Before and After Study
Cole County - US 50 & US 54 Grooving Project

This report contains before and after data for a safety project that was constructed during 2000 and 2001 at a High Hazard Location in Cole County. This project involved the grooving of the pavement for US 50 & US 54 through Jefferson City. For the years 1996-2000, there were a total of 1882 accidents on US 50 & US 54, with 5 being fatal accidents and 409 being injury accidents. Of the 1882 accidents that occurred during this time period, 617 occurred during wet or snow conditions. The predominant accident type of the wet accidents were rear end and out of control accidents.

It was determined that the best solution to reduce the amount of wet accidents for US 50 and US 54 would be to groove the pavement. It was estimated that we would be able to reduce the wet accidents by at least 10% by doing the grooving project.

Since the completion of construction for this project in 2001, there have been a total of 960 accidents that have occurred with 303 of these accidents being wet accidents. There has been approximately a 15% reduction in the total number of accidents and an 18% reduction in the number of wet accidents on US 50 and US 54 since the completion of the grooving project. Most of the accident reduction has occurred on US 54, which has shown nearly a 40% reduction in both the total and wet accidents. On US 50, the total number of accidents have remained the same with a slight reduction in the number of wet accidents.

The following information shows a yearly breakdown of the accident severity and the wet/dry accidents occurring at this location before and after the project.

YEARLY ACCIDENT BREAKDOWN

Before Construction

1996 - 356 Total (1 Fatal, 70 Injury, 285 Property Damage Only)
1997 - 410 Total (2 Fatal, 91 Injury, 317 Property Damage Only)
1998 - 434 Total (0 Fatal, 92 Injury, 342 Property Damage Only)
1999 - 361 Total (0 Fatal, 86 Injury, 275 Property Damage Only)
2000 - 321 Total (2 Fatal, 70 Injury, 249 Property Damage Only)

5 year average (1996-2000) = 376.4 Total/year (1.0 Fatal/year, 81.8 Injury/year, 293.6 Property Damage Only/year)

After Construction

2001 - 310 Total (1 Fatal, 73 Injury, 236 Property Damage Only)
2002 - 362 Total (2 Fatal, 78 Injury, 282 Property Damage Only)
2003 - 288 Total (0 Fatal, 87 Injury, 201 Property Damage Only)

3 year average (2001-2003) = 320 Total/year (1 Fatal/year, 79.3 Injury/year, 239.7 Property Damage Only/year)

YEARLY WET/DRY ACCIDENT BREAKDOWN

Before Construction

1996 - 356 Total (247 Dry, 109 Wet Accidents)
1997 - 410 Total (274 Dry, 136 Wet Accidents)
1998 - 434 Total (289 Dry, 145 Wet Accidents)
1999 - 361 Total (233 Dry, 128 Wet Accidents)
2000 - 321 Total (222 Dry, 99 Wet Accidents)
5 year average (1996-2000) = 376.4 Total/year (253 Dry, 123.4 Wet Accidents/year)

After Construction

2001 - 310 Total (208 Dry, 102 Wet Accidents)
2002 - 362 Total (247 Dry, 115 Wet Accidents)
2003 – 288 Total (202 Dry, 86 Wet Accidents)
3 year average (2001-2003) = 320 Total/year (219 Dry, 101 Wet Accidents/year)

Total Accidents on US 50 & US 54 in Cole County

US 54 EB

Before Grooving

	Total	Fatal	Injury	PDO
1996	84	0	10	74
1997	82	2	19	61
1998	114	0	33	81
1999	68	0	12	56
2000	48	0	13	35
Total	**396**	**2**	**87**	**307**
Average/year	***79.2***	***0.4***	***17.4***	***61.4***

After Grooving

	Total	Fatal	Injury	PDO
2001	58	0	18	40
2002	58	1	10	47
2003	55	0	18	37
Total	**171**	**1**	**46**	**124**
Average/year	***57.0***	***0.3***	***15.3***	***41.3***

US 54 WB

Before Grooving

	Total	Fatal	Injury	PDO
1996	56	1	11	44
1997	80	0	15	65
1998	80	0	17	63
1999	49	0	12	37
2000	52	0	12	40
Total	**317**	**1**	**67**	**249**
Average/year	***63.4***	***0.2***	***13.4***	***49.8***

After Grooving

	Total	Fatal	Injury	PDO
2001	31	0	8	23
2002	30	0	7	23
2003	24	0	4	20
Total	**85**	**0**	**19**	**66**
Average/year	***28.3***	***0.0***	***6.3***	***22.0***

US 50 EB

Before Grooving

	Total	Fatal	Injury	PDO
1996	97	0	23	74
1997	98	0	19	79
1998	111	0	19	92
1999	116	0	26	90
2000	108	2	21	85
Total	**530**	**2**	**108**	**420**
Average/year	***106.0***	***0.4***	***21.6***	***84.0***

After Grooving

	Total	Fatal	Injury	PDO
2001	124	1	29	94
2002	130	1	29	100
2003	93	0	30	63
Total	**347**	**2**	**88**	**257**
Average/year	***115.7***	***0.7***	***29.3***	***85.7***

US 50 WB

Before Grooving

	Total	Fatal	Injury	PDO
1996	119	0	26	93
1997	150	0	38	112
1998	129	0	23	106
1999	128	0	36	92
2000	113	0	24	89
Total	**639**	**0**	**147**	**492**
Average/year	***127.8***	***0.0***	***29.4***	***98.4***

After Grooving

	Total	Fatal	Injury	PDO
2001	97	0	18	79
2002	144	0	32	112
2003	116	0	35	81
Total	**357**	**0**	**85**	**272**
Average/year	***119.0***	***0.0***	***28.3***	***90.7***

Grand Total of US 50 & US 54

Before Grooving

	Total	Fatal	Injury	PDO
Grand Total	**1882**	**5**	**409**	**1468**
Average/year	***376.4***	***1.0***	***81.8***	***293.6***

After Grooving

	Total	Fatal	Injury	PDO
Grand Total	**960**	**3**	**238**	**719**
Average/year	***320.0***	***1.0***	***79.3***	***239.7***

JDR
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