					
	PM	45.1 F	25.2 F	25.0 F						
I-74 Exit Ramp	AM	38.7 F	35.6 E	36.0 E						
	PM	42.6 F	43.6 F	43.9 F						
I-74 Entrance Ramp	AM	- F (All)	Weave	Weave	Weave					
	PM	- F (U)	Weave	Weave						
Hopple Exit Ramp	AM	48.4 F	Weave	Weave						
	PM	37.2 F	25.3 F	24.4 F						
Hopple Entrance Ramp	AM	35.1 F	18.9 B	19.0 B	Weave					
	PM	27.1 C	37.8 F	37.7 F						
Western Hills Exit Ramp	AM	45.2 F	28.7 D	29.0 D						
	PM	33.7 D		29.2 D						
				I-75 Northbound						
Location	Time	Base	5/4 Lane	Towne Closed	With Local	Without Local				
Western Hills Entrance Ramp	AM	21.7 C	19.6 B	Same as 5/4 Lane Condition	Ramp Closed					
	PM	27.8 F	24.1 C							
Hopple Exit Ramp	AM	35.5 E	37.8 E							
	PM	46.7 F	49.1 F							
Hopple Entrance Ramp	AM	22.4 C	17.4 B	Same as 5/4 Lane Condition	Ramp Closed					
	PM	29.8 F	23.5 C							
Bates Entrance Ramp	AM	22.2 C	19.5 B							
	PM	27.0 F	26.4 C							
I-74 Exit Ramp	AM	33.8 D (U)	26.8 D (U)	Same as 5/4 Lane Condition	Ramp Closed					
	PM	- F (R+U)	- F (R)							
I-74 Entrance Ramp	AM	43.4 F	25.2 C							
	PM	33.8 F	23.8 C							
Mitchell Exit Ramp	AM	39.4 F	37.2 F	Same as 5/4 Lane Condition	Ramp Closed					
	PM	35.1 F	30.9 D							
Mitchell Entrance Ramp	AM	44.5 F	24.7 C							
	PM	41.5 F	22.8 C							
Norwood Exit Ramp	AM	44.2 F	44.5 F	Same as 5/4 Lane Condition	Ramp Closed					
	PM	41.3 F	39.5 F							
Norwood Entrance Ramp	AM	48.1 F	22.5 F							
	PM	41.5 F	21.9 C							
Towne Exit Ramp	AM	39.7 F	35.5 F	Same as 5/4 Lane Condition	Ramp Closed					
	PM	36.7 F	31.1 D							
Towne Entrance Ramp	AM	43.7 F	28.3 F							
	PM	41.5 F	25.5 C							
Paddock Exit Ramp	AM	44.0 F	37.9 F	Same as 5/4 Lane Condition	Ramp Closed					
	PM	42.8 F	36.7 F							
							Norwood Lateral Eastbound			
			34.8 D							
Location	Time	Base	5/4 Lane	Towne Closed	With Local	Without Local				
I-75 Ramps Merge	AM	44.1 E (S)	Weave	Weave	Same as 5/4 Lane Condition					
	PM	39.6 E (S)	Weave	Weave						
Paddock Exit Ramp	AM	37.2 E	Weave	Weave	Same as 5/4 Lane Condition					
	PM	32.1 D	Weave	Weave						
				Norwood Lateral Westbound						
Location	Time	Base	5/4 Lane	Towne Closed	With Local	Without Local				
Paddock Entrance Ramp	AM	31.0 D	28.8 D	28.1 D	Same as 5/4 Lane Condition					
	PM	28.0 C	25.8 C	26.9 C						
I-75 Ramps Diverge	AM	41.5 E (N)	42.1 E (N)	29.8 D (U)						
	PM	32.5 D (S)	32.6 D (S)	32.6 D (S)						
				I-74 Eastbound						
Location	Time	Base	5/4 Lane	Towne Closed	With Local	Without Local				
Montana Entrance Ramp	AM	44.5 E (U)	- F (U)	Same as 5/4 Lane Condition	Weave					
	PM	13.7 B (U)	13.8 B (U)							
Colerain Exit Ramp	AM	- F (D)	- F (D)							
	PM	16.1 B (D)	16.4 B (D)							
Colerain Entrance Ramp	AM	Weave	Weave	Same as 5/4 Lane Condition	Weave					
	PM	Weave	Weave							
I-75 Ramps Diverge	AM	40.3 F	40.7 F							
	PM	18.7 B	18.9 B							
				I-74 Westbound						
Location	Time	Base	5/4 Lane	Towne Closed	With Local	Without Local				
I-75 Ramps Merge	AM	18.6 C (N)	- F (N)	Same as 5/4 Lane Condition	Weave					
	PM	- F (N)	- F (N)							
Elmore Exit Ramp	AM	14.2 B (D)	14.1 B (D)							
	PM	40.1 E (D)	40.1 E (D)							
Colerain Exit Ramp	AM	16.6 B (D)	16.6 B (D)	Same as 5/4 Lane Condition	Weave					
	PM	- F (D)	- F (D)							
Colerain Entrance Ramp	AM	Weave	Weave							
	PM	Weave	Weave							
Montana Exit Ramp	AM	Weave	Weave	Same as 5/4 Lane Condition	Weave					
	PM	Weave	Weave							

* Capacity check failure

() Controlling segment of the ramp junction

(R) - Ramp Controls, (U) - Upstream Mainline Segment Controls, (D) - Downstream Mainline Segment Controls, (N) - Ramp to/from I-75 northbound, (S) - Ramp to/from I-75 southbound, (ALL) - All components

Capacity Analyses of Freeway Segments and Weaves (HCS 2000, Patch F)

Mill Creek Expressway (HAM-75-2-30)

I-75 Southbound											
Location	Time	Base	5/4 Lane		Towrre Closed		With Local		Without Local		
			Planned	* Aux.	Planned	* Aux.	Planned	* Aux.	Planned	* Aux.	
Paddock to Norwood Lateral	AM	- F	- F	37.3 E	- F	37.3 E	Same as 5/4 Lane Condition				
	PM	- F	- F	33.3 D	- F	33.3 D					
Norwood Lateral to Mitchell	AM	- F	- F	32.9 D	Same as 5/4 Lane Condition						
	PM	- F	- F	31.8 D							
Mitchell to I-74	AM	- F	38.3 E	28.4 D	40.0 E	29.2 D	38.3 E	28.4 D	Same as 5/4 Lane Condition		
	PM	- F	- F	31.7 D	- F	32.6 D	- F	31.7 D			
I-74 to Hopple	AM	- F	36.7 E	** 44.04 F	35.8 E	** 41.99 E	37.7 E	** 44.89 F	Same as 5/4 Lane Condition		
	PM	43.4 E	26.4 D	** 29.09 D	26.0 D	** 28.06 D	26.3 D	28.86 D			
Hopple to Western Hills	AM	- F	- F	35.8 E	- F	35.8 E	- F	36.1 E	Same as 5/4 Lane Condition		
	PM	37.8 E	29.7 D	24.6 C	- F	24.8 D	- F	24.8 C			
I-75 Northbound											
Location	Time	Base	5/4 Lane		Towrre Closed		With Local		Without Local		
			Planned	* Aux.	Planned	* Aux.	Planned	* Aux.	Planned	* Aux.	
Western Hills to Hopple	AM	35.0 D	28.1 D	23.4 C	Same as 5/4 Lane Condition						
	PM	- F	41.8 E	31.3 D							
Hopple to Bates	AM	32.3 D	26.8 D	NA	Same as 5/4 Lane Condition						
	PM	- F	38.2 E	NA							
Bates to I-74	AM	33.8 D	+ 26.8 D / 23.1 C	++ 5.6 A	Same as 5/4 Lane Condition						
	PM	- F	+ 38.2 E / 32.4 D	++ 13.4 B							
I-74 to Mitchell	AM	- F	42.6 E	30.1 D	Same as 5/4 Lane Condition						
	PM	- F	32.8 D	25.7 C							
Mitchell to Norwood Lateral	AM	- F	43.7 E	30.5 D	Same as 5/4 Lane Condition						
	PM	- F	36.8 E	27.8 D							
Norwood Lateral to Towne	AM	- F	- F	** 35.78 E	Same as 5/4 Lane Condition						
	PM	- F	37.6 E	** 30.28 D							
Towne to Paddock	AM	- F	- F	32.4 D	Same as 5/4 Lane Condition						
	PM	- F	44.6 E	30.8 D							
Hopple Exit to I-74 Exit	AM				Same as 5/4 Lane Condition						
	PM										
I-74 Exit to Hopple Entrance	AM				Same as 5/4 Lane Condition						
	PM										
Hopple Entrance to I-74 Entrance	AM				Same as 5/4 Lane Condition						
	PM										
	AM				Same as 5/4 Lane Condition						
	PM										
	AM				Same as 5/4 Lane Condition						
	PM										
Norwood Lateral (I-75 to Paddock)											
Location	Time	5/4 Lane		Towrre Closed		With Local		Without Local			
		Planned	* Aux.	Planned	* Aux.	Planned	* Aux.	Planned	* Aux.		
Eastbound	AM	35.0 E	35.8 E	** 34.36 D	** 35.16 E	Same as 5/4 Lane Condition					
	PM	28.8 D	29.3 D	** 27.43 C	** 27.20 C						
Westbound	AM	30.2 D	30.6 D	-	29.8 D	Same as 5/4 Lane Condition					
	PM	26.8 D	27.2 D	-	28.5 D						
I-74 Eastbound											
Location	Time	5/4 Lane		Towrre Closed		With Local		Without Local			
		Planned	* Aux.	Planned	* Aux.	Planned	* Aux.	Planned	* Aux.		
Montana to Colerain	AM	37.2 E	37.6 E	NA	Same as 5/4 Lane Condition						
	PM	12.4 B	12.5 B	NA							
Colerain to I-75	AM	** 63.27 F	** 59.64 F	NA	** 59.64 F	NA	** 61.91 F	NA	Same as 5/4 Lane Condition		
	PM	** 17.04 B	** 15.93 B	NA	** 16.39 B	NA	** 18.09 B	NA			
I-74 Westbound											
Location	Time	5/4 Lane		Towrre Closed		With Local		Without Local			
		Planned	* Aux.	Planned	* Aux.	Planned	* Aux.	Planned	* Aux.		
I-75 to Elmore	AM	12.6 B	12.6 B	NA	Same as 5/4 Lane Condition						
	PM	28.8 D	28.9 D	NA							
Elmore to Colerain	AM	14.2 B	14.1 B	NA	** 57.34 F	NA	** 57.69 F	NA	Same as 5/4 Lane Condition		
	PM	40.1 E	40.1 E	NA	** 12.68 B	NA	** 13.22 B	NA			
Colerain to Montana	AM	** 12.73 B	** 12.74 B	NA	** 51.49 F	NA	** 55.24 F	NA	Same as 5/4 Lane Condition		
	PM	** 51.70 F	** 51.61 F	NA	** 12.68 B	NA	** 13.22 B	NA			

* Freeway Module
 5/4 Lane measurements taken from Road//0105 PIM/bn_IR75_4-5lane_Nbalts.dgn
 ** Analyzed as a weave. If greater than 2500 feet, analyzed with 2500 feet.
 + Mainline Through Lanes Only / Mainline Through Lanes and Separated Auxiliary Lane
 ++ Auxiliary Lane Only

Traffic Plates