

# Safety Analysis Technical Report

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## Final Environmental Impact Statement

US-95 Thorncreek Road to Moscow

Project No. DHP-NH-4110(156);Key No 09294



# Blank Sample of Form

## Current Access Purchase Determination

Idaho Transportation Department

ITD 0606 (Rev. 03-13)

itd.idaho.gov

1. Complete all blanks as indicated.
2. Refer to "Right-of-Way Memo: Access Control, Board Policy 4005, and IDAPA Rule 39.03.42" for further information.
3. Indicate the units under "Limits" as either Milepost (MP) or Station (Sta.)
4. Provide justification for the proposed limits of Access Purchase. Attach Traffic Impact Study as needed.
5. Attach an 8 1/2" x 11" Vicinity Map showing the limits of purchased access if the limits are not readily understood (e.g., an interchange or major intersection).
6. Complete the ITD 0606 and send a copy to Headquarters Right-of-Way in concurrence with the Right-of-Way plans.

Key Number	Project Number	Location				District
Route Number	Highway Access Type (see IDAPA 39.03.42)	Design Year	ADT	DHV	Design Speed	

### Access Purchased

Limits	Justification for Purchase

### Remarks

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### Recommended By

District Traffic Engineer	Date
District R/W Property Mgr	Date
District PDE	Date

### Approved By

District Engineer	Date
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Distribution: Original - District Project File

Copies - HQ ROW

HQ Traffic

DCM

## Types of Access Spacing

Effective December 12, 2012, the Idaho Board approved [Board Policy 4005](#) - Management of Department-Owned Property, which incorporated the recently revised [IDAPA Rule 39.03.42](#) - Rules Governing Right-of-Way Encroachments on State Rights-of-Way.

Under the revised [IDAPA Rule 39.03.42](#), all routes on the State Highway System are classified into one of six tiers; Interstate, Freeway, Expressway, Statewide, Regional, and District. Segments of highway are further classified according to whether they are rural, transitional, urban high-speed, or urban low-speed. A map of these classifications is attached to this memo and is available at: [September 2012 Access Map](#).

Any existing access removed during a highway project shall be documented on the right-of-way documents and the "As Constructed" plans.

To maintain system capacity, safety and efficiency, maximize signal progression, and minimize delays to the traveling public, all approaches and signals shall be spaced in accordance with ITD standards. Variances to the spacing standards shall be handled as follows (from IDAPA 39.03.42):

The District Engineer shall have the authority to approve a decrease in the minimum access spacing distances set forth in Table 1, provided that the basis for any exception is justified and documented. The basis for the exception may include overriding economic opportunity considerations. For any exception that would result in a decrease in access spacing of more than ten percent (10%) of the distances set forth in Table 1, a Traffic Impact Study will be required in order to determine whether auxiliary lanes or other appropriate mitigation must be included in the permit's conditions. (10-1-12)T

A copy of this required documentation shall be available in the Project File.

<b>Idaho Administrative Code</b>	<b>IDAPA 39.03.42 - Rules Governing Highway Right-of-Way</b>
Idaho Transportation Department	Encroachments on State Rights-of-Way

**Table 1 – Access Spacing\***

Highway Type	Area Type	Signalized Road Spacing	Public Road Spacing (A)	Driveway Distance Upstream from Public Road Intersection (B)	Driveway Distance Downstream from Unsignalized Public Road Intersection (C)	Distance Between Unsignalized Accesses Other Than Public Roads (D)
Interstate	All	Accessible only by interchanges (ramps) and requires approval by the Board and Federal Highway Administration				
Freeway	All	Accessible only by interchanges (ramps)				
Expressway	All	Accessible only at locations specified by the Department				
Statewide Route	Rural	5,280 ft.	5,280 ft.	1,000 ft.	650 ft.	650 ft.
	Transitional	5,280 ft.	2,640 ft.	760 ft.	500 ft.	500 ft.
	Urban >35 mph	2,640 ft.	1,320 ft.	790 ft.	500 ft.	500 ft.
	Urban <35 mph	2,640 ft.	1,320 ft.	790 ft.	250 ft.**	250 ft.**
Regional Route	Rural	5,280 ft.	2,640 ft.	1,000 ft.	650 ft.	650 ft.
	Transitional	2,640 ft.	1,320 ft.	690 ft.	360 ft.**	360 ft.**
	Urban >35 mph	2,640 ft.	660 ft.	660 ft.	360 ft.**	360 ft.**
	Urban <35 mph	2,640 ft.	660 ft.	660 ft.	250 ft.**	250 ft.**
District Route	Rural	2,640 ft.	1,320 ft.	760 ft.	500 ft.	500 ft.
	Transitional	2,640 ft.	660 ft.	660 ft.	360 ft.**	360 ft.**
	Urban >35 mph	1,320 ft.	660 ft.	660 ft.	360 ft.**	360 ft.**
	Urban <35 mph	1,320 ft.	660 ft.	660 ft.	250 ft.**	250 ft.**

\*Distances in table are minimums based on optimal operational and safety conditions such as adequate sight distance and level grade. Definitions of spacing designated by (A), (B), (C), and (D) are represented on Figure 1.

\*\*Where the public road intersection or private access intersection is signalized, the distances in the table are for driveways restricted to right-in/right-out movements only. For unrestricted driveways the minimum distance shall be 500 feet from a signalized intersection.

# REGULAR MEETING OF THE IDAHO TRANSPORTATION BOARD

January 16, 2014

The Idaho Transportation Board met at 7:30 AM, on Thursday, January 16, 2014, at the Idaho Transportation Department in Boise, Idaho. The following principals were present:

Jerry Whitehead, Chairman  
Jim Coleman, Vice Chairman – District 1  
Janice B. Vassar, Member – District 2  
Julie DeLorenzo, Member – District 3  
Jim Kempton, Member – District 4  
Lee Gagner, Member – District 6  
Brian W. Ness, Director  
Scott Stokes, Chief Deputy  
Larry Allen, Lead Deputy Attorney General  
Sue S. Higgins, Executive Assistant and Secretary to the Board

Executive Session on Personnel and Legal Issues. Member Vassar made a motion to meet in executive session at 7:30 AM to discuss personnel and legal issues as authorized in Idaho Code Section 67-2345(a), (c), and (f). Member DeLorenzo seconded the motion and it passed 5-0 by individual roll call vote.

Discussions were held on personnel and legal matters.

The Board came out of executive session at 10:45 AM.

New Business. Information Technology Administrator Shannon Barnes requested approval of two agreements with 3M Corporation. The License Agreement is for software to update components such as titles and registrations for the Division of Motor Vehicles' modernization project. The Service Agreement is for training and consulting related to the software.

Member Vassar made a motion, seconded by Vice Chairman Coleman, and passed unopposed to approve the following resolution:

RES. NO.      WHEREAS, in December 2010 the Idaho Transportation Board selected 3M  
ITB14-01      Corporation to modernize the Idaho Transportation Department Division of Motor  
                 Vehicles' (DMV) computer system; and

WHEREAS, the contract was signed and work commenced in May 2011; and

WHEREAS, after 18 months of support from 3M, ITD decided it could independently complete the project and implement the software provided by 3M; and

WHEREAS, the Division of Purchasing has reviewed a License Agreement for ITD to use the 3M software in its DMV modernization program and a Service

January 16, 2014



Agreement under which 3M would install the software and train ITD in its use; and

WHEREAS, the Division of Purchasing has delegated to ITD the authority to enter into the License Agreement and the Service Agreement.

*NOW THEREFORE BE IT RESOLVED*, that the Board approves the License Agreement presented to it; and

*BE IT FURTHER RESOLVED*, that the Board approves the Service Agreement presented to it.

Board Minutes. Member Gagner made a motion to approve the minutes of the regular Board meeting held on December 11, 2013 as submitted. Member Vassar seconded the motion and it passed unopposed.

Board Meeting Dates. The following meeting dates and locations were scheduled:  
February 19-20, 2014 – Boise  
March 19-20, 2014 – Boise  
April 15-16, 2014 – District 2 (tentative location)

Consent Items. Vice Chairman Coleman made a motion, seconded by Member Gagner, and passed unopposed, to approve the following resolution:

RES. NO. WHEREAS, consent calendar items are to be routine, non-controversial, self-  
ITB14-02 explanatory items that can be approved in one motion; and

WHEREAS, Idaho Transportation Board members have the prerogative to remove items from the consent calendar for questions or discussion.

*NOW THEREFORE BE IT RESOLVED*, that the Board approves the addition of the Railroad-ITD mitigation strategies to FY14 of the program, transit program changes requested by Valley Regional Transit and Community Planning Association of Idaho to FY14, and the designation of an expressway – US-95, Lewiston to Thorncreek Road and proposed Thorncreek Road to Moscow.

1) Addition of the Railroad-ITD Mitigation Strategies to FY14 of the Program. The Department received a \$25,000 Strategic Highway Research Program User Incentive grant from the Federal Highway Administration. The grant is for ITD and Idaho's major rail partners to work cooperatively to delineate responsibilities and identify policy and programmatic changes to expedite project delivery for construction projects involving highways at railroad crossings. The grant will be used to hire a consultant to assist with establishing best practices for partnering with the railroad companies. The goal is to create a standardized institutional agreement to increase collaboration, reduce project delays, and streamline resources. Staff requested the addition of the Railroad-ITD Mitigation Strategies project to FY14 for \$25,000 and to update the Idaho Transportation Investment Program (ITIP) accordingly.

2) Transit Program Changes Requested by Valley Regional Transit (VRT) and Community Planning Association of Southwest Idaho (COMPASS). On behalf of VRT, COMPASS requested increasing funding for vehicle lease or purchase for the fixed line and demand response services, support for equipment and maintenance, and demand response services in the Nampa Urbanized Area for FY13. For the Boise Urbanized Area, it requested increases for mobility management administration and implementation in FY13; and demand response services, transit planning efforts, and mobility management administration implementation in FY14. Additionally, reductions in funding are being requested in the Nampa Urbanized Area for preventative maintenance support for fixed route and demand response service in FY13 and for demand response services in FY14. The COMPASS Regional Transportation Improvement Program has been modified to reflect these changes, as shown as Exhibit #436, which is made a part hereof with like effect. Staff requested modifying the Transit Program and amending the FY13-17 Statewide Transportation Improvement Program.

3) Designate Expressway – US-95, Lewiston to Thorncreek Road and Proposed Thorncreek Road to Moscow. Per IDAPA 39.03.42, the Board has authority to designate a highway as an “expressway” for the purpose of access control. Staff requested the designation of US-95 milepost 312.675 to 323.360 (segment code 001540); US-95 milepost 323.360 to 330.407 and milepost 330.407 to 337.668 (segment code 001539) and the proposed US-95 Thorncreek to Moscow project, milepost 337.668 to 344.004 as expressways.

Informational Items. 1) Monthly Financial Statements. Net obligations through December totaled \$103.3 million. Of those obligations, \$100.4 million were for activities programmed for 2014; although the Program estimated those activities at \$102.7 million. December’s obligations exceeded the three-year average of \$83.1 million for the same period.

Through November, federal aid to the State Highway Fund totaled \$167.3 million year-to-date, or about 23% more than the same time period last year. Revenue from the Highway Distribution Account was 2.3% below projections. Staff will monitor the revenue to determine if adjustments are required. It was noted, however, that December’s revenue improved with year-to-date revenue short of projections by .9%. Miscellaneous revenue and transfers in from the elimination of the ethanol exemption was \$1 million over the estimate. Expenditures for personnel costs were 4.4% less than budgeted through November. This is due to a continued effort to evaluate the workforce. Total expenditures, including encumbrances, for operations reflected a 1.7% positive variance. Capital equipment had a 5.6% negative variance, which is a timing difference in allotments versus contracts issued.

Aviation fuel tax revenue through November was 21% over projections. Staff does not believe the trend will continue. Miscellaneous revenue to the State Aeronautics Fund was 21% higher than projected. Overall expenditures were less than budgeted.

2) Non-Construction Professional Service Contracts Issued by Business and Support Management (BSM). From November 23 to December 30, the BSM Section processed three new professional service agreements and renewed one. The total activity equaled \$147,240.

3) FY15 Program Update – Funding Level Assumptions and Highlights. For the FY15 ITIP Update, funding assumptions are \$276 million from federal sources annually from FY15 through FY19. The projected state levels are \$12.5 million for FY15; \$10.2 million for FY16; \$11 million for FY17; and \$6 million for FY18 and FY19 each year. The process and schedule to update the Program was also outlined.

4) Status of FY15 Appropriation Request. The Department's FY15 appropriation request has been adjusted based on the Governor's budget recommendation. The main revisions are the elimination of the 1% change in employee compensation, totaling almost \$1 million; a fee increase of \$25,300 for the Idaho Technology Authority; and an additional \$65,900 for contract construction.

5) Contract Awards. Keys #12305 and #12304 – US-95, Plummer Creek Bridge, Milepost 395 and Plummer Creek Bridge, Milepost 394, District 1. Low bidder: Cook and Sons Construction - \$1,039,386.

Keys #12299 and #12300 – US-95, Kootenai River Bridge, Bonners Ferry and Burlington Northern Santa Fe Railroad and Arizona Street Bridge, Bonners Ferry, District 1. Low bidder: Braun-Jensen, Inc. - \$2,112,000.

Key #12329 – US-12 and US-95, Memorial, Spalding and Big Canyon Creek Bridges, District 2. Low bidder: The Truesdell Corporation - \$214,214.

Keys #12342 and #12396 – I-84, FY14 District 3 Pavement Striping and FY14 District 4 Pavement Striping. Low bidder: Interstate Barricades - \$557,750.

Key #12344 – SH-52, Union Pacific Railroad Overpass Rehabilitation, Payette, District 3. Low bidder: Braun-Jensen, Inc. - \$1,286,000.

Key #12407 – US-30, Snake River Gridley Bridge, District 4. Low bidder: Braun-Jensen, Inc. \$1,388,000.

Key #13065 – FY15 District 4 Districtwide Sealcoat. Low bidder: Intermountain Slurry Seal, Inc. - \$3,028,000.

Key #12401 – SH-50, Intersection 3800 East Road, Twin Falls County, District 4. Low bidder: Staker & Parson Companies dba Idaho Sand & Gravel Company - \$194,987.

Key #12454 – SH-28 and SH-33, FY15 District 6 Guardrail Upgrades. Low bidder: D L Beck Inc. - \$483,022.

Key #11675 – US-20, Island Park Lodge to Montana State Line, District 6. Low bidder: H-K Contractors, Inc. - \$2,715,808.

Key #12467 – US-20, South Rexburg Interchange #332 to South Fork Teton River Bridge, District 6. Low bidder: H-K Contractors, Inc. - \$3,043,588.

6) Professional Services Agreements and Term Agreement Work Task Report. From November 25 through December 27, 19 new professional services agreements and work tasks were processed, totaling \$778,400. Two supplemental agreements to existing agreements were processed during this period in the amount of \$37,330.

7) Annual Report on Outdoor Advertising Sign Status. At the close of federal FY13, 5 illegal and 190 non-conforming signs remained throughout the state. Illegal signs do not comply with state and federal law and are to be removed. Non-conforming signs complied with law at one time, but due to a change in conditions or rules, lost their conforming status. Non-conforming signs are allowed to remain in place but cannot be improved.

8) Administrative and Legal Settlements of Right-of-Way Acquisitions. From July 1 through December 31, 2013, the Right-of-Way Section processed 45 parcels. There were ten administrative settlements and five legal settlements during this time frame.

Legislative Report. Government Affairs Manager (GAM) Mollie McCarty reported on various legislative meetings and presentations scheduled. Overall, the Department's rules are proceeding well through the germane committees. Staff is monitoring and analyzing some non-ITD bills. It is continuing to work with the sponsors on the proposed 24/7 Sobriety and Drug Monitoring Program Act. She also mentioned that Member Gagner's term expires on January 31; however, the Governor is re-appointing him to another six-year term.

Chairman Whitehead thanked GAM McCarty for the report.

Director's Report. Director Ness also summarized some of the legislative activities. The Transportation Coalition has scheduled a series of presentations to the germane committees. Staff will present information on the condition of the state's bridges and highway safety. He recognized employees for their outstanding customer service and mentioned other recognitions ITD received. Director Ness also said he is changing the format of his monthly report. The Executive Team members will report on activities and accomplishments in their respective area.

The Director's entire report can be viewed at <http://itd.idaho.gov/Board/report.htm>.

Some of the Chief Executive Officers' highlights follow. At the federal level, efforts are underway on the next surface transportation act, as Moving Ahead for Progress in the 21<sup>st</sup> Century expires this fall. The final GARVEE bond sale generated a lot of buyers, resulting in an interest rate of 3.86%. About \$320 million in construction projects are on the shelf, ready to bid. The US-95, Thorncreek to Moscow project is proceeding well. The Record of Decision is expected soon, which will be followed by a 30-day advertisement period in the Federal Register. The Human Resource initiatives focus on recruitment; talent management, such as career paths and succession planning; developing employees through efforts such as leadership development and coaching and mentoring; and monitoring success by tracking the turnover rate and employee engagement. The Division of Administration is working on establishing a better team culture, engaging employees, and collaborating with other divisions. It wants hassle-free results, reports that are easy to understand, and to hire and develop the right people for each position.

Chief Operations Officer Jim Carpenter also announced some personnel changes. Pat Lightfield, Assistant District 2 Engineer, is retiring this month, after 43 years of service. The Headquarters offices are being restructured into two divisions. District 3 Engineer Dave Jones has been promoted to Division of Engineering and Products and Plans Administrator/Chief Engineer and District 6 Engineer Blake Rindlisbacher will be the new Division of Engineering Services Administrator.

Chairman Whitehead thanked Director Ness and the Executive Team for the reports. The Board congratulated District Engineers Jones and Rindlisbacher on their promotions.

Informal Luncheon with the Aeronautics Advisory Board (AAB). The two boards met informally during lunch.

Aeronautics' Annual Report. AAB Chairman Rodger Sorensen reported on global aviation issues, noting commercial airlines recorded a profit this past year and commercial airlines U.S. Airways and American merged. He also commented on the increased use of unmanned aerial systems, also known as drones. AAB Member Chip Kemper said the agriculture aviation industry is doing well; however, he believes there will be challenges in the future, mainly due to drone activity, which could potentially create hazards for aircraft. The aviation fire activity was fairly steady this past year in eastern Idaho.

AAB Member Dan Scott commended the Division of Aeronautics for its search and rescue program. AAB Member Mark Sweeney said aviation activity in the state increased last year. He expressed concern with the decreasing number of pilots. In 2013, there were 25% fewer pilots than in 2000. He believes a bigger emphasis is needed on aviation education and promoting aviation. In response to a question from Member Kempton, AAB Sweeney responded that he believes one of the key reasons for the decline in pilots is the cost to become a pilot.

Aeronautics Administrator (AA) Mike Pape provided a financial report. Revenue is currently over projections due to more flights, as the majority of revenue is from jet fuel. Expenses are less than budgeted, but are expected to be on track. A high priority is to reduce the carryover of Trustee and Benefits expenses. In other areas, the federal government shutdown due to a lack of appropriations bills was a concern last year. No aircraft could be registered during that period and traffic control towers were negatively impacted. He also reported on the use of the state aircraft. State employees saved 3,600 hours by flying instead of driving.

Staff provided reports on various programs and activities. In 2013, \$450,000 was provided as matching funds for 19 Federal Aviation Administration grants to general aviation airports for rehabilitation, planning, and new facility projects. For 2014, \$700,000 is estimated to be available. Work is underway to improve the grant management process, with goals of less annual carryover and faster grant payouts. The volunteer program continues to be a valuable asset, as 335 man hours provided assistance with activities at eight of the state-owned airports. Recreational usage at the state airports was up 10% over the last two years. Last year, there were 33 aviation accidents with 12 fatalities in Idaho compared to 39 accidents with 5 fatalities in 2012. Pilots making poor decisions appeared to be the most common factor in the incidents.

AA Pape also reported that the avionics in the King Air need to be replaced.

Vice Chairman Coleman made a motion, seconded by Member Vassar, and passed unopposed, to approve the following resolution:

RES. NO.      WHEREAS, the Idaho Transportation Department's Aircraft Operation function  
ITB14-03      is a critical program utilized by a variety of state agencies to perform state  
                 business effectively across the state; and

WHEREAS, safety of aircraft operations is the highest priority of every flight;  
and

WHEREAS, the 35 year old avionics (flight instruments, navigation, auto pilot,  
and associated systems) in the King Air are obsolete and safety and reliability  
may become a factor in current operations.

*NOW THEREFORE BE IT RESOLVED*, that the Idaho Transportation Board  
authorizes the Director to make the necessary business decisions to fund the  
replacement of the avionics systems for the King Air at an estimated cost of  
\$300,000 from current budgets within the State Aeronautics Fund.

Chairman Whitehead thanked the AAB members and staff for the report.

Delegation – Pacific Northwest Economic Region (PNWER). Idaho Lieutenant Governor Brad Little introduced the PNWER delegation and provided background on the coalition. Comprised of the public and private sector, it addresses various issues of the region, including energy and transportation.

Alana DeLong from Alberta, Canada said there is interest in utilizing the Port of Lewiston; however, a good, reliable corridor to Canada is needed. She stressed the importance of access to markets and moving products.

Bruce Agnew said PNWER would like Idaho to take the lead on harmonizing vehicle size and weight standards in the region and to streamline the permitting process. Another initiative it would like Idaho to help coordinate is Fast Forward Northwest. This public private partnership would improve international market access for exports by eliminating bottlenecks on rail corridors and improving road and port connections.

The Board expressed support for increased usage of the Port of Lewiston and standardizing the truck size and weight regulations. Chairman Whitehead thanked the delegation for its presentation.

Public Transportation Advisory Council (PTAC) Board Policy. PTAC Chair Kathleen Simko discussed proposed revisions to Board Policy 4039 Public Transportation Advisory Council, formerly B-28-04. PTAC supports inclusion of language stating that a philosophy of reducing reliance on federal funding should be pursued. During her tenure on PTAC, there have

never been sufficient funds for Idaho's transit needs. No service can be funded solely through fares. PTAC members believe other funding sources need to be identified.

Member Vassar understands PTAC's position; however, she does not support including that language in the Board policy. There is no state funding source for public transportation.

Member Kempton asked if the desire is to reduce reliance on federal funds, would Idaho decline additional federal money? PTAC Chair Simko replied that she does not anticipate additional federal funds would be rejected; however, she believes it is important to seek other funding sources.

Member Vassar made a motion to delete the statement "A philosophy of reducing reliance on Federal funding should be appropriately pursued" from the draft policy. Member DeLorenzo seconded the motion and it passed unopposed.

Member Vassar made a motion to approve the revised Board Policy 4039 Public Transportation Advisory Council. Member Kempton seconded the motion and it passed unanimously.

Policy Introduction. Human Resources (HR) staff introduced board and corresponding administrative policy changes. The legal authority and a purpose statement were added to all of the documents.

Board Policy 4019 Equal Employment Opportunity and Fair Employment Practices combined former policies B-18-07 Code of Fair Employment Practices and B-18-09 Equal Employment Opportunity/Affirmative Action. The consensus of the Board was to hold this policy for further review and discussion.

No additional changes are proposed to Board Policy 4033 Workplace Violence, formerly B-23-03. Minor changes are recommended to the corresponding administrative policy 5033 to ensure compliance with Idaho Code.

Member Vassar made a motion to approve Board Policy 4033 Workplace Violence. Member DeLorenzo seconded the motion and it passed unopposed.

Member Kempton made a motion to recommend Director approval of 5033 Workplace Violence. Member Vassar seconded the motion and it passed unanimously.

Minor changes are proposed to Board Policy 4055 Harassment in the Workplace, formerly B-18-04. More substantive changes are proposed to the corresponding administrative policy. By unanimous consent, the Board held 4055 and 5055 for further review and discussion.

The proposed change to Board Policy 4056 Employee Safety and Risk Management Program, formerly B-23-01, is the removal of a reference to a rule. No changes are proposed to the corresponding administrative policy 5056.

Vice Chairman Coleman made a motion to approve Board Policy 4056 Employee Safety and Risk Management Program. Member Vassar seconded the motion and it passed unopposed.

Member Vassar made a motion to recommend Director approval of 5056 Employee Safety and Risk Management Program. Member Kempton seconded the motion and it passed unopposed.

Administrative Policy Review. HR staff summarized changes to three stand-alone Administrative Policies: 5520 Internship Program, formerly A-01-17; 5521 Standard and Flextime Work Schedules, formerly A-06-03; and 5523 Alcohol and Drug-Free Workplace, formerly A-18-12. It also recommended deleting Administrative Policies A-06-44 Workplace Accommodations and A-18-08 Return to Work because the policies are procedural-based and the information is included in manuals.

The Board had no objection to the proposed changes to the stand-alone administrative policies.

WHEREUPON, the Idaho Transportation Board's regular monthly meeting officially adjourned at 3 PM.

Read and Approved  
February 19, 2014  
Boise, Idaho

\_\_\_\_\_  
signed  
JERRY WHITEHEAD, Chairman  
Idaho Transportation Board

January 16, 2014





## Board Agenda Item

ITD 2210 (Rev. 10-13)

Meeting Date Jan. 15 & 16, 2014Consent Item ☒Information Item ☐

Amount of Presentation Time Needed \_\_\_\_\_

Presenter's Name Dave Kuisti	Presenter's Title District 2 Engineer	Initials DBK	Reviewed By
Preparer's Name Dave Ellis	Preparer's Title Trans. Staff Engineer Assistant	Initials DLE	

### Subject

Designate Expressway - Lewiston to Thorncreek Road &amp; Proposed Thorncreek Road to Moscow project.

Key Number Various & 09294	District 2	Route Number US-95
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### Background Information

Per IDAPA 39.03.42, the Idaho Transportation Board has the authority to designate a highway as an 'Expressway' for the purpose of access control.

The change in IDAPA 39.03.42 removes the former access control designation for these roadway segments; therefore, Board action is needed to maintain access control through the formal designation of 'Expressway'.

An 'Expressway' is a segment of highway for use as a through highway, with partially controlled access, accessible only at locations specified by the Idaho Transportation Department. These specific routes meet the definition in IDAPA 39.03.42.010.31, wherein 'Expressways' are characterized by medians, limited at-grade intersections and high speeds.

District 2 requests the Board designate these segments along with the proposed US-95 project, Thorncreek Road to Moscow as an 'Expressway' with intersections/approaches only at locations specified by the Idaho Transportation Department. Existing approaches will be granted for existing segments on US-95. For the proposed Thorncreek Road to Moscow project access will be granted at locations agreed upon during the design phase with individual property owners.

### Recommendations

Designate US-95 MP 312.675 to MP 323.360 (Segment Code 001540), US-95 MP 323.360 to MP 330.407 & MP 330.407 to MP 337.668 (Segment Code 001539) and Proposed US-95 Thorncreek to Moscow project (MP 337.668 to MP 344.004), as Expressways.

### Board Action

<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Deferred	_____
<input type="checkbox"/> Other	_____	



## Board Agenda Item

ITD 2210 (Rev. 10-13)

### REQUEST FOR 'EXPRESSWAY' DESIGNATION

Location: U.S. Highway 95, Lewiston N. City Limits to Top of the Lewiston Hill (Segment Code Change).

Project Nos.: FF-RF-4114(23), FF-4114(28), DP-F-4114 (31) and TQF-4114(32).

Segment Code: 001540

MP 312.675 to MP 323.360

Speed limit: 65 MPH

The right-of-way for these three projects was acquired and the highway was constructed in the 1970's on a new alignment using Partial Control Type E Access.

At-grade intersections include:

NOTE: **Bold are County Road Approaches.**

M.P. 312.857 – Field Approach, Left;

(Lat. 46.43983992, Long. 116.98537290)

M.P. 312.857 – Commercial Approach, Right;

(Lat. 46.43983992, Long. 116.98537290)

**M.P. 317.440 – Frontage Road/Scenic Overlook, Left;**

**(Lat. 46.46225242, Long. 117.00849087)**

**M.P. 317.440 – Spur Road, Right;**

**(Lat. 46.46225242, Long. 117.00849087)**

**M.P. 318.017 – Frontage Road, Left (Spiral);**

**(Lat. 46.46354709, Long. 117.01989378)**

**M.P. 318.017 – Frontage Road, Right; (Access Rd)**

**(Lat. 46.46354709, Long. 117.01989378)**

M.P. 318.320 – Field Approach, Left;

(Lat. 46.46635591, Long. 117.02486358)

**M.P. 318.320 – Access Road, Right;**

**(Lat. 46.46635591, Long. 117.02486358)**

**M.P. 319.613 – US 195 Spur, Left;**

**(Lat. 46.48101623, Long. 117.03776165)**



## Board Agenda Item

ITD 2210 (Rev. 10-13)

### REQUEST FOR 'EXPRESSWAY' DESIGNATION

Location: U.S. Highway 95, Top of the Lewiston Hill to Genesee.  
Project Nos.: NH-4110 (133).  
Segment Code: 001539  
MP 323.360 to MP 330.407  
Speed limit: 65 MPH

The right-of-way for this project was acquired and the highway was constructed in 2005 & 2006 on a new alignment using Type IV Access Control where existing private approaches will be allowed to remain.

At-grade intersections for Project NH-4110 (133); Top of Lewiston Hill to Genesee include:

NOTE: **Bold are County Road Approaches.**

<b>SOUTHBOUND STATIONS - LT. (METRIC)</b>
18+11.626 - Field Approach
<b>26+89.585 – Leon Road</b>
26+86.740 – Field Approach
38+46.962 – Field Approach
44+00.000 – Field Approach
50+30.000 – Field Approach
53+40.000 – Field Approach
58+20.000 – Field Approach
60+44.409 – Joint Use Field Approach
66+78.753 – Field Approach
75+51.857 – Field Approach
77+08.675 – Joint Use Residential Approach
78+68.685 – Field Approach
81+07.852 – Field Approach
86+52.291 – Field Approach
96+04.238 – Field Approach
97+40.716 – Residential Approach
102+30.000 – Field Approach
104+93.664 – Field Approach
<b>116+37.877 – Hillside Road</b>
112+43.005 – Field Approach
121+30.000 – Field Approach
<b>121+88.492 – W. Cow Creek Road</b>
125+53.251 – Field Approach
<b>132+53.764 – Uniontown Road</b>
136+48.858 – Residential Approach

<b>NORTHBOUND STATIONS - RT. (METRIC)</b>
1018+58.841-1020+27.135 - Turnout
1020+41.173 – Field Approach
1026+70.824 - Field Approach
1029+67.979 – Residential Approach
1035+70.866 - Field Approach
<b>1038+28.201 – S. Evans Road</b>
1043+86.691 - Field Approach
1048+83.197 – Joint Use Residential Approach
1058+14.566 - Field Approach
1060+34.485 - Field Approach
1066+61.805 - Field Approach
1073+55.000 - Field Approach
1075+26.290 - Field Approach
1078+43.088 - Field Approach
1080+85.961 - Field Approach
1086+39.775 - Field Approach
1096+13.895 - Field Approach
<b>1097+56.964 – N. Evans Road</b>
1105+10.229 – Residential Approach
1112+58.189 - Field Approach
1116+59.208 – Joint Use Field Approach
<b>1122+09.823 – E. Cow Creek Road</b>
<b>1132+71.543 – Genesee-Juliaetta Road</b>



## Board Agenda Item

ITD 2210 (Rev. 10-13)

### REQUEST FOR 'EXPRESSWAY' DESIGNATION

Location: U.S. Highway 95, Genesee to Thorncreek Road.  
Project Nos.: NH-4110 (140).  
Segment Code: 001539  
MP 330.407 to MP 337.668  
Speed limit: 65 MPH

The right-of-way for this project was acquired and the highway was constructed in 2005 & 2006 on a new alignment using Type IV Access Control where existing private approaches will be allowed to remain.

At-grade intersections for Project NH-4110 (140); Genesee to Thorncreek Road include:

NOTE: **Bold are County Road Approaches.**

<b>SOUTHBOUND STATIONS - LT. (METRIC)</b>
21+21.848 - Residential Approach
26+67.325 - Field Approach
33+09.875 - Residential Approach
37+56.699 - Field Approach
<b>43+05.820 - Borgen Road</b>
51+06.000 - Residential Approach
56+20.113 - Field Approach
<b>59+44.716 - Kluss Road</b>
64+55.000 - Residential Approach
<b>71+64.375 - Sather Road</b>
77+82.199 - Residential Approach
80+01.510 - Field Approach
88+80.000 - Residential Approach
91+64.000 - Field Approach
102+23.983 - Field Approach
106+29.985 - Residential Approach
114+16.790 - Residential Approach
<b>120+13.729 - Thorncreek Road</b>
124+77.985 - Field Approach

<b>NORTHBOUND STATIONS - RT. (METRIC)</b>
1021+21.863 - Field Approach
<b>1026+67.494 - Neyens Road</b>
1033+06.127 - Residential Approach
1037+49.772 - Field Approach
1042+99.047 - Residential Approach
1047+38.159 - Residential Approach
1051+08.254 - Field Approach
1054+10.000 - Field Approach
1056+21.635 - Field Approach
1064+62.732 - Field Approach
<b>1071+75.376 - Sather Road</b>
<b>1080+26.500 - Hove Road</b>
1092+04.633 - Field Approach
1102+54.494 - Field Approach
<b>1106+69.247 - Old 95</b>
<b>1114+53.866 - Martinson Road</b>
1120+36.434 - Field Approach
1124+91.649 - Field Approach





## Board Agenda Item

ITD 2210 (Rev. 10-13)

### REQUEST FOR 'EXPRESSWAY' DESIGNATION:

Location: U.S. Highway 95, Thorncreek Road to Moscow (Proposed Route).  
Project Nos.: DHP-NH-4110 (156).  
Segment Code: 001539  
MP 337.668 to MP 344.004  
Speed limit: 65 MPH

District 2 is currently in the final stages of completing the Environmental Impact Statement for Thorncreek to Moscow and is currently addressing comments generated from the Public Hearing and FHWA before the Final Environmental Impact Statement can be submitted for review. Many comments were related to access control and the FHWA has required ITD to better define how future access control will be limited so that highway safety will not be compromised in the future by new access points.

District 2 is proposing to use the "Expressway" designation to control access on the proposed highway. An 'Expressway' is a segment of highway for use as a through highway, with partially controlled access, accessible only at locations specified by the Idaho Transportation Department. These specific routes meet the definition in IDAPA 39.03.42.010.31, wherein 'Expressways' are characterized by medians, limited at-grade intersections and high speeds. Only existing private approaches will be allowed to remain. The exact approach locations are not yet known. The approach locations will be discussed and negotiated with the property owners during the right-of-way acquisition phase of the project.

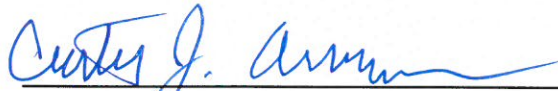
**ADDENDUM 1**  
**US-95 THORNCREEK ROAD TO MOSCOW**  
**AASHTO HIGHWAY SAFETY MANUAL ANALYSIS**  
**ON ALTERNATIVES CARRIED FORWARD**

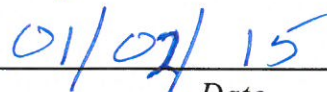
**DHP-NH-4110 (156)**

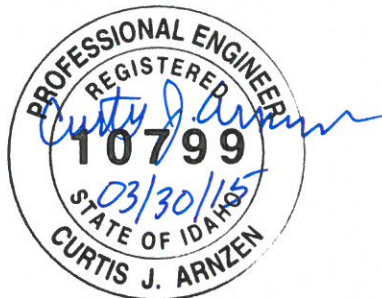
**KEY # 09294**

**December 31, 2014**

**PREPARED BY**  
**DISTRICT 2 PROJECT DEVELOPMENT ENGINEER**

  
\_\_\_\_\_  
Curtis J. Arnzen, P.E.

  
\_\_\_\_\_  
Date



## Addendum 1 - AASHTO Highway Safety Manual Analysis

DHP-NH-4110 (156); Key No. 9294; Thorncreek to Moscow

December 31, 2014

### Introduction

This Addendum was written to address safety for Alternative Modified W4. Alternative Modified W4 includes a slight alignment shift in Alternative W4 to avoid a cultural resource. Alternative Modified W4 is slightly shorter than Alternative W4; therefore, it is predicted to be slightly safer than Alternative W4. The conclusions and recommendations of the AASHTO Highway Safety Manual Analysis dated September 13, 2013 remain valid and calculations and conclusions regarding Alternative Modified W4 are almost identical to calculations and conclusions regarding Alternative W4 in the AASHTO Highway Safety Manual Analysis.

### Summary

The following results for Alternative Modified W4 are in Table 1 below:

Table 1: Predicted Crashes For Proposed Alternative Modified W4				
	Completion Year 2017		Crashes From 2017 Through 2036	
Alternative	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
Modified W4	9.2	4.6	218.0	107.0

The following results for Alternative Modified W4 are in Table 2 below:

Table 2: Predicted Crashes For Proposed Alternative Modified W4 and Remaining US-95 Loop				
	Completion Year 2017		Crashes From 2017 Through 2036	
Alternative	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
Modified W4	10.5	5.0	244.9	116.2

### Economic Cost of Crashes

There were no differences in any of the economic cost of crashes between Alternatives W4 and Modified W4 due to rounding to significant figures. The following results for Alternative Modified W4 are in Table 3 below:

Table 3: Total Economic Cost of Crashes on the Proposed Alternative Modified W4				
	Completion Year 2017		From 2017 Through 2036	
Alternative	Economic Cost	Difference From E2	Economic Cost	Difference From E2
Modified W4	\$1,400,000	\$300,000	\$32,000,000	\$6,000,000



## Addendum 1 - AASHTO Highway Safety Manual Analysis

DHP-NH-4110 (156); Key No. 9294; Thorncreek to Moscow

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The following results for Alternative Modified W4 are in Table 4 below:

<b>Table 4: Total Economic Cost of Crashes on the Proposed Alternative Modified W4 Including the Remaining US-95 Loop from 2017 to 2036</b>				
	<b>Completion Year 2017</b>		<b>From 2017 Through 2036</b>	
<b>Alternative</b>	<b>Economic Cost</b>	<b>Difference From E2</b>	<b>Economic Cost</b>	<b>Difference From E2</b>
<b>Modified W4</b>	\$1,500,000	\$200,000	\$35,000,000	\$5,500,000

### Calculation Methodology for Action Alternatives

#### *Predictive Calculations on Proposed Alignments*

The calculations of crashes on the different highway sections and intersections are nearly the same for Alternatives W4 and Modified W4. The only calculations that change are the calculations for rural divided four-lane highway. The length of rural divided four lane highway for Alternative Modified W4 is 0.04 miles shorter than Alternative W4. The new calculation sheets and crash results for the rural divided four-lane highway for Alternative Modified W4 are in the Appendix of this Addendum.

#### *Predictive Calculations on the Remaining US-95 Loop*

The calculations on the remaining US-95 Loop are the same for Alternatives W4 and Modified W4.

#### *Wild Animal Crashes*

The wild animal crash potential is the same for Alternatives W4 and Modified W4.

#### *Crashes Relating to Unfavorable Weather Conditions*

The weather conditions are the same for Alternatives W4 and Modified W4.

### Crash Prediction Results for Proposed Alternatives

#### *Alternative Modified W4*

Alternative Modified W4 is predicted to have slightly fewer crashes than Alternative W4 due to 0.04 mile shorter length.

The calculations of crashes on the different highway sections and intersections including the remaining US-95 Loop are nearly the same for Alternatives W4 and Modified W4. The only



## Addendum 1 - AASHTO Highway Safety Manual Analysis

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calculations that change are the calculations for rural divided four-lane highway. The length of rural divided four lane highway for Alternative Modified W4 is 0.04 miles shorter than Alternative W4. The new calculation sheets and crash results for rural divide four-lane highway for Alternative Modified W4 are in the Appendix of this Addendum. The remainder of the calculations including the calculations for the remaining US-95 Loop of Alternative Modified W4 did not change as a result of the alignment shift and are in Appendix E of the AASHTO Highway Safety Manual Analysis dated September 13, 2013 within the Alternative W4 calculations.

Table 13, shown below, summarizes the predicted crashes for Alternative Modified W4.

<b>Table 13: HSM Crash Results for Alternative Modified W4</b>				
	<b>Construction Year 2017</b>		<b>Crashes From 2017 Through 2036</b>	
	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>
<b>Rural Divided Multilane Segment</b>	6.9	3.8	161.8	87.3
<b>Suburban Segment</b>	1.1	0.3	26.2	7.9
<b>Eid Road Intersection</b>	0.3	0.1	8.2	3.5
<b>Jacksha Road Intersection</b>	0.3	0.1	7.7	3.3
<b>South Old US-95 Intersection</b>	0.2	0.1	5.2	1.7
<b>North Old US-95 Intersection</b>	0.4	0.1	8.8	3.4
<b>Total</b>	<b>9.2</b>	<b>4.6*</b>	<b>218.0*</b>	<b>107.0*</b>

\*Note: Differences between the total number and the sum of components are due to rounding. The actual numbers that have not been rounded can be found in Appendix E.

Table 14, shown below, summarizes the predicted crashes for Alternative Modified W4 and the remaining US-95 Loop.

<b>Table 14: HSM Crash Results for Alternative Modified W4 and Remaining US-95 Loop</b>				
	<b>Construction Year 2017</b>		<b>Crashes From 2017 Through 2036</b>	
	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>
<b>Modified W4 Alternative</b>	9.2	4.6	218.0	107.0
<b>Remaining US-95 Loop</b>	1.3	0.4	26.9	9.2
<b>Total</b>	<b>10.5</b>	<b>5.0</b>	<b>244.9</b>	<b>116.2</b>

## Addendum 1 - AASHTO Highway Safety Manual Analysis

DHP-NH-4110 (156); Key No. 9294; Thorncreek to Moscow

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An estimate of the economic cost of all accidents on Alternative Modified W4 can be calculated using the HSM Crash Results shown above, the economic costs of the different crash types reported in Idaho Traffic Crashes 2012, the average frequency of the different injury and fatal accidents on Idaho's Highways, and the average multiple car crash frequency.

The estimated economic cost of crashes on Alternative Modified W4 between 2017 and 2036 is calculated to be about \$32,000,000 and the estimated economic cost of crashes on Alternative Modified W4 and the remaining US-95 Loop is calculated to be about \$35,000,000. These costs are identical to Alternative W4 due to rounding to significant figures.

### Conclusion

The following results for Alternative Modified W4 are in Table 15 below:

Table 15: Predicted Crashes For Proposed Alternative Modified W4				
	Completion Year 2017		Crashes From 2017 Through 2036	
Alternative	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
Modified W4	9.2	4.6	218.0	107.0

The following results for Alternative Modified W4 are in Table 16 below:

Table 16: Predicted Crashes For Proposed Alternative Modified W4 and Remaining US-95 Loop				
	Completion Year 2017		Crashes From 2017 Through 2036	
Alternative	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
Modified W4	10.5	5.0	244.9	116.2

In conclusion, this Addendum documents from a safety perspective Alternatives W4 and Modified W4 are nearly the same and provides the required calculations.

**ADDENDUM 1**  
**US-95 THORNCREEK ROAD TO MOSCOW**  
**AASHTO HIGHWAY SAFETY MANUAL ANALYSIS**  
**ON ALTERNATIVES CARRIED FORWARD**

**DHP-NH-4110 (156)**

**KEY # 09294**

**December 31, 2014**

**APPENDIX E REVISIONS**

### Total Predicted Crashes of Modified W4 Alternative Between 2017 and 2036

		Proposed Modified W4 Alternative Total Crash Summary by Year																Total
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Modified W4	9.2	9.4	9.5	9.7	9.9	10.0	10.2	10.4	10.6	10.8	10.9	11.1	11.3	11.5	11.7	11.9	12.1	218.0
		Proposed Modified W4 Alternative and Existing US-95 Loop Total Crash Summary by Year																Total
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Modified W4	10.5	10.7	10.8	11.0	11.2	11.4	11.5	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	13.3	13.5	244.9

### Total Predicted Fatal and Injury Crashes of Modified W4 Alternative Between 2017 and 2036

		Proposed Alignment Total Fatal and Injury Crash Summary by Year																Total
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Modified W4	4.6	4.7	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.3	5.4	5.5	5.5	5.6	5.7	5.8	5.9	107.0
		Proposed Alignment and Existing US-95 Loop Total Fatal and Injury Crash Summary by Year																Total
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Modified W4	5.0	5.1	5.2	5.3	5.3	5.4	5.5	5.6	5.7	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	116.2



Modified W-4 Alternative Total Crash Summary

New Alignment		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Segment		6.856	6.973	7.092	7.213	7.336	7.461	7.589	7.718	7.850	7.984	8.121	8.259	8.400	8.544	8.689	8.838	8.989	9.142	9.298	9.457
Rural Divided		1.123	1.141	1.159	1.178	1.196	1.216	1.235	1.255	1.275	1.296	1.317	1.338	1.360	1.382	1.404	1.427	1.450	1.473	1.497	1.522
Suburban																					
Intersection		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Eld		0.339	0.345	0.352	0.359	0.367	0.374	0.382	0.389	0.397	0.405	0.413	0.421	0.430	0.439	0.447	0.456	0.465	0.475	0.484	0.494
Jacksha		0.318	0.325	0.331	0.338	0.345	0.352	0.359	0.366	0.373	0.381	0.388	0.396	0.404	0.412	0.420	0.429	0.438	0.446	0.455	0.464
South Old US-95		0.213	0.217	0.221	0.226	0.230	0.235	0.240	0.244	0.249	0.254	0.259	0.265	0.270	0.275	0.281	0.287	0.292	0.298	0.304	0.310
North Old US-95		0.370	0.376	0.383	0.390	0.397	0.404	0.411	0.419	0.426	0.434	0.442	0.450	0.458	0.466	0.475	0.484	0.493	0.502	0.511	0.521
Total		9.2	9.4	9.5	9.7	9.9	10.0	10.2	10.4	10.6	10.8	10.9	11.1	11.3	11.5	11.7	11.9	12.1	12.3	12.6	12.8
Existing US-95		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Segment		11	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
11		0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
12		0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
13		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
14		0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
15		0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
16		0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026
17		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
18		0.051	0.051	0.051	0.051	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.053	0.053	0.053	0.053	0.053	0.053
19		0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
20		0.093	0.093	0.094	0.094	0.095	0.095	0.096	0.096	0.096	0.097	0.097	0.098	0.098	0.099	0.099	0.100	0.100	0.101	0.102	0.102
21		0.259	0.260	0.261	0.263	0.264	0.266	0.267	0.269	0.270	0.272	0.273	0.275	0.276	0.278	0.279	0.281	0.282	0.284	0.285	0.287
22		0.470	0.475	0.479	0.484	0.488	0.493	0.497	0.502	0.507	0.512	0.517	0.521	0.526	0.531	0.536	0.542	0.547	0.552	0.557	0.563
Intersection		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Zeiler		0.026	0.026	0.026	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.028	0.028
Snow		0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Skyline		0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
South Clyde		0.023	0.023	0.023	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
Cameron		0.079	0.080	0.080	0.081	0.081	0.081	0.082	0.082	0.083	0.083	0.084	0.084	0.084	0.085	0.085	0.086	0.086	0.087	0.087	0.087
North Clyde		0.117	0.118	0.119	0.119	0.120	0.120	0.121	0.122	0.122	0.123	0.124	0.124	0.125	0.125	0.126	0.127	0.127	0.128	0.129	0.129
Total		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Total (Crashes/year)		10.5	10.7	10.8	11.0	11.2	11.4	11.5	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	13.3	13.5	13.7	14.0	14.2

244.945
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Total Crashes between 2017 and 2036

244.9

New Alignment																	Total				
Segment	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Rural Divided	3,753	3,812	3,871	3,932	3,993	4,055	4,118	4,182	4,248	4,314	4,381	4,449	4,519	4,589	4,660	4,733	4,807	4,882	4,958	5,035	
Suburban	0,341	0,346	0,351	0,356	0,362	0,367	0,373	0,378	0,384	0,390	0,396	0,402	0,408	0,414	0,420	0,427	0,433	0,440	0,447	0,454	
Intersection	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036		
Eid	0,148	0,150	0,153	0,156	0,159	0,162	0,165	0,168	0,171	0,174	0,177	0,181	0,184	0,187	0,191	0,194	0,198	0,202	0,206	0,209	
South Old US-95	0,069	0,071	0,072	0,073	0,075	0,076	0,078	0,079	0,080	0,082	0,083	0,085	0,087	0,088	0,090	0,091	0,093	0,095	0,097	0,098	
North Old US-95	0,142	0,145	0,147	0,149	0,152	0,154	0,157	0,160	0,162	0,165	0,168	0,171	0,174	0,177	0,180	0,183	0,186	0,189	0,193	0,196	
Total	4,6	4,7	4,7	4,8	4,9	5,0	5,0	5,1	5,2	5,3	5,4	5,5	5,5	5,6	5,7	5,8	5,9	6,0	6,1	6,2	
Alignment US-95																					107,0

		Planning Cycle																				Total
Segment		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Intersection	11	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.047
	12	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.134
	13	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.059
	14	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.135
	15	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.076
	16	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.167
	17	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.103
	18	0.016	0.016	0.016	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.335
	19	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.096
	20	0.030	0.030	0.030	0.030	0.030	0.030	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.624
Total	21	0.083	0.083	0.084	0.084	0.085	0.085	0.086	0.086	0.087	0.087	0.088	0.088	0.089	0.089	0.090	0.090	0.091	0.091	0.092	0.092	1.749
	22	0.151	0.152	0.154	0.155	0.157	0.158	0.160	0.161	0.163	0.164	0.166	0.167	0.169	0.171	0.172	0.174	0.176	0.177	0.179	0.181	3.306
	Intersection	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
	Zettler	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.224
	Snow	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.141
North Clyde	Skyline	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.070
	South Clyde	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.198
	Cameron	0.033	0.033	0.033	0.033	0.034	0.034	0.034	0.034	0.034	0.034	0.035	0.035	0.035	0.035	0.035	0.036	0.036	0.036	0.036	0.036	0.692
	North Clyde	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.050	0.051	0.051	0.051	0.052	0.052	0.052	0.052	0.053	0.053	0.053	0.053	0.054	1.023
Total		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	9.179
Total (Crashes/year)		5.0	5.1	5.2	5.3	5.3	5.4	5.5	5.6	5.7	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	116.198

## Modified W-4 Alternative Safety Summary 2017

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	6.856	3.753
Suburban	1.123	0.341
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.339	0.148
Jacksha Rd.	0.318	0.137
Old US-95 South	0.213	0.069
Old US-95 North	0.370	0.142
<b>Subtotal</b>	<b>9.218</b>	<b>4.591</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	9.2
<b>Fatal and Injury</b>	4.6
<b>Property Damage Only</b>	4.6

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.051	0.016
19	0.015	0.005
20	0.093	0.030
21	0.259	0.083
22	0.470	0.151
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.026	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.023	0.010
Cameron Rd.	0.079	0.033
Clyde Rd. North	0.117	0.049
<b>Subtotal</b>	<b>1.269</b>	<b>0.433</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.3
<b>Fatal and Injury</b>	0.4
<b>Property Damage Only</b>	0.8

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>10.5</b>
<b>Fatal and Injury</b>	<b>5.0</b>
<b>Property Damage Only</b>	<b>5.5</b>



Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co. ID	
			Analysis Year	2017	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)			AADT <sub>MAX</sub> = 89,300 (veh/day)	--	5,920
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted</sub> (a)
	from Table 11-5							
	a	b	c					
Total	-9.025	1.049	1.549	6.925	0.033	0.99	1.00	6.856
Fatal and Injury (FI)	-8.837	0.958	1.687	3.791	0.029	0.99	1.00	3.753
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.547	0.028	0.99	1.00	2.522
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.102

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type (TOTAL)	N <sub>predicted</sub> (a) (TOTAL) (crashes/year)	Proportion of Collision Type (FI)	N <sub>predicted</sub> (a) (FI) (crashes/year)	Proportion of Collision Type (FI <sup>a</sup> )	N <sub>predicted</sub> (a) (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type (PDO)	N <sub>predicted</sub> (a) (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	6.856	1.000	3.753	1.000	2.522	1.000	3.102
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.041	0.013	0.049	0.018	0.045	0.002	0.006
Sideswipe collision	0.043	0.295	0.027	0.101	0.022	0.055	0.053	0.164
Rear-end collision	0.116	0.795	0.163	0.612	0.114	0.288	0.088	0.273
Angle collision	0.043	0.295	0.048	0.180	0.045	0.113	0.041	0.127
Single-vehicle collision	0.768	5.265	0.727	2.729	0.778	1.962	0.792	2.457
Other collision	0.024	0.165	0.022	0.083	0.023	0.058	0.024	0.074

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	6.856	6.4	1.1
Fatal and Injury (FI)	3.753	6.4	0.6
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.522	6.4	0.4
Property Damage Only (PDO)	3.102	6.4	0.5

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2018

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	6.973	3.812
Suburban	1.141	0.346
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.345	0.150
Jacksha Rd.	0.325	0.140
Old US-95 South	0.217	0.071
Old US-95 North	0.376	0.145
<b>Subtotal</b>	<b>9.377</b>	<b>4.663</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	9.4
<b>Fatal and Injury</b>	4.7
<b>Property Damage Only</b>	4.7

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.051	0.016
19	0.015	0.005
20	0.093	0.030
21	0.260	0.083
22	0.475	0.152
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.026	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.023	0.010
Cameron Rd.	0.080	0.033
Clyde Rd. North	0.118	0.049
<b>Subtotal</b>	<b>1.277</b>	<b>0.435</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.3
<b>Fatal and Injury</b>	0.4
<b>Property Damage Only</b>	0.8

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	10.7
<b>Fatal and Injury</b>	5.1
<b>Property Damage Only</b>	5.6

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments			
General Information		Location Information	
Analyst	CJA, KJB	Roadway	US-95, Thomcreek to Moscow
Agency or Company	ITD District 2	Roadway Section	Modified W4 Rural - Divided
Date Performed	12/30/14	Jurisdiction	Latah Co. ID
		Analysis Year	2018
Input Data		Base Conditions	Site Conditions
Roadway type (divided / undivided)		Undivided	Divided
Length of segment, L (mi)		--	6.35
AADT (veh/day)	AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,016
Lane width (ft)		12	12
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]		8	8
Shoulder type - right shoulder type for divided		Paved	Paved
Median width (ft) - for divided only		30	40
Side Slopes - for undivided only		1:7 or flatter	Not Applicable
Lighting (present/not present)		Not Present	Not Present
Auto speed enforcement (present/not present)		Not Present	Not Present
Calibration Factor, Cr		1.00	1.00

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sub>rd</sub>	CMF 2 <sub>rd</sub>	CMF 3 <sub>rd</sub>	CMF 4 <sub>rd</sub>	CMF 5 <sub>rd</sub>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1) Crash Severity Level	(2)			(3)	(4)	(5)	(6)	(7)
	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, $N_{predicted\ crash}$
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			(3)*(5)*(6)
Total	-9.025	1.049	1.549	7.043	0.033	0.99	1.00	6.973
Fatal and Injury (FI)	-8.837	0.958	1.687	3.850	0.029	0.99	1.00	3.812
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.584	0.028	0.99	1.00	2.558
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.161

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type(TOTAL)	N <sub>predicted rd(d)</sub> (TOTAL)		N <sub>predicted rd(d)</sub> (FI)		N <sub>predicted rs</sub> (FI <sup>a</sup> )		N <sub>predicted rd(d)</sub> (PDO)
		(a)	(7) <sub>TOTAL</sub> from Worksheet 1C	(a)	(7) <sub>FI</sub> from Worksheet 1C (a)	(7) <sub>FI</sub> <sup>a</sup> from Worksheet 1C (a)	(7) <sub>FI</sub> <sup>a</sup> from Worksheet 1C (a)	
Total	1.000	6.973	1.000	3.812	1.000	2.558	1.000	3.161
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI</sub> <sup>a</sup>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.042	0.013	0.050	0.018	0.046	0.002	0.006
Sideswipe collision	0.043	0.300	0.027	0.103	0.022	0.056	0.053	0.168
Rear-end collision	0.116	0.809	0.163	0.621	0.114	0.292	0.088	0.278
Angle collision	0.043	0.300	0.048	0.183	0.045	0.115	0.041	0.130
Single-vehicle collision	0.768	5.355	0.727	2.771	0.778	1.990	0.792	2.504
Other collision	0.024	0.167	0.022	0.084	0.023	0.059	0.024	0.076

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	6.973	6.4	1.1
Fatal and Injury (FI)	3.812	6.4	0.6
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.558	6.4	0.4
Property Damage Only (PDO)	3.161	6.4	0.5

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2019

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.092	3.871
Suburban	1.159	0.351
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.352	0.153
Jacksha Rd.	0.331	0.143
Old US-95 South	0.221	0.072
Old US-95 North	0.383	0.147
<b>Subtotal</b>	<b>9.539</b>	<b>4.737</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	9.5
<b>Fatal and Injury</b>	4.7
<b>Property Damage Only</b>	4.8

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.051	0.016
19	0.015	0.005
20	0.094	0.030
21	0.261	0.084
22	0.479	0.154
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.026	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.023	0.010
Cameron Rd.	0.080	0.033
Clyde Rd. North	0.119	0.049
<b>Subtotal</b>	<b>1.285</b>	<b>0.438</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.3
<b>Fatal and Injury</b>	0.4
<b>Property Damage Only</b>	0.8

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>10.8</b>
<b>Fatal and Injury</b>	<b>5.2</b>
<b>Property Damage Only</b>	<b>5.6</b>



Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2019	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,114	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub>
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			(3)*(5)*(6)
Total	-9.025	1.049	1.549	7.164	0.033	0.99	1.00	7.092
Fatal and Injury (FI)	-8.837	0.958	1.687	3.910	0.029	0.99	1.00	3.871
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.620	0.028	0.99	1.00	2.594
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.221

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted ra(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted ra(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted ra(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.092	1.000	3.871	1.000	2.594	1.000	3.221
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.043	0.013	0.050	0.018	0.047	0.002	0.006
Sideswipe collision	0.043	0.305	0.027	0.105	0.022	0.057	0.053	0.171
Rear-end collision	0.116	0.823	0.163	0.631	0.114	0.296	0.088	0.283
Angle collision	0.043	0.305	0.048	0.186	0.045	0.117	0.041	0.132
Single-vehicle collision	0.768	5.447	0.727	2.814	0.778	2.018	0.792	2.551
Other collision	0.024	0.170	0.022	0.085	0.023	0.060	0.024	0.077

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.092	6.4	1.1
Fatal and Injury (FI)	3.871	6.4	0.6
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.594	6.4	0.4
Property Damage Only (PDO)	3.221	6.4	0.5

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2020

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.213	3.932
Suburban	1.178	0.356
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.359	0.156
Jacksha Rd.	0.338	0.145
Old US-95 South	0.226	0.073
Old US-95 North	0.390	0.149
<b>Subtotal</b>	<b>9.703</b>	<b>4.812</b>

Proposed Modified W4 Alternative	
Total (Crashes/year)	9.7
Fatal and Injury	4.8
Property Damage Only	4.9

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.051	0.017
19	0.015	0.005
20	0.094	0.030
21	0.263	0.084
22	0.484	0.155
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.081	0.033
Clyde Rd. North	0.119	0.049
<b>Subtotal</b>	<b>1.293</b>	<b>0.441</b>

Existing US-95 Loop	
Total (Crashes/year)	1.3
Fatal and Injury	0.4
Property Damage Only	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
Total (Crashes/year)	11.0
Fatal and Injury	5.3
Property Damage Only	5.7

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	C.JA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2020	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)	AADT <sub>MAX</sub> = 89,300 (veh/day)		--	6,214	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>rd</sup>	CMF 2 <sup>rd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>rd</sup>	CMF 5 <sup>rd</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>(predicted rate)</sub> (3)*(5)*(6)
	from Table 11-5							
		a	b	c	from Equation 11-9	from Equation 11-10		
Total	-9.025	1.049	1.549	7.286	0.033	0.99	1.00	7.213
Fatal and Injury (FI)	-8.837	0.958	1.687	3.971	0.029	0.99	1.00	3.932
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.658	0.028	0.99	1.00	2.631
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub> 3.281

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type (TOTAL)	N predicted ra(d) (TOTAL) (crashes/year)	Proportion of Collision Type (FI)	N predicted ra(d) (FI) (crashes/year)	Proportion of Collision Type (FI <sup>a</sup> )	N predicted rs (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type (PDO)	N predicted ra(d) (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> <sup>a</sup> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.213	1.000	3.932	1.000	2.631	1.000	3.281
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI</sub> <sup>a</sup>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.043	0.013	0.051	0.018	0.047	0.002	0.007
Sideswipe collision	0.043	0.310	0.027	0.106	0.022	0.058	0.053	0.174
Rear-end collision	0.116	0.837	0.163	0.641	0.114	0.300	0.088	0.289
Angle collision	0.043	0.310	0.048	0.189	0.045	0.118	0.041	0.135
Single-vehicle collision	0.768	5.540	0.727	2.858	0.778	2.047	0.792	2.599
Other collision	0.024	0.173	0.022	0.086	0.023	0.061	0.024	0.079

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.213	6.4	1.1
Fatal and Injury (FI)	3.932	6.4	0.6
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.631	6.4	0.4
Property Damage Only (PDO)	3.281	6.4	0.5

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2021

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.336	3.993
Suburban	1.196	0.362
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.367	0.159
Jacksha Rd.	0.345	0.148
Old US-95 South	0.230	0.075
Old US-95 North	0.397	0.152
<b>Subtotal</b>	<b>9.871</b>	<b>4.888</b>

Proposed Modified W4 Alternative	
Total (Crashes/year)	9.9
Fatal and Injury	4.9
Property Damage Only	5.0

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.095	0.030
21	0.264	0.085
22	0.488	0.157
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.081	0.034
Clyde Rd. North	0.120	0.050
<b>Subtotal</b>	<b>1.301</b>	<b>0.443</b>

Existing US-95 Loop	
Total (Crashes/year)	1.3
Fatal and Injury	0.4
Property Damage Only	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
Total (Crashes/year)	11.2
Fatal and Injury	5.3
Property Damage Only	5.8

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2021	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,315	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>rd</sup>	CMF 2 <sup>rd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>rd</sup>	CMF 5 <sup>rd</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, $N_{predicted}$
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			$(3)(5)(6)$
Total	-9.025	1.049	1.549	7.410	0.033	0.99	1.00	7.336
Fatal and Injury (FI)	-8.837	0.958	1.687	4.033	0.029	0.99	1.00	3.993
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.695	0.028	0.99	1.00	2.668
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL} - (7)_{FI}$
								3.343

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted ra(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted ra(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted ra(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.336	1.000	3.993	1.000	2.668	1.000	3.343
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.044	0.013	0.052	0.018	0.048	0.002	0.007
Sideswipe collision	0.043	0.315	0.027	0.108	0.022	0.059	0.053	0.177
Rear-end collision	0.116	0.851	0.163	0.651	0.114	0.304	0.088	0.294
Angle collision	0.043	0.315	0.048	0.192	0.045	0.120	0.041	0.137
Single-vehicle collision	0.768	5.634	0.727	2.903	0.778	2.076	0.792	2.648
Other collision	0.024	0.176	0.022	0.088	0.023	0.061	0.024	0.080

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.336	6.4	1.2
Fatal and Injury (FI)	3.993	6.4	0.6
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.668	6.4	0.4
Property Damage Only (PDO)	3.343	6.4	0.5

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2022

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.461	4.055
Suburban	1.216	0.367
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.374	0.162
Jacksha Rd.	0.352	0.151
Old US-95 South	0.235	0.076
Old US-95 North	0.404	0.154
<b>Subtotal</b>	<b>10.041</b>	<b>4.965</b>

Proposed Modified W4 Alternative	
Total (Crashes/year)	10.0
Fatal and Injury	5.0
Property Damage Only	5.1

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.095	0.031
21	0.266	0.085
22	0.493	0.158
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.081	0.034
Clyde Rd. North	0.120	0.050
<b>Subtotal</b>	<b>1.309</b>	<b>0.446</b>

Existing US-95 Loop	
Total (Crashes/year)	1.3
Fatal and Injury	0.4
Property Damage Only	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
Total (Crashes/year)	11.4
Fatal and Injury	5.4
Property Damage Only	5.9

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co. ID	
			Analysis Year	2022	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,417	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1) Crash Severity Level	(2)			(3)	(4)	(5)	(6)	(7)
	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet	Calibration Factor, Cr	Predicted average crash frequency, $N_{predicted crash}$
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10	1B (a)		(3)(5)(6)
Total	-9.025	1.049	1.549	7.537	0.033	0.99	1.00	7.461
Fatal and Injury (FI)	-8.837	0.958	1.687	4.096	0.029	0.99	1.00	4.055
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.734	0.028	0.99	1.00	2.706
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.406

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type(TOTAL)	N <sub>predicted</sub> (a) (TOTAL)	Proportion of Collision Type(FI)	N <sub>predicted</sub> (a) (FI)	Proportion of Collision Type (FI <sup>a</sup> )	N <sub>predicted</sub> (a) (FI <sup>a</sup> )	Proportion of Collision Type (PDO)	N <sub>predicted</sub> (a) (PDO)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.461	1.000	4.055	1.000	2.706	1.000	3.406
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI</sub> <sup>a</sup>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.045	0.013	0.053	0.018	0.049	0.002	0.007
Sideswipe collision	0.043	0.321	0.027	0.109	0.022	0.060	0.053	0.181
Rear-end collision	0.116	0.866	0.163	0.661	0.114	0.309	0.088	0.300
Angle collision	0.043	0.321	0.048	0.195	0.045	0.122	0.041	0.140
Single-vehicle collision	0.768	5.730	0.727	2.948	0.778	2.105	0.792	2.698
Other collision	0.024	0.179	0.022	0.089	0.023	0.062	0.024	0.082

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.461	6.4	1.2
Fatal and Injury (FI)	4.055	6.4	0.6
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.706	6.4	0.4
Property Damage Only (PDO)	3.406	6.4	0.5

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2023

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.589	4.118
Suburban	1.235	0.373
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.382	0.165
Jacksha Rd.	0.359	0.153
Old US-95 South	0.240	0.078
Old US-95 North	0.411	0.157
<b>Subtotal</b>	<b>10.215</b>	<b>5.044</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	10.2
<b>Fatal and Injury</b>	5.0
<b>Property Damage Only</b>	5.2

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.096	0.031
21	0.267	0.086
22	0.497	0.160
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.082	0.034
Clyde Rd. North	0.121	0.050
<b>Subtotal</b>	<b>1.317</b>	<b>0.449</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.3
<b>Fatal and Injury</b>	0.4
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>11.5</b>
<b>Fatal and Injury</b>	<b>5.5</b>
<b>Property Damage Only</b>	<b>6.0</b>



Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2023	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,522	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>rd</sup>	CMF 2 <sup>rd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>rd</sup>	CMF 5 <sup>rd</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub> (3)*(5)*(6)
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			
Total	-9.025	1.049	1.549	7.666	0.033	0.99	1.00	7.589
Fatal and Injury (FI)	-8.837	0.958	1.687	4.160	0.029	0.99	1.00	4.118
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.772	0.028	0.99	1.00	2.745
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub> 3.471

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type(TOTAL)	N predicted ra(d) (TOTAL) (crashes/year)	Proportion of Collision Type(FI)	N predicted ra(d) (FI) (crashes/year)	Proportion of Collision Type (FI <sup>a</sup> )	N predicted rs (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type (PDO)	N predicted ra(d) (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> <sup>a</sup> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.589	1.000	4.118	1.000	2.745	1.000	3.471
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI</sub> <sup>a</sup>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.046	0.013	0.054	0.018	0.049	0.002	0.007
Sideswipe collision	0.043	0.326	0.027	0.111	0.022	0.060	0.053	0.184
Rear-end collision	0.116	0.880	0.163	0.671	0.114	0.313	0.088	0.305
Angle collision	0.043	0.326	0.048	0.198	0.045	0.124	0.041	0.142
Single-vehicle collision	0.768	5.828	0.727	2.994	0.778	2.135	0.792	2.749
Other collision	0.024	0.182	0.022	0.091	0.023	0.063	0.024	0.083

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.589	6.4	1.2
Fatal and Injury (FI)	4.118	6.4	0.6
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.745	6.4	0.4
Property Damage Only (PDO)	3.471	6.4	0.5

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2024

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.718	4.182
Suburban	1.255	0.378
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.389	0.168
Jacksha Rd.	0.366	0.156
Old US-95 South	0.244	0.079
Old US-95 North	0.419	0.160
<b>Subtotal</b>	<b>10.391</b>	<b>5.124</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	10.4
<b>Fatal and Injury</b>	5.1
<b>Property Damage Only</b>	5.3

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.096	0.031
21	0.269	0.086
22	0.502	0.161
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.082	0.034
Clyde Rd. North	0.122	0.050
<b>Subtotal</b>	<b>1.325</b>	<b>0.452</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.3
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>11.7</b>
<b>Fatal and Injury</b>	<b>5.6</b>
<b>Property Damage Only</b>	<b>6.1</b>

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments			
General Information		Location Information	
Analyst	CJA, KJB	Roadway	US-95, Thorncreek to Moscow
Agency or Company	ITD District 2	Roadway Section	Modified W4 Rural - Divided
Date Performed	12/30/14	Jurisdiction	Latah Co, ID
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Roadway type (divided / undivided)		Undivided	Divided
Length of segment, L (mi)		--	6.35
AADT (veh/day)	AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,628
Lane width (ft)		12	12
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]		8	8
Shoulder type - right shoulder type for divided		Paved	Paved
Median width (ft) - for divided only		30	40
Side Slopes - for undivided only		1:7 or flatter	Not Applicable
Lighting (present/not present)		Not Present	Not Present
Auto speed enforcement (present/not present)		Not Present	Not Present
Calibration Factor, Cr		1.00	1.00

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub>
	from Table 11-5							
	a	b	c					
Total	-9.025	1.049	1.549	7.796	0.033	0.99	1.00	7.718
Fatal and Injury (FI)	-8.837	0.958	1.687	4.225	0.029	0.99	1.00	4.182
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.812	0.028	0.99	1.00	2.784
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.536

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted rd</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted rd</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted rd</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.718	1.000	4.182	1.000	2.784	1.000	3.536
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.046	0.013	0.054	0.018	0.050	0.002	0.007
Sideswipe collision	0.043	0.332	0.027	0.113	0.022	0.061	0.053	0.187
Rear-end collision	0.116	0.895	0.163	0.682	0.114	0.317	0.088	0.311
Angle collision	0.043	0.332	0.048	0.201	0.045	0.125	0.041	0.145
Single-vehicle collision	0.768	5.928	0.727	3.041	0.778	2.166	0.792	2.800
Other collision	0.024	0.185	0.022	0.092	0.023	0.064	0.024	0.085

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.718	6.4	1.2
Fatal and Injury (FI)	4.182	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.784	6.4	0.4
Property Damage Only (PDO)	3.536	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2025

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.850	4.248
Suburban	1.275	0.384
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.397	0.171
Jacksha Rd.	0.373	0.159
Old US-95 South	0.249	0.080
Old US-95 North	0.426	0.162
<b>Subtotal</b>	<b>10.571</b>	<b>5.205</b>

Proposed Modified W4 Alternative	
Total (Crashes/year)	10.6
Fatal and Injury	5.2
Property Damage Only	5.4

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.096	0.031
21	0.270	0.087
22	0.507	0.163
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.003
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.083	0.034
Clyde Rd. North	0.122	0.051
<b>Subtotal</b>	<b>1.333</b>	<b>0.454</b>

Existing US-95 Loop	
Total (Crashes/year)	1.3
Fatal and Injury	0.5
Property Damage Only	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
Total (Crashes/year)	11.9
Fatal and Injury	5.7
Property Damage Only	6.2

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thomcreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2025	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,736	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>st</sup>	CMF 2 <sup>nd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>th</sup>	CMF 5 <sup>th</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted ra(d)</sub>
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			(3)*(5)*(6)
Total	-9.025	1.049	1.549	7.929	0.033	0.99	1.00	7.850
Fatal and Injury (FI)	-8.837	0.958	1.687	4.291	0.029	0.99	1.00	4.248
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.852	0.028	0.99	1.00	2.823
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.603

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted ra(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted ra(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted ra(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.850	1.000	4.248	1.000	2.823	1.000	3.603
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.047	0.013	0.055	0.018	0.051	0.002	0.007
Sideswipe collision	0.043	0.338	0.027	0.115	0.022	0.062	0.053	0.191
Rear-end collision	0.116	0.911	0.163	0.692	0.114	0.322	0.088	0.317
Angle collision	0.043	0.338	0.048	0.204	0.045	0.127	0.041	0.148
Single-vehicle collision	0.768	6.029	0.727	3.088	0.778	2.196	0.792	2.853
Other collision	0.024	0.188	0.022	0.093	0.023	0.065	0.024	0.086

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.850	6.4	1.2
Fatal and Injury (FI)	4.248	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.823	6.4	0.4
Property Damage Only (PDO)	3.603	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2026

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	7.984	4.314
Suburban	1.296	0.390
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.405	0.174
Jacksha Rd.	0.381	0.162
Old US-95 South	0.254	0.082
Old US-95 North	0.434	0.165
<b>Subtotal</b>	<b>10.754</b>	<b>5.287</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	10.8
<b>Fatal and Injury</b>	5.3
<b>Property Damage Only</b>	5.5

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.097	0.031
21	0.272	0.087
22	0.512	0.164
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.083	0.034
Clyde Rd. North	0.123	0.051
<b>Subtotal</b>	<b>1.342</b>	<b>0.457</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.3
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>12.1</b>
<b>Fatal and Injury</b>	<b>5.7</b>
<b>Property Damage Only</b>	<b>6.4</b>

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thomcreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2026	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,845	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided (if differ for directions of travel, use average width)			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>rd</sup>	CMF 2 <sup>rd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>rd</sup>	CMF 5 <sup>rd</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub> (3)(5)(6)
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			
Total	-9.025	1.049	1.549	8.065	0.033	0.99	1.00	7.984
Fatal and Injury (FI)	-8.837	0.958	1.687	4.357	0.029	0.99	1.00	4.314
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.892	0.028	0.99	1.00	2.863
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.670

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted ra(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted ra(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted ra(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	7.984	1.000	4.314	1.000	2.863	1.000	3.670
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.048	0.013	0.056	0.018	0.052	0.002	0.007
Sideswipe collision	0.043	0.343	0.027	0.116	0.022	0.063	0.053	0.195
Rear-end collision	0.116	0.926	0.163	0.703	0.114	0.326	0.088	0.323
Angle collision	0.043	0.343	0.048	0.207	0.045	0.129	0.041	0.150
Single-vehicle collision	0.768	6.132	0.727	3.136	0.778	2.228	0.792	2.907
Other collision	0.024	0.192	0.022	0.095	0.023	0.066	0.024	0.088

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	7.984	6.4	1.3
Fatal and Injury (FI)	4.314	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.863	6.4	0.5
Property Damage Only (PDO)	3.670	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2027

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	8.121	4.381
Suburban	1.317	0.396
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.413	0.177
Jacksha Rd.	0.388	0.165
Old US-95 South	0.259	0.083
Old US-95 North	0.442	0.168
<b>Subtotal</b>	<b>10.940</b>	<b>5.371</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	10.9
<b>Fatal and Injury</b>	5.4
<b>Property Damage Only</b>	5.6

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.097	0.031
21	0.273	0.088
22	0.517	0.166
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.008	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.084	0.035
Clyde Rd. North	0.124	0.051
<b>Subtotal</b>	<b>1.350</b>	<b>0.460</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.3
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>12.3</b>
<b>Fatal and Injury</b>	<b>5.8</b>
<b>Property Damage Only</b>	<b>6.5</b>



Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2027	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	6,957	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>st</sup>	CMF 2 <sup>nd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>th</sup>	CMF 5 <sup>th</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted rd(d)</sub> (3)*(5)*(6)
	a	b	c					
Total	-9.025	1.049	1.549	8.203	0.033	0.99	1.00	8.121
Fatal and Injury (FI)	-8.837	0.958	1.687	4.425	0.029	0.99	1.00	4.381
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	2.933	0.028	0.99	1.00	2.904
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.740

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted rd(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted rd(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted rd(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	8.121	1.000	4.381	1.000	2.904	1.000	3.740
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.049	0.013	0.057	0.018	0.052	0.002	0.007
Sideswipe collision	0.043	0.349	0.027	0.118	0.022	0.064	0.053	0.198
Rear-end collision	0.116	0.942	0.163	0.714	0.114	0.331	0.088	0.329
Angle collision	0.043	0.349	0.048	0.210	0.045	0.131	0.041	0.153
Single-vehicle collision	0.768	6.237	0.727	3.185	0.778	2.259	0.792	2.962
Other collision	0.024	0.195	0.022	0.096	0.023	0.067	0.024	0.090

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	8.121	6.4	1.3
Fatal and Injury (FI)	4.381	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.904	6.4	0.5
Property Damage Only (PDO)	3.740	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2028

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	8.259	4.449
Suburban	1.338	0.402
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.421	0.181
Jacksha Rd.	0.396	0.168
Old US-95 South	0.265	0.085
Old US-95 North	0.450	0.171
<b>Subtotal</b>	<b>11.129</b>	<b>5.456</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	11.1
<b>Fatal and Injury</b>	5.5
<b>Property Damage Only</b>	5.7

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.098	0.031
21	0.275	0.088
22	0.521	0.167
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.084	0.035
Clyde Rd. North	0.124	0.052
<b>Subtotal</b>	<b>1.358</b>	<b>0.463</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.4
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>12.5</b>
<b>Fatal and Injury</b>	<b>5.9</b>
<b>Property Damage Only</b>	<b>6.6</b>



Worksheet 1A – General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2028	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	7,070	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>rd</sup>	CMF 2 <sup>rd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>rd</sup>	CMF 5 <sup>rd</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, $N_{predicted rd(d)}$
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			(3)*(5)*(6)
Total	-9.025	1.049	1.549	8.343	0.033	0.99	1.00	8.259
Fatal and Injury (FI)	-8.837	0.958	1.687	4.494	0.029	0.99	1.00	4.449
Fatal and Injury <sup>A</sup> (FI <sup>A</sup> )	-8.505	0.874	1.740	2.975	0.028	0.99	1.00	2.945
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.810

NOTE: \* Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted rd(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted rd(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI*</sub>	N <sub>predicted rs</sub> (FI*) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted rd(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI*</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	8.259	1.000	4.449	1.000	2.945	1.000	3.810
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI*</sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.050	0.013	0.058	0.018	0.053	0.002	0.008
Sideswipe collision	0.043	0.355	0.027	0.120	0.022	0.065	0.053	0.202
Rear-end collision	0.116	0.958	0.163	0.725	0.114	0.336	0.088	0.335
Angle collision	0.043	0.355	0.048	0.214	0.045	0.133	0.041	0.156
Single-vehicle collision	0.768	6.343	0.727	3.235	0.778	2.291	0.792	3.017
Other collision	0.024	0.198	0.022	0.098	0.023	0.068	0.024	0.091

NOTE: \* Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	8.259	6.4	1.3
Fatal and Injury (FI)	4.449	6.4	0.7
Fatal and Injury* (FI*)	2.945	6.4	0.5
Property Damage Only (PDO)	3.810	6.4	0.6

NOTE: \* Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2029

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	8.400	4.519
Suburban	1.360	0.408
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.430	0.184
Jacksha Rd.	0.404	0.171
Old US-95 South	0.270	0.087
Old US-95 North	0.458	0.174
<b>Subtotal</b>	<b>11.322</b>	<b>5.542</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	11.3
<b>Fatal and Injury</b>	5.5
<b>Property Damage Only</b>	5.8

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.098	0.032
21	0.276	0.089
22	0.526	0.169
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.084	0.035
Clyde Rd. North	0.125	0.052
<b>Subtotal</b>	<b>1.367</b>	<b>0.466</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.4
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	12.7
<b>Fatal and Injury</b>	6.0
<b>Property Damage Only</b>	6.7

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2029	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	7,185	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>rd</sup>	CMF 2 <sup>rd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>rd</sup>	CMF 5 <sup>rd</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub> (3)*(5)*(6)
	from Table 11-5							
	a	b	c					
Total	-9.025	1.049	1.549	8.485	0.033	0.99	1.00	8.400
Fatal and Injury (FI)	-8.837	0.958	1.687	4.564	0.029	0.99	1.00	4.519
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.017	0.028	0.99	1.00	2.987
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.882

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted ra(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted ra(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted ra(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	8.400	1.000	4.519	1.000	2.987	1.000	3.882
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.050	0.013	0.059	0.018	0.054	0.002	0.008
Sideswipe collision	0.043	0.361	0.027	0.122	0.022	0.066	0.053	0.206
Rear-end collision	0.116	0.974	0.163	0.737	0.114	0.341	0.088	0.342
Angle collision	0.043	0.361	0.048	0.217	0.045	0.134	0.041	0.159
Single-vehicle collision	0.768	6.451	0.727	3.285	0.778	2.324	0.792	3.074
Other collision	0.024	0.202	0.022	0.099	0.023	0.069	0.024	0.093

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	8.400	6.4	1.3
Fatal and Injury (FI)	4.519	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	2.987	6.4	0.5
Property Damage Only (PDO)	3.882	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2030

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	8.544	4.589
Suburban	1.382	0.414
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.439	0.187
Jacksha Rd.	0.412	0.175
Old US-95 South	0.275	0.088
Old US-95 North	0.466	0.177
<b>Subtotal</b>	<b>11.518</b>	<b>5.630</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	11.5
<b>Fatal and Injury</b>	5.6
<b>Property Damage Only</b>	5.9

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.052	0.017
19	0.015	0.005
20	0.099	0.032
21	0.278	0.089
22	0.531	0.171
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.085	0.035
Clyde Rd. North	0.125	0.052
<b>Subtotal</b>	<b>1.376</b>	<b>0.469</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.4
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>12.9</b>
<b>Fatal and Injury</b>	<b>6.1</b>
<b>Property Damage Only</b>	<b>6.8</b>

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2030	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	7,302	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted ra/d</sub>
	from Table 11-5							
	a	b	c					
Total	-9.025	1.049	1.549	8.630	0.033	0.99	1.00	8.544
Fatal and Injury (FI)	-8.837	0.958	1.687	4.635	0.029	0.99	1.00	4.589
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.060	0.028	0.99	1.00	3.030
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								3.955

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type (TOTAL)	N predicted ra/d (TOTAL) (crashes/year)	Proportion of Collision Type (FI)	N predicted ra/d (FI) (crashes/year)	Proportion of Collision Type (FI <sup>a</sup> )	N predicted rs (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type (PDO)	N predicted ra/d (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11- 6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> <sup>a</sup> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	8.544	1.000	4.589	1.000	3.030	1.000	3.955
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI</sub> <sup>a</sup>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.051	0.013	0.060	0.018	0.055	0.002	0.008
Sideswipe collision	0.043	0.367	0.027	0.124	0.022	0.067	0.053	0.210
Rear-end collision	0.116	0.991	0.163	0.748	0.114	0.345	0.088	0.348
Angle collision	0.043	0.367	0.048	0.220	0.045	0.136	0.041	0.162
Single-vehicle collision	0.768	6.561	0.727	3.336	0.778	2.357	0.792	3.132
Other collision	0.024	0.205	0.022	0.101	0.023	0.070	0.024	0.095

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	8.544	6.4	1.3
Fatal and Injury (FI)	4.589	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	3.030	6.4	0.5
Property Damage Only (PDO)	3.955	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2031

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	8.689	4.660
Suburban	1.404	0.420
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.447	0.191
Jacksha Rd.	0.420	0.178
Old US-95 South	0.281	0.090
Old US-95 North	0.475	0.180
<b>Subtotal</b>	<b>11.717</b>	<b>5.719</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	11.7
<b>Fatal and Injury</b>	5.7
<b>Property Damage Only</b>	6.0

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.053	0.017
19	0.015	0.005
20	0.099	0.032
21	0.279	0.090
22	0.536	0.172
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.085	0.035
Clyde Rd. North	0.126	0.052
<b>Subtotal</b>	<b>1.384</b>	<b>0.471</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.4
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>13.1</b>
<b>Fatal and Injury</b>	<b>6.2</b>
<b>Property Damage Only</b>	<b>6.9</b>

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thomcreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2031	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)	AADT <sub>MAX</sub> = 89,300 (veh/day)		--	7,421	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted rd</sub>
	from Table 11-5							
	a	b	c					
Total	-9.025	1.049	1.549	8.777	0.033	0.99	1.00	8.689
Fatal and Injury (FI)	-8.837	0.958	1.687	4.708	0.029	0.99	1.00	4.660
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.104	0.028	0.99	1.00	3.073
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								4.029

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted rd</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted rd</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted rd</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	8.689	1.000	4.660	1.000	3.073	1.000	4.029
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.052	0.013	0.061	0.018	0.055	0.002	0.008
Sideswipe collision	0.043	0.374	0.027	0.126	0.022	0.068	0.053	0.214
Rear-end collision	0.116	1.008	0.163	0.760	0.114	0.350	0.088	0.355
Angle collision	0.043	0.374	0.048	0.224	0.045	0.138	0.041	0.165
Single-vehicle collision	0.768	6.673	0.727	3.388	0.778	2.390	0.792	3.191
Other collision	0.024	0.209	0.022	0.103	0.023	0.071	0.024	0.097

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	8.689	6.4	1.4
Fatal and Injury (FI)	4.660	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	3.073	6.4	0.5
Property Damage Only (PDO)	4.029	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2032

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	8.838	4.733
Suburban	1.427	0.427
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.456	0.194
Jacksha Rd.	0.429	0.181
Old US-95 South	0.287	0.091
Old US-95 North	0.484	0.183
<b>Subtotal</b>	<b>11.920</b>	<b>5.810</b>

Proposed Modified W4 Alternative	
Total (Crashes/year)	11.9
Fatal and Injury	5.8
Property Damage Only	6.1

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.053	0.017
19	0.015	0.005
20	0.100	0.032
21	0.281	0.090
22	0.542	0.174
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.086	0.036
Clyde Rd. North	0.127	0.053
<b>Subtotal</b>	<b>1.393</b>	<b>0.474</b>

Existing US-95 Loop	
Total (Crashes/year)	1.4
Fatal and Injury	0.5
Property Damage Only	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
Total (Crashes/year)	13.3
Fatal and Injury	6.3
Property Damage Only	7.0



Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thomcreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2032	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	7,541	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1 <sup>rd</sup>	CMF 2 <sup>rd</sup>	CMF 3 <sup>rd</sup>	CMF 4 <sup>rd</sup>	CMF 5 <sup>rd</sup>	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub> (3)(5)(6)
	a	b	c					
Total	-9.025	1.049	1.549	8.927	0.033	0.99	1.00	8.838
Fatal and Injury (FI)	-8.837	0.958	1.687	4.781	0.029	0.99	1.00	4.733
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.148	0.028	0.99	1.00	3.116
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								4.105

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type(TOTAL)	N predicted ra(d) (TOTAL) (crashes/year)	Proportion of Collision Type(FI)	N predicted ra(d) (FI) (crashes/year)	Proportion of Collision Type (FI <sup>a</sup> )	N predicted rs (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type (PDO)	N predicted ra(d) (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> <sup>a</sup> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	8.838	1.000	4.733	1.000	3.116	1.000	4.105
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI</sub> <sup>a</sup>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.053	0.013	0.062	0.018	0.056	0.002	0.008
Sideswipe collision	0.043	0.380	0.027	0.128	0.022	0.069	0.053	0.218
Rear-end collision	0.116	1.025	0.163	0.771	0.114	0.355	0.088	0.361
Angle collision	0.043	0.380	0.048	0.227	0.045	0.140	0.041	0.168
Single-vehicle collision	0.768	6.787	0.727	3.441	0.778	2.424	0.792	3.251
Other collision	0.024	0.212	0.022	0.104	0.023	0.072	0.024	0.099

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	8.838	6.4	1.4
Fatal and Injury (FI)	4.733	6.4	0.7
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	3.116	6.4	0.5
Property Damage Only (PDO)	4.105	6.4	0.6

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2033

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	8.989	4.807
Suburban	1.450	0.433
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.465	0.198
Jacksha Rd.	0.438	0.184
Old US-95 South	0.292	0.093
Old US-95 North	0.493	0.186
<b>Subtotal</b>	<b>12.126</b>	<b>5.902</b>

Proposed Modified W4 Alternative	
Total (Crashes/year)	12.1
Fatal and Injury	5.9
Property Damage Only	6.2

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.053	0.017
19	0.015	0.005
20	0.100	0.032
21	0.282	0.091
22	0.547	0.176
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.086	0.036
Clyde Rd. North	0.127	0.053
<b>Subtotal</b>	<b>1.402</b>	<b>0.477</b>

Existing US-95 Loop	
Total (Crashes/year)	1.4
Fatal and Injury	0.5
Property Damage Only	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
Total (Crashes/year)	13.5
Fatal and Injury	6.4
Property Damage Only	7.1



Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thomcreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co. ID	
			Analysis Year	2033	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	7,664	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted rd</sub>
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			(3)*(5)*(6)
Total	-9.025	1.049	1.549	9.079	0.033	0.99	1.00	8.989
Fatal and Injury (FI)	-8.837	0.958	1.687	4.855	0.029	0.99	1.00	4.807
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.192	0.028	0.99	1.00	3.160
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								4.182

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted rd</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted rd</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted rd</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	8.989	1.000	4.807	1.000	3.160	1.000	4.182
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.054	0.013	0.062	0.018	0.057	0.002	0.008
Sideswipe collision	0.043	0.387	0.027	0.130	0.022	0.070	0.053	0.222
Rear-end collision	0.116	1.043	0.163	0.784	0.114	0.360	0.088	0.368
Angle collision	0.043	0.387	0.048	0.231	0.045	0.142	0.041	0.171
Single-vehicle collision	0.768	6.903	0.727	3.495	0.778	2.459	0.792	3.312
Other collision	0.024	0.216	0.022	0.106	0.023	0.073	0.024	0.100

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	8.989	6.4	1.4
Fatal and Injury (FI)	4.807	6.4	0.8
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	3.160	6.4	0.5
Property Damage Only (PDO)	4.182	6.4	0.7

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2034

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	9.142	4.882
Suburban	1.473	0.440
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.475	0.202
Jacksha Rd.	0.446	0.188
Old US-95 South	0.298	0.095
Old US-95 North	0.502	0.189
<b>Subtotal</b>	<b>12.337</b>	<b>5.996</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	12.3
<b>Fatal and Injury</b>	6.0
<b>Property Damage Only</b>	6.3

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.053	0.017
19	0.015	0.005
20	0.101	0.032
21	0.284	0.091
22	0.552	0.177
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.027	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.087	0.036
Clyde Rd. North	0.128	0.053
<b>Subtotal</b>	<b>1.411</b>	<b>0.480</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.4
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>13.7</b>
<b>Fatal and Injury</b>	<b>6.5</b>
<b>Property Damage Only</b>	<b>7.3</b>

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB ITD District 2 12/30/14		Roadway	US-95, Thorncreek to Moscow Modified W4 Rural - Divided Latah Co, ID 2034	
Agency or Company			Roadway Section		
Date Performed			Jurisdiction		
			Analysis Year		
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	7,789	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted rd/d</sub>
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			(3)*(5)*(6)
Total	-9.025	1.049	1.549	9.234	0.033	0.99	1.00	9.142
Fatal and Injury (FI)	-8.837	0.958	1.687	4.931	0.029	0.99	1.00	4.882
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.238	0.028	0.99	1.00	3.205
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								4.260

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted rd/d</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted rd/d</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted rs(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	9.142	1.000	4.882	1.000	3.205	1.000	4.260
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.055	0.013	0.063	0.018	0.058	0.002	0.009
Sideswipe collision	0.043	0.393	0.027	0.132	0.022	0.071	0.053	0.226
Rear-end collision	0.116	1.060	0.163	0.796	0.114	0.365	0.088	0.375
Angle collision	0.043	0.393	0.048	0.234	0.045	0.144	0.041	0.175
Single-vehicle collision	0.768	7.021	0.727	3.549	0.778	2.494	0.792	3.374
Other collision	0.024	0.219	0.022	0.107	0.023	0.074	0.024	0.102

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	9.142	6.4	1.4
Fatal and Injury (FI)	4.882	6.4	0.8
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	3.205	6.4	0.5
Property Damage Only (PDO)	4.260	6.4	0.7

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



## Modified W-4 Alternative Safety Summary 2035

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	9.298	4.958
Suburban	1.497	0.447
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.484	0.206
Jacksha Rd.	0.455	0.191
Old US-95 South	0.304	0.097
Old US-95 North	0.511	0.193
<b>Subtotal</b>	<b>12.550</b>	<b>6.091</b>

Proposed Modified W4 Alternative	
<b>Total (Crashes/year)</b>	12.6
<b>Fatal and Injury</b>	6.1
<b>Property Damage Only</b>	6.5

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.008
17	0.016	0.005
18	0.053	0.017
19	0.015	0.005
20	0.101	0.033
21	0.285	0.092
22	0.557	0.179
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.028	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.087	0.036
Clyde Rd. North	0.129	0.053
<b>Subtotal</b>	<b>1.420</b>	<b>0.483</b>

Existing US-95 Loop	
<b>Total (Crashes/year)</b>	1.4
<b>Fatal and Injury</b>	0.5
<b>Property Damage Only</b>	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
<b>Total (Crashes/year)</b>	<b>14.0</b>
<b>Fatal and Injury</b>	<b>6.6</b>
<b>Property Damage Only</b>	<b>7.4</b>



Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2035	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	7,915	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided [if differ for directions of travel, use average width]			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub>
	from Table 11-5							
	a	b	c					
Total	-9.025	1.049	1.549	9.392	0.033	0.99	1.00	9.298
Fatal and Injury (FI)	-8.837	0.958	1.687	5.008	0.029	0.99	1.00	4.958
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.284	0.028	0.99	1.00	3.251
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								4.340

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N predicted ra(d) (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N predicted ra(d) (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N predicted rs (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N predicted ra(d) (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	9.298	1.000	4.958	1.000	3.251	1.000	4.340
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.056	0.013	0.064	0.018	0.059	0.002	0.009
Sideswipe collision	0.043	0.400	0.027	0.134	0.022	0.072	0.053	0.230
Rear-end collision	0.116	1.079	0.163	0.808	0.114	0.371	0.088	0.382
Angle collision	0.043	0.400	0.048	0.238	0.045	0.146	0.041	0.178
Single-vehicle collision	0.768	7.141	0.727	3.604	0.778	2.529	0.792	3.438
Other collision	0.024	0.223	0.022	0.109	0.023	0.075	0.024	0.104

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	9.298	6.4	1.5
Fatal and Injury (FI)	4.958	6.4	0.8
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	3.251	6.4	0.5
Property Damage Only (PDO)	4.340	6.4	0.7

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

## Modified W-4 Alternative Safety Summary 2036

Proposed Modified W4 Alternative		
Segment	Total Crashes	Fatal and Injury Crashes
Rural Divided	9.457	5.035
Suburban	1.522	0.454
Intersection	Total Crashes	Fatal and Injury Crashes
Eid Rd.	0.494	0.209
Jacksha Rd.	0.464	0.195
Old US-95 South	0.310	0.098
Old US-95 North	0.521	0.196
<b>Subtotal</b>	<b>12.768</b>	<b>6.187</b>

Proposed Modified W4 Alternative	
Total (Crashes/year)	12.8
Fatal and Injury	6.2
Property Damage Only	6.6

Existing US-95		
Segment	Total Crashes	Fatal and Injury Crashes
11	0.007	0.002
12	0.021	0.007
13	0.009	0.003
14	0.021	0.007
15	0.012	0.004
16	0.026	0.009
17	0.016	0.005
18	0.053	0.017
19	0.015	0.005
20	0.102	0.033
21	0.287	0.092
22	0.563	0.181
Intersection	Total Crashes	Fatal and Injury Crashes
Zeitler Rd.	0.028	0.011
Snow Rd.	0.017	0.007
Skyview Dr.	0.009	0.004
Clyde Rd. South	0.024	0.010
Cameron Rd.	0.087	0.036
Clyde Rd. North	0.129	0.054
<b>Subtotal</b>	<b>1.429</b>	<b>0.486</b>

Existing US-95 Loop	
Total (Crashes/year)	1.4
Fatal and Injury	0.5
Property Damage Only	0.9

Proposed Modified W4 Alternative and Existing US-95 Loop	
Total (Crashes/year)	14.2
Fatal and Injury	6.7
Property Damage Only	7.5

Worksheet 1A -- General Information and Input Data for Rural Multilane Roadway Segments					
General Information			Location Information		
Analyst	CJA, KJB		Roadway	US-95, Thorncreek to Moscow	
Agency or Company	ITD District 2		Roadway Section	Modified W4 Rural - Divided	
Date Performed	12/30/14		Jurisdiction	Latah Co, ID	
			Analysis Year	2036	
Input Data			Base Conditions	Site Conditions	
Roadway type (divided / undivided)			Undivided	Divided	
Length of segment, L (mi)			--	6.35	
AADT (veh/day)		AADT <sub>MAX</sub> = 89,300 (veh/day)	--	8,044	
Lane width (ft)			12	12	
Shoulder width (ft) - right shoulder width for divided (if differ for directions of travel, use average width)			8	8	
Shoulder type - right shoulder type for divided			Paved	Paved	
Median width (ft) - for divided only			30	40	
Side Slopes - for undivided only			1:7 or flatter	Not Applicable	
Lighting (present/not present)			Not Present	Not Present	
Auto speed enforcement (present/not present)			Not Present	Not Present	
Calibration Factor, Cr			1.00	1.00	

Worksheet 1B (a) -- Crash Modification Factors for Rural Multilane Divided Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for Lane Width	CMF for Right Shoulder Width	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1rd	CMF 2rd	CMF 3rd	CMF 4rd	CMF 5rd	CMF comb
from Equation 11-16	from Table 11-17	from Table 11-18	from Equation 11-17	from Section 11.7.2	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C (a) -- Roadway Segment Crashes for Rural Multilane Divided Roadway Segments								
(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients			N spf rd	Overdispersion Parameter, k	Combined CMFs (6) from Worksheet 1B (a)	Calibration Factor, Cr	Predicted average crash frequency, N <sub>predicted crash</sub> (3)(5)(6)
	from Table 11-5							
	a	b	c	from Equation 11-9	from Equation 11-10			
Total	-9.025	1.049	1.549	9.552	0.033	0.99	1.00	9.457
Fatal and Injury (FI)	-8.837	0.958	1.687	5.086	0.029	0.99	1.00	5.035
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	-8.505	0.874	1.740	3.330	0.028	0.99	1.00	3.297
Property Damage Only (PDO)	--	--	--	--	--	--	--	(7) <sub>TOTAL</sub> - (7) <sub>FI</sub>
								4.422

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1D (a) -- Crashes by Severity Level and Collision Type for Rural Multilane Divided Roadway Segments								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	Proportion of Collision Type <sub>TOTAL</sub>	N <sub>predicted ra(d)</sub> (TOTAL) (crashes/year)	Proportion of Collision Type <sub>FI</sub>	N <sub>predicted ra(d)</sub> (FI) (crashes/year)	Proportion of Collision Type <sub>FI<sup>a</sup></sub>	N <sub>predicted rs</sub> (FI <sup>a</sup> ) (crashes/year)	Proportion of Collision Type <sub>PDO</sub>	N <sub>predicted ra(d)</sub> (PDO) (crashes/year)
	from Table 11-6	(7) <sub>TOTAL</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI</sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>FI<sup>a</sup></sub> from Worksheet 1C (a)	from Table 11-6	(7) <sub>PDO</sub> from Worksheet 1C (a)
Total	1.000	9.457	1.000	5.035	1.000	3.297	1.000	4.422
		(2)*(3) <sub>TOTAL</sub>		(4)*(5) <sub>FI</sub>		(6)*(7) <sub>FI<sup>a</sup></sub>		(8)*(9) <sub>PDO</sub>
Head-on collision	0.006	0.057	0.013	0.065	0.018	0.059	0.002	0.009
Sideswipe collision	0.043	0.407	0.027	0.136	0.022	0.073	0.053	0.234
Rear-end collision	0.116	1.097	0.163	0.821	0.114	0.376	0.088	0.389
Angle collision	0.043	0.407	0.048	0.242	0.045	0.148	0.041	0.181
Single-vehicle collision	0.768	7.263	0.727	3.660	0.778	2.565	0.792	3.502
Other collision	0.024	0.227	0.022	0.111	0.023	0.076	0.024	0.106

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 1E -- Summary Results for Rural Multilane Roadway Segments			
(1)	(2)	(3)	(4)
Crash severity level	Predicted average crash frequency (crashes/year)	Roadway segment length (mi)	Crash rate (crashes/mi/year)
	(7) from Worksheet 1C (a) or (b)		(2)/(3)
Total	9.457	6.4	1.5
Fatal and Injury (FI)	5.035	6.4	0.8
Fatal and Injury <sup>a</sup> (FI <sup>a</sup> )	3.297	6.4	0.5
Property Damage Only (PDO)	4.422	6.4	0.7

NOTE: <sup>a</sup> Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.



**US-95 THORNCREEK ROAD TO MOSCOW  
AASHTO HIGHWAY SAFETY MANUAL ANALYSIS  
ON ALTERNATIVES CARRIED FORWARD**

**DHP-NH-4110 (156)**

**KEY # 09294**

**September 3, 2013**

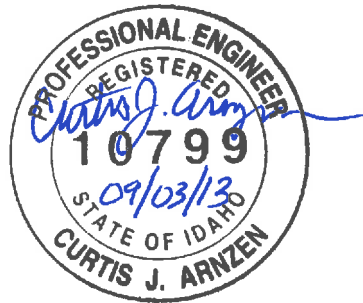
**PREPARED BY  
DISTRICT 2 PROJECT DEVELOPMENT ENGINEER**

*Curtis J. Arnzen*

*Curtis J. Arnzen, P.E.*

*09/03/13*

*Date*





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# AASHTO Highway Safety Manual Analysis

DHP-NH-4110 (156); Key No. 9294; Thorncreek to Moscow

September 3, 2013

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## Introduction

This Safety Analysis is a supporting document of the Environmental Impact Statement for US-95, Thorncreek to Moscow. This Safety Analysis will complete the following:

- Analyze the safety of the existing US-95 alignment,
- Quantify the safety benefit of the No Action Alternative and Alternatives E2, C3, and W4,
- And make an alternative recommendation based on safety.

This report replaces the safety analysis used for the Draft Environmental Impact Statement dated July 31, 2012. The report used for the DEIS was valid, but it was revised to address public comments received during the public comment period. It uses and reports updated crash data, and provides 20 years of predicted crash data starting in 2017, whereas, the previous safety analysis only provided crash predictions for 2017. The report provides additional analysis and information regarding predicted crashes on the remaining US-95 alignment that is proposed to be turned over to the North Latah Highway District primarily for local commuter traffic once an action alternative is constructed. The section that is proposed to be turned over to the North Latah Highway District is referred to as the remaining US-95 Loop in this report. The report also analyzes information regarding weather and wild animal related crashes.

As traffic volumes grow at an exponential rate, the number of predicted crashes per year increases. Selecting a safe alignment will result in a safety benefit every year after the construction of the new highway. With time, small differences in predicted crashes between the alternatives each year will grow to a significant safety benefit for an alternative that is predicted to have fewer crashes.

This report uses the First Edition (2010) of the American Association of State Highway and Transportation Officials (AASHTO) Highway Safety Manual (HSM) to analyze and quantify the safety benefits of each alternative. The HSM provides the most current and accepted knowledge and practices relating to safety management according to AASHTO and Transportation Research Board (TRB) Task forces.

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### Summary

Safety is one of the key reasons for proposing the project. In fact, the Purpose and Need Statement in the Environmental Impact Statement is the following:

- Purpose – The purpose of this project is to improve public safety and increase highway capacity on US 95 between Thorncreek Road and Moscow.
- Need – Within the project limits, US95 does not meet current American Association of State Highway and Transportation Officials (AASHTO) Standards (widths, clear-zones, grades, and sight distance). Additional concerns include high accident locations and insufficient highway capacity.

The results of the calculation methods in the HSM show that Alternatives E2, C3, and W4 will be much safer than the No Action Alternative. The results of the calculation method also show Alternative E2 is the safest proposed alternative for total crashes, as well as total injury related crashes and fatalities. Table 1 shown below summarizes the findings of this safety analysis for 20 years of crashes starting in 2017. A 20 year crash forecast was used because the normal practice is to design a project using traffic volumes projected 20 years after the completion of the project. At this time, 2017 is the first year a safety benefit would be anticipated after completion of the project; however, a safety benefit will be realized every year after the project is completed. As traffic volumes grow at an exponential rate in the future, the safety benefit becomes much greater because traffic volumes are a factor in crash prediction equations used by the Highway Safety Manual. Supporting data and assumptions used to make crash predictions are in Appendix C and the crash prediction calculations used to generate the table below are in Appendix E.

Table 1: Predicted Crashes For Proposed Alternatives				
Alternative	Completion Year 2017		Crashes From 2017 Through 2036	
	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
No Action	27.4	11.0	642.5	256.5
E2	7.6	3.8	179.5	89.0
C3	10.8	4.6	253.8	107.7
W4	9.3	4.6	219.3	107.7

In this safety analysis, the Idaho Transportation Department (ITD) predicted crashes on the remaining US-95 Loop for all of the action alternatives. The results of the calculation methods in the HSM show

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that Alternative E2 is still the safest predicted alternative after the crashes calculated on the remaining US-95 Loop are added to the total for all alternatives. The crash prediction results are shown in Table 2 below. Fewer total crashes and fewer fatal and injury crashes are predicted on Alternative E2 than Alternatives C3 and W4 even after crashes from the remaining US-95 Loop are considered in the calculated frequency. Alternative C3 has the highest predicted number of total crashes and Alternative W4 has the highest predicted number of fatal and injury crashes. The following table shows the crash predictions for each alternative after calculations for the remaining US-95 Loop are added. Supporting data and assumptions used to make crash predictions are in Appendix C and the crash prediction calculations used to generate the table are below in Appendix E.

Table 2: Predicted Crashes For Proposed Alternatives and Remaining US-95 Loop				
	Completion Year 2017		Crashes From 2017 Through 2036	
Alternative	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
No Action	27.4	11.0	642.5	256.5
E2	9.2	4.4	213.9	100.7
C3	11.1	4.7	260.2	110.0
W4	10.5	5.1	246.2	116.9

### Significance

Table 1 and Table 2 only report crash predictions for a 20 year period; however, once the four-lane highway between Thorncreek and Moscow is constructed, a safety benefit will be realized every year that US-95 between Thorncreek Road and Moscow is used by the traveling public for any of the action alternatives. Selecting an alternative based on safety will continue to benefit the traveling public every year after US-95 between Thorncreek Road and Moscow is constructed. Selecting an alternative based on safety will likely result in fewer fatalities and significantly reduced injuries over the course of its life.

Also, traffic is observed to grow at an exponential rate. Since crash predictions are a function of the volume of traffic, the number of predicted crashes increase every year. Future traffic growth magnifies the safety benefit predicted by a selected alternative.



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### Economic Cost of Crashes

The ITD Office of Highway Safety uses the cost the FHWA establishes for preventing a fatality and other accidents as a basis for determining the cost of the other crash types. The National Highway Traffic Safety Administration (NHTSA) also did a study on the costs of crashes and determined who pays for the cost of crashes. The most significant point of this study is that society at large picks up nearly 75% of all crash costs incurred by individual motor vehicle crash victims. These costs are passed on to the general public through insurance premiums, taxes, direct out-of-pocket payments for goods and services, and increased charges for medical care. Economic values can be calculated for predicted crashes between Thorncreek Road and Moscow.

Using the average crash distribution rate of crashes in 2012, the economic cost of crashes in 2012, and a factor used to account for multiple injuries in accidents, the economic cost of crashes for the different proposed alternatives can be calculated. The economic cost for different accident types are published in the Idaho Transportation Department Office of Highway Safety's document titled Idaho Traffic Crashes 2012. The total economic cost of crashes for the proposed alternatives will show the significance relating to predicted crashes. For example, in 2012 the cost of a fatality is \$6,295,406 and the cost of a crash with property damage only is \$6,739. Table 3 shows the total estimated economic costs of all crashes on the different proposed alternatives between 2017 and 2036. The data and assumptions used to calculate the economic cost of crashes is found in Appendix D.

<b>Table 3: Total Economic Cost of Crashes on the Proposed Alternatives</b>				
<b>Alternative</b>	<b>Completion Year 2017</b>		<b>From 2017 Through 2036</b>	
	<b>Economic Cost</b>	<b>Difference From E2</b>	<b>Economic Cost</b>	<b>Difference From E2</b>
<b>E2</b>	\$1,100,000	\$0	\$26,000,000	\$0
<b>C3</b>	\$1,400,000	\$300,000	\$32,000,000	\$6,000,000
<b>W4</b>	\$1,400,000	\$300,000	\$32,000,000	\$6,000,000
<b>No Action Alternative</b>	\$5,800,000	\$4,700,000	\$140,000,000	\$114,000,000

Using 2012 crash costs and the economic cost of crashes from 2017 to 2036, the predicted economic cost of crashes on Alternative E2 is about \$6 million dollars less than Alternatives C3 and W4, and \$114 million dollars less than the No Action Alternative.

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Table 4, shown below, shows the total economic cost of all crashes on the different proposed alternatives including the remaining US-95 Loop that will remain after construction of the proposed alternative is complete. The data and assumptions used to calculate the total economic cost of crashes is in Appendix D.

<b>Table 4: Total Economic Cost of Crashes on the Proposed Alternatives Including the Remaining US-95 Loop from 2017 to 2036</b>				
<b>Alternative</b>	<b>Completion Year 2017</b>		<b>From 2017 Through 2036</b>	
	<b>Economic Cost</b>	<b>Difference From E2</b>	<b>Economic Cost</b>	<b>Difference From E2</b>
<b>E2</b>	\$1,300,000	\$0	\$29,500,000	\$0
<b>C3</b>	\$1,400,000	\$100,000	\$33,000,000	\$3,500,000
<b>W4</b>	\$1,500,000	\$200,000	\$35,000,000	\$5,500,000
<b>No Action Alternative</b>	\$5,800,000	\$4,500,000	\$140,000,000	\$110,500,000

The estimated economic cost of crashes on Alternative E2 including the remaining US-95 Loop is about \$3.5 million dollars less than Alternative C3 including the remaining US-95 Loop, \$5.5 million dollars less than Alternative W4 including the remaining US-95 Loop, and \$110.5 million dollars less than the No Action Alternative.

The above-mentioned economic costs for crashes are for the first 20 years after construction of a proposed alternative; however, the economic savings due to a reduction of crashes is expected to continue over the entire lifetime that US-95 is being used if an action alternative is selected. Traffic volumes are predicted to increase exponentially, leading to more predicted crashes in the future. An increase in crashes will lead to a higher economic cost of crashes in the future and the safety benefit will continue to grow.

### Safety Analysis of the Existing Alignment

Ten years of crash data on the existing alignment between MP 337.668 (Thorncreek Rd.) and MP 344.004 (Moscow) was analyzed in order to compare the safety of the existing alignment to the proposed alternatives. The crashes are shown in Appendix A.1 of this report. From January 1, 2003 through December 31, 2012, 253 crashes occurred or an average of 25.3 crashes per year.

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In addition to the high predicted number of total crashes, two of the District's top five Official High Crash Locations are located within this section of highway. Statewide, the two High Crash Locations in this section of roadway are ranked number 17 and 34. Appendix A.2 shows the list of High Crash Locations. The previous safety analysis used for the DEIS reported 3 High Crash Locations ranked 4, 6, and 16. High Crash Locations are based on three years of crash data and change annually depending upon the most recent crash data.

The crashes that have occurred on the existing alignment over the past 10 years appear to be random in nature and include head-on crashes, sideswipes, rear end turning, overturning, run off the road to the ditch and embankment, among other crash types. In the past 10 years, 6 fatalities have occurred in 5 crashes and 152 injuries have occurred in 253 crashes on US-95 between Thorncreek and Moscow. Two of the fatal crashes were head on collisions, one fatal crash was a sideswipe, one fatal crash was due to a motorist driving left of center into another car, and one was a pedestrian crash. The head-on crashes and sideswipe crashes are generally associated with passing maneuvers. The frequency of head-on, sideswipe, and driving left of center crash types is predicted to greatly decrease by replacing the 2-lane roadway with a new 4-lane roadway with a divided median. The US-95 project between the top of the Lewiston Hill and Thorncreek Road constructed a divided 4-lane roadway and has eliminated head-on crashes and sideswipes from cars traveling in the opposite direction since its completion in October 2007.

Approximately 40% of the existing crashes are from vehicles negotiating a curve. In the past 10 years, 19 crashes occurred with a motorist running off the road to the ditch, 20 crashes occurred with a motorist running off the road in an embankment area, and 89 crashes occurred with a motorist overturning a vehicle. The existing alignment does not meet AASHTO Standards for shoulder width, curve radius, sight distance, clear zone, and grade. Any action alternative will be designed to full AASHTO standards. The number of run off the road and overturning crashes is predicted to decrease if any action alternative is selected. The severity of the accidents is also predicted to decrease because the roadside clear zone will become more forgiving.

There are currently 66 at-grade intersections and approaches (public, commercial, residential, and field) in this 6.34 mile segment of US-95. Between 2003 and 2012, there were 26 crashes directly associated with private approaches, or intersections. The north end of the project is the

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most densely populated area. It has the highest number of access points and the highest number of intersection related crashes. The southern end of the project with its closely spaced approaches onto US-95, have also resulted in a high number of intersection related crashes. Currently, many approaches do not meet the ITD access control policy and contribute to intersection related conflicts. Twenty-one rear-ending crashes occurred on the existing alignment in the past 10 years. Rear ending accidents are generally associated with turning traffic to and from public roads and approaches to residencies, businesses, and industry. Any of the three proposed action alternatives would greatly reduce at grade intersections and approaches to US-95 and future approaches would not easily be granted because the access control would be purchased on the rural highway.

Currently, about 60% of the crashes on US-95 between Thorncreek Road and Moscow occur during inclement weather where the crash report lists snow, rain, fog, blowing snow, severe cross winds, or sleet/hail as the weather condition and has a road surface condition of wet, snow, ice, or slush. The number of crashes occurring during inclement weather is observed to be the greatest along curves with substandard radii. All existing alternatives will flatten curves to the AASHTO standard for radii and super-elevation, widen shoulders, widen clearzone, and construct a divided median, reducing the potential for weather related crashes.

There have been 32 wild animal crashes between Thorncreek Road and Moscow in the ten year period between January 2003 and December 2012. This is 13% of the total crashes; however, the severity of the crashes was very low, with 26 crashes being property damage only crashes, and 6 crashes being Type C Accidents (Possible Injury). The Idaho Department of Fish and Game have designated a portion of Thorncreek Road to Moscow as a low priority wildlife linkage area.

The economic cost crashes can be calculated for accidents between Thorncreek Road and Moscow based on the costs per accident type established by the NHTSA. The results of these costs are summarized in Table 5 Below:



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<b>Table 5: Economic Cost of All Crashes Between Thorncreek and Moscow Between 1/1/03 and 12/31/12</b>				
<b>Crash Type</b>	<b>Total Crashes</b>	<b>Total Injuries</b>	<b>Cost Per Injury or Crash (2012 Costs)</b>	<b>Total Cost</b>
<b>Fatality</b>	5	6	\$6,295,406	\$37,772,436
<b>Type A Accident ( Serious)</b>	18	27	\$313,516	\$8,464,932
<b>Type B Accident (Visible)</b>	34	52	\$87,814	\$4,566,328
<b>Type C Accident (Possible)</b>	44	74	\$58,209	\$4,307,466
<b>Property Damage Only</b>	152	0	\$6,739	\$1,024,328
<b>Total</b>	<b>253</b>			<b>\$56,135,490</b>

From October 1, 2007, or the date the four lane divided highway from the Top of Lewiston Hill to Thorncreek Road (MP 323.36 to MP 337.668) was completed, to December 31, 2012, 27 injury crashes and no fatal crashes occurred on this new section of US-95, or 1.89 accidents per centerline mile. During the same time period on US-95 between Thorncreek Road and Moscow (MP 337.668 to MP 344.004), 55 injury and 3 fatal accidents occurred, or 9.2 injury crashes or fatal crashes per centerline mile.

During the public comment period, there were public comments to improve safety by reducing the speed limit on US-95 between Thorncreek Road and Moscow. However, reducing the speed limit would not make the roadway safer. An engineering speed study conducted in September 2012 concluded that the 85<sup>th</sup> percentile speed was 64 mph and that a 60 mph speed limit was adequate. Setting the posted speed limit at the 85<sup>th</sup> percentile speed is widely accepted and used by traffic professionals and the probability of crash occurrence is lowest for vehicles traveling at or slightly above the 85<sup>th</sup> percentile speed.

The conclusion of safety analysis of the existing alignment is that the existing crash data supports the need for the construction of an action alternative and reconstruction of US-95 between Thorncreek Road and Moscow with a four lane divided highway. The No Action Alternative is not acceptable because of the observed crash history of the existing alignment and the high economic cost of all crashes between Thorncreek Road and Moscow.

### Calculation Methodology for Action Alternatives

#### *Standard Predictive Calculations*

In order to calculate predicted number of crashes per year for proposed alternatives, Chapter 11-Predictive Method for Rural Multilane Highways and Chapter 12-Predictive Method for Urban and Suburban Arterials of the AASHTO Highway Safety Manual were followed. The Empirical Bayes method is not applicable since all three action alternatives are new and will be a different highway type than the existing facility.

The Highway Safety Manual calculates crashes using a base Safety Performance Function. The base Safety Performance Function is a regression equation that estimates the average crash frequency for a specific section of highway as a function of annual average daily traffic (AADT) and road length.

Once the base condition is calculated, Crash Modification Factors are applied to the base condition that either increase or decrease the predicted crash rate. Crash Modification Factors represent the relative change in crash frequency due to a change in one specific condition. An example of a Crash modification Factor might be a result of median width. The base condition for median width is 30 feet. Between Thorncreek and Moscow, the proposed median width is greater than the base condition, or 40 feet wide; therefore, a Crash Modification Factor of 0.99 is applied. This predicts that the 40 foot wide median will be 1% safer than the base condition of 30 feet.

After the Crash Modification Factors are applied to the base condition, a calibration factor may be applied to the overall crash data to account for local conditions. The calibration factor is multiplied by the overall crash costs after the Crash Modification Factors have been applied. At this time, the State of Idaho uses 1.0 as its calibration factor. The calibration factor may also be changed based on observed crash data. In the case of the Thorncreek to Moscow project, the proposed alternatives are new; therefore, existing data is not available and the calibration factor cannot be adjusted due to observed crash data.

#### *Predictive Calculations on Proposed Alignments*

Each of the three action alternatives has two different and distinct segments. One segment has characteristics of a rural multilane highway and the other segment has characteristics of a suburban arterial. Each segment within each alternative was modeled separately. Segments of

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highway that have a proposed 34 foot divided median (42' between the northbound and southbound travel lanes) and 65 mph speed limit were modeled as a rural divided multilane highway and segments of highway with five total lanes including a two-way left turn lane and a 45 mph speed limit were modeled as a suburban arterial. Typical sections for each proposed alternative are shown in Appendices C.1, C.2, and C.3. All public road intersections were also modeled with each proposed alternative.

In order to analyze the proposed alternatives equitably, all Crash Modification Factors and the predicted ADT for all proposed action alternatives are the same for the rural section of every action alternative and they are the same for the suburban sections of every action alternative. The Crash Modification Factors, the base conditions for the Crash Modification Factors, the input data, and other assumptions that affect the predicted number of crashes are shown on the spreadsheets shown within Appendix E. The primary factors that predict differences in safety between the action alternatives is the length of the rural section, length of the suburban section, and the number of county road approaches that intersect a proposed alternative.

Confidence intervals cannot be calculated for each of the proposed alternatives because some of the Crash Modification Factors do not have published standard deviation; however, all Crash Modification Factors used are widely accepted and published in the Highway Safety Manual. The confidence interval is nearly the same for all three proposed action alternatives because the Crash Modification Factors used for all action alternatives are identical within a specific highway type. The only slight differences between confidence intervals exist because the action alternatives have different lengths of rural and suburban highway sections.

Spreadsheets developed by Karen Dixon, PhD Civil Engineering, from Oregon State University were used for calculations and are shown in Appendix E of this report. Dr. Dixon was one of the authors of the AASHTO Highway Safety Manual.

### *Predictive Calculations on the Remaining US-95 Loop*

As a result of public comments received during the DEIS comment period, ITD predicted crashes on the remaining US-95 Loop once one of the proposed action alternatives is constructed. Chapter 10 of the AASHTO Highway Safety Manual offers a method that will predict crashes on existing rural two-lane, two-way highways.

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The method used to predict crashes on rural two-lane, two-way highways is a multistep procedure that first splits a roadway section into numerous different sections or intersections based on roadway geometry, AADT, presence of a passing lane, or other factors. After the roadway has been divided into different segments, a Safety Performance Factor is calculated for each of the different segments. The Safety Performance Factor determines the predicted average crash frequency for a segment with certain base conditions, traffic volumes, and lengths. After the Safety Performance Factor is calculated, Crash Modification Factors are applied to measure the predicted variation in the number of crashes from the base condition. For example, the base condition for shoulder width is 6 feet. Since existing US-95 has a 2 foot wide shoulder, a Crash Modification Factor of 1.04 is applied to the Safety Performance Factor. The Crash Modification Factor increases the number of crashes by 4 % based on the reduced shoulder width. The Crash Modification Factors, the base conditions for the Crash Modification Factors, the input data, and other assumptions that affect the predicted number of crashes are shown on the spreadsheets shown within Appendix E.

A calibration factor of 1.0 was used on the remaining loop. The existing crash data set was not used to create a calibration factor, since the motorists that use the remaining loop will be different than the motorists that currently use US-95. Motorists that will use the remaining US-95 Loop if an action alternative is selected will primarily be commuters who have a destination along the remaining US-95 Loop, while the motorists who currently use US-95 will be a wide variety of motorists. Some of these motorists would be users who won't be as familiar with road conditions as commuters. A lower crash frequency would be expected with commuters and a modified calibration factor may not be appropriate. Also, since traffic volumes will be much smaller a calibration factor using existing crash data may not correlate to accurately predict crashes on the remaining US-95 Loop.

### *Wild Animal Crashes*

To satisfy concerns about wild animal crashes, the wild animal crash rate was investigated between Thorncreek Road and Moscow and wild animal crash rates within ungulate crossing areas in Latah County identified by the Idaho Department of Fish and Game in Appendix B.1. Table 6, shown below, is a list of wild animal crashes within ungulate crossing areas that have been identified by the Idaho Department of Fish and Game.



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<b>Table 6: Wild Animal Crashes at Ungulate Crossing Areas on US-95 in Latah County From 1/1/03 to 12/31/12</b>		
<b>Ungulate Crossing Area</b>	<b>Total Wild Animal Crashes</b>	<b>Wild Animal Crashes Per Year</b>
<b>Marsh Hill (MP 367.1 - 370.1)</b>	27	2.7
<b>Crooks Hill (MP 356.0 - 359.0)</b>	19	1.9
<b>Steakhouse Hill (MP 349.7 -352.7)</b>	47	4.7
<b>Thorncreek to Moscow (MP 340.3-343.3)</b>	17	1.7

Currently, 17 of the 32 wild animal crashes on the existing alignment are between Thorncreek and Moscow occur within the identified ungulate crossing area.

Different wildlife technical reports indicate Alternative E2 may have more wild animal crash potential than the Alternatives C3 and W4 because 1.98 miles of E2 are within an ungulate impact area based on the results; however, greater sight distance on Alternative E2 may offset the wild animal crash potential. Sight distance will be greater on Alternative E2 because the length and radius of horizontal curvature is greater than the other action alternatives. Greater sight distance may reduce the crash potential of the wild animal crashes of Alternative E2 and offset the additional wild animal crash potential caused from Alternative E2 being in an ungulate impact area. Appendix B.2 shows the ungulate impact area in relationship to the alternatives.

The Highway Safety Manual Analysis Technique predicts some wild animal crashes within the base formulas; however, the wild animal crashes are not quantified within the formulas. The predicted crashes for each alternative generated using the HSM within this report include wild animal crashes.

A wildlife crash countermeasure that clears the roadside of trees and brush will be constructed. The crash countermeasure is predicted to reduce the total number of wild animal crashes to a rate that is similar to the number of wild animal crashes predicted by the base rate of the Highway Safety Manual. A report included in Appendix B.3 and titled "Methods to Reduce Traffic Crashes Involving Deer: What Works and What Does Not", shows a 50% reduction in animal crashes for railway clearing. This 50% reduction was achieved with the clearing of a 40

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to 60 meter strip for railway cars to avoid moose collisions. This report also acknowledges that roadside clearing is effective, but there is limited information supporting the extent of the wild animal crash reduction.

In July 2010, ITD District 6 completed a project to widen the roadside clear width from 30 feet to 60 feet from the roadway along US-20 between MP 369 and 375.5. For the ten years prior to the clearing project 37 wild animal crashes occurred or 3.7 crashes per year. Since the project only 1 wild animal crash has occurred, or about 0.4 crashes per year. This is about a 90% per year reduction in wild animal crashes so far. The data for this ITD project is shown in Appendix B.4. It should be noted that only 2 years and 6 months have passed since the completion of this project; however, the roadside clearing used on this project has substantially reduced wild animal crashes in the short time period.

For the proposed Thorncreek Road to Moscow Project, a minimum of 240' of Right-of-Way is estimated; however, in most areas the topography of the land will require a larger purchase of land that is estimated to be up to about 600' wide. The proposed Right-of-Way will be cleared of trees and brush providing a clear area that ranges from a minimum of 75' to maximum of about 330' from the edge of traveled way to the nearest possible brush or trees. The wide clear area is predicted to reduce the wild animal crash potential on all proposed alternatives.

It is difficult to pinpoint the amount of wild animal crashes that are expected and to quantify the difference in wild animal crashes on each of the action alternatives. ITD believes that there will not be a significant difference in wild animal crashes between the different alignments. The extra possible wild animal crash potential on a section of Alternative E2 may be offset by greater sight distance by the motorists and roadside clearing will greatly minimize the frequency of wild animal crashes.

While it is difficult to predict the number of wild animal crashes, we can estimate the severity of wild animal crashes. The severity of wild animal crashes is very low compared to other crash types. Because the severity of wild animal crashes is low, the current State Highway Safety Plan does not devote an emphasis area for wild animal crashes. As mentioned below in Table 7, about 91% of wild animal accidents are crashes resulting in property damage only. Of the 476 wild animal crashes along US-95 in District 2 during the past 10 years, no fatalities have occurred as a result of a wild animal crash and only 3 crashes (less than 1%) resulted in a

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serious injury. Wild Animal Crash Data used to generate Tables 7 and 8 are shown in Appendix B.5

<b>Table 7: Wild Animal Crashes along US-95 in District 2 From 1/1/2003 Through 12/31/2012 and Their Related Economic Costs</b>					
<b>Crash Type</b>	<b>Number of Crashes</b>	<b>Percentage of Total</b>	<b>Total Number of Injuries</b>	<b>Cost of Crash Type (2012 Costs)</b>	<b>Total Cost</b>
<b>Fatality</b>	0	0%	0	\$6,295,406	\$0
<b>Type A Accident ( Serious)</b>	3	0.6%	3	\$313,516	\$940,548
<b>Type B Accident (Visible)</b>	11	2.3%	16	\$87,814	\$1,405,024
<b>Type C Accident (Possible)</b>	31	6.55%	39	\$58,209	\$2,270,151
<b>Property Damage Only</b>	431	90.55%	0	\$6,739	\$2,965,160
<b>Total</b>	<b>476</b>	<b>100.0%</b>	<b>58</b>		<b>\$7,580,883</b>

Table 8, shown below, shows that the total economic cost of wild animal crashes within the existing Thorncreek to Moscow Alignment from 1/1/03 to 12/31/12 is \$524,468. This cost is less than 1% of the total economic costs on the existing alignment between Thorncreek Road and Moscow during the same time period. All data used for prediction of wild animal crashes is based on crashes that have been reported to the police. Many wild animal crashes are not reported to the police because the result of the collision is not significant and does not include an injury or significant property damage. Unreported wild animal crashes are not a primary ITD safety concern, since they do not increase the number crashes with injury and the property damage is generally not significant.

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<b>Table 8: Economic Costs of Wild Animal Crashes Within the Existing Thorncreek to Moscow Alignment From 1/1/03 to 12/31/12</b>					
<b>Crash Type</b>	<b>Number of Crashes</b>	<b>Percentage of Total</b>	<b>Number of Injuries</b>	<b>Cost of Crash</b>	<b>Total Cost</b>
<b>Fatality</b>	0	0%	0	\$6,295,406	\$0
<b>Type A Accident ( Serious)</b>	0	0%	0	\$313,516	\$0
<b>Type B Accident (Visible)</b>	0	0%	0	\$87,814	\$0
<b>Type C Accident (Possible)</b>	6	18.7%	6	\$58,209	\$349,254
<b>Property Damage Only</b>	26	81.3%	0	\$6,739	\$175,214
<b>Total</b>	<b>32</b>	<b>100%</b>			<b>\$524,468</b>

The Federal Highway Administration calculates the total economic cost of different crash types and estimates that property crashes resulting in property damage only are valued \$6,739 while fatalities are valued at \$6,295,406. Using these figures, 935 crashes causing property damage only are the equivalent of 1 fatality in terms of economic costs. Using this logic ITD is naturally more concerned about accident types that are likely to result in fatalities or severe accidents than accident types that generally result in property damage only.

The significance of potential additional wild animal crashes can be investigated by analyzing a hypothetical situation. If ITD was able to estimate the increased accident potential of Alternative E2 to be 1 extra wild animal accident per year, the significance of the extra crashes using the accident costs established by the FHWA and the percentages of accident types caused by wild animals can be calculated. For our 20 year crash study period, 20 additional wild animal crashes would result in an additional economic cost of \$310,000 for the 20 additional crashes. If \$310,000 is added to the estimated economic cost of crashes in Alternative E2, the total economic cost of crashes for Alternative E2 is still significantly less than the other action alternatives. In fact, 223 additional wild animal crashes in the next 20 years on Alternative E2 would be required to make the economic cost of accidents on Alternative E2 and its remaining US-95 Loop equivalent to Alternative C3 and its remaining loop. Two hundred twenty three additional wild animal crashes over the next 20 years on E2 is not a practical estimate of wild animal crashes given the fact that the roadside clearing countermeasure is being used, sight



distance will be improved, and that no other location in Latah County has nearly as many wild animal crashes. All supporting calculations relating to these cost estimates are in Appendix D.

The conclusions about predicted wild animal crashes can be summarized in the following statements:

- Wild animal crash prediction on new alternatives is difficult to pinpoint.
- Alternative E2 may have greater wild animal crash potential than Alternatives C3 and W4 based on findings reported in the wildlife technical reports for Thorncreek to Moscow; however, greater sight distance on Alternative E2 may offset the increased wild animal crash potential. Since the greater sight distance may offset the increased wild animal crash potential on Alternative E2 and wild animal crash prediction is difficult, no factors increasing the number of wild animal crashes were applied to the crash predictions on Alternative E2.
- The roadside clearing crash countermeasure that will be used is predicted to greatly reduce the number of wild animal crashes and mitigate wild animal crash potential. Past data shows a 50% - 90% reduction in wild animal crashes when roadside clearing is used.
- The severity of wild animal crashes is very low compared to other crash types. Even if additional wild animal crashes were predicted on Alternative E2, the additional wild animal crashes would not offset the other safety benefits of Alternative E2 and Alternative E2 would still be significantly safer than the other action alternatives.

In conclusion, wild animal crashes should not be a dominant factor in selecting an alternative. Wild animal crashes have been observed to have low severity and low economic costs relative to the total amount of economic costs due to crashes and because it is predicted that the total number of wild animal crashes is not significantly greater for any of the alternatives.

Alternative E2 may have more wild animal crash potential than Alternatives C3 and W4 because it is within an ungulate impact area; however, roadside clearing will reduce the wild animal crash potential. Wild animal crash rates are predicted to be similar to the wild animal crash rates that the base formulas of the HSM predict.

### *Crashes Relating to Unfavorable Weather Conditions*

Approximately about 60% of the crashes on US-95 between Thorncreek Road and Moscow occur during inclement weather where the crash report lists snow, rain, fog, blowing snow,

severe cross winds, or sleet/hail as the weather condition and has a road surface condition of wet, snow, ice, or slush. Therefore, the ITD commissioned Dr. Russell Qualls, Idaho State Climatologist and a Registered Professional Engineer, to study the weather patterns in the study area and make recommendations on proposed alternatives based on weather conditions. In Dr. Quall's report, he indicates that Alternative W4 would have colder temperatures and be more susceptible to frost; however, Alternative E2 and C3 would have greater precipitation than W4. Dr. Qualls suggested due to lack of a single, clearly superior alternative with regard to the impact of weather in the corridors, weather should not be a dominant factor in selecting one alternative over the other. For this report, all three alternatives are treated equally and no crash modification factors or calibration factors are applied to any of the alternatives for weather related crashes.

### **Crash Prediction Results for Proposed Alternatives**

#### *No Action Alternative*

The existing alignment had 253 total crashes and 101 fatal and injury related crashes for the 10 year period from January 1, 2003 through December 31, 2012.

As AADTs between Thorncreek Road and Moscow grow and the two lane highway approaches its capacity, passing opportunities will decrease and crashes on US-95 are expected to increase. The frequency of crashes is predicted to increase at the same rate as the growth rate, or at 1.63% per year. Using a growth rate of 1.63% per year for crashes is reasonable because greater traffic volumes increase predicted crashes in HSM calculations. Using this method is a quick and easy way to predict future crashes by extrapolating existing crash data. The growth rate of predicted crashes used for this method compares reasonably well with the growth rate of predicted crashes on the action alternatives without completing extensive crash prediction calculations.

Between 2017 and 2036, the total number of crashes on the No Action Alternative is predicted to be 642.5 total crashes and 256.5 fatal and injury related crashes if no improvements are made. Increasing actual crash data for the existing alignment with a growth rate is a reasonable projection of crashes for the No Action Alternative. The predictions of crashes per year are shown in Appendix E.

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### *Alternative E2*

Alternative E2 is predicted to have the fewest crashes of the three action alternatives and the No Action Alternative. Alternative E2 is the shortest alternative, has the fewest county road intersections, and has the fewest commercial and residential approaches. These factors all reduce the predicted crash rate. A grade separation is assumed at Eid Road due to the topography of the land and the turning movements in and out of the trailer park. Supporting data and assumptions used to make crash predictions are in Appendix C.1 and the crash prediction calculations used to generate the table below are in Appendix E. Table 9 shown below summarizes the crash data on Alternative E2 between 2017 and 2036.

Table 9: HSM Crash Results for Alternative E2				
	Construction Year 2017		Crashes From 2017 Through 2036	
	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
Rural Divided Multilane Segment	6.1	3.3	142.9	77.1
Suburban Segment	0.9	0.3	22.1	6.6
South Old US-95 Intersection	0.2	0.1	5.7	1.9
North Old US-95 Intersection	0.4	0.1	8.8	3.4
<b>Total</b>	<b>7.6</b>	<b>3.8</b>	<b>179.5</b>	<b>89.0</b>

Crashes within the remaining US-95 Loop once Alternative E2 is constructed were also calculated. To calculate the crashes on the remaining US-95 Loop, Existing US-95 was separated into 23 different segments based on roadway geometry and other factors. The different segments and assumptions used for the calculations are shown in Appendix C.1. Crashes for all segments and intersections onto the remaining US-95 Loop were calculated and results are shown in Appendix E. More crashes are predicted on the remaining loop for E2 than the remaining loop for W4 and C3 because the remaining loop on E2 is longer, has a greater traffic volume, and has more intersections. Since the traffic volumes are much smaller on the remaining loop for the action alternatives, Alternative E2 and the remaining US-95 Loop still has a significant safety advantage over Alternatives C3 and W4 with their respective remaining loops.

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**Table 10: HSM Crash Results for Alternative E2 and the Remaining US-95 Loop**

	Construction Year 2017		Crashes From 2017 Through 2036	
	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
<b>Alternative E2</b>	7.6	3.8	179.5	89.0
<b>Remaining US-95 Loop</b>	1.6	0.6	34.4	11.8
<b>Total</b>	<b>9.2</b>	<b>4.4</b>	<b>213.9</b>	<b>100.7*</b>

\*Note: Differences between the total number and the sum of components are due to rounding. The actual numbers that have not been rounded can be found in Appendix E.

An estimate of the economic cost of all accidents on Alternative E2 can be calculated using the HSM Crash Results shown above, the economic costs of the different crash types reported in Idaho Traffic Crashes 2012, the average frequency of the different injury and fatal accidents on Idaho's Highways, and the average multiple car crash frequency.

The estimated economic cost of all crashes on E2 between 2017 and 2036 is about \$26,000,000 and the estimated economic cost of crashes on E2 and the remaining US-95 Remaining Loop between 2017 and 2036 is about \$29,500,000. Supporting data, assumptions, and calculations used to calculate the economic cost of crashes is shown in Appendix D.

### *Alternative C3*

Alternative C3 is predicted to be the least safe action alternative in terms of total crashes and is tied with Alternative W4 with the most fatal and injury crashes. It has the longest five lane suburban section with a two-way left turning lane of the three action alternatives. Crashes are predicted at a rate of 3.4 crashes per centerline mile for the five lane suburban section while the rural four lane divided section has a predicted rate of 1.1 crashes per mile. Alternative C3 also has the most residential and commercial approaches of the three alternatives. The numerous residential and commercial approaches result in greater numbers of predicted crashes due to vehicles turning on and off of US-95. Five at-grade intersections at Eid Road, Clyde Road, Cameron Road, North Old US-95, and South Old US-95 must be constructed to accommodate local traffic and crashes associated with the additional county road intersections are predicted.

A grade separation is currently assumed at Zeitler Road. Supporting data and assumptions used to make crash predictions are in Appendix C.2 and the crash prediction calculations used to



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generate the table is in Appendix E. Table 11, shown below, summarizes the predicted crashes for Alternative C3.

<b>Table 11: HSM Crash Results for Alternative C3</b>				
	<b>Construction Year 2017</b>		<b>Crashes From 2017 Through 2036</b>	
	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>
<b>Rural Divided Multilane Segment</b>	4.9	2.7	115.2	62.1
<b>Suburban Segment</b>	4.8	1.5	111.6	33.6
<b>South Old US-95 Intersection</b>	0.3	0.1	8.2	3.5
<b>Eid Road Intersection</b>	0.2	0.1	5.3	1.7
<b>Cameron Road Intersection</b>	0.2	0.1	3.7	1.7
<b>Clyde Road Intersection North</b>	0.2	0.1	5.6	2.8
<b>North Old US-95 Intersection</b>	0.2	0.1	4.2	2.2
<b>Total</b>	<b>10.8</b>	<b>4.6*</b>	<b>253.8</b>	<b>107.7</b>

\*Note: Differences between the total number and the sum of components are due to rounding. The actual numbers that have not been rounded can be found in Appendix E.

Crashes within the remaining US-95 Loop once Alternative C3 is constructed were also calculated. To calculate the crashes on the remaining US-95 Loop, Existing US-95 was separated into 10 different segments based on roadway geometry and other factors as shown in Appendix C.2. Crashes for all segments and intersections onto the remaining US-95 Loop were calculated. Fewer crashes are predicted on the remaining loop for C3 than the remaining loop for E2 and W4 because the remaining loop on C3 is shorter, has a smaller traffic volume, and has more intersections. Since the traffic volumes are much smaller on the remaining loop for the action alternatives, the safety benefits from having a shorter remaining loop with less traffic does not offset the safety advantage of Alternative E2, but it does make Alternative C3 safer than Alternative W4 in terms of fatal and injury crashes and total economic costs as shown below. The calculations are shown in Appendix E.

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Table 12: HSM Crash Results for Alternative C3 and Remaining US-95 Loop				
	Construction Year 2017		Crashes From 2017 Through 2036	
	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
Alternative C3	10.8	4.6	253.8	107.7
Remaining US-95 Loop	0.3	0.1	6.4	2.3
Total	11.1	4.7	260.2	110.0

An estimate of the economic cost of all accidents on Alternative C3 can be calculated using the HSM Crash Results shown above, the economic costs of the different crash types reported in Idaho Traffic Crashes 2012, the average frequency of the different injury and fatal accidents on Idaho's Highways, and the average multiple car crash frequency.

The estimated economic cost of crashes on C3 between 2017 and 2036 is calculated to be about \$32,000,000 and the estimated economic cost of crashes on C3 and the remaining US-95 Loop between 2017 and 2036 is calculated to be about \$33,000,000. The data, assumptions, and calculations for the economic cost of crashes is shown in Appendix D.

### *Alternative W4*

Alternative W4 is predicted to have more total crashes, fatal crashes, and injury crashes than Alternative E2, but is predicted to have fewer total crashes than Alternative C3. Alternative W4 is tied with Alternative C3 in fatal and injury crashes. Alternative W4 is the longest proposed action alternative, and has four proposed county road intersections. A grade separation at Snow Road is assumed due to the topography of the land in relation to Snow Road.

Supporting data and assumptions used to make crash predictions are in Appendix C.3 and the crash prediction calculations used to generate the table is in Appendix E. Table 15, shown below, summarizes the predicted crashes for Alternative W4.

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<b>Table 13: HSM Crash Results for Alternative W4</b>				
	<b>Construction Year 2017</b>		<b>Crashes From 2017 Through 2036</b>	
	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>
<b>Rural Divided Multilane Segment</b>	6.9	3.8	163.1	88.0
<b>Suburban Segment</b>	1.1	0.3	26.2	7.9
<b>Eid Road Intersection</b>	0.3	0.1	8.2	3.5
<b>Jacksha Road Intersection</b>	0.3	0.1	7.7	3.3
<b>South Old US-95 Intersection</b>	0.2	0.1	5.2	1.7
<b>North Old US-95 Intersection</b>	0.4	0.1	8.8	3.4
<b>Total</b>	<b>9.3*</b>	<b>4.6*</b>	<b>219.3</b>	<b>107.7</b>

\*Note: Differences between the total number and the sum of components are due to rounding. The actual numbers that have not been rounded can be found in Appendix E.

Crashes within the remaining US-95 Loop if Alternative W4 is constructed were also calculated. To calculate the crashes on the remaining US-95 Loop, Existing US-95 was separated into 12 different segments based on roadway geometry and other factors as shown in Appendix C.3. Crashes for all segments and intersections onto the remaining US-95 Loop were calculated. Fewer crashes are predicted on the remaining loop of W4 than the remaining loop of E2 because the remaining loop on W4 is shorter, has a smaller traffic volume, and has fewer intersections. More crashes are predicted on the remaining loop of W4 than the remaining loop of C3, because the remaining loop on C3 is shorter and has fewer intersections. Since the traffic volumes and their predicted growth rates are much smaller on the remaining US-95 Loop for the action alternatives, the safety benefits from having a shorter remaining loop with less traffic does not offset the safety advantage of Alternative E2, but it does make Alternative C3 safer than Alternative W4 in terms of fatal and injury crashes as shown below. Calculations are shown in Appendix D.

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<b>Table 14: HSM Crash Results for Alternative W4 and Remaining US-95 Loop</b>				
	<b>Construction Year 2017</b>		<b>Crashes From 2017 Through 2036</b>	
	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>	<b>Total Crashes</b>	<b>Fatal and Injury Crashes</b>
<b>W4 Alternative</b>	9.3	4.6	219.3	107.7
<b>Remaining US-95 Loop</b>	1.3	0.4	26.9	9.2
<b>Total</b>	<b>10.5*</b>	<b>5.1*</b>	<b>246.2</b>	<b>116.9</b>

\*Note: Differences between the total number and the sum of components are due to rounding. The actual numbers that have not been rounded can be found in Appendix E.

An estimate of the economic cost of all accidents on Alternative W4 can be calculated using the HSM Crash Results shown above, the economic costs of the different crash types reported in Idaho Traffic Crashes 2012, the average frequency of the different injury and fatal accidents on Idaho's Highways, and the average multiple car crash frequency.

The estimated economic cost of crashes on Alternative W4 between 2017 and 2036 is calculated to be about \$32,000,000 and the estimated economic cost of crashes on Alternative W4 and the remaining US-95 Loop is calculated to be about \$35,000,000. Data, assumptions, and calculations used to create the total economic cost of crashes can be found in Appendix D.

### Conclusion

The First Edition of the AASHTO Highway Safety Manual (2010) was used to calculate predicted crash rates for the three different alternatives carried forward on the Thorncreek to Moscow project. AASHTO and TRB Task forces recognize that the Highway Safety Manual is the most accepted and current document that provides knowledge and practices relating to safety evaluation and management. The manual was developed as a tool for crash analysis and estimation. The following table summarizes the calculations based on the First Edition of the AASHTO Highway Safety Manual:



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Table 15: Predicted Crashes For Proposed Alternatives				
	Completion Year 2017		Crashes From 2017 Through 2036	
Alternative	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
No Action	27.4	11.0	642.5	256.5
E2	7.6	3.8	179.5	89.0
C3	10.8	4.6	253.8	107.7
W4	9.3	4.6	219.3	107.7

The ITD also calculated the crashes on each of the remaining US-95 Loops for the action alternatives. The following table shows the crash predictions for each alternative after calculations for the remaining US-95 Loop are added.

Table 16: Predicted Crashes For Proposed Alternatives and Remaining US-95 Loop				
	Completion Year 2017		Crashes From 2017 Through 2036	
Alternative	Total Crashes	Fatal and Injury Crashes	Total Crashes	Fatal and Injury Crashes
No Action	27.4	11.0	642.5	256.5
E2	9.2	4.4	213.9	100.7
C3	11.1	4.7	260.2	110.0
W4	10.5	5.1	246.2	116.9

Calculations from the AASHTO Highway Safety Manual show that all alternatives are predicted to be safer than the No Action Alternative and eliminate two High Crash Locations. Selecting any action alternative is predicted to significantly reduce fatalities and the different crash types; however, selecting Alternative E2 will result in the greatest safety benefit.

Calculations show that Alternative E2 is predicted to be safer than both Alternatives C3 and W4, both in total crashes, and fatal and injury crashes. The following are the reasons that Alternative E2 is predicted to be the safest proposed alternative:

- Alternative E2 is the shortest alternative.
- Alternative E2's suburban section is 1.18 miles shorter than Alternative C3's suburban section.

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- Alternative E2 has the fewest public road intersections.
- Alternative E2 has the fewest residential and commercial approaches.

Alternative C3 is not safer than Alternative E2 primarily because of the following:

- Alternative C3 has the longest 5 lane Suburban Section. The suburban section is 1.18 miles longer than the suburban section of Alternative E2. The suburban section generates more crashes than the rural section because the travel lanes are closer together and not separated by a median and because the five lane section has more turning movements from commercial and residential approaches that cause more crashes.
- Alternative C3 has the most residential and commercial approaches.
- Alternative C3 has the most public road intersections.

Alternative W4 is not safer than Alternative E2 primarily because of the following:

- Alternative W4 is the longest alternative and is longer than Alternative E2 by 0.84 miles.
- Alternative W4 has more county road intersections than Alternative E2.

All calculations in this report are for a 20 year design period from the time the construction of Thorncreek to Moscow is expected to be complete. Selecting the safest alignment will result in a safety benefit every year after the construction of the new highway. With time, relatively small differences in predicted crashes between the alternatives each year will grow to a significant safety benefit for an alternative that is predicted to have fewer crashes.

Alternative E2 has 18.7 fewer predicted fatal and injury crashes than Alternatives C3 and W4 in the first 20 years and this difference in predicted crashes will continue to grow with time. It is not unreasonable to predict that lives will be saved and numerous injuries will be prevented over the entire life of US-95 Thorncreek to Moscow by selecting Alternative E2 using these crash predictions and the average fatality rates in Idaho.

From a safety perspective, Alternative E2 satisfies the Purpose and Need Statement to a greater extent than Alternatives C3 and W4 and is the recommended alternative based on safety because it has the lowest predicted crash rate. The reason it has the lowest predicted crash rate is because it is the shortest alternative, has the fewest public road intersections, and has the fewest approaches. Selecting Alternative E2 will result in a safety benefit every year for the entire life of the highway and will likely save lives and prevent injuries.

## **Appendix A.1**

### **Crash Data**

- Thorncreek Road to Moscow Crash Data  
From 1/03 through 12/12
- Thorncreek Road to Moscow Injury Classification Data  
From 1/03 through 12/12
- Lewiston Hill to Thorncreek Road Crash Data  
From 10/07 through 12/12

## All Accidents on US-95 between Thorncreek and Moscow (MP 337.668 to 344.004) from 01/01/03 and 12/31/12

Total Crashes 253

Fatalities 6

Injuries 152

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
1	337.689	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Nonjunction	Right Shoulder	Other	None	None	Snow	Slush	Day	0	0	Wednesday	11/30/2005	Property Dmg Report
2	337.700	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Overturn	Nonjunction	Roadside or Sidewalk	None	None	None	Cloudy	Ice	Dark, No Street Lights	0	0	Friday	3/28/2008	Property Dmg Report
3	337.800	Car	Going Straight	Ascending N	Ditch	Nonjunction	Roadside or Sidewalk	Tire Defect	Inattention	None	Fog	Wet	Day	0	2	Tuesday	1/30/2007	A Injury Accident
4	337.800	Car	Going Straight	Ascending N	Fence	Nonjunction	Roadside or Sidewalk	None	Inattention	None	Clear	Dry	Day	0	0	Saturday	9/27/2008	Property Dmg Report
5	337.897	Car	Slowing in Traffic	Descending S	Rear-End	Driveway/Alley/Parking Lot Related		None	None	None	Clear	Dry	Day	0	1	Thursday	9/4/2008	C Injury Accident
5	337.897	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Rear-End	Driveway/Alley/Parking Lot Related	On Roadway	Inattention	Following Too Close					0	0		9/4/2008	C Injury Accident
6	337.900	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Overturn	Nonjunction	Roadside or Sidewalk	Asleep, Drowsy, Fatigued	Overcorrected	None	Cloudy	Wet	Day	0	1	Wednesday	12/1/2010	B Injury Accident
7	337.941	SUV/Crossover	Going Straight	Ascending S	Overturn	Nonjunction	On Roadway	Asleep, Drowsy, Fatigued	Failed to Maintain Lane	None	Clear	Dry	Day	0	3	Friday	8/17/2012	B Injury Accident
7	337.941	Car	Going Straight	Ascending N	Head-On	Nonjunction		None	None					0	0		8/17/2012	B Injury Accident
7	337.941	Car	Going Straight	Ascending N	Tree	Nonjunction	Roadside or Sidewalk	None	None					0	0		8/17/2012	B Injury Accident
8	337.973	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Friday	4/16/2010	Property Dmg Report
8	337.973	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Day	0	0	Sunday	9/30/2012	C Injury Accident
9	337.998	Car	Going Straight	Ascending N	Overturn	Nonjunction	Outside Right-Of-Way	Alcohol Impaired	Failed to Maintain Lane	None	Clear	Dry	Day	0	1	Sunday	9/30/2012	C Injury Accident
10	338.004	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	Animal(s) in Roadway	None	None	Rain	Wet	Dark, No Street Lights	0	1	Tuesday	11/20/2012	C Injury Accident
11	338.012	Car	Going Straight	Descending N	Angle	Nonjunction	On Roadway	Drove Left of Center	Drug Impaired	None	Snow	Snow	Dark, No Street Lights	1	4	Friday	1/7/2011	Fatal Accident
	338.012	Car	Going Straight	Descending S	Angle	Nonjunction		None	None					0	0		1/7/2011	Fatal Accident
12	338.019	Pickup	Going Straight	Ascending N	Ditch	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Blowing Snow	Snow	Day	0	0	Saturday	2/25/2012	Property Dmg Report
13	338.038	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Dark, No Street Lights	0	1	Tuesday	4/6/2010	C Injury Accident
14	338.040	Pickup	Going Straight	Ascending N	Overturn	Nonjunction	Private Property	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Dawn or Dusk	0	0	Monday	11/28/2011	Property Dmg Report
15	338.056	Car	Negotiating Curve	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Monday	9/15/2008	Property Dmg Report
16	338.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Rear-End	Nonjunction		None	None	None	Cloudy	Ice	Day	0	0	Sunday	12/4/2005	Property Dmg Report
16	338.100	Car	Going Straight	Ascending N	Rear-End	Nonjunction	On Roadway	Inattention	Following Too Close					0	0		12/4/2005	Property Dmg Report
17	338.100	Car	Going Straight	Descending S	Side Swipe Opposite	Nonjunction		None	None	None	Cloudy	Snow	Dark, No Street Lights	0	2	Thursday	2/22/2007	B Injury Accident
17	338.100	Pickup/Van/ Panel/SUV	Going Straight	Descending N	Side Swipe Opposite	Nonjunction	Outside Right-Of-Way	None	None					0	0		2/22/2007	B Injury Accident
18	338.100	Car	Negotiating Curve	Ascending S	Overturn	Nonjunction	Left Shoulder	None	Speed Too Fast For Conditions	None	Clear	Dry	Dark, No Street Lights	0	1	Tuesday	8/19/2003	B Injury Accident
19	338.100	Car	Going Straight	Descending S	Overturn	Nonjunction	Right Shoulder	Inattention	None	None	Cloudy	Dry	Day	0	0	Monday	11/22/2004	Property Dmg Report
20	338.100	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Animal - Domestic	Nonjunction	On Roadway	None	None	None	Cloudy	Wet	Dark, No Street Lights	0	0	Thursday	10/16/2008	Property Dmg Report



#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
21	338,100	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	Snow	Ice	Day	0	0	Saturday	12/12/2009	Property Dmg Report
22	338,100	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	N	Head-On	Nonjunction	On Roadway	Inattention	Asleep, Drowsy, Fatigued	Clear	Dry	Day	0	3	Monday	3/1/2010	A Injury Accident
22	338,100	Car	Negotiating Curve	Descending	S	Side Swipe Opposite	Nonjunction		None	None				0	0		3/1/2010	A Injury Accident
22	338,100	Car	Negotiating Curve	Descending	S	Head-On	Nonjunction		None	None				0	0		3/1/2010	A Injury Accident
23	338,100	Car	Negotiating Curve	Ascending	N	Animal - Wild	Nonjunction	On Roadway	None	None	Cloudy	Dry	Dark, No Street Lights	0	1	Monday	10/25/2010	C Injury Accident
24	338,100	Car	Negotiating Curve	Descending	S	Ditch	Nonjunction	Right Shoulder	Other	None	Cloudy	Slush	Day	0	0	Tuesday	3/20/2012	Property Dmg Report
25	338,100	Car	Going Straight	Descending	S	Animal - Wild	Nonjunction	On Roadway	Animal(s) In Roadway	None	Clear	Dry	Dark, No Street Lights	0	1	Sunday	11/4/2012	C Injury Accident
26	338,130	Car	Negotiating Curve	Descending	S	Overturn	Nonjunction	Roadside or Sidewalk	Inattention	None	Clear	Dry	Dark, No Street Lights	0	1	Wednesday	10/1/2003	B Injury Accident
27	338,200	Pickup/Van/ Panel/SUV	Going Straight	Descending	N	Overturn	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	Following Too Close	Clear	Ice	Day	0	1	Monday	11/27/2006	A Injury Accident
28	338,200	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Ditch	Nonjunction	Roadside or Sidewalk	None	None	Snow	Ice	Dark, No Street Lights	0	0	Friday	2/23/2007	Property Dmg Report
29	338,200	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Animal - Wild	Nonjunction	On Roadway	None	None	Clear	Dry	Dark, No Street Lights	0	2	Thursday	10/25/2007	C Injury Accident
30	338,200	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	N	Overturn	Nonjunction	On Roadway	Asleep, Drowsy, Fatigued	Drove Left of Center	Clear	Dry	Day	0	2	Monday	4/27/2009	C Injury Accident
30	338,200	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	S	Side Swipe Opposite	Nonjunction		None	None				0	0		4/27/2009	C Injury Accident
31	338,200	Car	Negotiating Curve	Descending	S	Embankment	Nonjunction	Roadside or Sidewalk	Asleep, Drowsy, Fatigued	None	Clear	Dry	Day	0	1	Sunday	4/17/2011	C Injury Accident
32	338,200	Car	Going Straight	Ascending	S	Ditch	Nonjunction	Outside Right-Of-Way	Inattention	None	Cloudy	Slush	Day	0	0	Thursday	1/19/2012	Property Dmg Report
33	338,200	SUV/Crossover	Going Straight	Ascending	S	Overturn	Nonjunction	Left Shoulder	Asleep, Drowsy, Fatigued	None	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	6/12/2012	Property Dmg Report
34	338,200	Car	Negotiating Curve	Descending	N	Side Swipe Opposite	Nonjunction	On Roadway	Speed Too Fast For Conditions	Drove Left of Center	Clear	Ice	Dark, No Street Lights	0	0	Friday	12/7/2012	Property Dmg Report
34	338,200	Pickup	Negotiating Curve	Descending	S	Side Swipe Opposite	Nonjunction		None	None				0	0		12/7/2012	Property Dmg Report
35	338,300	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	N	Head-On	Nonjunction	On Roadway	None	None	Snow	Snow	Dark, No Street Lights	0	3	Saturday	12/22/2007	A Injury Accident
35	338,300	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Head-On	Nonjunction		None	None				0	0		12/22/2007	A Injury Accident
36	338,300	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Ditch	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	Cloudy	Snow	Day	0	0	Tuesday	1/21/2003	Property Dmg Report
37	338,300	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Overturn	Nonjunction	Outside Right-Of-Way	None	Other	snow	Snow	Dark, No Street Lights	0	0	Saturday	1/10/2009	Property Dmg Report
38	338,300	Car	Going Straight	Ascending	S	Overturn	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	Drove Left of Center	Snow	Slush	Day	0	0	Saturday	3/19/2011	Property Dmg Report
39	338,400	Car	Going Straight	Ascending	N	Overturn	Nonjunction	Roadside or Sidewalk	Alcohol Impaired	Inattention	Clear	Dry	Dark, No Street Lights	0	1	Friday	5/12/2006	B Injury Accident
40	338,400	SUV/Crossover	Going Straight	Descending	N	Overturn	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	Clear	Ice	Dawn or Dusk	0	0	Saturday	2/5/2011	Property Dmg Report
41	338,400	SUV/Crossover	Going Straight	Ascending	N	Overturn	Nonjunction	Outside Right-Of-Way	Other	Vision Obstruction	Blowing Snow	Ice	Day	0	0	Saturday	2/25/2012	Property Dmg Report
42	338,500	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	S	Overturn	Nonjunction	Right Shoulder	None	None	Cloudy	Ice	Dark, No Street Lights	0	0	Sunday	3/23/2003	Property Dmg Report
43	338,500	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Guardrail Face	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	Snow	Snow	Day	0	0	Saturday	12/12/2009	Property Dmg Report
44	338,500	Pickup	Going Straight	Descending	N	Overturn	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	Clear	Ice	Dawn or Dusk	0	0	Thursday	4/7/2011	Property Dmg Report
45	338,600	Car	Negotiating Curve	Descending	S	Guardrail Face	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	Snow	Ice	Day	0	0	Wednesday	3/14/2012	Property Dmg Report
46	338,600	Pickup	Merging	Descending	S	Overturn	Nonjunction	Outside Right-Of-Way	Speed Too Fast For Conditions	Failed to Maintain Lane	Cloudy	Ice	Day	0	0	Sunday	11/18/2012	Property Dmg Report
47	338,700	Pickup/Van/ Panel/SUV	Merging	Descending	S	Side Swipe Same	Nonjunction		None	None	Clear	Dry	Day	0	0	Thursday	8/14/2008	Property Dmg Report

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
47	338,700	Car	Merging	Descending S	Side Swipe Same	Nonjunction	On Roadway	Inattention	Other					0	0		8/14/2008	Property Dmg Report
48	338,700	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Overturn	Nonjunction	Right Shoulder	Alcohol Impaired	None	None	Cloudy	Dry	Day	0	1	Saturday	10/24/2009	B Injury Accident
49	338,700	Car	Going Straight	Descending S	Side Swipe Opposite	Nonjunction		None	None	None	Clear	Ice	Dawn or Dusk	0	2	Monday	2/1/2010	A Injury Accident
49	338,700	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending N	Side Swipe Opposite	Nonjunction	Left Shoulder	Inattention	None					0	0		2/1/2010	A Injury Accident
50	338,700	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Guardrail End	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Cloudy	Snow	Dark, Street Lights On	0	1	Saturday	12/11/2010	C Injury Accident
51	338,800	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Ice	Dark, No Street Lights	0	0	Monday	10/15/2007	Property Dmg Report
52	338,800	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Nonjunction	On Roadway	None	None	None				0	2	Monday	3/24/2008	C Injury Accident
53	338,800	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending N	Traffic Sign Support	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Clear	Ice	Day	0	0	Thursday	1/28/2010	Property Dmg Report
54	338,800	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Day	0	0	Friday	7/16/2010	Property Dmg Report
55	338,800	Car	Going Straight	Ascending N	Animal - Wild	Nonjunction	On Roadway	Animal(s) In Roadway	None	None	Clear	Dry	Dark, No Street Lights	0	0	Monday	9/17/2012	Property Dmg Report
56	338,800	Pickup	Slowing In Traffic	Descending N	Side Swipe Opposite	Nonjunction	On Roadway	Speed Too Fast For Conditions	Failed to Maintain Lane	None	Snow	Ice	Dark, No Street Lights	0	0	Tuesday	12/18/2012	Property Dmg Report
56	338,800	Car	Slowing In Traffic	Descending S	Side Swipe Opposite	Nonjunction		None	None					0	0		12/18/2012	Property Dmg Report
57	338,818	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Guardrail Face	Nonjunction	Right Shoulder	Inattention	None	None	Clear	Dry	Day	0	0	Saturday	5/31/2008	Property Dmg Report
58	338,900	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Day	0	0	Tuesday	1/15/2008	Property Dmg Report
59	338,900	Pickup/Van/ Panel/SUV	Passing	Ascending S	Ditch	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Other	None	Snow	Snow	Dark, No Street Lights	0	0	Wednesday	3/8/2004	Property Dmg Report
60	338,900	SUV/Crossover	Negotiating Curve	Descending N	Overturn	Nonjunction	Left Shoulder	Asleep Drowsy, Fatigued	None	None	Clear	Wet	Dark, No Street Lights	0	1	Monday	1/9/2012	C Injury Accident
61	338,928	Car	Negotiating Curve	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Inattention	Overcorrected	None	Clear	Dry	Day	0	1	Tuesday	8/28/2007	C Injury Accident
62	338,972	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Overturn	Nonjunction	Outside Right-Of-Way	Speed Too Fast For Conditions	None	None	Clear	Ice	Dark, No Street Lights	0	1	Monday	12/10/2007	B Injury Accident
63	338,981	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Overturn	Nonjunction	Left Shoulder	None	None	None	Clear	Ice	Dawn or Dusk	0	0	Sunday	1/14/2006	Property Dmg Report
64	338,981	Car	Negotiating Curve	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Dark, No Street Lights	0	0	Wednesday	3/19/2008	Property Dmg Report
65	338,981	Car	Going Straight	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	Other	None	Clear	Dry	Dark, No Street Lights	0	0	Thursday	5/8/2008	Property Dmg Report
66	338,990	Car	Negotiating Curve	Descending N	Embankment	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Snow	Ice	Dark, No Street Lights	0	0	Sunday	11/21/2010	Property Dmg Report
67	338,991	Car	Going Straight	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Cloudy	Dry	Dark, No Street Lights	0	0	Sunday	10/9/2011	Property Dmg Report
68	339,020	Car	Negotiating Curve	Ascending N	Other Fixed Object	Nonjunction	Left Shoulder	None	None	None	Cloudy	Wet	Dark, No Street Lights	0	0	Friday	2/4/2005	Property Dmg Report
69	339,020	Truck - 2 Axle/6 Tires	Negotiating Curve	Descending S	Guardrail End	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Day	0	0	Monday	12/29/2008	Property Dmg Report
70	339,091	SUV/Crossover	Negotiating Curve	Descending S	Guardrail Face	Nonjunction	Roadside or Sidewalk	Failed to Maintain Lane	Overcorrected	None	Clear	Dry	Dawn or Dusk	0	0	Sunday	12/4/2011	Property Dmg Report
71	339,094	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Embankment	Nonjunction	Right Shoulder	None	Speed Too Fast For Conditions	None	Rain	Snow	Day	0	0	Sunday	12/2/2007	Property Dmg Report
72	339,100	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Day	0	0	Thursday	7/5/2007	Property Dmg Report
73	339,100	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending N	Embankment	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Snow	Ice	Dark, No Street Lights	0	0	Sunday	12/9/2007	Property Dmg Report
74	339,100	Car	Negotiating Curve	Descending S	Tree	Nonjunction	Right Shoulder	None	Speed Too Fast For Conditions	None	Snow	Snow	Dark, No Street Lights	0	1	Tuesday	12/25/2007	A Injury Accident
75	339,100	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Guardrail Face	Nonjunction	Right Shoulder	None	Speed Too Fast For Conditions	None	Snow	Snow	Day	0	0	Saturday	12/22/2007	Property Dmg Report

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	AccidentDate	Severity
76	339,100	Car	Going Straight	Descending N	Guardrail Face	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Drove Left of Center	None	Severe Cross Winds	Slush	Day	0	2	Wednesday	2/6/2008	C Injury Accident
77	339,100	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Embankment	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Clear	Ice	Dawn or Dusk	0	0	Saturday	2/22/2003	Property Dmg Report
78	339,100	Motorcycle	Negotiating Curve	Descending S	Guardrail Face	Nonjunction	Right Shoulder	Other	Inattention	None	Cloudy	Dry	Day	0	1	Thursday	4/24/2003	A Injury Accident
79	339,100	Pickup	Going Straight	Ascending S	Tree	Nonjunction	Outside Right-Of-Way	Speed Too Fast For Conditions	None	None	Clear	Ice	Dark, No Street Lights	0	0	Thursday	3/1/2012	Property Dmg Report
80	339,120	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Snow	Snow	Dark, No Street Lights	0	0	Wednesday	12/10/2003	Property Dmg Report
81	339,200	Car	Negotiating Curve	Descending N	Overturn	Nonjunction	Left Shoulder	None	None	None	Clear	Ice	Day	0	0	Saturday	11/18/2006	Property Dmg Report
82	339,200	Car	Negotiating Curve	Descending N	Side Swipe Opposite	Nonjunction	On Roadway	Drove Left of Center	Speed Too Fast For Conditions	None	Cloudy	Ice	Dark, No Street Lights	0	0	Monday	3/26/2007	Property Dmg Report
82	339,200	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Side Swipe Opposite	Nonjunction		None	None					0	0		3/26/2007	Property Dmg Report
83	339,200	Car	Negotiating Curve	Descending S	Ditch	Nonjunction	Outside Right-Of-Way	Alcohol Impaired	Overcorrected	None	Clear	Dry	Dark, No Street Lights	0	0	Friday	4/13/2007	Property Dmg Report
84	339,200	Car	Negotiating Curve	Ascending N	Overturn	Nonjunction	Right Shoulder	None	Speed Too Fast For Conditions	None	Cloudy	Ice	Dark, No Street Lights	0	2	Saturday	12/1/2007	B Injury Accident
85	339,200	Car	Negotiating Curve	Descending N	Guardrail Face	Nonjunction	Left Shoulder	None	Drove Left of Center	None	Clear	Dry	Day	0	0	Sunday	2/2/2003	Property Dmg Report
86	339,200	Tractor - 1 Trailer	Negotiating Curve	Descending N	Side Swipe Opposite	Nonjunction	On Roadway	None	Speed Too Fast For Conditions	None	Snow	Snow	Day	0	0	Tuesday	1/6/2004	Property Dmg Report
86	339,200	Tractor - 1 Trailer	Negotiating Curve	Descending S	Side Swipe Opposite	Nonjunction		None	None					0	0		1/6/2004	Property Dmg Report
87	339,200	Truck - 2 Axle/6 Tires	Going Straight	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Inattention	Poor Pavement Markings	Snow	Ice	Day	0	2	Wednesday	1/7/2004	B Injury Accident
88	339,200	Car	Negotiating Curve	Descending N	Overturn	Nonjunction	Left Shoulder	None	Overcorrected	None	Clear	Dry	Dark, No Street Lights	0	1	Sunday	12/26/2004	B Injury Accident
89	339,200	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Guardrail Face	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Snow	Snow	Dark, No Street Lights	0	0	Saturday	1/10/2009	Property Dmg Report
90	339,200	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Guardrail Face	Nonjunction	Right Shoulder	Other	None	None	Sleet/Hail	Ice	Dawn or Dusk	0	0	Saturday	1/9/2010	Property Dmg Report
91	339,200	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending N	Overturn	Nonjunction	Right Shoulder	Alcohol Impaired	Speed Too Fast For Conditions		Snow	Snow	Dark, No Street Lights	0	1	Sunday	11/21/2010	B Injury Accident
92	339,200	Car	Negotiating Curve	Descending N	Concrete Traffic Barrier	Nonjunction	Left Shoulder	None	Drove Left of Center	None	Clear	Ice	Day	0	0	Saturday	12/4/2010	Property Dmg Report
93	339,200	Car	Negotiating Curve	Ascending S	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Clear	Ice	Day	0	0	Friday	12/9/2011	Property Dmg Report
94	339,200	Car	Negotiating Curve	Ascending N	Ditch	Nonjunction	Right Shoulder	Inattention	None	None	Clear	Dry	Day	0	1	Saturday	9/15/2012	C Injury Accident
95	339,200	SUV/Crossover	Negotiating Curve	Ascending N	Overturn	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	Failed to Maintain Lane	None	Cloudy	Wet	Dark, No Street Lights	0	0	Thursday	11/8/2012	Property Dmg Report
96	339,200	Car	Negotiating Curve	Descending S	Ditch	Nonjunction	Left Shoulder	Other	None	None	Cloudy	Slush	Day	0	0	Thursday	3/22/2012	Property Dmg Report
96	339,200	Car	Negotiating Curve	Descending N	Non-Contact Unit	Nonjunction	On Roadway	Wrong Side or Wrong Way	None					0	0		3/22/2012	Property Dmg Report
97	339,250	Car	Negotiating Curve	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Inattention	None	None	Cloudy	Dry	Dark, No Street Lights	0	1	Thursday	3/24/2005	C Injury Accident
98	339,200	Car	Negotiating Curve	Ascending S	Ditch	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Snow	Ice	Day	0	0	Wednesday	12/31/2003	Property Dmg Report
99	339,200	Car	Negotiating Curve	Ascending N	Overturn	Nonjunction	Outside Right-Of-Way	None	None	None	Clear	Ice	Dawn or Dusk	0	0	Sunday	11/8/2009	Property Dmg Report
100	339,200	SUV/Crossover	Negotiating Curve	Ascending N	Overturn	Nonjunction	Outside Right-Of-Way	Speed Too Fast For Conditions	None	None	Snow	Snow	Day	0	0	Saturday	2/11/2012	Property Dmg Report
101	339,320	SUV/Crossover	Negotiating Curve	Descending N	Guardrail Face	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Dark, No Street Lights	0	0	Wednesday	11/16/2011	Property Dmg Report

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity	
102	339.400	Car	Negotiating Curve	Descending	N	Overturn	Nonjunction	Left Shoulder	Drove Left of Center	Other Vehicle Defect	None	Cloudy	Wet	Day	0	0	Tuesday	5/10/2005	Property Dmg Report
103	339.400	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Ditch	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	Cloudy	Wet	Day	0	1	Saturday	10/16/2004	B Injury Accident	
104	339.500	Car	Negotiating Curve	Ascending	S	Overturn	Nonjunction	Left Shoulder	None	None	Clear	Dry	Dawn or Dusk	0	1	Thursday	8/4/2005	C Injury Accident	
105	339.500	Car	Going Straight	Ascending	N	Animal - Wild	Nonjunction	On Roadway	None	None	Clear	Dry	Dark, No Street Lights	0	0	Saturday	11/19/2005	Property Dmg Report	
106	339.500	Car	Negotiating Curve	Ascending	S	Embankment	Nonjunction	Roadside or Sidewalk	Speed Too Fast for Conditions	None	Snow	Snow	Dark, No Street Lights	0	0	Monday	1/14/2008	Property Dmg Report	
107	339.500	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	N	Overturn	Nonjunction	Roadside or Sidewalk	None	None	Snow	Snow	Dark, No Street Lights	0	0	Sunday	12/21/2008	Property Dmg Report	
108	339.500	Pickup/Van/ Panel/SUV	Going Straight	Descending	N	Animal - Wild	Nonjunction	On Roadway	Other	None	Cloudy	Dry	Dark, Street Lights Off	0	0	Saturday	8/15/2009	Property Dmg Report	
109	339.500	Pickup	Going Straight	Descending	S	Overturn	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	Clear	Ice	Day	0	0	Saturday	1/8/2011	Property Dmg Report	
110	339.600	SUV/Crossover	Turning Left	Ascending	N	Same Direction Turning	Nonjunction	Failed to Signal	None	None	Clear	Dry	Day	0	0	Thursday	10/27/2011	Property Dmg Report	
110	339.600	Pickup	Passing	Ascending	N	Same Direction Turning	Nonjunction	Roadside or Sidewalk	Improper Overtaking	None	Clear	Dry	Day	0	0	Thursday	10/27/2011	Property Dmg Report	
111	339.620	Pickup/Van/ Panel/SUV	Passing	Descending	S	Overturn	In Intersection	On Roadway	Inattention	None	Clear	Dry	Day	0	1	Thursday	5/31/2007	C Injury Accident	
111	339.620	Pickup/Van/ Panel/SUV	Turning Left	Descending	S	Same Direction Turning	In Intersection	None	None	None	Clear	Dry	Day	0	0	Thursday	12/13/2007	C Injury Accident	
112	339.620	Car	Going Straight	Ascending	N	Overturn	Nonjunction	Roadside or Sidewalk	None	None	Clear	Ice	Day	0	1	Thursday	12/13/2007	C Injury Accident	
113	339.620	Pickup/Van/ Panel/SUV	Going Straight	Descending	N	Embankment	Nonjunction	Roadside or Sidewalk	None	None	Clear	Ice	Day	0	2	Wednesday	1/30/2008	A Injury Accident	
114	339.620	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Rear-End	Intersection Related	On Roadway	Inattention	None	Cloudy	Dry	Day	0	0	Tuesday	2/2/2010	Property Dmg Report	
114	339.620	Pickup/Van/ Panel/SUV	Slowing in Traffic	Ascending	N	Rear-End	Intersection Related	None	None	None			Day	0	0		2/2/2010	Property Dmg Report	
114	339.620	Car	Turning Right	Ascending	N	Rear-End Turning	Intersection Related	None	None	Other	Rain	Wet	Day	0	0	Sunday	6/5/2005	Property Dmg Report	
115	339.700	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Traffic Sign Support	Nonjunction	Right Shoulder	None	None	Clear	Ice	Day	0	0	Sunday	12/12/2004	Property Dmg Report	
116	339.731	Pickup/Van/ Panel/SUV	Turning Left	Ascending	S	Embankment	Nonjunction	Left Shoulder	None	None	Clear	Ice	Day	0	0	Sunday	12/12/2004	Property Dmg Report	
117	339.800	Car	Going Straight	Ascending	N	Animal - Wild	Nonjunction	On Roadway	None	Other	Cloudy	Wet	Dark, No Street Lights	0	1	Saturday	10/1/2005	C Injury Accident	
118	339.850	Pickup	Going Straight	Ascending	N	Animal - Wild	Nonjunction	On Roadway	None	None	Clear	Dry	Dark, No Street Lights	0	0	Saturday	4/9/2011	Property Dmg Report	
119	339.900	Pickup/Van/ Panel/SUV	Going Straight	Descending	N	Overturn	Nonjunction	Off Roadway- Location Unknown	Other	None	Rain	Wet	Dark, No Street Lights	0	2	Wednesday	11/12/2008	B Injury Accident	
120	340.000	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Other Object Not Fixed	Nonjunction	On Roadway	None	None	Cloudy	Dry	Day	0	0	Friday	3/26/2004	Property Dmg Report	
121	340.027	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Other	Nonjunction	On Roadway	None	None	Clear	Dry	Day	0	0	Tuesday	5/26/2009	Property Dmg Report	
122	340.100	Pickup/Van/ Panel/SUV	Going Straight	Descending	N	Overturn	Nonjunction	Roadside or Sidewalk	Drove Left of Center	Inattention	Cloudy	Ice	Dawn or Dusk	0	1	Friday	12/14/2007	C Injury Accident	
123	340.200	Car	Avoiding Obstacle	Descending	S	Ditch	Nonjunction	On Roadway	Animal(s) in Roadway Distacted IN or ON Vehicle	None	Clear	Dry	Day	0	1	Friday	5/18/2012	B Injury Accident	
124	340.250	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Head-On	Nonjunction	On Roadway	None	None	Clear	Dry	Day	0	2	Wednesday	1/24/2007	B Injury Accident	
124	340.250	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Head-On	Nonjunction	On Roadway	None	None	Cloudy	Wet	Day	0	0	Monday	10/31/2005	Property Dmg Report	
125	340.300	Pickup/Van/ Panel/SUV	Stopped in Traffic	Ascending	N	Rear-End	Nonjunction	On Roadway	None	None	Cloudy	Wet	Day	0	0	Monday	10/31/2005	Property Dmg Report	
125	340.300	Pickup/Van/ Panel/SUV	Stopped in Traffic	Ascending	N	Rear-End	Nonjunction	On Roadway	None	None	Cloudy	Wet	Day	0	0	Monday	10/31/2005	Property Dmg Report	



#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
126	340.300	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Friday	3/12/2004	Property Dmg Report
127	340.300	SUV/Crossover	Negotiating Curve	Ascending S	Ditch	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Clear	Ice	Day	0	0	Monday	1/23/2012	Property Dmg Report
128	340.350	Car	Negotiating Curve	Descending S	Rear-End Turning	In Intersection	On Roadway	Inattention	None	None	Clear	Dry	Day	0	1	Monday	9/15/2003	C Injury Accident
128	340.350	Car	Turning Right	Descending S	Rear-End Turning	In Intersection		None	None					0	0		9/15/2003	C Injury Accident
129	340.350	Car	Going Straight	Ascending N	Rear-End Turning	Intersection Related	On Roadway	Inattention	Following Too Close	None	Cloudy	Dry	Dark, No Street Lights	0	1	Monday	12/5/2011	C Injury Accident
129	340.350	Car	Turning Left	Ascending N	Rear-End Turning	Intersection Related		None	None					0	0		12/5/2011	C Injury Accident
130	340.400	Pickup/Van/Panel/SUV	Negotiating Curve	Descending S	Animal - Wild	In Intersection	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	2/18/2009	Property Dmg Report
131	340.425	Car	Negotiating Curve	Ascending S	Side Swipe Opposite	Nonjunction	On Roadway	None	None	None	Snow	Snow	Day	0	0	Friday	12/12/2003	Property Dmg Report
131	340.425	Car	Negotiating Curve	Ascending N	Side Swipe Opposite	Nonjunction		None	None	None				0	0		12/12/2003	Property Dmg Report
132	340.438	Car	Going Straight	Ascending S	Overturn	Nonjunction	Left Shoulder	None	Distracted IN or ON Vehicle	None	Cloudy	Dry	Day	0	0	Friday	2/18/2005	Property Dmg Report
133	340.500	Car	Negotiating Curve	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Cloudy	Wet	Day	0	0	Tuesday	7/8/2003	Property Dmg Report
134	340.500	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Thursday	1/29/2009	Property Dmg Report
135	340.500	Car	Negotiating Curve	Descending S	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	Loose Gravel/Seal Coat	Snow	Wet	Day	0	0	Thursday	3/5/2009	Property Dmg Report
136	340.500	Pickup/Van/Panel/SUV	Negotiating Curve	Descending N	Head-On	Nonjunction	On Roadway	Asleep, Drowsy, Fatigued	Drove Left of Center	None	Clear	Dry	Day	1	4	Sunday	6/27/2010	Fatal Accident
136	340.500	Pickup/Van/Panel/SUV	Avoiding Vehicle, Pedestrian, Pedalcycle	Descending S	Head-On	Nonjunction		None	None					0	0		6/27/2010	Fatal Accident
137	340.600	Car	Negotiating Curve	Descending S	Overturn	Nonjunction	Right Shoulder	Overcorrected	Overcorrected	None	Cloudy	Dry	Day	0	0	Tuesday	2/28/2006	Property Dmg Report
138	340.600	Pickup/Van/Panel/SUV	Negotiating Curve	Descending S	Side Swipe Same	Nonjunction	On Roadway	None	None	None	Cloudy	Slush	Day	0	1	Friday	3/7/2003	C Injury Accident
138	340.600	Car	Negotiating Curve	Descending S	Side Swipe Same	Nonjunction		None	None	None				0	0		3/7/2003	C Injury Accident
139	340.600	Car	Negotiating Curve	Descending N	Side Swipe Opposite	Nonjunction		Speed Too Fast For Conditions	Alcohol Impaired	None	Cloudy	Slush	Day	2	1	Friday	3/7/2003	Fatal Accident
139	340.600	Car	Negotiating Curve	Descending S	Side Swipe Opposite	Nonjunction	On Roadway	None	None	None				0	0		3/7/2003	Fatal Accident
140	340.700	Car	Negotiating Curve	Descending S	Tree	Nonjunction	Roadside or Sidewalk	Inattention	Speed Too Fast For Conditions	None	Snow	Ice	Day	0	1	Saturday	12/22/2007	B Injury Accident
141	340.700	Car	Going Straight	Ascending N	Overturn	Nonjunction	On Roadway	Speed Too Fast For Conditions	Failed to Maintain Lane	None	Blowing Snow	Ice	Day	0	0	Monday	11/14/2012	Property Dmg Report
142	340.800	Car	Negotiating Curve	Descending S	Delinquent Post	Nonjunction	Roadside or Sidewalk	None	None	None	Clear	Dry	Day	0	0	Saturday	3/14/2003	Property Dmg Report
143	340.800	Pickup/Van/Panel/SUV	Negotiating Curve	Ascending S	Overturn	Nonjunction	Roadside or Sidewalk	None	Alcohol Impaired	None	Cloudy	Dry	Dark, No Street Lights	0	1	Thursday	2/28/2008	A Injury Accident
144	340.800	Car	Negotiating Curve	Descending S	Embankment	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Clear	Ice	Dawn or Dusk	0	0	Wednesday	1/28/2009	Property Dmg Report
145	340.800	Pickup/Van/Panel/SUV	Negotiating Curve	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Overcorrected	High/Low Shoulder	Cloudy	Ice	Day	0	3	Saturday	11/14/2009	C Injury Accident
146	340.800	Car	Negotiating Curve	Descending N	Other Fixed Object	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Clear	Ice	Dark, No Street Lights	0	0	Saturday	1/22/2011	Property Dmg Report
147	340.800	SUV/Crossover	Avoiding Vehicle, Pedestrian, Pedalcycle	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Steering	Vision Obstruction	None	Blowing Snow	Ice	Dark, No Street Lights	0	1	Wednesday	11/16/2011	C Injury Accident
148	340.800	Car	Negotiating Curve	Ascending N	Tree	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Snow	Snow	Dark, No Street Lights	0	0	Tuesday	1/17/2012	Property Dmg Report
149	340.813	Pickup/Van/Panel/SUV	Negotiating Curve	Descending S	Tree	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Cloudy	Slush	Day	0	0	Tuesday	11/25/2003	Property Dmg Report

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	AccidentDate	Severity
150	340.900	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending	Overturn	Nonjunction	Left Shoulder	Overcorrected	Drove left of Center	Gravel/seal Coat	Fog	Ice	Day	0	0	Sunday	12/4/2005	Property Dmg Report
151	340.900	Car	Negotiating Curve	Ascending	Embankment	Nonjunction	Left Shoulder	None	None	None	Fog	Ice	Day	0	0	Thursday	12/13/2007	Property Dmg Report
152	340.900	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	Animal - Wild	Nonjunction	On Roadway	None	None	None	Cloudy	Dry	Day	0	0	Monday	4/14/2008	Property Dmg Report
153	340.900	Tractor - 1 Trailer	Going Straight	Descending	Overturn	Nonjunction	Right Shoulder	Other	Inattention	None	Cloudy	Dry	Dark, No Street Lights	0	1	Monday	11/10/2008	C Injury Accident
154	340.900	SUV/Crossover	Going Straight	Descending	Overturn	Nonjunction	Roadside or Sidewalk	Drug Impaired	Asleep, Drowsy, Fatigued	None	Clear	Wet	Day	0	2	Thursday	12/15/2011	A Injury Accident
155	340.900	Car	Negotiating Curve	Ascending	Embankment	Nonjunction	Left Shoulder	Alcohol Impaired	None	None	Clear	Dry	Dark, No Street Lights	0	0	Saturday	8/18/2012	Property Dmg Report
156	340.955	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	Embankment	Nonjunction	Left Shoulder	Overcorrected	Drove left of Center	None	Cloudy	Ice	Day	0	2	Tuesday	11/25/2003	B Injury Accident
157	340.976	Car	Negotiating Curve	Ascending	Tree	Nonjunction	Left Shoulder	Exceeded Posted Speed	Alcohol Impaired	None	Cloudy	Dry	Dawn or Dusk	0	1	Wednesday	5/28/2008	A Injury Accident
158	340.981	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	Overturn	Nonjunction	Outside Right-Of-Way	None	None	None	Snow	Slush	Dark, No Street Lights	0	0	Monday	2/3/2003	Property Dmg Report
159	340.981	Pickup/Van/ Panel/SUV	Going Straight	Ascending	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Day	0	0	Friday	3/28/2008	Property Dmg Report
160	340.994	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Day	0	0	Monday	7/17/2006	Property Dmg Report
161	340.996	Car	Negotiating Curve	Ascending	Ditch	Nonjunction	Off Roadway- Location Unknown	Other	None	None	Rain	Wet	Day	0	0	Sunday	5/16/2004	Property Dmg Report
162	341.000	Car	Negotiating Curve	Descending	Delinctor Post	Nonjunction	Left Shoulder	Alcohol Impaired	Speed Too Fast For Conditions	None	Clear	Ice	Dark, No Street Lights	0	0	Saturday	12/8/2012	Property Dmg Report
163	341.001	Car	Negotiating Curve	Ascending	Embankment	Nonjunction	Left Shoulder	Alcohol Impaired	None	None	Rain	Wet	Dark, No Street Lights	0	1	Saturday	2/18/2012	A Injury Accident
164	341.009	Car	Going Straight	Descending	Rear-End	Intersection Related	On Roadway	None	Following Too Close	None	Clear	Dry	Day	0	2	Monday	5/14/2007	A Injury Accident
164	341.009	Pickup/Van/ Panel/SUV	Turning Left	Descending	Rear-End	In Intersection		None	None					0	0		5/14/2007	A Injury Accident
165	341.009	Pickup/Van/ Panel/SUV	Turning Left	Descending	Rear-End	Intersection Related		None	None	None	Cloudy	Wet	Dark, No Street Lights	0	1	Sunday	3/2/2003	C Injury Accident
165	341.009	Car	Going Straight	Descending	Rear-End	Intersection Related	On Roadway	Vision Obstruction	None					0	0		3/2/2003	C Injury Accident
166	341.009	Pickup/Van/ Panel/SUV	Parked Vehicle	Descending	Parked Car	Intersection Related		Drove left of Center	None	None	Snow	Snow	Dark, No Street Lights	0	0	Saturday	12/13/2008	Property Dmg Report
166	341.009	Car	Negotiating Curve	Descending	Parked Car	Intersection Related	On Roadway	None	None					0	0		12/13/2008	Property Dmg Report
167	341.009	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending	Overturn	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Snow	Ice	Dark, No Street Lights	0	0	Saturday	1/28/2009	Property Dmg Report
168	341.009	SUV/Crossover	Negotiating Curve	Ascending	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Failed to Maintain Lane	None	Snow	Snow	Dawn or Dusk	0	0	Tuesday	12/18/2012	Property Dmg Report
169	341.023	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	Embankment	Nonjunction	Roadside or Sidewalk	Distacted Ix or ON Vehicle	Inattention	None	Clear	Dry	Day	0	1	Friday	9/11/2009	B Injury Accident
170	341.046	Pickup/Van/ Panel/SUV	Going Straight	Descending	Overturn	Intersection Related	Right Shoulder	Following Too Close	None	None	Cloudy	Dry	Day	0	0	Friday	3/16/2007	Property Dmg Report
171	341.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending	Overturn	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Sheet/Hail	Ice	Dark, Street Lights Off	0	0	Thursday	12/21/2006	Property Dmg Report
172	341.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending	Embankment	Nonjunction	Roadside or Sidewalk	None	Inattention	None	Clear	Ice	Dawn or Dusk	0	1	Wednesday	1/30/2008	C Injury Accident
173	341.100	Car	Negotiating Curve	Ascending	Embankment	Nonjunction	Right Shoulder	None	None	None	Cloudy	Ice	Dark, Street Lights Off	0	1	Friday	4/4/2003	C Injury Accident
174	341.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending	Tree	Nonjunction	Left Shoulder	None	Speed Too Fast For Conditions	Other	Snow	Ice	Dark, No Street Lights	0	0	Saturday	1/24/2009	Property Dmg Report
175	341.100	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending	Tree	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None		Cloudy	Ice	Dawn or Dusk	0	1	Sunday	1/3/2010	B Injury Accident
176	341.100	Pickup/Van/ Panel/SUV	Going Straight	Descending	Head-On	Nonjunction	On Roadway	Speed Too Fast For Conditions	Drove left of Center	None	Snow	Snow	Dark, No Street Lights	0	3	Sunday	11/21/2010	B Injury Accident
176	341.100	Car	Going Straight	Descending	Head-On	Nonjunction		None	None					0	0		11/21/2010	B Injury Accident
177	341.112	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending	Overturn	Nonjunction	Outside Right-Of-Way	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Dark, No Street Lights	0	1	Monday	11/27/2006	A Injury Accident

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	AccidentDate	Severity
178	341.200	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Day	0	0	Wednesday	6/30/2010	Property Dmg Report
179	341.200	Pickup	Going Straight	Descending S	Pedestrian	Nonjunction	On Roadway	None	None					1	0	Friday	9/30/2011	Fatal Accident
179	341.200	Pedestrian	Walk/Ride with Traffic No Bike Lane	Descending W	Pedestrian	Nonjunction		None	None					0	0		9/30/2011	Fatal Accident
180	341.300	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Traffic Sign Support	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Snow	Ice	Day	0	0	Saturday	11/27/2010	Property Dmg Report
181	341.300	Pickup	Going Straight	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Failed to Maintain Lane	None	Blowing Snow	Ice	Dark, No Street Lights	0	0	Monday	12/24/2012	Property Dmg Report
182	341.317	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Utility Pole	Intersection Related	Right Shoulder	None	None	None	Clear	Dry	Dark, No Street Lights	0	1	Saturday	10/22/2005	B Injury Accident
183	341.317	Car	Going Straight	Ascending N	Angle	In Intersection		None	None	None	Clear	Dry	Dark, No Street Lights	0	3	Thursday	10/4/2007	C Injury Accident
183	341.317	Car	Going Straight	Ascending N	Angle	In Intersection		None	None					0	0		10/4/2007	C Injury Accident
183	341.317	Pickup/Van/ Panel/SUV	Turning Right	Ascending E	Angle	In Intersection	On Roadway	Drove Left of Center	None					0	0		10/4/2007	C Injury Accident
184	341.317	Car	Passing	Ascending N	Rear-End	In Intersection	On Roadway	None	None	None	Clear	Dry	Day	0	1	Tuesday	7/8/2003	C Injury Accident
184	341.317	Truck - 3+ Axle	Slowing In Traffic	Ascending N	Rear-End	In Intersection		None	None					0	0		7/8/2003	C Injury Accident
185	341.332	Car	Going Straight	Descending N	Side Swipe Opposite	Nonjunction		Vision Obstruction	Following Too Close	None	Cloudy	Ice	Dark, No Street Lights	0	2	Monday	11/22/2010	B Injury Accident
185	341.332	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Side Swipe Opposite	Nonjunction	On Roadway	None	None					0	0		11/22/2010	B Injury Accident
185	341.332	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Rear-End	Nonjunction	On Roadway	Following Too Close	None	None				0	0		11/22/2010	B Injury Accident
186	341.335	Car	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Cloudy	Wet	Dark, No Street Lights	0	0	Friday	1/23/2009	Property Dmg Report
186	341.335	Car	Going Straight	Descending N	Animal - Wild	Nonjunction	On Roadway	None	None					0	0		1/23/2009	Property Dmg Report
187	341.400	Car	Going Straight	Ascending S	Ditch	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	None	None	Clear	Dry	Dawn or Dusk	0	0	Thursday	7/7/2005	Property Dmg Report
188	341.481	Car	Turning Left	Descending N	Head-On Turning	Nonjunction	On Roadway	Inattention	None	None	Clear	Slush	Day	0	0	Tuesday	3/10/2009	Property Dmg Report
188	341.481	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Head-On Turning	Nonjunction		None	None					0	0		3/10/2009	Property Dmg Report
189	341.500	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Other Object Not Fixed	Nonjunction	On Roadway	None	None	None	Severe Cross Winds	Dry	Day	0	0	Thursday	3/18/2004	Property Dmg Report
189	341.500	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Other Object Not Fixed	Nonjunction	On Roadway	Other	None					0	0		3/18/2004	Property Dmg Report
190	341.500	SUV/Crossover	Passing	Descending S	Overturn	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	Inattention	None	Cloudy	Ice	Day	0	1	Friday	3/2/2012	B Injury Accident
191	341.700	Car	Negotiating Curve	Ascending N	Overturn	Nonjunction	Outside Right-Of-Way	Inattention	Speed Too Fast For Conditions	None	Cloudy	Wet	Day	0	1	Saturday	10/30/2004	B Injury Accident
192	341.800	Car	Going Straight	Descending N	Overturn	Nonjunction	Left Shoulder	Asleep, Drowsy, Fatigued	None	None	Clear	Dry	Day	0	1	Wednesday	5/2/2007	B Injury Accident
193	341.800	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Cloudy	Dry	Dark, No Street Lights	0	0	Tuesday	6/10/2003	Property Dmg Report
194	341.800	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Overturn	Nonjunction	Left Shoulder	Alcohol Impaired	None	None	Clear	Dry	Dark, No Street Lights	0	0	Saturday	10/4/2003	Property Dmg Report
195	341.800	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Overturn	Nonjunction	Right Shoulder	None	None	None	Clear	Dry	Dark, No Street Lights	0	1	Friday	4/18/2008	B Injury Accident
196	341.800	Pickup	Going Straight	Ascending S	Cargo Loss/Shift	Nonjunction	On Roadway	Other	None	None	Severe Cross Winds	Wet	Day	0	0	Friday	3/30/2012	Property Dmg Report
196	341.800	Pickup	Going Straight	Ascending N	Other Object Not Fixed	Nonjunction	On Roadway	None	None					0	0		3/30/2012	Property Dmg Report
197	341.847	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Side Swipe Opposite	Nonjunction		None	None	None	Clear	Dry	Dark, No Street Lights	0	1	Saturday	9/11/2010	C Injury Accident
197	341.847	Car	Negotiating Curve	Descending N	Side Swipe Opposite	Nonjunction	On Roadway	Alcohol Impaired	Inattention					0	0		9/11/2010	C Injury Accident

#	Milepost	Venue Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
198	341.899	Car	Negotiating Curve	Descending N	Head-On	Nonjunction	On Roadway	Asleep, Drowsy, Fatigued	Drove Left of Center	None	Clear	Dry	Day	1	5	Tuesday	8/1/2006	Fatal Accident
198	341.899	Car	Negotiating Curve	Descending S	Head-On	Nonjunction		None	None					0	0		8/1/2006	Fatal Accident
199	341.900	Car	Going Straight	Ascending S	Overturn	Nonjunction	Left Shoulder	Asleep, Drowsy, Fatigued	None	None	Clear	Dry	Dark, No Street Lights	0	1	Saturday	4/2/2005	B Injury Accident
200	341.900	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Monday	8/15/2005	Property Dmg Report
201	341.900	Car	Going Straight	Descending N	Tree	Nonjunction	Off Roadway- Location Unknown	Asleep, Drowsy, Fatigued	None	None	Clear	Dry	Dark, No Street Lights	0	1	Saturday	6/24/2006	A Injury Accident
202	341.900	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Overturn	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Clear	Ice	Dawn or Dusk	0	0	Friday	4/4/2003	Property Dmg Report
203	341.900	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Embarkment	Nonjunction	Roadside or Sidewalk	None	None	None	Rain	Wet	Day	0	0	Sunday	5/4/2003	Property Dmg Report
204	341.900	Car	Negotiating Curve	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	3/11/2009	Property Dmg Report
205	342.000	Car	Turning Left	Descending S	Rear-End Turning	At Driveway/Alley/Parking Lot		Failed to Signal	None	None	Rain	Wet	Day	0	1	Friday	9/17/2004	C Injury Accident
205	342.000	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Rear-End Turning	Nonjunction	On Roadway	None	None					0	0		9/17/2004	C Injury Accident
206	342.000	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Thursday	3/12/2009	Property Dmg Report
207	342.028	Pickup	Turning Left	Descending S	Rear-End	Nonjunction		None	None	None	Clear	Dry	Day	0	4	Friday	3/9/2012	B Injury Accident
207	342.028	SUV/Crossover	Stopped in Traffic	Descending S	Rear-End	Nonjunction	On Roadway	None	None					0	0		3/9/2012	B Injury Accident
207	342.028	Car	Going Straight	Descending S	Rear-End	Nonjunction	On Roadway	Inattention	Distracted IN or ON Vehicle					0	0		3/9/2012	B Injury Accident
208	342.030	Car	Going Straight	Descending S	Rear-End Turning	Driveway/Alley/Parking Lot	On Roadway	Inattention	None	None	Cloudy	Dry	Day	0	4	Sunday	10/16/2005	C Injury Accident
208	342.030	Pickup/Van/ Panel/SUV	Stopped in Traffic	Descending S	Rear-End Turning	Driveway/Alley/Parking Lot	On Roadway	None	None					0	0		10/16/2005	C Injury Accident
209	342.100	Pickup/Van/ Panel/SUV	Stopped in Traffic	Ascending S	Rear-End	Driveway/Alley/Parking Lot	On Roadway	None	None	None	Clear	Dry	Day	0	3	Friday	5/13/2005	A Injury Accident
209	342.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Head-On	Driveway/Alley/Parking Lot	On Roadway	Inattention						0	0		5/13/2005	A Injury Accident
209	342.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Driveway/Alley/Parking Lot		None	None					0	0		5/13/2005	A Injury Accident
210	342.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Other	Nonjunction	On Roadway	None	None	None	Clear	Dry	Day	0	0	Saturday	4/28/2007	Property Dmg Report
210	342.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Cargo Loss/Shift	Nonjunction	On Roadway	Other	None					0	0		4/28/2007	Property Dmg Report
211	342.200	Pickup/Van/ Panel/SUV	Turning Right	Descending S	Rear-End Turning	At Driveway/Alley/Parking Lot		None	None	None	Cloudy	Wet	Dark, No Street Lights	0	0	Tuesday	2/20/2007	Property Dmg Report
211	342.200	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Rear-End Turning	At Driveway/Alley/Parking Lot	Right Shoulder	None	Following Too Close					0	0		2/20/2007	Property Dmg Report
212	342.200	Car	Going Straight	Descending S	Overturn	Nonjunction	Off Roadway- Location Unknown	Distracted IN or ON Vehicle	Overcorrected	None	Clear	Dry	Day	0	2	Monday	7/12/2007	C Injury Accident
213	342.200	Pickup/Van/ Panel/SUV	Going Straight	Ascending S	Ditch	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Drove Left of Center	None	Cloudy	Snow	Dark, No Street Lights	0	0	Friday	1/12/2004	Property Dmg Report
214	342.300	Motorcycle	Going Straight	Ascending N	Overturn	Nonjunction	Off Roadway- Location Unknown	None	None	None	Severe Cross Winds	Dry	Day	0	1	Wednesday	9/12/2004	A Injury Accident
215	342.317	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending N	Overturn	Nonjunction	Outside Right-Of-Way	Overcorrected	None	None	Cloudy	Ice	Dawn or Dusk	0	0	Tuesday	11/23/2010	Property Dmg Report
216	342.400	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Cloudy	Ice	Dawn or Dusk	0	1	Monday	11/22/2010	C Injury Accident
217	342.400	Pickup	Going Straight	Ascending N	Rear-End	Nonjunction	On Roadway	Speed Too Fast For Conditions	Inattention	None	Snow	Snow	Dark, No Street Lights	0	0	Monday	12/17/2012	Property Dmg Report
217	342.400	Car	Going Straight	Ascending N	Rear-End	Nonjunction		None	None					0	0		12/17/2012	Property Dmg Report



#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	AccidentDate	Severity	
218	342,500	Car	Going Straight	Ascending	S	Embankment	Nonjunction	Roadside or Sidewalk	Overcorrected	Fatigued	None	Clear	Dry	Day	0	0	Friday	3/12/2007	Property Dmg Report
219	342,500	Car	Going Straight	Ascending	N	Side Swipe Opposite	Nonjunction	Vision Obstruction	None	None	Rain	Snow	Day	0	0	Sunday	12/2/2007	Property Dmg Report	
219	342,500	Pickup/Van/ Panel/SUV	Avoiding Obstacle	Ascending	S	Side Swipe Opposite	Nonjunction	On Roadway	Speed Too Fast For Conditions	None				0	0		12/2/2007	Property Dmg Report	
220	342,500	SUV/Crossover	Negotiating Curve	Ascending	S	Overturn	Nonjunction	Outside Right-Of-Way	Speed Too Fast For Conditions	None	Clear	Ice	Dark, No Street Lights	0	0	Saturday	2/5/2011	Property Dmg Report	
221	342,600	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	S	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	Distracted IN or ON Vehicle	None	Clear	Ice	Dark, No Street Lights	0	1	Monday	12/22/2003	B Injury Accident
222	342,600	Car	Passing	Descending	S	Tree	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	Failed to Maintain Lane	None	Cloudy	Slush	Day	0	0	Saturday	12/8/2012	Property Dmg Report
223	342,700	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	N	Overturn	Nonjunction	Left Shoulder	Overcorrected	Speed Too Fast For Conditions	None	Cloudy	Ice	Dark, No Street Lights	0	2	Saturday	2/10/2007	B Injury Accident
224	342,700	Car	Going Straight	Descending	S	Animal - Wild	Nonjunction	On Roadway	None	None	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	9/1/2004	Property Dmg Report	
225	342,700	Pickup	Negotiating Curve	Ascending	N	Fence	Nonjunction	Private Property	Other	None	None	Clear	Ice	Day	0	0	Monday	1/23/2012	Property Dmg Report
226	342,700	SUV/Crossover	Going Straight	Ascending	N	Overturn	Nonjunction	Left Shoulder	Speed Too Fast For Conditions	Failed to Maintain Lane	High/Low Shoulder	Snow	Ice	Dark, No Street Lights	0	1	Tuesday	12/18/2012	C Injury Accident
227	342,800	Car	Going Straight	Descending	S	Embankment	Nonjunction	Roadside or Sidewalk	Other	None	Snow	Snow	Dawn or Dusk	0	0	Saturday	12/22/2007	Property Dmg Report	
228	342,800	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Overturn	Nonjunction	Right Shoulder	Tire Defect	Speed Too Fast For Conditions	None	Snow	Snow	Dark, No Street Lights	0	0	Thursday	1/6/2005	Property Dmg Report
229	342,801	Car	Going Straight	Ascending	N	Rear-End	Nonjunction		None	None	Clear	Dry	Dark, No Street Lights	0	1	Tuesday	10/17/2006	C Injury Accident	
229	342,801	Car	Going Straight	Ascending	N	Rear-End	Nonjunction	On Roadway	Inattention	Other Vehicle Defect				0	0		10/17/2006	C Injury Accident	
230	342,857	Car	Going Straight	Descending	S	Animal - Wild	Nonjunction	On Roadway	None	None	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	7/13/2005	Property Dmg Report	
231	342,905	SUV/Crossover	Merging	Descending	S	Side Swipe Same	Nonjunction	On Roadway	Inattention	Failed to Yield	None	Rain	Wet	Day	0	0	Monday	4/11/2011	Property Dmg Report
231	342,905	Truck With Trailer	Merging	Descending	S	Side Swipe Same	Nonjunction		None	None				0	0		4/11/2011	Property Dmg Report	
232	342,968	Car	Going Straight	Descending	S	Overturn	Nonjunction	Outside Right-Of-Way	Alcohol Impaired	None	Cloudy	Dry	Dark, No Street Lights	0	0	Saturday	3/27/2004	Property Dmg Report	
233	342,996	Pickup/Van/ Panel/SUV	Going Straight	Ascending	S	Embankment	Nonjunction	Left Shoulder	None	None	Clear	Dry	Day	0	1	Tuesday	2/10/2009	B Injury Accident	
234	343,000	Car	Going Straight	Descending	S	Angle Turning	Intersection Related		None	None	Snow	Ice	Dark, No Street Lights	0	0	Monday	11/22/2010	Property Dmg Report	
234	343,000	Pickup/Van/ Panel/SUV	Turning Left	Descending	E	Angle Turning	Intersection Related	On Roadway	Failed to Yield	None				0	0		11/22/2010	Property Dmg Report	
235	343,007	Van - 1 to 8 seats	Stopped in Traffic	Descending	S	Side Swipe Opposite	Nonjunction		None	None	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	12/6/2011	Property Dmg Report	
235	343,007	Car	Stopped in Traffic	Descending	S	Backed into	Nonjunction		None	None				0	0		12/6/2011	Property Dmg Report	
235	343,007	Tractor - 1 Trailer	Going Straight	Descending	N	Side Swipe Opposite	Nonjunction	On Roadway	Inattention	None				0	0		12/6/2011	Property Dmg Report	
236	343,095	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Ditch	Nonjunction	Outside Right-Of-Way	None	None	Cloudy	Ice	Dark, No Street Lights	0	0	Thursday	2/16/2006	Property Dmg Report	
237	343,100	Car	Going Straight	Ascending	N	Animal - Wild	Nonjunction	On Roadway	None	None	Rain	Wet	Day	0	0	Thursday	1/30/2003	Property Dmg Report	
238	343,100	Car	Going Straight	Ascending	N	Animal - Wild	Nonjunction	On Roadway	None	None	Clear	Dry	Day	0	1	Sunday	7/25/2004	C Injury Accident	
239	343,100	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Side Swipe Same	Driveway/Alley/Parking Lot Related	On Roadway	Inattention	Failed to Yield	None	Wet	Day	0	0	Tuesday	4/27/2010	Property Dmg Report	
239	343,100	Car	Turning Left	Descending	S	Side Swipe Same	Driveway/Alley/Parking Lot Related		None	None				0	0		4/27/2010	Property Dmg Report	
240	343,200	Car	U-Turn	Descending	S	Same Direction Turning	Nonjunction	On Roadway	Failed to Yield	Inattention	None	Clear	Dry	Day	0	0	Saturday	5/31/2008	Property Dmg Report
240	343,200	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Same Direction Turning	Nonjunction		None	None				0	0		5/31/2008	Property Dmg Report	

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Junction	Event Relation To Road	Contributing Circumstances 1	Contributing Circumstances 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
241	343.300	Pickup/Van/ Panel/SUV	Turning Left	Descending S	Rear-End	At arking lot		None	None	None	Clear	Dry	Day	0	0	Wednesday	5/10/2006	Property Dmg Report
241	343.300	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Rear-End	At arking lot	On Roadway	None	Following Too Close					0	0		5/10/2006	Property Dmg Report
242	343.300	Pickup	Going Straight	Descending S	Rear-End	Driveway/Alley/P arking lot	On Roadway	Inattention	Following Too Close	None	Cloudy	Dry	Dark, No Street Lights	0	5	Thursday	12/13/2012	A Injury Accident
242	343.300	Car	Slowing in Traffic	Descending S	Rear-End	Driveway/Alley/P arking lot	On Roadway	None	None					0	0		12/13/2012	A Injury Accident
242	343.300	Car	Slowing in Traffic	Descending S	Rear-End	Driveway/Alley/P arking lot	On Roadway	None	None					0	0		12/13/2012	A Injury Accident
243	343.400	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Overturn	Nonjunction	On Roadway	Other	None	None	Cloudy	Dry	Day	0	1	Sunday	10/30/2005	B Injury Accident
244	343.481	Car	Going Straight	Descending S	Utility Pole	Nonjunction	Roadside or Sidewalk	Inattention	Overcorrected	None	Cloudy	Snow	Day	0	1	Sunday	2/15/2004	C Injury Accident
245	343.500	Pickup/Van/ Panel/SUV	Turning Left	Descending S	Rear-End	Driveway/Alley/P arking lot		None	None	None	Clear	Dry	Day	0	0	Wednesday	2/26/2003	Property Dmg Report
245	343.500	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Rear-End	At Driveway/Alley/P arking lot	On Roadway	None	Inattention					0	0		2/26/2003	Property Dmg Report
246	343.500	Car	Going Straight	Descending S	Side Swipe	Nonjunction		Speed Too Fast For Conditions	None	None	Sleet/hail	Ice	Day	0	1	Saturday	1/9/2010	C Injury Accident
246	343.500	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Side Swipe	Nonjunction	On Roadway	Improper Overtaking	Improper Lane Change					0	0		1/9/2010	C Injury Accident
247	343.616	Car	Going Straight	Descending S	Overturn	Nonjunction	Outside Right-Of-Way	Inattention	None	None	Clear	Dry	Day	0	1	Sunday	9/10/2006	B Injury Accident
248	343.700	Pickup	Going Straight	Ascending S	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Clear	Ice	Dark, No Street Lights	0	1	Monday	1/23/2012	C Injury Accident
249	343.800	Tractor - 1 Trailer	Going Straight	Ascending N	Side Swipe	Driveway/Alley/P arking lot	On Roadway	Inattention	None	None	Cloudy	Wet	Day	0	0	Friday	5/28/2004	Property Dmg Report
249	343.800	Pickup/Van/ Panel/SUV	Stopped in Traffic	Ascending N	Side Swipe	Driveway/Alley/P arking lot		None	None					0	0		5/28/2004	Property Dmg Report
249	343.800	Car	Stopped in Traffic	Ascending N	Side Swipe	Driveway/Alley/P arking lot		None	None					0	0		5/28/2004	Property Dmg Report
250	343.900	Car	Turning Left	Descending N	Ditch	Nonjunction	Parking Lot Access Rd	Vision Obstruction	None	None	Clear	Dry	Dark, No Street Lights	0	1	Friday	1/13/2012	C Injury Accident
251	343.981	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Overturn	Nonjunction	Right Shoulder	Speed Too Fast For Conditions	None	None	Clear	Ice	Day	0	0	Sunday	1/11/2004	Property Dmg Report
252	343.985	Car	Turning Left	Ascending E	Angle Turning	Nonjunction		Failed to Yield	Speed Too Fast For Conditions	None	Cloudy	Slush	Day	0	0	Friday	1/20/2012	Property Dmg Report
252	343.985	Car	Going Straight	Ascending N	Angle Turning	Nonjunction	On Roadway	None	None					0	0		1/20/2012	Property Dmg Report
253	344.004	Truck With Trailer	Turning Right	Ascending N	Side Swipe	Intersection Related	On Roadway	Drove Left of Center	Inattention	None	Clear	Dry	Day	0	0	Wednesday	8/24/2005	Property Dmg Report
253	344.004	Car	Turning Left	Ascending N	Side Swipe	Intersection Related		Inattention	None					0	0		8/24/2005	Property Dmg Report

**Accident Injury Classification for US-95 between Thorncreek Road and Moscow  
(MP337.668 and 344.004) between 1/1/03 and 12/31/12**

<b>Injury Type</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Dead	2	0	0	1	0	0	0	1	2	0	6
Incapacitating	1	1	1	8	5	3	0	3	3	2	27
Non-Incapacitating	5	4	5	2	12	3	3	11	1	6	52
Possible	6	4	7	1	13	8	5	9	5	15	73
Unknown	0	0	0	0	0	1	0	0	0	0	1

\*From Data provided by ITD Headquarters Office of Highway Safety on Webcars.

All Crashes on US-95 Between the Lewiston Hill and Thorncreek Road (323.36 to 337.668) from 10/01/07 to 12/31/12

Total Crashes: 71 Total Fatalities: 0 Total Injuries: 37

Accident #	Milepost	Vehicle Type	Driver Action	Lane Direction	Most Harmful Event	Junction	Event Relation to Road	Contributing Circumstance 1	Contributing Circumstance 2	Road Condition	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
1	323.600	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Overturn	Nonjunction	Median	None	Alcohol Impaired	None	Cloudy	Dry	Day	0	1	Monday	2/16/2009	B Injury Accident
2	323.900	Car	Going Straight	Descending S	Rear-End	Nonjunction		Too Slow for Traffic	None		Snow	Snow	Day	0	0	Wednesday	12/29/2010	Property Dmg Report
	323.900	Tractor - 1 Trailer	Going Straight	Descending S	Rear-End	Nonjunction	On Roadway	Speed Too Fast for Conditions	None					0	0		12/29/2010	Property Dmg Report
3	324.010	Car	Avoiding Obstacle	Ascending N	Ditch	Nonjunction	Left Shoulder	Distacted IN or ON Vehicle	Overcorrected	None	Cloudy	Dry	Day	0	1	Monday	10/11/2010	C Injury Accident
4	324.100	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Cloudy	Dry	Dark, No Street Lights	0	0	Sunday	10/25/2009	Property Dmg Report
5	324.200	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Overturn	Nonjunction	Median	Speed Too Fast for Conditions	None	Poor Pavement Markings	Clear	Ice	Dark, No Street Lights	0	0	Saturday	12/13/2008	Property Dmg Report
6	324.200	Car	Going Straight	Ascending N	Animal - Wild	Nonjunction	On Roadway	Speed Too Fast for Conditions	None	None	Clear	Ice	Dark, No Street Lights	0	0	Friday	7/2/2010	Property Dmg Report
7	324.500	SUV/Crossover	Negotiating Curve	Descending S	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast for Conditions	None	None	Cloudy	Dry	Dark, No Street Lights	0	1	Wednesday	9/2/2009	Property Dmg Report
8	324.523	Car	Going Straight	Ascending N	Overturn	Nonjunction	Right Shoulder	Asleep, Drowsy, Fatigued	Inattention	None	Cloudy	Dry	Day	0	1	Wednesday	2/16/2011	Property Dmg Report
9	324.700	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending S	Overturn	Nonjunction	Median	None	None	None	Cloudy	Ice	Day	0	1	Friday	12/19/2008	B Injury Accident
10	324.700	Car	Changing Lanes	Ascending N	Cross Median	Nonjunction	Left Shoulder	Inattention	Speed Too Fast for Conditions	None	Snow	Snow	Dawn or Dusk	0	0	Tuesday	1/17/2012	Property Dmg Report
11	324.750	Car	Going Straight	Ascending N	Traffic Sign Support	Nonjunction	Right Shoulder	Speed Too Fast for Conditions	None	None	Fog	Ice	Dark, No Street Lights	0	0	Wednesday	4/4/2012	Property Dmg Report
12	324.800	Car	Passing	Ascending N	Embankment	Nonjunction	Median	Speed Too Fast for Conditions	None	None	Cloudy	Snow	Day	0	0	Tuesday	1/8/2008	Property Dmg Report
13	324.800	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Thursday	7/15/2010	Property Dmg Report
14	324.900	Car	Negotiating Curve	Ascending N	Overturn	Nonjunction	Roadside or Sidewalk	Asleep, Drowsy, Fatigued	Inattention	None	Cloudy	Dry	Dark, No Street Lights	0	1	Sunday	10/3/2010	C Injury Accident
15	324.995	Pickup	Negotiating Curve	Ascending N	Fence	Nonjunction	Private Property	Distacted IN or ON Vehicle	None	None	Cloudy	Dry	Dawn or Dusk	0	0	Sunday	11/13/2011	Property Dmg Report
16	325.200	Pickup	Going Straight	Ascending N	Ditch	Nonjunction	Right Shoulder	Speed Too Fast for Conditions	Failed to Maintain Lane	None	Clear	Ice	Dark, No Street Lights	0	0	Friday	12/7/2012	Property Dmg Report
17	325.500	Car	Going Straight	Ascending S	Ditch	Nonjunction	Left Shoulder	Failed to Maintain Lane	Inattention	None	Clear	Dry	Day	0	0	Monday	7/2/2012	Property Dmg Report
18	325.800	Car	Negotiating Curve	Descending S	Overturn	Nonjunction	Roadside or Sidewalk	Alcohol Impaired	None	None	Cloudy	Wet	Day	0	1	Sunday	9/18/2011	B Injury Accident
19	325.900	Car	Negotiating Curve	Descending S	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast for Conditions	None	None	Clear	Ice	Dark, No Street Lights	0	1	Wednesday	4/4/2012	C Injury Accident
20	325.986	Car	Going Straight	Ascending N	Traffic Sign Support	Nonjunction	Roadside or Sidewalk	Speed Too Fast for Conditions	None	None	Snow	Slush	Day	0	0	Thursday	4/5/2012	Property Dmg Report
21	325.987	Tractor - 2 Trailers	Negotiating Curve	Ascending N	Jackknifed	Nonjunction	Left Shoulder	Inattention	None	None	Cloudy	Wet	Day	0	0	Thursday	4/26/2012	Property Dmg Report
22	326.000	Car	Going Straight	Descending S	Embankment	Nonjunction	Right Shoulder	Inattention	None	High/Low Shoulder	Clear	Dry	Dark, No Street Lights	0	0	Saturday	8/30/2008	Property Dmg Report
23	326.016	Car	Negotiating Curve	Descending N	Overturn	Nonjunction	Roadside or Sidewalk	Inattention	Overcorrected	None	Cloudy	Wet	Dark, No Street Lights	0	0	Saturday	1/29/2011	Property Dmg Report
24	326.100	Pickup/Van/ Panel/SUV	Turning Left	Ascending N	Overturn	Intersection Related		Inattention	Failed to Yield	None	Cloudy	Wet	Day	0	5	Sunday	11/18/2007	A Injury Accident
	326.100	Pickup/Van/ Panel/SUV	Going Straight	Ascending N	Rear-End	Intersection Related	On Roadway	None	None	None				0	0		11/18/2007	A Injury Accident
25	326.111	Car	Going Straight	Ascending W	Overturn	Nonjunction	On Roadway	Asleep, Drowsy, Fatigued	Drove Left of Center	None	Clear	Dry	Day	0	0	Tuesday	9/18/2012	Property Dmg Report
	326.111	Pickup	Going Straight	Ascending E	Head-On	Nonjunction	On Roadway	None	None	None				0	0		9/18/2012	Property Dmg Report
26	326.300	Pickup/Van/ Panel/SUV	Going Straight	Descending S	Rear-End	Intersection Related	On Roadway	None	Inattention	None	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	8/19/2009	Property Dmg Report
	326.300	Truck With Trailer	Going Straight	Descending S	Rear-End	Intersection Related		None	None	None				0	0		8/19/2009	Property Dmg Report



27	326,500	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Overturn	Nonjunction	Right Shoulder	None	None	None	Cloudy	Ice	Dark, No Street Lights	0	0	Tuesday	1/15/2008	Property Dmg Report
28	327,012	Car	Passing	Ascending	N	Embankment	In Intersection	Median	Inattention	Improper Overtaking	None	Clear	Dry	Dark, No Street Lights	0	0	Monday	8/15/2011	Property Dmg Report
29	327,300	Car	Turning Left	Ascending	N	Rear-End	Nonjunction		None	None	None	Snow	Snow	Day	0	0	Thursday	1/31/2008	Property Dmg Report
30	327,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Rear-End	Intersection Related	On Roadway	None						0	0		1/31/2008	Property Dmg Report
31	327,400	Car	Merging	Ascending	N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Traffic	Failed to Yield	None	Cloudy	Ice	Day	0	0	Tuesday	1/15/2008	Property Dmg Report
32	327,600	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Rear-End	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	1/15/2008	Property Dmg Report
33	327,600	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	None						0	0	Friday	10/20/2009	Property Dmg Report
34	328,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Wild	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
35	328,800	Tractor - 1 Trailer	Turning Right	Ascending	S	Animal - Wild	Nonjunction	On Roadway	None						0	0	Saturday	8/7/2010	B Injury Accident
36	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
37	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
38	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	8/7/2010	B Injury Accident
39	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
40	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
41	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	8/7/2010	B Injury Accident
42	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
43	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
44	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	8/7/2010	B Injury Accident
45	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
46	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
47	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	8/7/2010	B Injury Accident
48	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
49	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
50	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
51	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
52	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
53	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report
54	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Friday	10/20/2009	Property Dmg Report
55	329,400	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Domestic	Nonjunction	On Roadway	Speed Too Fast For Conditions	None					0	0	Saturday	3/19/2011	Property Dmg Report

56	333,200	Pickup	Going Straight	Descending	S	Side Swipe	Nonjunction	On Roadway	Drove Left of Center	None	None	Cloudy	Snow	Day	0	0	Tuesday	2/15/2011	Property Dmg Report
	333,200	Pickup	Going Straight	Descending	S	Side Swipe Same	Nonjunction		None	None					0	0		2/15/2011	Property Dmg Report
57	333,400	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Overturn	Nonjunction	Roadside or Sidewalk	Other	None	None	Cloudy	Ice	Day	0	1	Thursday	12/30/2010	C Injury Accident
58	334,003	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Animal - Wild	Nonjunction	On Roadway	Vision Obstruction	None	None	Cloudy	Dry	Dawn or Dusk	0	0	Wednesday	9/30/2009	Property Dmg Report
59	334,017	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Overturn	Nonjunction	Median	Speed Too Fast For Conditions	None	None	Snow	Ice	Dark, No Street Lights	0	0	Friday	3/21/2008	Property Dmg Report
60	334,160	Car	Turning Left	Descending	S	Side Swipe Same	In Intersection	On Roadway	Inattention	Improper Turn	None	Cloudy	Snow	Day	0	0	Saturday	12/5/2009	Property Dmg Report
	334,160	Pickup/Van/ Panel/SUV	Passing	Descending	S	Side Swipe Same	In Intersection		None	None					0	0		12/5/2009	Property Dmg Report
61	334,200	Pickup	Going Straight	Ascending	N	Overturn	Nonjunction	Median	Speed Too Fast For Conditions	None	None	Cloudy	Snow	Dark, No Street Lights	0	0	Saturday	1/14/2012	Property Dmg Report
62	334,500	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Saturday	8/7/2010	Property Dmg Report
63	334,500	Pickup	Going Straight	Descending	N	Overturn	Nonjunction	Outside Right-Of-Way	Speed Too Fast For Conditions	None	None	Snow	Ice	Dark, No Street Lights	0	2	Monday	2/28/2011	C Injury Accident
64	334,621	Pickup/Van/ Panel/SUV	Negotiating Curve	Ascending	N	Overturn	In Intersection	Left Shoulder	Inattention	Overcorrected	None	Cloudy	Dry	Day	0	1	Monday	10/1/2007	B Injury Accident
65	334,732	Car	Going Straight	Ascending	N	Overturn	Nonjunction	Outside Right-Of-Way	Inattention	None	None	Cloudy	Wet	Dark, No Street Lights	0	1	Monday	1/4/2010	C Injury Accident
66	334,800	Pickup/Van/ Panel/SUV	Going Straight	Ascending	N	Overturn	Nonjunction	Roadside or Sidewalk	Speed Too Fast For Conditions	None	None	Snow	Ice	Dark, No Street Lights	0	3	Sunday	12/9/2007	C Injury Accident
67	335,300	Car	Going Straight	Descending	S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Cloudy	Dry	Day	0	0	Tuesday	3/3/2009	Property Dmg Report
68	336,600	Pickup/Van/ Panel/SUV	Going Straight	Descending	S	Animal - Wild	Nonjunction	On Roadway	None	None	None	Clear	Dry	Dark, No Street Lights	0	0	Friday	1/9/2009	Property Dmg Report
69	336,981	Car	Going Straight	Descending	S	Same Direction Turning	In Intersection		None	None	None	Clear	Dry	Day	0	0	Tuesday	10/21/2008	Property Dmg Report
	336,981	Car	Going Straight	Descending	S	Same Direction Turning	In Intersection	On Roadway	None	Inattention					0	0		10/21/2008	Property Dmg Report
70	337,180	Pickup/Van/ Panel/SUV	Negotiating Curve	Descending	S	Animal - Wild	In Intersection	On Roadway	None	None	None	Cloudy	Wet	Dark, No Street Lights	0	2	Wednesday	1/7/2009	C Injury Accident
71	337,180	Motorcycle	Negotiating Curve	Descending	S	Overturn	In Intersection	Roadside or Sidewalk	None	None	None	Cloudy	Dry	Day	0	1	Saturday	7/16/2011	B Injury Accident
	337,180	Car	Turning Left	Descending	S	Non-Contact Unit	In Intersection	On Roadway	Inattention	Failed to Yield					0	0		7/16/2011	B Injury Accident

**Appendix A.2**  
**Official High Crash Location List for District 2**



Idaho Transportation Department  
Office of Highway Safety  
Cluster Summary Non-Interstate District Report

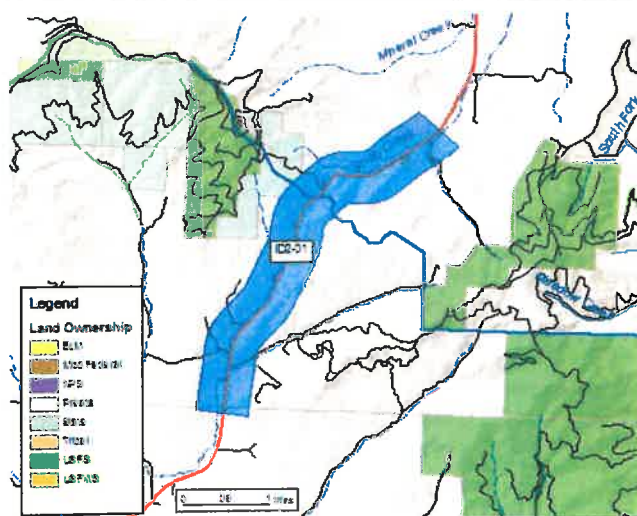
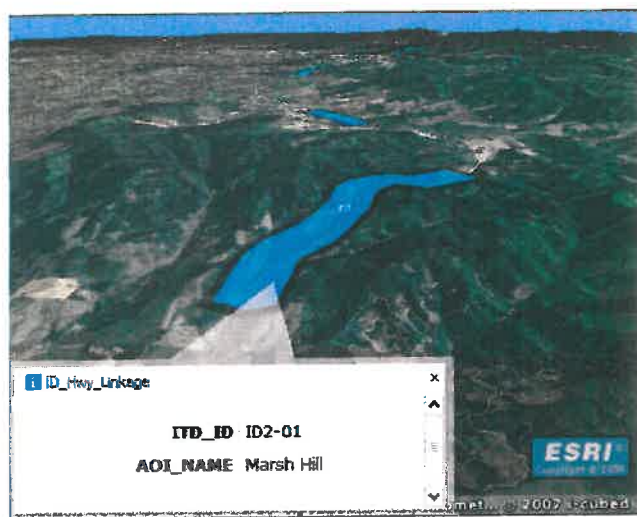
District	Rank	Route	Segment Code	& Milepost Range	Length	County	City	Frequenc Rank	Severit Rank	Rate Multiplie Rank
<u>2</u>										
	8.5	95	001540	344.568 - 344.767	0.199	Latah	Moscow	24	35	41
	12	12	001910	33.325 - 33.825	0.500	Nez Perce		42.5	37	33
	17.5	95	001540	340.620 - 341.620	1.000	Latah		52	10	104
	28.5	95	001540	282.601 - 283.101	0.500	Lewis		98.5	28	83
	34	95	001540	337.668 - 339.620	1.952	Latah		60	41	106
	37	12	001910	123.508 - 127.008	1.500	Idaho		159	32	30
	38	8	001870	17.980 - 18.480	0.500	Latah		72.5	86	9
	65	95	001540	368.736 - 369.236	0.500	Latah		140.5	46	96
	69	95	001540	303.581 - 304.081	0.500	Nez Perce		38	121	53
	76	8	001870	9.812 - 10.312	0.500	Latah		98.5	58	139
	82	12	001910	21.640 - 22.640	1.000	Nez Perce		163.5	6	191.5
	83.5	3	001800	15.050 - 15.550	0.500	Latah		140.5	95	40
	101	12	001910	36.818 - 37.818	1.000	Nez Perce		98.5	104	128.5
	119	66	002530	.000 - .992	0.992	Latah		221	100	54
	132	95	001540	349.863 - 351.863	2.000	Latah		85.5	129	172
	133.5	12	001910	30.825 - 31.825	1.000	Nez Perce		163.5	81	191.5
	133.5	12	001890	.503 - .972	0.469	Nez Perce	Lewiston	84	119	195
	141	6	001840	100.550 - 101.050	0.500	Latah		193	168	15
	146	8	001870	7.942 - 8.800	0.858	Latah		122	108	214
	147	3	001800	26.439 - 26.842	0.403	Latah		158	169	59
	148	3	001800	16.550 - 17.050	0.500	Latah		193	148	67
	154	13	001960	11.269 - 11.769	0.500	Idaho		193	178	16
	155	95	001540	355.930 - 356.430	0.500	Latah		72.5	176	142
	158	95	001540	190.626 - 191.126	0.500	Idaho		193	115	150
	178.5	8	001870	5.800 - 6.300	0.500	Latah		140.5	133	221
	180	12	001910	18.450 - 18.950	0.500	Nez Perce		140.5	158	173
	189	95	001540	280.101 - 280.601	0.500	Lewis		140.5	187	140
	191	12	001910	99.508 - 100.508	1.000	Idaho		226	131	170.5
	200	95	001540	367.736 - 368.236	0.500	Latah		140.5	223.5	96
	202	162	001950	5.427 - 6.427	1.000	Idaho		226	208	50
	203	12	001910	46.893 - 47.393	0.500	Clearwater		140.5	218	117.5
	210	12	001910	28.825 - 29.325	0.500	Nez Perce		140.5	209	165
	212	95	001540	196.189 - 196.689	0.500	Idaho		193	189	156
	217	95	001540	370.736 - 371.236	0.500	Latah		193	205.5	161.5
	225	12	001910	138.008 - 139.008	1.000	Idaho		226	200	170.5
	226	6	001850	2.748 - 3.248	0.500	Latah		193	213	178
	227	3	001800	6.000 - 8.000	1.000	Latah	Juliaetta	218.5	211	202.5



## **Appendix B.1**

### **Wildlife Crossing Areas on US-95 in Latah County Identified by Idaho Fish and Game**

## ID2-01



ITD2\_ID: ID2-01

AOI\_NAME: Marsh Hill

PRIORITY: Moderate

SPECIES: mule deer/ elk/ moose/ black bear/ small mammals

MIG\_POP:

LOC\_POP: Yes

SCALE:

HWY\_MORT:

SEASON: Spring, Summer, Fall, Winter

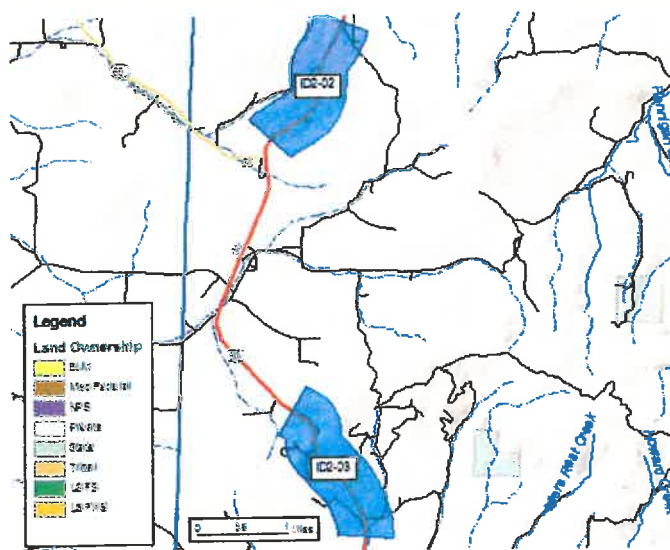
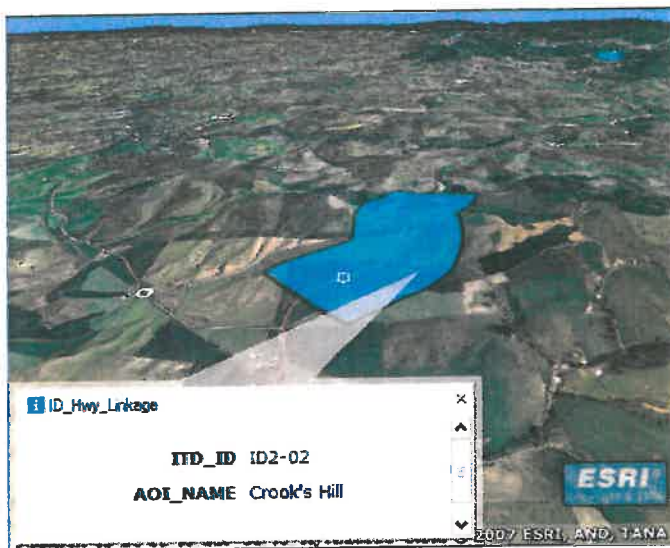
ATTRACT:

AGENCIES:

ADDITIONAL COMMENTS:

Not a high kill area.Herd of elk by rest area.

## ID2-02



ITD2\_ID: ID2-02

AOI\_NAME: Crook's Hill

PRIORITY: Low

SPECIES: mule deer/ elk/ moose/ small mammals

MIG\_POP:

LOC\_POP:

SCALE:

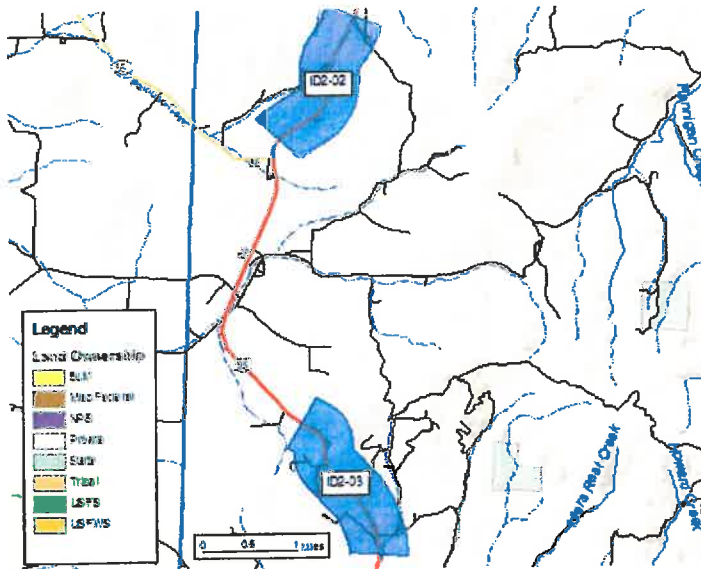
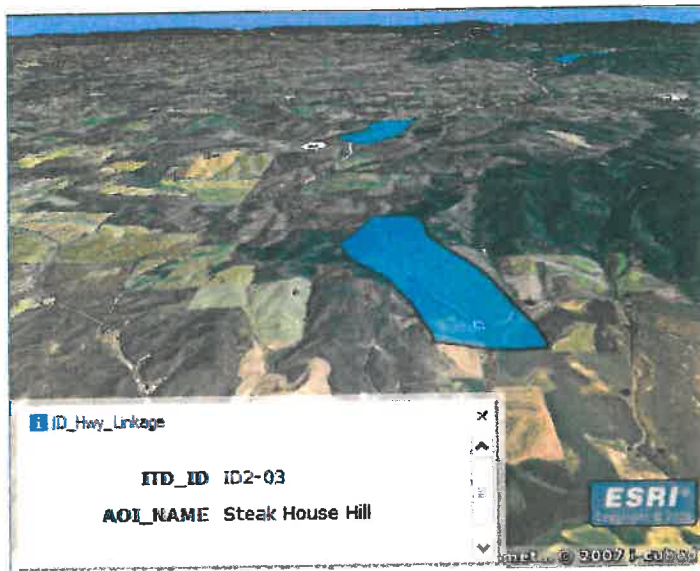
HWY\_MORT:

SEASON:

ATTRACT:

AGENCIES:

## ID2-03



ITD2\_ID: ID2-03

AOI\_NAME: Steak House Hill

PRIORITY: Moderate

SPECIES: mule deer/ elk/ moose/ small mammals

MIG\_POP:

LOC\_POP:

SCALE:

HWY\_MORT:

SEASON:

ATTRACT:

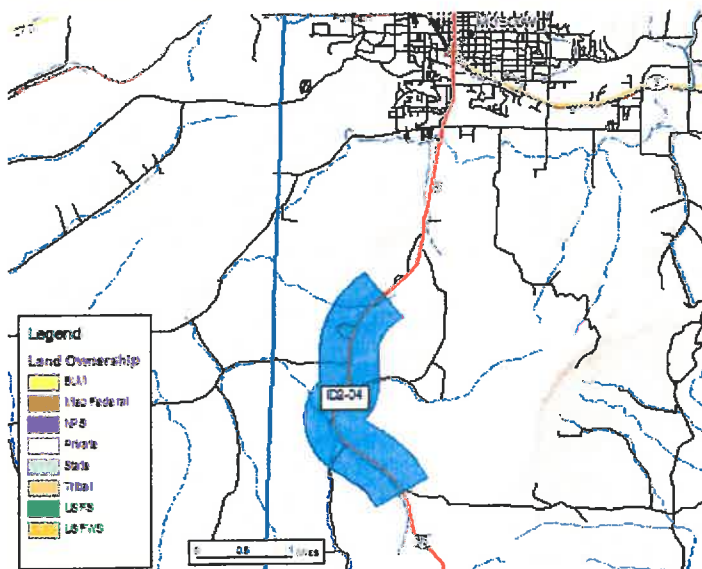
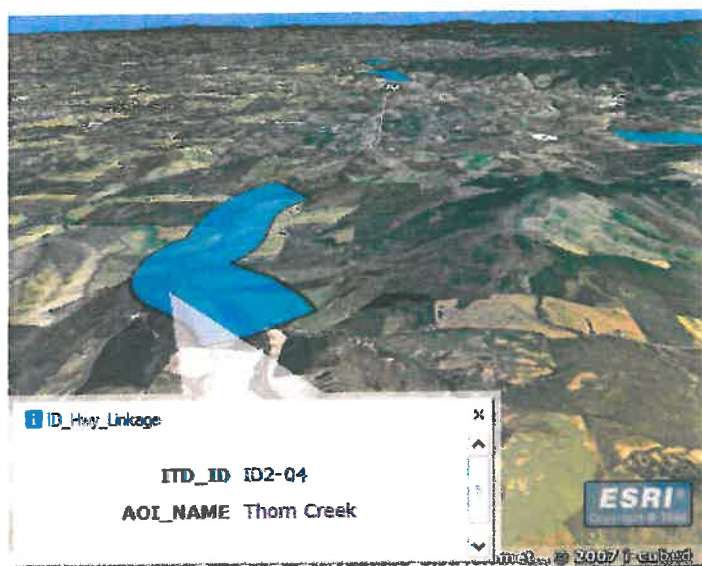
AGENCIES:

ADDITIONAL COMMENTS:

High kill area. Potential highway safety issue.



## ID2-04



ITD2\_ID: ID2-04

AOI\_NAME: Thorn Creek

PRIORITY: Low

SPECIES: mule deer/ elk/ moose/ short-eared owls/ small mammals

MIG\_POP:

LOC\_POP:

SCALE:

HWY\_MORT:

SEASON:

ATTRACT: water/riparian

AGENCIES:

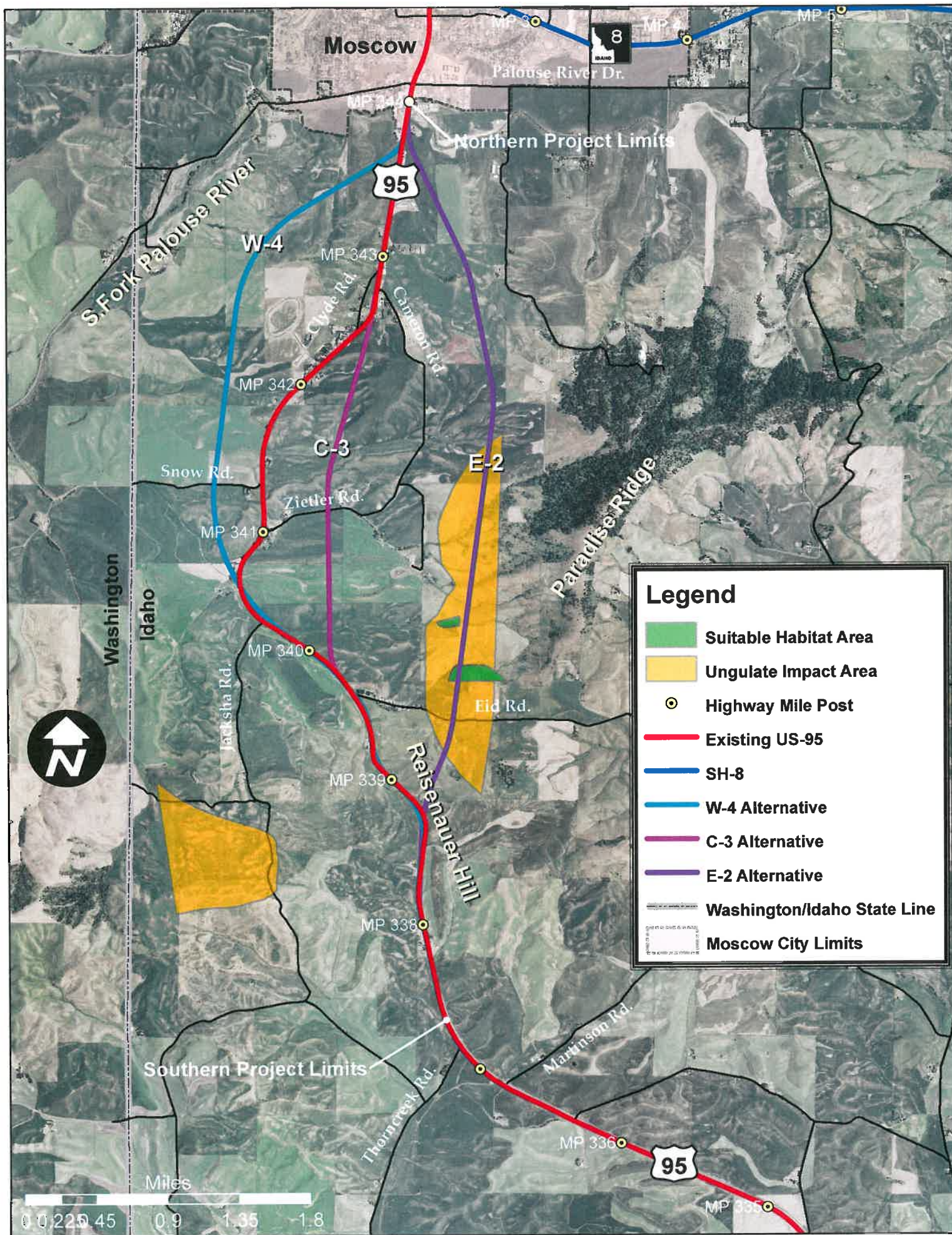
ADDITIONAL COMMENTS:

Moose population increasing in this area. Private ponds act as an attractant. Plans to make hwy wider and relocate.

## **Appendix B.2**

### **Ungulate Impact Area**





## **Appendix B.3**

### **Methods to Reduce Traffic Crashes Involving Deer: What Works and What Does Not**



**Methods to Reduce Traffic Crashes Involving  
Deer: What Works and What Does Not**

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October 2003

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## **ABSTRACT**

More than 1.5 million traffic crashes involving deer are estimated to occur each year in the United States. These crashes produce at least \$1.1 billion in vehicle damage and about 150 fatalities annually. Deer-related crashes are increasing as both deer populations and vehicular travel increase. Many methods have been used in attempts to reduce deer crashes, often with little scientific foundation and limited evaluation. This paper summarizes the methods and reviews the evidence of their effectiveness and the situations in which each may be useful. The only widely accepted method with solid evidence of effectiveness is well-designed and maintained fencing, combined with underpasses or overpasses as appropriate. Herd reduction is controversial but can be effective. Deer whistles appear useless. Roadside reflectors appear to have little long-term effect, although additional well-designed evaluations are needed before firm conclusions can be drawn. Both temporary passive signs and active signs appear promising in specific situations, but considerable research is required to evaluate long-term driver response and to improve and test deer detection technology for active signs. Other methods using advanced technology require substantial additional research and evaluation.

## **INTRODUCTION**

Deer and motor vehicles do not share the nation's highways gracefully or safely. Although precise data are not available, the best estimates suggest that more than 1.5 million deer-vehicle crashes (DVCs) in the United States in 2002 produced at least \$1.1 billion in vehicle damage, about 150 human fatalities, and at least 1.5 million dead deer (Conover et al., 1995; DeerCrash, 2003; Williams, 2003a). These numbers are rising every year as both the number of deer and the amount of motor vehicle travel continue to increase.

Many methods have been proposed and implemented in attempts to reduce DVCs. Few have been documented or evaluated well. This summary reviews the methods and evidence of their effectiveness. For the methods with solid evidence we discuss conditions most appropriate for their use. For promising methods we suggest additional research. Finally, we provide data collection and reporting recommendations that, if implemented, will help to understand the DVC problem more clearly and evaluate DVC control methods more accurately.

### **Deer Population and Crash Trends**

Deer inhabit all of the United States, including Hawaii, where they have escaped from captivity. White-tailed deer are common east of the Rocky Mountains, especially in northeastern, southeastern, and midwestern states; mule deer are found from the Rocky Mountains west, with smaller populations of black-tailed deer in some locations. In southern areas, white-tailed deer usually occupy fixed range areas year-round. In northern areas with deep snow, white-tailed deer may travel many miles between summer

ranges and winter deer yards. These movements depend somewhat on winter severity and spring green-up. Mule deer have regular migratory routes between summer and winter ranges.

Deer population totals are difficult to estimate, but there is abundant evidence that deer populations have increased over the past century. McCabe and McCabe (1997) estimated a North American white-tailed population of 24-33 million in 1500, before European settlement began, which dropped below 2 million by 1900 and then rose to 16-17 million by 1997. Other estimates placed the total U.S. deer population at 25-30 million by the end of the twentieth century; for example, Knapp (2001) estimated more than 27 million deer. Knox (1997) estimated that Virginia's deer population increased from about 25,000 in 1923 to about 900,000 in 1994.

Nationwide DVC counts also are difficult to estimate, but there is strong evidence that they are increasing. Most state crash data files record crashes with animals but do not distinguish deer from other animals such as moose, elk, horses, and cattle. The National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System, a census of all fatal traffic crashes, shows an average of 154 fatal crashes involving animals in the four years 1998-2001, compared with an average of 111 in the four years 1992-95, an increase of 39 percent. NHTSA's General Estimates System estimates about 274,000 total police-reported crashes with animals annually in 2000-01 compared with 222,000 in 1992-93, an increase of 24 percent (Williams, 2003a). Data from states that distinguish deer from other animals suggest that most animal crashes involve deer: 99.7 percent in Michigan (Highway Safety Information System (HSIS), 1995), more than 90 percent in Minnesota (HSIS, 1995), and 93 percent in Pennsylvania (Williams, 2003a).

DVCs increased by 54 percent in Pennsylvania from 1994 to 2000 (Williams, 2003a), by 51 percent in Iowa from 1990 to 1997 (Hubbard et al., 2000), and by 69 percent in five states combined (Illinois, Maine, Michigan, Minnesota, and Utah) from 1985 to 1991 (HSIS, 1995). In 1999, 16 percent of all reported traffic crashes in Wisconsin were DVCs, up from 5 percent in 1978 (DVCR Working Group, 2000). The number of DVC claims at a major automobile insurance company rose 21 percent from 1998 to 2001 (Williams, 2003b).

Many DVCs are not reported to police. In a small telephone survey in New York, Decker et al. (1990) found that police were notified of about half, and insurance companies of less than half, of the DVCs. Taking the police underreporting into account, Conover et al. (1995) estimated that about 1.5 million DVCs occurred annually in the mid-1990s. The reported crashes alone produced more than \$1.1 billion in vehicle damage (in 1993 dollars); the unreported crashes added additional vehicle damage costs. More recently, an estimated 131,500 DVCs occurred in 2000 in the five upper midwest states of Illinois, Iowa, Michigan, Minnesota, and Wisconsin, producing 23 deaths, 4,650 injuries, and \$222 million in vehicle damage (DeerCrash, 2003).

DVCs are seasonal. White-tailed deer DVCs peak in October and November during the breeding season, with a secondary peak in May and June as yearling deer disperse from their birth ranges (Allen and McCullough, 1976 (Michigan data); Decker et al., 1990 (New York data); Puglisi et al., 1974 (Pennsylvania data); HSIS, 1995 (data for five states combined)). Mule deer DVCs are most frequent during the spring and fall migrations (Messmer et al., 2000). DVCs occur predominantly in darkness, on high-speed, two-lane, rural roads (HSIS, 1995; Williams, 2003a), especially when forest cover is close to the roadway (Finder et al., 1999).

### **Study Approach**

We reviewed both published studies and other information obtained from highway safety, motor vehicle insurance, and natural resources sources. Three review studies were especially useful: Danielson and Hubbard (1998), DeerCrash (2003), and Putman (1997). The DeerCrash website ([deercrash.com](http://deercrash.com)) contains an extensive bibliography and periodically updates summaries of information on specific methods. Studies involving animals other than deer were not reviewed systematically but were included when appropriate.

Three general strategies to reduce DVCs are to modify driver behavior, modify deer behavior, or reduce the number of deer. Each can be attempted in several ways. We summarize the theoretical basis and supporting evidence for each method and assess the available evaluation studies. We did not conduct a formal meta-analysis with specific criteria to define high-quality studies. Rather, we give more weight to methods with evidence from studies with sound designs, controls for potentially confounding influences, adequate sample sizes, and consideration of how the method's effectiveness may change over time.

### **METHODS TO AFFECT DRIVER BEHAVIOR**

Three methods to affect driver behavior are to increase driver awareness of deer and the possibility of DVCs, improve the visibility of deer on or approaching roadways, and reduce driving speeds so drivers have more time to avoid crashes.

#### **General Education**

General education consists of efforts to provide information about DVC dangers so drivers will watch more carefully for deer and drive more slowly. Typical methods include news stories and public awareness campaigns in peak DVC seasons. About half the states use some form of general education (Romin and Bissonette, 1993; Sullivan and Messmer, 2003).

None of the general education campaigns has been evaluated. In other traffic safety areas such as impaired driving and occupant protection, stand-alone general education campaigns have not been effective in modifying driver behavior (O'Neill, 2001; Williams, 1994). Campaigns can be effective

when they present new information that directly affects drivers and that is reinforced by something drivers can observe. For example, publicity announcing increased enforcement of a safety belt use law can be effective when the publicity is followed with extensive law enforcement presence. It is unlikely that DVC general education is useful unless it provides information on very specific and time-sensitive situations, such as the beginning of mule deer migration across a short road segment. In these situations, either temporary passive or active signs may be more effective than general campaigns.

## Signs

Roadside signs attempt to warn drivers of specific locations and even times when deer may be present. Passive signs have a fixed message at all times, though they may use lights or animation to attract attention. Active signs are lighted when deer are detected on or near the roadway.

**Passive signs:** Roadway signs warning drivers of deer-crossing locations are used in almost all states (Romin and Bissonette, 1993; Sullivan and Messmer, 2003). Most are passive: fixed signs in fixed locations, with the same message in words or pictures at all times and in all seasons, usually a standard yellow diamond sign with the figure of a deer, as specified in the *Manual of Uniform Traffic Control Devices*.

No studies have evaluated the effectiveness of standard deer warning signs in increasing driver awareness of deer, in reducing driving speeds, or in reducing DVCs. Because passive signs are used so frequently at locations where deer are present only occasionally, drivers probably ignore them (Putman 1997, Sullivan and Messmer, 2003).

**Lighted and animated signs:** Three methods have been used to attempt to increase the effect of deer warning signs. The first is to make the signs more visible with lights, flags, or even a lighted and animated figure of a deer. In a small study of lighted and animated signs, Pojar et al. (1975) found a slight effect on vehicle speeds but no effect on DVCs.

**Temporary passive signs:** The second method, used on roads crossed by mule deer migration corridors, installs or uncovers passive signs only during migration periods. Messmer et al. (2000) used large warning signs with battery-powered flashing amber lights at the ends of a two-mile and a four-mile roadway section, together with smaller flashing signs at each milepost within the two sections. Travel speeds during three migration periods when the signs were displayed and activated dropped about 8 mph from pre-migration levels, and DVCs dropped by 50 percent in the spring and 70 percent in the fall migration compared with three previous years. In a more extensive study of the same technique, using a more powerful research design, Sullivan et al. (preprint) placed similar temporary lighted signs on five roadway sections in three states with an adjacent section, separated by a buffer section, as a control. DVCs were about 50 percent lower in signed than in control sections across all sites. Vehicle speeds also were lower in signed sections.



**Active signs:** The final method uses signs that are activated only when deer are detected near the roadway. Detection methods include infrared light (in Minnesota), radar (Wyoming), laser (Washington), radio frequency beams parallel to the roadway (Indiana), and heat detection cameras (British Columbia). In Washington, radio collars have been attached to 8 elk in a herd of 80 near a segment of Highway 101. Flashing “elk warning” signs are activated when any of the collared elk come within one-quarter mile of the roadway (DeerCrash, 2003).

The only evaluation of these methods to date is a small study of a segment of U.S. 30 in Nugget Canyon, Wyoming (Gordon et al., 2001). An eight-foot fence was erected along both sides of the roadway, with a 300-foot gap through which migrating deer could cross. Two deer detection systems were used: infrared heat sensors, and geophones that detect ground vibrations combined with infrared light beams that detect motion across the beam. Both systems detected almost all deer (very few false negatives). The heat sensor system also was activated by birds and snow (more than 50 percent false positives), while the combined geophone and infrared system had no false positives. Vehicle speeds dropped by about 4 mph when the “deer on road when lights are flashing” sign was lighted, regardless of whether the sign was triggered by a deer, a false positive, or remotely by a researcher. DVC data were not collected, and it is unclear whether the observed speed reduction would be large enough to affect DVCs.

In summary, standard passive signs, although low-cost and low-maintenance, are unlikely to have any effect, though no evaluations substantiate this conclusion. The one study of lighted signs showed no effect on DVCs. Initial results are encouraging for temporary passive signs used in defined mule deer migratory corridors during migratory periods, which can vary from year to year. More testing is needed before the potential of active signs can be evaluated accurately. The two main issues are to refine detection technology to minimize false positives and false negatives and to determine the effects of these signs on driver behavior and DVCs.

### **Deer Visibility**

The sooner a driver sees a deer on or approaching a roadway, the better the chance of avoiding a crash. Deer visibility can be improved through roadway lighting, roadside clearing, or methods to enhance drivers’ nighttime vision.

**Roadway lighting:** Roadway lighting is commonly used to improve driver vision in urban areas, freeway interchanges, and other potentially dangerous locations. Because most DVCs occur at night, roadway lighting is an obvious potential countermeasure. In the only study of the effect of roadway lighting on DVCs, Reed and Woodard (1981) studied a single three-quarter-mile section in Colorado using a one week on/one week off design. The lighting did not affect overall deer crossings or driving speeds, and the study was too small to detect an effect on DVCs.

Roadway lighting is expensive. Only two states reported using lighting to control DVCs (Romin and Bissonette, 1996). It is unlikely to be useful except in very specialized situations.

**Roadside clearing:** A broad clear roadside area allows drivers to see deer that may enter the road and reduces forage that may attract deer close to the roadway. Finder et al. (1999) found that the most important landscape or topographical feature predicting high DVC sites in Illinois was the distance between the roadway and forest cover. In a study in Norway, Jaren et al. (1991) found that a clear 20-30 meter strip reduced crashes between railway trains and moose by more than 50 percent. Putman (1997) and Bruinderink and Hazebrook (1996) recommend reducing forage near the roadside. Roadside clearing raises many issues beyond DVC control, such as the costs of acquiring roadside right-of-way and of maintaining a clear area, the potential safety benefits if trees adjacent to the roadway are removed, and the aesthetics of cleared areas along secondary roads.

**Infrared detection from vehicles:** A potential long-term strategy to improve drivers' night vision is to equip vehicles with infrared technology that can detect deer and other heat-emitting objects and transmit information to drivers on heads-up displays. These systems have been introduced recently in Cadillacs (General Motors, 2000) and as aftermarket equipment for heavy trucks (Bendix, 2002), but their effects on DVCs have not been evaluated. Any strategy involving vehicle modifications requires many years to implement in the majority of the vehicle fleet.

### **Speed Limits**

An approach often suggested to reduce traffic crashes in many situations is to attempt to reduce travel speeds through lower speed limits. Unfortunately, lower speed limits do not necessarily produce lower travel speeds (Transportation Research Board, 1998). The only study to evaluate the effects of speed limit changes on wildlife crashes involved short road segments in the highly regulated environment of Jasper National Park. Bertwistle (1999) compared sheep and elk crashes for eight years before and eight years after the speed limit was reduced from 90 to 70 km/h on three highway segments of 2.5 km, 4 km, and 9 km. He found that sheep crashes *increased* on these segments and decreased on adjoining segments where the speed limit remained at 90 km/h. Elk crashes increased on the speed-limit-reduction segments and increased more on the unchanged segments. No travel speed data were collected to measure the direct effect of the speed limit change. Bertwistle notes that differences in sheep and elk behavior likely explain the crash result differences.

Speed limit reductions together with deer warning signs may be useful in very specific locations with high deer populations or migration routes. However, unless speed limits are actively enforced, they are unlikely to affect travel speeds significantly, and perhaps not even then. Although seven states reported reducing speed limits in an attempt to control DVCs (Romin and Bissonette, 1996), the effects of these speed limit reductions have not been evaluated.

## METHODS TO AFFECT DEER BEHAVIOR

Deer behavior management strategies attempt to either physically block deer from the roadway or make the roadway less attractive to deer by appealing to their senses of sight, sound, or smell.

### Physical Control

**Fencing:** Fencing provides a physical barrier that attempts to prevent deer from entering the roadway. Every review of DVC control methods during the past 20 years has concluded that properly designed and maintained fencing, used together with appropriate underpasses, overpasses, and one-way deer gates, is the most effective method for reducing DVCs both in the United States (Danielson and Hubbard, 1998; Reed et al., 1979) and in Europe (Bruinderink and Hazebroek, 1996; Putman, 1997; Staines et al., 2001). State wildlife administrators agree, while state highway administrators rank fencing second to reducing deer herd size (Sullivan and Messmer, 2003). In 1992, 11 states had erected fencing to reduce DVCs (Romin and Bissonette, 1996). Crashes with moose were reduced by 80 percent after about 1,300 km of main roads in Sweden were fenced (Lavsund and Sandegren, 1991).

Aside from herd reduction, fencing is the only DVC method that unquestionably is effective if applied properly. Fencing that is sufficiently high, strong, long, and well-anchored with no gaps or tunnels will prevent deer from crossing a fenced road section. The issues with fencing involve the details and side effects.

- *Physical characteristics:* Fencing must be sufficiently high and long. Several studies have found 2.4 m (7.8 ft) fencing effective (Ward, 1982 (in Wyoming); Reed et al., 1982 (in Colorado); Ludwig and Bremicker, 1983 (in Minnesota)). White-tailed deer will jump a 2.2 m (7.4 ft) fence in search of food (Bellis and Graves, 1978). Fencing must extend far enough along a roadway to discourage deer from detouring around the ends of the fenced section. The necessary length depends on deer movement patterns. After one year's experience, Ward (1982) extended a fenced section from 6.7 to 7.8 miles and reduced end runs substantially. Electric fencing, currently being studied in Michigan, may provide an effective alternative to chain-link fencing (DVCR Working Group, 2000). Curtis et al. (1994) summarized the characteristics and effectiveness of various fencing types used to prevent deer from damaging crops.
- *Maintenance:* Regular checks are required to repair tunnels and breaks caused by erosion, animals, falling trees, and people. Deer regularly test a fence and are quick to pass through any breaks or gaps (Ward, 1982). Deer can crawl through openings less than 10 inches high under a fence (Bellis and Graves, 1978; Falk et al., 1978).
- *Effect on deer movements:* Fencing design should consider deer movement patterns and provide safe passage routes, as appropriate, through underpasses or other methods.

- *Escape routes:* Deer that manage to enter a fenced roadway need some way to escape. One-way gates have been found generally successful (Reed et al., 1974; Ward, 1982; Ludwig and Bremicker, 1983).
- *Costs:* Effective fencing is costly to construct and maintain. Iowa recently estimated construction costs for 8 ft chain-link fence on one side of a roadway at \$42,000 per mile (Danielson and Hubbard, 1998).
- *Other effects:* Roadway fencing or more substantial physical barriers may have other benefits such as reducing noise in adjacent properties or preventing pedestrian access to high-speed roads. Fencing and barriers may have positive or negative aesthetic implications.

**Underpasses and overpasses:** Deer underpasses, and more rarely used overpasses, allow deer to cross a roadway without encountering vehicles. Deer sometimes use underpasses or overpasses created when highways cross rivers or tunnel through ridges. Seven states report using underpasses specifically to allow deer crossings (Romin and Bissonette, 1996). Olbrich (1984) noted 824 under- and overpasses for animals on 823 km of federal highway in West Germany. To be effective, fencing or other barriers are required to channel deer to underpasses and overpasses.

Ward (1982) describes how a system of fencing and six underpasses was used along 7.8 miles of interstate highway crossing a mule deer migration route. The system did not disrupt deer movement and virtually eliminated DVCs. Other studies consider whether and how underpasses and overpasses are used rather than how they affect DVCs. Deer can be reluctant to use them, even when highly motivated to move along a migration route or to forage (Reed et al., 1975). Deer can remain wary or frightened even after several years of experience with the same underpass (Reed, 1981). Ward (1982) placed forage in underpasses to attract deer.

Factors affecting the use of underpasses and overpasses include their locations in relation to natural deer paths, size (wide openings and short lengths), design (earth floors), visual appearance (exit clearly visible from entrance, light walls and ceiling), and woody cover at the entrances (Danielson and Hubbard, 1998; Hartmann, 2003; Putman, 1997). In particular, some studies propose a minimum acceptable underpass “openness factor” of entrance area divided by underpass length (Putman, 1997).

Fencing and underpasses have been used to assist various species. Hartmann (2003) summarizes several case studies of underpass and overpass use by elk, bear, panther, mountain goats, and even salamanders. Singer and Doherty (1985) describe an underpass construction for mountain goats that directed almost all goats under rather than across the highway. Foster and Humphrey (1995) review other useful studies.

Underpasses and overpasses are expensive when included in original highway construction. Adding them to an existing highway is even more expensive.

**At-grade crosswalks:** Crosswalks may provide a middle ground between a fully separated underpass or overpass and uncontrolled crossings marked only with signs. In the only study to date, Lehnert and Bissonette (1997) installed nine crosswalks on about 13 miles of two-lane and 4 miles of divided four-lane highways in Utah, with similar adjacent roads used as controls. At each crosswalk, fencing and landscaping directed deer to the crosswalk area. Because fencing was not permitted on the highway shoulder, the deer were channeled to the highway on a dirt path bordered by cobblestones. A similar path bordered by cobblestones crossed the divided highway's median strip. White painted cattleguard lines bounded the path across the highway surface. One-way gates in the fencing near the crosswalks allowed deer that moved beyond the crosswalk area to leave the roadway. Passive signs warned drivers to expect deer in the crosswalk areas.

The crosswalks appeared to decrease DVCs by about 40 percent, although the small sample size precluded any definitive conclusions. The crosswalk design of cobblestones and cattleguard stripes directed many, but not all, deer across the road as intended. Although drivers may have been more alert for deer at crosswalk areas, fewer than 5 percent responded to crosswalk signs by slowing down or turning on their high-beam headlights.

Crosswalks may be worth additional study to determine if design improvements can contain deer more effectively and if active signs that detect deer in the crosswalk area can improve driver awareness and actions.

Crosswalks, underpasses, and overpasses are more likely to be effective for western mule deer than eastern white-tails. Mule deer have defined migratory routes across highways, so DVCs are confined to relatively few locations where these expensive control methods can be justified. In contrast, white-tailed deer crashes occur throughout substantial lengths of two-lane, rural roads (Maine Department of Transportation, 2002). Further, DVCs occur most frequently in the fall breeding season, when antlered males are chasing females. At these times, crosswalks or other methods short of the complete physical control provided by substantial fences are unlikely to keep deer off the highway.

### **Sensory Control**

**Reflectors:** Reflectors, used in Europe and some areas of the United States for more than 30 years, are the most contentious DVC control method. They have strong advocates, strong opponents, and conflicting results from more than 10 studies. The most commonly used and most frequently evaluated system, manufactured by Swareflex, consists of reflectors installed on posts at regular intervals along the roadway. Light from vehicle headlights is reflected to form a continuous "visual fence" of red, blue-green, or white light that deer are expected not to cross. Red reflectors form a visual barrier that humans cannot detect, so that it does not distract drivers. In 1992, 22 states reported using reflectors (Romin and Bissonette, 1997).



The basic behavioral questions about reflectors are whether deer can see light in the wavelengths used, whether deer are reluctant to cross such light beams, and whether deer become habituated to light beams over time. Zacks (1986) studied the effect of red and white light from Swareflex reflectors on penned white-tailed deer. He found no evidence that a beam of red or white light produced by reflectors from a static source, as opposed to a moving vehicle, affected deer behavior. Ujvari et al. (1998) exposed fallow deer in a large forested area to light from WEGU reflectors (a design similar to Swareflex) during a period of 15 nights. They found the proportion of deer that did not react to the reflected light increased over time: on the first night, 99 percent of the deer fled from low-intensity reflected light, while on the final three nights about 40 percent were completely indifferent to higher intensity light.

DeerCrash (2003) describes and summarizes 10 studies that attempt to evaluate the effect of roadside reflectors on DVCs using different study designs. The overall results are at best ambiguous.

- Four studies used designs that alternately cover and uncover the reflectors along a roadway segment. One found reflectors effective and three did not.
- Four studies used before/after designs. One found reflectors effective, one did not, and two had inconclusive results.
- Two studies used treatment/control designs. One found that reflectors were effective at some sites but not at others and the other study found no effect.

The best study in terms of its design, size, and power is Reeve and Anderson (1993), who used a cover/uncover design with control segments for three years on a 24.1 km segment of U.S. 30 in Wyoming that crosses a major mule deer migration route. They recorded 126 DVCs when the reflectors were uncovered, 64 when covered, and 147 on control segments. They concluded that the reflectors had no effect on DVCs.

Schafer and Penland (1985) provide the most positive site-specific evidence of effectiveness. They studied four roadway sections totaling 3.68 km in Washington during three years, in an area populated largely by white-tailed deer. They also used a cover/uncover design but with no control segments. They recorded 52 DVCs when reflectors were covered and only 6 when uncovered, concluding that the reflectors were highly effective.

Pafko and Kovach (1996) summarize results from a larger but less controlled application in Minnesota. Reflectors were installed at 16 road segments totaling 16.35 miles, four segments each in coniferous forest, prairie farmland, central hardwood, and metropolitan hardwood habitats. Average annual DVC counts on these segments for several years before and seven years after installation show 79 to 90 percent reductions in DVCs in the three rural habitats from pre-installation DVC averages of 98 to 214. In the metropolitan habitat, DVCs increased by 87 percent from a pre-installation average of 11.8.

These three examples illustrate the difficulties of drawing definitive conclusions from even the best studies. The very substantial reductions from high DVC totals found by Pafko and Kovach (1996)

suggest significant effects even though their simple before/after design does not control for other factors that may influence DVCs and their DVC counts may not be completely accurate. However, the authors note that estimated statewide deer populations were increasing during the study, DVCs did not decrease substantially on other roads, and the reductions appeared stable for several years. The increase in metropolitan areas may be due to small sample sizes, traffic volume increases, or reflector ineffectiveness on heavily traveled roads. Reeve and Anderson (1993) and Schafer and Penland (1985) reach very different conclusions from similar studies. Schafer and Penland had a considerably smaller study, with no control area, in an area populated largely by whitetails, while Reeve and Penland's study was on a mule deer migratory route.

If reflectors are effective, they offer obvious advantages. They are cheaper to install and maintain than physical barriers created with fencing and underpasses, though their cost is not insignificant — an estimated \$8,000 to \$10,000 per mile for installation (Danielson and Hubbard, 1998) plus annual maintenance to repair or replace damaged reflectors. Reflectors form a barrier only when vehicle headlights are present, so they allow deer to cross roads freely during daylight hours. However, the evaluations to date leave many questions unanswered. There appears to be no solid behavioral evidence that deer are reluctant to cross a light beam produced by reflectors. Do deer cross a beam at will, as suggested by Zacks (1986)? Do deer become habituated to such a beam, as found by Ujvari et al. (1998)? Are reflectors effective on high-volume roadways where there are few breaks in traffic to permit deer to cross? Are they effective on migratory routes or low-volume roads through established range areas where deer move freely?

Simple metal mirrors to reflect vehicle headlights as white light flashes also have been installed in a manner similar to reflectors. It appears that deer rapidly become accustomed to them, and they corrode quickly (Gilbert, 1982; Putman, 1997). Lavsund and Sandegren (1991) concluded from a large experiment that mirrors had no effect whatsoever on moose crashes in Sweden.

**Flagging:** An early attempt to influence deer behavior through sight was based on the observation that white-tailed deer raise their tails as a warning sign to other deer. Graves and Bellis (1978) placed rear-view silhouette models of deer with raised tails along a highway. These deer flag models did not affect deer movements (see also DeerCrash, 2003).

**Whistles:** Deer warning whistles have been available to the public for more than 20 years. A typical whistle is attached to a vehicle and produces ultrasonic noise in the range of 16-20 kHz when vehicle speed exceeds about 30 mph (DeerCrash, 2003). Whistles are based on the presumption that deer can hear and will be warned away from noise in this range. Twenty states reported using whistles in 1992 (Romin and Bissonette, 1997), although state wildlife agency and transportation department administrators ranked whistle effectiveness lowest of all common methods (Sullivan and Messmer, 2003).

Romin and Dalton (1992) conducted the only high-quality study of whistle effects. They drove past 150 groups of deer at distances up to 100 meters and a speed of 65 km/h, observing deer behavioral responses. Two common brands of whistles had no effect on deer behavior, even when deer were within 10 meters of the road. Romin and Dalton were unaware of any research demonstrating that deer are frightened by sound in the range produced by whistles. In a review of the effects of sound on animals and birds of many species, Bomford and O'Brien (1990) concluded that sounds of the type produced by whistles (steady noise rather than specific alarm or distress signals) may influence movements in the short term but that mammals and birds become accustomed to these sounds after long or frequent exposure.

Several less scientific reports and considerable anecdotal evidence either support or deny the effectiveness of whistles. For example, Cline (1989) reported on a one-year test of whistles attached to 42 Michigan State Police vehicles in five locations; 43 vehicles in five other locations served as controls. There were 14 DVCs involving police vehicles in the test locations and 5 in the control locations during the prior year; during the experimental year, there were 5 DVCs in each location. Based on these results, Cline concluded that the whistles were effective.

Roadside whistles, as opposed to vehicle-mounted whistles, are being tested in Saskatchewan (Beaupré, 2002). A series of noisemaking devices together with vehicle detection sensors was mounted along a 5 km section of highway. When the sensors detect a vehicle, the device warns deer with either sound or light signals.

In summary, there is no firm evidence that whistles are effective and considerable evidence that they are not. In the only high-quality study (Romin and Dalton, 1992), deer were not affected by whistles. It is unclear whether deer can hear whistles, whether whistle noise is covered by traffic noise, or whether deer become accustomed to whistle noise over time. In the absence of any solid studies that whistles are effective, they cannot be recommended.

**Repellents:** Chemical and biological substances attempt to repel deer in two ways. Contact repellents with unpleasant tastes applied to a food source seek to reduce or eliminate feeding. Area repellants with unpleasant smells, such as predator urine, seek to prevent deer from entering or crossing an area.

Several studies, summarized in El Hani and Conover (1995) and DeerCrash (2003), evaluated the effectiveness of various repellents on the feeding patterns of white-tailed and mule deer. Some repellents reduced feeding, but none completely stopped deer from feeding or entering an area.. The studies also showed that deer habituate to repellents and will not be deterred by them if sufficiently hungry. No study in the United States has evaluated the effects of repellents in reducing DVCs, and repellents are not used systematically in any state to control DVCs (Romin and Bissonette, 1996). Putman (1997) reported that repellent "scent fences" have been studied in Germany, with mixed results. Early results from a repellent "odor fence" installed along 53 km of roadway in British Columbia, using posts and boxes every 0.25 km,

reportedly showed a 36 percent DVC reduction from the prior 10 years, and a test of four different repellents along 16 km of roadway on Vancouver Island began in 1999 (DVCR Working Group, 2000).

Repellents are most likely to hinder deer movements when applied in conjunction with fences or other physical barriers (Curtis et al., 1994). Jordan and Richmond (1992) demonstrated that an electric fence treated with repellents was more effective in deterring deer from feeding on apples than an electric fence alone, although repellent effectiveness decreased significantly after several weeks. The combination of repellents and fences has proved useful for home gardens and agricultural fields (Curtis et al., 1994) but would be expensive to install and maintain along highways.

**Intercept feeding:** In certain locations, deer regularly cross roadways to feed. Wood and Wolfe (1988) studied three such road sections in Utah for two years. On the treatment portion of each section, they established and maintained feeding stations more than 1,200 feet away from the roadway. They found lower DVCs in some, but not all, treatment areas. They noted that a feeding program has continuing costs, may make deer dependent on the food provided, and may attract more deer to the roadside. They concluded that intercept feeding may be useful only temporarily in specific situations.

**Salt alternatives:** Some authors suggest that deer may be attracted to roadways by salt applied to melt ice in the winter and that other deicing substances should be used instead (Feldhamer et al., 1986; DeerCrash, 2003). However, no studies have investigated the issue.

## **METHODS TO AFFECT DEER POPULATIONS**

If there were no deer, or no deer near highways, there would be no DVCs. Deer herd reduction has long been considered an appropriate strategy for reducing DVCs as well as crop and garden losses caused by deer (DeNicola et al., 2000). State transportation department administrators rated herd management as potentially the most effective DVC control strategy, while state wildlife administrators rated it second only to fencing (Sullivan and Messmer, 2003).

The only herd reduction strategy that would completely eliminate DVCs would be to eliminate all deer, which the general public would not accept. Indeed, even in a high DVC area, only a minority of the public wished to reduce the deer population (Stout et al., 1993). In a survey of 10 randomly selected large metropolitan areas, 63 percent of respondents wanted no change in the number of deer in their neighborhoods, 27 percent wanted more deer, and only 10 percent wanted fewer deer (Conover, 1997).

Two reports document how local deer herd management policies can affect DVCs. In 1972, Princeton, New Jersey, passed a no-firearms-discharge ordinance. DVCs then increased by 436 percent in 10 years, from 33 in 1972 to 144 in 1982, compared with no statistically significant change in two adjoining townships where firearms hunting continued to be allowed (Kuser, 1995). Princeton then tried to reduce DVCs and other deer-related problems with deer whistles, reflectors, and increased bowhunting, but DVCs continued to rise, to 167 in 1991 and 227 in 1992.

Irondequoit, New York, began a selective deer culling and bowhunting program in 1993. About 125 deer were removed in each of the next eight years. DVCs dropped from 227 in 1992 to about 100 annually in the late 1990s (Eckler, 2001).

Although herd reduction can be controversial, common sense and expert opinion agree that substantial and continued herd reductions will reduce DVCs (Danielson and Hubbard 1998; DVCR Working Group, 2000). But many questions remain, including the effectiveness of herd reductions over a large area on DVCs, the amount of herd reduction necessary to reduce DVCs substantially, how deer range and migration patterns influence the effect of herd reductions on DVCs, and how to design cost-effective herd reduction programs (Brown et al., 2000). Wisconsin and other states are pursuing aggressive deer herd reduction programs (DVCR Working Group, 2000). Data from these programs may help address these questions.

## **SUMMARY AND CONCLUSIONS**

### **Effective Methods with Solid Scientific Evidence**

Fencing, combined with underpasses and overpasses as appropriate, is the only broadly accepted method that is theoretically sound and proven to be effective. Fencing is expensive to construct and maintain, and even the best fencing will not prevent all deer from entering a roadway.

### **Promising Methods Where More Information Is Needed**

Herd reduction is unquestionably effective in reducing DVCs if the deer population in a specific area is reduced by a substantial amount. More research is needed on the minimum area needed for herd reduction to have a substantial effect and on the expected impact of a given amount of herd reduction on DVCs. A herd reduction strategy should be part of an overall wildlife management program that balances the costs and benefits of maintaining wildlife populations.

Roadside clearing may be effective, although there is very limited information supporting it. Roadside clearing must be part of a broader strategy of roadway design and maintenance.

Both temporary passive signs and active signs appear promising in specific situations, but considerable research is required to evaluate long-term driver response and to improve and test deer detection technology for active signs.

At-grade crossings for deer, perhaps combined with active signs, offer a long-shot chance at providing greater safety than uncontrolled crossings marked only with passive signs. At-grade crossings are most promising for highways crossing mule deer migration routes in western states.

Infrared driver vision technology in vehicles may be effective in the future. Its development and implementation will depend on its usefulness in improving driver night vision overall, not on its effect on DVCs.



### **Methods With Limited Demonstrated Effectiveness**

Although reflectors have been studied fairly often, most studies were not designed or conducted well. The balance of the available evidence is that reflectors have little long-term effect, especially for white-tailed deer in suburban areas. Additional high-quality studies would be useful to investigate deer response and habituation to light beams and the effectiveness of reflectors when implemented.

Roadside lighting and intercept feeding may have limited effectiveness in specialized situations. Both methods are costly and have side effects that must be considered carefully.

Deer repellents can have limited effectiveness in modifying deer feeding and movement patterns. It is unlikely that repellents will be useful in roadway applications.

### **Methods that Appear Ineffective Based on Available Evidence**

General education, passive signs, and lower speed limits appear ineffective in influencing driver behavior and reducing DVCs. The lack of good studies proving their ineffectiveness probably results from the unwillingness of funding organizations to allocate resources to study methods that are so unpromising.

### **Ineffective Methods with Evidence from Controlled or Experimental Situations**

Deer whistles and deer flagging signs are not effective.

## **DISCUSSION AND RECOMMENDATIONS**

Previous reviews of DVC control methods (Reed et al., 1979; Bruinderink and Hazebroek, 1996; Putman, 1997; Danielson and Hubbard, 1998; Staines et al., 2001) reached conclusions similar to ours, as did a review of moose-vehicle crashes in Sweden (Lavsund and Sandegren, 1991). There is no quick, cheap method to reduce DVCs. Fencing and herd reduction programs can be effective if they are designed and maintained well, but they are neither cheap nor quick.

DVC control must be part of an overall environmental strategy that balances the competing needs of humans and wildlife. For example, there is a trend in suburban areas to preserve or create green space and wildlife corridors (Houck, 1990). These areas must be carefully planned and coordinated by transportation, natural resource, and urban planning agencies to avoid attracting more deer and increasing DVCs.

### **Data Collection and Reporting**

States should identify crashes involving deer on their state crash report forms and crash data files rather than aggregating crashes involving all animals. Without this, it is difficult to track DVC totals, trends, and patterns. States also should record precise DVC locations, as Maine does (Maine Department of Transportation, 2002), using GIS or other methods, to identify areas with high DVC frequencies. This

information is critical in deciding where fencing, herd reduction, active signs, or other DVC control methods are needed.

## Research

Research is needed in the following areas.

- *Herd reduction*: minimum geographic area needed to be effective, effect of different amounts of herd reduction on DVCs in various settings
- *Active signs*: improved deer detection technology, long-term driver response
- *Temporary passive signs and at-grade crossings*: additional field trials under varying circumstances
- *Reflectors*: deer response and habituation, effect of reflector systems as implemented
- *Intensive general education*: effects of intensive driver awareness programs for DVCs in targeted communities
- *Integrated DVC program*: effects of coordinated program including signs, roadside clearing, and general education in specific high DVC locations
- *Data*: multi-state survey of DVC reporting to police, insurance companies, and wildlife agencies

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## REFERENCES

- Allen, R.E. and McCullough, D.R. 1976. Deer-car accidents in southern Michigan. *Journal of Wildlife Management* 40:317-25.
- Beaupré, V.G. 2002. Pilot project to deter wildlife-vehicle collisions. Press release. Regina, Saskatchewan: Saskatchewan Department of Highways and Transportation. Available: <http://www.gov.sk.ca/newsrel/releases/2002/05/09-326.html>.
- Bellis, E.D. and Graves, H.B. 1978. Highway fences as deterrents to vehicle-deer collisions. *Transportation Research Record* 674:53-58. Washington, DC: Transportation Research Board.
- Bendix. 2002. Bendix begins sale of XVision™ infrared nighttime vision system. Press release. Elyria, OH. Available: <http://www.bendix.com/products/XVisionPR.shtml>.
- Bertwistle, J. 1999. The effects of reduced speed zones on reducing bighorn sheep and elk collisions with vehicles on the Yellowhead Highway in Jasper National Park. *Proceedings of the 1999 International Conference on Wildlife Ecology and Transportation*. Tallahassee, FL: Florida Department of Transportation.

- Bomford, M. and O'Brien, P.H. 1990. Sonic deterrents in animal damage control: a review of device tests and effectiveness. *Wildlife Society Bulletin* 18:411-22.
- Brown, T.L.; Decker, D.J.; Riley, S.J.; Enck, J.W.; Lauber, T.B.; Curtis, P.C. and Mattfeld, G.F. 2000. The future of hunting as a mechanism to control white-tailed deer populations. *Wildlife Society Bulletin* 28:797-807.
- Bruinderink, G.W.T.A. and Hazebroek, E. 1996. Ungulate traffic collisions in Europe. *Conservation Biology* 10:1059-67.
- Cline, B.C. 1989. The State of Michigan's Car-Deer Whistle Research Project. Lansing, MI: Michigan Department of Management and Budget.
- Conover, M.R. 1997. Wildlife management by metropolitan residents in the United States: practices, perceptions, costs, and values. *Wildlife Society Bulletin* 25:306-11.
- Conover, M.R.; Pitt, W.C.; Kessler, K.K.; DuBow, T.J. and Sanborn, W.A. 1995. Review of human injuries, illnesses, and economic losses caused by wildlife in the United States. *Wildlife Society Bulletin* 23:407-14.
- Curtis, P.D.; Fargione, M.J. and Richmond, M.E. 1994. Preventing deer damage with barrier, electrical, and behavioral fencing systems. *Proceedings of the 16th Vertebrate Pest Conference* (eds. W.S. Halverson and A.C. Crabb), 16:223-227. Davis, CA: University of California, Davis
- Danielson, B.J. and Hubbard, M.W. 1998. A literature review for assessing the status of current methods of reducing deer-vehicle collisions. Ames, IA: Iowa Department of Transportation and Iowa Department of Natural Resources.
- Decker, D.J.; Loconti Lee, K.M. and Connelly, N.A. 1990. Deer-related vehicular accidents in Tompkins County, New York: incidence, costs, and implications for deer management *Transactions of the Northeast Section of the Wildlife Society* 47:21-26.
- DeerCrash. 2003. Countermeasures toolbox. Madison, WI: University of Wisconsin, Madison, Deer-Vehicle Crash Information Clearinghouse. Available: <http://www.deercrash.com/toolbox/index.htm>.
- DeNicola, A.J.; VerCauteren, K.C.; Curtis, P.D. and Hyngstrom, S.C. 2000. *Managing White-Tailed Deer in Suburban Environments: A Technical Guide*. Ithaca, NY: Cornell Cooperative Extension.
- DVCR Working Group. 2000. Final Report: Deer Vehicle Collision Reduction Working Group Conference. Madison, WI: Sand County Foundation.
- Eckler, J. 2001. Irondequoit Live Deer Spotlight Survey, Fall 2000. Albany NY: New York State Department of Environmental Conservation.
- El Hani, A. and Conover, M.R. 1995. Comparative analysis of deer repellents. *Repellents in Wildlife Management Symposium Proceedings*. Fort Collins, CO: National Wildlife Research Center, Animal and Plant Health Inspection Service.
- Falk, N.W.; Graves, H.B. and Bellis, E.D. 1978. Highway right-of-way fences as deer deterrents. *Journal of Wildlife Management* 42:646-50.
- Feldhamer, G.A.; Gates, J.E.; Harman, D.M.; Loranger, A.J. and Dison, K.R. 1986. Effects of interstate highway fencing on white-tailed deer activity. *Journal of Wildlife Management* 50:497-503.

- Finder, R.A.; Roseberry, J.L. and Woolf, A. 1999. Site and landscape conditions at white-tailed deer/vehicle collision locations in Illinois. *Landscape and Urban Planning* 44:77-85.
- Foster, M.L. and Humphrey, S.R. 1995. Use of highway underpasses by Florida panthers and other wildlife. *Wildlife Society Bulletin* 23:95-100.
- General Motors. 2000. DeVille becomes first car to offer safety benefits of night vision. Detroit, MI. Available: [http://www.gm.com/company/gmability/safety/crash\\_avoidance/newfeatures/night\\_vision.html](http://www.gm.com/company/gmability/safety/crash_avoidance/newfeatures/night_vision.html).
- Gilbert, J.R. 1982. Evaluation of deer mirrors for reducing deer-vehicle collisions. Report no. FHWA-RD-82-061. Washington, DC: Federal Highway Administration.
- Gordon, K.M.; Anderson, S.H.; Gribble, B. and Johnson, M. 2001. Evaluation of the FLASH (Flashing Light Animal Sensing Host) system in Nugget Canyon, Wyoming. Report no. FHWA-WY-01/03F. Laramie, WY: University of Wyoming.
- Graves, H.B. and Bellis, D.E. 1978. The effectiveness of deer flagging models as deterrents to deer entering highway rights-of-way. Report no. FHWA-PA-78-12. Washington, DC: Federal Highway Administration.
- Hartmann, M. 2003. Evaluation of wildlife crossing structures: their use and effectiveness. Missoula, MT: Wildlands Center for Preventing Roads. Available: <http://www.wildlandscpr.org/resourcelibrary/reports/EvaluationByMaureenHartmann.htm>.
- Houck, M.C. 1990. Metropolitan wildlife refuge system: a strategy for regional natural resource planning. *Wildlife Conservation in Metropolitan Environments* (eds. L.W. Adams and D.L. Leedy), 225-29. Columbia, MD: National Institute for Urban Wildlife.
- Highway Safety Information System. 1995. Investigation of crashes with animals. Report no FHWA-RD-94-156. Washington, DC: Federal Highway Administration.
- Hubbard, M.W.; Danielson, B.J. and Schmitz, R.A. 2000. Factors influencing the location of deer-vehicle accidents in Iowa. *Journal of Wildlife Management* 64:707-13.
- Jaren, V.; Andersen, R.; Ulleberg, M.; Pedersen, P.H. and Wiseth, B. 1991. Moose-train collisions: the effects of vegetation removal with a cost-benefit analysis. *Alces* 27:93-99.
- Jordan, D.M. Jr. and Richmond, M.E. 1992. Effectiveness of a vertical 3-wire electrical fence modified with attractants or repellents as a deer exclosure. *Proceedings of the Fifth Eastern Wildlife Damage Control Conference*, 44-47.
- Knapp, K. 2001. Midwest deer-vehicle crash facts. Madison, WI: University of Wisconsin, Madison, Deer-Vehicle Crash Information Clearinghouse.
- Knox, W.M. 1997. Historical changes in the abundance and distribution of deer in Virginia. *The Science of Overabundance* (eds. W.J. McShea, H.B. Underwood, and J.H. Rappole). Washington, DC: Smithsonian Institution Press.
- Kuser, J. 1995. Deer and people in Princeton, New Jersey, 1971-1993. *Urban Deer: A Manageable Resource? Proceedings of the 1993 Symposium of the North Central Section, the Wildlife Society* (ed. J.B. McAninch), 47-50.
- Lavsund, S. and Sandegren, F. 1991. Moose-vehicle relations in Sweden: a review. *Alces* 27:118-26.

- Lehnert, M.E. and Bissonette, J.A. 1997. Effectiveness of highway crosswalk structures at reducing deer-vehicle collisions. *Wildlife Society Bulletin* 25:809-18.
- Ludwig, J. and Bremicker, T. 1983. Evaluation of 2.4m fences and one-way gates for reducing deer-vehicle collisions in Minnesota. *Transportation Research Record* 913:19-22. Washington, DC: Transportation Research Board.
- Maine Department of Transportation. 2002. Maine deer crashes, 1999-2001. Augusta ME: Maine Department of Transportation.
- McCabe, T.R. and McCabe, R.D. 1997. Recounting whitetails past. *The Science of Overabundance* (eds. W.J. McShea, H.B. Underwood, and J.H. Rappole). Washington, DC: Smithsonian Institution Press.
- Messmer, T.A.; Hendricks, C.W. and Klimack, P.W. 2000. Modifying human behavior to reduce wildlife-vehicle collisions using temporary signage. *Wildlife and Highways: Seeking Solutions to an Ecological and Socio-Economic Dilemma* – Seventh Annual Meeting of the Wildlife Society, 134-47.
- Olbrich, P. 1984. Untersuchung der Wirksamkeit von Woldwarnreflektoren und der Eignung von Wilddurchlassen. *Zeitschrift für Jagdwissenschaft* 30:101-16.
- O'Neill, B. 2001. Seat belt use: where we've been, where we are, and what's next. *2001 Seat Belt Summit: Policy Options for Increasing Seat Belt Use in the United States in 2001 and Beyond*, Appendix A. Arlington, VA: Automotive Coalition for Traffic Safety.
- Pafko, F. and Kovach, B. 1996. Minnesota experience with deer reflectors. *Proceedings of Transportation and Wildlife: Reducing Wildlife Mortality and Improving Wildlife Passageways Across Transportation Corridors*, 116-124. Tallahassee, FL: Florida Department of Transportation.
- Pojar, T.M.; Reed, D.F.; Reseigh, T.C. and Woodard, T.N. 1975. Effectiveness of a lighted, animated deer crossing sign. *Journal of Wildlife Management* 39:87-91.
- Puglisi, M.J.; Lindzey, J.S. and Bellis, E.D. 1974. Factors associated with highway mortality of white-tailed deer. *Journal of Wildlife Management* 38:799-807.
- Putman, R.J. 1997. Deer and road traffic accidents: options for management. *Journal of Environmental Management* 51:43-57.
- Reed, D.F. 1981. Mule deer behavior at a highway underpass exit. *Journal of Wildlife Management* 45:542-43.
- Reed, D.F.; Beck, T.D. and Woodard, T.N. 1982. Methods of reducing deer-vehicle accidents: benefit-cost analysis. *Wildlife Society Bulletin* 10:349-54.
- Reed, D.F.; Pojar, T.M. and Woodard, T.N. 1974. Use of one-way gates by mule deer. *Journal of Wildlife Management* 38:9-15.
- Reed, D.F. and Woodard, T.N. 1981. Effectiveness of highway lighting in reducing deer-vehicle collisions. *Journal of Wildlife Management* 45:721-26.
- Reed, D.F.; Woodard, T.N. and Beck, T.D.I. 1979. Regional deer-vehicle accident research. Report no. FHWA-CO-RD-79-11. Denver, CO: Colorado Division of Wildlife.
- Reed, D.F.; Woodard, T.N. and Pojar, T.M. 1975. Behavioral response of mule deer to a highway underpass. *Journal of Wildlife Management* 39:361-67.



- Reeve, A.F. and Anderson, S.H. 1993. Ineffectiveness of Swareflex reflectors at reducing deer-vehicle collisions. *Wildlife Society Bulletin* 21:127-32.
- Romin, L.A. and Bissonette, J.A. 1997. Deer-vehicle collisions: status of state monitoring activities and mitigation efforts. *Wildlife Society Bulletin* 24:276-83.
- Romin, L.A. and Dalton, L.B. 1992. Lack of response by mule deer to wildlife warning whistles. *Wildlife Society Bulletin* 20:382-84.
- Schafer, J.A. and Penland, S.T. 1985. Effectiveness of Swareflex reflectors in reducing deer-vehicle accidents. *Journal of Wildlife Management* 49:774-76.
- Singer, F.J. and Doherty, J.L. 1985. Managing mountain goats at a highway crossing. *Wildlife Society Bulletin* 13:469-77.
- Staines, B.; Langbein, J. and Putman, R. 2001. Road traffic accidents and deer in Scotland. Aberdeen, UK: University of Aberdeen.
- Stout, R.J.; Stedman, R.C.; Decker, D.J. and Knuth, A.B. 1993. Perception of risk from deer-related vehicle accidents: implications for public preferences for deer herd size. *Wildlife Society Bulletin* 21: 237-49.
- Sullivan, T.L. and Messmer, T.A. 2003. Perceptions of deer-vehicle collision management by state wildlife agency and department of transportation administrators. *Wildlife Society Bulletin* 31:163-73.
- Sullivan, T.L.; Williams, A.F.; Messmer, T.A.; Nelson, L.A. and Kyrychenko, S.Y. 2003. Effectiveness of temporary warning signs in reducing deer-vehicle collisions during mule deer migrations (preprint). Arlington, VA: Insurance Institute for Highway Safety.
- Transportation Research Board. 1998. Managing speed: review of current practice for setting and enforcing speed limits. Special Report 254. Washington, DC: Transportation Research Board.
- Ujvari, M.; Baagoe, H.J. and Madsen, A.B. 1998. Effectiveness of wildlife warning reflectors in reducing deer-vehicle collisions: a behavioral study. *Journal of Wildlife Management* 62:1094-99.
- Ward, A.L. 1982. Mule deer behavior in relation to fencing and underpasses on Interstate 80 in Wyoming. *Transportation Research Record* 859:8-13. Washington, DC: Transportation Research Board.
- Williams, A.F. 1994. The contribution of education and public information to reducing alcohol-impaired driving. *Alcohol, Drugs, and Driving* 10:197-205.
- Williams, A.F. 2003a. Motor vehicle/animal collisions. Internal memorandum. Arlington, VA: Insurance Institute for Highway Safety.
- Williams, A.F. 2003b. Personal communication.
- Wood, P. and Wolfe, M.L. 1988. Intercept feeding as a means of reducing deer-vehicle collisions. *Wildlife Society Bulletin* 16:376-80.
- Zacks, J.L. 1986. Do white-tailed deer avoid red? An evaluation of the premise underlying the design of Swareflex wildlife reflectors. *Transportation Research Record* 1075:35-43. Washington, DC: Transportation Research Board.

## **Appendix B.4**

### **Roadside Clearing Crash Modification Factor**

- Wild Animal Crash Data on US-20 From MP 369 to 375.5  
Between 7/1/2000 and 3/9/2013
- Photographs of US-20 Before, During, and After  
the Tree Clearing Project During July 2010

# Wild Animal Related Crashes on US-20 from MP 369 to 375.5 from 7/14/2000 to 8/11/2012

Total Crashes 38

Fatalities 0

Injuries 7

#	Milepost	Vehicle Type	Driver Action	Lane Direction	Event 1	Intersection	Roadway	Weather	Surface	Light	AccidentDate	Severity
1	369.000	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	7/20/2001	Property Dmg Report
2	369.047	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	7/14/2000	C Injury Accident
3	369.300	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	10/30/2005	Property Dmg Report
4	369.900	Car	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Cloudy	Dry	Dark, No Street Lights	9/25/2008	Property Dmg Report
5	370.000	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Day	5/9/2003	Property Dmg Report
6	370.063	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	5/25/2007	Property Dmg Report
7	370.300	Motorcycle	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Day	8/30/2003	A Injury Accident
8	370.500	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Snow	Snow	Dark, No Street Lights	11/21/2003	Property Dmg Report
9	370.500	Tractor - 1 Trailer	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Cloudy	Dry	Dawn or Dusk	5/18/2008	Property Dmg Report
10	370.500	Tractor - 1 Trailer	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	6/15/2008	Property Dmg Report
11	370.998	Car	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	8/23/2005	Property Dmg Report
12	371.000	Tractor - 1 Trailer	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dawn or Dusk	6/29/2003	B Injury Accident
13	371.063	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dawn or Dusk	6/29/2003	Property Dmg Report
14	371.063	Tractor - 1 Trailer	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	8/15/2009	Property Dmg Report
15	371.132	Car	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Wet	Day	6/10/2004	Property Dmg Report
16	371.170	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Rain	Wet	Day	10/8/2009	Property Dmg Report
17	371.924	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	7/3/2002	C Injury Accident
18	372.000	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	11/13/2010	Property Dmg Report
19	372.001	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Snow	Ice	Dark, No Street Lights	8/18/2009	Property Dmg Report
20	372.005	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	7/12/2004	Property Dmg Report
21	372.275	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Day	8/31/2002	Property Dmg Report
22	372.400	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	9/5/2001	Property Dmg Report
23	372.563	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	11/18/2002	Property Dmg Report
24	372.988	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Cloudy	Ice	Dark, No Street Lights	6/19/2006	Property Dmg Report
25	373.200	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	10/16/2002	Property Dmg Report
26	373.800	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	8/20/2001	C Injury Accident
27	373.900	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	10/25/2000	Property Dmg Report
28	374.000	Car	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Snow	Ice	Dark, No Street Lights	12/30/2005	Property Dmg Report
29	374.000	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Day	8/7/2002	B Injury Accident
30	374.000	Car	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Cloudy	Dry		6/8/2009	B Injury Accident
31	374.000	Car	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Day	8/29/2001	Property Dmg Report
32	374.037	Motor Home	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Cloudy	Dry	Dark, No Street Lights	9/1/2008	Property Dmg Report
33	374.800	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Day	8/14/2005	Property Dmg Report
34	375.000	Motor Home	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	6/16/2003	Property Dmg Report
35	375.000	Tractor - 1 Trailer	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights	10/10/2004	Property Dmg Report
36	375.000	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Rain	Wet	Dark, No Street Lights	10/22/2004	Property Dmg Report
37	375.000	Pickup/Van/Panel/SUV	Going Straight	Ascending	Animal - Wild	Nonjunction	On Roadway	Clear	Wet	Dark, No Street Lights	9/7/2004	Property Dmg Report
38	375.011	Pickup/Van/Panel/SUV	Going Straight	Descending	Animal - Wild	Nonjunction	On Roadway	Clear	Dry	Dark, No Street Lights		Property Dmg Report

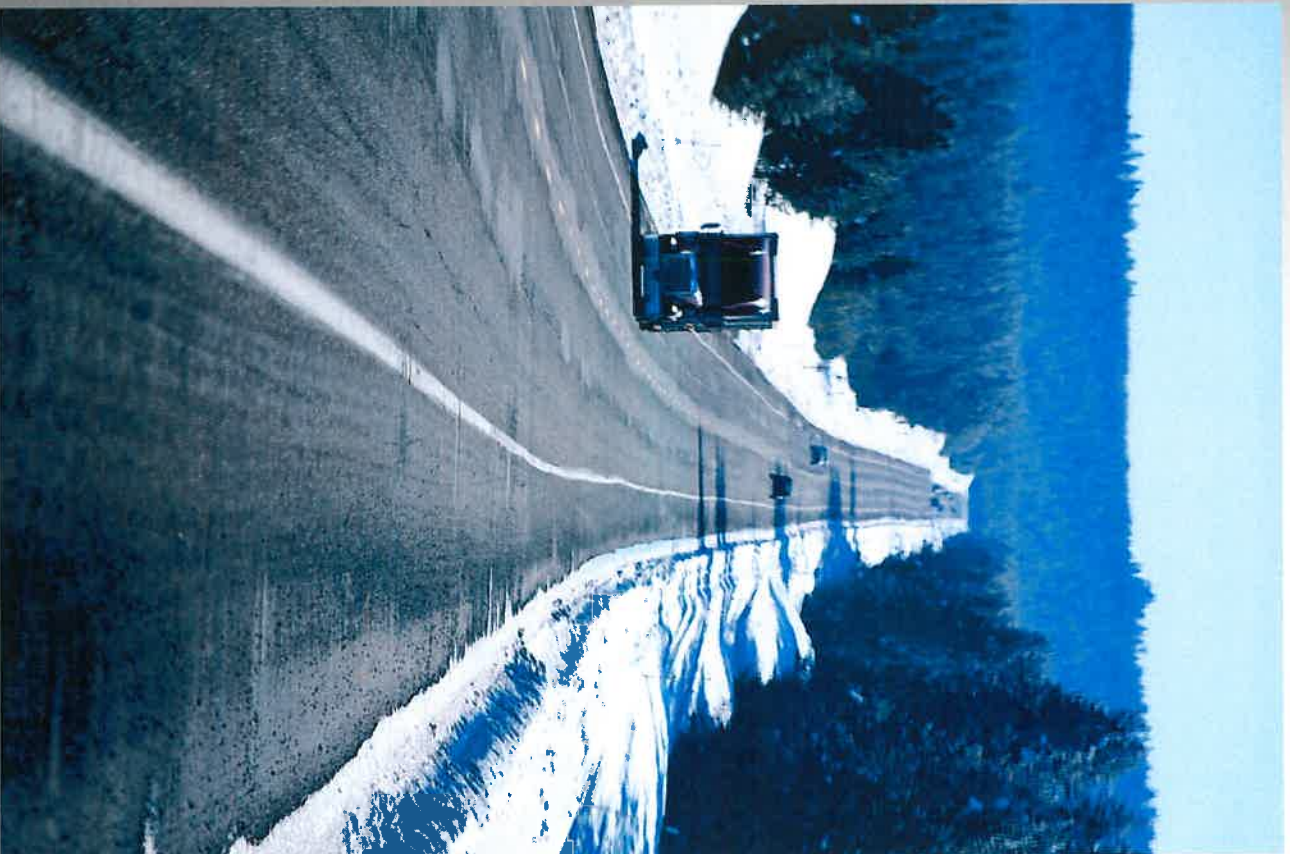


# Logging 2010





2007



2011





## **Appendix B.5**

### **Wild Animal Crashes on US-95 in District 2 Between January 1, 2003 and December 31, 2012**

Wild Animal Crashes on US-95 in District 2 between 1/1/2003 and 12/31/2012

Total Crashes: 476 Total Fatalities: 0 Total Injuries: 58

Accident #	Milepost	Vehicle Type	Driver Action	Most Harmful Event	Event Relation to Junction	Weather	Surface	Light	Fatalities	Injuries	Day	Accident Date	Severity
1	187.700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Monday	2/16/2009	Property Dmg Report
2	183.500	Van - 1 to 8 seats	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Saturday	7/16/2011	Property Dmg Report
3	183.601	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Sunday	2/10/2008	Property Dmg Report
4	185.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	2/18/2008	Property Dmg Report
5	185.600	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Sunday	12/23/2007	Property Dmg Report
6	186.500	Tractor - 1 Trailer	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Saturday	1/14/2012	Property Dmg Report
7	187.000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Ice	Dark, No Street Lights	0	0	Tuesday	12/23/2008	Property Dmg Report
8	187.500	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	12/16/2011	Property Dmg Report
9	188.426	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Dawn or Dusk	0	0	Sunday	11/28/2010	Property Dmg Report
10	189.300	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	12/29/2006	Property Dmg Report
11	190.500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	12/24/2010	Property Dmg Report
12	190.900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Friday	5/18/2012	Property Dmg Report
13	191.000	Tractor - 1 Trailer	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Wednesday	11/16/2005	Property Dmg Report
14	191.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	10/21/2008	Property Dmg Report
15	192.018	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Monday	5/24/2010	Property Dmg Report
16	192.200	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Saturday	8/14/2004	Property Dmg Report
17	193.500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Sunday	4/26/2009	Property Dmg Report
18	194.129	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Intersection	Cloudy	Dry	Dark, Street Lights On	0	0	Monday	2/1/2010	Property Dmg Report
19	195.003	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Friday	8/26/2005	Property Dmg Report
20	199.019	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	8/13/2012	Property Dmg Report
21	202.300	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	7/20/2008	Property Dmg Report
22	203.012	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	11/23/2012	Property Dmg Report
23	204.500	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Day	0	0	Monday	1/17/2011	Property Dmg Report
24	204.800	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	Sunday	9/21/2008	Property Dmg Report
25	208.100	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Monday	4/23/2012	Property Dmg Report
26	208.600	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	3/13/2004	Property Dmg Report
27	209.600	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Saturday	6/25/2011	Property Dmg Report
28	210.049	Pickup	Avoiding Obstacle	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	1/4/2012	Property Dmg Report
29	210.100	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Saturday	10/6/2012	Property Dmg Report
30	213.200	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Sunday	8/8/2004	Property Dmg Report
31	214.009	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Tuesday	10/2/2007	Property Dmg Report
32	215.000	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Thursday	9/2/2004	Property Dmg Report
33	215.700	Truck - 2 Axle/6 Tires	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dawn or Dusk	0	0	Thursday	4/26/2012	Property Dmg Report
34	215.800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Monday	2/3/2003	Property Dmg Report
35	215.900	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Friday	8/17/2012	Property Dmg Report
36	216.500	SUV/Crossover	Turning Left	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Saturday	7/21/2012	Property Dmg Report
37	216.700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Thursday	5/1/2003	Property Dmg Report
38	217.000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Tuesday	6/12/2007	Property Dmg Report
39	218.100	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	7/27/2012	Property Dmg Report
40	218.300	SUV/Crossover	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Friday	7/13/2012	Property Dmg Report
41	218.400	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Friday	9/16/2005	Property Dmg Report
42	218.590	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Saturday	8/30/2003	Property Dmg Report

43	219,000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Sunday	10/26/2003	Property Dmg Report
44	219,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dawn or Dusk	0	0	0	Thursday	6/2/2005	Property Dmg Report
45	219,600	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	8/21/2010	Property Dmg Report
46	220,700	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Wet	Dark, No Street Lights	0	0	0	Wednesday	12/26/2012	Property Dmg Report
47	221,005	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	6/16/2008	Property Dmg Report
48	221,400	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	12/23/2010	Property Dmg Report
49	221,800	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	7/5/2012	Property Dmg Report
50	221,900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	5/8/2009	Property Dmg Report
51	221,924	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	0	Monday	6/1/2009	Property Dmg Report
52	221,962	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Tuesday	8/7/2012	Property Dmg Report
53	223,100	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Day	0	0	0	Saturday	5/1/2010	Property Dmg Report
54	224,200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	7/24/2004	Property Dmg Report
55	224,800	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Sunday	10/23/2011	Property Dmg Report
56	225,000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Thursday	8/14/2008	Property Dmg Report
57	232,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Thursday	5/12/2005	Property Dmg Report
58	233,700	Tractor - 1 Trailer	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	11/15/2012	Property Dmg Report
59	234,000	Van - 1 to 8 seats	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Sunday	7/18/2004	Property Dmg Report
60	234,100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	9/7/2012	Property Dmg Report
61	234,438	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	5/14/2008	Property Dmg Report
62	234,700	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	8/27/2007	Property Dmg Report
63	235,900	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Sunday	9/1/2012	Property Dmg Report
64	236,082	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	0	Sunday	10/31/2010	Property Dmg Report
65	236,400	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Monday	9/3/2007	Property Dmg Report
66	237,800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	10/20/2010	Property Dmg Report
67	238,943	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Sunday	7/22/2007	Property Dmg Report
68	239,000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	9/10/2003	Property Dmg Report
69	240,700	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	0	Saturday	7/16/2011	Property Dmg Report
70	247,034	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Wednesday	7/12/2012	Property Dmg Report
71	248,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	10/3/2012	Property Dmg Report
72	250,100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	8/12/2011	Property Dmg Report
73	254,400	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	9/27/2005	Property Dmg Report
74	256,300	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Tuesday	7/15/2011	Property Dmg Report
75	256,600	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Friday	7/9/2010	Property Dmg Report
76	257,912	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	7/2/2009	Property Dmg Report
77	260,040	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights On	0	0	0	Sunday	6/8/2003	Property Dmg Report
78	260,180	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	4/30/2004	Property Dmg Report
79	266,400	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Friday	7/18/2012	Property Dmg Report
80	267,500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	10/9/2009	Property Dmg Report
81	268,600	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	3/3/2012	Property Dmg Report
82	268,800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	8/17/2012	Property Dmg Report
83	269,700	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	3/24/2007	Property Dmg Report
84	269,732	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Saturday	4/19/2007	Property Dmg Report
85	269,758	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Sunday	8/12/2007	Property Dmg Report
86	270,300	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Saturday	9/18/2004	Property Dmg Report
87	271,000	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Friday	5/12/2006	Property Dmg Report

92	272,000	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Monday	7/13/2009	Property Dmg Report
93	274,100	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Tuesday	10/23/2005	Property Dmg Report
94	274,100	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	Monday	11/21/2011	Property Dmg Report
95	274,572	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	0	Sunday	5/25/2003	Property Dmg Report
96	275,766	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	7/19/2010	Property Dmg Report
97	275,987	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Sunday	10/28/2012	Property Dmg Report
98	276,200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	10/17/2009	Property Dmg Report
99	277,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	6/27/2006	Property Dmg Report
100	278,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Tuesday	5/31/2005	Property Dmg Report
101	278,102	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Thursday	7/26/2012	Property Dmg Report
102	278,700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	8/8/2003	Property Dmg Report
103	278,990	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Tuesday	10/14/2008	Property Dmg Report
104	279,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Thursday	8/5/2004	Property Dmg Report
105	279,000	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	Wednesday	11/17/2010	Property Dmg Report
106	283,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Thursday	11/16/2006	Property Dmg Report
107	285,200	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	8/6/2008	Property Dmg Report
108	285,500	Tractor - 1 Trailer	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	11/6/2004	Property Dmg Report
109	287,000	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Friday	9/17/2004	Property Dmg Report
110	288,300	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Saturday	5/10/2008	Property Dmg Report
111	288,400	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	5/19/2003	Property Dmg Report
112	288,981	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	Friday	6/15/2007	Property Dmg Report
113	289,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	10/30/2005	Property Dmg Report
114	289,000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	10/30/2005	Property Dmg Report
115	289,600	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Friday	10/7/2005	Property Dmg Report
116	290,500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	8/19/2011	Property Dmg Report
117	291,500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	7/17/2006	Property Dmg Report
118	291,500	Pickup	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Day	0	0	Monday	4/25/2011	Property Dmg Report
119	291,900	Pickup/Van/Panel/SUV	Avoiding Obstacle	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Sunday	10/5/2003	Property Dmg Report
120	291,914	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Wednesday	9/10/2003	Property Dmg Report
121	292,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Monday	3/15/2004	Property Dmg Report
122	292,156	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	9/25/2010	Property Dmg Report
123	292,200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Fog	Wet	Dark, No Street Lights	0	0	Friday	10/31/2008	Property Dmg Report
124	292,800	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Wednesday	12/26/2012	Property Dmg Report
125	293,100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	10/6/2012	Property Dmg Report
126	293,150	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	12/6/2003	Property Dmg Report
127	293,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	Tuesday	4/19/2005	Property Dmg Report
128	293,600	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Saturday	6/24/2006	Property Dmg Report
129	293,900	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	7/4/2008	Property Dmg Report
130	294,100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	9/9/2003	Property Dmg Report
131	294,400	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	12/11/2011	Property Dmg Report
132	294,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	7/27/2004	Property Dmg Report
133	294,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	1/24/2005	Property Dmg Report
134	294,700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	2/22/2008	Property Dmg Report
135	294,900	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	6/12/2008	Property Dmg Report
136	295,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	3/14/2007	Property Dmg Report
137	295,600	Pickup	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Sunday	6/12/2011	Property Dmg Report
138	295,800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	10/14/2008	Property Dmg Report
139	296,100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Tuesday	7/12/2005	Property Dmg Report
140	296,743	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Thursday	7/10/2003	Property Dmg Report

141	297.100	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Sunday	9/9/2012	Property Dmg Report
142	297.400	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Thursday	12/15/2011	Property Dmg Report
143	298.039	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	9/16/2010	Property Dmg Report
144	298.100	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Tuesday	10/30/2012	Property Dmg Report
145	298.600	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Sunday	6/12/2005	Property Dmg Report
146	301.000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	0	Friday	5/12/2006	Property Dmg Report
147	301.800	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Saturday	12/1/2012	Property Dmg Report
148	302.300	Pickup	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dawn or Dusk	0	0	0	Sunday	6/20/2003	Property Dmg Report
149	302.500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Friday	6/20/2003	Property Dmg Report
150	302.600	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	10/1/2012	Property Dmg Report
151	302.700	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	12/29/2008	Property Dmg Report
152	302.800	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	0	Thursday	5/8/2008	Property Dmg Report
153	302.800	SUV/Crossover	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Thursday	7/26/2012	Property Dmg Report
154	303.000	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Sunday	8/7/2005	Property Dmg Report
155	303.009	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	8/4/2012	Property Dmg Report
156	303.100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Sunday	11/14/2004	Property Dmg Report
157	303.300	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Saturday	11/24/2012	Property Dmg Report
158	303.500	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	11/24/2007	Property Dmg Report
159	303.700	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Tuesday	9/28/2010	Property Dmg Report
160	303.900	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	6/8/2005	Property Dmg Report
161	304.900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Saturday	6/5/2004	Property Dmg Report
162	304.900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights On	0	0	0	Thursday	9/1/2011	Property Dmg Report
163	305.300	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	5/19/2012	Property Dmg Report
164	305.800	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Snow	Dark, No Street Lights	0	0	0	Tuesday	12/23/2008	Property Dmg Report
165	305.800	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Snow	Dark, No Street Lights	0	0	0	Tuesday	12/23/2008	Property Dmg Report
166	305.800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	9/22/2010	Property Dmg Report
167	306.000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	6/11/2003	Property Dmg Report
168	306.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	6/2/2004	Property Dmg Report
169	306.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Monday	4/21/2003	Property Dmg Report
170	306.700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Dark, No Street Lights	0	0	0	Monday	3/6/2006	Property Dmg Report
171	306.800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Tuesday	5/11/2010	Property Dmg Report
172	307.100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	5/5/2008	Property Dmg Report
173	307.300	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	6/11/2009	Property Dmg Report
174	307.500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	5/13/2006	Property Dmg Report
175	307.549	Van - 1 to 8 seats	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	6/13/2012	Property Dmg Report
176	308.400	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Sunday	7/13/2003	Property Dmg Report
177	308.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights On	0	0	0	Friday	8/29/2008	Property Dmg Report
178	308.600	Motorcycle	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	5/10/2006	Property Dmg Report
179	308.600	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	9/27/2010	Property Dmg Report
180	308.680	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	6/18/2010	Property Dmg Report
181	308.700	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Thursday	6/12/2008	Property Dmg Report
182	308.700	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Wet	Dawn or Dusk	0	0	0	Saturday	2/14/2009	Property Dmg Report
183	308.700	SUV/Crossover	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	6/25/2012	Property Dmg Report
184	308.800	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Monday	6/16/2008	Property Dmg Report
185	308.900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Sunday	5/6/2012	Property Dmg Report
186	308.976	Motorcycle	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights Off	0	0	0	Friday	8/5/2011	Property Dmg Report
187	308.999	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Sunday	2/17/2010	Property Dmg Report
188	309.100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Saturday	8/19/2006	Property Dmg Report
189	309.400	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	5/4/2011	Property Dmg Report



190	309.433	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Intersection	Cloudy	Dry	Dawn or Dusk	0	0	0	Sunday	6/10/2007	Property Dmg Report
191	309.700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	0	Thursday	10/6/2005	Property Dmg Report
192	309.900	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights On	0	0	0	Thursday	6/12/2003	Property Dmg Report
193	310.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Monday	6/28/2010	Property Dmg Report
194	310.800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Sunday	7/3/2011	Property Dmg Report
195	311.000	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Sunday	3/30/2008	Property Dmg Report
196	311.500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Tuesday	12/7/2010	Property Dmg Report
197	312.500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Monday	5/28/2012	Property Dmg Report
198	312.800	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, Street Lights On	0	0	0	Monday	10/10/2011	Property Dmg Report
199	313.018	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Monday	10/20/2008	Property Dmg Report
200	313.100	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Sunday	11/12/2006	Property Dmg Report
201	313.100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	6/22/2012	Property Dmg Report
202	313.200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Saturday	9/10/2005	Property Dmg Report
203	313.200	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Friday	11/9/2012	Property Dmg Report
204	313.400	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, Street Lights On	0	0	0	Thursday	11/8/2007	Property Dmg Report
205	313.800	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Friday	12/5/2003	Property Dmg Report
206	314.000	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Tuesday	10/18/2005	Property Dmg Report
207	314.100	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dawn or Dusk	0	0	0	Sunday	12/2/2007	Property Dmg Report
208	314.160	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Saturday	4/12/2003	Property Dmg Report
209	314.500	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	0	Tuesday	10/14/2003	Property Dmg Report
210	314.800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	10/29/2004	Property Dmg Report
211	314.800	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Saturday	12/8/2012	Property Dmg Report
212	314.985	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Friday	10/14/2005	Property Dmg Report
213	315.000	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Monday	10/21/2003	Property Dmg Report
214	315.000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	1/26/2005	Property Dmg Report
215	317.400	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	9/29/2006	Property Dmg Report
216	317.458	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Saturday	10/13/2007	Property Dmg Report
217	317.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Saturday	9/10/2005	Property Dmg Report
218	318.000	Bus - 16 or more seats	Going Straight	Animal - Wild	On Ramp	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	10/17/2009	Property Dmg Report
219	318.100	Car	Going Straight	Animal - Wild	Nonjunction	Cross	Dry	Dark, Street Lights Off	0	0	0	Monday	2/16/2009	Property Dmg Report
1	182.700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Saturday	7/16/2011	Property Dmg Report
2	183.500	Van - 1 to 8 seats	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Sunday	2/10/2008	Property Dmg Report
3	183.601	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Monday	2/18/2008	Property Dmg Report
4	185.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Dark, No Street Lights	0	0	0	Sunday	12/23/2007	Property Dmg Report
5	185.600	Tractor - 1 Trailer	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	0	Saturday	1/14/2012	Property Dmg Report
6	186.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Ice	Dark, No Street Lights	0	0	0	Tuesday	12/23/2008	Property Dmg Report
7	187.000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	12/16/2011	Property Dmg Report
8	187.500	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Dawn or Dusk	0	0	0	Sunday	11/28/2010	Property Dmg Report
9	188.426	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	12/24/2010	Property Dmg Report
10	189.500	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	12/24/2010	Property Dmg Report
11	190.500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Friday	5/18/2012	Property Dmg Report
12	190.900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	11/16/2005	Property Dmg Report
13	191.000	Tractor - 1 Trailer	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Tuesday	10/21/2008	Property Dmg Report
14	192.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Monday	5/24/2010	Property Dmg Report
15	192.018	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Saturday	8/14/2004	Property Dmg Report
16	192.200	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Sunday	4/26/2009	Property Dmg Report
17	193.500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Monday	2/14/2010	Property Dmg Report
18	194.129	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Intersection	Cloudy	Dry	Dark, Street Lights On	0	0	0	Friday	8/26/2005	Property Dmg Report
19	195.003	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Friday	8/26/2005	Property Dmg Report

239	335,300	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day		0	0	0	Tuesday	3/3/2009	Property Dmg Report
240	336,600	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Friday	1/9/2009	Property Dmg Report
241	337,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Thursday	9/7/2006	Property Dmg Report
242	337,973	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Friday	4/16/2010	Property Dmg Report
243	338,056	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Monday	9/15/2008	Property Dmg Report
244	338,800	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights		0	0	0	Monday	10/15/2007	Property Dmg Report
245	338,800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day		0	0	0	Friday	7/16/2010	Property Dmg Report
246	338,800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Monday	9/17/2012	Property Dmg Report
247	338,981	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Thursday	5/8/2008	Property Dmg Report
248	338,991	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights		0	0	0	Sunday	10/9/2011	Property Dmg Report
249	339,100	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day		0	0	0	Thursday	7/5/2007	Property Dmg Report
250	339,500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Saturday	11/19/2005	Property Dmg Report
251	339,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, Street Lights Off		0	0	0	Saturday	8/15/2009	Property Dmg Report
252	339,850	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Saturday	4/9/2011	Property Dmg Report
253	340,300	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Friday	3/12/2004	Property Dmg Report
254	340,400	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Intersection	Clear	Dry	Dark, No Street Lights		0	0	0	Wednesday	2/18/2009	Property Dmg Report
255	340,500	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Wet	Day		0	0	0	Tuesday	7/8/2003	Property Dmg Report
256	340,500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Thursday	1/29/2009	Property Dmg Report
257	340,900	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Day		0	0	0	Monday	4/14/2008	Property Dmg Report
258	340,994	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day		0	0	0	Monday	7/17/2006	Property Dmg Report
259	341,200	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day		0	0	0	Wednesday	6/30/2010	Property Dmg Report
260	341,335	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights		0	0	0	Friday	1/23/2009	Property Dmg Report
261	341,800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights		0	0	0	Tuesday	6/10/2003	Property Dmg Report
262	341,900	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Monday	8/15/2005	Property Dmg Report
263	341,900	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Thursday	3/12/2009	Property Dmg Report
264	342,000	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Wednesday	9/1/2004	Property Dmg Report
265	342,700	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Wednesday	7/13/2005	Property Dmg Report
266	342,857	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Thursday	1/30/2003	Property Dmg Report
267	343,100	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights		0	0	0	Thursday	10/25/2007	Property Dmg Report
268	346,687	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk		0	0	0	Thursday	7/29/2010	Property Dmg Report
269	347,990	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Tuesday	10/19/2004	Property Dmg Report
270	348,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Saturday	10/9/2010	Property Dmg Report
271	348,100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day		0	0	0	Tuesday	6/19/2012	Property Dmg Report
272	348,100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk		0	0	0	Sunday	9/11/2005	Property Dmg Report
273	348,514	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Tuesday	10/7/2008	Property Dmg Report
274	348,700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights		0	0	0	Monday	4/28/2003	Property Dmg Report
275	349,018	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Tuesday	6/28/2005	Property Dmg Report
276	349,101	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Tuesday	6/28/2005	Property Dmg Report
277	349,101	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Sunday	7/23/2006	Property Dmg Report
278	349,200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Wednesday	8/27/2003	Property Dmg Report
279	349,200	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Thursday	9/13/2012	Property Dmg Report
280	349,651	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk		0	0	0	Friday	8/18/2006	Property Dmg Report
281	349,700	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Sunday	1/21/2007	Property Dmg Report
282	349,700	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Ice	Dark, No Street Lights		0	0	0	Tuesday	10/9/2007	Property Dmg Report
283	349,700	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Saturday	11/20/2010	Property Dmg Report
284	349,800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Monday	1/24/2005	Property Dmg Report
285	350,020	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights		0	0	0	Saturday	7/28/2012	Property Dmg Report
287	350,030	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day		0	0	0	Saturday	5/10/2003	Property Dmg Report

288	350.100	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Tuesday	10/18/2005	Property Dmg Report
289	350.100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	9/23/2006	Property Dmg Report
290	350.300	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	0	Monday	10/17/2005	Property Dmg Report
291	350.400	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	4/12/2007	Property Dmg Report
292	350.400	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Thursday	7/1/2004	Property Dmg Report
293	350.400	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	10/11/2008	Property Dmg Report
294	350.500	Car	Going Straight	Animal - Wild	Related	Fog	Wet	Dark, No Street Lights	0	0	0	Thursday	11/24/2005	Property Dmg Report
295	350.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Tuesday	6/20/2006	Property Dmg Report
296	350.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Monday	10/22/2007	Property Dmg Report
297	350.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Saturday	2/7/2009	Property Dmg Report
298	350.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	10/23/2009	Property Dmg Report
299	350.600	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	5/17/2004	Property Dmg Report
300	350.600	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Tuesday	11/25/2008	Property Dmg Report
301	350.650	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Fog	Wet	Day	0	0	0	Tuesday	11/22/2005	Property Dmg Report
302	350.800	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	0	0	Tuesday	2/15/2011	Property Dmg Report
303	350.964	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Dark, No Street Lights	0	0	0	Sunday	4/12/2010	Property Dmg Report
304	350.981	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	0	0	Monday	11/11/2005	Property Dmg Report
305	351.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	6/1/2003	Property Dmg Report
306	351.000	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Sunday	5/16/2009	Property Dmg Report
307	351.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	12/5/2008	Property Dmg Report
308	351.070	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Saturday	5/16/2009	Property Dmg Report
309	351.100	SUV/Crossover	Negotiating Curve	Animal - Wild	Nonjunction	Rain	Wet	Day	0	0	0	Tuesday	11/20/2012	Property Dmg Report
310	351.200	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Wednesday	11/4/2009	Property Dmg Report
311	351.300	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	0	Friday	2/6/2009	Property Dmg Report
312	351.400	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	10/29/2005	Property Dmg Report
313	351.400	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Thursday	9/29/2011	Property Dmg Report
314	351.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Tuesday	12/1/2009	Property Dmg Report
315	351.500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Tuesday	12/1/2009	Property Dmg Report
316	351.500	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	0	Wednesday	7/13/2011	Property Dmg Report
317	351.500	Pickup	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Sunday	7/22/2012	Property Dmg Report
318	351.800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	7/24/2010	Property Dmg Report
319	351.965	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	0	Sunday	7/5/2009	Property Dmg Report
320	352.100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	0	Tuesday	8/26/2008	Property Dmg Report
321	352.200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Saturday	10/6/2007	Property Dmg Report
322	352.300	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Dark, No Street Lights	0	0	0	Monday	6/26/2006	Property Dmg Report
323	352.300	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Sunday	12/28/2003	Property Dmg Report
324	352.400	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Monday	8/15/2011	Property Dmg Report
325	352.800	Car	Negotiating Curve	Animal - Wild	Related	Cloudy	Dry	Day	0	0	0	Thursday	7/1/2010	Property Dmg Report
326	353.636	Pickup/Van/Panel/SUV	Turning Left	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	0	Thursday	6/12/2003	Property Dmg Report
327	354.100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Tuesday	7/26/2005	Property Dmg Report
328	354.205	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Monday	11/3/2003	Property Dmg Report
329	355.100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Friday	8/26/2005	Property Dmg Report
330	355.430	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights Off	0	0	0	Tuesday	10/25/2011	Property Dmg Report
331	355.500	SUV/Crossover	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	3/23/2011	Property Dmg Report
332	356.005	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	6/28/2010	Property Dmg Report
333	356.018	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Wednesday	7/22/2009	Property Dmg Report
334	356.700	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Sunday	9/14/2003	Property Dmg Report
335	356.700	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	0	Saturday	6/21/2012	Property Dmg Report
336	357.100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	0	Monday	7/11/2005	Property Dmg Report

337	357,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	6/24/2009	Property Dmg Report
338	357,600	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Saturday	11/3/2012	Property Dmg Report
339	358,000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Day	0	0	Friday	12/19/2003	Property Dmg Report
340	358,197	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Sunday	6/22/2003	Property Dmg Report
341	358,500	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	0	Tuesday	11/20/2012	Property Dmg Report
342	358,600	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	8/11/2012	Property Dmg Report
343	358,724	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Thursday	10/9/2008	Property Dmg Report
344	358,800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	9/25/2004	Property Dmg Report
345	358,900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	7/26/2009	Property Dmg Report
346	358,976	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Wednesday	5/14/2008	Property Dmg Report
347	358,981	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	10/22/2008	Property Dmg Report
348	359,200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Thursday	9/10/2009	Property Dmg Report
349	359,500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Friday	10/12/2007	Property Dmg Report
350	359,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Thursday	9/9/2004	Property Dmg Report
351	359,500	Motorcycle	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	9/16/2012	Property Dmg Report
352	359,700	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Wednesday	8/31/2011	Property Dmg Report
353	359,770	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	10/31/2009	Property Dmg Report
354	360,001	Car	Going Straight	Animal - Wild	Nonjunction	Snow	Snow	Dark, No Street Lights	0	0	Saturday	11/25/2006	Property Dmg Report
355	360,020	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Tuesday	5/25/2010	Property Dmg Report
356	360,300	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dawn or Dusk	0	0	Saturday	9/17/2005	Property Dmg Report
357	360,400	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Friday	11/30/2012	Property Dmg Report
358	360,611	Pickup	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights On	0	0	Wednesday	9/21/2011	Property Dmg Report
359	360,800	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Tuesday	11/15/2005	Property Dmg Report
360	360,981	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	3/6/2010	Property Dmg Report
361	360,994	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	10/1/2004	Property Dmg Report
362	361,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	11/21/2009	Property Dmg Report
363	361,001	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	0	Tuesday	8/7/2012	Property Dmg Report
364	361,200	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	11/14/2003	Property Dmg Report
365	361,200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	0	Thursday	10/29/2009	Property Dmg Report
366	361,480	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Wednesday	5/24/2006	Property Dmg Report
367	361,724	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	6/30/2007	Property Dmg Report
368	362,000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Snow	Wet	Dark, No Street Lights	0	0	Thursday	12/11/2003	Property Dmg Report
369	362,100	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Day	0	0	Sunday	12/20/2009	Property Dmg Report
370	362,500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Saturday	11/20/2004	Property Dmg Report
371	362,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Friday	11/31/2009	Property Dmg Report
372	362,600	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	4/2/2004	Property Dmg Report
373	363,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Day	0	0	Monday	11/12/2007	Property Dmg Report
374	363,687	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	6/17/2003	Property Dmg Report
375	363,700	Van - 1 to 8 seats	Going Straight	Animal - Wild	Intersection	Clear	Dry	Dark, No Street Lights	0	0	Sunday	9/16/2012	Property Dmg Report
376	363,780	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dawn or Dusk	0	0	Saturday	10/9/2008	Property Dmg Report
377	363,800	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	0	Friday	5/6/2011	Property Dmg Report
378	364,180	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Tuesday	6/26/2012	Property Dmg Report
379	365,000	Car	Going Straight	Animal - Wild	Nonjunction		Dry		0	0	Sunday	8/28/2005	Property Dmg Report
380	365,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Thursday	3/15/2007	Property Dmg Report
381	365,500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Monday	11/19/2007	Property Dmg Report
382	365,500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Saturday	11/15/2008	Property Dmg Report
383	365,650	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	4/12/2004	Property Dmg Report
384	365,800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	11/3/2007	Property Dmg Report
385	365,900	Tractor - 2 Trailers	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Tuesday	10/30/2007	Property Dmg Report

386	366.600	Van - 1 to 8 seats	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	4/6/2012	Property Dmg Report
387	366.600	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	8/24/2012	Property Dmg Report
388	366.800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Monday	12/1/2008	Property Dmg Report
389	367.100	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Thursday	9/18/2003	Property Dmg Report
390	367.200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Sunday	11/19/2006	Property Dmg Report
391	367.500	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Saturday	2/21/2009	Property Dmg Report
392	367.900	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Thursday	10/28/2010	Property Dmg Report
393	368.000	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dawn or Dusk	0	0	Tuesday	5/10/2005	Property Dmg Report
394	368.000	Truck With Trailer	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Thursday	11/22/2007	Property Dmg Report
395	368.000	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Saturday	1/10/2009	Property Dmg Report
396	368.000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	4/19/2009	Property Dmg Report
397	368.100	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Rain	Wet	Day	0	0	Friday	4/30/2010	Property Dmg Report
398	368.300	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	0	Thursday	3/27/2003	Property Dmg Report
399	368.500	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	2/22/2009	Property Dmg Report
400	368.500	Van - 1 to 8 seats	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	7/1/2011	Property Dmg Report
401	368.700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Snow	Ice	Dawn or Dusk	0	0	Sunday	12/30/2007	Property Dmg Report
402	368.700	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Thursday	7/17/2008	Property Dmg Report
403	368.800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Monday	5/30/2011	Property Dmg Report
404	368.900	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Sunday	12/5/2004	Property Dmg Report
405	369.050	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	6/6/2010	Property Dmg Report
406	369.100	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Day	0	0	Saturday	4/16/2011	Property Dmg Report
407	369.300	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Sunday	3/4/2007	Property Dmg Report
408	369.568	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	5/6/2006	Property Dmg Report
409	369.600	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Sunday	9/21/2008	Property Dmg Report
410	369.700	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Thursday	7/8/2010	Property Dmg Report
411	369.800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	7/2/2008	Property Dmg Report
412	369.900	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Saturday	10/13/2007	Property Dmg Report
413	370.028	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Wet	Dark, No Street Lights	0	0	Saturday	6/26/2011	Property Dmg Report
414	371.000	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Day	0	0	Monday	1/4/2010	Property Dmg Report
415	371.050	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Sunday	9/28/2010	Property Dmg Report
416	371.100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Thursday	9/9/2010	Property Dmg Report
417	371.200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Tuesday	5/24/2009	Property Dmg Report
418	371.400	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Friday	4/9/2004	Property Dmg Report
419	372.100	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Wet	Dark, No Street Lights	0	0	Friday	10/5/2007	Property Dmg Report
420	373.000	Truck - 3+ Axle	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Tuesday	3/18/2008	Property Dmg Report
421	373.001	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Day	0	0	Monday	12/19/2011	Property Dmg Report
422	373.500	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Friday	11/25/2011	Property Dmg Report
423	374.600	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	0	Sunday	4/10/2011	Property Dmg Report
424	374.638	Pickup	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Monday	9/6/2010	Property Dmg Report
425	375.000	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	11/3/2007	Property Dmg Report
426	375.056	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Monday	1/11/2010	Property Dmg Report
427	375.080	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	0	Saturday	11/20/2008	Property Dmg Report
428	375.400	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	0	Thursday	9/25/2010	Property Dmg Report
429	375.500	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	0	Monday	6/11/2012	Property Dmg Report
431	375.500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Day	0	0	Monday	7/6/2011	Property Dmg Report
432	223.500	Motorcycle	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	1	Wednesday	9/11/2008	A Injury Accident
433	365.200	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	2	Thursday	5/23/2005	A Injury Accident
434	370.300	Motorcycle	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Monday		



435	183,600	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Monday	1/16/2012	B Injury Accident
436	226,800	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	1	Monday	7/4/2011	B Injury Accident
437	283,004	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	1	Saturday	5/10/2008	B Injury Accident
438	309,000	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights Off	0	4	Sunday	10/3/2004	B Injury Accident
439	315,000	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Thursday	5/15/2008	B Injury Accident
440	318,500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	1	Monday	11/17/2008	B Injury Accident
441	319,600	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Friday	6/18/2004	B Injury Accident
442	328,400	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights On	0	1	Saturday	8/7/2010	B Injury Accident
443	353,990	Pickup	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	2	Friday	9/7/2012	B Injury Accident
444	366,003	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Day	0	1	Sunday	7/8/2007	B Injury Accident
445	373,001	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	1	Tuesday	10/12/2010	B Injury Accident
446	188,000	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Monday	1/23/2006	C Injury Accident
447	208,900	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dawn or Dusk	0	2	Friday	9/15/2006	C Injury Accident
448	268,100	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Friday	12/25/2009	C Injury Accident
449	275,100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, Street Lights On	0	1	Tuesday	6/19/2007	C Injury Accident
450	278,520	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Friday	9/23/2011	C Injury Accident
451	281,400	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	1	Sunday	11/1/2009	C Injury Accident
452	302,995	Car	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Wednesday	10/29/2003	C Injury Accident
453	303,700	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Wednesday	1/23/2008	C Injury Accident
454	308,800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	1	Tuesday	11/4/2008	C Injury Accident
455	310,300	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Thursday	10/12/2006	C Injury Accident
456	315,024	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	1	Wednesday	10/24/2007	C Injury Accident
457	337,180	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Intersection	Cloudy	Wet	Dark, No Street Lights	0	2	Wednesday	1/7/2009	C Injury Accident
458	338,004	Car	Going Straight	Animal - Wild	Nonjunction	Rain	Wet	Dark, No Street Lights	0	1	Tuesday	11/20/2012	C Injury Accident
459	338,100	Car	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	1	Monday	10/25/2010	C Injury Accident
460	338,200	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Sunday	11/4/2012	C Injury Accident
462	339,800	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	2	Thursday	10/25/2007	C Injury Accident
463	343,100	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	1	Sunday	7/25/2004	C Injury Accident
464	350,346	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	1	Tuesday	12/14/2010	C Injury Accident
465	350,600	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Sunday	2/17/2008	C Injury Accident
466	350,700	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Friday	10/20/2006	C Injury Accident
467	356,100	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Day	0	1	Monday	4/5/2010	C Injury Accident
468	356,100	SUV/Crossover	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Tuesday	9/27/2011	C Injury Accident
469	357,800	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Thursday	8/23/2007	C Injury Accident
470	368,100	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	1	Wednesday	12/15/2010	C Injury Accident
471	370,300	Pickup/Van/Panel/SUV	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	2	Friday	9/10/2010	C Injury Accident
472	372,037	Pickup/Van/Panel/SUV	Negotiating Curve	Animal - Wild	Nonjunction	Cloudy	Dry	Dark, No Street Lights	0	1	Wednesday	9/15/2010	C Injury Accident
473	372,733	Car	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	2	Tuesday	11/10/2009	C Injury Accident
474	374,000	Motorcycle	Going Straight	Animal - Wild	Nonjunction	Clear	Dry	Day	0	1	Friday	7/25/2008	C Injury Accident
475	374,500	Car	Going Straight	Animal - Wild	Nonjunction	Cloudy	Wet	Dark, No Street Lights	0	2	Friday	2/10/2012	C Injury Accident
476	375,942	Car	Avoiding Obstacle	Animal - Wild	Nonjunction	Clear	Dry	Dark, No Street Lights	0	3	Monday	8/18/2008	C Injury Accident

**Accident Injury Classification for Wild Animal Crashes Along US-95 in District 2  
Having Multiple Injuries Between 1/1/03 and 12/31/12**

**Accident 433 – 1 Type A Incapacitating Injury, 1 Type B Non Incapacitating Injury**

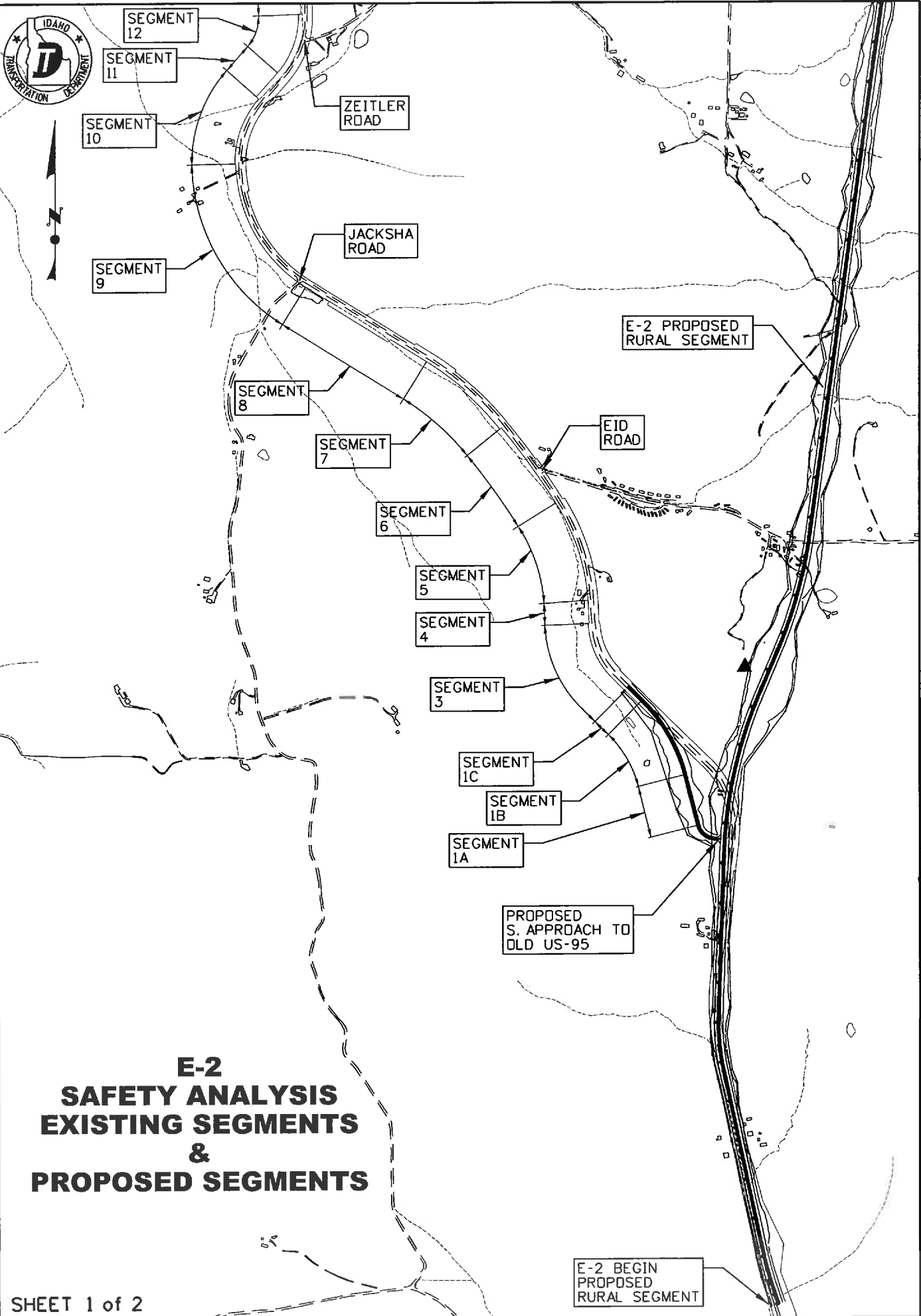
**Accident 438 – 4 Type B Non Incapacitating Injuries**

**Accident 443 – 2 Type B Non Incapacitating Injuries**

**\*From Data provided by ITD Headquarters Office of Highway Safety on Webcars.**

**Appendix C.1**

**Segment Breakdown, Proposed Typical Sections, and  
Predictions For Alternative E2**



SEGMENT 12

SEGMENT 11

SEGMENT 10

ZEITLER ROAD

SEGMENT 9

JACKSHA ROAD

SEGMENT 8

SEGMENT 7

E-2 PROPOSED RURAL SEGMENT

EID ROAD

SEGMENT 6

SEGMENT 5

SEGMENT 4

SEGMENT 3

SEGMENT 1C

SEGMENT 1B

SEGMENT 1A

PROPOSED S. APPROACH TO OLD US-95

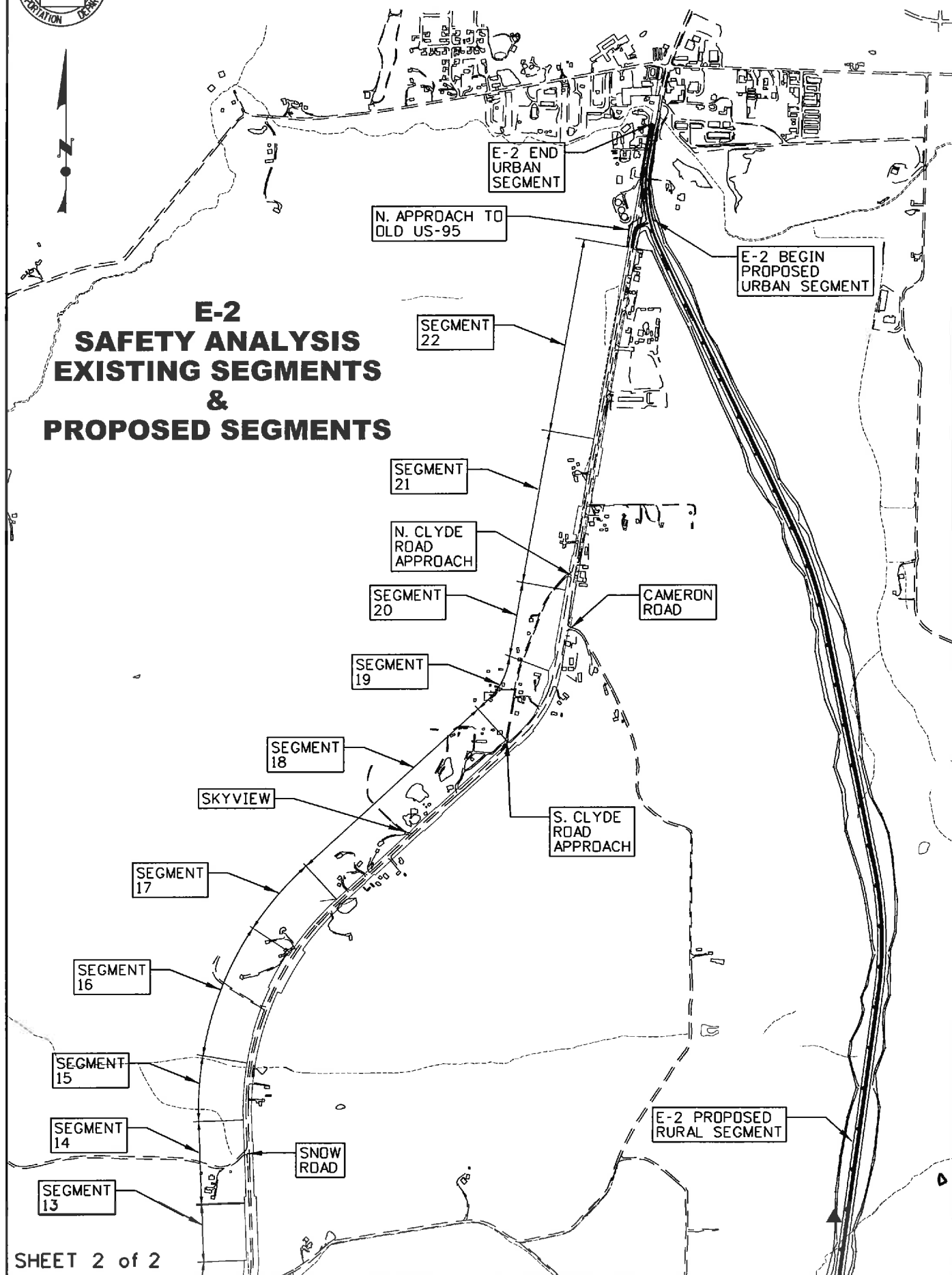
# E-2 SAFETY ANALYSIS EXISTING SEGMENTS & PROPOSED SEGMENTS

E-2 BEGIN  
PROPOSED  
RURAL SEGMENT



MOSCOW

# E-2 SAFETY ANALYSIS EXISTING SEGMENTS & PROPOSED SEGMENTS



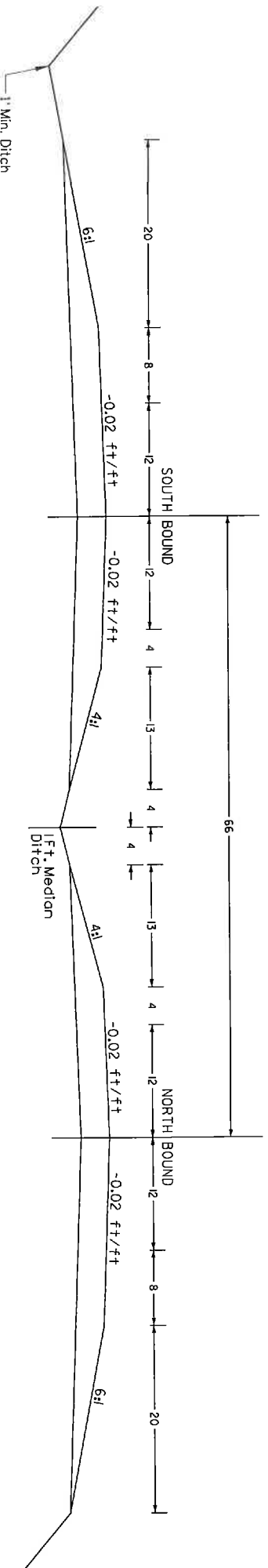




# E-2 TYPICAL SECTIONS

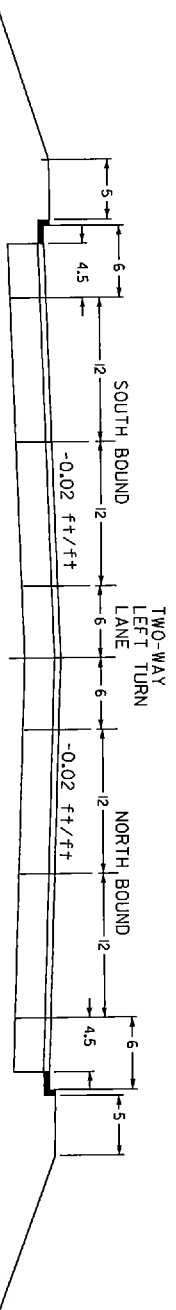
## RURAL SECTION

Milepost 337.668 to Milepost 343.282



## URBAN SECTION

Milepost 343.282 to Milepost 343.518



### **Predicted 2017 ADT for Proposed US-95 and County Roads for Safety Analysis**

Rural US-95 – **5920** From ITD Traffic Volume Report

Suburban US-95 – **7465** From ITD Traffic Volume Report

Eid Road – **65** – From Current North Latah Highway District Plan

Jacksha Road – **50** – Volume is predicted to be less than Eid Road Volume

Zeitler Road – **50** – Volume is predicted to be less than Eid Road Volume

Snow Road – **25** – Volume is predicted to be very light due to few residences

Skyview Drive – **25** – The private drive currently services only 1 home

North Clyde Road – **50** – Volume predicted to be less than Eid Road Volume

Cameron Road – **100** – Volume predicted to be greater than other rural roads based on proximity to Moscow and the number of homes

South Clyde Road – **50** – Volume of traffic predicted to be light and less than Eid Road Volume

### **Predicted 2017 ADT on Existing US-95 Loop If Alternative E2 Was Constructed**

Segments 1a – 19 – **300** (For Predictions See Below)

27 Approaches generate 10 trips per day = 270

Eid Road = 65, Jacksa Road = 50, Zeitler Road = 50, Snow Road = 25, Skyline Drive = 25, Clyde Road South = 50 / Total = 265

Predict an Even Directional Split –  $(270+265)/2 = 267.5$

Predict about 32.5 commuters that drive through on Old US-95 per day –  $267.5 + 32.5 = 300$

Segments 20-22 - **1545** from Differences in ITD Traffic Volume Report ( $7465 - 5920 = 1545$ )

### **Predicted Traffic Growth Rates**

Proposed US-95 Rural – **1.63%** From ITD Traffic Volume Report

Proposed US-95 Suburban – **1.58%** From ITD Traffic Volume Report

Segment 22 on Existing US-95 Loop – **0.91%** Growth Rate of Moscow from Latah County Comprehensive Plan because the segment is within the area of impact of Moscow

Segments 20,21 on Existing US-95 Loop – **0.53%** Growth Rate of Unincorporated Latah County from Latah County Comprehensive Plan because the segments are near the area of impact of Moscow

Segments 1a-19 – **0.19%** Growth Rate within the Thorncreek to Moscow Corridor based on Census Bureau Data in the Thorncreek to Moscow Community Impact Technical Report

Skyline Drive – **0.91%** Growth Rate of Moscow – This is a new subdivision so growth is predicted to be greater than other areas within the corridor

All County Roads Except Skyline Drive – **0.19%** Growth Rate within the Thorncreek to Moscow Corridor based on Census Bureau Data in the Thorncreek to Moscow Community Impact Technical Report

## Assumed E2 ADTs

E2 Rural ADT		E2 Suburban ADT		E2 Segment 21,20 ADT		E2 Segment 22 ADT	
Year	ADT	Year	ADT	Year	ADT	Year	ADT
2017	5920	2017	7465	2017	1545	2017	1545
2018	6016	2018	7583	2018	1553	2018	1559
2019	6114	2019	7703	2019	1561	2019	1573
2020	6214	2020	7825	2020	1570	2020	1588
2021	6315	2021	7949	2021	1578	2021	1602
2022	6417	2022	8075	2022	1586	2022	1617
2023	6522	2023	8203	2023	1594	2023	1631
2024	6628	2024	8333	2024	1603	2024	1646
2025	6736	2025	8465	2025	1611	2025	1661
2026	6845	2026	8599	2026	1620	2026	1677
2027	6957	2027	8735	2027	1628	2027	1692
2028	7070	2028	8873	2028	1637	2028	1707
2029	7185	2029	9014	2029	1646	2029	1723
2030	7302	2030	9157	2030	1654	2030	1738
2031	7421	2031	9302	2031	1663	2031	1754
2032	7541	2032	9449	2032	1672	2032	1770
2033	7664	2033	9598	2033	1680	2033	1786
2034	7789	2034	9750	2034	1689	2034	1803
2035	7915	2035	9905	2035	1698	2035	1819
2036	8044	2036	10062	2036	1707	2036	1836
2037	8175	2037	10221	2037	1716	2037	1853
2038	8308	2038	10383	2038	1725	2038	1869
2039	8443	2039	10547	2039	1734	2039	1886
2040	8581	2040	10714	2040	1743	2040	1904
2041	8720	2041	10884	2041	1753	2041	1921
2042	8862	2042	11056	2042	1762	2042	1939
2043	9006	2043	11231	2043	1771	2043	1956
2044	9153	2044	11409	2044	1780	2044	1974
2045	9302	2045	11590	2045	1790	2045	1992
2046	9453	2046	11773	2046	1799	2046	2010
2047	9607	2047	11960	2047	1809	2047	2029
2048	9763	2048	12149	2048	1818	2048	2047
2049	9922	2049	12342	2049	1828	2049	2066
2050	10083	2050	12537	2050	1837	2050	2085
2051	10247	2051	12736	2051	1847	2051	2104
2052	10414	2052	12937	2052	1857	2052	2123
2053	10583	2053	13142	2053	1867	2053	2142
2054	10755	2054	13350	2054	1876	2054	2162
2055	10930	2055	13562	2055	1886	2055	2181
2056	11108	2056	13776	2056	1896	2056	2201
2057	11289	2057	13994	2057	1906	2057	2221
2058	11473	2058	14216	2058	1916	2058	2242
2059	11659	2059	14441	2059	1926	2059	2262
2060	11849	2060	14670	2060	1937	2060	2283
2061	12042	2061	14902	2061	1947	2061	2303
2062	12238	2062	15138	2062	1957	2062	2324
2063	12437	2063	15378	2063	1967	2063	2346
2064	12639	2064	15621	2064	1978	2064	2367
2065	12845	2065	15869	2065	1988	2065	2389
2066	13054	2066	16120	2066	1999	2066	2410

## Assumed E2 Old US-95 Highway ADTs

Old US-95 ADT		Eid Rd. ADT		Jacksha Rd. ADT		Zeitler Rd. ADT	
Year	ADT	Year	ADT	Year	ADT	Year	ADT
2017	300	2017	65	2017	50	2017	50
2018	301	2018	65	2018	50	2018	50
2019	301	2019	65	2019	50	2019	50
2020	302	2020	65	2020	50	2020	50
2021	302	2021	65	2021	50	2021	50
2022	303	2022	66	2022	50	2022	50
2023	303	2023	66	2023	51	2023	51
2024	304	2024	66	2024	51	2024	51
2025	305	2025	66	2025	51	2025	51
2026	305	2026	66	2026	51	2026	51
2027	306	2027	66	2027	51	2027	51
2028	306	2028	66	2028	51	2028	51
2029	307	2029	67	2029	51	2029	51
2030	308	2030	67	2030	51	2030	51
2031	308	2031	67	2031	51	2031	51
2032	309	2032	67	2032	51	2032	51
2033	309	2033	67	2033	52	2033	52
2034	310	2034	67	2034	52	2034	52
2035	310	2035	67	2035	52	2035	52
2036	311	2036	67	2036	52	2036	52
2037	312	2037	68	2037	52	2037	52
2038	312	2038	68	2038	52	2038	52
2039	313	2039	68	2039	52	2039	52
2040	313	2040	68	2040	52	2040	52
2041	314	2041	68	2041	52	2041	52
2042	315	2042	68	2042	52	2042	52
2043	315	2043	68	2043	53	2043	53
2044	316	2044	68	2044	53	2044	53
2045	316	2045	69	2045	53	2045	53
2046	317	2046	69	2046	53	2046	53
2047	318	2047	69	2047	53	2047	53
2048	318	2048	69	2048	53	2048	53
2049	319	2049	69	2049	53	2049	53
2050	319	2050	69	2050	53	2050	53
2051	320	2051	69	2051	53	2051	53
2052	321	2052	69	2052	53	2052	53
2053	321	2053	70	2053	54	2053	54
2054	322	2054	70	2054	54	2054	54
2055	323	2055	70	2055	54	2055	54
2056	323	2056	70	2056	54	2056	54
2057	324	2057	70	2057	54	2057	54
2058	324	2058	70	2058	54	2058	54
2059	325	2059	70	2059	54	2059	54
2060	326	2060	71	2060	54	2060	54
2061	326	2061	71	2061	54	2061	54
2062	327	2062	71	2062	54	2062	54
2063	327	2063	71	2063	55	2063	55
2064	328	2064	71	2064	55	2064	55
2065	329	2065	71	2065	55	2065	55
2066	329	2066	71	2066	55	2066	55

Snow Rd. ADT	
Year	ADT
2017	25
2018	25
2019	25
2020	25
2021	25
2022	25
2023	25
2024	25
2025	25
2026	25
2027	25
2028	26
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2058	27
2059	27
2060	27
2061	27
2062	27
2063	27
2064	27
2065	27
2066	27

Skyview Dr. ADT	
Year	ADT
2017	25
2018	25
2019	25
2020	26
2021	26
2022	26
2023	26
2024	27
2025	27
2026	27
2027	27
2028	28
2029	28
2030	28
2031	28
2032	29
2033	29
2034	29
2035	29
2036	30
2037	30
2038	30
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2056	36
2057	36
2058	36
2059	37
2060	37
2061	37
2062	38
2063	38
2064	38
2065	39
2066	39

Clyde Rd. ADT	
Year	ADT
2017	50
2018	50
2019	50
2020	50
2021	50
2022	50
2023	51
2024	51
2025	51
2026	51
2027	51
2028	51
2029	51
2030	51
2031	51
2032	51
2033	52
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2051	53
2052	53
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2056	54
2057	54
2058	54
2059	54
2060	54
2061	54
2062	54
2063	55
2064	55
2065	55
2066	55

Cameron Rd. ADT	
Year	ADT
2017	100
2018	100
2019	100
2020	101
2021	101
2022	101
2023	101
2024	101
2025	102
2026	102
2027	102
2028	102
2029	102
2030	103
2031	103
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2057	108
2058	108
2059	108
2060	109
2061	109
2062	109
2063	109
2064	109
2065	110
2066	110



# ADT Volume Projection Report

Route US095  
 Segment From 1539 Milepost From 337.180  
 Segment To 1540 Milepost To 342.930  
 Traffic Data 2010  
 Start Projection 2017  
 End Projection 2037

Year	From	To	From	To	ADT	CAADT	DHV	DHV %	CDHV	CDHV %	DIR	From Description	To Description
2010	001539	001539	337.180	337.668	4,900	650	567	11.5	53	8.106	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	4,900	680	567	11.5	55	8.106	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	5,300	680	611	11.5	55	8.071	60/40%	EID RD	
<b>2010 Weighted 5,130 677 593 11.50 55 8.07</b>													
2017	001539	001539	337.180	337.668	5,654	809	650	11.4	65	8.044	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	5,657	847	650	11.4	68	8.044	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	6,113	847	700	11.4	68	8.014	60/40%	EID RD	
<b>2017 Weighted 5,920 843 679 11.40 68 8.01</b>													
2037	001539	001539	337.180	337.668	7,809	1,264	885	11.3	100	7.934	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	7,821	1,323	886	11.3	105	7.933	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	8,437	1,323	954	11.3	105	7.912	60/40%	EID RD	
<b>2037 Weighted 8,175 1,318 925 11.30 104 7.91</b>													

# ADT Volume Projection Report

Route US095

Traffic Data 2010

Segment From 1540

Milepost From 342.93

Start Projection 2017

Segment To 1540

Milepost To 344.11

End Projection 2037

Year	Segment		Milepost		AADT	CAADT	DHV	DHV %	CDHV	CDHV %	DIR	From Description	To Description
	From	To	From	To									
2010	001540	001540	342.933	344.116	6,500.	520	742	11.4	42	7.992	60/40%	CLYDE RD	PALOUSE RIVER DR
	2010		Weighted averages		6,500	520	742	11.4	42	7.99			
2017	001540	001540	342.933	344.116	7,465	647	848	11.3	51	7.947	60/40%	CLYDE RD	PALOUSE RIVER DR
	2017		Weighted averages		7,465	647	848	11.3	51	7.95			
2037	001540	001540	342.933	344.116	10,221	1,011	1,148	11.2	80	7.865	60/40%	CLYDE RD	PALOUSE RIVER DR
	2037		Weighted averages		10,221	1,011	1,148	11.2	80	7.87			

**Appendix C.2**

**Segment Breakdown, Proposed Typical Sections, and  
Predictions For Alternative C3**



SEGMENT 12

SEGMENT 11

SEGMENT 10

SEGMENT 9

SEGMENT 8

ZEITLER ROAD

JACKSHA ROAD

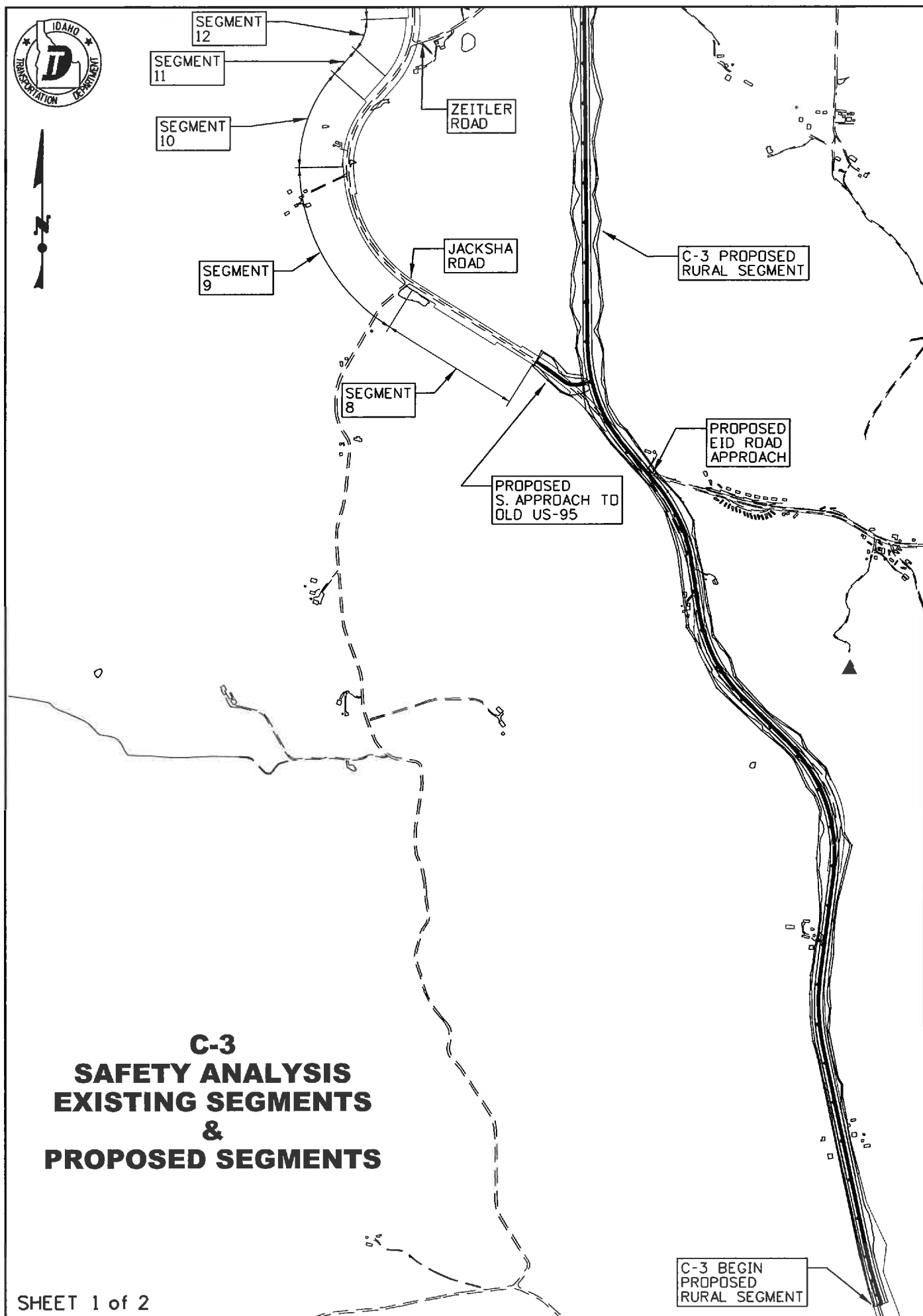
C-3 PROPOSED RURAL SEGMENT

PROPOSED EID ROAD APPROACH

PROPOSED S. APPROACH TO OLD US-95

**C-3  
SAFETY ANALYSIS  
EXISTING SEGMENTS  
&  
PROPOSED SEGMENTS**

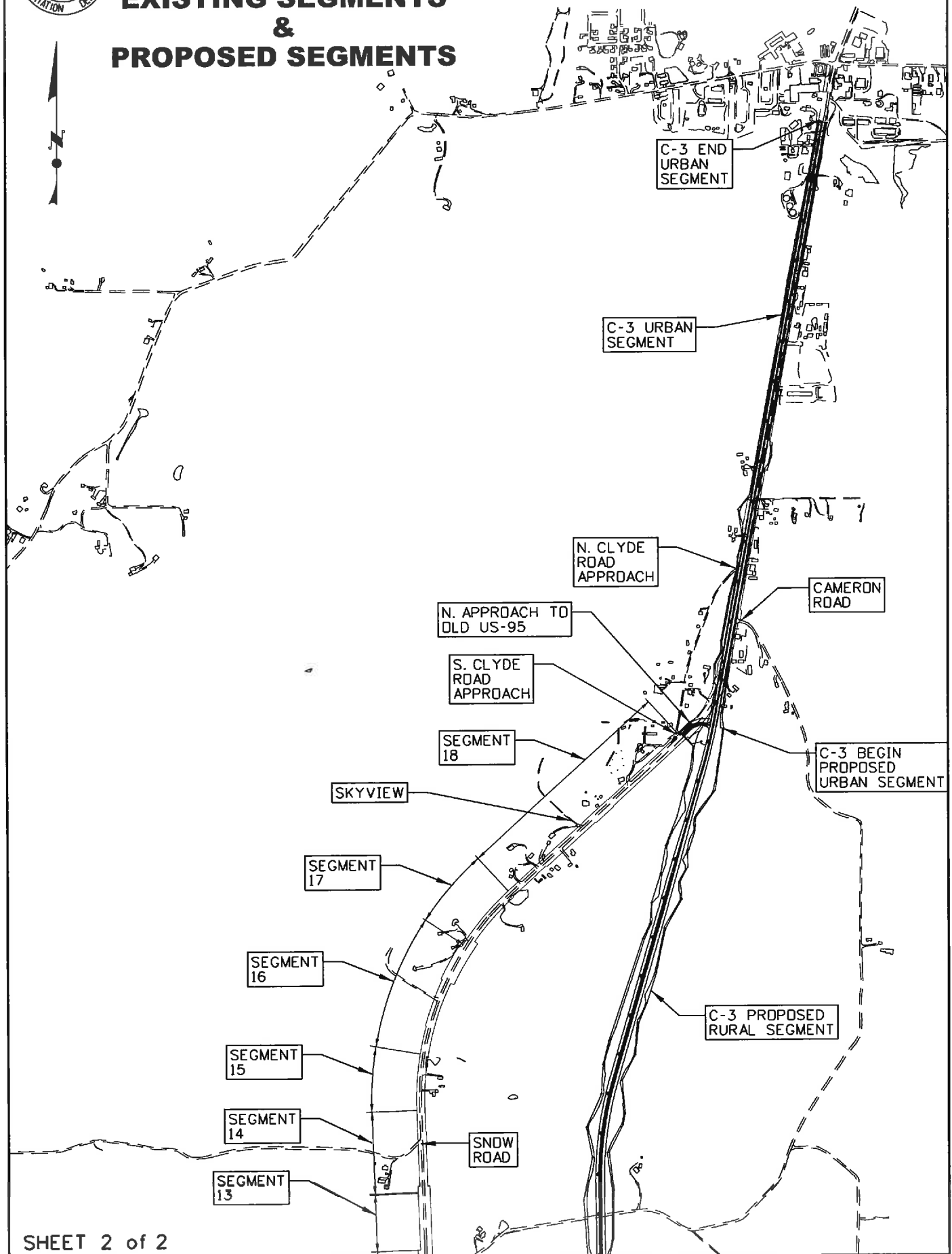
C-3 BEGIN  
PROPOSED  
RURAL SEGMENT



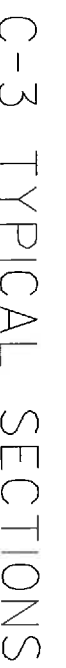


# C-3 SAFETY ANALYSIS EXISTING SEGMENTS & PROPOSED SEGMENTS

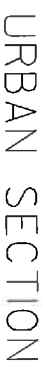
MOSCOW



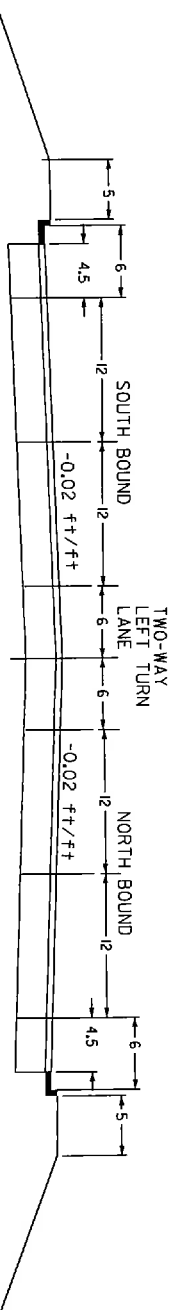




Milepost + 337.668 to Milepost + 342.187



Milepost 342.187 to Milepost 343.608



### **Predicted 2017 ADT for Proposed US-95 and County Roads for Safety Analysis**

Rural US-95 – **5920** From ITD Traffic Volume Report

Suburban US-95 – **7465** From ITD Traffic Volume Report

Eid Road – **65** – From Current North Latah Highway District Plan

Jacksha Road – **50** – Volume is predicted to be less than Eid Road Volume

Zeitler Road – **50** – Volume is predicted to be less than Eid Road Volume

Snow Road – **25** – Volume is predicted to be very light due to few residences

Skyview Drive – **25** – The private drive currently services only 1 home

North Clyde Road – **50** – Volume predicted to be less than Eid Road Volume

Cameron Road – **100** – Volume predicted to be greater than other rural roads based on proximity to Moscow and the number of homes

South Clyde Road – **50** – Volume of traffic predicted to be light and less than Eid Road Volume

### **Predicted 2017 ADT on Existing US-95 Loop If Alternative C3 Was Constructed**

Segments 8 – 18 – **220** (For Predictions See Below)

17 Approaches generate 10 trips per day = 170

Jacksa Road = 50, Zeitler Road = 50, Snow Road = 25, Skyline Drive = 25, Clyde Road South = 50 / Total = 200

Predict an Even Directional Split –  $(170+200)/2 = 187.5$

Predict about 32.5 commuters that drive through on Old US-95 per day –  $187.5 + 32.5 = 220$

### **Predicted Traffic Growth Rates**

Proposed US-95 Rural – **1.63%** From ITD Traffic Volume Report

Proposed US-95 Suburban – **1.58%** From ITD Traffic Volume Report

Segments 8-18 – **0.19%** Growth Rate within the Thorncreek to Moscow Corridor based on Census Bureau Data in the Thorncreek to Moscow Community Impact Technical Report

Skyline Drive – **0.91%** Growth Rate of Moscow – This is a new subdivision so growth is predicted to be greater than other areas within the corridor

All County Roads Except Skyline Drive – **0.19%** Growth Rate within the Thorncreek to Moscow Corridor based on Census Bureau Data in the Thorncreek to Moscow Community Impact Technical Report

### Assumed C3 ADTs

E2 Rural ADT		E2 Suburban ADT	
Year	ADT	Year	ADT
2017	5920	2017	7465
2018	6016	2018	7583
2019	6114	2019	7703
2020	6214	2020	7825
2021	6315	2021	7949
2022	6417	2022	8075
2023	6522	2023	8203
2024	6628	2024	8333
2025	6736	2025	8465
2026	6845	2026	8599
2027	6957	2027	8735
2028	7070	2028	8873
2029	7185	2029	9014
2030	7302	2030	9157
2031	7421	2031	9302
2032	7541	2032	9449
2033	7664	2033	9598
2034	7789	2034	9750
2035	7915	2035	9905
2036	8044	2036	10062
2037	8175	2037	10221
2038	8308	2038	10383
2039	8443	2039	10547
2040	8581	2040	10714
2041	8720	2041	10884
2042	8862	2042	11056
2043	9006	2043	11231
2044	9153	2044	11409
2045	9302	2045	11590
2046	9453	2046	11773
2047	9607	2047	11960
2048	9763	2048	12149
2049	9922	2049	12342
2050	10083	2050	12537
2051	10247	2051	12736
2052	10414	2052	12937
2053	10583	2053	13142
2054	10755	2054	13350
2055	10930	2055	13562
2056	11108	2056	13776
2057	11289	2057	13994
2058	11473	2058	14216
2059	11659	2059	14441
2060	11849	2060	14670
2061	12042	2061	14902
2062	12238	2062	15138
2063	12437	2063	15378
2064	12639	2064	15621
2065	12845	2065	15869
2066	13054	2066	16120

### Assumed C3 Old US-95 Highway ADTs

Old US-95 ADT		Jacksha Rd. ADT		Zeitler Rd. ADT		Snow Rd. ADT	
Year	ADT	Year	ADT	Year	ADT	Year	ADT
2017	220	2017	50	2017	50	2017	25
2018	220	2018	50	2018	50	2018	25
2019	221	2019	50	2019	50	2019	25
2020	221	2020	50	2020	50	2020	25
2021	222	2021	50	2021	50	2021	25
2022	222	2022	50	2022	50	2022	25
2023	223	2023	51	2023	51	2023	25
2024	223	2024	51	2024	51	2024	25
2025	223	2025	51	2025	51	2025	25
2026	224	2026	51	2026	51	2026	25
2027	224	2027	51	2027	51	2027	25
2028	225	2028	51	2028	51	2028	26
2029	225	2029	51	2029	51	2029	26
2030	226	2030	51	2030	51	2030	26
2031	226	2031	51	2031	51	2031	26
2032	226	2032	51	2032	51	2032	26
2033	227	2033	52	2033	52	2033	26
2034	227	2034	52	2034	52	2034	26
2035	228	2035	52	2035	52	2035	26
2036	228	2036	52	2036	52	2036	26
2037	229	2037	52	2037	52	2037	26
2038	229	2038	52	2038	52	2038	26
2039	229	2039	52	2039	52	2039	26
2040	230	2040	52	2040	52	2040	26
2041	230	2041	52	2041	52	2041	26
2042	231	2042	52	2042	52	2042	26
2043	231	2043	53	2043	53	2043	26
2044	232	2044	53	2044	53	2044	26
2045	232	2045	53	2045	53	2045	26
2046	233	2046	53	2046	53	2046	26
2047	233	2047	53	2047	53	2047	26
2048	233	2048	53	2048	53	2048	27
2049	234	2049	53	2049	53	2049	27
2050	234	2050	53	2050	53	2050	27
2051	235	2051	53	2051	53	2051	27
2052	235	2052	53	2052	53	2052	27
2053	236	2053	54	2053	54	2053	27
2054	236	2054	54	2054	54	2054	27
2055	237	2055	54	2055	54	2055	27
2056	237	2056	54	2056	54	2056	27
2057	237	2057	54	2057	54	2057	27
2058	238	2058	54	2058	54	2058	27
2059	238	2059	54	2059	54	2059	27
2060	239	2060	54	2060	54	2060	27
2061	239	2061	54	2061	54	2061	27
2062	240	2062	54	2062	54	2062	27
2063	240	2063	55	2063	55	2063	27
2064	241	2064	55	2064	55	2064	27
2065	241	2065	55	2065	55	2065	27
2066	242	2066	55	2066	55	2066	27

Skyview Dr. ADT	
Year	ADT
2017	25
2018	25
2019	25
2020	26
2021	26
2022	26
2023	26
2024	27
2025	27
2026	27
2027	27
2028	28
2029	28
2030	28
2031	28
2032	29
2033	29
2034	29
2035	29
2036	30
2037	30
2038	30
2039	31
2040	31
2041	31
2042	31
2043	32
2044	32
2045	32
2046	33
2047	33
2048	33
2049	33
2050	34
2051	34
2052	34
2053	35
2054	35
2055	35
2056	36
2057	36
2058	36
2059	37
2060	37
2061	37
2062	38
2063	38
2064	38
2065	39
2066	39

Clyde Rd. ADT	
Year	ADT
2017	50
2018	50
2019	50
2020	50
2021	50
2022	50
2023	51
2024	51
2025	51
2026	51
2027	51
2028	51
2029	51
2030	51
2031	51
2032	51
2033	52
2034	52
2035	52
2036	52
2037	52
2038	52
2039	52
2040	52
2041	52
2042	52
2043	53
2044	53
2045	53
2046	53
2047	53
2048	53
2049	53
2050	53
2051	53
2052	53
2053	54
2054	54
2055	54
2056	54
2057	54
2058	54
2059	54
2060	54
2061	54
2062	54
2063	55
2064	55
2065	55
2066	55

Eid Rd. ADT	
Year	ADT
2017	65
2018	65
2019	65
2020	65
2021	65
2022	66
2023	66
2024	66
2025	66
2026	66
2027	66
2028	66
2029	67
2030	67
2031	67
2032	67
2033	67
2034	67
2035	67
2036	67
2037	68
2038	68
2039	68
2040	68
2041	68
2042	68
2043	68
2044	68
2045	69
2046	69
2047	69
2048	69
2049	69
2050	69
2051	69
2052	69
2053	70
2054	70
2055	70
2056	70
2057	70
2058	70
2059	70
2060	71
2061	71
2062	71
2063	71
2064	71
2065	71
2066	71

Cameron Rd. ADT	
Year	ADT
2017	100
2018	100
2019	100
2020	101
2021	101
2022	101
2023	101
2024	101
2025	102
2026	102
2027	102
2028	102
2029	102
2030	103
2031	103
2032	103
2033	103
2034	103
2035	103
2036	104
2037	104
2038	104
2039	104
2040	104
2041	105
2042	105
2043	105
2044	105
2045	105
2046	106
2047	106
2048	106
2049	106
2050	106
2051	107
2052	107
2053	107
2054	107
2055	108
2056	108
2057	108
2058	108
2059	108
2060	109
2061	109
2062	109
2063	109
2064	109
2065	110
2066	110



# ADT Volume Projection Report

Route US095  
 Segment From 1539 Milepost From 337.180  
 Segment To 1540 Milepost To 342.930

Traffic Data 2010  
 Start Projection 2017  
 End Projection 2037

Year	From	To	From	To	ADT	CAADT	DHV	DHV %	CDHV	CDHV %	DIR	From Description	To Description
2010	001539	001539	337.180	337.668	4,900	650	567	11.5	53	8.106	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	4,900	680	567	11.5	55	8.106	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	5,300	680	611	11.5	55	8.071	60/40%	EID RD	
<b>2010 Weighted 5,130 677 593 11.50 55 8.07</b>													
2017	001539	001539	337.180	337.668	5,654	809	650	11.4	65	8.044	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	5,657	847	650	11.4	68	8.044	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	6,113	847	700	11.4	68	8.014	60/40%	EID RD	
<b>2017 Weighted 5,920 843 679 11.40 68 8.01</b>													
2037	001539	001539	337.180	337.668	7,809	1,264	885	11.3	100	7.934	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	7,821	1,323	886	11.3	105	7.933	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	8,437	1,323	954	11.3	105	7.912	60/40%	EID RD	
<b>2037 Weighted 8,175 1,318 925 11.30 104 7.91</b>													

# ADT Volume Projection Report

Route US095

Traffic Data 2010

Segment From 1540 Milepost From 342.93

Start Projection 2017

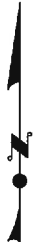
Segment To 1540 Milepost To 344.11

End Projection 2037

Year	Segment		Milepost		AADT	CAADT	DHV	DHV %	CDHV	CDHV %	DIR	From Description	To Description
	From	To	From	To									
2010	001540	001540	342.933	344.116	6,500.	520	742	11.4	42	7.992	60/40%	CLYDE RD	PALOUSE RIVER DR
	2010		Weighted averages		6,500	520	742	11.4	42	7.99			
2017	001540	001540	342.933	344.116	7,465	647	848	11.3	51	7.947	60/40%	CLYDE RD	PALOUSE RIVER DR
	2017		Weighted averages		7,465	647	848	11.3	51	7.95			
2037	001540	001540	342.933	344.116	10,221	1,011	1,148	11.2	80	7.865	60/40%	CLYDE RD	PALOUSE RIVER DR
	2037		Weighted averages		10,221	1,011	1,148	11.2	80	7.87			

**Appendix C.3**

**Segment Breakdown, Proposed Typical Sections, and  
Predictions For Alternative W4**



SEGMENT  
12

SEGMENT  
11

ZEITLER  
ROAD

PROPOSED  
S. APPROACH I.D.  
OLD US-95

PROPOSED  
JACKSHA ROAD  
APPROACH

W-4 PROPOSED  
RURAL SEGMENT

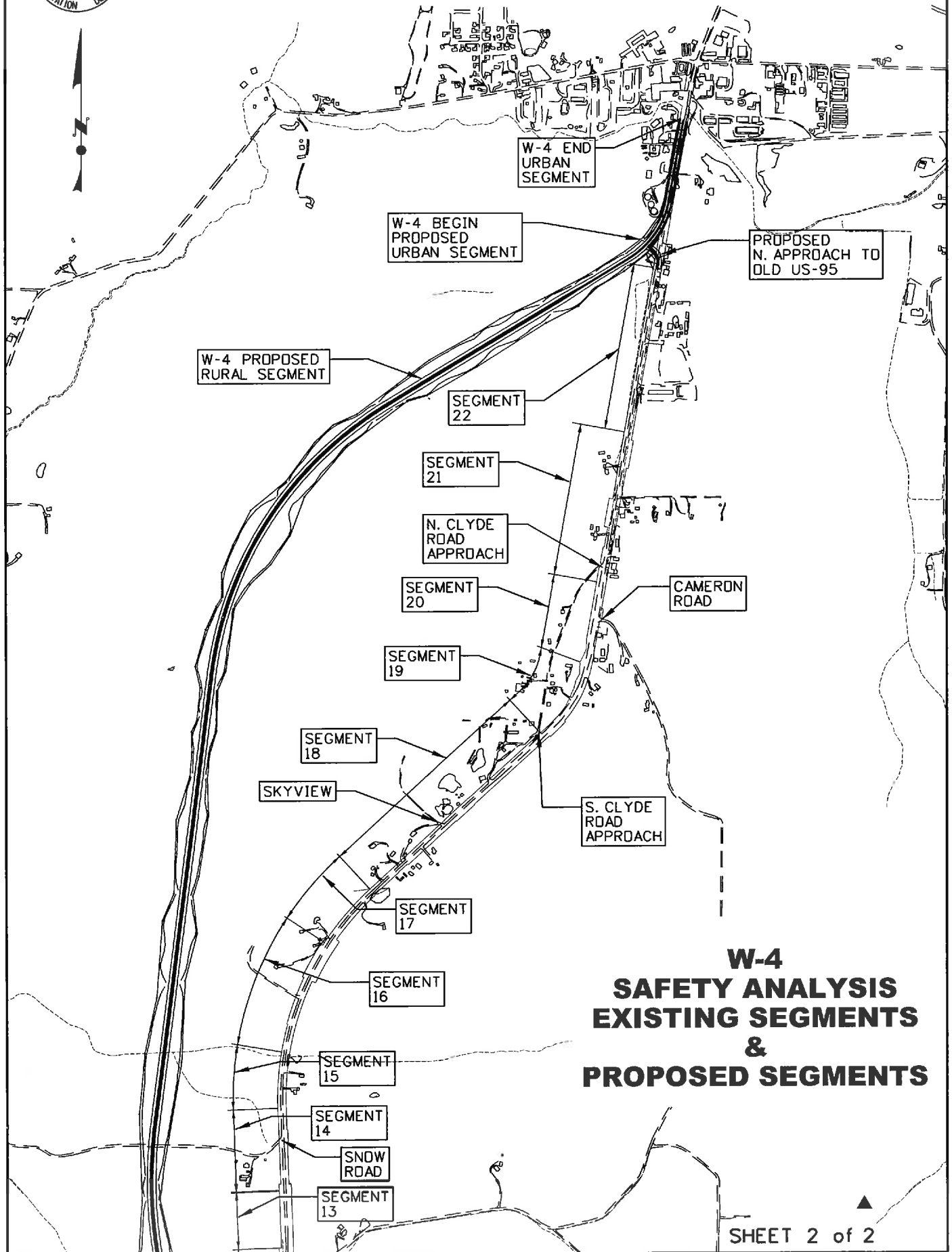
PROPOSED  
EID ROAD  
APPROACH

**W-4  
SAFETY ANALYSIS  
EXISTING SEGMENTS  
&  
PROPOSED SEGMENTS**

W-4 BEGIN  
PROPOSED  
RURAL SEGMENT



# MOSCOW



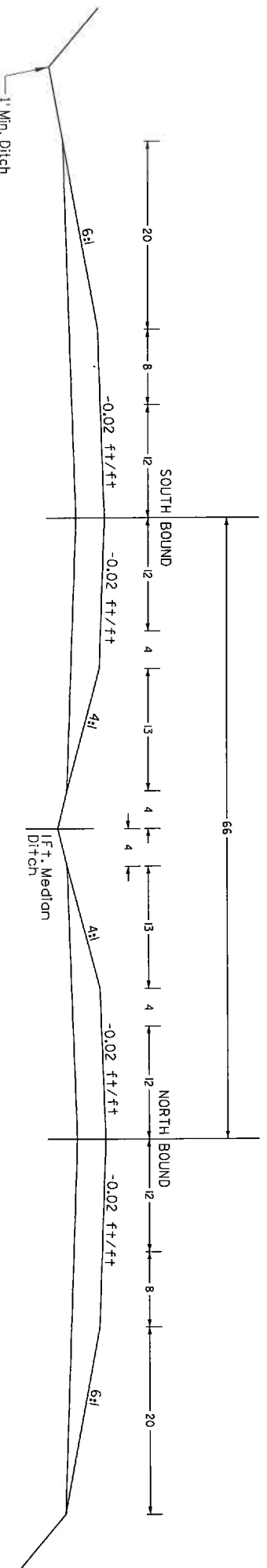
## W-4 SAFETY ANALYSIS EXISTING SEGMENTS & PROPOSED SEGMENTS



# W-4 TYPICAL SECTIONS

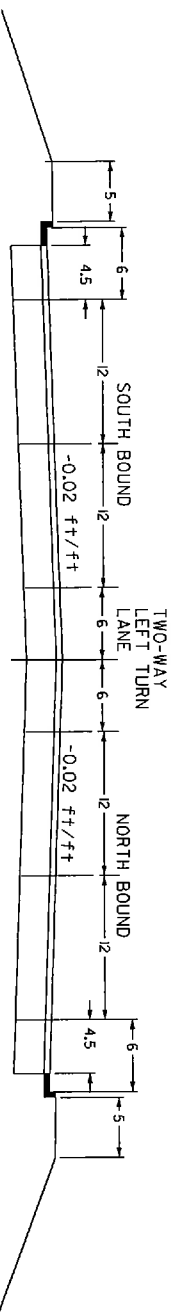
## RURAL SECTION

Milepost 337.668 to Milepost 344.058



## URBAN SECTION

Milepost 344.058 to Milepost 344.358





### **Predicted 2017 ADT for Proposed US-95 and County Roads for Safety Analysis**

Rural US-95 – **5920** From ITD Traffic Volume Report

Suburban US-95 – **7465** From ITD Traffic Volume Report

Eid Road – **65** – From Current North Latah Highway District Plan

Jacksha Road – **50** – Volume is predicted to be less than Eid Road Volume

Zeitler Road – **50** – Volume is predicted to be less than Eid Road Volume

Snow Road – **25** – Volume is predicted to be very light due to few residences

Skyview Drive – **25** – The private drive currently services only 1 home

North Clyde Road – **50** – Volume predicted to be less than Eid Road Volume

Cameron Road – **100** – Volume predicted to be greater than other rural roads based on proximity to Moscow and the number of homes

South Clyde Road – **50** – Volume of traffic predicted to be light and less than Eid Road Volume

### **Predicted 2017 ADT on Existing US-95 Loop If Alternative W4 Was Constructed**

Segments 11 – 19 – **200** (For Predictions See Below)

18 Approaches generate 10 trips per day = 180

Zeitler Road = 50, Snow Road = 25, Skyline Drive = 25, Clyde Road South = 50 / Total = 150

Predict an Even Directional Split –  $(180+150)/2 = 165$

Predict about 35 commuters that drive through on Old US-95 per day –  $165 + 35 = \mathbf{200}$

Segments 20-22 - **1545** from Differences in ITD Traffic Volume Report ( $7465 - 5920 = 1545$ )

### **Predicted Traffic Growth Rates**

Proposed US-95 Rural – **1.63%** From ITD Traffic Volume Report

Proposed US-95 Suburban – **1.58%** From ITD Traffic Volume Report

Segment 22 on Existing US-95 Loop – **0.91%** Growth Rate of Moscow from Latah County Comprehensive Plan because the segment is within the area of impact of Moscow

Segments 20,21 on Existing US-95 Loop – **0.53%** Growth Rate of Unincorporated Latah County from Latah County Comprehensive Plan because the segments are near the area of impact of Moscow

Segments 11-19 – **0.19%** Growth Rate within the Thorncreek to Moscow Corridor based on Census Bureau Data in the Thorncreek to Moscow Community Impact Technical Report

Skyline Drive – **0.91%** Growth Rate of Moscow – This is a new subdivision so growth is predicted to be greater than other areas within the corridor

All County Roads Except Skyline Drive – **0.19%** Growth Rate within the Thorncreek to Moscow Corridor based on Census Bureau Data in the Thorncreek to Moscow Community Impact Technical Report

### Assumed W4 ADTs

W4 Rural ADT		W4 Suburban ADT		W4 Segment 22 ADT		W4 Segment 21,20 ADT	
Year	ADT	Year	ADT	Year	ADT	Year	ADT
2017	5920	2017	7465	2017	1545	2017	1545
2018	6016	2018	7583	2018	1559	2018	1553
2019	6114	2019	7703	2019	1573	2019	1561
2020	6214	2020	7825	2020	1588	2020	1570
2021	6315	2021	7949	2021	1602	2021	1578
2022	6417	2022	8075	2022	1617	2022	1586
2023	6522	2023	8203	2023	1631	2023	1594
2024	6628	2024	8333	2024	1646	2024	1603
2025	6736	2025	8465	2025	1661	2025	1611
2026	6845	2026	8599	2026	1677	2026	1620
2027	6957	2027	8735	2027	1692	2027	1628
2028	7070	2028	8873	2028	1707	2028	1637
2029	7185	2029	9014	2029	1723	2029	1646
2030	7302	2030	9157	2030	1738	2030	1654
2031	7421	2031	9302	2031	1754	2031	1663
2032	7541	2032	9449	2032	1770	2032	1672
2033	7664	2033	9598	2033	1786	2033	1680
2034	7789	2034	9750	2034	1803	2034	1689
2035	7915	2035	9905	2035	1819	2035	1698
2036	8044	2036	10062	2036	1836	2036	1707
2037	8175	2037	10221	2037	1853	2037	1716
2038	8308	2038	10383	2038	1869	2038	1725
2039	8443	2039	10547	2039	1886	2039	1734
2040	8581	2040	10714	2040	1904	2040	1743
2041	8720	2041	10884	2041	1921	2041	1753
2042	8862	2042	11056	2042	1939	2042	1762
2043	9006	2043	11231	2043	1956	2043	1771
2044	9153	2044	11409	2044	1974	2044	1780
2045	9302	2045	11590	2045	1992	2045	1790
2046	9453	2046	11773	2046	2010	2046	1799
2047	9607	2047	11960	2047	2029	2047	1809
2048	9763	2048	12149	2048	2047	2048	1818
2049	9922	2049	12342	2049	2066	2049	1828
2050	10083	2050	12537	2050	2085	2050	1837
2051	10247	2051	12736	2051	2104	2051	1847
2052	10414	2052	12937	2052	2123	2052	1857
2053	10583	2053	13142	2053	2142	2053	1867
2054	10755	2054	13350	2054	2162	2054	1876
2055	10930	2055	13562	2055	2181	2055	1886
2056	11108	2056	13776	2056	2201	2056	1896
2057	11289	2057	13994	2057	2221	2057	1906
2058	11473	2058	14216	2058	2242	2058	1916
2059	11659	2059	14441	2059	2262	2059	1926
2060	11849	2060	14670	2060	2283	2060	1937
2061	12042	2061	14902	2061	2303	2061	1947
2062	12238	2062	15138	2062	2324	2062	1957
2063	12437	2063	15378	2063	2346	2063	1967
2064	12639	2064	15621	2064	2367	2064	1978
2065	12845	2065	15869	2065	2389	2065	1988
2066	13054	2066	16120	2066	2410	2066	1999

### Assumed W4 Old US-95 ADTs

Old US-95 ADT		Jacksha Rd. ADT		Zeitler Rd. ADT		Snow Rd. ADT	
Year	ADT	Year	ADT	Year	ADT	Year	ADT
2017	200	2017	50	2017	50	2017	25
2018	200	2018	50	2018	50	2018	25
2019	201	2019	50	2019	50	2019	25
2020	201	2020	50	2020	50	2020	25
2021	202	2021	50	2021	50	2021	25
2022	202	2022	50	2022	50	2022	25
2023	202	2023	51	2023	51	2023	25
2024	203	2024	51	2024	51	2024	25
2025	203	2025	51	2025	51	2025	25
2026	203	2026	51	2026	51	2026	25
2027	204	2027	51	2027	51	2027	25
2028	204	2028	51	2028	51	2028	26
2029	205	2029	51	2029	51	2029	26
2030	205	2030	51	2030	51	2030	26
2031	205	2031	51	2031	51	2031	26
2032	206	2032	51	2032	51	2032	26
2033	206	2033	52	2033	52	2033	26
2034	207	2034	52	2034	52	2034	26
2035	207	2035	52	2035	52	2035	26
2036	207	2036	52	2036	52	2036	26
2037	208	2037	52	2037	52	2037	26
2038	208	2038	52	2038	52	2038	26
2039	209	2039	52	2039	52	2039	26
2040	209	2040	52	2040	52	2040	26
2041	209	2041	52	2041	52	2041	26
2042	210	2042	52	2042	52	2042	26
2043	210	2043	53	2043	53	2043	26
2044	211	2044	53	2044	53	2044	26
2045	211	2045	53	2045	53	2045	26
2046	211	2046	53	2046	53	2046	26
2047	212	2047	53	2047	53	2047	26
2048	212	2048	53	2048	53	2048	27
2049	213	2049	53	2049	53	2049	27
2050	213	2050	53	2050	53	2050	27
2051	213	2051	53	2051	53	2051	27
2052	214	2052	53	2052	53	2052	27
2053	214	2053	54	2053	54	2053	27
2054	215	2054	54	2054	54	2054	27
2055	215	2055	54	2055	54	2055	27
2056	215	2056	54	2056	54	2056	27
2057	216	2057	54	2057	54	2057	27
2058	216	2058	54	2058	54	2058	27
2059	217	2059	54	2059	54	2059	27
2060	217	2060	54	2060	54	2060	27
2061	217	2061	54	2061	54	2061	27
2062	218	2062	54	2062	54	2062	27
2063	218	2063	55	2063	55	2063	27
2064	219	2064	55	2064	55	2064	27
2065	219	2065	55	2065	55	2065	27
2066	220	2066	55	2066	55	2066	27

Skyview Dr. ADT	
Year	ADT
2017	25
2018	25
2019	25
2020	26
2021	26
2022	26
2023	26
2024	27
2025	27
2026	27
2027	27
2028	28
2029	28
2030	28
2031	28
2032	29
2033	29
2034	29
2035	29
2036	30
2037	30
2038	30
2039	31
2040	31
2041	31
2042	31
2043	32
2044	32
2045	32
2046	33
2047	33
2048	33
2049	33
2050	34
2051	34
2052	34
2053	35
2054	35
2055	35
2056	36
2057	36
2058	36
2059	37
2060	37
2061	37
2062	38
2063	38
2064	38
2065	39
2066	39

Clyde Rd. ADT	
Year	ADT
2017	50
2018	50
2019	50
2020	50
2021	50
2022	50
2023	51
2024	51
2025	51
2026	51
2027	51
2028	51
2029	51
2030	51
2031	51
2032	51
2033	52
2034	52
2035	52
2036	52
2037	52
2038	52
2039	52
2040	52
2041	52
2042	52
2043	53
2044	53
2045	53
2046	53
2047	53
2048	53
2049	53
2050	53
2051	53
2052	53
2053	54
2054	54
2055	54
2056	54
2057	54
2058	54
2059	54
2060	54
2061	54
2062	54
2063	55
2064	55
2065	55
2066	55

Eid Rd. ADT	
Year	ADT
2017	65
2018	65
2019	65
2020	65
2021	65
2022	66
2023	66
2024	66
2025	66
2026	66
2027	66
2028	66
2029	67
2030	67
2031	67
2032	67
2033	67
2034	67
2035	67
2036	67
2037	68
2038	68
2039	68
2040	68
2041	68
2042	68
2043	68
2044	68
2045	69
2046	69
2047	69
2048	69
2049	69
2050	69
2051	69
2052	69
2053	70
2054	70
2055	70
2056	70
2057	70
2058	70
2059	70
2060	71
2061	71
2062	71
2063	71
2064	71
2065	71
2066	71

Cameron Rd. ADT	
Year	ADT
2017	100
2018	100
2019	100
2020	101
2021	101
2022	101
2023	101
2024	101
2025	102
2026	102
2027	102
2028	102
2029	102
2030	103
2031	103
2032	103
2033	103
2034	103
2035	103
2036	104
2037	104
2038	104
2039	104
2040	104
2041	105
2042	105
2043	105
2044	105
2045	105
2046	106
2047	106
2048	106
2049	106
2050	106
2051	107
2052	107
2053	107
2054	107
2055	108
2056	108
2057	108
2058	108
2059	108
2060	109
2061	109
2062	109
2063	109
2064	109
2065	110
2066	110

# ADT Volume Projection Report

Route US095  
 Segment From 1539 Milepost From 337.180  
 Segment To 1540 Milepost To 342.930  
 Traffic Data 2010  
 Start Projection 2017  
 End Projection 2037

Year	From	To	From	To	AADT	CAADT	DHV	DHV %	CDHV	CDHV %	DIR	From Description	To Description
2010	001539	001539	337.180	337.668	4,900	650	567	11.5	53	8.106	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	4,900	680	567	11.5	55	8.106	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	5,300	680	611	11.5	55	8.071	60/40%	EID RD	
<b>2010 Weighted 5,130 677 593 11.50 55 8.07</b>													
2017	001539	001539	337.180	337.668	5,654	809	650	11.4	65	8.044	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	5,657	847	650	11.4	68	8.044	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	6,113	847	700	11.4	68	8.014	60/40%	EID RD	
<b>2017 Weighted 5,920 843 679 11.40 68 8.01</b>													
2037	001539	001539	337.180	337.668	7,809	1,264	885	11.3	100	7.934	60/40%	THORN CREEK RD	END NEW ALIGNMENT
	001540	001540	337.668	339.620	7,821	1,323	886	11.3	105	7.933	60/40%	END NEW ALIGNMENT	EID RD
			339.620	342.930	8,437	1,323	954	11.3	105	7.912	60/40%	EID RD	
<b>2037 Weighted 8,175 1,318 925 11.30 104 7.91</b>													

# ADT Volume Projection Report

Route US095

Traffic Data 2010

Segment From 1540

Milepost From 342.93

Start Projection 2017

Segment To 1540

Milepost To 344.11

End Projection 2037

Year	Segment		Milepost		AADT	CAADT	DHV	DHV %	CDHV	CDHV %	DIR	From Description	To Description
	From	To	From	To									
2010	001540	001540	342.933	344.116	6,500.	520	742	11.4	42	7.992	60/40%	CLYDE RD	PALOUSE RIVER DR
	2010		Weighted averages		6,500	520	742	11.4	42	7.99			
2017	001540	001540	342.933	344.116	7,465	647	848	11.3	51	7.947	60/40%	CLYDE RD	PALOUSE RIVER DR
	2017		Weighted averages		7,465	647	848	11.3	51	7.95			
2037	001540	001540	342.933	344.116	10,221	1,011	1,148	11.2	80	7.865	60/40%	CLYDE RD	PALOUSE RIVER DR
	2037		Weighted averages		10,221	1,011	1,148	11.2	80	7.87			



## **Appendix D**

### **Economic Cost of Crashes**

- Economic Cost of Predicted Crashes on Alternative E2
- Economic Cost of Predicted Crashes on Alternative C3
- Economic Cost of Predicted Crashes on Alternative E4
- Economic Cost of Predicted Crashes No Action Alternative
  - Economic Cost Relating to Wild Animal Crashes
- Percentages and Factors Used to Determine Economic Costs of Alternatives and Wild Animal Crashes

# Economic Cost of Predicted Crashes on Alternative E2

Total Predicted Crashes on Alternative E2:	179.5
Total Predicted Fatal and Injury Crashes on Alternative E2:	89

Estimated Economic Cost of Crashes on Alternative E2 Between 2017 and 2036						
Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	1.93	1.1%	1.09	2.11	\$6,295,406	\$13,252,566.19
Type A	11.88	6.6%	1.24	14.73	\$313,516	\$4,619,050.04
Type B	29.39	16.4%	1.33	39.09	\$87,814	\$3,432,278.16
Type C	45.81	25.5%	1.56	71.46	\$58,209	\$4,159,670.32
Property Damage	90.5	50.4%	1.00	0.00	\$6,739	\$609,879.50
Total:	179.5	100.0%				<b>\$26,073,444.21</b>

Total Predicted Crashes on Alternative E2 and US-95 Loop:	213.9
Total Predicted Fatal and Injury Crashes on Alternative E2 and US-95 Loop:	100.7

Estimated Economic Cost of Crashes on Alternative E2 and the US-95 Loop Between 2017 and 2036						
Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	2.19	1.0%	1.09	2.38	\$6,295,406	\$14,994,757.48
Type A	13.44	6.3%	1.24	16.67	\$313,516	\$5,226,273.47
Type B	33.25	15.5%	1.33	44.22	\$87,814	\$3,883,487.76
Type C	51.83	24.2%	1.56	80.86	\$58,209	\$4,706,503.39
Property Damage	113.2	52.9%	1.00	0.00	\$6,739	\$762,854.80
Total:	213.9	100.0%				<b>\$29,573,876.90</b>

\*The economic cost of crashes estimated is based on the total predicted number of crashes by the Highway Safety Manual and crash costs from the Office of Highway Safety Publication titled Idaho Highway Crashes 2012. The percentage of fatal and injury crashes, and the factor increasing the number of fatalities or injuries is based on statewide averages published in the Office of Highway Safety Publication titled Idaho Highway Crashes 2012.

# Economic Cost of Predicted Crashes on Alternative E2

Total Predicted Crashes on Alternative E2:	7.6
Total Predicted Fatal and Injury Crashes on Alternative E2:	3.8

Estimated Economic Cost of Crashes on Alternative E2 For 2017						
Crash Type	Predicted Crashes	Percentage of Crashes	Multiple Car Multiplier	Predicted Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	0.08	1.1%	1.09	0.09	\$6,295,406	\$565,839.90
Type A	0.51	6.7%	1.24	0.63	\$313,516	\$197,217.87
Type B	1.25	16.5%	1.33	1.67	\$87,814	\$146,546.71
Type C	1.96	25.7%	1.56	3.05	\$58,209	\$177,603.90
Property Damage	3.8	50.0%	1.00	0.00	\$6,739	\$25,608.20
Total:	7.6	100.0%				<b>\$1,112,816.58</b>

Total Predicted Crashes on Alternative E2 and US-95 Loop:	9.2
Total Predicted Fatal and Injury Crashes on Alternative E2 and US-95 Loop:	4.4

Estimated Economic Cost of Crashes on Alternative E2 and the US-95 Loop For 2017						
Crash Type	Predicted Crashes	Percentage of Crashes	Multiple Car Multiplier	Predicted Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	0.10	1.0%	1.09	0.10	\$6,295,406	\$655,183.05
Type A	0.59	6.4%	1.24	0.73	\$313,516	\$228,357.53
Type B	1.45	15.8%	1.33	1.93	\$87,814	\$169,685.66
Type C	2.26	24.6%	1.56	3.53	\$58,209	\$205,646.62
Property Damage	4.8	52.2%	1.00	0.00	\$6,739	\$32,347.20
Total:	9.2	100.0%				<b>\$1,291,220.06</b>

\*The economic cost of crashes estimated is based on the total predicted number of crashes by the Highway Safety Manual and crash costs from the Office of Highway Safety Publication titled Idaho Highway Crashes 2012. The percentage of fatal and injury crashes, and the factor increasing the number of fatalities or injuries is based on statewide averages published in the Office of Highway Safety Publication titled Idaho Highway Crashes 2012.

# Economic Cost of Predicted Crashes on Alternative C3

Total Predicted Crashes on Alternative C3:	253.8
Total Predicted Fatal and Injury Crashes on Alternative C3:	107.7

Estimated Economic Cost of Crashes on Alternative C3 Between 2017 and 2036						
Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	2.3694	0.9%	1.09	2.58	\$6,295,406	\$16,258,805.12
Type A	14.70105	5.7%	1.24	18.23	\$313,516	\$5,715,177.85
Type B	36.34875	14.2%	1.33	48.34	\$87,814	\$4,245,265.75
Type C	56.6502	22.1%	1.56	88.37	\$58,209	\$5,144,180.33
Property Damage	146.1	57.0%	1.00	0.00	\$6,739	\$984,567.90
Total:	256.1694	100.0%				<b>\$32,347,996.94</b>

Total Predicted Crashes on Alternative C3 and US-95 Loop:	260.2
Total Predicted Fatal and Injury Crashes on Alternative C3 and US-95 Loop:	110

Estimated Economic Cost of Crashes on Alternative C3 and the US-95 Loop Between 2017 and 2036						
Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	2.42	0.9%	1.09	2.64	\$6,295,406	\$16,606,021.95
Type A	15.015	5.7%	1.24	18.62	\$313,516	\$5,837,229.00
Type B	37.125	14.1%	1.33	49.38	\$87,814	\$4,335,926.02
Type C	57.86	22.0%	1.56	90.26	\$58,209	\$5,254,037.47
Property Damage	150.2	57.2%	1.00	0.00	\$6,739	\$1,012,197.80
Total:	262.62	100.0%				<b>\$33,045,412.24</b>

\*The economic cost of crashes estimated is based on the total predicted number of crashes by the Highway Safety Manual and crash costs from the Office of Highway Safety Publication titled Idaho Highway Crashes 2012. The percentage of fatal and injury crashes, and the factor increasing the number of fatalities or injuries is based on statewide averages published in the Office of Highway Safety Publication titled Idaho Highway Crashes 2012.

# Economic Cost of Predicted Crashes on Alternative C3

Total Predicted Crashes on Alternative C3:	10.8
Total Predicted Fatal and Injury Crashes on Alternative C3:	4.6

Estimated Economic Cost of Crashes on Alternative C3 For 2017						
Crash Type	Predicted Crashes	Percentage of Crashes	Multiple Car Multiplier	Predicted Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	0.1012	0.9%	1.09	0.11	\$6,295,406	\$694,433.65
Type A	0.6279	5.8%	1.24	0.78	\$313,516	\$244,102.30
Type B	1.5525	14.2%	1.33	2.06	\$87,814	\$181,320.54
Type C	2.4196	22.2%	1.56	3.77	\$58,209	\$219,714.29
Property Damage	6.2	56.9%	1.00	0.00	\$6,739	\$41,781.80
Total:	10.9012	100.0%				<b>\$1,381,352.59</b>

Total Predicted Crashes on Alternative C3 and US-95 Loop:	11.1
Total Predicted Fatal and Injury Crashes on Alternative C3 and US-95 Loop:	4.7

Estimated Economic Cost of Crashes on Alternative C3 and the US-95 Loop For 2017						
Crash Type	Predicted Crashes	Percentage of Crashes	Multiple Car Multiplier	Predicted Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	0.1034	0.9%	1.09	0.11	\$6,295,406	\$709,530.03
Type A	0.64155	5.7%	1.24	0.80	\$313,516	\$249,408.88
Type B	1.58625	14.2%	1.33	2.11	\$87,814	\$185,262.29
Type C	2.4722	22.1%	1.56	3.86	\$58,209	\$224,490.69
Property Damage	6.4	57.1%	1.00	0.00	\$6,739	\$43,129.60
Total:	11.2034	100.0%				<b>\$1,411,821.49</b>

\*The economic cost of crashes estimated is based on the total predicted number of crashes by the Highway Safety Manual and crash costs from the Office of Highway Safety Publication titled Idaho Highway Crashes 2012. The percentage of fatal and injury crashes, and the factor increasing the number of fatalities or injuries is based on statewide averages published in the Office of Highway Safety Publication titled Idaho Highway Crashes 2012.

# Economic Cost of Predicted Crashes on Alternative W4

Total Predicted Crashes on Alternative W4:	219.3
Total Predicted Fatal and Injury Crashes on Alternative W4:	107.7

Estimated Economic Cost of Crashes on Alternative W4 Between 2017 and 2036						
Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	2.3694	1.1%	1.09	2.58	\$6,295,406	\$16,258,805.12
Type A	14.70105	6.6%	1.24	18.23	\$313,516	\$5,715,177.85
Type B	36.34875	16.4%	1.33	48.34	\$87,814	\$4,245,265.75
Type C	56.6502	25.6%	1.56	88.37	\$58,209	\$5,144,180.33
Property Damage	111.6	50.3%	1.00	0.00	\$6,739	\$752,072.40
Total:	221.6694	100.0%				<b>\$32,115,501.44</b>

Total Predicted Crashes on Alternative W4 and US-95 Loop:	246.2
Total Predicted Fatal and Injury Crashes on Alternative W4 and US-95 Loop:	116.9

Estimated Economic Cost of Crashes on Alternative W4 and the US-95 Loop Between 2017 and 2036						
Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	2.5718	1.0%	1.09	2.80	\$6,295,406	\$17,647,672.41
Type A	15.95685	6.4%	1.24	19.79	\$313,516	\$6,203,382.45
Type B	39.45375	15.9%	1.33	52.47	\$87,814	\$4,607,906.83
Type C	61.4894	24.7%	1.56	95.92	\$58,209	\$5,583,608.92
Property Damage	129.3	52.0%	1.00	0.00	\$6,739	\$871,352.70
Total:	248.7718	100.0%				<b>\$34,913,923.31</b>

\*The economic cost of crashes estimated is based on the total predicted number of crashes by the Highway Safety Manual and crash costs from the Office of Highway Safety Publication titled Idaho Highway Crashes 2012. The percentage of fatal and injury crashes, and the factor increasing the number of fatalities or injuries is based on statewide averages published in the Office of Highway Safety Publication titled Idaho Highway Crashes 2012.



# Economic Cost of Predicted Crashes on Alternative W4

Total Predicted Crashes on Alternative W4:	9.3
Total Predicted Fatal and Injury Crashes on Alternative W4:	4.6

Estimated Economic Cost of Crashes on Alternative W4 For 2017						
Crash Type	Predicted Crashes	Percentage of Crashes	Multiple Car Multiplier	Predicted Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	0.1012	1.1%	1.09	0.11	\$6,295,406	\$694,433.65
Type A	0.6279	6.7%	1.24	0.78	\$313,516	\$244,102.30
Type B	1.5525	16.5%	1.33	2.06	\$87,814	\$181,320.54
Type C	2.4196	25.7%	1.56	3.77	\$58,209	\$219,714.29
Property Damage	4.7	50.0%	1.00	0.00	\$6,739	\$31,673.30
Total:	9.4012	100.0%				<b>\$1,371,244.09</b>

Total Predicted Crashes on Alternative W4 and US-95 Loop:	10.5
Total Predicted Fatal and Injury Crashes on Alternative W4 and US-95 Loop:	5.1

Estimated Economic Cost of Crashes on Alternative W4 and the US-95 Loop For 2017						
Crash Type	Predicted Crashes	Percentage of Crashes	Multiple Car Multiplier	Predicted Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	0.1122	1.1%	1.09	0.12	\$6,295,406	\$769,915.56
Type A	0.69615	6.6%	1.24	0.86	\$313,516	\$270,635.16
Type B	1.72125	16.2%	1.33	2.29	\$87,814	\$201,029.30
Type C	2.6826	25.3%	1.56	4.18	\$58,209	\$243,596.28
Property Damage	5.4	50.9%	1.00	0.00	\$6,739	\$36,390.60
Total:	10.6122	100.0%				<b>\$1,521,566.91</b>

\*The economic cost of crashes estimated is based on the total predicted number of crashes by the Highway Safety Manual and crash costs from the Office of Highway Safety Publication titled Idaho Highway Crashes 2012. The percentage of fatal and injury crashes, and the factor increasing the number of fatalities or injuries is based on statewide averages published in the Office of Highway Safety Publication titled Idaho Highway Crashes 2012.

## Economic Cost of Wild Animal Crashes

Extra Wild Animal Crashes (1 Per Year for 20 Years):

**20**

Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Crash Type	Number	Percentage	Multiplier	Fatalities and Injuries	Cost of Crashes	Total Cost
Fatality	0	0.00%	1.00	0.00	\$6,295,406	\$0.00
Type A	0.12	0.60%	1.00	0.12	\$313,516	\$37,621.92
Type B	0.46	2.30%	1.45	0.67	\$87,814	\$58,571.94
Type C	1.31	6.55%	1.26	1.65	\$58,209	\$96,079.78
Property Damage	18.11	90.55%	1.00		\$6,739	\$122,043.29
<b>Total:</b>	<b>20</b>	<b>100.0%</b>				<b>\$314,316.92</b>

Extra Wild Animal Crashes:

**223**

How Many Wild Animal Crashes Would Be Required to Make Economic Cost of Crashes for Alternative E2 Equal to Alternative C3

Crash Type	Crashes	Percentage of Crashes	Multiple Car Multiplier	Fatalities or Injuries	2012 FHWA Cost of Crashes	Total Cost
Fatality	0	0.00%	1.00	0.00	\$6,295,406	\$0.00
Type A	1.338	0.60%	1.00	1.34	\$313,516	\$419,484.41
Type B	5.129	2.30%	1.45	7.44	\$87,814	\$653,077.11
Type C	14.6065	6.55%	1.26	18.40	\$58,209	\$1,071,289.50
Property Damage	201.9265	90.55%	1.00		\$6,739	\$1,360,782.68
<b>Total:</b>	<b>223</b>	<b>100.0%</b>				<b>\$3,504,633.70</b>

\*The economic cost of crashes estimated is based on crash costs from the Office of Highway Safety Publication titled Idaho Highway Crashes 2012. The percentage of fatal and injury crashes and property damage only crashes, and the factor increasing the number of fatalities or injuries is based on wild animal crash data along US-95 in District 2 between 1/1/03 and 12/31/12.

## Percentages and Factors Used to Determine Economic Costs of Alternatives and Wild Animal Crashes

	Number of Crashes of Different Severity From ITD Database	Percentage of Crash Type Compared to Total Fatal and Injury* Crashes
Fatal Crashes	169	2.17%
A Crashes	1042	13.35%
B Crashes	2577	33.02%
C Crashes	4017	51.47%
Total F+I Crashes	7805	100.00%

\*The percentage of crash type compared to total Fatal and Injury Crashes is used to help estimate the percentage of Fatal and Injury Crashes on the different alternatives

	Total Number of Injuries or Fatalities in Idaho in 2012*	Crash Multiplication Factor**
Total Fatalities (2012)	184	1.09
Total A Injuries (2012)	1287	1.24
Total B Injuries (2012)	3428	1.33
Total C Injuries (2012)	6273	1.56
Total F+I (2012)	11172	

\*This Number is from Table 3 of Section 1 of Idaho Traffic Crashes 2012 by the Idaho Transportation Department Office of Highway Safety

\*\*The Crash Multiplication Factor is the total number of the injuries or fatalities of a given crash type divided by the total number of crashes listed with the corresponding severity level. The Crash Multiplication Factor is used to account for numerous injuries in a given crash event and is used to help estimate the estimated economic cost of crashes for different accident types.

	Crashes Resulting in a Fatal or Injury Accident Caused By Animal Crashes Between 1/03 and 12/31	Injuries or Fatalities for Wild Animal Crashes Between 1/03 and 12/31	Crash Multiplication Factor**
Total Fatalities (2012)	0	0	0.00
Total A Injuries (2012)	3	3	1.00
Total B Injuries (2012)	11	16	1.45
Total C Injuries (2012)	31	39	1.26
Total F+I (2012)	45	58	

\*This Number is from Table 3 of Section 1 of Idaho Traffic Crashes 2012 by the Idaho Transportation Department Office of Highway Safety

\*\*The Crash Multiplication Factor is the total number of the injuries or fatalities of a given crash type divided by the Total number of crashes listed with the corresponding severity level. The Crash Multiplication Factor is used to account for numerous injuries in a given crash event and is used to help estimate the estimated economic cost of crashes for different accident types.

## Economic Cost of No Action Alternative

Economic Cost of No Action Alternative	
Year	Cost Per Year
2013	\$5,613,549
2014	\$5,705,050
2015	\$5,798,042
2016	\$5,892,550
2017	\$5,988,599
2018	\$6,086,213
2019	\$6,185,418
2020	\$6,286,241
2021	\$6,388,706
2022	\$6,492,842
2023	\$6,598,676
2024	\$6,706,234
2025	\$6,815,546
2026	\$6,926,639
2027	\$7,039,543
2028	\$7,154,288
2029	\$7,270,903
2030	\$7,389,418
2031	\$7,509,866
2032	\$7,632,277
2033	\$7,756,683
2034	\$7,883,117
2035	\$8,011,611
2036	\$8,142,201
<b>Total 2017 to 2036:</b>	<b>\$140,265,019</b>

\*This table is based on a 10 year crash average from Thorncreek Road to Moscow between 2003 and 2012, the 2012 economic cost of crashes, and a growth factor of 1.63%.

## **Appendix E**

### **Crash Predictions**

- Total Predicted Crashes Between 2017 and 2036 and Total Predicted Fatal and Injury Crashes Between 2017 and 2036
- Summary of Crash Predictions for Alternatives E2, C3, and W4
  - E2 Total Crash Summary
  - E2 Fatal and Injury Cash Summary
  - C3 Total Crash Summary
  - C3 Fatal and Injury Cash Summary
  - W4 Total Crash Summary
  - W4 Fatal and Injury Cash Summary
- Crash Prediction for No Action Alternative

(2017 – 2036 Crash Data is Bound Separately)

### Total Predicted Crashes Between 2017 and 2037

Proposed Alignment Total Crash Summary by Year																					
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
E2	7.6	7.7	7.9	8.0	8.1	8.3	8.4	8.6	8.7	8.9	9.0	9.2	9.3	9.5	9.6	9.8	10.0	10.1	10.3	10.5	179.5
C3	10.8	11.0	11.2	11.3	11.5	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.2	13.4	13.6	13.8	14.1	14.3	14.5	14.8	253.8
W4	9.3	9.4	9.6	9.8	9.9	10.1	10.3	10.5	10.6	10.8	11.0	11.2	11.4	11.6	11.8	12.0	12.2	12.4	12.6	12.8	219.3
Proposed Alignment and Existing US-95 Loop Total Crash Summary by Year																					
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
E2	9.2	9.4	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	11.1	11.2	11.4	11.6	11.8	11.9	12.1	12.3	213.9
C3	11.1	11.3	11.5	11.7	11.9	12.0	12.2	12.4	12.6	12.8	13.1	13.3	13.5	13.7	13.9	14.2	14.4	14.6	14.9	15.1	260.2
W4	10.5	10.7	10.9	11.1	11.2	11.4	11.6	11.8	12.0	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6	13.8	14.0	14.3	246.2

### Total Predicted Fatal and Injury Crashes Between 2017 and 2037

		Proposed Alignment Total Fatal and Injury Crash Summary by Year																				Total
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
E2	3.8	3.9	3.9	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.7	4.8	4.8	4.9	5.0	5.1	5.1	89.0	
C3	4.6	4.7	4.8	4.9	4.9	5.0	5.1	5.2	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.8	5.9	6.0	6.1	6.2	107.7	
W4	4.6	4.7	4.8	4.8	4.9	5.0	5.1	5.2	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.8	5.9	6.0	6.1	6.2	107.7	
Proposed Alignment and Existing US-95 Loop Total Fatal and Injury Crash Summary by Year																						Total
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
E2	4.4	4.4	4.5	4.6	4.6	4.7	4.8	4.8	4.9	5.0	5.1	5.1	5.2	5.3	5.4	5.4	5.5	5.6	5.7	5.8	100.7	
C3	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.3	5.4	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.0	6.1	6.2	6.3	110.0	
W4	5.1	5.1	5.2	5.3	5.4	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	116.9	



## E-2 Total Crash Summary

New Alignment																					
Segment	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Rural Divided	6.057	6.160	6.266	6.373	6.481	6.592	6.704	6.819	6.935	7.054	7.174	7.297	7.421	7.548	7.677	7.808	7.941	8.077	8.215	8.355	
Suburban	0.943	0.958	0.974	0.989	1.005	1.022	1.038	1.055	1.072	1.089	1.107	1.125	1.143	1.162	1.181	1.200	1.220	1.240	1.260	1.281	
Intersection	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
South Old US-95	0.234	0.239	0.243	0.248	0.253	0.258	0.264	0.269	0.274	0.280	0.285	0.291	0.297	0.303	0.309	0.315	0.322	0.328	0.335	0.341	
North Old US-95	0.370	0.376	0.383	0.390	0.397	0.404	0.411	0.419	0.426	0.434	0.442	0.450	0.458	0.466	0.475	0.484	0.493	0.502	0.511	0.521	
Total	7.6	7.7	7.9	8.0	8.1	8.3	8.4	8.6	8.7	8.9	9.0	9.2	9.3	9.5	9.6	9.8	10.0	10.1	10.3	10.5	

**Existing US-95**

[illegible]

Total (Crashes/year)	9.2	9.4	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	11.1	11.2	11.4	11.6	11.8	11.9	12.1	12.3
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**Total crashes between 2017 and 2036**

213.9

### C-3 Total Crash Summary

[illegible]

### **New Alignment**

**Existing US-95**

Total crashes between 2017 and 2036	246.2
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### New Alignment

### Existing US-95

Total fatal and injury crashes between 2017 and 2036

Total fatal and injury crashes between 2017 and 2036	100.7
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## New Alignment

### Existing US-95

Total fatal and injury crashes between 2017 and 2036	110.0
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### **New Alignment**

**Existing US-95**

Total fatal and injury crashes between 2017 and 2036

116.9



## Crash Prediction on the No Action Alternative

Crash Prediction on No Action Alternative			
Year	Crashes	F and I	PDO
2017	27.4	11.0	16.5
2018	27.9	11.1	16.7
2019	28.3	11.3	17.0
2020	28.8	11.5	17.3
2021	29.3	11.7	17.6
2022	29.7	11.9	17.9
2023	30.2	12.1	18.2
2024	30.7	12.3	18.5
2025	31.2	12.5	18.8
2026	31.7	12.7	19.1
2027	32.2	12.9	19.4
2028	32.8	13.1	19.7
2029	33.3	13.3	20.0
2030	33.8	13.5	20.3
2031	34.4	13.7	20.7
2032	35.0	14.0	21.0
2033	35.5	14.2	21.3
2034	36.1	14.4	21.7
2035	36.7	14.6	22.0
2036	37.3	14.9	22.4
<b>Total:</b>	<b>642.5</b>	<b>256.5</b>	<b>386.0</b>

\*This table is based on a 10 year crash average from Thorncreek Road to Moscow between 2003 and 2012 and a growth factor of 1.63%.