



2030 Interstate 75 Northbound Freeway Segments							
Segment		AM			PM		
From	To	Volume	LOS	Density (pc/mi/ln)	Volume	LOS	Density (pc/mi/ln)
Paddock Road	Towne Street	7,488	F	*	7,133	F	*
Towne Street	SR 562 (Norwood Lateral)	7,703	E	42.6	6,546	D	32.4
SR 562 (Norwood Lateral)	Mitchell Avenue	7,269	F	*	6,772	F	*
Mitchell Avenue	I-74	7,402	F	*	6,162	F	*
I-74	Bates Avenue	7,080	E	36.3	9,149	F	*
Bates Avenue	Hopple Street	6,849	D	34.5	8,469	F	*
Hopple Street	Western Hills Viaduct	7,397	E	39.2	8,891	F	*

* - Capacity exceeds HCS calculations

2030 Interstate 75 Southbound Freeway Segments							
Segment		AM			PM		
From	To	Volume	LOS	Density (pc/mi/ln)	Volume	LOS	Density (pc/mi/ln)
Paddock Road	SR 562 (Norwood Lateral)	8,464	F	*	8,112	F	*
SR 562 (Norwood Lateral)	Mitchell Avenue	7,718	F	*	7,753	F	*
Mitchell Avenue	I-74	6,613	F	*	7,713	F	*
I-74	Hopple Street	9,781	F	*	8,098	F	*
Hopple Street	Western Hills Viaduct	9,363	F	*	7,616	E	41.5

* - Capacity exceeds HCS calculations

2030 Interstate 74 Westbound Freeway Segments							
Segment		AM			PM		
From	To	Volume	LOS	Density (pc/mi/ln)	Volume	LOS	Density (pc/mi/ln)
I-75 SB	Spring Grove/Elmore	2,714	B	12.9	5,774	D	27.4
Spring Grove/Elmore	Colerain Interchange	2,317	B	14.7	5,600	E	38.1
Colerain Interchange	Montana	1,993	B	12.6	5,461	E	36.5

2030 Interstate 74 Eastbound Freeway Segments							
Segment		AM			PM		
From	To	Volume	LOS	Density (pc/mi/ln)	Volume	LOS	Density (pc/mi/ln)
I-75 SB	Colerain Interchange	6,170	F	*	2,596	B	16.4
Colerain Interchange	Montana	5,101	D	33.0	2,311	B	14.6

* - Capacity exceeds HCS calculations

2030 State Route 562 Freeway Segments							
Segment		AM			PM		
From	To	Volume	LOS	Density (pc/mi/ln)	Volume	LOS	Density (pc/mi/ln)
East bound: I-75	Paddock Road	3,574	E	35.4	3,091	D	29.4
Westbound: Paddock Rd	I-75	3,265	D	31.3	2,506	C	23.8

Unlike 2004, all of Interstate 75 southbound will operate at unacceptable levels of service, as well as most of Interstate 75 northbound. In addition, Interstate 74 westbound will operate at LOS E during the PM design hour while eastbound between I-75 and the Colerain Interchange will operate at LOS F in the AM design hour. Finally, SR 562 eastbound between Paddock Road and I-75 will degrade to a LOS E during the AM design hour.



2030 Ramp-Freeway Junctions. The following table presents the results for each of the merge-diverge locations in 2030. Once again red and orange highlighting was used to indicate the locations of concern.

2030 Interstate 75 Northbound Ramps					
Ramp	Junction	AM		PM	
		LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
Paddock Road Exit Ramp	Diverge	F	43.3#	F	42.2#
Towne Street Entrance Ramp	Merge	F	42.2#	F	41.9#
Towne Street Exit Ramp	Diverge	F	39.7#	F	35.6#
SR 562 (Norwood Lateral) Entrance Ramp	Merge	F	48.3#	F	38.9#
SR 562 (Norwood Lateral) Exit Ramp	Diverge	F	44.6#	F	42.2#
Mitchell Avenue Entrance Ramp	Merge	F	38.6#	F	36.6#
Mitchell Avenue Exit Ramp	Diverge	F	39.7#	F	34.7#
I-74 Eastbound Entrance Ramp	Merge	F	28.2#	F	18.8#
I-74 Westbound Exit Ramp	Drop Lane	B	17.9	F	*
Bates Avenue Entrance Ramp	Merge	C	27.2	F	32.0#
Hopple Street Entrance Ramp	Merge	C	23.7	F	28.9#
Hopple Street Exit Ramp	Diverge	E	38.2	F	44.8#
Western Hill Viaduct Entrance Ramp	Merge	C	22.6	F	27.3#
Western Hills Viaduct Exit Ramp	Diverge	D	33.9	F	44.7#

- The flowrate of the ramp and/or freeway exceeds capacity for the merge/diverge area, resulting in LOS F.

* - Capacity exceeds HCS calculations

2030 Interstate 75 Southbound Ramps					
Ramp	Junction	AM		PM	
		LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
Paddock Road Entrance Ramp	Merge	F	48.4#	F	46.2#
SR 562 (Norwood Lateral) Exit Ramp	Diverge	F	43.1#	F	42.9#
SR 562 (Norwood Lateral) Entrance Ramp	Merge	F	47.7#	F	37.1#
Mitchell Avenue Exit Ramp	Diverge	F	41.9#	F	41.2#
Mitchell Avenue Entrance Ramp	Merge	F	37.3#	F	45.1#
I-74 Westbound Exit Ramp	Diverge	F	37.6#	F	42.5#
I-74 Eastbound Entrance Ramp	Add Lane	F	*	C	19.7
Hopple Street Exit Ramp	Diverge	F	46.3#	F	38.5#
Hopple Street Entrance Ramp	Merge	F	34.1#	D	28.4
Western Hill Viaduct Exit Ramp	Diverge	F	41.8#	D	34.9
Western Hills Viaduct Entrance Ramp	Add Lane	F	*	E	37.2

- The flowrate of the ramp and/or freeway exceeds capacity for the merge/diverge area, resulting in LOS F.

* - Capacity exceeds HCS calculations



2030 Interstate 74 Westbound Ramps					
Ramp	Junction	AM		PM	
		LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
I-75 Southbound Entrance Ramp	Add Lane	B	16.9	D	32.6
I-75 Northbound Entrance Ramp	Add Lane	B	17.9	F	*
Colerain Ave. @ Spring Grove/Elmore	Diverge	B	16.6	D	31.5
Colerain Interchange Exit Ramp	Drop Lane	A	10.0	C	20.0
Colerain Interchange Entrance Ramp	Add Lane	B	11.6	D	29.3
Montana Avenue Exit Ramp	Drop Lane	A	10.4	D	26.9

* - Capacity exceeds HCS calculations

2030 Interstate 74 Eastbound Ramps					
Ramp	Junction	AM		PM	
		LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
I-75 Southbound Exit Ramp	Drop Lane	F	*	C	19.7
I-75 Northbound Exit Ramp	Drop Lane	C	23.8	A	9.2
Spring Grove Avenue Entrance Ramp	Merge	F	60.2#	D	29.2
Colerain Interchange Entrance Ramp	Add Lane	E	35.0	A	10.5
Colerain Interchange Exit Ramp	Drop Lane	D	28.3	B	13.2
Montana Avenue Entrance Ramp	Add Lane	D	27.4	B	11.5

- The flowrate of the ramp and/or freeway exceeds capacity for the merge/diverge area, resulting in LOS F.

* - Capacity exceeds HCS calculations

2030 State Route 562 Ramps					
Ramp	Junction	AM		PM	
		LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
Paddock Rd to SR 562 EB Entrance Ramp	Merge	D	34.0	D	34.1
SR 562 EB to Paddock Rd Exit Ramp	Diverge	E	37.5	D	32.7
Paddock Rd to SR 562 WB Entrance Ramp	Merge	D	31.9	C	25.2
SR 562 WB to Paddock Rd Exit Ramp	Diverge	E	37.0	D	34.4

As with the freeway segments, the ramp junctions on Interstate 75 will severely degrade by Year 2030. All of the I-75 northbound ramp junctions will operate at a LOS F during the PM design hour and most will operate at an unacceptable level-of-service during the AM design hour. For Interstate 75 southbound during the AM design hour, all of the ramp junctions will operate at a LOS F and most will operate at a LOS F during the PM design hour. Additionally, the I-75 northbound entrance ramp to I-74 westbound will operate at a LOS F. I-74 eastbound, the I-75 southbound exit ramp, Spring Grove Avenue entrance ramp and the Colerain Interchange entrance ramp will fail. Finally, the SR 562 entrance ramps in both directions will operate at a LOS E.

2030 At-grade Local Street Intersection Analyses. The following tables present the intersections evaluated as part of this study and the results obtained for each location for 2030. Once again red and orange highlighting was used to detail the locations of interest.



2030 I-75 and Paddock Road Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Paddock Rd & I-75 SB ramps	AM	123.4	F	17.2	B	-	-	128.4	F	102.5	F
	PM	73.4	E	67.4	E	-	-	68.7	E	70.0	E
Paddock Rd & I-75 NB exit ramps/Summit Rd	AM	13.1	B	20.6	C	19.7	B	20.7	C	17.3	B
	PM	33.8	C	40.1	D	25.8	C	34.6	C	35.7	D
Paddock Rd & Seymore Ave	AM	24.6	C	13.4	B	15.3	B	24.3	C	20.6	C
	PM	26.2	C	15.3	B	26.4	C	19.5	B	21.1	C
Paddock Rd & North Bend Rd (stop controlled)	AM	74.1	F	-	-	462.1	F	-	-	-	-
	PM	83.1	F	-	-	14.1	B	-	-	-	-
Paddock Rd & Vine St	AM	63.7	E	68.9	E	11.6	B	75.5	E	64.2	E
	PM	31.9	C	29.9	C	23.1	C	32.0	C	28.5	C
Vine St & North Bend Rd	AM	11.6	B	15.4	B	13.5	B	15.2	B	14.5	B
	PM	16.5	B	16.0	B	16.0	B	11.9	B	15.4	B

2030 I-75 and Towne Street Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Towne St & I-75 NB ramps (stop controlled)	AM	7.6	A	-	-	20.5	C	-	-	-	-
	PM	11.3	B	-	-	448.2	F	-	-	-	-
Towne St & Paddock Rd	AM	13.1	B	-	-	13.2	B	12.3	B	12.8	B
	PM	34.6	C	-	-	34.3	C	5.4	A	26.7	C
Towne St & Chestnut Ave	AM	20.2	C	21.0	C	20.2	C	20.9	C	20.6	C
	PM	23.4	C	14.2	B	23.5	C	23.1	C	20.7	C
Towne St & Vine St	AM	19.8	B	20.2	C	9.7	A	20.4	C	17.9	B
	PM	15.2	B	13.7	B	15.7	B	12.6	B	14.7	B

2030 I-75 and Mitchell Avenue Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Mitchell Ave & I-75 NB ramps	AM	52.4	D	41.6	D	51.9	D	-	-	49.1	D
	PM	36.4	D	37.9	D	37.9	D	-	-	37.3	D
Mitchell Ave & I-75 SB ramps	AM	107.6	F	31.8	C	-	-	110.1	F	81.7	F
	PM	88.6	F	30.7	C	-	-	92.9	F	69.3	E
Mitchell Ave & Vine St	AM	59.6	E	13.1	B	58.9	E	25.8	C	48.0	D
	PM	29.8	C	56.0	E	54.0	D	28.7	C	44.0	D
Mitchell & Kenard Ave	AM	27.9	C	18.4	B	28.6	C	28.0	C	22.6	C
	PM	84.6	F	41.6	D	81.6	F	77.1	E	64.7	E
Mitchell & Spring Grove Ave	AM	50.7	D	47.9	D	50.7	D	22.7	C	46.6	D
	PM	111.3	F	109.7	F	111.6	F	100.7	F	109.1	F

2030 I-75 and Hopple Street / Bates Avenue Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bates Ave & Central Parkway	AM	16.7	B	-	-	10.1	B	16.7	B	13.2	B
	PM	24.5	C	-	-	21.6	C	24.2	C	22.6	C
Hopple St/MLK Dr & Central Parkway	AM	37.3	D	43.0	D	42.3	D	40.3	D	39.3	D
	PM	33.8	C	99.5	F	93.3	F	100.3	F	77.3	E
Hopple St & I-75 NB/SB ramps	AM	27.2	C	21.7	C	-	-	29.4	C	27.6	C
	PM	9.6	A	22.8	C	-	-	22.1	C	19.5	B
Hopple St & Colerain Ave	AM	21.8	C	7.1	A	21.3	C	21.1	C	17.2	B
	PM	299.9	F	268.2	F	352.3	F	28.7	C	228.1	F



2030 I-75 and Western Hills Viaduct Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Western Hills Viaduct & Central Parkway	AM	67.0	E	9.1	A	18.8	B	61.4	E	54.2	D
	PM	23.4	C	19.1	B	22.0	C	23.6	C	22.1	C
Western Hills Viaduct & Spring Grove Ave	AM	15.6	B	-	-	8.6	A	15.6	B	13.3	B
	PM	15.8	B	-	-	13.4	B	15.6	B	14.3	B

2030 I-74 and Montana Avenue Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Montana Ave/West Fork Rd & I-74 WB ramps	AM	34.3	C	31.6	C	32.4	C	34.0	C	33.3	C
	PM	48.4	D	54.6	D	38.3	D	51.6	D	50.9	D

2030 I-74 and Colerain Avenue Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Colerain Ave & I-74 WB exit ramp	AM	16.4	B	14.3	B	16.5	B	-	-	16.1	B
	PM	16.8	B	22.1	C	21.5	C	-	-	21.3	C
Colerain Ave & West Fork Rd/Virginia Ave	AM	74.0	E	156.6	F	14.0	B	158.7	F	117.0	F
	PM	44.8	D	43.9	D	47.3	D	43.3	D	45.9	D
Elmore St & Beekman St	AM	17.0	B	17.0	B	17.1	B	15.2	B	16.1	B
	PM	17.2	B	16.6	B	17.3	B	10.6	B	16.0	B

2030 I-74 and Spring Grove Ave / Elmore Street Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Elmore St & Colerain Ave	AM	13.1	B	11.8	B	-	-	13.4	B	12.9	B
	PM	19.2	B	9.0	A	-	-	19.3	B	13.2	B
Colerain Ave & Spring Grove Ave	AM	15.2	B	-	-	6.6	A	15.1	B	12.9	B
	PM	14.6	B	-	-	6.7	A	14.9	B	10.4	B
Elmore St & William Dooley Byp	AM	-	-	17.8	B	10.8	B	17.3	B	14.2	B
	PM	-	-	22.0	C	19.2	B	22.7	C	20.8	C
Spring Grove Ave/Old Ludlow & Ludlow Ave/Hoffner St	AM	33.0	C	27.7	C	10.2	B	32.4	C	27.4	C
	PM	53.4	D	31.0	C	52.5	D	15.3	B	44.1	D
Ludlow Ave & Central Parkway	AM	20.0	C	10.5	B	19.6	B	-	-	17.9	B
	PM	20.7	C	12.7	B	20.9	C	-	-	16.4	B
I-74 WB exit ramp/Powers St & Colerain Ave	AM	12.2	B	-	-	12.0	B	12.2	B	12.2	B
	PM	12.3	B	-	-	12.6	B	11.2	B	12.1	B

2030 SR 562 and Paddock Road Interchange Area											
Intersection	Time Period	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 562 EB ramps & Paddock Rd	AM	17.9	B	-	-	18.2	B	12.4	B	15.4	B
	PM	32.9	C	-	-	33.0	C	34.0	C	33.5	C
SR 562 WB ramps & Paddock Rd	AM	-	-	18.3	B	11.1	B	18.2	B	16.1	B
	PM	-	-	61.4	E	15.0	B	62.4	E	47.7	D

In addition to the intersections that experience unacceptable levels of service in 2004, a few other intersections will have capacity issues in 2030. In the Interstate 75 and Paddock Road interchange area, the Paddock Road and Vine Street intersection will operate at a LOS E during the AM design hour. The I-



75 and Mitchell Avenue interchange area will continue to degrade to the point where two of the intersections experience LOS F. The remaining intersections that will operate at unacceptable levels of service (LOS E or F) by 2030 are the same intersections that operate at unacceptable levels of service in 2004.

POTENTIAL FUTURE CONDITIONS

Based upon the future no-build traffic volumes, capacity analyses were conducted to develop an initial estimate on the number of lanes needed to achieve LOS D in 2030. The findings are presented in the tables below.

2030 Interstate 75 Freeway Segments					
Segment		Southbound		Northbound	
From	To	AM	PM	AM	PM
Western Hills Viaduct	Hopple Street	6 lanes	5 lanes	5 lanes	6 lanes
Hopple Street	Bates Avenue	6 lanes	5 lanes	4 lanes*	5 lanes
Bates Avenue	I-74			5 lanes	6 lanes
I-74	Mitchell Avenue	4 lanes	5 lanes	5 lanes	4 lanes
Mitchell Avenue	SR 562	5 lanes	5 lanes	5 lanes	4 lanes
SR 562	Towne Street	5 lanes	5 lanes	5 lanes	4 lanes*
Towne Street	Paddock Road			5 lanes	5 lanes

* - existing number of lanes

2030 Interstate 74 Freeway Segments					
Segment		Westbound		Eastbound	
From	To	AM	PM	AM	PM
I-75	Spring Grove/Elmore	4 lanes*	4 lanes*	4 lanes	3 lanes*
Spring Grove/Elmore	Colerain	3 lanes*	4 lanes		
Colerain	Montana	3 lanes*	4 lanes	3 lanes*	3 lanes*

* - existing number of lanes

2030 SR 562 Freeway Segments					
Segment		Westbound		Eastbound	
From	To	AM	PM	AM	PM
I-75	Paddock	2 lanes*	2 lanes*	3 lanes	2 lanes*

* - existing number of lanes

The actual number of lanes proposed for the alternatives will be refined based upon physical constraints, impacts, costs and revised traffic model results.

8.0 Crash Analysis

The portion of the I-75 corridor under study has been documented as a congested freeway with a history of high accident frequency. The sections of this corridor, along with the sections of I-74 and SR 562, on the



High Crash Location Identification System (HCLIS), are shown in Table A below. This system is used to identify high hazard locations. Many sections and interchanges located in the study area show up on this list. I-74 from SLM 18.49 to 18.99 ranks first and SR 562 from SLM 0.56 to 1.06 ranks second. Overall, seven sections and three interchanges on I-75, two sections and one interchange on I-74 and two sections and one interchange on SR 562 appear on the list. Six sections on I-75 in the study area rank in the top one hundred on the HSP list.

Table J: Highway Safety Program Listings in Study Area

	Begin Mile	End Mile	Location Type	HCLIS Rank
I-75 Corridor Segments and Interchanges	5.52	6.02	Section	24
	7.50	8.00	Section	35
	3.52	4.02	Section	39
	8.50	9.00	Section	47
	4.50	5.00	Section	52
	2.54	3.04	Section	83
	6.50	7.00	Section	121
	6.04	--	Interchange	557
	3.05	--	Interchange	655
I-74 Corridor Segments and Interchanges	6.46	--	Interchange	661
	18.49	18.99	Section	1
	17.50	18.00	Section	48
SR 562 Corridor Segments and Interchanges	19.02	--	Interchange	622
	0.56	1.06	Section	2
	0	0.56	Section	210
	0	--	Interchange	640

Source: ODOT Office of Roadway Safety and Mobility High Crash List, 2001-2003

Safety Hot Spots were also identified using Data from the Office of Roadway Safety and Mobility. The Hot Spot locations are based on the total number of accidents in an area, over a three year period regardless of traffic volume and other factors. Ohio roadways are divided into two-mile segments, and the number of crashes is compared to a given rate to establish if a hot spot exists. Table K below lists the Safety Hot Spots in the study area. It should be noted that the entire I-75 Mill Creek Expressway study area is listed within the following Safety Hot Spot table.

Table K: Safety Hot Spots

	Begin Mile	End Mile	# of Crashes	# Fatal	# of Injuries
I-75 Corridor Segments	2.22	4.22	802	2	205
	4.22	6.22	666	1	180
	6.22	8.22	688	0	180
	8.22	10.22	580	1	130
I-74 Corridor Segments	16.00	18.00	351	2	89
	18.00	19.47	255	0	72
SR 562 Segments	0.00	2.00	525	2	136

Source: ODOT Office of Roadway Safety and Mobility Safety Hot Spot List, 2001-2003

Crash Data Analyses. Traffic Crash information for the study area was obtained from both ODOT's Office of Roadway Safety and Mobility and from the Ohio Department of Public Safety (ODPS). These data include a summary of crashes in the study area from ODOT and OH-1 reports for all crashes occurring