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 would severely degrade by 2030. All of the I-75 northbound ramp junctions would operate at an LOS F during the PM design hour and most would 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 would operate at an LOS F and most would operate at an LOS F during the PM design hour. Additionally, the I-75 northbound entrance ramp to I-74 westbound would operate at an LOS F. I-74 eastbound, the I-75 southbound exit ramp, Spring Grove Avenue entrance ramp and the Colerain Interchange entrance ramp would fail. Finally, the SR 562 entrance ramps in both directions would operate at an 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 an 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 will experience LOS F. The remaining intersections that will operate at unacceptable levels of service (LOS E or F) in 2030 are the same intersections that operate at unacceptable levels of service in 2004.

Safety

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 A: 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
	6.46	--	Interchange	661
I-74 Corridor Segments and Interchanges	18.49	18.99	Section	1
	17.50	18.00	Section	48
	19.02	--	Interchange	622
SR 562 Corridor Segments and Interchanges	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 having 200 or more 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 B 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 B: 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 between 2001 and 2003 within the study area. All crashes were analyzed and incorrect and missing data were corrected using the individual OH-1 reports.

The accidents were then mapped by year (2001-2003) utilizing the ArcGIS software and an aerial photograph of Hamilton County obtained from the Cincinnati Area GIS (CAGIS). Safety mapping is included in the appendices of the I-75 Mill Creek Expressway Existing and Future Conditions Report.

Crash reports from ODPS were analyzed to determine crash rates throughout the study area. Along the I-75 corridor within the study area, 2830 accidents were logged between the years 2001 and 2003. On I-74, in the study area, 611 accidents were logged and 345 accidents were logged on SR 562 during this same time period.

Crash rates in accidents per million vehicle miles traveled were determined for segments along the three highway mainlines in the study area. Once the I-75, I-74 and SR 562 mainlines were divided into smaller segments, crash rates were determined for years 2001, 2002, 2003 and a combined 2001-2003 rate based on 2002 ADTs. Crash rates for each mainline were then calculated using the weighted average of the 2002 ADTs for that specific mainline. The rates were then compared to the statewide average crash rates which take into account the number of lanes and functional classification.

The overall crash rates for all segments along both Northbound and Southbound I-75 were higher than the average crash rates for similar facilities in Ohio. The worst segment has a crash rate more than seven times greater than the statewide average. Overall, the corridor has a crash rate of 3.697, which is drastically higher than the statewide average rate of 1.403. Along I-74, the crash rates for the majority of the segments are greater than the statewide average rates. The overall crash rate for the corridor is 3.022 accidents/ million vehicle miles traveled (acc/mvmt), which is more than two times the statewide average rate of 1.411 acc/mvmt. Lastly, most of the segments along SR 562 are greater than the statewide average rates. The corridor has an overall crash rate of 2.951 acc/mvmt, which is two and a half times higher than the statewide average rate of 1.185 acc/mvmt.

Summary

The purpose of the I-75 Mill Creek Expressway study is to efficiently serve existing and future traffic volumes, reduce the number and severity of collisions, and correct substandard physical conditions that contribute to these problems.

Efficiently Serve Existing and Future Traffic Volumes

- By 2030, nearly all of I-75 through the study area will fail, functioning at Level of Service F in the a.m. or p.m. design hour, or both.
- By 2030, I-74 in the study area will function at LOS E or F in a.m. or p.m. design hour.

Reduce the Number and Severity of Collisions

- I-74, I-75 and SR 562 in the I-75 Mill Creek Expressway study area appear on ODOT's Safety Hot Spot list. Additionally, many segments on these routes appear on the HCLIS list. The segment on I-74 from SLM 18.49 to 18.99 ranks first on that list and the segment on SR 562 from SLM 0.56 to 1.06 ranks second.

- I-75 within the study area experiences a crash rate of 3.697 accidents per million vehicles miles traveled. On I-74, the crash rate is 3.022 acc/mvmt. For SR 562, the crash rate is 2.951 acc/mvmt. These rates are more than twice the statewide average rate for facilities of their type.
- The high crash rates contribute to congestion levels even higher than those expected based upon traffic volumes alone.

Correct Substandard Physical Conditions

- Since the I-75 Mill Creek Expressway construction dates from the 1950's and 1960's, lower speed curves, left-hand exit ramps, poor lane continuity, and undesirable service ramp locations are prevalent throughout the corridor. These substandard physical conditions contribute to accidents and to congestion problems.

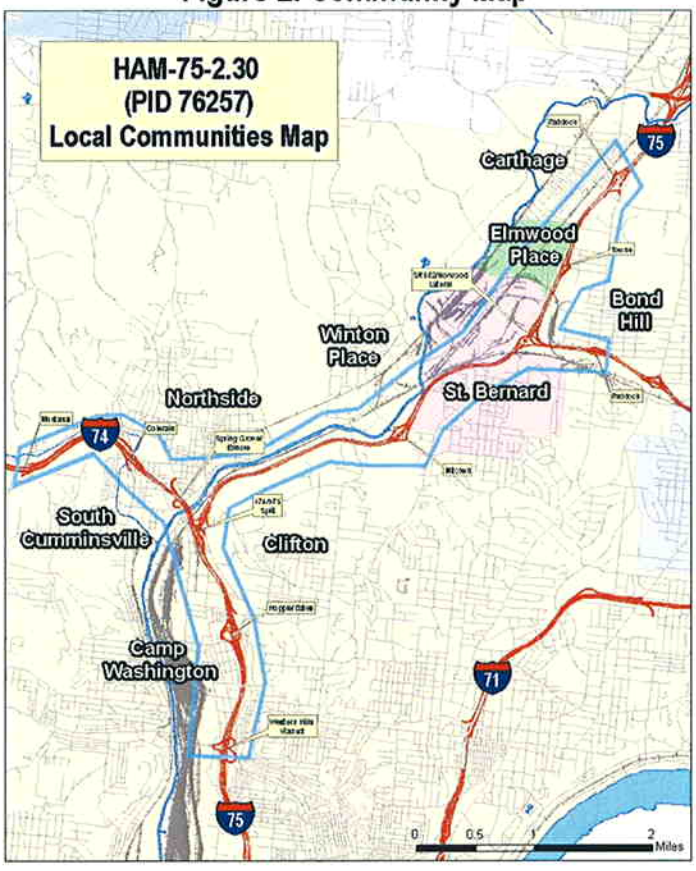
AFFECTED ENVIRONMENT

A Red Flag Summary was developed in order to document the critical issues that would need to be addressed in the development and evaluation of alternatives. On January 10, 2005, the Red Flag site visit was conducted with ODOT staff and project consultants. Those in attendance were: ODOT District 8 (Stefan Spinosa, Jay Hamilton, Brandon Collett, Mark Clark, Diana Martin), CTL Consultants (Doug Batt), and TranSystems Corporation (Greg Parsons and David Shipps). The information regarding the setting, environmental issues, and design challenges are summarized below. The Red Flag Summary is available in the Existing and Future Conditions Report.

Community Setting and Characteristics

The I-75 Mill Creek Expressway study area encompasses several communities, including the City of St. Bernard, the Village of Elmwood Place and a portion of the City of Cincinnati. Within the latter, the neighborhoods of Carthage, Bond Hill, Winton Place, Clifton, Northside, South Cumminsville and Camp Washington (from north to south) are within the study area (Figure 2: Community Map). A concise narrative of each city, village and neighborhood is listed below:

Figure 2: Community Map



Elmwood Place: The relatively small Village of Elmwood Place (0.3 square miles) was incorporated in 1889 and is bound by Cincinnati's Carthage Neighborhood on the north, I-75 on the east, the City of St. Bernard on the south and the Mill Creek on the west. The village is mostly residential, with fewer than 3,000 residents, but includes a commercial district along Vine Street and light industrial facilities along the Norfolk Southern Rail line.

St. Bernard: Incorporated in 1878, St. Bernard is located directly south of Elmwood Place and is bisected by I-75. The City of St. Bernard has a population of roughly 5,000 persons within 2.5 square miles. The northern half of the city is predominantly industrial and includes the Norfolk Southern and CSX