

# Oklahoma Highway Safety Improvement Program FFY 2005 – 2013

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*Written by:  
Matt Warren, P.E.  
Traffic Engineering Division  
Oklahoma DOT*

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# Program Structure

## **1. Program Administration**

The following describes the practices for HSIP projects that are administered through the Traffic Engineering Division. The field Division Offices administered approximately half of HSIP projects. They selected these safety projects to address their need based on information about roadway, structures, maintenance status, pavement condition, and safety history.

### **a. How are HSIP funds administered in the state, i.e. centrally or via districts?**

All of the HSIP funds are administered through ODOT's Central Office.

### **b. Describe any innovative practices used to implement the HSIP.**

ODOT is currently in transition on the method in which sites are ranked for both segments and intersections. We are currently using Bayesian methods for segments and probability-weighted rates for intersections.

Road Safety Audits are currently conducted primarily on request to help recommend projects for hot spot locations. Routine implementation of Road Safety Audits for HSIP projects is planned in the future if and when staffing levels permit.

### **c. Describe how local roads are addressed as part of the HSIP.**

The local roads are owned and operated by the local entity (county or city) and the data coverage represented in this report does not include county roads or city streets. Local roads are not identified as part of the HSIP.

Currently, ODOT's database does not have city and county road collisions within it. However, these roads have two different coordinate systems than that of ODOT's system and are not capable of being related to each other at this time. Furthermore, the software is not capable of drawing comparisons across the three coordinate systems. Roadway data is not available for most local roads, making it impossible to use the same analytical methods on these roads. Extension of the analytical methods to a limited set of local roads is planned as software development resources become available.

Reporting methods for other local roads strictly require geocoded crash data. At present the majority of these crashes are geocoded and can be mapped but cannot be tied to

roadway data. Complete geocoding of all crashes and integration with roadway data will require extensive resources and is not being actively pursued at this time since the resources to collect the relevant roadway data are not expected to be available in the foreseeable future. ODOT is presently exploring methods of selecting systemic safety mitigations on local roads.

**d. Describe how highway safety improvement projects are selected for implementation.**

Currently, HSIP funds are used by ODOT exclusively; i.e. there are no other entities that can apply and we have no competitive application process for these funds. Crash experience, as reflected by the annual Collision Data Digest (parallel to the former 5% report), is a factor in project selection but there is no single governing metric. Possible B/C ratios are typically not estimated but some of the lists are ranked by expected crashes or expected crashes per mile, which may be taken as roughly proportional to a first approximation of B/C ratio. Sites for systemic improvement are chosen based on roadway characteristics and sometimes on crash history; for certain improvements specialized reports using Bayesian analysis are available to help optimize benefits. There is no established method for ranking systemic improvements relative to hot spot projects.

## **2. Program Methodology**

The following describes the practices for HSIP projects that are administered through the Traffic Engineering Division. The other HSIP projects (approx. half) that go through the other Divisions have their own practices.

The program was last updated approximately in 1998.

**a. Data Used**

**Crash**

Crash data used to evaluate HSIP projects has a span of 5 years before the exact Work Start Date and 5 years after the exact Completion Date. Fatality, incapacitating injury and non-incapacitating injury collisions (types K, A, B) are used. Other than excluding possible injury and property damage only crashes (types C, O) all crash types are included.

Site ranking for project selection typically uses 5 calendar years of prior crash data, including fatalities, incapacitating injuries and non-incapacitating injuries (K, A, B). For



many rankings, only certain crash types are considered, for instance only run-off-road or only non-intersection or only median-crossover.

### Exposure

Estimated AADT is used in both crash rate analysis and Bayesian methods.

Population is not considered. For intersections, mainline AADT is used instead of total entering vehicles due to an almost complete lack of traffic data for minor approaches. For purposes of comparison with other intersections only, crash counts are adjusted to reflect the lower bound of a one-tailed 99% confidence interval on the assumption that observed crashes are a sample from a Poisson distribution with a mean which is itself a sample from a uniform probability distribution over the interval  $(0, \infty)$ . This method produces an estimate significantly lower than the observed crash counts and is not an accurate estimate of future crashes; the estimates cannot be used for instance to predict B/C ratios but provides a reasonable ranking of intersections relative to each other (for network screening), effectively deflating the ranking of intersections with very low AADT and only a few crashes.

### Roadway

Only data from Oklahoma Highways, U.S. Highways, and Interstates (non-turnpike) were used in the Collision Data Digest and HSIP reports. High-level roadway data (e.g. urban/rural, 2-lane/multi-lane, divided/undivided, shouldered/unshouldered, access control) are used to segregate many internal reports. Median width was also taken into account for ranking segments by potential for crossover collisions.

### **b. Project Identification Methodology**

The Collision Data Digest and sometimes Road Safety Audits are used as guidance by Field Divisions to identify projects for safety hot spots. In accordance with our SHSP, HSIP funds are also used for systemic improvements, including cable barrier, rumble strips, and upgrades to striping, including edgeline striping, and guardrail. Systemic improvements are identified on the basis of past experience, including that of other states; expected benefits and known maintenance issues are taken into account.

Data from the Crash Modification Factor Clearinghouse is often used to help evaluate potential systemic programs and sometimes other projects as well.

### **c. Summary of Targeted Programs being Implemented under the HSIP**

SHSP targets currently being addressed with HSIP funds include median crossovers, lane departures, intersections, and rural highways.

Median crossover collisions are being addressed by systemic application of median cable barrier, which has been notably successful.

Lane departures are being addressed by application of shoulder rumble strips (systemically for new construction as well as selected retrofits), as well as systemic upgrades to guard rail and striping, including edgeline striping. Some shoulder cable barrier has also been placed and more is planned. Projects have been initiated to improve curve delineation and replace obsolete guardrail. A program for clear zone mitigation is incipient. A small number of high friction surface treatments are planned. A centerline rumble strip pilot project is awaiting evaluation.

Intersection crashes are being addressed by a policy of systematically funding the highest ranked intersections recommended for traffic signals each year by the Field Divisions. Implementation has been initiated of systemic sign, signal and marking improvements as recommended by the FHWA Intersection Safety Assistance Program. Intersection crashes are also being addressed by a project to retrofit some existing signals with retroreflective backplates, which are also being used on all new signal projects. A few "J-Turn" intersections are finished or under construction, and more are tentatively planned. Two high speed intersections are planned to be retrofitted with dynamic advance signal change warning signs as a pilot.

Rural highways have been given increased attention by separating rural 2-lanes into their own reports and are ranked by Highway Safety Manual methods using Safety Performance Functions. Rural 2-lane highways are targeted especially for shoulder rumble strips, curve delineation, and shoulder widening.

Procedures for Road Safety Audits have been established and we are planning to make them an integral part of project identification and selection when resources permit.

**d. Extent to which System Wide Improvements are Implemented as Part of the HSIP**

We currently have several ongoing system wide projects which include: Cable Barrier, Sub-Standard Guardrail Replacement, Clearzone Mitigation, Intersection Sign & Marking Improvement, Curve Delineation, Shoulder Rumble Strip, Retroreflective Backplate

Replacement and Striping, including edgeline striping. These are funded partly by HSIP funds and partly by other sources.

In 1998 in coordination with FHWA and ODOT, a Guardrail Improvement Safety Policy was developed and implemented to address substandard guardrail and end treatments. The policy not only outlines strategies for ODOT's maintenance forces but also for new construction projects. It was decided to fund guardrail projects each year and plan development would occur in of ODOT's Traffic Engineering Division. These projects have created new guardrail and end treatments that are up to date with industry and highway standards and these projects are still ongoing today. It is expected the projects will continue until we are fully updated.

ODOT has provided upgraded striping, including edgeline striping and delineation through the use of HSIP and/or other funds. Paint is being replaced with multipolymer and thermoplastic, and striping, including edgeline striping, on controlled access highways is being widened from 4" to 6". In recent years, progress has been made to provide these improvements in a data-driven manner. In 2010, a decision matrix was finalized for the type and size of striping, including edgeline striping based on AADT and the type and condition of pavement. System-wide use of 6" edgeline and centerline stripe is under consideration.

In 2012 ODOT received a plan for systemic intersection improvements from FHWA consultants, to be implemented over the next 5-10 years.

Median cable barrier, initially treated as a hot spot mitigation, is now being treated as a systemic improvement.

Systemic improvements to curve delineation are scheduled for more than 100 curve locations on rural highways. A second phase of this program will treat additional curves.

Retroreflective borders on signal backplates have been established as standard for new signals and over two hundred intersections are already scheduled for the retrofit.

***e. Extent to which Highway Safety Improvements Projects Align with the State's SHSP***

In accordance with our SHSP, ODOT is emphasizing rural locations and intersection improvements; we are implementing systemic improvements, especially to address roadway departure (i.e. cable barrier, curve delineation, guardrail, and rumble strips); we

are now considering only injury/fatality crashes in prioritizing locations and Traffic Engineering use of HSIP funding is increasingly data-driven.

**f. Project Prioritization Process**

Prioritization is guided by the crash ranking demonstrated in the Collision Data Digest, with adjustments for field conditions, funding, road safety audits when available, and other circumstances.

**B. Progress in Implementing the HSIP Projects**

**1. HSIP Funds Available<sup>1</sup> (Programmed)**

<b>HSIP Project Funding</b>		
<b>Reporting Period: FFY 2013</b>		
<b>Funding Category</b>		<b>Obligated</b>
HSIP (SAFETEA-LU Sect. 148)		\$7,115,860
HSIP (MAP-21 Sect. 1112)		\$30,186,416
Hazard Elimination (Section 152)		-----
HRRRP		-----
Optional Safety		\$2,000,000
Other Federal Aid Funds (i.e. STP, ARRA)		-----
State and Local Funds		\$5,814
<b>Total</b>		<b>\$</b>

Table 1

1. “Available Funds” are those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) for the reporting period and can be expended on Highway Safety Improvement projects.

**2. General Listing of Projects**

The following 31 pages are a general list of all projects from FFY 2005-2013 that use(d) Federal safety funds. The projects were identified using fund codes for HSIP, Hazard Elimination, Optional Safety, HRRRP, and Rail-Highway Crossings, which included H020, H210, H240, H260, H280, Q210, Q280, L010, LY10, LY20, L05E, L05R, L01E, L21R, L24R, L28R, LS30, LS2E, LS3E, LS4E, LS5E, and MS30. Also included are all projects let by Traffic Engineering Division in FFY 2008-2013 and all traceable cable barrier projects.

When 5 years of “After” crash data are available for a project, a B/C ratio is reported. B/C ratios are based on the Value of a Statistical Life and estimated maintenance cost at the time the B/C is first calculated.



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Job Price #	County	Project No.	Proj. Dist.	Highway	Work Type	Division	FRMA Auth.	Let Date	Award Date	Work Order Date	Work Start Date	Actual Comp Date	Control Section	Start Milepost	End Milepost	Length	Description	Fund Code	Project Total	Federal Funds	State Funds	Other Funds	Est. Before (b) (3)	Est. After (b) (3)	Est. Before (b) (4)	Est. After (b) (4)	Study Period	Service Life (yrs)	Maint Unit	Units / yr	EUAB	EUAC	Actual B/C	
198405	MUSKOGEE	ITSY-0078 (07) DC	DC	NA	SAFETY IMPROVEMENT	1	2005						N/A				COMMUNICATIONS FOR ITS PROJECT TO INTEGRATE DIVISION 14.8 WITH THE REGIONAL ANEX "AULT" SMC-5040	400	\$78,266	\$23,916	\$0	\$0									Relevant Crash Data Cannot Be Isolated			
198604	TULSA	ITSY-0078 (08) DC	DC	NA	SAFETY IMPROVEMENT	8	2006	9-15-05	10-1-05	10-31-05	11-14-05	9-22-06	N/A				ITS PROJECT FOR INTEGRATION OF EXISTING EMERGENCY MANAGEMENT AGENCIES IN TULSA REGION "AULT" SMC-5050	400	\$118,010	\$88,010	\$0	\$0										Relevant Crash Data Cannot Be Isolated		
198605	TULSA	ITSY-0078 (02) DC	DC	NA	SAFETY IMPROVEMENT	8	2006						N/A				INTEGRATING EXISTING EMERGENCY MANAGEMENT AGENCIES IN TULSA REGION "AULT" SMC-5050	400	\$97,168	\$61,600	\$0	\$0									Relevant Crash Data Cannot Be Isolated			
198604	OKMUCHA	ITSY-0078 (08) DC	DC	136	SAFETY IMPROVEMENT	4	2006	7-21-05	8-1-05	8-23-05	9-12-05	1-4-07	N/A				ITS PROJECT FOR INTEGRATION OF EXISTING ITS COMPONENTS WITH OK COUNTY, OKMUCHA COUNTY, OKMUCHA AND NATIONAL GUARD "AULT" FORMERLY W03 SMC-5050	400	\$38,336	\$120,326	\$0	\$0										Relevant Crash Data Cannot Be Isolated		
202205	PADDO	STPY-109C (04) RW	RW	US-277	RIGHT OF WAY	7	2005						8	0.00	3.18	3.18	US-277 FROM JUST S. OF COMANCHE COUNTY LINE & EXTEND NORTH 3.18 MILES TO SUPER 2 RW FOR 2023/04/2004	400	\$274,000	\$274,000	\$0	\$0									Project Not in Traffic Engineering Division			
202505	COMANCHE	STPY-116C (02) RW	RW	US-277	RIGHT OF WAY	7	2005						12	5.30	11.73	6.44	US-277 4650 @ BELGAN AND EXTENDING NORTH 6.44 MILE FOR 2025/04	400	\$169,000	\$169,000	\$0	\$0									Project Not in Traffic Engineering Division			
202606	COMANCHE	STPY-116C (03) UT	UT	US-277	UTILITIES	7	2006						12	5.30	11.73	6.44	US-277 4650 @ BELGAN AND EXTENDING NORTH 6.44 MILE FOR 2025/04	400	\$1,100,000	\$1,100,000	\$0	\$0									Project Not in Traffic Engineering Division			
202605	MURRAY	STPY-150B (04) RW	RW	US-177	RIGHT OF WAY	7	2005						26	0.00	5.20	5.20	US-177 FROM THE CARTER COUNTY 2025/04 SMC-4020	400	\$916,000	\$616,000	\$0	\$0									Project Not in Traffic Engineering Division			
202606	MURRAY	STPY-150B (04) UT	UT	US-177	UTILITIES	7	2006						26	0.00	5.20	5.20	US-177 FROM THE CARTER COUNTY 2025/04 SMC-4020	400	\$219,917	\$219,917	\$0	\$0									Project Not in Traffic Engineering Division			
202704	PAYNE	STPY-160B (05)		SH-33	GRADE DRAINING, BRIDGE & SURFACE	4	2005	11-18-04	12-1-04	1-13-05	6-13-05	1-31-09		10	3.00	3.33	SH-33 BEG APPROX 1.8 MILE EAST OF 2025/04 SMC-4020	400	\$4,237,012	\$1,982,697	\$0	\$0									Project Not in Traffic Engineering Division			
202804	SEDOQUIAH	STPY-169C (10)		SH-100	RESURFACE	1	2005	7-28-05	8-1-05	8-23-05	9-28-05	1-3-06		24	0.00	7.5	SH-100 FROM GORE, EXTEND NORTH 7.5 MILES THEN EAST 1.0 MILES (AWRCH) CANCELLED 06/05, ADD TO 07/05	400	\$867,560	\$867,560	\$0	\$0									Project Not in Traffic Engineering Division			
210004	OKMUCHA	ITSY-017B (04) IT	IT	NA	SAFETY IMPROVEMENT	4	2005						N/A				ITS OKC METRO INTEGRATE NEW & EXIST COMMENTS INTO COM FIBER OPTIC NETWORK AT LOCATIONS (1) @ I-40 @ 100' 405' PROXITY CHIP "AULT"	400	\$548,666	\$278,666	\$0	\$0									Relevant Crash Data Cannot Be Isolated			
214604	CHEROKEE	STPY-111A (04) TR	TR	US362	SAFETY IMPROVEMENT	1	2006						4				US-62 INSTALL TRAFFIC SIGNAL INTERCONNECT SYSTEM @ INTER @ 019 RAYNE ST & @ SH-51, INSTALL TRAFFIC SIGNAL CABLE TO RETAIL ENTRANCE	400	\$102,333	\$91,250	####	\$0										No Construction Data Available For Crash Analysis		
215404	PARDON	STPY-108A (04) TR	TR	SH-066	SAFETY IMPROVEMENT	4	2006	7-21-05	8-1-05	8-23-05	1-15-06	2-12-07		6	9.91	11.91	SH-66 UPGRADE TRAFFIC SIGNALS @ VARIOUS LOCATIONS ALONG SH-66	400	\$446,455	\$219,367	\$0	\$0										\$1,361,940	\$2,176	(#7.5)
216804	OTTAWA	STP-156E (03) RR	RR	R R	CROSSING IMPR & RR SIGNALS	8	2006										FARLAND INST SIGS @ 4 LOC, SURF @ 3 LOC, CLOSURE @ 2 LOC, W/ 008 @ 1/15/17 (AWR007# 6840X-04E-ACL-61P-450-07519L)	400	\$64,261	\$750,915	\$0	\$0									Project Not in Traffic Engineering Division			
216204	OKMUCHA	STPY-155E (05) EC	EC	NA	PRELIMINARY ENGINEERING	4	2005						N/A				STATEWIDE HYDRAULICS/SCHEMATIC ANALYSIS AND REPORTS AT LOCATIONS STATEWIDE (SMC-4020)	400	\$300,000	\$300,000	\$0	\$0									Relevant Crash Data Cannot Be Isolated			
216704	WAGONER	STPY-172B (05) EC	EC	SH-51	PRELIMINARY ENGINEERING	1	2005						16	0.00	0.00	0.00	SH-51 PREPARE ENVIRONMENTAL ASSESSMENT ENGINEERING STUDIES AND DESIGN STUDIES FOR UPGRADE OF SH-51 FROM WAGONER TO TAHEQUAH (SMC-4020)	400	\$488,500	\$488,500	\$0	\$0									Relevant Crash Data Cannot Be Isolated			

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Job Price #	County	Project No.	Proj. Subc.	Highway	Work Type	Division	FFY	FHWA Auth.	Let Date	Award Date	Work Order Date	Work Start Date	Actual Comp Date	Control Section	Start Milepost	End Milepost	Length	Description	Fund Code	Project Title	Federal Funds	State Funds	Other Funds	Start Before (yrs)	End Before (yrs)	Start After (yrs)	End After (yrs)	Study Period	Service Life (yrs)	Maint Unit	Units / year	EUAB	EUAC	Actual B/C					
Z20024	OKLAHOMA	STPY-155E (662) EC	EC	N/A	PRELIMINARY ENGINEERING	4	2005							N/A				STATEWIDE DEVELOPER. VARIOUS BRIDGEWATER PROJECT TO BRIDGE WATER PROOF SEAL. (S&C-407) (S&C-402)	H-60	\$70,000	\$70,000	\$0									Relevant Crash Data Cannot Be Isolated								
Z20004	MUSKOGEE	STPY-151H (133)		Multiple	BRIDGE WATER PROOF SEAL	1	2005		4-21-05	5-1-05	5-13-05	6-7-05	12-27-05	N/A				DIV. 1 DIVISION WIDE SLURRY PROJECT FOR FFY 2004 AND TO 04-05, LATE ADDITION.	H-60	\$48,238	\$48,238	\$0										Relevant Crash Data Cannot Be Isolated							
Z20104	OKMOTOC	STPY-162H (120)		Multiple	BRIDGE WATER PROOF SEAL	3	2005		4-21-05	5-1-05	5-3-05	9-8-05	11-18-05	N/A				DIV. 1 DIVISION WIDE SLURRY PROJECT FOR FFY 2004 AND TO 04-05, LATE ADDITION.	H-60	\$3,246	\$3,246	\$0											Relevant Crash Data Cannot Be Isolated						
Z20004	NOBLE	STPY-152H (800)		Multiple	BRIDGE WATER PROOF SEAL	4	2005		4-21-05	5-1-05	5-3-05	6-29-05	8-5-05	N/A				DIV. 4 DIVISION WIDE SLURRY PROJECT FOR FFY 2005.	H-60	\$3,705	\$3,705	\$0											Relevant Crash Data Cannot Be Isolated						
Z20034	CLUSTER	STPY-120H (106)		Multiple	BRIDGE WATER PROOF SEAL	5	2005		4-21-05	5-1-05	5-3-05	7-5-05	1-31-06	N/A				DIV. 2 DIVISION WIDE SLURRY PROJECT FOR FFY 2005.	H-60	\$38,555	\$38,555	\$0											Relevant Crash Data Cannot Be Isolated						
Z20404	HARPER	STPY-130H (88)		US-64	BRIDGE WATER PROOF SEAL	6	2005		4-21-05	5-1-05	5-3-05	7-25-05	3-7-06	N/A				DIV. 7 DIVISION WIDE SLURRY PROJECT FOR FFY 2005.	H-60	\$7,574	\$7,574	\$0											Relevant Crash Data Cannot Be Isolated						
Z20604	STEPHENS	STPY-169H (108)		Multiple	BRIDGE WATER PROOF SEAL	7	2005		4-21-05	5-1-05	5-6-05	7-11-05	10-30-05	N/A				DIV. 7 DIVISION WIDE SLURRY PROJECT FOR FFY 2005.	H-60	\$90,105	\$90,105	\$0											Relevant Crash Data Cannot Be Isolated						
Z20604	TULSA	STPY-172H (275)		Multiple	BRIDGE WATER PROOF SEAL	8	2005		4-21-05	5-1-05	5-3-05	8-17-05	11-8-05	N/A				US-209&123 INSTALL THERMOPLASTIC PAVEMENT MARKINGS, BEGIN 8 M. N. OF MAIN ST. IN BEAVER, BEAT. S. 274 M.	H-60	\$62,847	\$62,847	\$0												Relevant Crash Data Cannot Be Isolated					
Z21004	SEMAN	STPG-100C (242) TR	TR	Multiple	SAFETY IMPROVEMENT	6	2005							Multiple				US-329&145 INSTALL THERMOPLASTIC PAVEMENT MARKINGS, BEGIN 6 M. S. OF SH-46, EXT. E. 1/4 MI. BEGIN AT US-265, EXT. E. 3/4 MI.	H-60	\$15,000	\$15,000	\$0											No Construction Data Available For Crash Analysis						
Z21004	ELLIS	STPG-129A (328) TR	TR	Multiple	SAFETY IMPROVEMENT	6	2005							Multiple				US-329&145 INSTALL THERMOPLASTIC PAVEMENT MARKINGS, BEGIN 1.0 M. S. OF SH-46, EXT. N. 2 1/2 MI. BEGIN AT US-265, EXT. E. 3/4 MI.	H-60	\$22,000	\$22,000	\$0												No Construction Data Available For Crash Analysis					
Z21004	HARPER	STPG-130B (81) TR	TR	Multiple	SAFETY IMPROVEMENT	6	2005							Multiple				SH-46 INSTALL TRAFFIC SIGNAL SYSTEM AT INTER. OF SH-46 AND CO. RD. EW. 560 IN THE TOWN OF VERDUGAS.	H-60	\$10,045	\$10,045	\$0				0	2	1	0	2	2	5	\$200	1.00	(\$10,200)	\$6,688	(1956)		
Z21004	ROGERS	STPY-166A (62) TR	TR	SH-66	TRAFFIC SIGNALS	8	2005		9-15-05	10-1-05	2-21-06	7-5-06	10-5-06	2	6-42	6-42		SH-66 INSTALL TRAFFIC SIGNAL SYSTEM AT INTER. OF SH-66 AND CO. RD. EW. 560 IN THE TOWN OF VERDUGAS.	H-60	\$10,045	\$10,045	\$0													Relevant Crash Data Cannot Be Isolated				
Z21004	OKLAHOMA	STPY-155E (66) EC	EC	N/A	PRELIMINARY ENGINEERING	4	2005							N/A				ENGINEERING SERVICES TO SUPPORT DEPARTMENT STAFF - POLE & ASSOCIATES (S&C-402)	H-60	\$50,000	\$50,000	\$0												Relevant Crash Data Cannot Be Isolated					
Z21204	OKLAHOMA	STPY-155E (66) EC	EC	N/A	ENGINEERING	4	2005							N/A				ENGINEERING SERVICES TO SUPPORT DEPARTMENT STAFF - VERDUGAS (S&C-402)	H-60	\$50,000	\$50,000	\$0													Relevant Crash Data Cannot Be Isolated				
Z21204	OKLAHOMA	STPY-155E (67) EC	EC	N/A	PRELIMINARY ENGINEERING	4	2005							N/A				ENGINEERING SERVICES TO SUPPORT DEPARTMENT STAFF - CORB	H-60	\$50,000	\$50,000	\$0													Relevant Crash Data Cannot Be Isolated				
Z21204	OKLAHOMA	STPY-155E (68) EC	EC	N/A	PRELIMINARY ENGINEERING	4	2005							N/A				ENGINEERING SERVICES TO SUPPORT DEPARTMENT STAFF - ROAD DESIGN GROUP (S&C-402)	H-60	\$50,000	\$50,000	\$0														Relevant Crash Data Cannot Be Isolated			
Z21604	OKLAHOMA	STPY-155E (77) EC	EC	N/A	PRELIMINARY ENGINEERING	4	2005							N/A				STATEWIDE DESIGN MANUAL	H-60	\$50,000	\$50,000	\$0													Relevant Crash Data Cannot Be Isolated				
Z22004	PUSHMATAWA	STPY-164C (20) TR	TR	SH-44	SAFETY IMPROVEMENT	2	2005		5-16-05	7-5-05	8-1-05	8-15-05	8-24-05	20	4-40	4-60	4-60	SH-44 INSTALL SCHOOL ZONE BEACONS FOR THE HASKINS SCHOOL DISTRICT (DEL. PR. 06-05, ADD TO 05-05, PR)	H-10	\$12,666	\$12,666	\$0				0	0	0	0	0	5	\$100	1.00	\$0	\$223	0.00			
Z22004	PREEK	STP-1501 (23) RR	RR	R R	RAILROAD SIGNALS	8	2005											RAIL SIGNAL SURFACE PROJECT @ WILSON, WILSON PROJECT @ CO	H-10	\$24,636	\$24,636	\$0												Project Not in Traffic Engineering Division					
Z22004	ELLIS	STP-1320 (24) RR	RR	R R	RAILROAD SIGNALS	6	2005											RAILROAD SIGNAL SURFACE PROJECT @ WILSON, WILSON PROJECT @ CO	H-10	\$166,616	\$166,616	\$0												Project Not in Traffic Engineering Division					
Z22004	NOVA	STP-138A (23) RR	RR	R R	RAILROAD SIGNALS	5	2005											RAILROAD SIGNAL SURFACE PROJECT @ WILSON, WILSON PROJECT @ CO	H-10	\$3,181	\$3,181	\$0													Project Not in Traffic Engineering Division				













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216305	OKLAHOMA	ITSY-0720 (027) IT	NA	SAFETY IMPROVEMENT	4	2007											OKLAHOMA CITY INTEGRATION & FIBER OPTIC EXPANSION 44 AND US VARIOUS	L330	\$194,097	\$12,237	\$0																
216307	OKLAHOMA	SPFG-155E (594) TR	NA	SAFETY IMPROVEMENT	4	2007											SACRISTO AREA FIBER OPTIC SIGNALS	L330	\$30,000	\$30,000	\$0																
216304	TULSA	ITSY-0720 (054) IT	L44	SAFETY IMPROVEMENT	9	2007		9-16-07	10-2-07	8-25-09							TULSA METRO AREA CREEK ROGERS TULSA AND WAGONER COUNTIES INVESTIGATION PROJECT "A" - "H"	H-60	\$342,748	\$19,415	\$0																
226004	OTTAWA	SPFY-155A (094) TR	TR	US-59 TRAFFIC SIGNALS	9	2007		1-18-07	2-1-07	6-15-07	9-1-07		14	6.38	6.38	0.00	INTER. OF US-59 AND COMMERCE AVE (NORMERDIE DEL. FR. 11-06, ADD TO 01-07 ROW ISSUES)	L330	\$69,264	\$69,264	\$0							\$200	1.00	\$0	\$6,592	0.00					
226004	MCCLAIN	SPFY-144B (629) TR	TR	US-62 TRAFFIC SIGNALS	3	2007		11-16-06	12-1-06	1-8-07	2-12-07	5-17-07	2	2.30	2.30	0.00	INSTALL TRAFFIC SIGNAL AT INTERS. OF US-62 & E. 10TH ST. IN BLANCHARD	L330	\$132,915	\$132,915	\$0							\$200	1.00	\$0	\$8,493	0.00					
226005	OTTAWA	SPFG-159A (143)		RAILROAD SIGNALS	9	2007											SH-105/VE OWENS BLVD & 70 <sup>TH</sup> ST IN OKMURRAY AREA. INSTALL SIGNAL AS PER APPROV. PLAN (256504)	L330	\$238,252	\$238,252	\$0																
226004	OKLAHOMA	HSIPG-155A (620) TR	TR	SH-152 GUARDRAIL	4	2007		11-16-06	12-1-06	1-5-07	4-2-07	9-21-07	52	4.68	6.94	2.26	SH-152 INSTALL GUARDRAIL BETWEEN 44 DEL FR 07-06, ADD TO 11-06, FUNDING ISSUES	L330	\$502,268	\$502,268	\$0							\$200	1.00	\$1,915,900	\$25,317	(7567)					
226004	TULSA	HSIPG-172A (030) TR	TR	SH-45 GUARDRAIL	9	2007		11-16-06	12-1-06	1-22-07	4-21-07	3-20-09	60	0.00	5.50	5.50	SH-45 INSTALL GUARDRAIL BETWEEN 44 DEL FR 07-06, ADD TO 11-06, FUNDING ISSUES	L330	\$991,260	\$991,260	\$0							\$200	1.00	\$271,897,000	\$63,314	(429,40)					
226004	OKLAHOMA	HSIPG-155A (629) TR	TR	L35 SIGNING	4	2007		11-16-06	12-1-06	1-5-07	6-15-07	5-31-09					OKLAHOMA CITY INSTALL ADDITIONAL WARNING SIGNS AND DELINEATION ON ALLEYS IN OKM METRO AREA (DEL FR 07-06, ADD TO 11-06, FUNDING ISSUES)	L330	\$397,242	\$397,242	\$0																
226004	TULSA	HSIPG-172N (040) TR	TR	L44 SIGNING	9	2007		3-15-07	4-1-07	4-17-07	7-30-07	7-29-09					TULSA INSTALL ADDITIONAL WARNING SIGNS AND DELINEATION ON ALL FREEWAYS IN TULSA METRO AREA (DEL FR 12-06, ADD TO 03-07, QUANTITY ERRORS) "A" - "H"	L330	\$443,004	\$443,004	\$0																
226005	BRYAN	HSIPY-107N (110) TR	TR	INTERSECTION MOD & TRAF SIGNALS	2	2007		1-18-07	2-1-07	3-12-07	10-23-07	11-17-09	3	0.70	0.70	0.00	DURANT INTERSECTION MODIFICATION AT INTERSECTION OF US-59S & 10TH ST. (DEL FR 11-06, ADD TO 01-07, ROW ISSUES) "A" - "H"	L330	\$1,812,168	\$194,875	\$0							\$200	1.00	\$6,867,760	\$116,200	50,50					
238704	LEFLORE	HSIPY-140C (138) TR	TR	US-271 TRAFFIC SIGNALS	2	2007		9-16-07	9-1-07	10-2-07	2-18-09	4-2-09	14	5.04	5.04	0.00	US-271/SH-163/430 (DALLAS ST.), US-271/SH-163/ST.1 INTERSECTION TRAFFIC SIGNALS DEL FR 07-07, ADD TO 03-07, FUNDING AGREEMENT "A" - "H"	L330	\$86,500	\$86,500	\$0							\$200	1.00	\$76,520	\$5,743	(128,94)					
238804	CLEVELAND	HSIPY-114B (108) TR	TR	SH-37 TRAFFIC SIGNALS	3	2007		11-16-06	12-1-06	1-8-07	4-30-07	12-19-07	14	2.97	2.97	0.00	SH-37 (6W) 134TH ST. AND PENN AVE. INTERSECTION TRAFFIC SIGNALS	L330	\$123,168	\$123,168	\$0							\$200	1.00	\$1,125,600	\$9,084	(189,27)					
238804	PANDURN	HSIPY-108A (115) TR	TR	SH-3 TRAFFIC SIGNALS	4	2007		11-16-06	12-1-06	1-10-07	4-10-07	7-11-07	22	17.32	17.32	0.00	SH-3 HWY HIGHWAY AND MUSTANG RD INTERSECTION TRAFFIC SIGNALS	L330	\$108,156	\$108,156	\$0							\$200	1.00	\$665,520	\$7,123	121,50					
236104	Multiple	SPFG-172C (633) TR	TR	STRIPING & PAVEMENT MARKING	9	2007		11-16-06	12-1-06	1-10-07	6-4-07	7-14-07	Multiple				SH-36 INSTALLATION OF PAVEMENT MARKINGS E OF US-187 TULSA COUNTY. (DEL FR 11-06, ADD TO 01-07, SH-162 IN BERGCO)	L330	\$81,678	\$81,678	\$0																
236704	CLEVELAND	HSIPY-114B (174) TR	TR	US-77 TRAFFIC SIGNALS	3	2007		1-18-07	2-1-07	3-1-07	8-27-07	10-25-07	4	13.72	13.72	0.00	US-77 & CEDAR LAKE RICHTY OF SIGNALS	L330	\$131,256	\$131,256	\$0							\$200	1.00	\$4,878,160	\$9,802	567,09					
236904	OTTAWA	HSIPG-158B (111) TR	TR	US-59 TRAFFIC SIGNALS	9	2007		9-20-07	10-1-07	10-26-07	2-4-09	3-31-09	2	1.02	1.02	0.00	US-59/SH-125 INSTALL FLASHING REASONABLE FR 07-07, ADD TO 09-07, AS PER TRAFFIC DIV "A" - "H"	L330	\$84,524	\$84,524	\$0							\$200	1.00	\$1,125,600	\$4,230	(266,18)					
237704	PONTIAC	SPFG-162A (159) TR	TR	STRIPING & PAVEMENT MARKING	3	2007											SH-3 INSTALLATION OF THERMOPLASTIC PAINT MARKING 0.50 MILES E OF JCTUS-177/US-88, EXTEND S 11.10 MI TO COAL ZL	L330	\$69,000	\$69,000	\$0																

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231604	BARFIELD	STP-1240 (026) RR	RR		CROSSING IMPR & RRR SIGNALS	4	2007										NEAR-CARRIER PROJ. FED. MNTD LITES SIG. W/ GATE BLOC. CONCRT. SLOC. @ 13TH ST. W/ 100' W/ BNSF RR. #55561672602.672607.67 #55561673699	LS30	\$1,107,056	\$1,550,075	\$0																		
231604	WALMILLEE	STP-1502 (126) RR	RR		CROSSING IMPR & RRR SIGNALS	1	2007										NEAR BEGGS SIGNAL PROJ. INSTALL OF PED. MOUNT FLASH LITES SIG. W/ GATE @ 100' E/W/ W/ BNSF RR. #55561673699	LS30	\$161,338	\$145,204	\$0																		
231904	WALMILLEE	STP-1502 (127) RR	RR		CROSSING IMPR & RRR SIGNALS	1	2007										NEAR BEGGS SIGNAL PROJ. INSTALL OF PED. MOUNT FLASH LITES SIG. W/ GATE @ 100' E/W/ W/ BNSF RR. #55561673699	LS30	\$211,464	\$190,316	\$0																		
231904	OTTAWA	STP-1502 (113) RR	RR		CROSSING IMPR & RRR SIGNALS	8	2007										NEAR MAM SIGNAL PROJ. INSTALL OF MAJUR FLASH LITES SIG. W/ GATE @ 100' E/W/ W/ BNSF RR. #55561673699	LS30	\$157,034	\$141,847	\$0																		
238704	WAGONER	HSIP-173A (123) TR	TR	SH-5	TRAFFIC SIGNALS	1	2007	7-15-07	8-1-07	8-2-07	7-9-09	8-8-09	12	7.10	7.10	0.00	INTERSECTION TRAFFIC SIGNALS. SH-5 @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$112,286	\$112,286	\$0																		
238804	WAINES	HSIP-1466 (101) TR	TR	SH-62	TRAFFIC SIGNALS	8	2007	8-16-07	9-1-07	10-5-07	1-9-09	4-9-09	26	6.86	6.86	0.00	INTERSECTION TRAFFIC SIGNALS. SH-62 @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$65,502	\$65,502	\$0																		
239004	HUGHES	STP-1302 (027) RR	RR		CROSSING IMPR & RRR SIGNALS	3	2007										HOLDENVALE SIG SURF. INSTALL. FED. MNT. FLASH LITES SIG. W/ GATE @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$212,381	\$191,637	\$0																		
238004	JOHNSTON	STP-1302 (026) RR	RR		CROSSING IMPR & RRR SIGNALS	3	2007										MILL CREEK SIG SURF. PROJ. INSTALL. FED. MNT. FLASH LITES SIG. W/ GATE @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$215,945	\$193,536	\$0																		
238204	MUSKOGEE	STP-1510 (159) RR	RR		CROSSING IMPR & RRR SIGNALS	1	2007										MASHOORE SIG SURF. PROJ. INSTALL. FED. MNT. FLASH LITES SIG. W/ GATE @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$195,867	\$176,263	\$0																		
238404	BRVAN	STP-1070 (119) RR	RR		CROSSING IMPR & RRR SIGNALS	2	2007										DURANT INSTALL. FED. MNT. FLASH LITES SIG. W/ GATES. CONCRT. CROSS @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$81,027	\$74,267	\$0																		
238504	BRVAN	STP-1070 (118) RR	RR		CROSSING IMPR & RRR SIGNALS	2	2007										DURANT SIG SURF. PROJ. INSTALL. FED. MNT. FLASH LITES SIG. W/ GATE @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$102,094	\$172,575	\$0																		
238604	PANOWAN	STP-1002 (128) RR	RR		CROSSING IMPR & RRR SIGNALS	4	2007										TUKON CORR. PROJ. INSTALL. FED. MNT. FLASH LITES SIG. W/ GATE @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$61,238	\$55,164	\$0																		
238704	WOODS	STP-1762 (116) RR	RR		CROSSING IMPR & RRR SIGNALS	6	2007										ALVA CORR. PROJ. INSTALL. FED. MNT. FLASH LITES SIG. W/ GATE @ 100' W/ 100' W/ BNSF RR. #55561673699	LS30	\$1,000,228	\$900,207	\$0																		
238804	CHEROKEE	HSIP-111C (112) TR	TR	SH-62	SAFETY IMPROVEMENT	1	2007	2-15-07	3-1-07	3-8-07	7-2-07	8-6-07	26	15.44	15.01	0.59	SH-62 INSTALLATION OF SCHOOL ADVANCE WARNING SIGNS WITH FLASHING BEACONS, NEYS SCHOOL DISTRICT	LS30	\$16,581	\$16,586	\$0																		



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23604	CHOCTAW	HSIP-112A(07)TR	TR	US70	SAFETY IMPROVEMENT	2		6-14-07	7-1-07	8-14-07	11-26-07	12-12-07	2	3.68	4.33	0.65	SH-7C INSTALL SCHOOL ADVANCE WARNING SIGNS W/FLASHING RED MTD FLASHLIGHTS TO BE RELECTED. PROJ. NO. 1006-07. BIG ELECT. "A" UNIT.	LS30	\$18,511	\$18,511	\$0	\$0	\$0	1	0	1	0	0	5	25	\$100	1.00	\$1,200.00	\$1,266	1066.37		
23604	COAL	HSIP-115G(05)TR	TR	SH31	SAFETY IMPROVEMENT	3		2-15-07	3-1-07	3-21-07	6-21-07	7-10-07	12	1.48	1.67	0.19	SH-31 INSTALLATION OF SCHOOL ADVANCE WARNING SIGNS WITH FLASHING RED MTD. COTTOWOOD SCHOOL DISTRICT	LS30	\$13,916	\$13,916	\$0	\$0	\$0	0	0	3	0	0	5	25	\$100	1.00	\$0	\$691	0.00		
23804	BARFIELD	STP-130(102)RR	RR		CROSSING IMPR & RR SIGNALS	4											END CORR PROJ. INST. FED. MTD FLASH SIG. W/ GATE ARM @ SLOC. MANLINE. PROJ. NO. 1006-07. 56579M/56587U/56597R/56597S/56597L/56597C/56597D/56597E	LS30	\$91,260	\$91,260	\$0	\$0	\$0														
24020A	BLAINE	STP-100(090)RR	RR		CROSSING IMPR & RR SIGNALS	5											NEAR EAGLE CITY SIGNALS PROJ. INSTALL FED. MTD FLASHLIGHTS SIGNS W/ GATE ARMS. & CONCRETE CROSS ON SH-59 W/ FARMAL SYS INC. (ARR.)	LS30	\$25,808	\$25,808	\$0	\$0	\$0														
24030A	HOWA	STP-130(144)RR	RR		CROSSING IMPR & RR SIGNALS	5											INSTALL MTD FLASHLIGHTS SIGNS W/ GATE ARMS. CONCRET CROSS SAFE ON SH-19. W/ GRANBELL SYS INC. (ARR.) (DOT PROJECT #47228)	LS30	\$194,336	\$194,336	\$0	\$0	\$0														
24030A	DUSTER	MG-004-21(8025)TR	TR	IS04	CABLE BARRIER	5		4-19-07	5-7-07	5-15-07	10-30-07	7-17-09	2	5.47	9.01	3.54	NO INSTALLATION OF LONG SIGNAL AT HATHAWAY RD. EXTEND EAST 3/8 MI TO RED WHEAT DR. IN CLUSTER CO.		\$365,326	\$365,326	\$0	\$0	\$0	3	8	14	3	13	10	5	25	\$50	3.53	\$2,101,200	\$2,5718	\$1.70	
24072A	IRVING	MG-010(10)TR	TR	US89	CABLE BARRIER	2		5-20-07	10-8-07	10-26-07	1-7-08	4-20-09	2	0.00	4.11	4.08	US-66 MEDIUM BARRIER PROJECT. BEGIN AT RED WHEAT DR. IN CLUSTER CO.		\$1,276,356	\$1,276,356	\$0	\$0	\$0	3	8	22	1	2	8	5	25	\$50	4.00	\$7,507,360	\$94,443	92.69	
24090A	CLEVELAND	MG-004-11(07)08TR	TR	IS04	CABLE BARRIER	3		8-16-07	9-10-07	10-20-07	6-10-08	1-21-09	34	2.60	5.01	2.41	44 NEAR BARRIER PROJ. FROM MP 11.0 TO 15.0		\$60,877	\$60,877	\$0	\$0	\$0	4	10	24	1	14	36	5	25	\$50	2.40	\$2,504,480	\$56,666	44.95	
24090A	OKLAHOMA	MG-004-11(08)05TR	TR	IS04	CABLE BARRIER	4		5-14-07	7-16-07	8-9-07	12-2-07	5-2-08	7	5.38	10.38	4.99	44 NEAR BARRIER PROJ. FROM MP 11.0 TO 15.0		\$522,715	\$522,715	\$0	\$0	\$0	8	9	20	9	61	211	5	25	####	4.64	\$8,800	\$56,666	\$4.44	
24030A	OKLAHOMA	MG-004-11(08)15TR	TR	IS04	CABLE BARRIER	4		8-16-07	9-10-07	10-20-07	4-23-08	8-31-08	57	24.00	43.81	19.81	44 NEAR BARRIER PROJ. FROM MP 11.0 TO 15.0		\$26,354	\$26,354	\$0	\$0	\$0	11	112	407	14	127	307	5	25	\$50	5.45	\$11,596,000	\$43,637	\$74.50	
24040A	KAY	MG-005-4(0222)TR	TR	IS05	CABLE BARRIER	4		5-17-07	6-4-07	7-9-07	11-26-07	6-5-08	26	13.13	19.13	5.99	56 NEAR BARRIER PROJ. FROM MP 10.0 TO 27.0		\$84,036	\$84,036	\$0	\$0	\$0	1	3	12	0	1	10	5	25	####	5.97	\$2,391,940	\$53,516	35.91	
24060A	PANHUE	STP-159(08)SS	SS	US84	CABLE BARRIER	8		7-19-07	8-5-07	8-30-07	10-3-07	8-27-09	6				US-64 MEDIUM BARRIER PROJ. @ JCT. OF US-64/SH-48 EXTEND SIGNALS W/ GATE ARM @ SLOC. MANLINE. PROJ. NO. 1006-07. LATE ADD BY TRAFFIC		\$1,272,591	\$1,272,591	\$0	\$0	\$0														
24070A	POTTAWATOMIE	MG-004-5(07)173		IS04	CABLE BARRIER	3		6-14-07	7-16-07	8-10-07	9-4-07	4-1-09	46	0.00	13.15	13.00	40 REG @ OKLAHOMA CL & EXTEND BARRIER. (ADD TO 07.07. LATE ADD BY TRAFFIC)		\$1,023,626	\$1,023,626	\$0	\$0	\$0	6	39	102	9	39	172	5	25	\$50	13.00	\$5,034,240	\$73,997	\$9.04	
24060A	KAY	STP-180(140)RR	RR		CROSSING IMPR & RR SIGNALS	4											NEAR NETWORK SIGNAL PROJ. INSTALL FED. MTD FLASHLIGHTS SIGNS W/ GATE ARMS. CONCRET CROSS ON REDWOOD ST. W/ FARMAL SYS INC. (ARR.) (DOT PROJECT #47228)	LS30	\$144,010	\$144,010	\$0	\$0	\$0														
24070A	EGOUYAH	STP-180(173)RR	RR		CROSSING IMPR & RR SIGNALS	1											SULLYWAY SIGNAL PROJ. INSTALL OF FLASHLIGHTS SIGNS W/ GATE ARMS. CONCRET CROSS ON REDWOOD ST. W/ FARMAL SYS INC. (ARR.) (DOT PROJECT #47228)	LS30	\$57,945	\$57,945	\$0	\$0	\$0														
241005	EGOUYAH	MG-004-6(08)39TR	TR	IS04	CABLE BARRIER	1		6-14-07	7-16-07	8-9-07	9-4-07	5-30-09	23				40 REG @ MILEPOST 3195 A/EVY EAST TO MILEPOST 3195 B/EVY EAST		\$400,500	\$400,500	\$0	\$0	\$0														
24100A	TULSA	MG-010(10)SS	SS	US84	CABLE BARRIER	8		6-14-07	7-16-07	8-9-07	9-4-07	5-30-09	23				US-66 MEDIUM BARRIER PROJ. AT SH-1518 EAST TO SH-97 CABLE BARRIER. (ADD TO 07.07. LATE ADD BY TRAFFIC)		\$78,500	\$78,500	\$0	\$0	\$0														
241005	TULSA	MG-010(10)SS	SS	US84	CABLE BARRIER	8											US-64/US-4129/SH-15 MEDIUM BARRIER PROJ. AT SH-1518 EAST TO SH-97 CABLE BARRIER. (ADD TO 07.07. LATE ADD BY TRAFFIC)		\$41,211	\$41,211	\$0	\$0	\$0														





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202016	CARTER	STPY-108(1)Q1/UT	UT	SH-59	UTILITIES	7	2008						4				SH-59 BEGIN AT END OF LAKE EAST 5 1/4 OF ADVANCE EXTEND EAST 1/2 MILE TO RIVER ROAD WEST OF US-59	LSSE	\$279,968	\$0	\$0									Project Not in Traffic Engineering Division								
202015	MONTOUSH	STPY-146C(85)U	UT	SH-536	UTILITIES	1	2008						6	16.66	17.47	0.56	EXTEND EAST 0.56 MILES IN CHECOTAH UT FOR 20291(84)	LS30	\$36,048	\$0	\$0									Project Not in Traffic Engineering Division								
202016	MONTOUSH	STPY-146C(83)RW	RW	SH-536	RIGHT OF WAY	1	2008						6	16.66	17.47	0.56	EXTEND EAST 0.56 MILES IN CHECOTAH UT FOR 20291(84)	LS30	\$656,000	\$0	\$0									Project Not in Traffic Engineering Division								
203035	MURRAY	STPY-150C(84)RW	RW	SH-770	RIGHT OF WAY	7	2009						36	0.00	1.80	1.80	FALLS CREEK ASSEMBLY NEW ALIGNMENT RW FOR 20303(84)	LS30	\$119,000	\$0	\$0									Project Not in Traffic Engineering Division								
203036	MURRAY	STPY-150C(84)UT	UT	SH-770	UTILITIES	7	2009						36	0.00	1.80	1.80	FALLS CREEK ASSEMBLY NEW ALIGNMENT UT FOR 20303(84)	LS30	\$39,500	\$0	\$0									Project Not in Traffic Engineering Division								
208105	PREEK	BRFY-119C(108)RW	RW	SH-116	RIGHT OF WAY	8	2008						10	11.16	11.20	0.01	EAST OF SH-49 RW FOR 2081(84) SMC-8020	LS30	\$37,000	\$0	\$0									Project Not in Traffic Engineering Division								
209141	WAGNER	BRFY-172B(149)		SH-72	CROSSING IMPR & RR SIGNALS	1	2008						26	7.13	7.33	0.20	SH-72 BRIDGE AND SHOVEL AT JCT SH-51 IN DOWEL PARK FORCE ACCOUNT	LS30	\$173,828	\$1,700,000	\$0									Project Not in Traffic Engineering Division								
209105	CLEVELAND	STPY-114C(113)RW	RW	US-77	RIGHT OF WAY	3	2008						4			5.79	US-77 FROM 1/8 MI NORTH OF SH-36 NORTH 3/4 MI TO MCQUIRE ROAD IN WIBLE (4 IN UNDIVIDED) RW FOR 209107(81)O	LSSE	\$3,105,000	\$0	\$0									Project Not in Traffic Engineering Division								
209106	CLEVELAND	STPY-114C(113)UT	UT	US-77	UTILITIES	3	2008						4	4.05	9.80	5.79	US-77 FROM 1/8 MI NORTH OF SH-36 NORTH 3/4 MI TO MCQUIRE ROAD IN WIBLE (4 IN UNDIVIDED) UT FOR 209107(81)O "REVISED 5/22/2007"	LS30	\$922,400	\$0	\$0									Project Not in Traffic Engineering Division								
209111	CLEVELAND	STPY-114C(224)EC	EC	US-77	PLANNING	3	2008						4	7.30	11.00	3.78	MILES FROM LEXINGTON TO NRG LECT-1157/6.86 FOR 209107(81)O	LS30	\$1,000,000	\$0	\$0									Project Not in Traffic Engineering Division								
215404	OKLAHOMA	ITSY-072D(058)IT	IT	N/A	SAFETY IMPROVEMENT	4	2008		11-15-07	12-1-07	14-08	8-15-09					VARIOUS COUNTIES DIVISIONS IV & V IS INTERSECTION PROJECT "A" ITI"	6240	\$38,818	\$912,332	\$0									Relevant Crash Data Cannot Be Isolated								
220034	TULSA	STP-172D(009)RR	RR	RAILROAD SIGNALS		8	2008										TULSA SIGNAL PROJ AT LEWIS AVE RW THE SOUTH KANSAS AND OKLAHOMA RAILROAD (ARD007408966E)	LS30	\$307,947	\$187,752	\$0									Project Not in Traffic Engineering Division								
230274	TULSA	STP-172D(019)RR	RR	RAILROAD SIGNALS		8	2008										TULSA SIGNAL PROJ AT APACHE AVE W/ THE SOUTH KANSAS AND OKLAHOMA RAILROAD CO. (ARD007408966E)	LS30	\$205,484	\$184,938	\$0									Project Not in Traffic Engineering Division								
230304	PAYNE	HSIPY-160B(105)TR	TR	SH-51	TRAFFIC SIGNALS	4	2008		6-19-08	6-26-08	9-15-08	11-30-08	18	16.34	16.38	0.04	SH-51 WEST END ST AND MARQUEE ST INTERSECTION TRAFFIC SIGNALS	LS30	\$84,173	\$64,173	\$0			1	1	0	0	5	25	\$200	1.00	\$2,596.80	\$42,075	6.153				
230304	PUSHMATAHA	HSIPY-164B(009)TR	TR	US-271	TRAFFIC SIGNALS	2	2008		1-17-08	11-1-07	12-31-07	8-18-08	2	5.14	5.14		US-271 SH-3 TRAFFIC ACTUATED SIGNALS (AND TO DO LATE ADD BY TRAFFIC)	LS30	\$24,141	\$24,141	\$0			0	0	1	0	1	5	25	\$200	1.00	\$0	\$15,188	0.00			
2371604	WASHINGTON	HSIPY-174A(048)TR	TR	US-75	TRAFFIC SIGNALS	8	2008		10-18-07	11-5-07	12-3-07	2-28-09	21	19.45	19.45	0.00	TRAFFIC SIGNALS AT US-75 WASHINGTON BLVD. & SOUTHPORT CAMELOT TR (ARD007410523) TO 10-27 UTILITY LINES 7525 SMC	LS30	\$172,337	\$172,337	\$0			0	0	0	0	5	25	\$200	1.00	\$0	\$11,232	0.00				
238604	PEROKEE	HSIPY-111A(107)TR	TR	SH-51	TRAFFIC SIGNALS	1	2008		10-19-07	11-1-07	12-17-07	4-29-08	12	18.68	18.68	0.00	INTERSECTION TRAFFIC SIGNALS SH-51 AND HAWKINS RD. IN TALEQUOH	LS30	\$144,286	\$136,036	\$0			0	0	7	8	1	1	5	25	\$200	1.00	\$3,022.80	\$8,168	405.13		
239104	PREEK	STP-115D(140)RR	RR		CROSSING IMPR & RR SIGNALS	8	2008										SH-51 RW CROSS SIGNAL INSTAL FEE (AR-DOT) CENTER LINE RAILLINE STILL WATER CENTRAL RAIL MAINLINE ARR-DOT	LS30	\$69,276	\$511,445	\$0									Project Not in Traffic Engineering Division								

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242704	OKLAHOMA	STP-1552 (60) RR	RR		CROSSING IMPR & RR SIGNALS	4	20B										OKC SIG SURF PROJ. INSTALL PED MNT FLASH LITES SIG W/ GATE ARMS & MNT FLASH LITES SIG W/ PORTLAND CEMENT CONCRETE CURB (144'-200' F&S) (247)	L330	\$219,370	\$197,433	\$0																						
240705	MARFA	SPY-102C (110) RW	RW	US-64	RIGHT OF WAY	6	20B										US-64 OVER TWIN SPINGS CR. 1.6 MI (200) (24)	L330	\$69,000	\$69,000	\$0																						
242704	CARTER	MG-0035 (114) 03 TR	TR	US-35	CABLE BARRIER	7	20B										US-35 OVER TWIN SPINGS CR. 1.6 MI (200) (24)	L330	\$63,300	\$63,300	\$0																						
241204	BECHAM	MG-0002 (138) 03 TR	TR	L-40	CABLE BARRIER	5	20B										US-64 OVER TWIN SPINGS CR. 1.6 MI (200) (24)	L330	\$48,124	\$500,027	\$0																						
248404	TULSA	STP-1720 (67) RR	RR		CROSSING IMPR & RR SIGNALS	8	20B										TULSA SIG PROJ. INSTALL CANTILEVER MNT FLASH LITES SIG W/ GATE ARMS SIG W/ PORTLAND CEMENT CONCRETE CURB (144'-200' F&S) (247)	L330	\$277,977	\$205,178	\$0																						
246504	PREEK	HSIP-115A (168) TR	TR	SH-66	SAFETY IMPROVEMENT	8	20B										SH-66 INSTALLATION AN EMERGENCY FORCE SIG SYS ON SH-66 ADJACENT TO INTERSECTION WITH THE CITY OF SOKALA	L330	\$54,881	\$54,881	\$0																						
242504	LEFLORE	HSIP-140A (158) TR	TR	US-59	SAFETY IMPROVEMENT	2	20B										US-59 & WELLS BLVD INTERSECTION. INTERSECTION SHIP ALI NE IN SHIP LPA (752.5 SMC)	L330	\$149,341	\$149,341	\$0																						
253304	PREEK	HSIP-115C (171) TR	TR	SH-97	SAFETY IMPROVEMENT	8	20B										INSTALL THERMO SIGNAL SYS W/ POLES W/ STARS, ALUMINUM RAILS AT INTERSECTION SHIP ALI NE IN SHIP LPA (752.5 SMC)	L330	\$109,668	\$109,668	\$0																						
253004	CLEVELAND	STPG-114C (67) TR	TR	SH-37	STRIPING & PAVEMENT MARKING	3	20B										PAVEMENT MKGS. SANTA FE AVE. E 3.0 MI TO SUNTLINE IN CLEVELAND CO.	L330	\$43,330	\$43,330	\$0																						
253005	ROGERS	STPG-168B (65) TR	TR	SH-167	FORCE ACCOUNT	8	20B										SH-167 FROM I-44 N. 5.0 MI. TO SH-266	L330	\$36,000	\$36,000	\$0																						
253607	TULSA	STPG-172A (63) TR	TR	US-64	STRIPING & PAVEMENT MARKING	8	20B										US-64 FROM TITHEIST, S. 4.0 MI. TO WELLS BLVD. IN TULSA	L330	\$70,266	\$70,266	\$0																						
255204	OKLAHOMA	ITSY-155E (647) TR	TR	N/A	SAFETY IMPROVEMENT	4	20B										STATEWIDE ITS OPERATIONS & MAINTENANCE INCLUDING UTILITIES (7-1-2007 THROUGH 6-30-2009)	L330	\$50,000	\$50,000	\$0																						
256704	OKLAHOMA	STP-1550 (63) RR	RR	R	CROSSING IMPR & RR SIGNALS	4	20B										ROBERTSON AVE SIG SURF IN IMMEDIATE VICINITY OF RR RR#6688	4C10	\$25,661	\$20,515	\$0																						
256704	OKLAHOMA	STP-1550 (64) RR	RR	R	CROSSING IMPR & RR SIGNALS	4	20B										RR, COUNCIL RD SIG SURF IN IMMEDIATE VICINITY OF RR RR#6675	4C10	\$25,661	\$26,702	\$0																						
256704	HITSBURG	STP-1610 (7) RR	RR	R	CROSSING IMPR & RR SIGNALS	2	20B										RR, ASHLAND RD SIG SURF NEAR MCLESTER TWP RR RR#007 #413028	4C10	\$68,750	\$151,876	\$0																						
257104	ADAR	STPG-107A (83) TR	TR	US-59	STRIPING & PAVEMENT MARKING	1	20B										US-59 INSTALL THERMO PLASTIC PAVEMENT MKGS. BEGON 0.24 MI. S OF JCT SH-108/21 N. 2.5 MI. S OF JCT SH-108/21 N. 2.5 MI. S OF JCT SH-65/40	L330	\$41,000	\$41,000	\$0																						
257004	BECHAM	STPG-108B (67) TR	TR	SH-6	STRIPING & PAVEMENT MARKING	5	20B										US-62 INSTALL THERMO PLASTIC PAVEMENT MKGS. BEGON 1.48 MI. E. S. OF JCT SH-65/40	L330	\$30,000	\$30,000	\$0																						
257204	BRADY	STPG-125A (170) TR	TR	US-62	STRIPING & PAVEMENT MARKING	7	20B										US-62 INSTALL THERMO PLASTIC PAVEMENT MKGS. BEGON 1.48 MI. E. S. OF JCT SH-65/40	L330	\$34,000	\$34,000	\$0																						
257304	BRADY	STPG-126C (171) TR	TR	US-51B	STRIPING & PAVEMENT MARKING	7	20B										US-51B INSTALL THERMO PLASTIC PAVEMENT MKGS. THROUGH SPRINGS 2.92 MI.	L330	\$34,000	\$34,000	\$0																						
257404	CARTER	STPG-110A (24) TR	TR	US-37	STRIPING & PAVEMENT MARKING	7	20B										US-37 THERMO PAINT MKGS. @ US-37 E. EXT. N. 2.5 MI. TO JCT. SH-156/SH-159 @ MAN & WASHINGTON EXT. N. 0.10 MI. TO BRIDGWAY EXT. W. 1.0 MI.	L330	\$74,000	\$74,000	\$0																						

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252504	MCURTAIN	HSIPY-156A (178) TR	TR	US-70	SAFETY IMPROVEMENT	2	2009	7-24-09	8-1-09	8-25-09	12-31-09	2-11-09	56	0.32	0.56	0.24	US-70 INSTALL SCHOOL ADVANCE WARNING SIGNS W/ FLASHING RED LIGHTS @ INTERSECTION OF US-70 & WARDEN RD. APPROX 1.0 MILE EAST OF WARDEN RD.	L330	\$18,449	\$18,449	\$0	\$0	0	1	1	0	0	3	5	25	\$100	1.00	\$316,460	\$1,281	247.11						
252424	USAGE	STPY-157B (152) 3R	3R	SH-69	RESURFACE	8	2009	5-15-09	8-1-09	8-25-09	9-2-09	1-21-09	26	0.00	5.38	5.38	US-70 WEST SIDE OF WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$977,686	\$977,686	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
241410	CLEVELAND	MY-2005-229B (112) TR	TR	US-36	TRAFFIC SIGNALS	3	2009	10-19-07	11-5-07	11-27-07	3-24-08	7-13-09	6	4.50	4.00	0.10	US-36 INSTALL TRAFFIC SIGNALS AT INTERSECTION OF US-36 & WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$25,200	\$25,200	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
091702	PANDOWN	MY-011H (009)		US-81	GRADE DRAIN & SURFACE	4	2009	2-1-09	1-22-09	2-11-09	3-16-09	6-7-10	8	2.37	4.80	2.43	US-81 FROM THE NORTH EDGE OF UNION CITY, NORTH 2.43 MI PARALLEL & RECOMMEND INSTALLATE ADD TO 01. 2P+ADHP	L330	\$8,850.175	\$2,656.926	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
094704	CARTER	STPY-018B (002)		US-70	GRADE DRAIN & SURFACE	7	2009	12-1-09	11-20-09	12-30-09	4-5-09	10-16-11	21	2.90	5.00	2.10	US-70 WEST SIDE OF WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$8,091.710	\$8,091.710	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
202304	BRADY	STPY-129B (057)		SH-69	GRADE DRAINING, BRIDGE & SURFACE	7	2009	12-1-09	11-20-09	12-30-09	1-16-09	4-12-10	36	0.87	3.82	2.95	SH-69 FROM APPROX 0.87 MILE EAST OF WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$8,665.541	\$8,665.541	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2371504	ROGERS	HSIPY-166C (186) TR	TR	SH-66	TRAFFIC SIGNALS	8	2009	10-1-09	9-17-09	10-30-09	2-11-10	7-21-10	4	0.00	0.10	0.10	SH-66 WEST PATTAUSE BLVD. & SH-66 WEST 1ST ST. IN CLOREMORE (P525 SMC)	L330	\$494.152	\$494.152	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2410006	EQUOYAH	MG-0040-4418 (026) TR	TR	I-40	CABLE BARRIER	1	2009	8-1-09	7-23-09	8-12-09	10-5-09	5-6-10	22	2.71	7.71	5.00	I-40 MEDIAN BARRIER BEG AT MILEPOST 29.00 ENDING EAST TO MILEPOST 28.00	0290	\$308.366	\$469.443	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2410004	PADDON	MG-0040-4418 (026) TR	TR	IS-90	CABLE BARRIER	7	2009						46			3.09	I-40 MEDIAN BARRIER PROJECT, FROM MILEPOST 11.08, ADD TO 10.01 AS PER TRAFFIC "AULT"		\$236.674	\$236.674	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
241504	PADDON	MG-0040-4417 (026) TR	TR	IS-90	CABLE BARRIER	7	2009						46			3.00	I-40 MEDIAN BARRIER PROJECT, FROM MILEPOST 11.08, ADD TO 10.01 AS PER TRAFFIC "AULT"		\$415.768	\$415.768	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
257604	JOHNSTON	HSIPY-156B (112) TR	TR	US-377	INTERSECTION SIGNALS & TRAFFIC SIGNALS	3	2009	4-1-09	4-23-09	5-16-09	8-15-09	11-10-09					INSTALL TRAFFIC SIGNS @ INTERSEC US-377 & WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$86.253	\$86.253	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
258104	POTAWATOMIE	HSIPY-163B (054) TR	TR	US-177	SAFETY IMPROVEMENT	3	2009	2-1-09	1-22-09	2-27-09	6-9-09	10-31-09					INSTALL TRAFFIC SIGNALS @ INTERSECTION OF US-177 & WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$117.974	\$117.974	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
258204	PADDON	STP-0802 (516) R	RR	R R	CROSSING IMPR & RR SIGNALS	7	2009									0.19	CROSSING PROJECT IN ANCHORAGE MI. APPROX 0.19 MILE WEST OF WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	0270	\$133.945	\$133.945	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
259104	USAGE	HSIPY-157B (198) TR	TR	US-59	SAFETY IMPROVEMENT	8	2009	12-1-09	11-20-09	12-31-09	3-26-09	6-11-09	36	0.00	0.00	0.00	US-59 INSTALL SCHOOL ZONE ADVANCE WARNING SIGNS W/ FLASHING RED LIGHTS @ INTERSECTION OF US-59 & WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$22,526	\$22,526	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
262604	BECHAM	HSIPY-105A (178) TR	TR	I-40B	TRAFFIC SIGNALS	5	2009	4-1-09	4-23-09	5-16-09	7-7-09	9-22-09	6	2.00	3.00	1.00	I-40B TRAFFIC SIGNALS AT MERRIT RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$200.031	\$200.031	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
262704	PANDOWN	MG-0040-4421 (25) TR	TR	IS-90	CABLE BARRIER	4	2009						5			2.00	I-40 FROM MILE 125 TO MILE 127 @ WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.		\$481.774	\$481.774	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
263404	OXFORD	HSIPY-156A (167) TR	TR	US-75	SAFETY IMPROVEMENT	1	2009	9-1-09	7-23-09	10-27-09	12-3-09	8-6-10					US-75 FROM MILE 125 TO MILE 127 @ WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$697.271	\$697.271	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
263404	MUSKOGEE	HSIPY-151B (194) TR	TR	Multiple	SAFETY IMPROVEMENT	1	2009	3-1-09	2-16-09	3-13-09	3-16-09	7-15-09					INSTALL HUMBLE STRIPS ALONG WARDEN RD. APPROX 1.0 MILE WEST OF WARDEN RD.	L330	\$63.438	\$63.438	\$0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



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267074	BARTER	HSIP-110N (221) TR	TR	I-36	STRIPING & PAVEMENT MARKING	7	2008		9-1-08	7-23-09	9-15-09	12-29-10	36	7.00	21.00	14.00	3.56 CARTER CO FROM MILE MARKER 31 TO 41 ON NORTH I-40 MULTILANE POLYMER PAVENT MARKING (ALENS)	LS30	\$245,438	\$17,100	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data													
267604	ROMANHOE	HSIP-116N (181) TR	TR	I-44	STRIPING & PAVEMENT MARKING	7	2005						46	0.00	8.25	8.25	2.24 MI FROM SH-36 NORTH 0.25 MI MULTILANE PAVEMENT MARKING (ALENS)	LS30	\$126,652	\$18,250	\$0	\$0		Relevant Crash Data Cannot Be Isolated													
267604	TULSA	HSIP-172B (470) TR	TR	SH-51	STRIPING & PAVEMENT MARKING	6	2008						86	5.20	19.40	5.20	SH-51 FROM SH-59 WEST 0.2 MILES (THERMOPLASTIC PAVEMENT MARKING)	LS30	\$136,000	\$11,000	\$0	\$0		Relevant Crash Data Cannot Be Isolated													
268404	STEPHENS	SP16-166F (172) TR	TR	Major	SAFETY IMPROVEMENT	7	2008		5-17-09	10-5-09	10-30-09	2-15-10	7-30-11				MULTIPLE LOCATIONS IN DAWSON DIVISION MULTIPLE DIVISIONS MULTIPLE LOCATIONS (MILLED RUMBLE STRIPS)	6090	\$233,086	\$233,086	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data													
268604	TULSA	SP16-172F (470) TR	TR	Major	SAFETY IMPROVEMENT	8	2008		9-18-09	10-5-09	10-23-09	3-15-10	5-17-11				SH-51 FROM APPROX 7.3 MILES EAST OF COMETA EXT EAST 2.8 MILE EXISTING (BARRIERS, RUMBLE STRIPS, ADD TO 10.0 MI. COAST ROAD (FERN))	6090	\$666,417	\$666,417	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data													
1000410	WAGONER	SP17-172B (019)		SH-51	BRIDGE & APPROACHES	1	2010						14	7.00	9.00	2.00	SH-51 FROM APPROX 7.3 MILES EAST OF COMETA EXT EAST 2.8 MILE EXISTING (BARRIERS, RUMBLE STRIPS, ADD TO 10.0 MI. COAST ROAD (FERN))	LS30	\$3,276,847	\$4,132,002	\$0	\$0		Project Not in Traffic Engineering Division													
188705	ROGERS	SP17-162C (272)		SH-88	GRADE DRAIN & SURFACE	8	2010						22	3.50	9.10	4.60	SH-88 FROM 3.5 MI NORTHWEST OF US-70 EXTEND NORTH 0.16 MILES SHEL PROJ. LS30	LS30	\$833,281	\$3,462,715	\$0	\$0		Project Not in Traffic Engineering Division													
202307	GRADY	SP17-126B (113)		SH-38	GRADE DRAIN & SURFACE	7	2010						36	0.00	0.97	0.97	SH-38 FROM APPROX 0.3 MILE EAST OF US-62 EAST 0.57 MILE (WIND RESURFACE & BRIDGE)	LS30	\$1,057,028	\$1,057,028	\$0	\$0		Project Not in Traffic Engineering Division													
241405	DOTTON	SP17-117C (059) RW	RW	SH-36	RIGHT OF WAY	7	2010						22	0.00	3.00	3.00	SH-36 RECONSTRUCTION ON OFFSET ALIGN FROM THE RAMPS OF I-44, NORTH TO US-70N, ROW FOR 241404	LS30	\$1,556,470	\$1,556,470	\$0	\$0		Project Not in Traffic Engineering Division													
242204	NOAR	SP17-101A (272)		US-59	GRADE DRAIN & SURFACE	1	2010		10-15-09	11-2-09	12-2-09	3-15-10	2-23-12	6	9.00	11.80	2.80	US-59 NORTH BOUND LINES ILLINOIS ROW NORTH OF MATTS	LS30	\$838,238	\$2,002,766	\$0	\$0		Project Not in Traffic Engineering Division												
242704	OKMULGEE	WH-314N (079)		US-975	CABLE BARRIER	1	2010		5-20-10	6-7-10	6-28-10	10-4-11	11			6.79	US-70 FROM APPROX 0.3 MILE NORTH OF US-70 NORTH NORTH 1/4 CABLE BARRIER	LS30	\$1,054,877	\$1,054,877	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data													
262004	BEAUMORE	HSIP-121A (138)		US-59	CABLE BARRIER	8	2010		12-17-09	1-11-10	1-15-10	2-22-10	8-9-10	4	6.50	10.00	3.50	CABLE BARRIER SH-88 FROM 0.5 MI OF ADAR CO W TO SH-10 INT & SH-10 FROM APPROX 0.2 MI NORTH SH-10 FROM SH-88 SHOULDER 2 MI "MULTI"	LS30	\$1,005,000	\$1,005,000	\$0	\$0		Project Not in Traffic Engineering Division												
262404	PAYNE	MG-0056-4233 (74) TR	TR	I-35	CABLE BARRIER	4	2010		5-20-10	6-7-10	7-2-10	8-9-10	4-14-11	26	7.11	12.11	5.00	CABLE BARRIER MP 174 TO THE PAYNEVILLE CAUTION NON-TRAFFIC	LS30	\$643,286	\$321,644	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data												
262704	HEMPHRE	HSIP-0040-9409-0031R	TR	IS-90	CABLE BARRIER	3	2010		6-17-10	7-5-10	7-29-10	11-15-10	5-2-11	3	0.07	10.07	10.00	10.00 CABLE MEDIUM BARRIER, MP 207 TO MP 209 AND 10.00 LB LATE ADD	LS30	\$669,447	\$669,447	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data												
263004	MONTOSH	HSIP-013N (123) TR	TR	US-69	CABLE BARRIER	1	2010		6-17-10	7-5-10	7-29-10	11-15-10	5-2-11	3	0.00	3.75	3.75	US-66 CABLE MEDIUM BARRIER FROM THE FITTSBURG ON NORTH TO US-66	LS30	\$669,527	\$669,527	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data												
263004	MCURTAIN	HSIP-115A (184) TR	TR	US-70	SAFETY IMPROVEMENT	2	2010		10-17-09	1-11-10	2-8-10	5-9-10	9-3-10				INSTALL TRAFF SIG @ INTERSEC US-70/US-259 WITH MEMORIAL & MAIN ST	LS30	\$101,004	\$101,004	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data													
263404	ROGERS	HSIP-116EA (238) TR	TR	SH-167	SAFETY IMPROVEMENT	8	2010		2-18-10	3-1-10	3-16-10	4-25-10	10-18-10				INSTALL TRAFF SIG @ INTERSEC SH-167 & ROLLINS ST IN GATOSIA	LS30	\$94,762	\$94,762	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data													
264004	OKLAHOMA	HSIP-159N (715) TR	TR	I-235	SIGNING	4	2010		10-15-09	11-2-09	11-30-09	2-7-10	8-31-10	42	0.00	2.94	2.94	SIGN REPAIR ALONG I-235 IN OK	LS30	\$303,668	\$303,668	\$0	\$0		Relevant Crash Data Cannot Be Isolated												
265704	CHOCTAW	HSIP-022N (190) TR	TR	US-70	SIGNING	2	2010		10-17-09	1-11-10	2-8-10	7-15-10	11-17-10	42	0.00	2.71	2.71	US-70 (HUGO BYPASS) REPLACEMENT OF SIGNS FOR US-271 NORTH TO US-70 FROM APPROX 10.00 TO 10.1258 FUNDING SLEES "MULTI"	LS30	\$200,864	\$200,864	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data												
265904	OTTAWA	HSIP-159C (168)		SH-10	CABLE BARRIER	8	2010		10-17-09	1-11-10	2-8-10	2-29-10	10-5-10	20	0.00	8.90	8.90	CABLE BARRIER FROM 0.0 MI NORTH OF SH-10 FROM APPROX 11.00 TO 11.1125 FUNDING SLEES "MULTI"	LS30	\$1,038,575	\$1,038,575	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data												
270304	WASHITA	MG-0040-21(1)06SS	SS	IS-90	CABLE BARRIER	5	2010		7-22-10	8-10-10	9-16-10	11-14-10	8-22-11	2	12.00	12.00	12.00 CABLE BARRIER FROM MILE MARKER 83 TO 91	LS30	\$1,524,497	\$1,524,497	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data													



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269104	WABE	MG-0054(201)190 TR	TR	US-85	CABLE BARRIER	4	2011	9/5/11	11/7/11	11/30/11	3/1/12	10/10/12	035	12.26		8.00	35' CABLE BARRIER, MP 190 TO MP 199	LSSE	\$1,072,664																		
269204	BECHAM	HSIP-1055(205) TR	TR	US-209	SCHOOL SIGNS	5	2011	9/21/11	11/7/11	11/29/11	3/12/12	3/12/12	056	3.50		0.25 ADVISE WARNING SIGNS WITH FLASHING BEACONS ON LADDER SURFACE (ADD TO 101, 102, 103, 104, 105)	LSSE	\$18,750																			
095610	POTTAWATOMIE	STPY-033C(22)			WIDEN & RESURFACE	3	2011						26	10.53	11.56	1.00	SH-1E FROM COUNTY ROAD 16W TO 100L, APPROX 2.50 MILE (SURFACE FOR PLAN REVISIONS)	LSSE	\$7,184,441	\$1,559,227	\$0																
111430	TULSA	STPY-172C(209)			PAVEMENT REHABILITATION	8	2011						66	0.30	6.25	5.99	SH-1E FROM 3.41 MILE EAST OF THE CREEK, JONES CREEK, APPROX 0.10 MILE TO 11-10, APPROX 2.50 MILE (SURFACE FOR PLAN REVISIONS)	LSSE	\$8,455,394	\$2,966,036	\$0																
203106	PAYNE	STPY-160B(166)			SURFACE	4	2011						6	0.87	3.72	2.86	SH-1E FROM NEW ALIGNMENT OVER APPROX 2.50 MILE (SURFACE FOR PLAN REVISIONS)	LSSE	\$4,613,134	\$4,612,134	\$0																
203108	PAYNE	STPY-160B(171)			SURFACE	4	2011						6	3.72	7.30	4.16	SH-1E FROM APPROX 3.72 MILE EAST OF 100L TO APPROX 4.0 MILE (SURFACE FOR PLAN REVISIONS)	LSSE	\$5,804,000	\$5,803,525	\$0																
200004	BECHAM	STPY-105A(200)			WIDEN & RESURFACE	5	2011						6	4.66	6.75	1.90	SH-1E FROM 1.90 MILE EAST OF PROMER ST TO APPROX 1.9 MILE TO 11-10, APPROX 1.9 MILE (SURFACE FOR PLAN REVISIONS)	LSSE	\$5,864,081	\$37,056	\$0																
230710	SEDOQUIAH	STPY-168B(224) EC	EC		PRELIMINARY ENGINEERING	1	2011						4	0.00	3.90	3.90	US-85 FROM US-64 NORTH 3.5 M TO APPROX 3.90 MILE (FOR TULL & ASSOCIATES)	LSSE	\$975,000	\$975,000	\$0																
245107	MOURTAIN	STPY-149A(199) EC	EC		PRELIMINARY ENGINEERING	2	2011						6	22.05	27.14	5.09	SH-1E FROM APPROX 5.09 MILE WEST OF 2475(504) TO APPROX 10.18 MILE (FOR 2475(504) PROJECT)	LSSE	\$1,075,100	\$1,036,411	\$0																
244605	WAGONER	STPY-172C(133) RW	RW		RIGHT OF WAY	1	2011						23	5.05	11.10	6.05	SH-1E FROM APPROX 6.05 MILE NORTH OF 2436(504) TO APPROX 12.10 MILE (FOR 2436(504) PROJECT)	LSSE	\$2,397,000	\$2,390,000	\$0																
244606	WAGONER	STPY-172C(134) UT	UT		UTILITIES	1	2011						22	5.05	11.10	6.05	SH-1E FROM APPROX 6.05 MILE NORTH OF 2436(504) TO APPROX 12.10 MILE (FOR 2436(504) PROJECT)	LSSE	\$2,031,800	\$2,000,000	\$0																
262424	PANOWAN	MG-0404(424) 111 TR	TR		CABLE BARRIER	4	2011	6/30/11	7/11/11	7/29/11	9/25/11	4/13/12	5	6.00	11.00	5.00	SH-1E FROM APPROX 5.00 MILE NORTH OF 111 TO APPROX 11.00 MILE (FOR 111 PROJECT)	LSSE	\$1,043,908	\$1,043,908	\$0																
263604	MCCLAIN	HSIP-0005(209) 981 TR	TR	US-36	CABLE BARRIER	3	2011	10/21/10	11/8/10	12/1/10	1/4/11	9/29/11	5	0.00	5.25	5.25	SH-1E FROM APPROX 5.25 MILE NORTH OF 981 TO APPROX 10.50 MILE (FOR 981 PROJECT)	LSSE	\$649,666	\$649,666	\$0																
263604	MCCLAIN	HSIP-0005(209) 981 TR	TR	US-36	CABLE BARRIER	3	2011	10/21/10	11/8/10	12/1/10	1/4/11	9/29/11	22	3.00	17.00	14.00	SH-1E FROM APPROX 14.00 MILE NORTH OF 981 TO APPROX 28.00 MILE (FOR 981 PROJECT)	LSSE	\$2,474,520	\$2,474,520	\$0																
267004	SEDOQUIAH	HSIP-0945(209) 261 TR	TR	US-40	CABLE BARRIER	1	2011	10/21/10	11/8/10	12/1/10	1/4/11	9/29/11	35	8.00	14.00	6.00	SH-1E FROM APPROX 6.00 MILE NORTH OF 261 TO APPROX 12.00 MILE (FOR 261 PROJECT)	LSSE	\$1,455,947	\$1,455,947	\$0																
267204	OKLAHOMA	MG-0005(209) 22 TR	TR	US-36	CABLE BARRIER	4	2011	7/21/11	8/1/11	8/19/11	1/3/12	10/15/12	15	9.00	12.00	3.00	SH-1E FROM APPROX 3.00 MILE NORTH OF 22 TO APPROX 6.00 MILE (FOR 22 PROJECT)	LSSE	\$891,603	\$891,603	\$0																
267404	CLEVELAND	HSIPY-114A(242) TR	TR	US-77	INTERSECTION MOD & TRAF SIGNALS	3	2011	9/15/11	10/3/11	10/20/11	2/5/12	12/31/13	44	0.42	0.42	0.00	SH-1E FROM APPROX 0.42 MILE NORTH OF 242 TO APPROX 0.84 MILE (FOR 242 PROJECT)	LSSE	\$1,598,457	\$1,598,457	\$0																
270004	MAJOR	STPG-147B(171)			SAFETY IMPROVEMENT	6	2011						16	15.03	15.13	0.10	SAFETY IMPROVEMENTS AT VARIOUS LOCATIONS (FOR 171 PROJECT)	LSSE	\$346,536	\$346,536	\$0																
270504	COMANCHE	MG-0044(1019) 537 TR	TR	US-44	CABLE BARRIER	7	2011	10/21/10	11/8/10	11/18/10	3/7/11	6/4/12	49	2.82	5.64	2.82	SH-1E FROM APPROX 2.82 MILE NORTH OF 537 TO APPROX 5.64 MILE (FOR 537 PROJECT)	LSSE	\$417,266	\$208,656	\$0																
270604	COMANCHE	MG-0044(1014) 542 TR	TR	US-44	CABLE BARRIER	7	2011	10/21/10	11/8/10	11/18/10	3/7/11	6/4/12	46	12.42	15.66	3.24	SH-1E FROM APPROX 3.24 MILE NORTH OF 542 TO APPROX 6.48 MILE (FOR 542 PROJECT)	LSSE	\$740,320	\$32,138	\$0																
271007	WAGONER	STPG-170A(174)			CROSSING IMPR & TRAF SIGNALS	1	2011						12	5.10	5.10	0.00	SAFETY IMPROVEMENT AT SH-170 & AVE (FOR 174 PROJECT)	LSSE	\$45,591	\$45,591	\$0																
270804	CLEVELAND	STPY-114A(200) TR	TR	US-77	TRAFFIC SIGNALS	3	2011	11/18/10	12/6/10	1/4/11	3/7/11	7/13/11					TRAFFIC SIGNALS AT US-77 AND FRANKLIN RD IN NORMAN	LSSE	\$69,715	\$69,715	\$0																



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279004	CARTER	MG-005-(169)027	TR		CABLE BARRIER	7	2011	6-30-11	7-11-11	8-1-11	8-18-11	8-17-12	56	2.56	19.24	16.77	1.56 CABLE BARRIER BEG APPROX 0.25 MI N. OF LOVE CANYON APPROX 1.67 MI TO APPROX 1.0 MI N. OF SH-53 (DEL FR 05-11, ADD TO 05-3-11, BID REJECT)	H01E	\$124,688	\$124,688	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
279004	LOVE	MG-005-(169)001	TR		TRAFFIC SIGNALS	7	2011	6-30-11	7-11-11	8-1-11	8-18-11	8-17-12	56	2.56	19.24	16.77	1.56 CABLE BARRIER BEG APPROX 0.25 MI N. OF LOVE CANYON APPROX 1.67 MI TO APPROX 1.0 MI N. OF SH-53 (DEL FR 05-11, ADD TO 05-3-11, BID REJECT)	H01E	\$124,688	\$124,688	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
280004	PANHOLAN	MG-006-(169)001	TR		CABLE BARRIER	4	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	14	10.00	10.00	0.00	0.0 INTERCHANGE FOR NB OFF-RAMP "A" WITH SH-53 (DEL FR 05-11, ADD TO 08-11, FUNDING ISSUES)	LSSE	\$306,691	\$306,691	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
280004	PANHOLAN	MG-006-(169)001	TR		CABLE BARRIER	4	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	14	10.00	10.00	0.00	0.0 INTERCHANGE FOR NB OFF-RAMP "A" WITH SH-53 (DEL FR 05-11, ADD TO 08-11, FUNDING ISSUES)	LSSE	\$306,691	\$306,691	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
280004	PANHOLAN	MG-011-(088)001	TR		CABLE BARRIER	4	2011	9-15-11	10-3-11	10-20-11	10-20-11	10-20-11	14	10.00	10.00	0.00	US-81 CABLE BARRIER FROM 5.0 MIS. N. OF SH-8 ON THE E. SIDE OF EL RENO (DEL FR 04-11, ADD TO 08-11, FUNDING ISSUES)	LSSE	\$108,476	\$108,476	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
280004	PANHOLAN	MG-005-(169)011	TR		CABLE BARRIER	4	2011	9-15-11	10-3-11	10-20-11	10-20-11	10-20-11	14	10.00	10.00	0.00	US-81 CABLE BARRIER FROM DOUGLAS FUNDING ISSUES	L2TR	\$129,231	\$129,231	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
280004	POTWATOMIE	SPY-1636 (65) 65	SS		INTERSECT MODIF	3	2011	7-21-11	8-1-11	8-25-11	10-17-11	6-15-12	12	1.47	1.45	0.02	SH-9 INTERSECTION SAFETY PROJECT (ADD TO 07-11, AS PER PROJECT MGMT "A" ITR)	LSSE	\$333,161	\$333,161	\$0			Project Not in Traffic Engineering Division													
280504	SEMOUVAH	MG-006-(169)022	TR		CABLE BARRIER	1	2011	9-15-11	10-3-11	10-20-11	10-20-11	10-20-11	26	4.50	7.50	3.00	300 MILE WARRER 32 EXTEND EAST 3 MI TO CABLE BARRIER ALONG I-40 BEG AT I-40 BEG AT CABLE BARRIER BEG 0.5 MI N. OF SH-53 (DEL FR 05-11, ADD TO 08-11, FUNDING ISSUES)	L2TR	\$570,000	\$570,000	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
281004	WAGONER	MG-013N (143) TR	TR		CABLE BARRIER	1	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	8	4.94	8.34	3.50	300 MILE WARRER 32 EXTEND EAST 3 MI TO CABLE BARRIER ALONG I-40 BEG AT I-40 BEG AT CABLE BARRIER BEG 0.5 MI N. OF SH-53 (DEL FR 05-11, ADD TO 08-11, FUNDING ISSUES)	H01E	\$570,000	\$570,000	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
281004	RYAN	MG-013N (144) TR	TR		CABLE BARRIER	2	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	3	0.00	9.50	9.50	US-66 BEG AT CHOCTAW RD EXTEND NORTH 0.5 MI TO BLUE RIVER	H01E	\$139,430	\$139,430	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
281004	RYAN	MG-013N (145) TR	TR		GUARDRAIL	2	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	2	0.00	11.03	11.03	US-66 BEG AT CHOCTAW RD EXTEND NORTH 0.5 MI TO BLUE RIVER	H01E	\$563,897	\$563,897	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
281004	MCLLAN	MG-005-(169)022	TR		CABLE BARRIER	3	2011	9-15-11	10-3-11	10-20-11	10-20-11	10-20-11	5	4.00	7.50	3.50	US-66 BEG AT CHOCTAW RD EXTEND NORTH 0.5 MI TO BLUE RIVER	L2TR	\$63,678	\$63,678	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
282005	POTWATOMIE	SPY-1636 (65) 3P	SP		RESURFACE	3	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	26	8.25	14.25	6.00	US-177 FROM 70 MI NORTH OF SH-53 NORTH 0.5 MI	LSSE	\$76,166	\$76,166	\$0			Project Not in Traffic Engineering Division													
283007	OKLAHOMA	SPY-1636 (65) EC	EC		PRELIMINARY ENGINEERING	4	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	12	0.00	0.00	0.00	ON-DIAMOND ENGINEERING SERVICES (EC-1070) THE BETHAM COMPANIES	LSSE	\$250,000	\$250,000	\$0			Relevant Crash Data Cannot Be Isolated													
283604	MCCURTAIN	HSIP-145A (194) TR	TR		SCHOOL SIGNS	2	2011	3-17-11	4-4-11	4-26-11	8-30-11	9-21-11	12	0.00	0.00	0.00	ADVANCE WARNING SIGNS WITH FLASHING BEACONS ON SH-3 NEAR DABEL DEL FR 02-11, ADD TO 03-11, AS PER TRAFFIC	LSSE	\$18,091	\$18,091	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
284604	SENNOLE	HSIP-167C (167) TR	TR		SAFETY IMPROVEMENT	3	2011	9-15-11	10-3-11	10-20-11	10-20-11	10-20-11	38	0.00	6.46	6.46	SH-53A INSTALL GUARDRAIL TERMINAL WITH SH-53A PARAPET WALLS ON EXISTING PARAPET WALLS AT SH-137 EXTEND EAST 1.87 MI	LSSE	\$513,996	\$513,996	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
284604	POTWATOMIE	HSIP-000-0418 (85) TR	TR		SAFETY IMPROVEMENT	3	2011	7-21-11	8-1-11	8-22-11	9-12-11	6-14-12	41	0.00	7.72	7.72	SH-53A PARAPET WALLS ON EXISTING PARAPET WALLS AT SH-137 EXTEND EAST 1.87 MI	H01E	\$100,036	\$100,036	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
284604	BECHAM	HSIP-105C (201) TR	TR		SAFETY IMPROVEMENT	5	2011	8-18-11	9-12-11	10-2-11	10-2-11	10-2-11	12	0.00	0.00	0.00	INSTALL RUMBLE STRIPS ALONG VARIOUS LOCATIONS IN BLAINE & BECHAM CORNER SH-91 (285) SH-52	LSSE	\$69,634	\$69,634	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
284604	TULSA	HSIP-172B (254) TR	TR		SAFETY IMPROVEMENT	8	2011	8-18-11	9-12-11	10-11-11	11-15-11	3-27-12	14	10.00	10.00	0.00	SH-91B JCT INSTALL GUARDRAIL & BECHAM CORNER SH-91 (285) SH-52	LSSE	\$143,462	\$143,462	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													
284804	ADDO	SPY-109B (258) TR	TR		SCHOOL SIGNS	7	2011	4-14-11	5-21-11	5-26-11	8-24-11	9-26-11	14	10.00	10.00	0.00	US-38 INITIAL SCHOOL ZONE ADVANCE WARNING SIGNS INTERSECTION WITH I-249	L2AR	\$17,305	\$17,305	\$0			Analysis Pending Availability of 5 Years of After-Crash Data													

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Job Price #	County	Project No.	Proj. Dist.	Highway	Work Type	Division	FRMA Auth.	Let Date	Award Date	Work Order Date	Work Start Date	Actual Comp Date	Control Section	Start Milepost	End Milepost	Length	Description	Fund Code	Project Title	Federal Funds	State Funds	Other Funds	Est. Before (3 yrs)	Est. After (3 yrs)	Est. Before (5 yrs)	Est. After (5 yrs)	Study Period	Service Life (yrs)	Maint Unit	Units / year	EUAB	EUAC	Actual B/C						
284604	COMANCHE	STP-115C (03) TR	TR		SCHOOL SIGNS	7		6-16-11	7-11-11	7-29-11	8-22-11	9-19-11	52	0.99	0.99	0.00	SCHOOL INSTALL SCHOOL ZONE ADVANCE WARNING SIGNS W/BEACONS IN GEORGETOWN, FR 04-11, ADD TO 06-11, BID REJECT "AUIH"	L2RR	\$15,481	\$12,266	\$0					Analysis Pending Availability of 5 Years of After Crash Data													
284604	LOVE	STP-143C (03) TR	TR		SCHOOL SIGNS	7		6-16-11	7-11-11	8-1-11	8-16-11	8-31-11	2	14.38	14.38	0.00	SCHOOL ZONE ADVANCE WARNING SIGNS W/BEACONS IN MARETTABLE, FR 04-11, ADD TO 06-11, BID REJECT "AUIH"	L2RR	\$16,682	\$13,026	\$0					Analysis Pending Availability of 5 Years of After Crash Data													
284804	CHEROKEE	HSIP-111F (13) TR	TR	Multiple	STRIPING & PAVEMENT MARKING	1											DIV 5 DIVISION WIDE PAVEMENT MARKING AT VARIOUS LOCATIONS	LSSE	\$54,000	\$54,000	\$0					Relevant Crash Data Cannot Be Isolated													
284604	BECKHAM	HSIP-109F (02) TR	TR	Multiple	STRIPING & PAVEMENT MARKING	5											DIV 5 DIVISION WIDE PAVEMENT MARKING AT VARIOUS LOCATIONS	LSSE	\$370,000	\$370,000	\$0					Relevant Crash Data Cannot Be Isolated													
284604	COMANCHE	HSIP-116F (04) TR	TR	Multiple	STRIPING & PAVEMENT MARKING	7											DIV 7 DIVISION WIDE PAVEMENT MARKING AT VARIOUS LOCATIONS	LSSE	\$175,000	\$175,000	\$0					Relevant Crash Data Cannot Be Isolated													
286104	OKMULGEE	HSIP-159F (06) IT	IT		SAFETY IMPROVEMENT	4							9	5.00	5.00	0.00	DYNAMIC MESSAGE SIGNS AT VARIOUS LOCATIONS	LSSE	\$74,248	\$62,026	\$0					Relevant Crash Data Cannot Be Isolated													
286104	TULSA	HSIP-172F (50) IT	IT		SAFETY IMPROVEMENT	8							66	1.50	1.51	0.00	DYNAMIC MESSAGE SIGN TULSA AT FUND 38A, TURKISH FUNDS	LSSE	\$1,157,448	\$717,616	\$0					Relevant Crash Data Cannot Be Isolated													
286104	MCCLAIN	STP-144A (19) TR	TR		SCHOOL SIGNS	3		4-14-11	5-21-11	5-26-11	8-26-11	9-15-11	4	12.00	12.00	0.19	INSTALL INTERMEDIATE SCHOOL ZONE SIGNS AT VARIOUS LOCATIONS	L2RR	\$15,038	\$12,026	\$0					Analysis Pending Availability of 5 Years of After Crash Data													
286304	SEMOLE	SECT17-459 (19) SS	SS		INTERSECT MODIF	3							2	6.91	7.73	0.82	INSTALLATION OF PAVEMENT MARKINGS AT INTERSECTION OF I-75/20 @ JCT WITH N. KOLMAR (PORTSMAN LAKE RD) (0407)	LSSE	\$1,057,300	\$319,256	\$0					Project Not in Traffic Engineering Division													
286404	CLEVELAND	IMG-303S-2(19) 1/4 TR	TR		STRIPING & PAVEMENT MARKING	3							6	5.20	5.41	4.23	ALONG 1/4 FROM MM 114 EXTEND NORTH TO MM 118 LATE ADD TO 02-11, AS PER TRAFFIC	LOTE	\$37,261	\$37,261	\$0					Relevant Crash Data Cannot Be Isolated													
287004	CHEROKEE	HSIP-111A (13) TR	TR	SH-51	TRAFFIC SIGNALS	1		9-15-11	10-31-11	10-29-11	11-12-11	5-14-12	12	17.60	17.50	0.10	TRAFFIC SIGNAL SYSTEM AT INTERSECTION OF SIGNAL WEST 4TH ST LATE ADD TO 05-11, AS PER TRAFFIC	LSSE	\$129,231	\$96,026	\$0					Analysis Pending Availability of 5 Years of After Crash Data													
292607	OKMULGEE	HSIP-259E (02) IT	IT		SAFETY IMPROVEMENT	4		10-31-11									STATEWIDE TRS OPERATIONS & MAINTENANCE INCLUDING INTERSECTION	LSSE	\$500,000	\$500,000	\$0					Project Not in Traffic Engineering Division													
287404	JACKSON	MC-125C(21)			CHIP SEAL	4		12-1-11									RAILROAD SIGNAL SURFACE IN EL RENO AT 27TH ST, E WOODSON ST, RADO RD	LSSE	\$121,056	\$100,076	\$0					Project Not in Traffic Engineering Division													
288104	BOYD	STP-258B (03) RR	RR		CROSSING IMPR & RRR SIGNALS	7		12-15-11									SIGNALS IN CHICKSOB	LSAE	\$22,216	\$28,026	\$0					Project Not in Traffic Engineering Division													
293004	OKMULGEE	STP-255E (01) RR	RR		CROSSING IMPR & RRR SIGNALS	4		12-15-11									CONTINUED OPERATION OF THE STATEWIDE OLA/MORAL ASSESSMENT JUNCTION AND SIGNAL PROJECT IN OKMULGEE	LSAE	\$160,272	\$160,272	\$0					Relevant Crash Data Cannot Be Isolated													
287504	STEPHENS	STP-160D (04) RR	RR		RAILROAD SIGNALS	7		12-20-11									SIGNAL PROJECT IN OKMULGEE	LSSE	\$212,730	\$191,457	\$0					Project Not in Traffic Engineering Division													
241805	INCLIN	RRF-147C(12)		US-177	BRIDGE & APPROACHES	3		1-10-12									STILLWATER CENTRAL RR FORCE ACCOUNT WORK FOR RR SIGNATURE PROJ. ON US-177 NEAR WARREN, ARBODD NO 188 RR, WP 500 (UNLIMITED) OF	LSSE	\$415,000	\$415,000	\$0					Project Not in Traffic Engineering Division													
293004	BOYD	STP-226C (03) RR	RR		CROSSING IMPR & RRR SIGNALS	7		4-3-12									MINNEAPOLIS SIGNAL SURFACE AT BELL ST WITH UNION PACIFIC RAILROAD	LSAE	\$210,016	\$191,715	\$0					Project Not in Traffic Engineering Division													

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268004	NOVA	STP-2030-04HRR	RR		CROSSING IMPR & RR SIGNALS	2	2012	44-12										RAILROAD SIGNAL/SURFACE AT VENTA ALLER RD NEAR ATOVA WITH UNION PACIFIC RAILROAD	LSSE	\$55,946	\$30,256																			
268004	NOVA	STP-1010-05HRR	RR		RAILROAD SIGNALS	1	2012	410-12										STILLWELL AT SOUTH 3RD ST WITH KANSAS CITY SOUTHERN RAILWAY CO	LSSE	\$41,992	\$217,426																			
242004	MAJOR	BRFY-147C(12)	SH-59		BRIDGE & APPROACHES	6	2012	412-12										SH-56 OVER INDIAN CREEK APPROX. 5.7 MILE NORTH OF JCT SH-99/SH-84 DEL FR ADD TO 08-12, 16 PER PROJ. MGMT.	LSSE	\$1,200,000	\$1,200,000																			
268004	STEPHENS	STP-2630-04HRR	RR		CROSSING IMPR & RR SIGNALS	7	2012	430-12										INDUCAN CROSSING IMP & RR SIGNAL PLATON, BOSS DARG & SPRUCE WILSON PACIFIC RAILROAD CO	LSSE	\$729,516	\$555,666																			
268004	TULSA	STP-2720-02HRR	RR		CROSSING IMPR & RR SIGNALS	8	2012	430-12										TULSA BROAD EAST AVE SIGNAL SURFACE PROJECT SIGNALS WIGWAG ARMS & PREDICTION CIRCUITRY WILSON PACIFIC RAILROAD CO	LSSE	\$373,775	\$336,405																			
210304	OSAGE	HSFP-157C(06)	SH-19		BRIDGE & APPROACHES	8	2012	5-12										SH-1E OVER LOST MAN CREEK, APPROX 2.0 MILES NORTH OF JCT OF SH-18/US-69	LSSE	\$62,116	\$62,116																			
268004	PAYNE	HSFP-0256-(4/06)170	US55		CABLE BARRIER	4	2012	64-12	7-19-12	8-6-12	8-24-12	10-17-12	10-30-13					CABLE BARRIER ALONG I-35 REGION AT MILE MARKER 170 EXTEND NORTH 4 MI IN Payne Co. IN Osage Co. BEGIN AT MILE MARKER 160 EXTEND EAST 17	LSSE	\$41,946	\$41,946																			
268104	KOWATA	STP-2630-04HRR	RR		CROSSING IMPR & RR SIGNALS	8	2012	7-12										NEAR NOWATA INSTALL SIGNALS WIGWAG ARMS UTILIZING PREDICTION CIRCUITRY WILSON PACIFIC RAILROAD CO	LSSE	\$79,676	\$251,704																			
210304	BECKHAM	BRFY-105C(06)SS	SS	SH-152	BRIDGE & APPROACHES	5	2012	84-12										US-37 OVER SWEETWATER CREEK & OVERFLOW APPROX 1.5 MILE EAST OF THE TEXAS SIL ALSO ROGER MILLS COUNTY	LSSE	\$4,300,028	\$1,203,028																			
270205	WOODS	SSP-276C-004JSS	SS	US-381	INTERSECTION MODIFICATION	6	2012	83-12										US-37 @ SH-14 IN THE CITY OF WARDEN (INTERSECTION 0003) ALSO FROM THE BANKS OF 144 NORTH TO US-70W (RR FUNDS INCLUDED) DEL 06-12, ADD 09-12, UTILITY SALES VALUE OF \$4,384,620	LSSE	\$2,000,000	\$2,000,000																			
241404	COTTON	STPY-117C(09)	SH-36		GRADE DRAIN & SURFACE	7	2012	84-12										US-36 OVER BIG CREEK APPROX 1.5 MILES WEST OF SH-36A-50	LSSE	\$2,342,301	\$2,342,301																			
231004	KOWATA	BRFY-153C(14)	SH-28		BRIDGE REHABILITATION	8	2012	84-12										US-36 FROM THE ATOVA CLINE NORTH MARKING	LSSE	\$84,000	\$84,000																			
268404	OSAGE	STPG-017N(226)TR	TR	US975	STRIPING & PAVEMENT MARKING	3	2012	81-12	/									US-36 OVER AR CREEK, APPROX 7.7 MILES NORTH OF JCT US-69/US-59	LSSE	\$141,000	\$141,000																			
268404	MUGHES	STPG-132C(136)TR	TR	SH-009	STRIPING & PAVEMENT MARKING	3	2012	81-12	/									SH-2E OVER BIG CREEK APPROX 1.5 MILES WEST OF SH-28A-50	LSSE	\$293,356	\$293,356																			
210604	BITTWA	BRFY-158C(07)	US-69		BRIDGE & APPROACHES	8	2012	82-12										US-66 OVER AR CREEK, APPROX 7.7 MILES NORTH OF JCT US-69/US-59	LSSE	\$293,356	\$293,356																			
210104	MAYES	BRFY-142C(09)	SH-028		BRIDGE & APPROACHES	8	2012	10-20-11	11-7-11	11-11-12	2-6-12	9-24-13						SH-2E OVER BIG CREEK APPROX 1.5 MILES WEST OF SH-28A-50	LSSE	\$4,694,954	\$4,694,954																			
232704	ALFALFA	BRFY-102C(05B)	SH-008		BRIDGE & APPROACHES	6	2012	10-20-11	11-29-11	11-29-11	3-5-12							SH-48 OVER DEFTWOOD CR & FLOWNS US-64/SH-11E JCT NEAR INGERROLL	LSSE	\$2,459,946	\$2,459,946																			
242304	CARTER	STPY-110C(19)HP	HP	SH-053	GRADE DRAIN & SURFACE	7	2012	1-19-12	2-6-12	2-22-12	4-23-12	12-31-13						SH-55 BEG. 7.05 MILE OF US 64 AT THE W. END OF SH-11E AT NEAR RIVERMONEY MA. TO JCT SH-54 (04-02)	LSSE	\$1,411,616	\$1,411,616																			
261704	MOURTAIN	BRFY-145C(18)	SH-037		BRIDGE & APPROACHES	2	2012											SH-37 OVER THE RED RIVER MONEY (SAL TEXAS TO LET)	LSSE	\$3,857,695	\$1,945,256																			

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208004	PONOTOC	SPY+1628(02)P	P	SH004	BRIDGE & APPROACHES	3	2013		3-21-13	4-1-13	4-9-13	7-8-13		12				SH-36 OVER CANNON RIVER FROM 0.75 MI NORTH OF US-177 NORTH TO 7.5 MI SSE OF SH-36 OVER CANNON CREEK, 8.0 MILES EAST OF MARKETDALE, FROM 0.911, ADD TO 1.011, ROW ISSUES	MS30	\$3,000,000	\$3,000,000	\$0					Project Not in Traffic Engineering Division									
208404	LOVE	BFFY+1435(000)		SH022	BRIDGE & APPROACHES	7	2013		1-17-13	2-4-13	2-25-13	4-1-13		10				US-36 OVER FULTON CREEK, 4.7 MI. E OF CANNONVILLE, GA.	MS30	\$8,227,096	\$8,227,096	\$0					Project Not in Traffic Engineering Division									
2170104	MONTOUSH	SPY+1462(006)		US366	BRIDGE & APPROACHES	1	2013		9-19-13	10-7-13	10-20-13	2-18-14		6				SH-36 OVER FULTON CREEK, 4.7 MI. E OF CANNONVILLE, GA.	MS30	\$2,170,096	\$2,170,096	\$0					Project Not in Traffic Engineering Division									
218004	HAYES	SPY+1462(076)		SH028	BRIDGE & APPROACHES	8	2013		9-19-13	10-7-13	10-20-13	2-18-14		16				SH-36 OVER ROCK CREEK, APPROX. 4.5 MILES EAST OF JCT. OF SH-28/US-69	MS30	\$1,500,000	\$1,500,000	\$0					Project Not in Traffic Engineering Division									
219104	DITAMA	SPY+1962(077)		SH010	BRIDGE & APPROACHES	9	2013		9-19-13	10-7-13	11-21-13	1-13-14		26				SH-12 OVER STAMORE CREEK, APPROX. 0.3 MILES NORTH OF THE CLEARWATER COUNTY LINE	MS30	\$2,500,000	\$2,500,000	\$0					Relevant Cash Data Cannot Be Isolated									
230654	OKLAHOMA	SPY+1554(62)TR	TR		SAFETY IMPROVEMENT	4	2013							956				T.S. COMPONENTS DIMENSION 4) SFY 2008 (7/107 THRU 6/30/09)		\$65,000	\$65,000	\$0					Relevant Cash Data Cannot Be Isolated									
238604	WOODS	SPY+1760(1)59RR	RR	R R	CROSSING IMPR. & RR SIGNALS	6	2013											NEAR BELVA SIGSAFE PROJ. INSTALL RED MOUNT FLASHING LITES SIG. W/ SATELLITE @ CO. RD NS-2965 W/INBFS R/R. (INR001140404)	LS30	\$22,200	\$20,076	\$0					Project Not in Traffic Engineering Division									
253104	PANOWAN	SPY+1056(1407R)	TR	SH066	FORCE ACCOUNT	4	2013							6				SH-62 FROM GREGORY RD. 4.50 MI. E TO OKLAHOMA CANNON CREEK, 1.0 MI. W. OF I-49, FORCE ACCT.	LS30	\$64,128	\$64,128	\$1					Analysis Pending Availability of 5 Years of After Cash Data									
253105	PANOWAN	SPY+1056(146)TR	TR	SH004	FORCE ACCOUNT	4	2013							54				SH-4 FROM 69TH ST. 1.46 MI. N. TO I-49. THIS WILL BE A THERMOPLASTIC STRIPING PROJECT (DEL. R/O. 04.9). FORCE ACCT.	LS30	\$69,656	\$69,656	\$1					Analysis Pending Availability of 5 Years of After Cash Data									
253106	PANOWAN	SPY+1056(146)TR	TR	SH062	FORCE ACCOUNT	4	2013							37				SH-12 FROM I-49, N. 1.38 MI. TO SH-4 DEL. R/O. 04.9. FORCE ACCT.	LS30	\$65,750	\$65,750	\$0					Analysis Pending Availability of 5 Years of After Cash Data									
253107	PANOWAN	SPY+1056(147R)	TR	SH052	FORCE ACCOUNT	4	2013							36				SH-152 FROM SH-62, 5.0 MI. E. TO OKLAHOMA, THIS WILL BE A THERMOPLASTIC STRIPING PROJECT (DEL. R/O. 04.9). FORCE ACCT.	LS30	\$62,276	\$62,276	\$1					Analysis Pending Availability of 5 Years of After Cash Data									
253108	PANOWAN	SPY+1056(148)TR	TR	SH003	FORCE ACCOUNT	4	2013							22				SH-3 FROM KINGFISHER CUL. E. 16.10 MI. W. TO SH-4. THIS WILL BE A THERMOPLASTIC STRIPING PROJECT	LS30	\$209,380	\$209,380	\$0					Analysis Pending Availability of 5 Years of After Cash Data									
253109	PANOWAN	IMG-040-4(20)34TR	TR	IS040	FORCE ACCOUNT	4	2013							5				40 FROM I-49 TO I-49, 1.0 MI. TO I-49, FORCE ACCT.		\$156,642	\$156,642	\$0					Relevant Cash Data Cannot Be Isolated									
253110	PANOWAN	NHG-011N(030)TR	TR	US381	FORCE ACCOUNT	4	2013							8				US-81 FROM GRADY CUL. N. 3.40 MI. OF SH-152. THIS WILL BE A THERMOPLASTIC STRIPING PROJECT (DEL. R/O. 04.9). FORCE ACCT.		\$49,520	\$49,520	\$0					Relevant Cash Data Cannot Be Isolated									
263604	RAY	HSIP+026-1629(2)5TR	TR	IS036	CABLE BARRIER	4	2013		3-21-13	4-1-13	4-8-13	8-5-13	7-15-14	25				56 CABLE MEDIAN BARRIER, MP 215 TO MP 220		\$60,240	\$60,240	\$0					Analysis Pending Availability of 5 Years of After Cash Data									
264604	MUFALA	SPY+1022(144)		US084	BRIDGE & APPROACHES	6	2013		9-19-13	10-7-13	10-25-13	2-16-14		4				US-64 OVER EAST CLAY CR. 1.0 MI. EAST 1.00 OF SH-601, FROM I-13, ADD TO 0.813, UTIL. FORCE ACCT.	MS30	\$2,000,000	\$2,000,000	\$0					Project Not in Traffic Engineering Division									
2670104	INCULIN	SPY+1412(207)		SH066	RESURFACE & BRIDGE	3	2013		5-20-13	7-1-13	7-18-13	11-11-13		6				SH-66 OVER DEEP FORK NORTH OKLAHOMA, GA.	MS30	\$3,014,326	\$3,014,326	\$0					Project Not in Traffic Engineering Division									
270305	HARPER	SPY+330F(004)			SAFETY IMPROVEMENT	6	2013											INTERSECTION SIGNING AT VARIOUS LOCATIONS WITH REDUCTION IN SPEED LIMITS AT CROSSING CREEK 1.9 MI. N. OF JCT. 0.5 MI. 44.	LS30	\$371,256	\$371,256	\$1					Project Not in Traffic Engineering Division									
2703104	ROGERS	SPY+1862(040)		SH066	BRIDGE & APPROACHES	9	2013		9-19-13	10-7-13	10-22-13	1-15-14		2				US-36 OVER WYTHE CREEK, 6.0 MILES EAST OF CANNONVILLE COUNTY LINE	MS30	\$4,250,000	\$4,250,000	\$0					Project Not in Traffic Engineering Division									
272204	MONTOUSH	SPY+1462(138)		US366	BRIDGE & APPROACHES	1	2013							6				SH-36 OVER WYTHE CREEK, 6.0 MILES EAST OF CANNONVILLE COUNTY LINE	MS30	\$1,026,360	\$1,026,360	\$0					Project Not in Traffic Engineering Division									

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271604	TULSA	HSIP172N0403	TR	US075	INTERSECTION SIGNAL & TRAF SIGNALS	8	2013	7-25-13	8-12-13	10-4-13	2-12-14	52				0.00	TRAFFIC SIGNAL INTERSECTION IMPROVEMENTS I-75 NORTHBOUND OFF RAMP/PCRNA AVE IN TULSA (7525 SAC) DEL FR 08-12, ADD TO 04-13.	MS30	\$510,647	\$136,028	\$0	\$0												Analysis Pending Availability of 5 Years of After-Cash Data		
286604	POTTAWATOMIE	IMS-G04-5(01)9TR	TR	IS040	CABLE BARRIER	3	2013	4-18-13	5-6-13	8-29-13	6-30-14	41				7.240	CABLE BARRIER INSTALLATION ALONG I-4 EAST OF SH-89 WAGONERS BLVD	MS30	\$1,304,418	\$1,304,418	\$0	\$0											Analysis Pending Availability of 5 Years of After-Cash Data			
290104	MOBILE	HSIPG-006-1(48)03TR	TR	US035	CABLE BARRIER	4	2013	1-17-13	2-4-13	2-25-13	7-22-13	33				3.000	NORTHMOBILE EAST END NORTH 13 MI TO BLACKBERRY CREEK	MS30	\$591,417	\$591,417	\$0	\$0												Analysis Pending Availability of 5 Years of After-Cash Data		
292204	PERDUE	HSIPG-21HF003TR	TR	SH010	CABLE BARRIER	1	2013	4-18-13	5-6-13	5-22-13	7-30-13	10				9.9	CABLE BARRIER SH-10 FROM US-62 NORTH APPROX 5.0 MI & US-62 FROM SH- SOUTH APPROX 5.0 MI DEL FR 01-13.	MS30	\$301,754	\$301,754	\$0	\$0												Analysis Pending Availability of 5 Years of After-Cash Data		
294004	BARBER	HSIPG-29BC012TR	TR	SH016	SAFETY IMPROVEMENT	7	2013	1-17-13	2-4-13	2-25-13	3-21-13	22				0.00	INSTALL FLASHING WARNING SIGNS AT JCT 12-20 & US-78	MS30	\$83,236	\$83,236	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
300504	PHOENIX	HSIPG-20ZF003TR	TR	US069	SAFETY IMPROVEMENT	2	2013	3-21-13	4-1-13	4-9-13	6-10-13	8-8-13				0.00	DIVISION INSTALLATION OF RUMBLE STRIPS ALONG VARIOUS HWYS IN TULSA COUNTY (US-49, US-63 AND SIGNALMAINT)	MS30	\$69,553	\$69,553	\$0	\$0												Analysis Pending Availability of 5 Years of After-Cash Data		
300604	OKLAHOMA	HSIP125C152TR	TR	SH152	TRAFFIC SIGNALS	4	2013	2-21-13	3-1-13	3-19-13	6-17-13	52				0.00	SIGNALMAINT INSTALL TRAFFIC SIGNAL AT INT SH-152 & SH-59TH	MS30	\$138,350	\$110,686	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
300904	TOWNA	HSIP120A010TR	TR	US069	TRAFFIC SIGNALS	2	2013	2-21-13	3-4-13	3-15-13	6-17-13	2				0.00	TULSA INSTALL TRAFFIC SIGNAL, JCT US-6975, I-40 AND DEPOT RD	USSE	\$113,962	\$95,465	\$0	\$0												Analysis Pending Availability of 5 Years of After-Cash Data		
301004	TOWNA	HSIPG-20N015TR	TR	US069	CABLE BARRIER	2	2013	6-20-13	7-1-13	7-18-13	10-7-13	4				10.00	INSTALL CABLE BARRIER AT VARIOUS LOCATIONS ALONG US-69 IN TOWNA AND WY17069P RD.	MS30	\$1,536,946	\$1,536,946	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
301404	OWASHEE	HSIPG-21BN020TR	TR	SH007	CABLE BARRIER	7	2013	2-21-13	3-4-13	3-15-13	7-12-13	18				4.500	SH-7 INSTALL CABLE BARRIER BEGIN IN 4.5 MI EAST OF I-48/97 JCT EXTEND EAST TO STEPHENS CO.	MS30	\$914,628	\$914,628	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
301604	SEKOY	HSIP-226E-009TR	TR	SK017	SCHOOL SIGNS	7	2013	1-17-13	2-4-13	2-15-13	6-3-13	16				0.00	INSTALL ADVANCE WARNING SIGNS AT ALL SCHOOLS	MS30	\$16,843	\$16,843	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
301704	BARBER	HSIP-210A019TR	TR	SH42	TRAFFIC SIGNALS	7	2013	7-25-13	8-12-13	8-29-13	1-15-14	26				0.10	ANDREORE SH-42 & ROCKFORD RD TRAFFIC SIGNAL SYSTEM (7525)	MS30	\$254,917	\$168,287	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
301704	WASHINGTON	HSIPG-21ND041TR	TR	US075	CABLE BARRIER	8	2013					8				16.500	CABLE BARRIER INSTALL LISTS BEGIN 16.5 MI TULSA COL EXTEND NORTH 16.5 MI DEL FR 1413, ADD TO 05-13 PLANS	MS30	\$2,270,221	\$2,270,221	\$0	\$0													Project Not in Traffic Engineering Division	
302104	SEQUOYAH	HSIPG-20SF-003TR	TR	US075	SAFETY IMPROVEMENT	1	2013									0.00	US-78 IN SEQUOYAH CO. SIB IN WASKELL STRIPS	MS30	\$192,668	\$192,668	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
302204	WAGONERS	HSIPG-20ZF007TR	TR	US075	SAFETY IMPROVEMENT	4	2013	5-16-13	6-3-13	6-20-13	10-1-13	1,231.4				0.00	INSTALL RUMBLE STRIPS IN VARIOUS LOCATIONS ALONG SH-63 IN KING FISHER COUNTY, SH-111 IN GRANT CO., SH-83 IN LOGAN CO.	MS30	\$60,652	\$60,652	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
302404	BEAVER	HSIPG-20WF-003TR	TR	US075	SAFETY IMPROVEMENT	6	2013	7-25-13	8-12-13	9-11-13	11-4-13					0.00	INSTALL RUMBLE STRIPS IN VARIOUS LOCATIONS IN DIABLO	MS30	\$61,256	\$61,256	\$0	\$0														Analysis Pending Availability of 5 Years of After-Cash Data
302504	CHICKASAW	HSIPG-21EF-020TR	TR	US075	SAFETY IMPROVEMENT	8	2013	7-25-13	8-12-13	9-11-13	3-10-14	3,271.4				0.00	INSTALL RUMBLE STRIPS ALONG STATE HWYS IN DIVISION 8	MS30	\$53,217	\$53,217	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
302604	MCCLAIN	HSIP-205E-019TR	TR	SK000	SAFETY IMPROVEMENT	5	2013	5-16-13	6-3-13	6-24-13	9-3-13	26				0.10	SWEETWATER INSTALL SCHOOL ZONE WARNING SIGNS WITH BEACONS	MS30	\$15,865	\$15,865	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
303104	CLUSTER	HSIPG-20ZC-017TR	TR	SH164	SAFETY IMPROVEMENT	5	2013	6-20-13	7-1-13	7-18-13	10-7-13	11,613				2.000	RUMBLE STRIPS VARIOUS LOCATIONS 2.00 MI SH-54 IN CLUSTER COUNTY & SH-5 IN TILLMAN COUNTY	MS30	\$48,594	\$48,594	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
303204	MRYAN	HSIPG-20TF-018TR	TR	US070	SAFETY IMPROVEMENT	2	2013	6-20-13	7-1-13	7-25-13	11-4-13	4,241.4				0.10	RUMBLE STRIPS VARIOUS LOCATIONS IN DIVISION 3	MS30	\$442,623	\$442,623	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
303204	CLEVELAND	HSIPG-21HF-019TR	TR	SH009	SAFETY IMPROVEMENT	3	2013	6-20-13	7-1-13	7-25-13	11-18-13	13-14				0.10	RUMBLE STRIPS VARIOUS LOCATIONS IN DIVISION 3	MS30	\$64,744	\$64,744	\$0	\$0													Analysis Pending Availability of 5 Years of After-Cash Data	
303604	OKLAHOMA	HSIPG-25N170TR	TR	IS025	IMPACT ATTENUATORS	4	2013	8-22-13	9-9-13	9-26-13	10-25-13	2,281.4				1.00	REPLACEMENT OF IMPACT ATTENUATORS ALONG THE INTERSTATE AND OKLAHOMA & LOGAN COUNTIES	MS30	\$52,076	\$52,076	\$0	\$0													Relevant Crash Data Cannot Be Isolated	

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302704	TULSA	HSIPG-2704(04) TR	TR	US075	CABLE BARRIER	8	2013	9-19-13	10-7-13	11-1-13	3-17-14		56			6.0	MS PER FROM 16TH STREET NORTH TO THE WASHINGTON CALCULABLE BARRIER	MS30	\$1,340,074	\$1,340,074	\$0						Analysis Pending Availability of 5 Years of After Crash Data																							
302943	WAGONER	HSIPG-27F(03) TR	TR	SH051	STRIPING & PAVEMENT MARKING	1	2013						14			52.5	DIVISION I STRIPING AT VARIOUS LOCATIONS	MS30	\$657,996	\$657,996	\$0						Relevant Crash Data Cannot Be Isolated																							
302945	RYAN	HSIPG-207F(01) TR	TR	US070	STRIPING & PAVEMENT MARKING	2	2013						10			16.0	DIVISION 2 STRIPING AT VARIOUS LOCATIONS	MS30	\$300,000	\$300,000	\$0						Relevant Crash Data Cannot Be Isolated																							
302946	MACCLAN	HSIPG-244F(00) TR	TR	IS035	STRIPING & PAVEMENT MARKING	3	2013						5			15.5	DIVISION 3 STRIPING AT VARIOUS LOCATIONS	MS30	\$195,316	\$195,316	\$0						Relevant Crash Data Cannot Be Isolated																							
302947	BECHAM	HSIPG-259F(03) TR	TR	US049	STRIPING & PAVEMENT MARKING	5	2013						6			36.2	DIVISION 5 STRIPING AT VARIOUS LOCATIONS	MS30	\$714,624	\$714,624	\$0						Relevant Crash Data Cannot Be Isolated																							
302949	DMARCON	HSIPG-213F(00) TR	TR	US056	STRIPING & PAVEMENT MARKING	6	2013						2			65.4	DIVISION 6 STRIPING AT VARIOUS LOCATIONS	MS30	\$4,000	\$4,000	\$0						Relevant Crash Data Cannot Be Isolated																							
302949	TULSA	HSIPG-27F(03) TR	TR	US169	STRIPING & PAVEMENT MARKING	8	2013						8			18.22	DIVISION 8 STRIPING AT VARIOUS LOCATIONS	MS30	\$467,044	\$467,044	\$0						Relevant Crash Data Cannot Be Isolated																							
302949	OKLAHOMA	HSIPG-259F(02) TR	TR	IS035	STRIPING & PAVEMENT MARKING	4	2013						9			5.2	DIVISION 4 STRIPING AT VARIOUS LOCATIONS	MS30	\$65,000	\$65,000	\$0						Relevant Crash Data Cannot Be Isolated																							
302964	BEAVER	HSIPG-204F(01) TR	TR	US038	STRIPING & PAVEMENT MARKING	6	2013						8			34.3	INSTALL MULTILAYER PAVEMENT ON US HWY 30 FROM 12TH TO 34TH AVENUE IN DISTRICT 11	MS30	\$340,200	\$340,200	\$0					Relevant Crash Data Cannot Be Isolated																								
302965	PADDO	HSIPG-208F(01) TR	TR	SH009	STRIPING & PAVEMENT MARKING	7	2013						16			20.78	INSTALL MULTILAYER PAVEMENT ON US HWY 16 FROM 20TH WARRINGS IN CADDO, COMANCHE & SHERMAN COUNTIES DISTRICT 11	MS30	\$234,945	\$234,945	\$0					Relevant Crash Data Cannot Be Isolated																								
208604	PARKER	STP V156B(03)		SH018	SHOULDER & APPROACHES	8	2014	10-17-13	11-4-13	11-25-13	1-6-14		14			0.78	SHOULDER & APPROACHES AT 0.78 MI. SMOULDSVILLE CD JCT. FR. OS 13, 40 TO 1013, ECHERO	LS30	\$3,237,797	\$3,237,797	\$0					Project Not in Traffic Engineering Division																								
228407	BECHAM	STP V105C(18)		SH030	SHOULDER & SURFACE	5	2014						26			1.0	SHOULDER & SURFACE OVER NORTH FORK OF RED RIVER, 5.0 MI NORTH OF AGRICOLLE TIE INS	MS30	\$2,701,610	\$2,701,610	\$0					Project Not in Traffic Engineering Division																								
228704	COMANCHE	STP V116C(19)		SH017	SHOULDER & APPROACHES	7	2014	10-17-13	11-4-13	1-2-14	3-6-14		24			0.25	OVER WINDY CREEK BRIDGE APPROX. 0.25 MILE WEST OF SH06	LS30	\$3,000,000	\$3,000,000	\$0					Project Not in Traffic Engineering Division																								
267904	BECHAM	HSIPG-004G-1055(00) TR	TR	IS040	CABLE BARRIER	5	2014						1			6.0	40' CABLE MEDIA BARRIER, MP 0.0 TO MP 6.0		\$452,541	\$452,541	\$0						Analysis Pending Availability of 5 Years of After Crash Data																							
302005	ADWA	HSIPG-208N(01) TR	TR	US069	CABLE BARRIER	2	2014						4			10.0	CABLE BARRIER VARIOUS LOCATIONS ALONG US 69 IN ADWA CO (EEL RDS 14, ADD TO 06-14, AS PER PROJ.MGMT)	MS30	\$1,182,206	\$1,182,206	\$0					Analysis Pending Availability of 5 Years of After Crash Data																								
302664	COMANCHE	HSIP-216C(03) TR	TR	US277	TRAFFIC SIGNALS	7	2014	11-21-13	12-8-13	1-2-14	4-7-14	5-7-14	12			0.19	TRAFFIC SIGNALS ON INSTALLATION OF TRAFFIC SIGNAL SYSTEM(SGS CRT)	MS30	\$69,498	\$69,498	\$0					Analysis Pending Availability of 5 Years of After Crash Data																								
302704	OKMULGEE	HSIPG-259N(01) TR	TR	US075	CABLE BARRIER	1	2014	10-17-13	11-4-13	11-26-13			4			9.77	INSTALL CABLE BARRIER US75 BEGIN 1.000 NORTH OF MAIN ST IN HEIPRETTA EXTEND 0.72 MILES NORTH (ADD TO 01, 14, LATE ADD TO 02-14)	MS30	\$425,665	\$425,665	\$0					Analysis Pending Availability of 5 Years of After Crash Data																								
302804	ADWA	HSIP-238N(01) TR	TR	US183	SCHOOL SIGNS	5	2014	2-20-14	3-10-14	3-31-14			6			0.10	SCHOOL ZONE ADVANCE WARNING SIGNS ON US183 AND SIGNING ON US HWY 0 TO 14, LATE ADD	MS30	\$31,600	\$25,440	\$0					Analysis Pending Availability of 5 Years of After Crash Data																								
302704	MCKELL	HSIPG-237F(01) TR	TR	SH009	CABLE BARRIER	1	2014	5-15-14	6-2-14	6-19-14			8			6.19	BARRIER IN VARIOUS LOCATIONS IN DIVISION I OF GUARNAULCABLE	MS30	\$2,270,350	\$2,270,350	\$0					Relevant Crash Data Cannot Be Isolated																								
302804	EDMOND	HSIPG-207F(02) TR	TR	SH009	CABLE BARRIER	3	2014						14			19.0	BARRIER IN VARIOUS LOCATIONS IN DIVISION III	MS30	\$778,600	\$778,600	\$0						Relevant Crash Data Cannot Be Isolated																							
302504	WOODWARD	STP G277F(03) MS	MS		SCHOOL SIGNS	6	2014	5-15-14	6-2-14	6-18-14			1270			0.0	INSTALL SCHOOL ZONE ADVANCE WARNING SIGNS AT VARIOUS LOCATIONS ADD TO 05-14, 06-14, 07-14, 08-14, 09-14, 10-14, 11-14, 12-14, 13-14, 14-14, 15-14, 16-14, 17-14, 18-14, 19-14, 20-14, 21-14, 22-14, 23-14, 24-14, 25-14, 26-14, 27-14, 28-14, 29-14, 30-14, 31-14, 32-14, 33-14, 34-14, 35-14, 36-14, 37-14, 38-14, 39-14, 40-14, 41-14, 42-14, 43-14, 44-14, 45-14, 46-14, 47-14, 48-14, 49-14, 50-14, 51-14, 52-14, 53-14, 54-14, 55-14, 56-14, 57-14, 58-14, 59-14, 60-14, 61-14, 62-14, 63-14, 64-14, 65-14, 66-14, 67-14, 68-14, 69-14, 70-14, 71-14, 72-14, 73-14, 74-14, 75-14, 76-14, 77-14, 78-14, 79-14, 80-14, 81-14, 82-14, 83-14, 84-14, 85-14, 86-14, 87-14, 88-14, 89-14, 90-14, 91-14, 92-14, 93-14, 94-14, 95-14, 96-14, 97-14, 98-14, 99-14, 100-14	MS30	\$298,520	\$298,520	\$0																													

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301404	BARFIELD	HSIP-224-0091R	SH24	SCHOOL SIGNS	4	2014	2-20-14	3-10-14	3-20-14	6-16-14	7-9-14	26				COMING ON INSTALL SCHOOL ZONE FLASHERS ON SH440 TO 02+14 LATE	MS30	\$53,280	\$18,026	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
301404	OKMULGEE	HSIP-254-022R	SH2	CABLE BARRIER	4	2014						52				SH42 INSTALL CABLE BARRIERS BEGIN EAST 1/8 MI	MS30	\$501,622	\$501,622	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
301404	BECKHAM	HSIP-256-027R	SH2	GUARDRAIL	5	2014	6-19-14	7-7-14	7-23-14			36				SH42 INSTALL GUARDRAIL FROM 4+0 TO SH42SH46 BRIDGE AT JCT 140SH46	MS30	\$188,544	\$188,544	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
301604	MUSKOGEE	HSIP-251F-022R	TR	SAFETY IMPROVEMENT	1	2014										DIVISION 1 INSTALLATION AND UPGRADES OF SIGNING STRIPPING TRANSVERSE RUMBLE STRIPS ON VARIOUS AT GRADE INTERSECTIONS	MS30	\$520,000	\$520,000	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
307004	CHOCTAW	HSIP-276F-027R	TR	SAFETY IMPROVEMENT	2	2014										DIVISION 2 INSTALL AND UPGRADE SIGNING STRIPPING TRANSVERSE RUMBLE STRIP VARIOUS GRADE INTERSEC DEL IN 06+14 ADD 100+14 ASP	MS30	\$301,288	\$301,288	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
307014	REMOLE	HSIP-277F-020R	TR	SAFETY IMPROVEMENT	3	2014										SH6 DIVISION 3 INSTALL AND UPGRADE SIGNING STRIPPING AND TRANSVERSE RUMBLE STRIPS ON VARIOUS GRADE INTERSECTIONS	MS30	\$567,680	\$567,680	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
307024	WADSWORTH	HSIP-278F-013R	TR	SAFETY IMPROVEMENT	4	2014	6-19-14	7-7-14	7-25-14							SH15 DIVISION 4 UPGRADE AND INSTALL SIGNING STRIPPING TRANSVERSE RUMBLE STRIPS ON VARIOUS GRADE INTERSECTIONS	MS30	\$431,867	\$431,867	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
304604	WASKIELL	HSIP-291-013R	TR	SCHOOL SIGNS	1	2014	6-19-14	7-7-14	7-23-14			10				SH11 IN DEEP CREEK SCHOOL ZONE	MS30	\$29,048	\$29,048	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
306604	GRANT	HSIP-278F-011R	TR	SCHOOL SIGNS	4	2014	6-19-14	7-7-14	7-23-14			14				SH11 IN DEEP CREEK SCHOOL ZONE	MS30	\$22,731	\$18,166	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
306604	BLAINE	HSIP-278F-017R	TR	SCHOOL SIGNS	5	2014						4				SPEED LIMIT SIGNS AND ADVANCE WARNING SIGNS (ADD BEACONS) TO 02+14 (LATE ADD)	MS30	\$67,765	\$67,765	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
291604	OKMULGEE	HSIP-040-040-028R	TR	CABLE BARRIER	1	2015						3				SH6 MULTIPLEXING BEACONS AT VARIOUS LOCATIONS IN DIVISION 5	MS30	\$700,000	\$700,000	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
307014	MCINTOSH	HSIP-248N-011R	TR	CABLE BARRIER	1	2015						3				CABLE BARRIER ALONG I40 BEGIN AT MILE MARKER 28 EXTENDED EAST 56 MI	MS30	\$1,911,751	\$1,911,751	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
301804	BARFIELD	HSIP-224N-009R	TR	CABLE BARRIER	4	2015						31				US-66 INSTALL CABLE BARRIER BEGIN AT MUSHOGE MOUNTAIN EXTEND SIDE OF S 87TH STREET AND EXT EAST 500 METERS TO 2900 ROAD INSTALL CABLE BARRIERS ON INTERSECTIONS AND DRAINAGE INLET AD	MS30	\$600,000	\$600,000	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
302014	PITTSBURG	HSIP-251N-026R	TR	CABLE BARRIER	2	2015						2				INSTALLATION OF CABLE BARRIER BEGIN AT EAST 1970 RD IN HOWA EXTENDING NORTHEAST 0.5 MI TO 4TH ST IN SAVANNA	MS30	\$1,200,000	\$1,200,000	\$0	\$0		Analysis Pending Availability of 5 Years of After Crash Data									
241024	WASHINGTON	WFG-0144-026	TR	SAFETY IMPROVEMENT	8	2008	9-17-07	10-1-07	11-5-07	11-19-07	2-25-09	006	0.00			SIGN REPLACEMENT AND OVERHEAD SIGN INSPECTION AND REPAIRS 75 IN LENGTH ON I-205 FROM 0+00 TO 0+100 TO EASTLAND PARKWAY		\$88,936					Relevant Crash Data Cannot Be Isolated									
246604	MOGENSE	MG-004-2462-222	TR	SAFETY IMPROVEMENT	8	2008	10-19-07	11-15-07	14-08	3-31-08	8-25-08	0.00				441-344 REPLACE OVERHEAD SIGN STRUCTURE ON I-44 AND I-34H IN TULSA		\$97,974					Relevant Crash Data Cannot Be Isolated									
241404	LOVE	MG-005-1146-013	TR	CABLE BARRIER	7	2008	10-28-07	11-15-07	12-3-07	14-08	2-19-09	017	12.87			REMEDIAL PROJECT BEGINNING @ NORTH EDGE OF RED RIVER EXT @ NORTH @ VARIOUS LOCATIONS 10 MILE POST 18		\$1,446,042					Analysis Pending Availability of 5 Years of After Crash Data									

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241804	OKLAHOMA	IMG-0036-4/22/142	TR	IS205	CABLE BARRIER	7	2008	12-17-09	1-17-09	2-1-09	4-17-09	12-18-09	026	8+00	15+00	7+00	36 MEDIAN BARRIER BEG @ 2ND STREET, IN EDMOND, & EXT NORTH 70 MILE		\$1,020,662			3	18	36	3	27	58	5	25	####	7.00	RE(134,550)	\$99,197	\$184					
2389704	OKLAHOMA	NHG-0291-0051	TR	S1074	STRIPING & PAVEMENT MARKING	4	2008	1-8-09	4-1-09				063	0+00		7+49	SH-74 PAVE MKRS & REPLACE LENS. BEG @ 65+86 EXTN APPROX 743 TO 748.00 TO 0+00. AS PER O.E.T "A" UNIT TO 0+04.08. AS PER O.E.T "A" UNIT.		\$36,081																				
250104	LOGAN	IMG-0036-4/22/146	TR	IS205	STRIPING & PAVEMENT MARKING	4	2008	1-8-09	4-17-09	5-19-09	8-22-09	7-31-09	036	0+00		58	REPLACE LENS BEG @ MM 146.7 & EXT TO MM 152.5 @ BEL FR. @ 0.08. ADD TO 04.08. AS PER O.E.T "A" UNIT.		\$145,169																				
250204	OKLAHOMA	IMG-0035-1/26/126	TR	IS205	STRIPING & PAVEMENT MARKING	4	2008	1-8-09	4-1-09				016	0+00		70	36 AVANT MKRS. REREPLACE LENS BETWEEN MM 128 & 139 AND MM 133 & 138. INCLUDE RWMS @ BEL FR @ 0.08. ADD TO 04.08. AS PER O.E.T "A" UNIT.		\$419,997																				
241904	PADDO	IMG-0040-3/05/089	TR	IS240	CABLE BARRIER	7	2008	1-14-09	2-1-09	5-21-09	9-30-09	9-30-09	048	2+82		6+00	40 MEDIAN BARRIER PROJECT, FROM MP .865 TO .950		\$951,815																				
241804	PADDO	IMG-0040-4/18/101	TR	IS240	CABLE BARRIER	7	2008	1-14-09	4-17-09	4-25-09	7-16-09	10-31-09	8+48	9+74	11+60	1+86	40 MEDIAN BARRIER PROJECT, FROM 1+11 MP 10+0 TO 16+0 @ BEL FR @ 0.08. ADD TO 04.08. PRIORITY CHANGE "A" UNIT.		\$34,468																				
240105	POTTAWATOMIE	MY-0040-5/03/166	TR	IS240	SAFETY IMPROVEMENT	3	2008	2-19-09	3-1-09	4-7-09	8-18-09	5-2-09	40	41+73	13+16	2+65	40 SEG 0.40M. W. OF SH-56 (KOKOPO AVE), EXT E 2.6 MI TO 12 BEL FR @ 0.08. AS PER O.E.T "A" UNIT. (CONCRETE BARRIER & LIGHTING)		\$1,700,127																				
250104	TULSA	IMG-0044-2/65/220	TR	IS244	STRIPING & PAVEMENT MARKING	8	2008	2-19-09	3-20-09	4-7-09	5-1-09	8-13-09	078	0+00		6+00	44. INSTALL EPOXY RAISED PAVEMENT MARKING PROJECT, FROM 6+00 TO 14+00. NORTH EAST 150 M. TO JCT US-66		\$50,547																				
250204	TULSA	IMG-0044-2/65/000	TR	IS244	STRIPING & PAVEMENT MARKING	8	2008	2-19-09	3-1-09				026	0+00		3+00	244. INSTALL EPOXY RAISED PAVEMENT MARKING, AT JCT 144. EXT NORTHEAST 30M. TO JCT US-5		\$66,369																				
250304	TULSA	MY-0036-4/24/259	TR	IS205	CABLE BARRIER	4	2008	3-14-09	4-17-09	4-25-09	5-5-09	12-6-09	026	2+26		5+00	58 MEDIAN BARRIER PROJECT, FROM MP .200 TO .240		\$497,548																				
250204	TULSA	NHG-0036-063	TR	US169	STRIPING & PAVEMENT MARKING	8	2008	3-16-09	5-15-09	6-2-09	6-27-09	9-15-09	081	11+00	17+00	6+00	US-169 FROM 167+151 TO 167+151. N. 6.0 MI. TO 600 @ 167+151. BEL FR @ 0.08. ADD TO 05-08. AS PER O.E.T "A" UNIT.		\$715,916																				
241504	TULSA	NHG-0194-070	TR	US3075	CABLE BARRIER	8	2008	4-16-09	5-15-09	6-2-09	8-4-09	12-11-09	036	8+40	13+40	5+00	NORTH 18 EXT NORTH TO 128TH ST NORTH		\$484,142																				
252104	TEXAS	NHG-0038-078	TR	US354	STRIPING & PAVEMENT MARKING	6	2008	5-6-09					002	0+00		11+8	US-54 INSTALL THERMOPLASTIC PAVEMENT MARKING, BEGIN TEXAS SA, EXT 11+8 IN. TO 13+3 M. E. OF 3000 BEL.		\$84,500																				
250305	DELELAND	IMG-0044-1/05/102	TR	IS344	FORCE ACCOUNT	3	2008	5-12-09					038	0+00		5+00	PAV'T MKRS. & LENS REPLACE (OKLAHOMA CO. IN FORCE ACCOUNT)		\$69,000																				
250306	MOGERS	IMG-0044-2/65/226	TR	IS244	FORCE ACCOUNT	8	2008	5-12-09					036	0+00		4+65	44. FROM 148TH ST. E 3.0 MI. TO 153TH ST. THIS WILL BE THERMOPLASTIC STRIPING PROJECT (FORCE ACCOUNT)		\$42,000																				
250309	TULSA	NHG-0194-031	TR	S1051	FORCE ACCOUNT	8	2008	5-12-09					036	0+00		14+38	SH-51 FROM PEGRARA AVE. S 14.3 MI. TO WAGONCREEK. THIS WILL BE THERMOPLASTIC STRIPING PROJECT (FORCE ACCOUNT)		\$43,300																				
251804	REGULOVYAH	NHG-0038-013	TR	US359	STRIPING & PAVEMENT MARKING	1	2008	5-12-09					002	8+38		3+36	US-54 INSTALL THERMOPLASTIC PAVEMENT MARKING, BEGIN Jct US-64. 40. EXT. N & E 2.8 MI. TO JCT US-64		\$65,000																				





HSIP Report FFY 2005 - 2013

Job Price #	County	Project No.	Proj. Dist.	Highway	Work Type	Division	FRY	FHWA Auth	Let Date	Award Date	Work Order Date	Work Start Date	Actual Comp Date	Control Section	Start Milepost	End Milepost	Length	Description	Fund Code	Project Total	Federal Funds	State Funds	Other Funds	F@ Before (b) (3)	N1 Before (b) (3)	F@ After (b) (3)	N1 After (b) (3)	Study Period	Service Life (yrs)	Maint Unit	Units / year	EUAB	EUAC	Actual B/C						
222704	CREEK	HSIP-119A(20) TR	TR	SH67	INTERSECTION MUD & TRAF SIGNALS	8	2010	2-19-10	4-1-10	5-3-10	5-19-10	8-19-10	15-11	026	0.70		0.11	TRAFFIC SIGNAL INTERSECTION IMPROVEMENTS SH-97 & TURNER TURNPIKE GATE DEL FR 03.10, ADD TO 04 10, CONST TIMING ISSUES "AUTH"		\$164,078				Analysis Pending, Availability of 5 Years of After-Crash Data																
242624	MOBLE	MG-0036-4(217) 602 TR	TR	IS305	CABLE BARRIER	4	2010	2-22-10	3-19-10	4-12-10	4-29-10	6-7-10	032	4.38		5.00	58	CABLE MEDIUM BARRIER, 10' HGT TO CHAMARRO MAJOR, TEXAS, WOODS & MAYNARD (POLYMER PAVE MARK, VARIOUS LOCATIONS)		\$555,168				Analysis Pending, Availability of 5 Years of After-Crash Data																
276524	CHAMARRON	STP-6-113F (68) TR	TR	US326	STRIPING & PAVEMENT MARKING	6	2010	2-22-10					022	31.25		2.33	23	CHAMARRON MAJOR, TEXAS, WOODS & MAYNARD (POLYMER PAVE MARK, VARIOUS LOCATIONS)		\$192,000				Relevant Crash Data Cannot Be Isolated																
276524	CHAMARRON	STP-6-113F (68) TR	TR	SH65	STRIPING & PAVEMENT MARKING	6	2010	2-24-10					022	36.87		1.20	120	CHAMARRON MAJOR & WOODWARD MARK, VARIOUS LOCATIONS		\$59,000				Relevant Crash Data Cannot Be Isolated																
108604	BRYAN	STP-407N(163) TR	TR	US309	MUD & TRAF SIGNALS	2	2010	3-22-10	4-1-10	5-3-10	5-14-10	10-4-10	022	10.95		0.22	22	CALESA ON US 695 AT MAIN STREET & NORTH MOONILEY STREET		\$228,600				Analysis Pending, Availability of 5 Years of After-Crash Data																
242625	MOBLE	MG-0036-4(218) 200 TR	TR	IS305	CABLE BARRIER	4	2010	4-14-10	5-23-10	6-7-10	7-2-10	10-5-10	032	22.59		9.00	90	CABLE MEDIUM BARRIER FROM MILEPOST 200 NORTH TO MILEPOST 229 PART OF FROJUNAK COJ		\$366,660				Analysis Pending, Availability of 5 Years of After-Crash Data																
276524	DOMWACHE	MG-0044-1(116) 030 TR	TR	IS244	SIGNING	7	2010	6-2-10	7-22-10	8-10-10	10-19-10	5-3-11	045	4.00		11.65	116	REFINEMENT NORTH TO SH-42 (SIGN INTERSECTION NINORMAN)	LSSE	\$404,124				Relevant Crash Data Cannot Be Isolated																
2647524	CLEVELAND	HSIP-114A(243) TR	TR	SH07H	INTERSECTION MUD & TRAF SIGNALS	3	2012	1-17-12	2-1-12				026	2.67		0.00	00	24 THOMPSON STREET INTERSECTION NINORMAN	LSSE	\$1,051,182	\$974,651			Analysis Pending, Availability of 5 Years of After-Crash Data																
2688424	DOMWACHE	HSIP-6-116A(210) TR	TR	US302	SIGNING	7	2012	2-12-12	3-1-12				003	0.00		25.44	254	SPACE SIGNS ALONG US 628 BEGIN AT MILEPOST 25.44 TO MILEPOST 25.74 IN DOMWACHE CO	LSSE	\$251,501	\$251,501			Relevant Crash Data Cannot Be Isolated																
298624	PHOCTAW	HSIP-112A(057) TR	TR	US271	INTERSECT MUDP	2	2012	2-14-12	3-15-12	4-2-12	4-23-12	5-7-12	8-8-12	026	5.30		0.10	10	OXDOW WITH DECELERATION AT US-271 INTERSECTION MUDCATION AT LEFT TURN LANES	LSSE	\$411,200	\$369,632			Analysis Pending, Availability of 5 Years of After-Crash Data															
288624	ROGERS	HSIP-6-266A(006) TR	TR	US412	SIGNING	8	2012	2-15-12	3-1-12				018	0.00		15.30	153	REFLAXE SIGNS ALONG US-412 BEGIN AT GREEN TURNPIKE EXTEND EAST 16.5 M	LSSE	\$117,728	\$117,728			Relevant Crash Data Cannot Be Isolated																
286624	WAYES	HSIP-6-169A(150) TR	TR	US412	SIGNING	8	2012	2-23-12	3-1-12				018	0.00		10.00	100	REFLAXE SIGNS ALONG US-412 BEGIN AT RODGERS CO EXTEND EAST 10M TO CHERRY TREE	LSSE	\$183,632	\$183,632			Relevant Crash Data Cannot Be Isolated																
208324	REQUOYAH	HSIP-6-268F(001) TR	TR		STRIPING & PAVEMENT MARKING	1	2012	3-28-12	5-1-12				000	0.00		0.00	00	PAVEMENT MARKINGS AT VARIOUS LOCATIONS	LSSE	\$821,500	\$821,500			Relevant Crash Data Cannot Be Isolated																
291824	DALHOMA	HSIP-6-0240-1(507) 003 TR	TR	IS240	CABLE BARRIER	4	2012	4-11-12	5-17-12	6-4-12	6-28-12	8-20-12	3-31-13	071	10.90		3.00	30	CABLE BARRIER ALONG 120 BEGIN AT MILE MARKER EXTEND EAST 3 M (ADD TO 30.2 DATE ADD)	LSSE	\$322,248	\$322,248			Analysis Pending, Availability of 5 Years of After-Crash Data															
220704	REQUOYAH	HSIP-6-0946(577) 308 TR	TR	IS340	CABLE BARRIER	1	2012	4-12-12	5-17-12	6-4-12	6-18-12	9-4-12	5-6-13	022	8.00		2.90	29	EXISTING CABLE BARRIER EAST OF US59 EXTEND EAST 2.5 M TO CREEK BRIDGE WEST OF US54	LSSE	\$307,712	\$307,712			Analysis Pending, Availability of 5 Years of After-Crash Data															
2919704	MUSKOGEE	HSIP-6-0046(579) 282 TR	TR	IS340	CABLE BARRIER	1	2012	4-12-12	5-17-12	6-4-12	6-28-12	9-4-12	7-23-13	015	6.00		8.00	80	CABLE BARRIER ALONG 140 BEGIN AT MILE MARKER EXTEND NORTH 2.5 M TO 140.25 DATE ADD TO 145.12, 145.18 OVERPASS EXTEND SOUTH EAST 4.3 M	LSSE	\$223,198	\$223,198			Analysis Pending, Availability of 5 Years of After-Crash Data															
291004	HAY	HSIP-6-286F(003) TR	TR		STRIPING & PAVEMENT MARKING	4	2012	6-6-12	7-1-12				000	0.00		0.00	00	DIVISION W/ INSTALLATION OF MULT. POLYMER PAVEMENT MARKINGS AT VARIOUS LOCATIONS	LSSE	\$168,688	\$168,688			Relevant Crash Data Cannot Be Isolated																
2919104	TULSA	HSIP-6-0244-1(029) 000 TR	TR	IS244	CABLE BARRIER	8	2012	6-12-12	7-19-12	8-6-12	8-24-12	2-6-13	7-3-13	026	0.00		6.30	63	CABLE BARRIER ALONG 124 BEGIN AT MILE MARKER EXTEND NORTH 2.5 M TO 124.25 DATE ADD TO 129.10 OVERPASS EXTEND SOUTH EAST 4.3 M	LSSE	\$1,191,713	\$1,191,713			Analysis Pending, Availability of 5 Years of After-Crash Data															
290704	BRYAN	HSIP-6-013N(195) TR	TR	US309	CABLE BARRIER	2	2012	6-25-12	7-19-12	8-6-12	8-24-12	11-8-12	10-31-13	023	10.50		6.40	64	CABLE BARRIER ALONG US58 NORTH OF LEMONHILL RD EXTEND NORTH 6.7 M TO 107.10 DATE ADD TO 107.12, NO NEPA	LSSE	\$768,638	\$768,638			Analysis Pending, Availability of 5 Years of After-Crash Data															
290024	BRYAN	HSIP-6-013N(157) TR	TR	US309	CABLE BARRIER	2	2012	6-25-12	7-1-12				022	4.38		6.70	67	LEMONHILL RD EXTEND NORTH 6.7 M TO 107.10 DATE ADD TO 107.12, ADD TO 107.12, NO NEPA	LSSE	\$1,475,100	\$1,475,100			Analysis Pending, Availability of 5 Years of After-Crash Data																

HSIP Report FFY 2005 - 2013

Job Price #	County	Project No.	Proj. Status	Highway	Work Type	Division	FFY	Start Date	Let Date	Award Date	Work Order Date	Work Order Date	Actual Comp Date	Control Section	Start Milepost	End Milepost	Length	Description	Fund Code	Project Total	Federal Funds	State Funds	Other Funds	FF Before (b) (3)	FF After (b) (3)	NI Before (b) (3)	NI After (b) (3)	Study Period	Service Life (yrs)	Maint Unit	Units / year	EUAB	EUAC	Actual B/C		
250004	HOWA	HSIPG_205F_0001 TR	TR		STRIPING & PAVEMENT MARKINGS	2	2012	6-25-12	7-1-12						0.00			DIVISION 1 INSTALLATION OF MULTI-LAYER POLYMER PAVEMENT MARKINGS AT SIGNAL LOCATIONS	LSSE	\$314,600	\$314,600										Relevant Crash Data Cannot Be Isolated					
251804	POTTAWATOMIE	HSIP_203B_0005 TR	TR	US270	TRAFFIC SIGNALS	3	2012	6-25-12	7-15-12	8-6-12	8-24-12	12-3-12	2-4-13	025	2.10			0.16 SIGNAL SYSTEM (S/17/270, JCT ACME RD, JCT ADD TO 07-12 LATE ADDITION)	LSSE	\$1,183,918	\$69,556										Analysis Pending Availability of 5 Years of After Crash Data					
286604	LEFlore	SPFG_140A_0711 TR	TR	US269	CONCRETE BARRIER	2	2012	6-27-12	7-15-12	8-6-12	8-24-12	10-1-12		043	11.00			US-269 3.26 M SOUTH OF SHAWNEE 259 JCT INSTALLATION OF BARRIER WALL AND ADJANT OF SUPERELEVATION (DEL FR 0512, ADD TO 07-12, NO NEPA)	LSSE	\$1,036,371	\$1,036,371										Analysis Pending Availability of 5 Years of After Crash Data					
251104	BECKHAM	HSIPG_205F_0141 TR	TR		STRIPING & PAVEMENT MARKINGS	5	2012	6-27-12	7-1-12						0.00			DIVISION 1 INSTALLATION OF MULTI-LAYER POLYMER PAVEMENT MARKINGS AT VARIOUS LOCATIONS	LSSE	\$318,000	\$318,000										Relevant Crash Data Cannot Be Isolated					
292734	MURRAY	HSIPG_200A_0011 TR	TR	SH007	GUARDRAIL	7	2012	7-2-12	8-16-12	9-10-12	10-2-12	1-7-13		026	1.46			DIVISION 1 GUARDRAIL WITH 30" SUB-STRUCTURE AT EXTEND NORTH 3048 BEGIN SHRP JCT EXTEND NORTH 100M TO 3070 3M EAST OF CL EXTEND 10M EAST	LSSE	\$167,777	\$167,777										Analysis Pending Availability of 5 Years of After Crash Data					
292704	BRYAN	HSIPG_207C_0041 TR	TR	SH019	GUARDRAIL	2	2012	7-30-12	9-20-12	10-8-12	10-24-12	11-26-12	2-13-13	024	6.11			DIVISION 1 GUARDRAIL WITH 30" SUB-STRUCTURE AT EXTEND NORTH 3048 BEGIN SHRP JCT EXTEND NORTH 100M TO 3070 3M EAST OF CL EXTEND 10M EAST	LSSE	\$83,368	\$83,368										Analysis Pending Availability of 5 Years of After Crash Data					
286604	MONTOSH	MG_0005-6799_262 TR	TR	IS040	CABLE BARRIER	1	2012	8-8-12	9-20-12	10-8-12	10-31-12	1-7-13		007	16.00			CABLE BARRIER INSTALLATION ALONG 140 BEGIN AT MILE MARKER 262 EAST SIDE OF EUFALA BRIDGE EXT 8 M TO 1M 270	LSSE	\$136,591											Analysis Pending Availability of 5 Years of After Crash Data					
292724	DOMANACHE	HSIPG_216C_0041 TR	TR	SH059	GUARDRAIL	7	2012	8-8-12	9-20-12	10-8-12	10-30-12	12-4-12	3-28-13	046	0.00			CABLE BARRIER ALONG 140 BEGIN AT MILE MARKER 256 EXTEND 5.2M EAST	LSSE	\$302,246	\$302,246										Analysis Pending Availability of 5 Years of After Crash Data					
291604	MONTOSH	HSIPG_0904-6799_266 TR	TR	IS040	CABLE BARRIER	1	2012	8-15-12	9-1-12					007	10.00			CABLE BARRIER ALONG 140 BEGIN AT MILE MARKER 256 EXTEND 5.2M EAST	LSSE	\$636,266	\$636,266										Analysis Pending Availability of 5 Years of After Crash Data					

\*Some values for projects unvaluated or evaluated before 2012, are unverified and subject to significant error.

FFY = Federal Fiscal Year  
 F# = Fatality  
 M# = Moderate Injury  
 N# = Non-Incorporating Injury  
 S# = Severe  
 EUAB = Equivalent Uniform Annual Benefit  
 EUAC = Equivalent Uniform Annual Cost  
 B/C = Benefit to Cost Ratio

## C. Assessment of the Effectiveness of the Improvements (Program Evaluation)

### 1. Graphs of General Highway Safety Trends

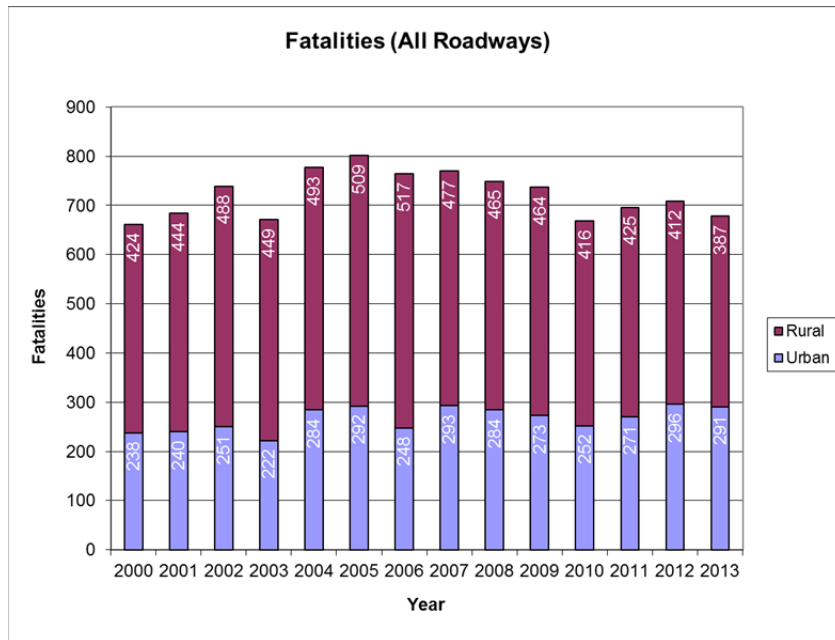


Fig. 1

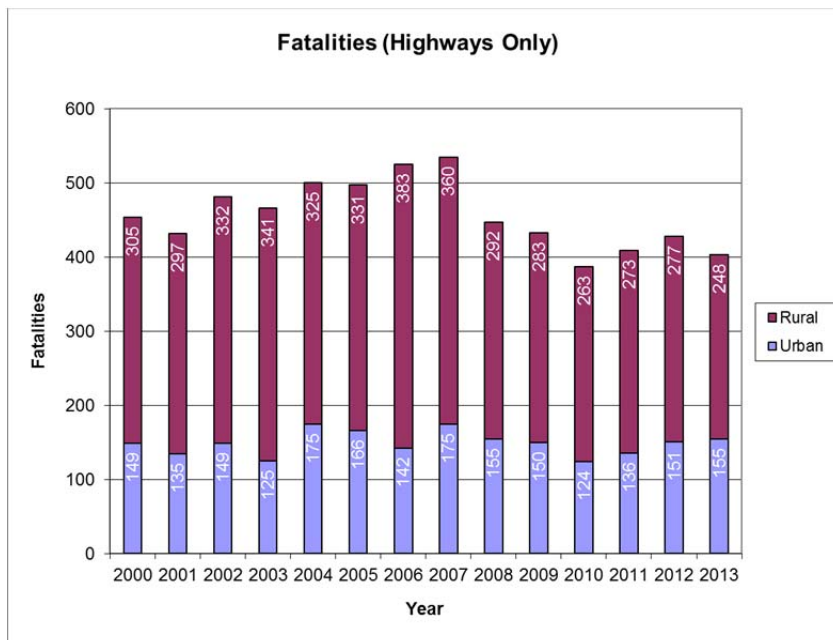


Fig. 2

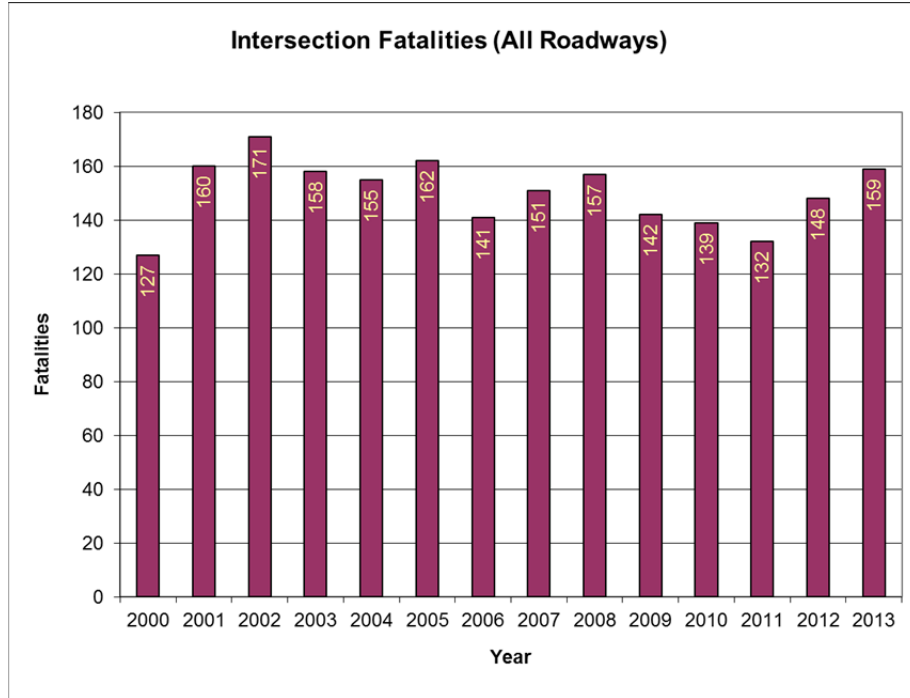


Fig. 3

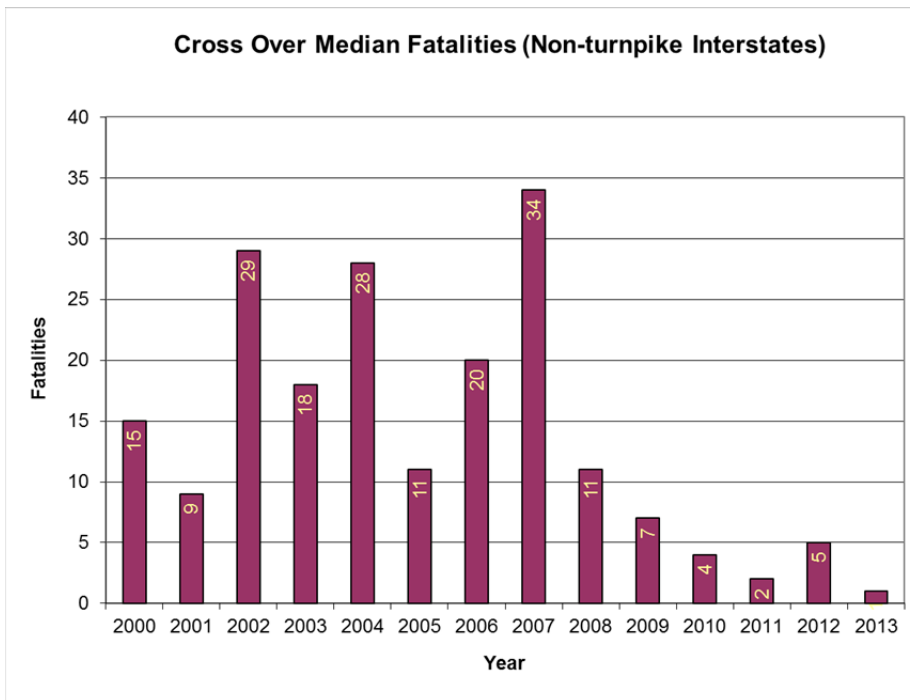


Fig. 4

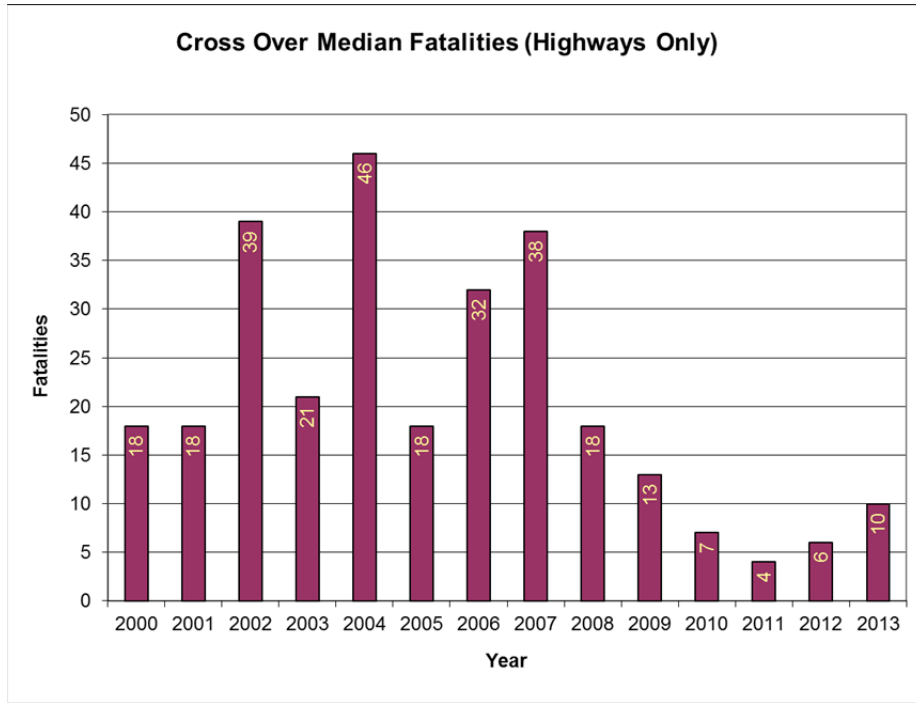


Fig. 5

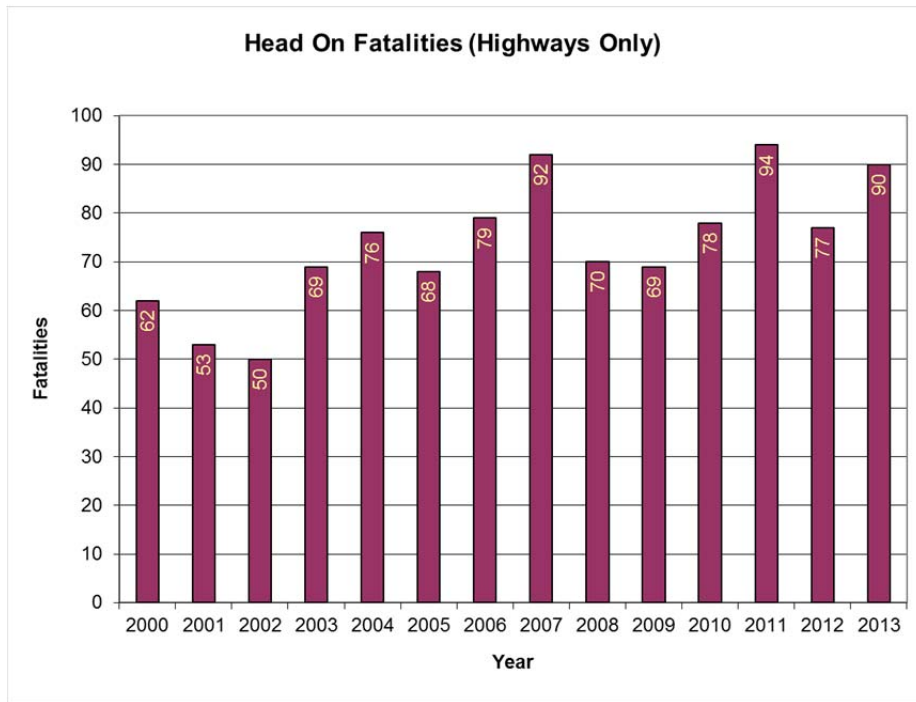


Fig. 6

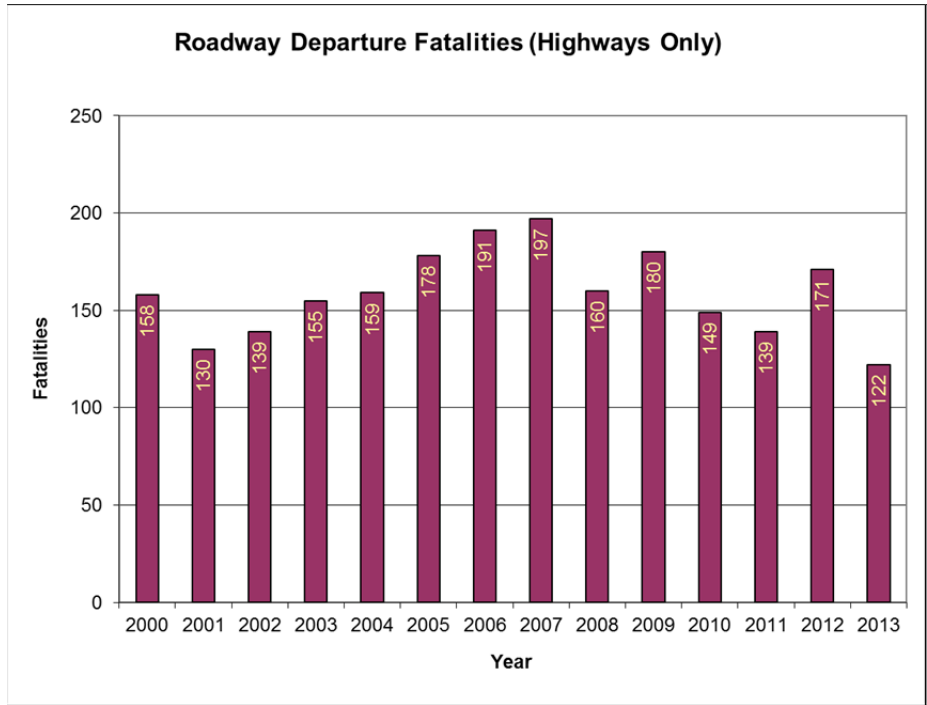


Fig. 7

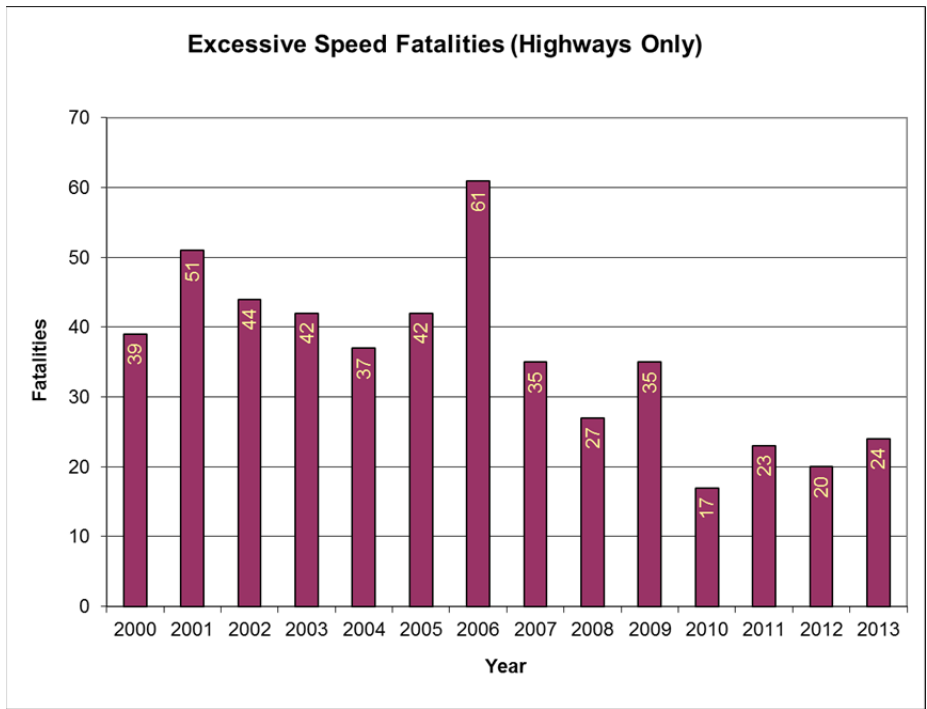


Fig. 8

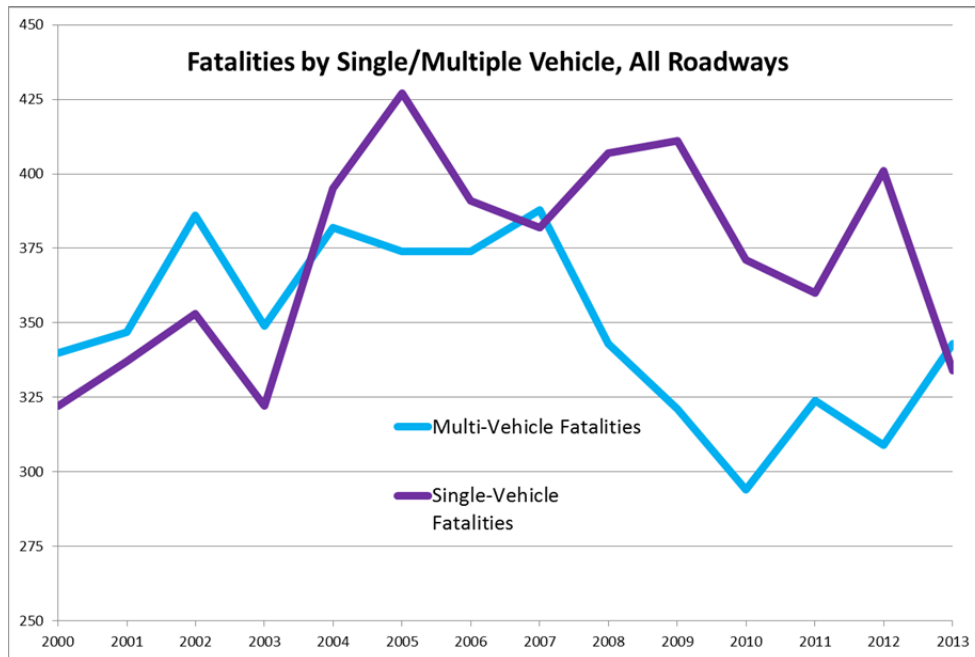


Fig. 9

**See reference information in Appendix D for more trends and crash facts for Oklahoma.**

## **2. Description of Overall HSIP Effectiveness**

Improved site ranking methodologies include using only injury/fatal crash history (to better concentrate on reducing these crash types), introduction of Bayesian methods, specialized reports for prioritization of specific systemic mitigations, and probability-adjusted rate-based rather than frequency-based methods in order to emphasize higher risk rural locations. Key systemic improvements (e.g. cable barrier and shoulder rumble strips) are being implemented on relevant construction projects.

### **a. SHSP Emphasis Areas**

Crossover fatalities and injuries have diminished drastically on highways treated with cable median barrier. Because of this success, installation of cable median barrier is being considered even for highways with narrow medians. The overall fatality trend for 2013 is downward, with the decrease dominated by declines in single vehicle crashes, roadway departures, and rural crashes.



*b. Subprogram types*

Distinct subprograms exist for cable barrier, guard rail, shoulder rumble strip, low cost intersection safety improvement, retroreflective backplates, curve delineation, high friction surface treatment, and intersection signalization. The cable barrier program has been the longest running and has had the most obvious success to date.

*c. System Wide Treatments*

Most SHSP targeted areas are, or are planned to become, system wide. Systemic intersection treatment is moving toward implementation with site screening in progress and a small number of sites already treated.

D. High Risk Rural Roads Program (HRRRP)

ODOT did not utilize any HRRRP funds for FFY 2013.

## **E: References**


Lindeburg, Michael R., P.E. Engineering-In-Training Reference Manual, 8th Ed. Professional Publications, Inc. Belmont, 1998.

Toole, Joseph S., Associate Administrator for Safety. Memorandum. Subject: INFORMATION: Highway Safety Improvement Program (HSIP) Reporting Guidance. USDOT / FHWA. May 14, 2009.

Furst, Tony, Associate Administrator for Safety. Memorandum. Subject: Highway Safety Improvement Program – Map021 Interim Eligibility Guidance. USDOT / FHWA. October 4, 2012.

Rogoff, Peter, Acting Undersecretary for Policy. Memorandum. Subject: Guidance on Treatment of the Economic Value of a Statistical Life (VSL) in U.S. Department of Transportation Analyses – 2014 Adjustment. Office of the Secretary of Transportation. June 13, 2014.

# Appendix A: Initial Request with HSIP Project Categories (Toole Memorandum)

  
U.S. Department  
of Transportation  
Federal Highway  
Administration

Oklahoma Division  
June 3, 2009

5801 N Broadway Ext., Ste. 300  
Oklahoma City, OK 73118  
Phone: 405-254-3300  
Fax: 405-254-3302  
www.fhwa.dot.gov/okdiv

In Reply Refer To:  
HIDA-OK

Gary Ridley  
Director  
Oklahoma Department of Transportation  
200 NE 21<sup>st</sup> Street  
Oklahoma City, OK 73105

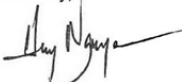
Attention: Messrs. Harold Smart, Joe Kyle and Ms. Ginger Miller

Dear Mr. Ridley:


Enclosed is the guidance package for reporting requirements under Title 23 U.S.C. Section 148(g) and 23 CFR 924. The Department needs to submit its annual reporting on Highway Safety Improvement Program (HSIP), "5 Percent" Report, and the Railway-Highway Crossing Report. The HSIP report shall also contain information regarding the High Risk Rural Roads Program (HRRRP), which is a component of the HSIP.


The guidance for the annual Railway-Highway Crossing and "5 Percent" reports remain the same and are available on the web at <http://safety.fhwa.dot.gov/safetealu/usc130.htm> and <http://safety.fhwa.dot.gov/safetealu/fiveguidance.htm>. However, the HSIP reporting guidance has been updated to reflect the recent revision of 23 CFR Part 924 which was effective January 23, 2009.

The State should submit all three reports together to FHWA Division Office **no later than August 31** of each year. If you have any questions, please contact me at 405-254-3345, or [huy.nguyen@dot.gov](mailto:huy.nguyen@dot.gov).

Sincerely,  
  
Huy Nguyen, P.E.  
Safety Engineer

Enclosure  
Cc: David Streb, ODOT

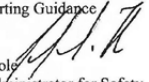


  
U.S. Department  
of Transportation  
Federal Highway  
Administration

## Memorandum

SENT VIA ELECTRONIC MAIL

Subject: **INFORMATION:** Highway Safety Improvement Program (HSIP) Reporting Guidance Date: May 14, 2009

From: Joseph S. Toole   
Associate Administrator for Safety In Reply Refer To: HSSP

To: Division Administrators

The FHWA Office of Safety has updated the Highway Safety Improvement Program (HSIP) Reporting Guidance to reflect the recent revisions to the HSIP regulation (23 CFR Part 924), which was effective January 23, 2009. This guidance supersedes the April 4, 2006, guidance entitled "Highway Safety Improvement Program Reporting Requirements 23 USC 148(g)".

The guidance for the annual Railway-Highway Crossing and "5 Percent" reports remains the same and is available on the Office of Safety's Web site, as follows:


- Railway Highway Crossing Report (May 5, 2006)  
<http://safety.fhwa.dot.gov/safetealu/usc130.htm>
- The "5 Percent" Report (April 5, 2006)  
<http://safety.fhwa.dot.gov/safetealu/fiveguidance.htm>

These reports are due to the FHWA Division Office by August 31, 2009, and to the FHWA Office of Safety by September 30, 2009. If you have any questions or need additional information, please contact Ms. Karen Yunk at (609) 637-4207.

Thank you for your continued support in ensuring successful implementation of the HSIP.

Attachment

cc: Director of Field Services  
Safety Field



**HIGHWAY SAFETY IMPROVEMENT PROGRAM  
REPORTING GUIDANCE  
May 15, 2009**

The Highway Safety Improvement Program (HSIP) Reporting Guidance is being revised to reflect the reporting requirements of Title 23 of the Code of Federal Regulations, Part 924 (23 CFR 924). This guidance supersedes the April 4, 2006 "Guidance for Highway Safety Improvement Program Reporting Requirements 23 U.S.C. 148(g)."

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**1. Introduction**

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) established the Highway Safety Improvement Program (HSIP) as an FHWA core program and provided a significant increase in the funding available for infrastructure-related highway safety improvement projects. This program is established as section 148 of Title 23, United States Code (23 U.S.C. 148) and regulated under 23 CFR 924.

Given the emphasis on this program, it is important that FHWA be able to demonstrate that the program is being effectively carried out, and that the projects being implemented are achieving results. The ultimate measure of the success of this program is a significant nationwide decline, in real terms, in the number of fatalities and serious injuries. To ensure that the program is being implemented as intended and that it is achieving its purpose, an annual report on the HSIP implementation and effectiveness is required by 23 U.S.C. §148(g) and 23 CFR 924. Furthermore, State Departments of Transportation (SDOT) that can clearly demonstrate the success of the safety program, through regular reporting, can use the report to communicate to others within their State about the importance of continuing to focus on improving highway safety.

The following guidance will assist the States in meeting the HSIP reporting requirements of 23 U.S.C. §148(g) and 23 CFR 924. Pursuant to 23 CFR 924.15, the HSIP report shall also contain information regarding the High Risk Rural Roads Program (HRRRP), which is a component of the HSIP.

While 23 U.S.C. §148(g) also includes a requirement to address railway-highway crossings, this information should be collected in a separate report required under 23 U.S.C. § 130(g). At the option of the State, the three reports required under Section 148 (the HSIP report, the railway-highway crossing report and the transparency (5%) report (Section 148(c)(1)(D)) may be submitted separately, or combined into one report with three distinct sections. *(See guidance for the Railway-Highway Crossing Reporting requirements dated May 5, 2006, and guidance for the "5% of most hazardous locations" dated April 5, 2006, for additional information on those reports.)*

**2. Reporting Frequency and Schedule**

Pursuant to 23 CFR 924.15, States reports shall be submitted to the FHWA Division Administrator no later than August 31<sup>st</sup> of each year. The report should be no more than 10 pages in length, excluding general listing of projects.

Pursuant to 23 CFR 924.15, the report shall be for a defined one year reporting period. It is at the discretion of the SDOT, in consultation with the FHWA Division Office, to define the reporting period. The States have the flexibility to report based on calendar year, federal fiscal year or State fiscal year. However, the reporting period must be clearly indicated at the beginning of the report and be consistent from year to year.

The Division Offices will forward the reports electronically to the FHWA Office of Safety by September 30<sup>th</sup> each year. These dates coincide with the other HSIP-related reports required under SAFETEA-LU (e.g., the report describing at least 5% of the locations exhibiting the most severe safety needs and the railway-highway crossing report).

### 3. Content and Structure of the HSIP Report

The report should address ALL projects implemented with HSIP and HRRRP funds, including local projects and non-infrastructure projects (i.e. implemented with HSIP flex funds). In addition, States should also report on projects identified through the HSIP but implemented with other funding sources. States are encouraged to coordinate with their planning organizations and local government agencies to obtain all relevant information to ensure complete HSIP reporting.

The HSIP report should consist of four sections: program structure, progress in implementing HSIP projects, assessment of the effectiveness of the improvements, and the HRRRP. The content and structure of each section is described below.

#### A. Program Structure

The report should briefly describe the structure of the State's HSIP, including the HRRRP, and any significant program changes that have been implemented since the beginning of SAFETEA-LU. This should include, but not be limited to, the following:

- i. Program Administration
- ii. Program Methodology

##### i. Program Administration

Briefly describe how the HSIP funds are administered in the State (i.e. centrally or via districts). If the HSIP is administered at the district level, describe the funding allocation process (i.e. formula, crash data). Describe any innovative practices (i.e. road safety audits) used to implement the HSIP. Describe how local roads are addressed as part of the HSIP. For example, are local road (non-State owned and operated) projects identified using the same methodology as State roads? If not, describe how local road projects are identified under A.2) below. Describe how highway safety improvement projects are selected for implementation (i.e. competitive application process). Lastly, describe overall coordination and collaboration with internal (i.e. planning) and external (i.e. regional planning organizations) partners as it relates to the HSIP.

##### ii. Program Methodology

The program and project identification processes must be developed in consultation with the FHWA Division Administrator. Since these processes will not likely change on an annual basis, it is recommended that they be submitted to the Division Administrator under separate cover from the annual HSIP report. The Division Administrator should maintain a copy of current program and project identification processes. For the purposes of the annual HSIP report, States should indicate the date the program methodology was last updated and submit a brief summary of the following key elements:

- Data used
  - Crash (i.e. all crashes, fatal only, fatal plus serious injury, fatal plus all injuries)
  - Exposure (i.e. traffic volume, population)
  - Roadway (i.e. geometry, pavement condition)
- Project Identification Methodology (i.e. frequency, equivalent property damage only, critical rate, safety performance functions, empirical bayes)
- Summary of targeted programs being implemented under the HSIP (i.e. median crossover, intersection, safe corridor, horizontal curve)
- Extent to which systemwide improvements are implemented as part of the HSIP (i.e. proportion of spot location vs. systemwide improvements)
- Extent to which highway safety improvement projects align with the State's SHSP
- Project prioritization process (i.e. incremental benefit cost ratio, ranking based on net benefit, etc.)

#### B. Progress in Implementing the HSIP projects

States should describe the progress in implementing HSIP projects during the specified reporting period. This description should include the following:

- i. HSIP funds available (programmed)
- ii. Number and general listing of the types of projects initiated
  - Identify how the projects relate to the State SHSP and the State's safety goals and objectives

##### i. HSIP Funds Available (Programmed):

For the purpose of this report, the term "HSIP funds" includes those funds that are available (programmed) to implement highway safety improvement projects that have been identified as part of the State's HSIP. At a minimum, this would include projects obligated using HSIP funds (Section 148), Hazard Elimination funds (Section 152), Optional Safety funds, penalty transfer funds (from Sections 154 and 164), safety belt performance grant funds (Section 406), and incentive grant funds (from sections 157 and 163). In addition, the report should include other non-safety funds (i.e. STP, ARRA, State, local) that were available (programmed) to implement highway safety improvement projects. HRRRP funds are addressed in Part D below and Railway-Highway Crossing Program funds are addressed under separate reporting requirements.

"Available" (Programmed) funds are those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) for the reporting period and can be expended on highway safety improvement projects. States should not only report available (programmed) funds, but also the amount of available (programmed) funds that were obligated for the specified reporting period.

This information could be presented in a format similar to that illustrated below. If this format is used, it should be supplemented with a narrative briefly describing the information presented. The report should also discuss any impediments to obligating HSIP funds and plans to overcome this challenge in the future.

HSIP Project Funding		
Reporting Period: MM/DD/YYYY to MM/DD/YYYY		
Funding Category	Programmed*	Obligated
HSIP (Section 148)		
Hazard Elimination (Section 152)		
Optional Safety		
Penalty Transfer (154 and 164)		
Safety Belt Performance Grants (Section 406)		
Incentive Grants (i.e. Sections 157, 163)		
Other Federal-aid funds (i.e. STP, ARRA)		
State and Local Funds		
<b>Total</b>		

\* "Available" (Programmed) funds refer to those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) and can be expended on highway safety improvement projects.

Lastly, briefly describe the amount of HSIP funds, either dollar amounts or percentage basis that were available (programmed) and obligated to local safety projects for the specified reporting period. Local safety projects are those projects implemented on non-State owned and operated roadways.

ii. General Listing of Projects:

Pursuant to 23 CFR 924.15, States shall provide the number and general listing of the types of projects obligated using HSIP funds for the reporting period. The general listing of the projects obligated shall be structured to identify how the projects relate to the State Strategic Highway Safety Plan (SHSP) and the State's safety goals and objectives. For each project obligated with HSIP funds, the following information should be provided:

- Improvement Category
- Project output (i.e. miles of rumbles strips)
- Project cost
- Relationship to the State's SHSP

Attachment 1 illustrates how this information can be presented in a tabular format. This table should be supplemented with a narrative briefly describing the information presented.

The improvement category should align with the list of highway safety improvement projects in 23 CFR 924, as shown in Attachment 2. While a single project may consist of multiple project types, each project should be assigned to only one category. The category chosen should align with the primary purpose of the project. For example, the State recently completed a pavement overlay at intersection A to improve the skid resistance on the approaches to the intersection. This project could be categorized as (1) intersection safety improvement, (4) installation of skid resistant surface and (11) improvement of highway signage and pavement markings. The State

chose improvement category (4) installation of skid resistant surface since that was the primary purpose of the project.

The project output will vary depending on the type of projects implemented. For example, if the State recently completed a rumble strip project, the project output would be the miles of rumble strips installed for that project. On the other hand, if the county had a project to improve pedestrian accommodations at ten intersections in their region, the project output would be 10 intersections.

The cost should reflect the total cost of each project.

For each HSIP project, the State must demonstrate the relationship to the SHSP. States should not only link each project to the appropriate SHSP emphasis area (i.e. intersection, roadway departure), but also the strategy that most closely aligns with the primary purpose of the project.

**C. Assessment of the Effectiveness of the Improvements (Program Evaluation)**

This section should provide a demonstration of the effectiveness of the HSIP in two parts:

- i. Overview of general highway safety trends
- ii. Description of the overall effectiveness of the HSIP

i. Overview of general highway safety trends

Present and describe figures showing the general highway safety trends (for the past five years) in the State (crashes, serious injuries and fatalities and any other information the State deems useful) by number and by rate.

ii. Description of overall HSIP effectiveness

As appropriate, the summary of program effectiveness should consist of three components, as noted below. Provide any other information that demonstrates the effectiveness and success of the HSIP. For example, in some instances, successful implementation of programs, strategies and/or treatments may lead to policy level changes, whereas safety treatments are being applied across all projects and not just safety specific projects. Such changes should be noted in the annual report as they represent a shift in safety culture.

Also, briefly describe significant program changes that have occurred since the beginning of SAFETEA-LU. For example, some States have begun targeting fatal and serious injury crashes in their HSIP, rather than all crashes. Other States have taken steps to address local roads as part of the HSIP. This information will help FHWA qualitatively assess the effects SAFETEA-LU has had on the HSIP.

*SHSP Emphasis Areas*

Present information regarding SHSP emphasis areas that relate to the HSIP. Present and describe trends in emphasis area performance measures (i.e. fatalities and serious injuries, all crashes).

Subprogram Types

Many States have subprograms that are administered under the HSIP. These subprograms may target subsets of the SHSP emphasis areas or specific strategies (i.e. median barrier program). States should report on the overall effectiveness of these subprograms. Continuing with the example, if a State has been implementing a median barrier program for the past several years, trends in cross median crashes could be presented.

Systemwide Treatments

Many States are beginning to implement treatments on a systemwide basis. States should also report on the effectiveness of these treatments in reducing the target crash type. For example, the State has been targeting horizontal curve crashes by implementing chevron warning signs on a systemwide basis for the past several years. The State should report on the effectiveness (i.e. percent reduction of targeted crash type) of this treatment.

**D. High Risk Rural Roads Program (HRRRP)**

This section of the HSIP report should provide information on the progress of HRRRP implementation. The content of the HRRRP portion of the report should mirror that of the HSIP, as outlined in sections B and C above, except that it is specific to the HRRRP. HRRRP funds are set aside for construction and/or operational improvements to improve safety on roadways functionally classified as rural major or minor collectors, or rural local roads.

The HRRRP portion of the HSIP report should consist of three parts:

- i. Basic program implementation information
- ii. Methods used to identify HRRR
- iii. Overall HRRRP effectiveness

i. Program Implementation

Based on the specified reporting period, the following should be addressed:

- HRRRP funds available (programmed)
- Number and type of HRRRP projects initiated

HRRRP Funds Available (Programmed)

This section of the report should only address the funds set aside for the HRRRP. Other funds (i.e. STP, ARRA, Rural Safety Innovation Program, State, local) used to obligate projects identified through the HRRRP should also be identified in the report. If additional HSIP funds are used to support the HRRRP, that information should be captured in the HSIP portion of the report. "Available" (Programmed) refers to the HRRRP funds that have been programmed in the Statewide Transportation Improvement Program (STIP) for the reporting period and can be expended on HRRR projects. In addition to the amount of HRRRP funds available

(programmed), States should also report the amount of HRRRP funds obligated for the specified reporting period.

This information could be presented in a format similar to that illustrated below. If this format is used, it should be supplemented with narrative briefly describing the information presented. The report should also discuss any impediments to obligating HRRR funds and plans to overcome this challenge in the future.

HRRRP Project Funding		
Reporting Period: MM/DD/YYYY to MM/DD/YYYY		
Funding Category	Programmed*	Obligated
HRRRP		
Other Federal-aid funds (i.e. STP, ARRA, Rural Safety Innovation Program)		
State and Local funds		
<b>Total</b>		

\* "Available" (Programmed) refers to the HRRRP funds that have been programmed in the Statewide Transportation Improvement Program (STIP) and can be expended on HRRR projects.

HRRRP Projects Initiated

States should provide the number and general listing of the types of projects obligated using HRRRP funds for the reporting period. The general listing of the projects obligated should be structured to identify how the projects relate to the State Strategic Highway Safety Plan (SHSP) and the State's safety goals and objectives. For each project obligated with HRRR funds, the following information should be provided:

- Improvement Category
- Project output (i.e. miles of rumbles strips)
- Project cost
- Relationship to the State's SHSP

Attachment 1 illustrates how this information can be presented in a tabular format. This table should be supplemented with narrative briefly describing the information presented.

The improvement category should align with the list of highway safety improvement projects in 23 CFR 924, as shown in Attachment 2. However, those items designated with a caret (^) are not eligible for HRRRP funds and should not be used to categorize HRRRP projects. In addition, while all HRRRP projects would be considered "construction and operational improvements on high risk rural roads," this project category should not be used to define the project type for HRRRP reporting purposes. Also, while a single project may consist of multiple project types, each project should be assigned to only one category. The category chosen should align with the primary purpose of the project.

The project output will vary depending on the type of projects implemented.





Attachment 2: Highway Safety Improvement Categories

**Highway Safety Improvement Project Categories**  
(Source: 23 CFR 924)

While a single project may consist of multiple project types, each project should be assigned to only one category. The category chosen should align with the primary purpose of the project.

- (1) An intersection safety improvement project
- (2) Pavement and shoulder widening
- (3) Installation of rumble strips or other warning devices
- (4) Installation of skid resistant surface at an intersection or other location with a high frequency of crashes
- (5) An improvement for pedestrian or bicyclist safety or for the safety of persons with disabilities
- \*(6) Construction of any project for the elimination of hazards at a railway-highway crossing that is eligible for funding under 23 U.S.C. 130, including the separation or protection of grades at railway-highway crossings.
- \*(7) Construction of railway-highway crossing safety feature, including installation of highway-railway grade crossing protective devices
- \*(8) The conduct of an effective traffic enforcement activity at a railway-highway crossing
- (9) Construction of a traffic calming feature
- (10) Elimination of a roadside obstacle or roadside hazard
- (11) Improvement of highway signage and pavement markings
- (12) Installation of a priority control system for emergency vehicles at signalized intersections
- (13) Installation of a traffic control or other warning device at a location with high crash potential
- ^(14) Transportation safety planning
- ^(15) Improvement in the collection and analysis of data
- (16) Planning integrated interoperable emergency communications equipment, operational activities or traffic enforcement activities (including law enforcement assistance) relating to work zone safety.
- (17) Installation of guardrails, barriers (including barriers between construction work zones and traffic lanes for the safety of road users and workers), and crash attenuators.
- (18) The addition or retrofitting of structures or other measures to eliminate or reduce crashes involving vehicles and wildlife
- (19) Installation and maintenance of signs (including fluorescent yellow-green signs) at pedestrian-bicycle crossings and in school zones.
- \*(21) Construction and operational improvements on high risk rural roads. [Do not use for the HRRRP portion of the report.]
- ^(22) Conducting road safety audits.

\* Include only if railway-highway or high risk rural roads projects are funded with HSIP-type funds, NOT the set-aside funds for these programs. Projects implemented using the set-aside funds for these programs have separate reporting requirements.

^ These project categories should not be included in the HRRRP portion of the report. They are not considered construction or operational improvements and therefore are not eligible for HRRR funds.

+ Describe in narrative

# Appendix B: B/C Ratio and EUAC (Lindeburg 13-7, 13-15, 13-16)

**Table 13.1**  
Discount Factors for Discrete Compounding

factor name	converts	symbol	formula
single payment compound amount	P to F	(F/P, i%, n)	(1 + i) <sup>n</sup>
single payment present worth	F to P	(P/F, i%, n)	(1 + i) <sup>-n</sup>
uniform series sinking fund	F to A	(A/F, i%, n)	$\frac{i}{(1+i)^n - 1}$
capital recovery	P to A	(A/P, i%, n)	$\frac{i(1+i)^n}{(1+i)^n - 1}$
uniform series compound amount	A to F	(F/A, i%, n)	$\frac{(1+i)^n - 1}{i}$
uniform series present worth	A to P	(P/A, i%, n)	$\frac{(1+i)^n - 1}{i(1+i)^n}$
uniform gradient present worth	G to P	(P/G, i%, n)	$\frac{(1+i)^n - 1}{i^2(1+i)^n} - \frac{n}{i(1+i)^n}$
uniform gradient future worth	G to F	(F/G, i%, n)	$\frac{(1+i)^n - 1}{i^2} - \frac{n}{i}$
uniform gradient uniform series	G to A	(A/G, i%, n)	$\frac{1}{i} - \frac{n}{(1+i)^n - 1}$

**13 CALCULATING UNIFORM SERIES EQUIVALENCE**

A cash flow that repeats each year for *n* years without change in amount is known as an *annual amount* and is given the symbol *A*. As an example, a piece of equipment may require annual maintenance, and the maintenance cost will be an annual amount. Although the equivalent value for each of the *n* annual amounts could be calculated and then summed, it is more expedient to use one of the uniform series factors. For example, it is possible to convert from an annual amount to a future amount by use of the (F/A) factor.

$$F = A(F/A, i\%, n) \quad 13.8$$

A *sinking fund* is a fund or account into which annual deposits of *A* are made in order to accumulate *F* at *t* = *n* in the future. Since the annual deposit is calculated as  $A = F(A/F, i\%, n)$ , the (A/F) factor is known as the *sinking fund factor*.

An *annuity* is a series of equal payments (*A*) made over a period of time.<sup>10</sup> Usually, it is necessary to "buy into" an investment (e.g., a bond, an insurance policy, etc.) in order to ensure the annuity. In the simplest case of an annuity

<sup>10</sup>An annuity may also consist of a lump sum payment made at some future time. However, this rare interpretation is not considered in this chapter.

that starts at the end of the first year and continues for *n* years, the purchase price (*P*) is

$$P = A(P/A, i\%, n) \quad 13.9$$

The present worth of an *infinite (perpetual) series* of annual amounts is known as a *capitalized cost*. There is no (P/A, i%, ∞) factor in the tables, but the capitalized cost can be calculated simply as

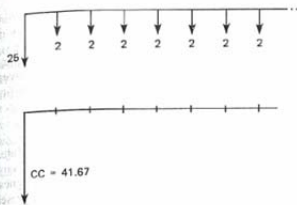
$$P = \frac{A}{i} \quad (i \text{ in decimal form}) \quad 13.10$$

Alternatives with different lives will generally be compared by way of *equivalent uniform annual cost*, or EUAC. An EUAC is the annual amount that is equivalent to all of the cash flows in the alternative. The EUAC differs in sign from all of the other cash flows. Costs and expenses expressed as EUACs, which would normally be considered negative, are actually positive. The term *cost* in the designation EUAC serves to make clear the meaning of a positive number.

**Example 13.4**

Maintenance costs for a machine are \$250 each year. What is the present worth of these maintenance costs over a 12-year period if the interest rate is 8%?

ECONOMICS



**C. Annual Cost Method**

Alternatives that accomplish the same purpose but that have unequal lives must be compared by the *annual cost method*.<sup>16</sup> The annual cost method assumes that each alternative will be replaced by an identical twin at the end of its useful life (infinite renewal). This method, which may also be used to rank alternatives according to their desirability, is also called the *annual return method* or *capital recovery method*.

Restrictions are that the alternatives must be mutually exclusive and repeatedly renewed up to the duration of the longest-lived alternative. The calculated annual cost is known as the *equivalent uniform annual cost* (EUAC) or just *equivalent annual cost*. Cost is a positive number when expenses exceed income.

**Example 13.13**

Which of the following alternatives is superior over a 30-year period if the interest rate is 7%?

	alternative A	alternative B
type	brick	wood
life	30 years	10 years
initial cost	\$1800	\$450
maintenance	\$5/year	\$20/year

(solution)

$$\begin{aligned} \text{EUAC}(A) &= 1800(A/P, 7\%, 30) + 5 \\ &= (1800)(0.0806) + 5 \\ &= \$150 \\ \text{EUAC}(B) &= 450(A/P, 7\%, 10) + 20 \\ &= (450)(0.1424) + 20 \\ &= \$84 \end{aligned}$$

<sup>16</sup>Of course, the annual cost method can be used to determine the superiority of assets with identical lives as well.

Alternative B is superior since its annual cost of operation is the lowest. It is assumed that three wood facilities, each with a life of ten years and a cost of \$450, will be built to span the 30-year period.

**25 CHOICE OF ALTERNATIVES: COMPARING AN ALTERNATIVE WITH A STANDARD**

With specific economic performance criteria, it is possible to qualify an investment as acceptable or unacceptable without having to compare it with another investment. Two such performance criteria are the *benefit-cost ratio* and the *minimum attractive rate of return*.

**A. Benefit-Cost Ratio Method**

The benefit-cost ratio method is often used in municipal project evaluations where benefits and costs accrue to different segments of the community. With this method, the present worth of all benefits (irrespective of the beneficiaries) is divided by the present worth of all costs. The project is considered acceptable if the ratio equals or exceeds 1.0, that is, if  $B/C \geq 1.0$ .

When the benefit-cost ratio method is used, disbursements by the initiators or sponsors are *costs*. Disbursements by the users of the project are known as *disbenefits*. It is often difficult to determine whether a cash flow is a cost or a disbenefit (whether to place it in the numerator or denominator of the benefit-cost ratio calculation).

Regardless of where the cash flow is placed, an acceptable project will always have a benefit-cost ratio greater than or equal to 1.0, although the actual numerical result will depend on the placement. For this reason, the benefit-cost ratio method should not be used to rank competing projects.

The benefit-cost ratio method of comparing alternatives has seen extensive use in transportation engineering where the ratio is often (but not necessarily) written in terms of annual benefits and annual costs instead of present worths. Another characteristic of highway benefit-cost ratios is that the route (road, highway, etc.) is usually already in place and that various alternative upgrades are being considered. There will be existing benefits and costs associated with the current route. Therefore, the *change* (usually an increase) in benefits and costs is used to calculate the benefit-cost ratio.<sup>17</sup>

$$B/C = \frac{\Delta \text{ user benefits}}{\Delta \text{ investment cost} + \Delta \text{ maintenance} - \Delta \text{ residual value}} \quad 13.21$$

<sup>17</sup>This discussion of highway benefit-cost ratios is not meant to imply that everyone agrees with Eq. 13.21. In *Economic Analysis for Highways* (International Textbook Company, Scranton, PA, 1969), author Robley Winfrey takes a strong stand on one aspect of the benefits versus disbenefits issue: highway maintenance. Regular highway maintenance costs (according to Winfrey) should be placed in the numerator as a subtraction from the user benefits. This mandate has been called the *Winfrey method* by some.

ECONOMICS

Notice that the change in *residual value (terminal value)* appears in the denominator as a negative item. An increase in the residual value would decrease the denominator.

*Example 13.14*

By building a bridge over a ravine, a state department of transportation can shorten the time it takes to drive through a mountainous area. Estimates of costs and benefits (due to decreased travel time, fewer accidents, reduced gas usage, etc.) have been prepared. Should the bridge be built? Use the benefit-cost ratio method of comparison.

	millions
initial cost	40
capitalized cost of perpetual annual maintenance	12
capitalized value of annual user benefits	49
residual value	0

(solution)

If Eq. 13.21 is used, the benefit-cost ratio is

$$B/C = \frac{49}{40 + 12 + 0} = 0.942$$

Since the benefit-cost ratio is less than 1.00, the bridge should not be built.

If the maintenance costs are placed in the numerator, the benefit-cost ratio value will be different, but the conclusion will not change.

$$B/C_{\text{alternate method}} = \frac{49 - 12}{40} = 0.925$$

#### B. Rate of Return Method

The minimum attractive rate of return (MARR) has already been introduced as a standard of performance against which an investment's actual rate of return (ROR) is compared. If the rate of return is equal to or exceeds the minimum attractive rate of return, the investment is qualified. This is the basis for the *rate of return method* of alternative selection.

Finding the rate of return can be a long, iterative process. Usually, the actual numerical value of rate of return is not needed; it is sufficient to know whether or not the rate of return exceeds the minimum attractive rate of return. This *comparative analysis* can be accomplished without calculating the rate of return simply by finding the present worth of the investment using the minimum attractive rate of return as the effective interest rate (i.e.,  $i = \text{MARR}$ ). If the present worth is zero or positive, the investment is qualified. If the present worth is negative, the rate of return is less than the minimum attractive rate of return.

#### 26 RANKING MUTUALLY EXCLUSIVE MULTIPLE PROJECTS

Ranking of multiple investment alternatives is required when there is sufficient funding for more than one investment. Since the best investments should be selected first, it is necessary to be able to place all investments into an ordered list.

Ranking is relatively easy if the present worths, future worths, capitalized costs, or equivalent uniform annual costs have been calculated for all the investments. The highest-ranked investment will be the one with the largest present or future worth, or the smallest capitalized or annual cost. Present worth, future worth, capitalized cost, and equivalent uniform annual cost can all be used to rank multiple investment alternatives.

However, neither rates of return nor benefit-cost ratios should be used to rank multiple investment alternatives. Specifically, if two alternatives both have rates of return exceeding the minimum acceptable rate of return, it is not sufficient to select the alternative with the highest rate of return.

An *incremental analysis*, also known as a *rate of return on added investment study*, should be performed if rate of return is used to select between investments. An incremental analysis starts by ranking the alternatives in order of increasing initial investment. Then, the cash flows for the investment with the lower initial cost are subtracted from the cash flows for the higher-priced alternative on a year-by-year basis. This produces, in effect, a third alternative representing the costs and benefits of the added investment. The added expense of the higher-priced investment is not warranted unless the rate of return of this third alternative exceeds the minimum attractive rate of return as well. The choice criterion is to select the alternative with the higher initial investment if the incremental rate of return exceeds the minimum attractive rate of return.

An incremental analysis is also required if ranking is to be done by the benefit-cost ratio method. The incremental analysis is accomplished by calculating the ratio of differences in benefit to differences in costs for each possible pair of alternatives. If the ratio exceeds 1.0, alternative 2 is superior to alternative 1. Otherwise, alternative 1 is superior.<sup>18</sup>

$$\frac{B_2 - B_1}{C_2 - C_1} \geq 1 \quad [\text{alternative 2 superior}] \quad 13.22$$

#### 27 ALTERNATIVES WITH DIFFERENT LIVES

Comparison of two alternatives is relatively simple when both alternatives have the same life. For example, a problem might be stated: "Which would you rather have: car A with a life of five years, or car B with a life of five years?"

<sup>18</sup>It goes without saying that the benefit-cost ratios for all investment alternatives by themselves must also be equal to or greater than 1.0.

# Appendix C: Discount Rates

## Discount Rates

- Discount Rate =  $[(1 + \text{Market Interest Rate}) / (1 + \text{Inflation Rate})] - 1$ .

The discount rate (commonly called an interest rate in business investments) represents the time value of money. It is usually expressed as an annual compounded rate that represents the rate of interest money will earn over a future period. The **AASHTO Pavement Design Guide** explains the discount rate in the following way:

"A governmental unit that decides to spend money improving a highway, for example, loses the opportunity to "invest" this money elsewhere. That rate at which money could be invested elsewhere is sometimes known as the "Opportunity Cost Of Capital" and is the appropriate discount rate from performing the present value calculations on public projects should represent the opportunity cost of capital to the taxpayer as reflected by the average market rate of return. However, the market ... rate of interest includes an allowance for expected inflation as well as a return that represents the real cost of capital."

- The **Oklahoma Turnpike Authority** uses approximately 5% to 6% bonds. (Should receive more information from OTA, 1/15/97.)
- Oklahoma State Treasury's** office has availability to invest in US Treasury Bills (0-12 months) varies  
Notes (1-20 years) 6.94 % (20 year Note)  
Bonds (30 years) 6.85 %  
They currently invest in bills and notes.
- FHWA** considers "Best Practice" to use a 3% to 5% discount rate.
- Corps of Engineers**, use a discount rate based on interest-bearing securities. Currently, all projects having terms exceeding 15 years have a discount rate of 7-3/8%.
- American Concrete Paving Association**, Frank Cunningham recommends 3% for government projects.
- Asphalt Institute**, Gary Fitts says it varies from 2% to 6%. Most states settle on 3% or 4% with 4% being the most common.
- "**PONTIS**" a National Bridge Management tool for AASHTO contributing states comes with the default value of 2.5% discount rate.

## Further Life-Cycle Analysis of Proj No.: BHF-186(176)

I have reevaluated the study using a constant-dollar analysis (discount rate adjust for inflation). Below list a summary of the sensitivity.

Discount Rate	Uniform Equivalent Annual Cost		
	Widen w/ Exist. Steel	Replace Steel	Difference
2.00%	\$124,803	\$105,793	\$19,010
3.00%	\$151,122	\$137,866	\$13,256
4.00%	\$177,804	\$173,084	\$4,720
4.46%	\$190,074	\$190,075	-\$1
5.00%	\$204,479	\$210,506	-\$6,027
6.00%	\$231,252	\$249,377	-\$18,125
7.00%	\$258,283	\$289,155	-\$30,872
15.00%	\$485,100	\$616,008	-\$130,908
20.00%	\$630,751	\$821,325	-\$190,574

- + A survey\* of commonly used discount rates indicate a 15% discount rate is unjustified. Discount rates should be in the 2% to 4% or 4% to 7.5% range depending on whether "Constant Dollars" or "Nominal Discount Rate" is used.
- + This study was perform using "Constant Dollars" and the discount rate of 2 to 4% should be used.
- + Both options are equal using a 4.46% discount rate.
- + At 15% discount rate, it will be very difficult justifying anything beyond maintain existing situation. Future accidents, delays due to congestion and detours due to failed roadways will not greatly impact the present cost. To rebuild the superstructure 75 years in the future with today's dollars at \$4,106,621 will have the present cost of \$100.

\* See Attachment



- \* **1995 Federal Register** (12/21/95) applies to the Department of Interior's "**Bureau of Reclamation**" for all 1996 Water Resource Projects use 7.625% discount rate.
- \* **Michigan DOT** uses 4% discount rate.
- \* **South Carolina DOT** - BMS uses 4% and PMS uses 3 - 3.5%.
- \* **South Dakota DOT** - While we have no official policy on this figure, we have used figures in the 3 to 5% range and never above 5%.
- \* Executive Office of the President - The **Office of Management & Budget** Circular No. A-94 recommends the following discount rates. Programs with durations longer than 30 years may use the 30-year interest rate.

Effective Dates: March 96 through February 97

Nominal Discount Rates

3-Year	5-Year	7-Year	10-Year	30-Year
5.4 %	5.5 %	5.5 %	5.6 %	5.7 %

Real Discount Rates (No Inflation)

3-Year	5-Year	7-Year	10-Year	30-Year
2.7 %	2.7 %	2.8 %	2.8 %	3.0 %

When government expenses provide a mix of cost savings and external social benefits, the OMB recommends the net present value of such investment should be evaluated with a 7% real discount rate.

# 2013 OKLAHOMA Crash Facts

**Oklahoma Department of Public Safety**

**Highway Safety Office**

**3223 N. Lincoln Blvd.**

**Okla. City, OK 73105-5403**

**Telephone (405) 523-1570**

**Fax (405) 523-1586**

**Web Site: [www.ohso.ok.gov](http://www.ohso.ok.gov)**

**Document Location:**

[http://www.ok.gov/ohso/Data/Crash\\_Data\\_and\\_Statistics/Crash\\_Facts\\_2013.html](http://www.ok.gov/ohso/Data/Crash_Data_and_Statistics/Crash_Facts_2013.html)

This publication is issued by the Oklahoma Department of Public Safety as authorized by the Commissioner of Public Safety. The Oklahoma Department of Libraries has been notified of the posting of the 2013 Crash Fact Book to the Department of Public Safety web site: [www.dps.state.ok.us](http://www.dps.state.ok.us).

**Appendix E: Guidance on Treatment of the Economic Value of a Statistical Life (VSL) in U.S. Department of Transportation Analyses – 2014 Adjustment.**






**U.S. Department of  
Transportation**

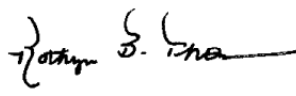
Office of the Secretary  
of Transportation

1200 New Jersey Avenue, SE  
Washington, DC 20590

June 13, 2014

**MEMORANDUM TO: SECRETARIAL OFFICERS  
MODAL ADMINISTRATORS**

**From:** Peter Rogoff   
Acting Under Secretary for Policy  
x64540

Kathryn Thomson   
General Counsel  
x64702

**Subject:** Guidance on Treatment of the Economic Value of a Statistical Life (VSL) in  
U.S. Department of Transportation Analyses – 2014 Adjustment

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Departmental guidance on valuing reduction of fatalities and injuries by regulations or investments has been published periodically by this office since 1993. We issued a thorough revision of our guidance in 2013 and indicated that we planned to issue annual updates to adjust for changes in prices and real incomes since then.

Our 2013 revision indicated a VSL of \$9.1 million in current dollars for analyses using a base year of 2012. Using the 2013 value as a baseline, and taking into account both changes in prices and changes in real incomes, we now find that these changes over the past year imply an increased VSL of \$9.2 million for analyses prepared in 2014. The procedure for adjusting VSL for changes in prices and real incomes is described on pages 6-7 of the guidance. We also indicated in our guidance that VSL values for future years could be projected based on forecasts of median real wages by the Congressional Budget Office and an elasticity of VSL with respect to income of 1.0. Based on revised wage forecasts from the Congressional Budget Office issued in September 2013, we estimate that there will be an expected 1.18 percent annual growth rate in median real wages over the next 30 years (2013-2043). These estimates imply that VSL in future years should be estimated to grow by 1.18 percent per year before discounting to present value.

This guidance also includes a table of the relative values of preventing injuries of varied severity, unchanged since the 2013 guidance. We also prescribe a sensitivity analysis of the effects of using alternative VSL values. Instead of treating alternative values in terms of a probability distribution, analysts should apply only a test of low and high alternative values of \$5.2 million and \$13.0 million.

This guidance and other relevant documents will be posted on the Reports page of the Office of Transportation Policy website, <http://www.dot.gov/policy>, and on the General Counsel's regulatory information website, <http://www.dot.gov/regulations>. Questions should be addressed to Jack Wells, (202) 366-9224 or [jack.wells@dot.gov](mailto:jack.wells@dot.gov).

cc: Regulations officers and liaison officers

**Revised Departmental Guidance 2014:**  
**Treatment of the Value of Preventing Fatalities and Injuries**  
**in Preparing Economic Analyses**

On the basis of the best available evidence, this guidance identifies \$9.2 million as the value of a statistical life to be used for U.S. Department of Transportation analyses assessing the benefits of preventing fatalities and using a base year of 2013. It also establishes policies for projecting future values and for assigning comparable values to prevention of injuries.

**Background**

Prevention of injury, illness, and loss of life is a significant factor in many private economic decisions, including job choices and consumer product purchases. When government makes direct investments or controls external market impacts by regulation, it also pursues these benefits, often while also imposing costs on society. The Office of the Secretary of Transportation and other DOT administrations are required by Executive Order 13563, Executive Order 12866, Executive Order 12893, OMB Circular A-4, and DOT Order 2100.5 to evaluate in monetary terms the costs and benefits of their regulations, investments, and administrative actions, in order to demonstrate the faithful execution of their responsibilities to the public. Since 1993, the Office of the Secretary of Transportation has periodically reviewed the published research on the value of safety and updated guidance for all administrations. Our previous guidance, issued on February 28, 2013, stated that we planned to update our guidance annually to adjust for changes in prices and real incomes. This guidance updates our values based on 2013 prices and real incomes.

The benefit of preventing a fatality is measured by what is conventionally called the Value of a Statistical Life (VSL), defined as the additional cost that individuals would be willing to bear for improvements in safety (that is, reductions in risks) that, in the aggregate, reduce the expected number of fatalities by one. This conventional terminology has often provoked misunderstanding on the part of both the public and decision-makers. What is involved is not the valuation of life as such, but the valuation of reductions in risks. While new terms have been proposed to avoid misunderstanding, we will maintain the common usage of the research literature and OMB Circular A-4 in referring to VSL.

Most regulatory actions involve the reduction of risks of low probability (as in, for example, a one-in-10,000 annual chance of dying in an automobile crash). For these low-probability risks, we shall assume that the willingness to pay to avoid the risk of a fatal injury increases proportionately with growing risk. That is, when an individual is willing to pay \$1,000 to reduce the annual risk of death by one in 10,000, she is said to have a VSL of \$10 million. The assumption of a linear relationship between risk and willingness to pay therefore implies that she would be willing to pay \$2,000 to reduce risk by two in 10,000 or \$5,000 to reduce risk by five in 10,000. The assumption of a linear relationship between risk and willingness to pay (WTP) breaks down when the annual WTP becomes a substantial portion of annual income, so the assumption of a constant VSL is not appropriate for substantially larger risks.

When first applied to benefit-cost analysis in the 1960s and 1970s, the value of saving a life was measured by the potential victim's expected earnings, measuring the additional product society might have lost. These lost earnings were widely believed to understate the real costs of loss of life, because the value that we place on the continued life of our family and friends is not based entirely, or even principally, on their earning capacity. In recent decades, studies based on estimates of individuals' willingness to pay for improved safety have become widespread, and offer a way of measuring the value of reduced risk in a more comprehensive way. These estimates of the individual's value of safety are then treated as the ratio of the individual marginal utility of safety to the marginal utility of wealth. These estimates of the individual values of changes in safety can then

be aggregated to produce estimates of social benefits of changes in safety, which can then be compared with the costs of these changes.

Studies estimating the willingness to pay for safety fall into two categories. Some analyze subjects' responses in real markets, and are referred to as revealed preference (RP) studies, while others analyze subjects' responses in hypothetical markets, and are described as stated preference (SP) studies. Revealed preference studies in turn can be divided into studies based on consumer purchase decisions and studies based on employment decisions (usually referred to as hedonic wage studies). Even in revealed preference studies, safety is not purchased directly, so the value that consumers place upon it cannot be measured directly. Instead, the value of safety can be inferred from market decisions that people make in which safety is one factor in their decisions. In the case of consumer purchase decisions, since goods and services usually display multiple attributes, and are purchased for a variety of reasons, there is no guarantee that safety will be the conclusive factor in any purchasing decision (even products like bicycle helmets, which are purchased primarily for safety, also vary in style, comfort, and durability). Similarly, in employment decisions, safety is one of many considerations in the decision of which job offer to accept. Statistical techniques must therefore be used to identify the relative influence of price (or wage), safety, and other qualitative characteristics of the product or job on the consumer's or worker's decision on which product to buy or which job to accept.

An additional complication in RP studies is that, even if the real risks confronted by individuals can be estimated accurately by the analyst, the consumer or employee may not estimate these risks accurately. It is possible for individuals, through lack of relevant information or limited ability to analyze risks, to assign an excessively low or high probability to fatal risks. Alternatively, detailed familiarity with the hazards they face and their own skills may allow individuals to form more accurate estimates of risk at, for example, a particular job-site than those derived by researchers, which inevitably are based on more aggregate data.

In the SP approach, market alternatives incorporating hypothetical risks are presented to test subjects, who respond with what they believe would be their choices. Answers to hypothetical questions may provide helpful information, but they remain hypothetical. Although great pains are usually taken to communicate probabilities and measure the subjects' understanding, there is no assurance that individuals' predictions of their own behavior would be observed in practice. Against this weakness, the SP method can evaluate many more alternatives than those for which market data are available, and it can guarantee that risks are described objectively to subjects. With indefinitely large potential variations in cost and risk and no uncontrolled variation in any other dimension, some of the objections to RP models are obviated. Despite procedural safeguards, however, SP studies have not proven consistently successful in estimating measures of WTP that increase proportionally with greater risks.

RP studies involving decisions to buy and/or use various consumer products have focused on decisions such as buying cars with better safety equipment, wearing seat belts or helmets, or buying and installing smoke detectors. These studies often lack a continuum of price-risk opportunities, so that the price paid for a safety feature (such as a bicycle helmet) does not necessarily represent the value that the consumer places on the improvement in safety that the helmet provides. In the case of decisions to use a product (like a seatbelt) rather than to buy the product, the "price" paid by the consumer must be inferred from the amount of time and degree of inconvenience involved in using the product, rather than the directly observable price of buying the product. The necessity of making these inferences introduces possible sources of error. Studies of purchases of automobiles probably are less subject to these problems than studies of other consumer decisions, because the price of the safety equipment is directly observable, and there are usually a variety of more or less expensive safety features that provide more of a range of price-risk trade-offs for consumers to make.

While there are many examples of SP studies and RP studies involving consumer product purchases, the most widely cited body of research comprises hedonic wage studies, which estimate the wage differential that

employers must pay workers to accept riskier jobs, taking other factors into account. Besides the problem of identifying and quantifying these factors, researchers must have a reliable source of data on fatality and injury risks and also assume that workers' psychological risk assessment conforms to the objective data. The accuracy of hedonic wage studies has improved over the last decade with the availability of more complete data from the Bureau of Labor Statistics' (BLS) Census of Fatal Occupational Injuries (CFOI), supported by advances in econometric modeling, including the use of panel data from the Panel Study of Income Dynamics (PSID). The CFOI data are, first of all, a complete census of occupational fatalities, rather than a sample, so they allow more robust statistical estimation. Second, they classify occupational fatalities by both industry and occupation, allowing variations in fatalities across both dimensions to be compared with corresponding variations in wage rates. Some of the new studies use panel data to analyze the behavior of workers who switch from one job to another, where the analysis can safely assume that any trade-off between wage levels and risk reflects the preferences of a single individual, and not differences in preferences among individuals.

VSL estimates are based on studies of groups of individuals that are covered by the study, but those VSL estimates are then applied to other groups of individuals who were not the subjects of the original studies. This process is called benefit transfer. One issue that has arisen in studies of VSL is whether this benefit transfer process should take broadly over the general population of people that are affected by a rulemaking, or whether VSL should be estimated for particular subgroups, such as workers in particular industries, and people of particular ages, races, and genders. Advances in data and econometric techniques have allowed specialized estimates of VSL for these population subgroups. Safety regulations issued by the U.S. Department of Transportation typically affect a broad cross-section of people, rather than more narrowly defined subgroups. Partly because of that, and partly for policy reasons, we do not consider variations in VSL among different population groups (except to take into account the effect on VSL of rising real income over time).

### **Principles and policies of DOT guidance**

This guidance for the conduct of U.S. Department of Transportation analyses is a synthesis of empirical estimates, practical adaptations, and social policies. We continue to explore new empirical literature as it appears and to give further consideration to the policy resolutions embodied in this guidance. Although our approach is unchanged from previous guidance, the numbers and their sources are new, consistent with OMB guidance in Circular A-4 and other sources, and with the use of the best available evidence. The methods we adopt are:

1. Prevention of an expected fatality is assigned a single, nationwide value in each year, regardless of the age, income, or other distinct characteristics of the affected population, the mode of travel, or the nature of the risk. When Departmental actions have distinct impacts on infants, disabled passengers, or the elderly, no adjustment to VSL should be made, but analysts should call the attention of decision-makers to the special character of the beneficiaries.
2. In preparing this guidance, we have adjusted the VSL from the year of the source data to the year before the guidance is issued, based on two factors: growth in median real income and monetary inflation, both measured to the last full year before the date of the guidance.
3. The value to be used by all DOT administrations will be published annually by the Office of the Secretary of Transportation.
4. Analysts should project VSL from the base year to each future year based on expected growth in real income, according to the formula prescribed on page 8 of this guidance. Analysts should not project future changes in VSL based on expected changes in price levels.

5. Alternative high and low benefit estimates should be prepared, using a range of VSLs prescribed on pages 10-11 of this guidance.

In Circular A-4 (2003), the Office of Management and Budget endorsed VSL values between \$1 million and \$10 million, drawing on two recently completed VSL meta-analyses.<sup>1</sup> In 2013 dollars, these values would be between \$1.25 million and \$12.5 million. The basis for our 2008 guidance comprised five studies, four of which were meta-analyses that synthesized many primary studies, identifying their sources of variation and estimating the most likely common parameters. These studies were written by Ted R. Miller;<sup>2</sup> Ikuho Kochi, Bryan Hubbell, and Randall Kramer;<sup>3</sup> W. Kip Viscusi;<sup>4</sup> Janusz R. Mrozek and Laura O. Taylor;<sup>5</sup> and W. Kip Viscusi and Joseph Aldy.<sup>6</sup> They narrowed VSL estimates to the \$2 million to \$7 million range in dollar values of the original data, between 1995 and 2000 (about \$3 million to \$9 million at current prices). Miller and Viscusi and Aldy also estimated income elasticities for VSL (the percent increase in VSL per one percent increase in income). Miller's estimates were close to 1.0, while Viscusi and Aldy estimated the elasticity to be between 0.5 and 0.6. DOT used the Viscusi and Aldy elasticity estimate (averaged to 0.55), along with the Wages and Salaries component of the Employer Cost for Employee Compensation, as well as price levels represented by the Consumer Price Index, to project these estimates to a 2007 VSL estimate of \$5.8 million.

Since these studies were published, the credibility of these meta-analyses has been qualified by recognition of weaknesses in the data used by the earlier primary studies whose results are synthesized in the meta-analyses. We now believe that the most recent primary research, using improved data (particularly the CFOI data discussed above) and specifications, provides more reliable results. This conclusion is based in part on the advice of a panel of expert economists that we convened to advise us on this issue. The panel consisted of Maureen Cropper (University of Maryland), Alan Krupnick (Resources for the Future), Al McGartland (Environmental Protection Agency), Lisa Robinson (independent consultant), and W. Kip Viscusi (Vanderbilt University). The Panel unanimously concluded that we should base our guidance only on hedonic wage studies completed within the past 10 years that made use of the CFOI database and used appropriate econometric techniques.

A White Paper prepared for the U.S. Environmental Protection Agency (EPA) in 2010 identified eight hedonic wage studies using the CFOI data;<sup>7</sup> we also identified seven additional studies, including five published since the EPA White Paper was issued (see Table 1). Some of these studies focus on estimating VSL values for narrowly defined economic, demographic, or occupational categories, or use inappropriate econometric techniques, resulting in implausibly high VSL estimates. We therefore focused on nine studies that we think

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<sup>1</sup> Viscusi, W. K. and J.E. Aldy (2003). "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World." *Journal of Risk and Uncertainty*, 27(1): 5-76; and Mrozek, J.R. and L. O. Taylor (2002). "What Determines the Value of a Life? A Meta-Analysis." *Journal of Policy Analysis and Management*. 21(2).

<sup>2</sup> Miller, T. R. (2000). "Variations between Countries in Values of Statistical Life." *Journal of Transport Economics and Policy*. 34(2): 169-188. [http://www.bath.ac.uk/e-journals/jtep/pdf/Volume\\_34\\_Part\\_2\\_169-188.pdf](http://www.bath.ac.uk/e-journals/jtep/pdf/Volume_34_Part_2_169-188.pdf)

<sup>3</sup> Kochi, I., B. Hubbell, and R. Kramer (2006). "An Empirical Bayes Approach to Combining and Comparing Estimates of the Value of a Statistical Life for Environmental Policy Analysis." *Environmental and Resource Economics*. 34(3): 385-406.

<sup>4</sup> Viscusi, W. K. (2004). "The Value of Life: Estimates with Risks by Occupation and Industry." *Economic Inquiry*. 42(1): 29-48.

<sup>5</sup> Mrozek, J. R., and L. O. Taylor (2002). "What Determines the Value of Life? A Meta-Analysis." *Journal of Policy Analysis and Management*. 21(2).

<sup>6</sup> Viscusi, W. K. and J. E. Aldy (2003). "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World." *Journal of Risk and Uncertainty*. 27(1): 5-76.

<sup>7</sup> U.S. Environmental Protection Agency (2010), *Valuing Mortality Risk Reductions for Environmental Policy: A White Paper (Review Draft)*. Prepared by the National Center for Environmental Economics for consultation with the Science Advisory Board – Environmental Economics Advisory Committee.

are useful for informing an appropriate estimate of VSL. There is broad agreement among researchers that these newer hedonic wage studies provide an improved basis for policy-making.<sup>8</sup>

The 15 hedonic wage studies we have identified that make use of the CFOI database to estimate VSL are listed in Table 1. Several of these studies focus on estimating how VSL varies for different categories of people, such as males and females,<sup>9</sup> older workers and younger workers,<sup>10</sup> blacks and whites,<sup>11</sup> immigrants and non-immigrants,<sup>12</sup> and smokers and non-smokers,<sup>13</sup> as well as for different types of fatality risks.<sup>14</sup> Some of these studies do not estimate an overall (“full-sample”) VSL, instead estimating VSL values only for specific categories of people. Some of the studies, as the authors themselves sometimes acknowledge, arrive at implausibly high values of VSL, because of econometric specifications which appear to bias the results, or because of a focus on a narrowly-defined occupational group. Moreover, these papers generally offer multiple model specifications, and it is often not clear (even to the authors) which specification most accurately represents the actual VSL. We have generally chosen the specification that the author seems to believe is best. In cases where the author does not express a clear preference, we have had to average estimates based on alternative models within the paper to get a representative estimate for the paper as a whole.

**Table 1: VSL Studies Using CFOI Database**  
(VSLs in millions of dollars)

	<u>Study</u>	<u>Year of Study</u> \$	<u>VSL in Study- Year</u> \$	<u>VSL in 2012</u> \$	<u>Comments</u>
1.	Viscusi (2003) *	1997	\$14.185M	\$21.65M	Implausibly high; industry-only risk measure
2.	Leeth and Ruser (2003) *	2002	\$7.04M	\$8.90M	Occupation-only risk measure
3.	Viscusi (2004)	1997	\$4.7M	\$7.17M	Industry/occupation risk measure
4.	Kniesner and Viscusi (2005)	1997	\$4.74M	\$7.23M	Industry/occupation risk measure
5.	Kniesner <i>et al.</i> (2006) *	1997	\$23.70M	\$36.17M	Implausibly high; industry/occupation risk measure

<sup>8</sup> A current survey of theoretical and empirical research on VSL may be found in: Cropper, M., J.K. Hammitt, and L.A. Robinson (2011). “Valuing Mortality Risk Reductions: Progress and Challenges.” *Annual Review of Resource Economics*. 3: 313-336. [http://www.annualreviews.org/doi/abs/10.1146/annurev\\_resource.012809.103949](http://www.annualreviews.org/doi/abs/10.1146/annurev_resource.012809.103949)

<sup>9</sup> Leeth, J.D. and J. Ruser (2003). “Compensating Wage Differentials for Fatal and Nonfatal Injury Risks by Gender and Race.” *Journal of Risk and Uncertainty*, 27(3): 257-277.

<sup>10</sup> Kniesner, T.J., W.K. Viscusi, and J.P. Ziliak (2006). “Life-Cycle Consumption and the Age-Adjusted Value of Life.” *Contributions to Economic Analysis and Policy*. 5(1): 1-34; Viscusi, W.K. and J.E. Aldy (2007). “Labor Market Estimates of the Senior Discount for the Value of Statistical Life.” *Journal of Environmental Economics and Management*. 53: 377-392; Aldy, J.E. and W.K. Viscusi (2008). “Adjusting the Value of a Statistical Life for Age and Cohort Effects.” *Review of Economics and Statistics*. 90(3): 573-581; and Evans, M.F. and G. Schaur (2010). “A Quantile Estimation Approach to Identify Income and Age Variation in the Value of a Statistical Life.” *Journal of Environmental Economics and Management*. 59: 260-270.

<sup>11</sup> Viscusi, W.K. (2003). “Racial Differences in Labor Market Values of a Statistical Life.” *Journal of Risk and Uncertainty*. 27(3): 239-256, and Leeth, J.D. and J. Ruser (2003), *op. cit.*

<sup>12</sup> Hersch, J. and W.K. Viscusi (2010). “Immigrant Status and the Value of Statistical Life.” *Journal of Human Resources*. 45(3): 749-771.

<sup>13</sup> Viscusi, W.K. and J. Hersch (2008). “The Mortality Cost to Smokers.” *Journal of Health Economics*. 27: 943-958.

<sup>14</sup> Scotton, C.R. and L.O. Taylor. “Valuing Risk Reductions: Incorporating Risk Heterogeneity into a Revealed Preference Framework.” *Resource and Energy Economics*. 33 and Kochi, I and L.O. Taylor (2011). “Risk Heterogeneity and the Value of Reducing Fatal Risks: Further Market-Based Evidence.” *Journal of Benefit-Cost Analysis*. 2(3): 381-397.

6.	Viscusi and Aldy (2007) *	2000			Industry-only risk measure; no full-sample VSL estimate
7.	Aldy and Viscusi (2008) *	2000			Industry-only risk measure, no full-sample VSL estimate
8.	Evans and Smith (2008)	2000	\$9.6M	\$12.84M	Industry-only risk measure
9.	Viscusi and Hersch (2008)	2000	\$7.37M	\$9.86M	Industry-only risk measure
10.	Evans and Schaur (2010)	1998	\$6.7M	\$9.85M	Industry-only risk measure
11.	Hersch and Viscusi (2010)	2003	\$6.8M	\$8.43M	Industry/occupation risk measure
12.	Kniesner <i>et al.</i> (2010)	2001	\$7.55M	\$9.76M	Industry/occupation risk measure
13.	Kochi and Taylor (2011)*	2004			VSL estimated only for occupational drivers
14.	Scotton and Taylor (2011)	1997	\$5.27M	\$8.04M	Industry/occupation risk measure; VSL is mean of estimates from three preferred specifications
15.	Kniesner <i>et al.</i> (2012)	2001	\$4M - \$10M	\$5.17M - \$12.93M	Industry/occupation risk measure; mean VSL estimate is \$9.05M

\* Studies shown in grayed-out rows were not used in determining the VSL Guidance value.

We found that nine of these studies provided usable estimates of VSL for a broad cross-section of the population.<sup>15</sup> We excluded Viscusi (2003) and Kniesner *et al.* (2006) on the grounds that their estimates of VSL were implausibly high (Viscusi acknowledges that the estimated VSLs in his study are very high). We excluded Leeth and Ruser (2003) because it used only variations in occupation for estimating variation in risk (the occupational classifications are generally regarded as less accurate than the industry classifications). We excluded Viscusi and Aldy (2007) and Aldy and Viscusi (2008) because they did not estimate overall “full-sample” VSLs (they focused instead on estimating VSLs for various subgroups). We excluded Kochi and Taylor (2011) because it estimated VSL only for a narrow occupational group (occupational drivers). For Scotton and Taylor (2011) and Kniesner *et al.* (2012) we calculated average values for VSL from what appeared to be the preferred model specifications. For our 2013 guidance, we adopted the average of the VSLs estimated in the remaining nine studies, updated to 2012 dollars (based both on changes in the price level and changes in real incomes from the year for which the VSL was originally estimated). This average was \$9.14 million, which we rounded to \$9.1 million for purposes of that guidance.

For any one study, updating to 2012 was essentially multiplying the base year VSL of that study by the ratio of 2012 CPI to the study’s base year CPI and by the ratio of 2012 Real Incomes to the study’s base year Real Incomes. The following equation shows the calculation:

<sup>15</sup> In addition to Viscusi (2004) [cited in footnote 4], Viscusi and Hersch (2008) [cited in footnote 13], Evans and Schaur (2010) [cited in footnote 10], Hersch and Viscusi (2010) [cited in footnote 12], and Scotton and Taylor (2011) [cited in footnote 14], these include Kniesner, T.J. and W.K. Viscusi (2005). “Value of a Statistical Life: Relative Position vs. Relative Age.” *AEA Papers and Proceedings*. 95(2): 142-146; Evans, M.F. and V.K. Smith (2008). “Complementarity and the Measurement of Individual Risk Tradeoffs: Accounting for Quantity and Quality of Life Effects.” National Bureau of Economic Research Working Paper 13722; Kniesner, T.J., W.K. Viscusi, and J.P. Ziliak (2010). “Policy Relevant Heterogeneity in the Value of Statistical Life: New Evidence from Panel Data Quantile Regressions.” *Journal of Risk and Uncertainty*. 40: 15-31; and Kniesner, T.J., W.K. Viscusi, C. Woock, and J.P. Ziliak (2012). “The Value of a Statistical Life: Evidence from Panel Data.” *Review of Economics and Statistics*. 94(1): 74-87.

$$2012 \text{ VSL} = \text{Base Year VSL} * (2012 \text{ CPI}/\text{Base Year CPI}) * (2012 \text{ Real Income}/\text{Base Year Real Income})$$

For example, in the case of the 2005 Kniesner and Viscusi study, the VSL estimate is \$4.74 million in 1997 dollars. To adjust that 1997 estimate to 2012 dollars, we use the ratio of 2012 CPI to 1997 CPI and the ratio of 2012 real dollars to 1997 real dollars. The resulting estimate in 2012 dollars is \$7.23 million:

$$\$7.23 \text{ million } (\$2012) = \$4.74 \text{ million} * (229.594/160.5) * (335/314)$$

Our VSL guidance will be updated each year to take into account both the increase in the price level and the increase in real incomes. The procedure for updating the overall VSL value is the same as that for updating values for individual VSL studies shown above. For the 2013 update, the formula is as follows:

$$2013 \text{ VSL} = 2012 \text{ VSL} * (2013 \text{ CPI}/2012 \text{ CPI}) * (2013 \text{ Real Income}/2012 \text{ Real Income})$$

$$\$9.22 \text{ million} = \$9.14 \text{ million} * (232.957/229.594) * (\$333/\$335)$$

Again, we round the VSL value to two significant digits, or \$9.2 million.

The VSL literature is generally in agreement that VSL increases with real incomes, but the exact rate at which it does so is subject to some debate. In our 2011 guidance, we cited research by Viscusi and Aldy (2003) that estimated the elasticity of VSL with respect to increases in real income as being between 0.5 and 0.6 (i.e., a one-percent increase in real income results in an increase in VSL of 0.5 to 0.6 percent). We accordingly increased VSL by 0.55 percent for every one-percent increase in real income. More recent research by Kniesner, Viscusi, and Ziliak (2010) has derived more refined income elasticity estimates ranging from 2.24 at low incomes to 1.23 at high incomes, with an overall figure of 1.44.<sup>16</sup> An alternative specification yielded an overall elasticity of 1.32. Similarly, Costa and Kahn (2004) estimated the income-elasticity of VSL to be between 1.5 and 1.6.<sup>17</sup> These empirical results are consistent with theoretical arguments suggesting that the income-elasticity of VSL should be greater than 1.0.<sup>18</sup>

In view of the large increase in the income elasticity of VSL that would be suggested by these empirical results, and because the literature seems somewhat unsettled, we decided in our 2013 guidance to increase our suggested income-elasticity figure only to 1.0. While this figure is lower than the elasticity estimates of Kniesner *et al.* and Costa and Kahn, it is higher than that of Viscusi and Aldy, the basis for our previous guidance. It is difficult to state with confidence whether a cross-sectional income elasticity (such as those

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<sup>16</sup> Kniesner, T.J., W.K. Viscusi, and J.P. Ziliak (2010). "Policy Relevant Heterogeneity in the Value of Statistical Life: New Evidence from Panel Data Quantile Regressions." *Journal of Risk and Uncertainty*. 40(1):15-31.

<sup>17</sup> Costa, D.L. and M.E. Kahn (2004). "Changes in the Value of Life, 1940-1980." *Journal of Risk and Uncertainty*. 29(2): 159-180.

<sup>18</sup> Eeckhoudt, L.R. and J.K. Hammitt (2001). "Background Risks and the Value of a Statistical Life." *Journal of Risk and Uncertainty*. 23(3): 261-279; Kaplow, L. (2005). "The Value of a Statistical Life and the Coefficient of Relative Risk Aversion." *Journal of Risk and Uncertainty*, 31(1); Murphy, K.M. and R.H. Topel (2006). "The Value of Health and Longevity." *Journal of Political Economy*. 114(5): 871-904; and Hammitt, J.K. and L.A. Robinson (2011). "The Income Elasticity of the Value per Statistical Life: Transferring Estimates between High and Low Income Populations." *Journal of Benefit-Cost Analysis*. 2(1): 1-27.



estimated in these empirical analyses), representing the difference in sensitivity to fatality risks between low-income and high-income workers in a given population, corresponds to a longitudinal elasticity, representing the way in which VSL is affected by growth in income over time for an overall population. Consequently, we adopt this more moderate figure, pending more comprehensive documentation.

The index we use to measure real income growth as it affects VSL is the Median Usual Weekly Earnings (MUWE), in constant (1982-84) dollars, derived by BLS from the Current Population Survey (Series LEU0252881600 – not seasonally adjusted). This series is more appropriate than the Wages and Salaries component of the Employment Cost Index (ECI), which we used previously, because the ECI applies fixed weights to employment categories, while the weekly earnings series uses a median employment cost for wage and salary workers over the age of 16. A median value is preferred because it should better reflect the factors influencing a typical traveler affected by DOT actions (very high incomes would cause an increase in the mean, but not affect the median). In contrast to a median, an average value over all income levels might be unduly sensitive to factors that are less prevalent among actual travelers. Similarly, we do not take into account changes in non-wage income, on the grounds that this non-wage income is not likely to be significant for the average person affected by our rules. The MUWE has been virtually unchanged for the past decade, so this has very little effect on the VSL adjustment over the past ten years. However, it is likely to be more significant in the future.

We have chosen the Consumer Price Index for All Urban Consumers Current Series (CPI-U) as a price index that similarly is representative of changes in the value of money that would be considered by a typical worker making decisions corresponding to his income level. This index grew from 2002 to 2012 by 27.62 percent, raising estimates of VSL in 2002 dollars by over 27 percent over ten years.

In 2011, we adopted a procedure for estimating VSL in each future year as it would respond to expected growth in real income levels. Logical consistency required that higher incomes in the future would influence projected VSLs, just as they affect the current year's baseline. The procedure we now specify uses the projected rate of growth of the Real Median Wage for Workers Covered by Social Security, estimated by the Congressional Budget Office (CBO).<sup>19</sup> While the growth rate forecast fluctuates significantly over the next decade in response to incentives in the Affordable Care Act to receive wage compensation versus health insurance benefits, we believe that it is reasonable to use a long-term average growth rate to estimate changes in future VSL. We have calculated the average projected growth rate in the real median wage, based on the CBO data over the next 30 years, to be 1.18 percent per year. With an income elasticity of 1.0, the base-year VSL should thus be increased by 1.18 percent per year to estimate VSL for any future year (in base-year dollars), before discounting to present value.<sup>20</sup>

For future years, the formula for calculating future values of VSL is therefore:

$$VSL_{2013+N} = VSL_{2013} \times 1.0118^N$$

where  $VSL_{2013+N}$  is the VSL value N years after 2013

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<sup>19</sup> The projected growth of the mean real wage is reported by CBO in its 2013 Long-Term Budget Outlook. CBO has provided us with unpublished forecasts of median real wages, which grow slightly more slowly than mean real wages and which we believe are more relevant to estimating the VSL of the average person affected by transportation-related safety risks. We use these projected median real wage forecasts in our guidance for adjustments of future VSLs.  
<http://www.cbo.gov/publication/45308>

<sup>20</sup>  $1.0118^{1.0} = 1.0118$  (annual income growth factor of 1.0118, raised to the power of the income elasticity, 1.0, yields annual real VSL growth of 1.0118).

and VSL<sub>2013</sub> is the VSL value in 2013 (i.e., \$9.2 million).

When conducting sensitivity analyses using alternative VSL values (see page 10), analysts should use those alternative VSL values in place of the \$9.2 million value used here. We emphasize that future VSL values should be adjusted only for changes in real wages, not for changes in price levels. For analysts using base years prior to 2013, the VSL for 2012 (adjusted for changes in real income and prices) is \$9.1 million. For 2011 this value was \$9.0 million in 2011 dollars.

**Value of Preventing Injuries**

Nonfatal injuries are far more common than fatalities and vary widely in severity, as well as probability. In principle, the resulting losses in quality of life, including both pain and suffering and reduced income, should be estimated by potential victims’ WTP for personal safety. While estimates of WTP to avoid injury are available, often as part of a broader analysis of factors influencing VSL, these estimates are generally only available for an average injury resulting in a lost workday, and not for a range of injuries varying in severity. Because detailed WTP estimates covering the entire range of potential disabilities are unobtainable, we use an alternative standardized method to interpolate values of expected outcomes, scaled in proportion to VSL. Each type of accidental injury is rated (in terms of severity and duration) on a scale of quality-adjusted life years (QALYs), in comparison with the alternative of perfect health. These scores are grouped, according to the Abbreviated Injury Scale (AIS), yielding coefficients that can be applied to VSL to assign each injury class a value corresponding to a fraction of a fatality.

In our 2011 guidance, the values of preventing injuries were updated by new estimates from a study by Spicer and Miller.<sup>21</sup> The measure adopted was the quality-adjusted percentage of remaining life lost for median utility weights, based on QALY research considered “best,” as presented in Table 9 of the cited study. The rate at which disability is discounted over a victim’s lifespan causes these percentages to vary slightly, and the study shows estimates for 0, 3, 4, 7, and 10 percent discount rates. These differences are minor in comparison with other sources of variation and uncertainty, which we recognize by sensitivity analysis. Since OMB recommends the use of alternative discount rates of 3 and 7 percent, we present the scale corresponding to an intermediate rate of 4 percent for use in all analyses. The fractions shown should be multiplied by the current VSL to obtain the values of preventing injuries of the types affected by the government action being analyzed.

**Table 2: Relative Disutility Factors by Injury Severity Level (AIS)  
For Use with 3% or 7% Discount Rate**

AIS Level	Severity	Fraction of VSL
AIS 1	Minor	0.003
AIS 2	Moderate	0.047
AIS 3	Serious	0.105
AIS 4	Severe	0.266

<sup>21</sup> Rebecca S. Spicer and Ted R. Miller. “Final Report to the National Highway Traffic Safety Administration: Uncertainty Analysis of Quality Adjusted Life Years Lost.” Pacific Institute for Research and Evaluation. February 5, 2010. [http://ostpxweb.dot.gov/policy/reports/QALY\\_Injury\\_Revision\\_PDF\\_Final\\_Report\\_02-05-10.pdf](http://ostpxweb.dot.gov/policy/reports/QALY_Injury_Revision_PDF_Final_Report_02-05-10.pdf)

AIS 5	Critical	0.593
AIS 6	Unsurvivable	1.000

For example, if the analyst were seeking to estimate the value of a “serious” injury (AIS 3), he or she would multiply the Fraction of VSL for a serious injury (0.105) by the VSL (\$9.2 million) to calculate the value of the serious injury (\$966,000). Values for injuries in the future would be calculated by multiplying these Fractions of VSL by the future values of VSL (calculated using the formula on page 8).

These factors have two direct applications in analyses. The first application is as a basis for establishing the value of preventing nonfatal injuries in benefit-cost analysis. The total value of preventing injuries and fatalities can be combined with the value of other economic benefits not measured by VSLs, and then compared to costs to determine either a benefit/cost ratio or an estimate of net benefits.

The second application stems from the requirement in OMB Circular A-4 that evaluations of major regulations for which safety is the primary outcome include cost-effectiveness analysis, in which the cost of a government action is compared with a non-monetary measure of benefit. The values in the above table may be used to translate nonfatal injuries into fatality equivalents which, when added to fatalities, can be divided into costs to determine the cost per equivalent fatality. This ratio may also be seen as a “break-even” VSL, the value that would have to be assumed if benefits of a proposed action were to equal its costs. It would illustrate whether the costs of the action can be justified by a VSL that is well within the accepted range or, instead, would require a VSL approaching the upper limit of plausibility. Because the values assigned to prevention of injuries and fatalities are derived in part by using different methodologies, it is useful to understand their relative importance in drawing conclusions. Consequently, in analyses where benefits from reducing both injuries and fatalities are present, the estimated values of injuries and fatalities prevented should be stated separately, as well as in the aggregate.

While these injury disutility factors have not been revised in this update of our VSL guidance, the peer review process for this guidance raised the question as to whether their accuracy could be further improved. We therefore believe that a more thorough review of the value of preventing injuries is warranted. While the results of that review are not incorporated in this guidance, we plan to incorporate the results of that review in future guidance as soon as it is completed.

**Recognizing Uncertainty**

Regulatory and investment decisions must be made by officials informed of the limitations of their information. The values we adopt here do not establish a threshold dividing justifiable from unjustifiable actions; they only suggest a region where officials making these decisions can have relatively greater or lesser confidence that their decisions will generate positive net benefits. To convey the sensitivity of this confidence to changes in assumptions, OMB Circular A-4 and Departmental policy require analysts to prepare estimates using alternative values. We have previously encouraged the use of probabilistic methods such as Monte Carlo analysis to synthesize the many uncertain quantities determining net benefits.

While the individual estimates of VSL reported in the studies cited above are often accompanied by estimates of confidence intervals, we do not, at this time, have any reliable method for estimating the overall probability distribution of the average VSL that we have calculated from these various studies. Consequently, alternative VSL values can only illustrate the conclusions that would result if the true VSL actually equaled the higher or lower alternative values. Analysts should not imply a known probability that the true VSL would exceed or fall short of either the primary VSL figure or the alternative values used for sensitivity analysis. Kniesner et al.

(2012) suggest that a reasonable range of values for VSL is between \$4 million and \$10 million (in 2001 dollars), or \$5.2 million to \$13.0 million in 2013 dollars. This range of values includes all the estimates from the eight other studies on which this guidance is based. For illustrative purposes, analysts should calculate high and low alternative estimates of the values of fatalities and injuries by using alternative VSLs of \$5.2 million and \$13.0 million, with appropriate adjustments for future VSL values and for values of injuries calculated using the VSL.

Because the relative costs and benefits of different provisions of a rule can vary greatly, it is important to disaggregate the provisions of a rule, displaying the expected costs and benefits of each provision, together with estimates of costs and benefits of reasonable alternatives to each provision.

This guidance and other relevant documents will be posted on the Reports page of the Office of Transportation Policy website, <http://www.dot.gov/policy>. Questions should be addressed to Jack Wells, (202) 366-9224, or [jack.wells@dot.gov](mailto:jack.wells@dot.gov).

**Appendix F: Highway Safety Improvement Program – Map021**  
**Interim Eligibility Guidance**



U.S. Department  
of Transportation  
Federal Highway  
Administration

# Memorandum

Subject: **INFORMATION:** Highway Safety  
Improvement Program - MAP-21 Interim  
Eligibility Guidance

Date: October 4, 2012

From: Tony Furst  
Associate Administrator for Safety

In Reply Refer To:  
HSSP

To: Division Administrators

Moving Ahead for Progress in the 21st Century Act (Public Law 112-141), or MAP-21, made some subtle but significant changes to the Highway Safety Improvement Program (HSIP). The significant change to HSIP in MAP-21 is that the types of projects eligible for HSIP funds are no longer constrained by an inclusionary list. MAP-21 continues to focus the HSIP on significantly reducing traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. The HSIP also continues to require a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance.

Under MAP-21, a highway safety improvement project is any strategy, activity or project on a public road that is consistent with the data-driven State Strategic Highway Safety Plan (SHSP) and corrects or improves a hazardous road location or feature or addresses a highway safety problem. MAP-21 did not continue the 10% flexibility provision established in SAFETEA-LU. States are no longer required to certify they have met various safety infrastructure needs in order to fund non-infrastructure projects. Further, there is no longer a limit to how much a state can spend on any project types. The use of HSIP funds must be compliant with Title 23 and can be used for both infrastructure and non-infrastructure projects that are consistent with the State's SHSP, correct or improve a hazardous road location of feature, or address a highway safety problem.

The attached guidance, which clarifies the new HSIP eligibility guidance, was posted on the FHWA MAP-21 Website on September 25, 2012 (<http://www.fhwa.dot.gov/map21/guidance/guidehsip.cfm>). This guidance provides clarification on project consistency with the SHSP; project selection through a data driven process; project relationship to performance goals, measures and targets; general project eligibility; and highway safety improvement projects that may warrant additional consideration, such as exceptions to the eligibility of projects to maintain minimum levels