

## Transforming Dixie Highway

6/5/2015

### Predicted No-Build and Build Crashes Showing Predicted Decrease

Year	No-Build Crashes				Build Crashes				Reduction			
	Fatal	Injury	PDO	Total	Fatal	Injury	PDO	Total	Fatal	Injury	PDO	Total
Avg 2010-2014	4	240	925	1169								
2018	4	246	947	1197	3	182	860	1046	1	64	87	152
2048	5	291	1120	1416	4	215	1018	1237	1	76	102	179
								<b>30 Year Estimate</b>	<b>32</b>	<b>2098</b>	<b>2834</b>	<b>4964</b>

Source: HDR Analysis of available crash data

### Existing Crash Rate Summary Comparing Current Rates to Statewide Average

		Total	Fatal & Injury	Fatal
Statewide Avg.	Urban Principal Arterial	418	77	0.04
2009-2013	Urban 4-Lane Undivided	461	83	0.09
<b>Dixie Highway Average (2010-2014)</b>		<b>799</b>	<b>167</b>	<b>2.7</b>
<b>Ratio of Dixie to Statewide Arterial Rates</b>		<b>1.9</b>	<b>2.2</b>	<b>68.4</b>

Source: [http://www.ktc.uky.edu/files/2014/09/KTC\\_14\\_07\\_KSP2\\_13\\_1F\\_.pdf](http://www.ktc.uky.edu/files/2014/09/KTC_14_07_KSP2_13_1F_.pdf)

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## No-Build Crash Rate Analysis

6/5/2015

Start	End	Length (mi)	2014 ADT	ADT Year	Growth	2010	2011	2012	2013	Opening Year (2018) ADT	Opening Year + 30 (2048) ADT	2010	2011	2012	2013	2014	2018 VMT	2048 VMT	2010	2011	2012	2013	2014	2018	2048
						ADT	ADT	ADT	ADT			VMT	VMT	VMT	VMT	VMT			MVM	MVM	MVM	MVM	MVM	MVM	MVM
Broadway	Wathen Ln	2.4	11,000	2014	0.59%	11,000	11,000	11,000	11,000	11,500	13,500	26,400	26,400	26,400	26,400	26,400	27,600	32,400	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Wathen Ln	Garrs Ln	2.1	19,000	2014	0.81%	19,000	19,000	19,000	19,000	19,500	25,000	39,900	39,900	39,900	39,900	39,900	40,950	52,500	0.15	0.15	0.15	0.15	0.15	0.15	0.19
Garrs Ln	Heaton Rd	0.7	46,500	2014	0.32%	46,500	46,500	46,500	46,500	47,000	52,000	32,550	32,550	32,550	32,550	32,550	32,900	36,400	0.12	0.12	0.12	0.12	0.12	0.12	0.13
Heaton Rd	Greenwood Rd	2.9	52,500	2014	0.44%	52,500	52,500	52,500	52,500	53,500	61,000	152,250	152,250	152,250	152,250	152,250	155,150	176,900	0.56	0.56	0.56	0.56	0.56	0.57	0.65
Greenwood Rd	Valley Station Rd	2.9	37,500	2014	0.42%	37,500	37,500	37,500	37,500	38,000	43,000	108,750	108,750	108,750	108,750	108,750	110,200	124,700	0.40	0.40	0.40	0.40	0.40	0.40	0.46
Valley Station Rd	Moorman Rd	1.7	24,000	2014	0.91%	24,000	24,000	24,000	24,000	25,000	32,500	40,800	40,800	40,800	40,800	40,800	42,500	55,250	0.15	0.15	0.15	0.15	0.15	0.16	0.20
						12.7	31,547			31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547	31,547
										32,228	37,650	400,650	400,650	400,650	400,650	400,650	409,300	478,150	1.46	1.46	1.46	1.46	1.46	1.46	1.75

It is assumed that volumes have been constant for the period 2010 to 2014, therefore the current volumes were used for all historic years

2010	2011	2012	2013	2014	No-Build Crashes		2010	2011	2012	2013	2014	Avg	No-Build Crash Rate	
Total	Total	Total	Total	Total	2018 Total	2048 Total	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crash Rate per 100 MVM	2018 Crashes per 100 MVM	2048 Crashes per 100 MVM
130	146	136	118	102	132	155	1,349	1,515	1,411	1,225	1,059	1,312	1,312	1,312
159	198	200	183	212	195	251	1,092	1,360	1,373	1,257	1,456	1,307	1,307	1,307
74	71	96	76	82	81	89	623	598	808	640	690	672	672	672
387	402	417	507	484	448	511	696	723	750	912	871	791	791	791
186	204	221	178	179	196	222	469	514	557	448	451	488	488	488
142	139	141	124	150	145	189	954	933	947	833	1,007	935	935	935
1,078	1,160	1,211	1,186	1,209	1,197	1,416	737	793	828	811	827	799	799	799
Future Year Crash Increase						102%	121%							

# Transforming Dixie Highway

## No-Build Fatal Crash Rate Analysis

6/5/2015

Start	End	Length (mi)	2014 ADT	ADT Year	Growth	2010	2011	2012	2013	Opening Year (2018) ADT	Opening Year + 30 (2048) ADT	2010	2011	2012	2013	2014	2018 VMT	2048 VMT	2010	2011	2012	2013	2014	2018	2048
						ADT	ADT	ADT	ADT			VMT	VMT	VMT	VMT	VMT			MVM	MVM	MVM	MVM	MVM	MVM	MVM
Broadway	Wathen Ln	2.4	11,000	2014	0.59%	11,000	11,000	11,000	11,000	11,500	13,500	26,400	26,400	26,400	26,400	26,400	27,600	32,400	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Wathen Ln	Garrs Ln	2.1	19,000	2014	0.81%	19,000	19,000	19,000	19,000	19,500	25,000	39,900	39,900	39,900	39,900	39,900	40,950	52,500	0.15	0.15	0.15	0.15	0.15	0.15	0.19
Garrs Ln	Heaton Rd	0.7	46,500	2014	0.32%	46,500	46,500	46,500	46,500	47,000	52,000	32,550	32,550	32,550	32,550	32,550	32,900	36,400	0.12	0.12	0.12	0.12	0.12	0.12	0.13
Heaton Rd	Greenwood Rd	2.9	52,500	2014	0.44%	52,500	52,500	52,500	52,500	53,500	61,000	152,250	152,250	152,250	152,250	152,250	155,150	176,900	0.56	0.56	0.56	0.56	0.56	0.57	0.65
Greenwood Rd	Valley Station Rd	2.9	37,500	2014	0.42%	37,500	37,500	37,500	37,500	38,000	43,000	108,750	108,750	108,750	108,750	108,750	110,200	124,700	0.40	0.40	0.40	0.40	0.40	0.40	0.46
Valley Station Rd	Moorman Rd	1.7	24,000	2014	0.91%	24,000	24,000	24,000	24,000	25,000	32,500	40,800	40,800	40,800	40,800	40,800	42,500	55,250	0.15	0.15	0.15	0.15	0.15	0.16	0.20
		12.7	31,547			31,547	31,547	31,547	31,547	32,228	37,650	400,650	400,650	400,650	400,650	400,650	409,300	478,150	1.46	1.46	1.46	1.46	1.46	1.49	1.75

It is assumed that volumes have been constant for the period 2010 to 2014, therefore the current volumes were used for all historic years

2010	2011	2012	2013	2014	No-Build Crashes		2010	2011	2012	2013	2014	Avg	No-Build Crash Rate	
Total	Total	Total	Total	Total	2018 Total	2048 Total	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crash Rate per 100 MVM	2018 Crashes per 100 MVM	2048 Crashes per 100 MVM
0	1	0	0	0	0	0	0	10	0	0	0	2	2	2
0	0	0	1	2	1	1	0	0	0	7	14	4	4	4
0	0	1	0	0	0	0	0	0	8	0	0	2	2	2
0	1	1	0	3	1	1	0	2	2	0	5	2	2	2
3	3	1	1	1	2	2	8	8	3	3	3	5	5	5
0	1	0	0	0	0	0	0	7	0	0	0	1	1	1
3	6	3	2	6	4	5	2	4	2	1	4	3	3	3
Future Year Crash Increase					102%	119%								

# Transforming Dixie Highway

## No-Build Fatal and Injury Crash Rate Analysis

6/5/2015

Start	End	Length (mi)	2014 ADT	ADT Year	Growth	2010	2011	2012	2013	Opening Year (2018) ADT	Opening Year + 30 (2048) ADT	2010	2011	2012	2013	2014	2018 VMT	2048 VMT	2010	2011	2012	2013	2014	2018	2048
						ADT	ADT	ADT	ADT	VMT	VMT	VMT	VMT	VMT	MVM	MVM			MVM	MVM	MVM	MVM	MVM	MVM	
Broadway	Wathen Ln	2.4	11,000	2014	0.59%	11,000	11,000	11,000	11,000	11,500	13,500	26,400	26,400	26,400	26,400	26,400	27,600	32,400	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Wathen Ln	Garrs Ln	2.1	19,000	2014	0.81%	19,000	19,000	19,000	19,000	19,500	25,000	39,900	39,900	39,900	39,900	39,900	40,950	52,500	0.15	0.15	0.15	0.15	0.15	0.15	0.19
Garrs Ln	Heaton Rd	0.7	46,500	2014	0.32%	46,500	46,500	46,500	46,500	47,000	52,000	32,550	32,550	32,550	32,550	32,550	32,900	36,400	0.12	0.12	0.12	0.12	0.12	0.12	0.13
Heaton Rd	Greenwood Rd	2.9	52,500	2014	0.44%	52,500	52,500	52,500	52,500	53,500	61,000	152,250	152,250	152,250	152,250	152,250	155,150	176,900	0.56	0.56	0.56	0.56	0.56	0.57	0.65
Greenwood Rd	Valley Station Rd	2.9	37,500	2014	0.42%	37,500	37,500	37,500	37,500	38,000	43,000	108,750	108,750	108,750	108,750	108,750	110,200	124,700	0.40	0.40	0.40	0.40	0.40	0.40	0.46
Valley Station Rd	Moorman Rd	1.7	24,000	2014	0.91%	24,000	24,000	24,000	24,000	25,000	32,500	40,800	40,800	40,800	40,800	40,800	42,500	55,250	0.15	0.15	0.15	0.15	0.15	0.16	0.20
		12.7	31,547			31,547	31,547	31,547	31,547	32,228	37,650	400,650	400,650	400,650	400,650	400,650	409,300	478,150	1.46	1.46	1.46	1.46	1.46	1.49	1.75

It is assumed that volumes have been constant for the period 2010 to 2014, therefore the current volumes were used for all historic years

2010	2011	2012	2013	2014	No-Build Crashes		2010	2011	2012	2013	2014	Avg Crash	No-Build Crash Rate		
Total Crashes	Total Crashes	Total Crashes	Total Crashes	Total Crashes	2018 Total Crashes	2048 Total Crashes	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Crashes per 100 MVM	Rate per 100 MVM	2018 Crashes per 100 MVM	2048 Crashes per 100 MVM	
35	46	42	36	27	39	46	363	477	436	374	280	386	386	386	
29	48	46	41	50	44	56	199	330	316	282	343	294	294	294	
13	6	15	14	12	12	13	109	51	126	118	101	101	101	101	
73	72	70	85	90	79	91	131	130	126	153	162	140	140	140	
41	34	61	38	37	43	48	103	86	154	96	93	106	106	106	
31	38	29	29	33	33	43	208	255	195	195	222	215	215	215	
222	244	263	243	249	251	298	152	167	180	166	170	167	167	167	
					Future Year Crash Increase		103%								122%



## Transforming Dixie Highway

### Crash Modification Factors Considered in the Analysis

6/5/2015

CMF	All			Ped			Notes	Source
	Fatal	Injury	PDO/Other	Fatal	Injury	PDO/Other		
Raised Median	0.86	0.86	1.06	0.86	0.86	1.06	Affects segments only	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=14">http://www.cmfclearinghouse.org/study_detail.cfm?stid=14</a>
Traffic Calming	0.89	0.89	0.95	0.89	0.89	0.95	Affects all crashes	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=14">http://www.cmfclearinghouse.org/study_detail.cfm?stid=14</a>
Curb and Gutter	0.93	0.93	0.93	0.93	0.93	0.93	Affects segments only	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=147">http://www.cmfclearinghouse.org/study_detail.cfm?stid=147</a>
Left Turn Lanes	0.83	0.83	0.84	0.83	0.83	0.84	Affects intersection crashes only	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=24">http://www.cmfclearinghouse.org/study_detail.cfm?stid=24</a>
Signal Upgrades	0.96	0.96	0.97	0.96	0.96	0.97	Affects signalized intersection crashes, applied to 1/2 of signalized intersections	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=247">http://www.cmfclearinghouse.org/study_detail.cfm?stid=247</a>
Leading Ped Indication (LPI)	1.00	1.00	1.00	0.91	0.91	0.91	Affects ped/bike crashes only	<a href="http://www.cmfclearinghouse.org/detail.cfm?facid=1993">http://www.cmfclearinghouse.org/detail.cfm?facid=1993</a>
Replace TWLTL with Raised Median	0.86	0.86	0.78	0.86	0.86	0.78	Affects segments only	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=165">http://www.cmfclearinghouse.org/study_detail.cfm?stid=165</a>
Signs Conform to MUTCD	0.85	0.85	0.93	0.85	0.85	0.93	Affects all crashes	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=14">http://www.cmfclearinghouse.org/study_detail.cfm?stid=14</a>
Add TWLTL	0.8	0.8	0.92	0.8	0.8	0.92	Affects all crashes, selected the CMF to be conservative	<a href="http://www.cmfclearinghouse.org/study_detail.cfm?stid=72">http://www.cmfclearinghouse.org/study_detail.cfm?stid=72</a>