Request for Proposal
For
Development of a Web Based Safety Analysis Tool

Issued by:

IOWA DEPARTMENT OF TRANSPORTATION
Purchasing Section
Proposal No. 13605

Letting Date: May 5, 2015

Must be submitted no later than 1:00 PM Central Time
Bid Responses received after this date will be rejected

For information about this notice, and during this procurement, interested persons shall contact only:

Laurie Hoing, CPPB, PA III
800 Lincoln Way
Ames, Iowa 50010
Phone: 515-239-1168
Fax: 515-239-1538
E-Mail: laurie.hoing@iowa.gov

Issued addenda and all other correspondence will be posted to Iowa DOT's website:
http://**www.iowadot.gov/purchasing**

Procurement Timetable

The following dates are set forth for informational and planning purposes. The Iowa DOT reserves the right to revise the dates as needed. All times listed are Central Time.

Event/Dates	Section Reference	Date/Time
Issue RFP	cover	4/1/15
Number of Copies of Bid Responses Required	4.1.3	1 Original & 5 Copies
Bidders Conference (Pre-Bid) ☐ *Box will be checked when attendance is mandatory*	2.32	N/A
DOT Response from Bidder's Conference Questions	2.32	N/A
Bidder Questions, Requests for Clarification, & Changes *(no later than)*	2.2/2.5	4/9/15
DOT Response to Questions Issued *(no later than)*	2.2/2.5	4/16/15
Bid Opening/Proposal Due	2.8/2.9	5/5/15
Presentations & Demonstrations "Short list" (*by invitation only*)	2.24/ 5.3	5/28/15 & 5/29/15
Announce Successful Bidder Intent to Award* *see note below*	2.24	6/5/2015
Completion of Contract Negotiations & Execution of the Contract	2.25	6/30/15
Contract Begins	6.2	7/1/15
Contract Length Start Date --- End Date --- Renewals	6.2	Start date:7/1/15 End date: 6/30/17 Renewals: 4 Annual

*Intent to Award - See Section 2.22

It is intended that Bid Responses will be evaluated and a notice of "intent to award" will be issued within thirty (30) days of the bid opening date. Bid Responses prices, terms and conditions must be held firm for a 180-day period from the date of the notice of "intent to award" the contract.

Bid Response

Date Bids Due:	Time of Bid Opening:	Bid Opening Location:
5/5/2015	1:00 P.M.	800 Lincoln Way, Ames, IA

Proposal Number:	Description:
13605	Development of Web Based Safety Analysis Tool

Contract to Begin:	Date of Completion:	Proposal Guaranty Amount:	Liquidated Damages:
7/1/15	6/30/17	N/A	N/A

Purchasing Agent:	E-mail Address:	Phone:	Fax:
Laurie Hoing	Laurie.hoing@dot.iowa.gov	515-239-1168	515-239-1538

Company Name:	Federal Tax ID:

Street Address:	City: State:	Zip Code:

Supplier Contact (type or print)	E-mail Address:	Phone:	Fax:

Supplier agrees to sell items/services at the same prices, terms and conditions to any other state agency. Regent or Political Subdivision upon request. Please check Yes or No.	Are you an Iowa Targeted Small Business?
☐ Yes ☐ No	☐ Yes ☐ No

GENERAL INFORMATION

This bid package includes the Bid Proposal, Schedule of Prices, Standard Terms and Conditions, Supplemental Terms, Specifications, mailing label and other information needed to prepare a bid response. Please use the furnished mailing label, & indicate on the packet, proposal number & letting date" on the outside of the return envelope. Bidders may personally deliver, mail, or select a carrier that ensures timely delivery. **Faxed or emailed bids will not be accepted.**

If required, each bid must be accompanied by a proposal guarantee in an accepted form in the sum indicated above. Refer to the Standard Terms and Conditions for the accepted forms required for this specific bid opportunity. Bids not including a proposal guarantee when required will not be considered for award.

PROPOSAL STATEMENT

The entire contents of this Bid Proposal, addendums to the proposal, specifications, plans, Supplemental Terms and Conditions, Standard Terms and Conditions, and Schedule of Prices shall become part of the contract.

Upon award, the successful Bidder promises to enter into a contract within fifteen (15) days after award or forfeit the proposal guarantee furnished herewith.

Bidder promises to furnish all materials, equipment and/or services specified, in the manner and the time prescribed, at prices hereinafter set out.

Bidder certifies that they have not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of free competition; that no attempt has been made to induce any other person or firm to submit or not to submit a bid; that this bid has been independently arrived at without collusion with any other bidder, competitor, or potential competitor; and that this bid has not been knowingly disclosed prior to the opening of bids to any other bidder or competitor.

Bidder certifies that all materials, equipment and/or services proposed meet or exceed the specifications and will be supplied in accordance with the entire contents of this Bid Proposal.

Upon award, the successful bidder promises to complete the contract within the contract period, or pay any liquidated damages, if stipulated, for each calendar day as set forth in the bid documents.

Signed _____ Date _____

Iowa Department of Transportation
Standard Terms and Conditions For
Bid Proposals/Contracts
-FORMAL-

Formal is the procurement process required by Iowa law when the estimated, aggregate amount of the purchase equals or exceeds $50,000.

The entire contents of this bid proposal shall become a part of a contract or purchase order. In case of a discrepancy between the contents of the bid documents, the following items listed by descending order shall prevail:

- Addendums to the bid proposal
- Bid Proposal-
  - Schedule of Prices
  - Specifications
  - Plans and Drawings
- Supplemental Terms and Conditions
- Standard Terms and Conditions

(Example - if a statement in the specifications contradicts a statement in the Standard Terms and Conditions, the statement in the specifications shall apply)

Preparation of Bid Response: All bid responses must address all aspects of the proposal including clearly answering all questions within the proposal. Bid responses must be typed or completed in ink and submitted on the forms supplied by the Iowa DOT.

Bid responses must be signed and received prior to the bid opening date and time as indicated on the Bid Response cover page or bid opportunity. The signed, submitted quotation or bidder's proposal shall become the official bid response to be considered for award.

No email, fax or web link bid responses will be accepted. Bid Responses must be signed, sealed and delivered in person or by a mail courier that ensures timely delivery.

A. Bid Proposal

1. **Bid Opening:** Bid openings are made public and conducted at the Iowa DOT, Ames complex unless otherwise specified. Bid responses received after the time of the bid opening will be returned unopened and considered non-compliant.
2. **Communications:** Questions concerning this proposal should be directed to the purchasing agent listed on the bid proposal. Inquiries can be written, phoned, or faxed. In all cases, written communication will take precedence over verbal communication
3. **Proposal Guarantee:** If required, the bid response page will indicate the amount required to be included in the bid response. A Proposal Guarantee can be supplied in one of the following ways: **(1)** Certified check or credit union certified share draft, cashier's check, or bank draft, drawn on a solvent bank or credit union. Certified checks and certified share drafts shall be drawn and endorsed in the amount indicated. Checks or drafts shall be made payable either to the Iowa Department of Transportation (Iowa DOT) or to the bidder. If payable to the bidder, the check or draft shall be endorsed without qualifications to the Iowa DOT by the bidder or an authorized agent. **(2)** An insurance or surety company may be retained to provide a bond in fulfillment of the proposal guarantee requirement. A properly completed and signed copy of the Proposal Guarantee (*Form 131084*) must accompany the bid. **The Iowa DOT's Proposal Guarantee form must be used; no other forms or formats will be accepted.**
4. **Pricing and Discount:** Unit prices shown on the bid/response shall be quoted as the price per unit (e.g., gal., case, each, etc.) as stated in the bid proposal. If there is a discrepancy between the unit bid prices, extension, or total amount of bid, the unit prices shall prevail. Unless otherwise indicated, prices shall be firm for the duration of the contract or purchase. Discounts for early payment are allowed, but not considered in award of the contract.

5. **Acceptance/Rejection:** The Iowa DOT reserves the right to accept or reject any or all bids and to waive irregularities or technicalities, provided such waiver does not substantially change the offer or provide a competitive advantage to any supplier(s). The Iowa DOT also reserves the right to accept that bid which is deemed to be in the best interests of the state. Any unauthorized changes, additions, or conditional bids including any ties to another bid or proposal or any reservations about accepting an award or entering into a contract, may result in rejection of the bid. Bids must remain available for award for thirty (30) days from date of bid opening.
6. **Bid Results & Disclosure:** Bid tabulations will be posted on the DOT website at www.iowadot.gov/purchasing under the *Bid Award* link referencing the proposal number with an award recommendation indicated. At the conclusion of the selection process, the contents of all received bid responses will be placed in the public domain and be open to inspection by interested parties, according to state law. Trade secrets or proprietary information that are recognized as such and are protected by law may be withheld if clearly identified as such in the proposal.
7. **Quality:** All material shall be new and of first quality. Items which are used, demonstrators, refurbished, obsolete, seconds, or which have been discontinued are unacceptable without prior written approval by the Iowa DOT.
8. **Recycled Content:** The Iowa Code encourages purchase of products and materials with recycled content, including but not limited to paper products, oils, plastic products, compost materials, aggregate, solvents, and rubber products. Recycled items or alternatives must be noted in the bid response, if known.
9. **Shipping Terms:** Deliveries shall be F.O.B. Destination unless otherwise specified. All deliveries shall be accompanied by a packing slip indicating the Supplier, quantities shipped, and the purchase order number(s). All delivery charges shall be included in the bid price and paid by the Supplier. No collect C.O.D. deliveries shall be accepted. When entering into a contract, the Supplier shall notify the freight company that all freight and delivery charges are to be prepaid by the Supplier. Goods delivered to the Iowa DOT Distribution Center at 800 Lincoln Way, Ames, IA shall be received between the hours of 7:30 a.m. and 3:30 p.m. on any day except Saturday, Sunday, or a holiday. For deliveries to other Iowa DOT locations, the Supplier may contact the destination location for available times to deliver as not all Iowa DOT locations have the same business hours. The Iowa DOT will not be liable for any freight claims or unpaid freight bills arising from contract or purchase order issues.

B. Award

The binding agreement (award) may be issued in the form a purchase order or contract or both depending on the requirements and complexity of the agreement.

1. **Method of Award:** Award shall be made to the lowest responsible, responsive bidder whose bid meets the requirements of the solicitation and is the most advantageous to the Iowa DOT unless otherwise specified. An Iowa bidder will be given preference over an out-of-state bidder when bid responses are equal in all aspects and are tied in price. By virtue of statutory authority preference will be given to products and provisions grown and coal produced within the State of Iowa.
2. **Award Protests:** Protests of award recommendations are to be addressed to the Director of Purchasing, and shall be made in accordance with paragraph 761--20.4(6)"e" of the Iowa Administrative Code.
3. **Contracts:** Successful contractor(s) may be sent either a formal Contract, Notification of Award or purchase order as confirmation of acceptance and award. Any of these binding agreements shall be for the term stated in the bid proposal or on a purchase order and may be renewed for additional period(s) under the same terms and conditions upon mutual agreement as defined. The successful bidder may not assign a contract to another party without written authorization from the Iowa DOT Purchasing Section. A service contract, including all optional renewals, shall not exceed a term of six years unless a state agency obtains a waiver of this provision pursuant to rule 11-11B.16 (8A).
4. **Payment Terms:** The Iowa DOT typically pays properly submitted vendor invoices within thirty (30) days of receipt, providing goods and/or services have been successfully delivered, installed or inspected (if required), and accepted. Invoices presented for payment must be only for quantities received by the Iowa DOT and must reference the purchase order number to be submitted for processing.

5. **Default:** Failure of the Supplier to adhere to specified delivery schedules or to promptly replace rejected materials shall render the Supplier liable for all costs in excess of the bid price when alternate procurement is necessary. This shall not be the exclusive remedy and the Iowa DOT reserves the right to pursue other remedies available to it by law or under the terms of the binding agreement.
6. **Default:** Failure of a Contractor other than a Supplier to meet any specified project completion deadline shall render the Contractor liable for all costs incurred by DOT that were: a) necessary to meet said deadline; or b) necessary to complete said project after said deadline. This shall not be the exclusive remedy and the Iowa DOT reserves the right to pursue other remedies available to it by law or under the terms of the agreement.

C. General

1. **Administrative Rules:** For Additional details on the rules governing the actions of the Iowa DOT Purchasing Section, refer to 761 IAC, Chapter 20, Iowa Administrative Code, entitled "Procurement of Equipment, Materials, Supplies and Services".
2. **Affirmative Action:** The Contractor (and also subcontractor, vendor or supplier) is prohibited from engaging in discriminatory employment practices forbidden by federal and state law, executive orders and rules of the Iowa Department of Management, pertaining to equal employment opportunity and affirmative action. Contractor may be required to have on file a copy of their affirmative action program, containing goal and time specifications. Contractors doing business with Iowa in excess of $5,000 annually and employing 50 or more full time employees may be required to file with the Iowa Department of Management a copy of their affirmative action plan. Failure to fulfill these non-discrimination requirements may cause the contract to be canceled and the contractor declared ineligible for future state contracts or subject to other sanctions as provided by law or rule.
3. **Applicable Law:** The contract shall be governed under the laws of the State of Iowa. The contractor shall at all times comply with and observe all federal and state laws, local laws, ordinances, and regulations which are in effect during the period of a contract and which in any manner affect the work or its conduct. Any legal action relating to a contract shall only be commenced in the Story County, Iowa, District Court or the United States District Court for the Southern District of Iowa.
4. **Conflict of Interest:** No state or county official or employee, elective or appointive shall be directly or indirectly interested in any contract issued by the Iowa DOT, see Code of Iowa 314.2.
5. **Debarment and Vendor Suspension:** By submitting a proposal, the contractor is certifying that it and its principals and/or subcontractors are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by the State of Iowa or any Federal department or agency.
6. **Equal Opportunity:** Firms submitting bids must be an "Equal Opportunity Employer" as defined in the Civil Rights Act of 1964 and in Iowa Executive Order Number Thirty-four.
7. **Infringement:** Goods shall be delivered free of the rightful claim of any third party by way of infringement. Contractor shall indemnify and save harmless the State of Iowa and the Iowa DOT against all claims for infringement of, and/or royalties claimed under, patents or copyrights on materials and equipment furnished under this bid.
8. **Records Audit:** The contractor agrees that the Auditor of the State of Iowa or any authorized representative of the state, and where federal funds are involved, the Comptroller General of the U.S. Government, shall have access to and the right to examine, audit, excerpt, and transcribe any directly pertinent books, documents, papers, and records of the contractor relating to orders, invoices, or payments of a contract or purchase order.
9. **Targeted Small Businesses:** The Iowa DOT seeks to provide opportunities for women and/or minority small business enterprises. To apply for certification as an Iowa Targeted Small Business, contact the Iowa Department of Inspection and Appeals (515-281-5796). Contractors shall take documented steps to encourage participation from Targeted Small Businesses for the purpose of subcontracting and supplying of good or services or both.
10. **Taxes:** Prices quoted shall not include state or federal taxes from which the state is exempt. Exemption certificates will be furnished upon request.
11. **Termination:**
    - **Termination Due to Lack of Funds or Change in Law**
      The Iowa DOT shall have the right to terminate this Contract without penalty by giving thirty (30) days written notice to the vendor as a result of any of the following:
      • Adequate funds are not appropriated or granted to allow the Iowa DOT to operate as required and to fulfill its obligations under contract.
      • Funds are de-appropriated or not allocated or if funds needed by the Iowa DOT, at the

Iowa DOT's sole discretion, are insufficient for any reason.

- The Iowa DOT's authorization to operate is withdrawn or there is a material alteration in the programs administered by the Iowa DOT.
- The Iowa DOT's duties are substantially modified.

Following a 30 day written notice, the Iowa DOT may terminate a binding agreement in whole or in part without the payment of any penalty or incurring any further obligation to the Supplier. Following termination upon notice, the Supplier shall be entitled to compensation upon submission of invoices and proper proof of claim for goods and services under contract up to and including the date of termination.

Iowa Department of Transportation
Schedule of Prices Proposal No: 13605
Development of a Web Based Safety Analysis Tool

		Years One & Two	Year 3	Year 4	Year 5	Year 6
1.	Software Development – Phase One Estimated number of project hours _____.					
2.	Software Development – Phase Two Estimated number of project hours _____.					
3.	Software License Fees					
4.	Maintenance & Support					
5.	Hourly Rates for potential enhancements (List all proposed staff and rates by position)					

I HEREBY CERTIFY THAT THIS PROPOSAL MEETS OR EXCEEDS THE MINIMUM REQUIREMENT INCLUDING SPECIFICATIONS AND ADDENDUMS.

(Please Print)
COMPANY NAME: _____ PHONE: _____

ADDRESS: _____ CITY: _____

STATE: _____ ZIP: _____

CONTACT PERSON: _____ E-MAIL: _____

SIGNATURE: _____

FED TAX ID: _____

I ACKNOWLEDGE RECEIPT OF ADDENDUM NUMBERS: _____

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Section 1 Introduction

1.1 Purpose of the RFP Process

The purpose of this Request for Proposal (RFP) is to solicit Bid Responses from responsible, responsive Bidders to provide the goods and/or services identified on the RFP cover page and described further in Section 3 of this RFP. The Iowa DOT intends to award a contract(s) beginning and ending on the dates listed on the Procurement Timetable. The Iowa DOT may renew the contract(s) for up to the number of annual extensions identified on the Procurement Timetable at the sole discretion of the Iowa DOT. Any contract(s) resulting from the RFP shall not be an exclusive contract.

Bidders will be required to submit Bid Responses according to the Procurement Timetable. The Iowa DOT will evaluate all responsible Bidders that submit timely responsive Bid Responses to be considered for award.

1.2 Overview

The Iowa Department of Transportation seeks assistance to offer a web browser-based, server/client-based, GIS-based, open access safety analysis, visualization, and exploration resource. (See also section 3.5)

- web browser-based – the application shall be available via common web browsers that users would have available to them on their devices
- server/client-based – the application shall primarily, if not wholly, reside on an Iowa DOT-based server with little or no client side application requirements
- GIS-based – the application shall provide common GIS map functionality (e.g., map manipulation, data selection tools, theme properties, feature identification, etc.)
- open access – the application shall provide all functionality, packaged to serve all customers across all devices without a logon requirement

Iowa DOT envisions a web-based, multi-level, safety analysis GUI which presents differing levels of functionality to serve a myriad of diverse customers including:

- general public (e.g., private citizens, students, media, lawyers)
- agency partners (e.g., counties, cities, other state agencies, other DOT offices, federal agencies)
- university/research partners (e.g., ISU/InTrans, ISU Statistics, U of I/IPRC), and
- special users.

These customers represent a subset of Iowa's safety 5Es – Engineering, Enforcement, Education, Emergency Medical Services (EMS), and Everyone else. The analytical and data availability of these 5E partners has been expanding and the need for a flexible, more accessible safety analysis tool stems from these expectations.

The tool would consolidate, replicate, and expand current Iowa crash analysis tool features within a web-based environment featuring a multi-level, safety analysis GUI for internal and external customers. This multi-level GUI would present a simple, initial face with easily understood, minimal functionality that covers common

requests. Beyond that, the GUI would enable access to expanded functionality at the discretion of the user. The entry level GUI will enable retrieval of simple safety-related data such as crash frequencies by year and crash severity at specific sites, within certain jurisdictional boundaries, and/or related to selected topics. Additional functionality will exist to allow access to more information such as case-by-case details and construction of more complex queries. Finally, users wishing access to the raw data for research or other purposes will be provided tools to facilitate this. Throughout, users will be provided immediate feedback regarding their choices, e.g., number of crashes selected.

Primary aspects of the envisioned system include:

- a three-pronged initialization module, starting with jurisdictional/location filtering, with these paths available:
  - a selection map
  - pre-processed & data layers
  - a topical selection capability
- a query/filter module
- a report generation module (tables, charts, graphs)
- collision diagramming (perhaps via a COTS solution)
- visualization (output/display maps) module
- special operations module
- raw data extracts/export/download module
- a project module

1.3 Definitions

The terms used in individual sections of this document are intended to be consistent with those commonly used in the application field in question. When responding, use the terms and acronyms used in this document, and define any terms or conditions that require further clarification.

1.3.1 "Beats" means user-defined regions of analytical interest, most commonly associated with enforcement patrol areas

1.3.2 "Bid Response" means the bid document submitted by the bidder in response to the RFP.

1.3.3 "Bidder" means individual, company or entity submitting a response in response to the RFP.

1.3.4 "CMaT" means Crash Mapping Tool, simpler Iowa-based crash analysis and reporting tool

1.3.5 "Collision Diagram" means "stick" or "schematic" display of crash history at a location, e.g., an intersection

1.3.6 "Comparables/Expected Values" means compilation of average rates and densities of crash history by various road classification schema, e.g., route classification, functional classification, administrative classification.

1.3.7 "Contractor" shall be in reference to the successful bidder, once contracted.

1.3.8 "Contract" or "Resulting Contract" means the contract(s) entered into with the successful Bidder(s) as described in section 4.

1.3.9 "**Coverages"** means a map layer within a GIS, e.g., crashes, roads, rails. Interchangeable with the term layers and themes.

1.3.10 "**Features"** means the mapped elements within a map layer within a GIS, e.g., individual crashes, individual road segments

1.3.11 "**GIS-based"** means Geographic Information System-based, the application shall provide common GIS map functionality (e.g., map manipulation, data selection tools, theme properties, feature identification, etc.)

1.3.12 "Iowa DOT" means the Iowa Department of Transportation.

1.3.13 "**Layers"** means a map layer within a GIS, e.g., crashes, roads, rails. Interchangeable with the term coverages and themes.

1.3.14 "**Legends"** means the description of formats within a map layer, e.g., color, thickness, solidity

1.315 "**NHTSA data 6-pack"** means the National Highway Traffic Safety Administration's (NHTSA) suggested data for state traffic safety purposes which includes crash, roadway, driver, vehicle, injury surveillance (ISS)/emergency medical services (EMS, and citation/adjudication data. See http://www.dot.gov/sites/dot.gov/files/docs/NHTSA%20Traffic%20Records%20Program%20Assessment%20Advisory.pdf for further information.

1.3.16 "**Open access"** means the application shall provide all functionality, packaged to serve all customers across all devices without a logon requirement

1.3.17 "Participating Agency" or "Participating Agencies" means the agency or agencies identified on the RFP cover sheet as Participating Agencies and any other agency that decides to utilize the executed contract.

1.3.18 "**Patrol Areas**" means user-defined regions of analytical interest, most commonly associated with enforcement.

1.3.19 "Procurement Timetable" *(on the page immediately following the RFP cover)* provide timeline, event and date information.

1.3.20 "Purchase Order" means the documentation issued by the State to the Bidder for a purchase of goods and/or services in accordance with the terms and conditions of the Contract. It may include an identification of the items to be purchased, the delivery date and location, the address where the supplier should submit the invoices, and any other requirements deemed necessary by the State. Any preprinted contract terms and conditions included on Bidder's forms or invoices shall be null and void.

1.3.21 "Responsible Bidder" means a bidder that has the capability in all respects to perform the requirements of the Bid Proposal specifications. In determining whether a Bidder is a responsible, responsive Bidder, the Iowa DOT may consider various factors including, but not limited to, the Bidder's competence and qualifications to provide the goods or services requested, the Bidder's integrity and reliability, the past performance of the Bidder relative to the quality of the goods or

services offered by the Bidder, the proposed terms of delivery, and the best interest of the Iowa DOT and Participating Agencies.

1.3.22 "RFP" means Request for Proposal and any attachments, exhibits, schedules or addenda hereto. A written response by a Bidder shall be considered a bid and referred to as a Bid Response.

1.3.23 "**Themes"** means a map layer within a GIS, e.g., crashes, roads, rails. Interchangeable with the term coverages and themes.

1.3.24 "**SAVER"** means Safety Analysis, Visualization, and Exploration Resource, more robust Iowa-based crash analysis and reporting tool

1.3.25 "**Server/client-based"** means the application shall primarily, if not wholly, reside on an Iowa DOT-based server with little or no client side application requirements

1.3.26 "State" means the Iowa DOT, State of Iowa, and Participating Agencies identified on the title page and all state agencies, boards, and commissions, and any political subdivisions making purchases off of the resulting Contract as permitted by this RFP.

1.3.27 "**Web browser-based"** means the application shall be available via common web browsers that users would have available to them on their devices

1.4 Acronyms

The following acronyms are used in the RFP.

5Es – Engineering, Enforcement, Education, Emergency Medical Services (EMS), and Everyone else
Access-ALAS – MicroSoft Access-based Accident Location and Analysis System
AEA – Area Education Agency
ALAS – Accident Location and Analysis System
AV-SAVER – ArcView GIS 3.2/3.3-based Safety Analysis, Visualization, and Exploration Resource (SAVER)
CMaT – Crash Mapping Tool
COTS – Custom-Off-The-Shelf
DNR – Department of Natural Resources
DOT – Department of Transportation
EMS – Emergency Medical Services
ESRI – formerly Environmental Systems Research Institute (ESRI), now just ESRI
FHWA – Federal Highway Administration
FME – Feature Manipulation Engine
FTP – File Transfer Protocol
GIS – Geographic Information System
GIS-ALAS – Geographic Information System-based (GIS) Access-based Accident Location and Analysis System (ALAS)
GUI – Graphical User Interface
Iowa DOT – Iowa Department of Transportation (DOT)
IM – Intersection Magic
InTrans – Institute for Transportation, Iowa State University-affiliated transportation research group

IPRC – Injury Prevention Research Center, University of Iowa-affiliated injury prevention research group
ISP – Iowa State Patrol
ISS – Injury Surveillance Systems
ISU – Iowa State University
LAN – Local Area Network
MPO – Metropolitan Planning Organization
NHTSA – National Highway Traffic Safety Administration
PC-ALAS – Personal Computer-based Accident Location and Analysis System (ALAS)
REST – REpresentational State Transfer
RPA – Regional Planning Affiliation
SAVER – Safety Analysis, Visualization, and Exploration Resource
SICL – Safety Improvement Candidate Location
SQL – Structured Query Language
U of I – University of Iowa
UTM – Universal Transverse Mercator

Section 2 Administrative Information

2.1 Issuing Agent

The Issuing Agent, identified on the cover page is the sole point of contact regarding the RFP from the date of issuance until the notice of intent to award is issued (selection of the successful contractor).

2.2 Restriction on Communication

From the issue date of this RFP until the notice of intent to award is issued (announcement of the successful bidder), bidders may contact only the Issuing Agent.

The Issuing Agent will respond only to questions regarding the procurement process. Questions related to the interpretation of this RFP must be submitted in writing to the Issuing Officer by the deadline found in the Procurement Timetable listed immediately after the cover sheet**.** Verbal questions related to the interpretation of this RFP will not be accepted. Questions related to the interpretation of this RFP must be submitted as provided in section 2.5. Bidders may be disqualified if they contact any state employee other than the Issuing Agent. *Exception: Bidders may contact the State Targeted Small Business Office on issues related to the preference for Targeted Small Businesses. See Section 2.32.*

In NO CASE shall verbal communication override written communications. Only written communications are binding on the State.

The Iowa DOT assumes no responsibility for representations concerning conditions made by its officers or employees prior to the execution of a contract, unless such representations are specifically incorporated into this RFP. Verbal discussions pertaining to modifications or clarifications of this RFP shall not be considered part of the RFP unless confirmed in writing. All such requests for clarification shall be submitted in writing. Any information provided by the Bidder verbally shall not be considered part of the bid response. Only written communications from the Bidder and received by the Iowa DOT shall be accepted.

With the exception of the written Bid Response which must be submitted by Bidders in accordance with Section 2 herein, communications between the Issuing Agent and Bidders may be conducted by regular prepaid US mail, courier service, e-mail or facsimile transmission.

2.3 Downloading the RFP from the Internet

All correspondence for this Bid Proposal will be posted on the Iowa DOT's website at **www.iowadot.gov/purchasing/lettingschedule.** **Bidders are required** to visit the Iowa DOT's home page periodically for any and all addendums or other pertinent information regarding this bid opportunity. **It is the Bidder's sole responsibility to check daily for Addenda to posted documents.**

2.4 Procurement Timetable

The dates listed in the Procurement Timetable (on the page immediately following the RFP cover) are set forth for informational and planning purposes; however, the Iowa DOT reserves the right to change the dates. If a change is made to any of the deadlines for Bidder submission, the Iowa DOT will issue an addendum to the RFP. All times listed are Central Times.

2.5 Questions, Requests for Clarification, and Suggested Changes

Bidders are invited to submit written questions and requests for clarifications regarding the RFP during the time indicated in the Procurement Timetable. Bidders may also submit suggestions for changes to the requirements of this RFP. The questions, requests for clarifications or suggestions must be in writing and received by the Issuing Agent on or before the deadline stated in the Procurement Timetable. Oral questions will not be permitted. If the questions, requests for clarifications, or suggestions pertain to a specific section of the RFP must be referenced.

Written responses to questions, requests for clarifications or suggestions will be posted on or before the deadline stated in the Procurement Timetable and posted on the Iowa DOT's website (see Section 2.3) **It is the vendor's sole responsibility to check daily for Addenda to posted documents.** If the Iowa DOT decides to adopt a suggestion, the Iowa DOT will issue an addendum to the RFP.

The Iowa DOT assumes no responsibility for verbal representations made by its officers or employees unless such representations are confirmed in writing and incorporated into the RFP.

Each bidder must inform themselves fully of the conditions relating to the proposal. Failure to do so will not relieve a successful bidder of their obligation to furnish all services required to carry out the provisions of his contract. Insofar, as possible, the Contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of, or interference with the work of any other contractor.

If a bidder discovers any significant ambiguity, error, conflict, discrepancy, omission, or other deficiency in this RFP, the bidder should immediately notify Purchasing Officer in writing of such error and request modification or clarification of the RFP document.

2.6 Revisions to Bid Response

Bidders who submit Bid Responses in advance of the bid opening date may withdraw, modify, and resubmit Bid Responses at any time until the bid opening date and time. Bidders must notify the Issuing Agent in writing if they wish to withdraw their Bid Response. A Bidder shall not withdraw its Bid Response or its prices prior to the end of the one hundred and eighty (180) day period immediately following the notice of intent to award a contract.

2.7 Submission of Bid Responses

The Iowa DOT must receive Bid Responses addressed to the Department of Transportation, Purchasing Section, 800 Lincoln Way, Ames, Iowa 50010 before the deadline stated in the Procurement Timetable. **This is a mandatory requirement and will not be waived by the Iowa DOT**. Any Bid Response received after this deadline will be rejected and returned unopened to the Bidder.

Bidders mailing Bid Responses must allow ample mail delivery time to ensure timely receipt by the Iowa DOT on or before the due date. Postmarking by the due date will not substitute for actual receipt of the Bid Response. **Electronic mail and faxed Bid Responses will not be accepted.**

Bidders must furnish all information necessary to evaluate the Bid Response. Bid Responses that fail to meet the mandatory requirements of the RFP will be

disqualified. Verbal information provided by the Bidder shall not be considered part of the Bid Response.

2.8 Bid Response Opening

The Iowa DOT will open Bid Responses on the date and time stated in the Procurement Timetable. Bid Responses will remain confidential until a bid tabulation has been posted on the Iowa DOT's website for all bidders to view the results in the form of "Intent to Award". See Iowa Code Section 72.3.

The names of the Bidders who submit compliant Bid Responses within the time frame permitted will be available for public review after the contract has been awarded.

2.9 Costs of Preparing the Bid Response

The costs of preparation and delivery of a Bid Response are solely the responsibility of the Bidder.

No payments shall be made by the State to cover costs incurred by any Bidder in the preparation of or the submission of this RFP or any other associated costs.

2.10 Reasonable Accommodations

The Iowa DOT will provide reasonable accommodations, including the provision of informational material in an alternative format, for qualified individuals with disabilities upon request. If accommodations are required at time of a bid opening, contact the issuing officer designated on the cover page.

2.11 Rejection of Bid Responses

The Iowa DOT reserves the right to reject any or all Bid Responses, in whole and in part, received in response to this RFP at any time prior to the execution of a written contract. Issuance of this RFP in no way constitutes a commitment by the Iowa DOT to award a contract. This RFP is designed to provide Bidders with the information necessary to prepare a competitive Bid Response. This RFP process is for the Iowa DOT benefit and is intended to provide the Iowa DOT with competitive information to assist in the selection of a Contractor to provide services.

It is not intended to be comprehensive and each Bidder is responsible for determining all factors necessary for submission of a comprehensive Bid Response.

The Iowa DOT reserves the right to negotiate the terms of the contract, including the award amount, with the awarded Contractor prior to entering into a contract. If contract negotiations cannot be concluded successfully, the Iowa DOT reserves the right to negotiate a contract with the next highest scoring Bidder.

2.12 Disqualification

The Iowa DOT may reject outright and shall not evaluate Responses for any one of the following reasons:

2.12.1 The Bidder fails to deliver the cost proposal in a separate envelope.

2.12.2 The Bidder states that a requirement of the RFP cannot be met.

2.12.3 The Bidder's Bid Response materially changes a requirement of the RFP or the Bid Response is not compliant with the requirements of the RFP.

2.12.4 The Bidder's response limits the rights of the Iowa DOT.

2.12.5 The Bidder fails to include information necessary to substantiate that it will be able to meet a service requirement. A response of "will comply" or merely repeating the requirement is not sufficient. Responses must indicate present capability; representations that future developments will satisfy the requirement are not sufficient.

2.12.6 The Bidder fails to respond to the Iowa DOT's request for information, documents, or references.

2.12.7 The Bidder fails to include a *proposal guarantee*, also known as bid bond or bid security, *if required*. See Bid Response cover page and Section 2.32**.**

2.12.8 The Bidder fails to include any signature, certification, authorization, stipulation, disclosure or guarantee (if required).

2.12.9 The Bidder presents the information requested by this RFP in a format inconsistent with the instructions of the RFP or otherwise fails to comply with the requirements of this RFP.

2.12.10 The Bidder initiates unauthorized contact regarding the RFP with state employees.

2.12.11 The Bidder provides misleading or inaccurate responses.

2.12.12 The Bidder fails to attend the mandatory Bidders Conference or Pre-Bid meeting.

2.12.13 The Bidder's Bid Response is materially unbalanced.

2.12.14 There is insufficient evidence (including evidence submitted by the Bidder and evidence obtained by the Iowa DOT from other sources) to satisfy the Iowa DOT that the Bidder is a "Responsible Contractor".

2.12.15 The Bidder alters the Bid Proposal language in any way.

2.13 Nonmaterial and Material Variances

The Iowa DOT reserves the right to waive or permit cure of nonmaterial variances in the Bidder's Bid Response if, in the judgment of the Iowa DOT, it is in the Iowa DOT best interest to do so. Nonmaterial variances include minor informalities that do not affect responsiveness; that are merely a matter of form or format; that do not change the relative standing or otherwise prejudice other Bidders; that do not change the meaning or scope of the RFP; or that do not reflect a material change in the services. In the event the Iowa DOT waives or permits cure of nonmaterial variances, such waiver or cure will not modify the RFP requirements or excuse the Bidder from full compliance with RFP specifications or other contract requirements if the Bidder is awarded the contract. The determination of materiality is in the sole discretion of the Iowa DOT.

2.14 Reference Checks

The Iowa DOT reserves the right to contact any reference to assist in the evaluation of the Bid Response, to verify information contained in the Bid Response and to discuss the Bidder's qualifications and the qualifications of any subcontractor identified in the bidders Bid Response.

2.15 Information From Other Sources

The Iowa DOT reserves the right to obtain and consider information from other sources concerning a Bidder, such as the Bidder's capability and performance under other contracts, the qualifications of any subcontractor identified in the Bid Response, specifically, the Bidder's financial stability, past or pending litigation, and publicly available information.

2.16 Verification of Bid Response Contents

The content of a Bid Response submitted by a Bidder is subject to verification. Misleading or inaccurate responses shall result in disqualification and rejection of the Bid Response.

2.17 Criminal History and Background Investigation

The Bidder hereby explicitly authorizes the Iowa DOT to conduct criminal history and/or other background investigation(s) of the Bidder, its officers, directors, shareholders, partners and managerial and supervisory personnel retained by the Bidder for the performance of the contract.

2.18 Bid Response Clarification Process

The Iowa DOT reserves the right to contact a Bidder after the submission of Bid Response for the purpose of clarification to ensure mutual understanding. This contact may include written questions, interviews, site visits, a review of past performance if the Bidder has provided goods or services to the Iowa DOT or any other political subdivision wherever located, or requests for corrective pages in the Bid Response. The Iowa DOT will not consider information received if the information materially alters the content of this Bid Proposal or alters the type of goods and services the Bidder is offering to the Iowa DOT. An individual authorized to legally bind the Bidder shall sign responses to any request for clarification. Responses shall be submitted to the Iowa DOT within the time specified in the Iowa DOT request. Failure to comply with requests for additional information may result in rejection of the Bid Response as non-compliant.

2.19 Disposition of Bid Responses

At the conclusion of the selection process, the contents of all Bid Responses will be in the public domain and be open to inspection by interested parties except for information for which Bidder properly requests confidential treatment or is subject to exceptions provided in Iowa Code Chapter 22 or other applicable law.

2.20 Public Records and Requests for Confidential Treatment

The Iowa DOT may treat all information submitted by a Bidder as public information following the conclusion of the selection process unless the Bidder properly requests that information be treated as confidential at the time of submitting the bid response. The Iowa DOT release of information is governed by Iowa Code chapter 22. Bidders are encouraged to familiarize themselves with chapter 22 before submitting a response. The Iowa DOT will copy and produce public records as required to comply with the public records laws.

Any request for confidential treatment of specific information must be included in the transmittal letter with the Bid Response. In addition, the Bidder must enumerate the specific grounds in Iowa Code Chapter 22 or other applicable law which support treatment of the material as confidential and explain why disclosure is not in the best interest of the public. **Pricing information cannot be considered confidential**

information. The request for confidential treatment of information must also include the name, address, and telephone number of the person authorized by the Bidder to respond to any inquiries by the Iowa DOT concerning the confidential status of the materials.

Any bid response submitted which contains confidential information must be conspicuously marked on the outside as containing confidential information, and each page upon which confidential information appears must be conspicuously marked as containing confidential information. Failure to properly identify specific confidential information shall relieve the Iowa DOT or State personnel from any responsibility if confidential information is viewed by the public, or a competitor, or is in any way accidentally released. Identification of the entire bid response as confidential may be deemed non-responsive and disqualify the Bidder.

If the Bidder designates any portion of the RFP as confidential, **the Bidder must submit one copy of the bid response from which the confidential information has been excised. This excised copy is in addition to the number of copies requested in section 4 of this RFP.** The confidential material must be excised in such a way as to allow the public to determine the general nature of the material removed and to retain as much of the bid response as possible.

The Iowa DOT will treat the information marked confidential as confidential information to the extent such information is determined confidential under Iowa Code Chapter 22 or other applicable law by a court of competent jurisdiction. In the event the Iowa DOT receives a request for information marked confidential, written notice shall be given to the Bidder seven calendar days prior to the release of the information to allow the Bidder to seek injunctive relief pursuant to Section 22.8 of the Iowa Code. The Iowa DOT will release the information marked confidential in response to a request for public record records unless a court of competent jurisdiction determines the information is confidential under Iowa Code Chapter 22 or other applicable law.

The Bidder's failure to request confidential treatment of material will be deemed by the Iowa DOT as a waiver of any right to confidentiality, which the Bidder may have had.

2.21 Copyrights

By submitting a bid response, the Bidder agrees that the Iowa DOT may copy the bid response for purposes of facilitating the evaluation of the bid response or to respond to requests for public records. The Bidder consents to such copying by submitting a bid response and warrants that such copying will not violate the rights of any third party. The Iowa DOT shall have the right to use ideas or adaptations of ideas that are presented in the bid responses.

2.22 Release of Claims

By submitting a Bid Response, the Bidder agrees that it will not bring any claim or cause of action against the Iowa DOT based on any misunderstanding concerning the information provided herein or concerning the Iowa DOT failure, negligent or otherwise, to provide the Bidder with pertinent information as intended by this RFP.

2.23 Evaluation of Bid Responses Submitted

Bid responses that are timely submitted and are not subject to disqualification will be reviewed in accordance with Section 5 of the RFP. The Iowa DOT will not necessarily award any contract resulting from this RFP to the Bidder offering the lowest cost to the Iowa DOT.

The evaluation and selection of a Bidder will be based on; the information submitted in the response, references and required presentations and demonstrations. Bidders shall respond clearly and completely to all requirements within three (3) days upon request. Failure to respond completely may be the basis for rejecting a response. Bidders may supply removable media (CDROM or flash drive) or web site addresses to help demonstrate certain features of the response, to help clarify the written response to the proposal or to demonstrate new concepts.

Elaborate responses (e.g. expensive artwork) beyond that sufficient to present a complete and effective response, are not necessary or desired.

2.24 Award Notice and Acceptance Period

Notice of intent to award will be posted on the Iowa DOT's website at www.iowadot.gov/purchasing/bidaward. **It is the Bidder's sole responsibility to check daily for the bid tabulation**. Final negotiation and execution of the contract(s) shall be completed no later than thirty (30) days from the date of the Notice of Intent to Award or such other time as designated by the Iowa DOT.

Negotiation and execution of the contract(s) shall be completed no later than thirty (30) days from the date of the Notice of Intent to Award or such other time as designated by the Iowa DOT. If the successful Bidder fails to negotiate and deliver an executed contract by that date, the Iowa DOT in its sole discretion may cancel the award and award the contract to the next highest ranked Bidder the Iowa DOT believes will provide the best value to the State.

The award shall be granted to the highest scoring responsive, responsible Bidder.

It is the intent of the Iowa DOT to award the contract to the responsible vendor whose bid conforms to the RFP and is the most advantageous to the Iowa DOT, cost and other factors considered. See Award Matrix, Section 5.

2.25 No Contract Rights until Execution

The full execution of a written contract shall constitute the making of a contract for services and no Bidder shall acquire any legal or equitable rights relative to the contract services until the contract has been fully executed by the successful Contractor and the Iowa DOT.

2.26 Restrictions on Gifts and Activities

Iowa Code Chapter 68B restricts gifts which may be given or received by state employees and requires certain individuals to disclose information concerning their activities with state government. Bidders are responsible to determine the applicability of this Chapter to their activities and to comply with the requirements. In addition, pursuant to Iowa Code section 722.1, it is a felony offense to bribe or attempt to bribe a public official.

The laws of Iowa provide that it is a felony to offer, promise, or give anything of value or benefit to a state employee with the intent to influence that employee's acts,

opinion, judgment or exercise of discretion with respect to that employee's duties. Evidence of violations of this statute will be submitted to the proper prosecuting attorney.

2.27 No Minimum Guaranteed

The Iowa DOT anticipates that the selected Contractor will provide services as requested by the Iowa DOT. The Iowa DOT will not guarantee any minimum compensation will be paid to the Contractor or any minimum usage of the Contractor's services.

2.28 Conflicts Between Terms

The Iowa DOT reserves the right to accept or reject any exception taken by the Bidder to the terms and conditions contained in this RFP. Should the Bidder take exception to the terms and conditions required by the Iowa DOT, the Bidder's exceptions may be rejected and the entire response declared nonresponsive. The Iowa DOT may elect to negotiate with the Bidder regarding contract terms that do not materially alter the substantive requirements of the request for proposals or the contents of the Bid Response.

2.29 News Releases

News releases or other materials made available to the media or the public, the Contractor's clients or potential clients pertaining to this procurement or any part of the proposal shall not be made without the prior written approval of the Iowa DOT.

2.30 Pre-Bid Conference

If the Procurement Timetable indicates a Pre-Bid Conference will be held in conjunction with this RFP, it will be held at the date, time, and location listed on the Procurement Timetable immediately following the cover page. If Attendance at the Pre-Bid Conference is a mandatory requirement to submit a Bid Response, it will be indicated on the Procurement Timetable. The purpose of the Pre-Bid conference is to discuss with prospective Bidders the work to be performed and allow prospective Bidders an opportunity to ask questions regarding the RFP. Verbal discussions at the Pre-Bid conference shall not be considered part of the RFP unless confirmed in writing by the Iowa DOT and incorporated into this RFP. The conference may be recorded. Questions asked at the conference that cannot be adequately answered during the conference may be deferred.

A copy of the questions and answers will be posted on the DOT website for viewing.

2.31 Presentation

Bidders may be required to make a presentation of the Bid Response.

All Bidders submitting responses may not have an opportunity to interview and/or present. The highest scoring Bidder(s) may be required to make oral presentations to supplement their responses. The presentation may occur at the Iowa DOT offices or at the offices of the Bidder The presentation, the location, order, and schedule is at the sole discretion of the Iowa DOT. The presentation may include slides, graphics and other media selected by the Bidder to illustrate the Bidder's bid response. The presentation shall not materially change the information contained in the bid response. The Iowa DOT will make every reasonable attempt to schedule each oral presentation at a date and time agreeable to the Bidder.

Bidder's key personnel will be required to participate in the presentation to determine their understanding of the requirements of this proposal, their authority and reporting relationships within their firm, their expertise and their management style. Only representatives of the State and the presenting Bidder will be permitted to attend the oral presentations.

The successful presentation of the Bidder's product(s) and/or service(s) does not constitute acceptance of award by the Iowa DOT. Any product(s), service(s) and/or expenses incurred furnished by the Bidder for the purposes of this presentation must be substantially identical in every respect to those that will be furnished if a contract results.

Short-List: The responses receiving the highest scores will be short-listed and may be requested to provide a presentation. The firms shall be provided with no less than one week's notice. Key members of the proposed team are required to be present at any oral presentation. Presentation shall be held in Ames, Iowa at a site(s) unless otherwise specified.

Detailed notes of presentation may be recorded and supplemental information (such as briefing charts, et cetera) shall be accepted. Additional written information gathered in this manner shall not constitute replacement of response contents. The State reserves the right to record the interviews and/or presentation on audio or videotape.

Any cost(s) incidental for the interviews and/or presentations shall be the sole responsibility of the Bidder.

2.32 Proposal Guarantee (see Bid Response cover page for requirements)

Each bid must be supported by a Proposal Guarantee in the sum indicated on the Bid Response cover page (if required). See Standard Terms and Conditions included in the Bid Proposal section A-3.

Certified checks and credit union share drafts shall be certified, or the cashier's check shall be drawn and endorsed, in an amount not less than indicated in the Bid Proposal. If a proposal guarantee is submitted, it must be submitted on Iowa DOT Form No. 131084or bid will be rejected.

The proposal guarantee from the qualified responsive low bidder will be retained until a contract is entered into and the required Bonds and Insurance Certificates are filed. All other bid securities will be returned after the award has been made.

Section 3 Specifications and Technical Requirements

3.1 Purpose

The purpose of this RFP is to create a custom-built "Safety Analysis Tool" website that will update, consolidate, and expand our current Iowa crash analysis tool features and functionality. The tool will leverage current Iowa DOT technology, data, and services/products and anticipate future safety-related data. The primary goal would be better customer service and enhance safety analysis.

3.2 Background

The Iowa Department of Transportation (Iowa DOT) has a 25-year history of developing and distributing crash analysis software tools to safety partners, both internal and external. In addition, customers have been provided crash data retrieval services, utilizing either DOT staff time or services based at our Iowa universities.

A brief history of Iowa safety analysis tools:

- In the late 1980s, Iowa DOT transitioned from a mainframe-based, limited access data portal (Accident Location and Analysis System (ALAS)), which had been used since the mid-1970s, to a PC-based, crash data retrieval tool (PC-ALAS).
- In the late 1990s, due to the emergence of Geographic Information Systems (GIS), DOT partnered with Iowa State University (ISU) to transition PC-ALAS into a GIS-environment, resulting in GIS-ALAS. Simultaneously, DOT developed a non-GIS solution internally within an MS Access environment (Access-ALAS). Iowa DOT also initiated a relationship with Pd' Programming for statewide use of their collision diagramming software, Intersection Magic (IM).
- In 2000, the crash location method changed to X,Y-coordinates, making Access-ALAS somewhat obsolete and initiating the development of the Crash Mapping Tool (CMaT).
- In 2001, the Iowa crash report form was redeveloped, requiring the complete transition from Access-ALAS to CMaT and initiating the redevelopment of GIS-ALAS into the ArcView GIS-based Safety Analysis, Visualization, and Exploration Resource (AV-SAVER). With this redevelopment, the IM collision diagramming tool was transitioned to Diagram Magic, which interacted with SAVER to generate collision diagrams from crashes selected within SAVER.
- Recently, the contract with Pd' Programming has transitioned Iowa collision diagramming to their Crash Magic Online software.

For more details of current SAVER and CMaT functionality, please see Appendix B – CMaT Functionality and Appendix C – SAVER Functionality. CMaT FTP download instructions are available within Appendix D – CmaT Download Instructions – FTP.

Developed a decade or more ago, Iowa DOT's current crash analysis tools are facing obsolescence due to technology gains. Without these tools, much of the data available now and analyses currently performed will be jeopardized. These analyses support many of our funding decisions regarding traffic safety, which may negatively impact the current downward trend in fatalities and major injuries. Additionally, lack of these tools will result in increasing difficulty serving our diverse customer base.

The existing tools have positioned the agency to utilize web-based tools to enhance our service to a growing user base. Thus, Iowa DOT proposes to update, consolidate, and expand our current crash analysis tool features within a web framework. The development would leverage current Iowa DOT technology, data, and services/products and anticipate future safety-related data. The primary goal would be better customer service and enhanced safety analysis.

3.3 Application Environment

The Safety Analysis Tool application will be web-based application hosted by the Iowa DOT.

• Application will be built on Microsoft.Net Framework 4.5 or later.
• Application will run on IIS 8.5 or later version.

Technology/ Environment	Version
.Net Framework	4.5 or later
IDE	Visual Studio 2013
Database	Oracle version 11g R2 or higher. Oracle 12c preferred.
Language/Tools	VB.Net, ASP.Net, ADO.NET, JavaScript
Browsers	IE8+, Firefox, Chrome, Safari
Platform Device	Desktop & Tablet (Preferred). Smart Phone (Optional).

3.3.1 Web Design and Accessibility Standards

The web application must comply with the following State of Iowa standards:

• State of Iowa Web design Standard
https://ocio.iowa.gov/home/standards/web-design-under-review
• Web accessibility standard
https://ocio.iowa.gov/home/standards/website-accessibility-22012

3.3.2 Iowa DOT Information and Technology Standards and Procedures - See also Appendix L – Information Technology Division Standards and Procedures

Consultants developing websites/web applications for Iowa DOT must:

- Use the Department's web template and navigation. The web template will be provided to the consultant.
- Abide by Iowa DOT IT standards.
- Work with the Highway Support Team on the naming conventions of tables and fields. The Highway Support Team has the final decision on the naming conventions.
- Follow the Department's editing procedure (The Department's copy editor shall edit all text prior to website development, excluding database table content).
- Make sure the application is supported in IE8+, Chrome, Firefox, and Safari browsers.
- Use the Department's domain-naming structures.
  - URLs must adhere to the Department's naming conventions.

- The Department's main domain name is http://www.iowadot.gov.
- http://www.iowadot.gov/SUFFIXNAME is the standard domain structure for all sites that do not require a secure server (which involve encryptions, passwords, data collection, etc.).
- https://PREFIXNAME.iowadot.gov is the standard domain structure for all sites requiring either a secure server or stand-alone URL based upon system requirements. The Information Technology Division is responsible for determining the business necessity for secure servers.
- https://secure.iowadot.gov is the Department's generic secure server address, which can be used for any DOT Web page that includes a simple secure feature. For instance, https://secure.iowadot.gov/contact.aspx is used for the DOT's universal contact form that requires input of sensitive information, such as a driver's license or social security number.
- Department domains registered with a .com, .org., .net, or .us extension or extensions other than .gov will no longer be used by the Department. The only exception to this policy is the 511ia.org domain, which shall retain the website domain structure that is common nationally.

- Use applications, software, and scripts supported by the Department.
- Develop the web application on Iowa DOT test and production servers. Consultants will be given access to the Test environment at the Iowa DOT to develop their application.
- Meet with the representatives from the Information Technology Division and Web Team prior to and periodically during development of the site.
- Write and provide documentation for the Safety Analysis Tool to the Highway Support Team.
- Highway Support Team will review the programming code throughout the development process. Both Highway Support Team and the consultants will agree on the timing of the reviewing process.
- External web-based applications shall be tested with the current DOT approved security tool.

3.3.3 Existing Server Infrastructure

- Windows Server 2012R2 with IIS version 8.5
- VMware version is now 5.5
- McAfee antivirus is now 8.8
- McAfee ePO Agent 4.8
- System Center Operations Manager 2012 R2
- System Center Configuration Manager 2012 R2
- Oracle Database 11G Release 2 or higher
- Mobile Applications: Airwatch Mobile Device Management

3.3.4 Database environments:

Oracle

3.3.5 Web Server

Windows IIS

3.3.6 Standard for GIS web applications

Services created on ArcGIS Server 10.2.2 or ArcGIS Online

Interface development – any or in combination

- Option 1 – Geocortex Essentials
  - Geocortex Workflow Designer
  - Geocortex Report Designer
- Option 2 – ESRI JavaScript API 3.11 or greater
- Option 3 – ArcGIS Online

Feature Manipulation Engine (FME) is available as the data translation toolset (e.g., export, download)

ESRI REST services are available internal and external.

REST services and interfaces can be secured using active directory.

3.3.7 Iowa DOT GIS Policy (see Appendix K)

3.4 Hosting

The Safety Analysis Tool application will be hosted by the Iowa DOT.

3.5 Technical Requirements (Scope)

Following are more details regarding the envisioned safety analysis, visualization, and exploration resource. The Iowa DOT is open to alternate concepts, with the vision representing an ideal solution. A companion, supplementary tabular format of these requirements are available in Appendix A.

Within Appendix A, expected timeframes are indicated by the phase and timeframe columns. These phases and timeframes indicate an anticipated schedule; however, the Iowa DOT is open to input regarding plausibility. Phase 1 items are divided into a prototype phase (6 months) and a base functionality phase (1 year). Phase 1 addresses the primary thrust of the project, to have a functional web browser-based, server/client-based, GIS-based, open access safety analysis, visualization, and exploration resource available within 1 year of contract initiation. Phase 2 items address extended functionality, primarily to provide the vision and encourage development of architecture to account for future enhancements.

3.5.1 Primary aspects of the envisioned system include:

(see also section 1 of Appendix A)

- a three-pronged initialization module, starting with jurisdictional/location filtering, with these paths available:
  - a selection map
  - pre-processed data layers
  - a topical selection capability
- a query/filter module
- a report generation module (tables, charts, graphs)
- collision diagramming (perhaps via a COTS solution)
- visualization (output/display maps) module
- special operations module
- raw data extracts/export/download module
- a project module

3.5.1.1 Initialization Module

(see section 2 of Appendix A)

The initialization module will present three options: a selection map, pre-processed data layers, or a topical selection capability. Prior to following a path, the GUI would enable some initial jurisdictional filtering, allowing the user to narrow their area of interest to a particular jurisdiction (e.g., statewide, DOT Districts, counties, cities). The narrowing GUI could be map-based, list-based, a combination, or some other option. Alternatively, users would be able to enter a query which zooms to a location through at least three different means:

1. A query similar to Google or Bing that enables direct zooming to a particular road name, address, and the like,
2. A finder selection similar to the current CMaT finders that utilize the background layers to directly zoom to reference posts, cities, etc.
3. Coordinate-based navigation that allows users to enter a longitude/latitude to indicate a point or an area of interest.

After this, the interface would offer these sub-options or allow progression to the other modules:

- The selection map will enable users to select a site or sites from the map using standard GIS selection tools (circles, rectangles, polygons) that may be one-time use (selection tool) or multiple use/retained (graphic objects or shapes). Users will also have the option to use existent features from other layers (e.g., roads, rivers, rails, intersections, etc.) or user drawn (e.g., points, circles, lines, polylines, rectangles, polygons/beats) features to select crashes using standard GIS selection options (e.g., completely within, within distance of, etc.). User will be able to save their drawn features for later loading/reuse. As a quick filter, the topical selection capability could be used to narrow the selected site crashes to a particular topic. Using heat map capabilities would aid users in honing in on denser concentrations of crashes.
- Selection based on layers from existent DOT safety processes will enable users to select crashes for subsequent operations. Examples of pre-processed data layers include the intersection and segment Safety Improvement Candidate Location (SICL) lists (also known as the top 200 lists).
- The topical selection capability will enable users to indicate topics of interest from common general topics (e.g., younger driver-involved, truck-related, single-vehicle run-off-road (SV ROR), pedestrian-involved) for filtering/querying the data. The topical selection capability would not replace the query/filter module, which would have a much richer set of options. The topical selection options would be readily available (i.e., akin to the SAVER, standardized query menu options or the CMaT filter options).

The subsets identified via the initialization module will serve as the basis for subsequent modules. As part of this, the concept of “active” will be of key importance. To facilitate flexibility, the user will be able to activate or

inactivate layers as desired for use by subsequent modules. Subsequent modules would then only apply their operations to the active layers. If features are selected within those active layers, operations would be limited further to selection sets. Query/filter operations will also able to initiate from all features (i.e., the unselected set or ignoring the selected set).

3.5.1.2 Query/Filter Module

(see section 3 of Appendix A)

The query/filter module will enable users to specify subsets of the data selected via the initialization module, whether jurisdictionally, site, or topically. These queries/filters will operate in either query mode or filter mode:

- Query mode will function as a one-time, user-initiated method of subset specification.
- Filter mode will function as a constant, instantly applied method of subset specification, requiring the user to toggle the filter on/off. Filter mode status will be clear to the user within the interface.
- A SQL-defined mode will be available primarily for advanced users. This mode will allow users to modify the SQL defined by the query/filter selections to create specialized queries.

Fields available to the users for querying/filtering will include crash and roadway data, with expansion to additional databases (e.g., National Highway Traffic Safety Administration's (NHTSA) data 6-pack – see Definitions for a link to further information) enabled via future configuration setting updates (see Data section below). Queries/filters will allow access to most, if not all, fields in the database(s), including defined, text, and numeric fields. Querying/filtering of text fields will enable standard data mining operations. For numeric fields, specification will include identification of ranges. Users will be able to save their selections and load them later, creating user-defined, "standardized" selection sets. These "standardized" selection sets will be communicated to the server manager for consideration as additions to standard queries/filters. Often utilized standard queries/filters will be available via a readily available set (i.e., akin to the SAVER, standardized query menu options or the CMaT filter options) with others able to be loaded. Often used queries/filters should be tracked and shown as "trending", with a quick method of replicating the query/filter. The query/filter interface is envisioned to be a visual, tab-based interface.

3.5.1.3 Report Generation Module

(see section 4 of Appendix A)

The report generation module will enable users to specify reports, tables, charts, and/or graphs (henceforth referred to collectively as "reports") to produce. Reports will initially be enabled from crash and roadway data, with additional databases (e.g., NHTSA's data 6-pack – see Definitions for a link to further information) enabled via future configuration setting updates (see Data section below). Some reporting options will utilize these disparate datasets in combination, e.g., for calculation of rates and densities, whether based on traffic volume or populations.

Some reports will be standard/quick selection reports, accessible via a couple clicks (e.g., akin to the SAVER Count report and the CMaT reports). These standard/quick selection reports will be defined by Iowa DOT and will be expandable via configuration.

An expanded, less commonly requested selection of reports will be selectable via an enhanced interface which will also enable user-defined report creation. Users will be able to save their selections and load them later, creating user-defined, "standardized" selection sets. These "standardized" selection sets will be communicated to the server manager for consideration as additions to standard reports. The user-defined reports will follow the same model.

Regarding the individual types of reports:

- Reports refer to specially arranged combinations of summarized data in a one or two page format (e.g., akin to standard CMaT reports, see Appendix E). Standard reports will be developed but users will be provided an ability to develop their own reports using a visual, drag-and-drop environment (i.e., a Report Development Kit (RDK)).
- Tables refer to data presentations in a tabular, spreadsheet-ready format (e.g., akin to the standard SAVER reports, see Appendix F). These reports would most commonly fall into either a case-based, year-based, or summary category, with standard options available but user customization possible:
  - Case-based (crash-based) tables refer to case-by-case listings with varying numbers of fields, ranging from minimal to all.
  - Year-based reports refer to year-based summaries with specified fields to define the columns and the rows.
  - Summary reports refer to reports similar to year-based reports but summarized over the total timeframe.
- Charts and graphs refer to data presentations in charts/graphs formats (e.g., line, bar, or pie). Standard charts/graphs will be available, using the most appropriate format, but user specification of additional chart/graph options will be available. Users will have the option to continually display these charts/graphs as they change selections/adjust queries.

Users will have the option to print and download/export generated reports (again, referring to the collective) to standard export options, including both data (e.g., .csv, .txt, .xls) and image (e.g., .bmp, .jpg) formats. Users will also be provided the opportunity to share their reports via social media.

3.5.1.4 Collision Diagramming Aspect

(see section 5 of Appendix A)

The collision diagramming aspect will enable users to generate collision diagrams from the selection set of crash data. Currently, Iowa DOT utilizes the Crash Magic Online product by Pd' Programming, Inc. (http://www.pdprog.com/) as a COTS solution. If the proposed RFP solution were to utilize Crash Magic Online, a seamless connection would be preferable. This seamless connection would allow crashes selected within either system to be utilized by the modules of the other system.

3.5.1.5 Visualization (Output/Display Maps) Module

(see section 6 of Appendix A)

The output/display maps module will focus on the map display/visualization of results from selections and queries. Initial display will focus on simple displays of selected features with options to adjust the display via thematic (e.g., color, size, symbol) adjustments, stacking, heat mapping, and other standard GIS options. Generation of layouts will be accomplished either via standard/template layouts or via user-developed/defined layouts enabled via a visual, drag and drop environment (i.e., a Layout Development Kit (LDK)). Users will be able to save their selections and load them later, creating user-defined, "standardized", display selection sets. Additionally, users will be able to save their custom layouts and load them later. These custom layouts will be communicated to the server manager for consideration as additions to standard layouts.

3.5.1.6 Special Operations Module

(see section 7 of Appendix A)

The special operations module encapsulates features not part of the other modules. Examples of these include the application of Safety Performance Functions (SPFs) and Crash Modification Factors (CMFs) for forecasting purposes. Calculation of rates and densities, whether based on traffic volume or populations, may also fall under this module.

3.5.1.7 Raw Data Extracts/Export/Download Module

(see section 8 of Appendix A)

The raw data extracts/export/download module will enable users to download the raw data in entirety or subsets, based on the selection set. Several format options will be offered (e.g., ESRI shapefile, .kmz, .csv, .txt, .xls).

3.5.1.8 Project Module

(see section 9 of Appendix A)

The project module will enable users to save their current work and retrieve/open it later. It is anticipated that the save files will be resident on the client device rather than the server and that all aspects that define the current look-and-feel of the system are saved within tables and GIS files as needed, including jurisdiction selection, site-selection and/or topic selection, query, report, and such selections. Within this envisioned framework, transferability of the projects would be enabled via file transfer, whether e-mail, LAN, FTP, or other.

3.5.2 Data

(see Appendix J for examples of each data type)

As indicated above, Iowa DOT envisions several datasets as part of the proposed safety analysis, visualization, and exploration resource. Initially, two primary datasets will be relied on – crash and roadway – with other datasets based on NHTSA's data 6-pack (see Definitions for a link to further information) available later. Each dataset represents groupings of data, with some portions available currently or near-term and other parts available at a later data. However, with a system architecture designed to accommodate and facilitate configurability, these datasets will be much easier to incorporate as desired.

The NHTSA data 6-pack (see Definitions for a link to further information) includes crash, roadway, driver, vehicle, Injury Surveillance System (ISS)/Emergency Medical System (EMS), and citation/adjudication. A discussion of current and near-term Iowa data availability follows:

3.5.2.1 Crash: Iowa crash records exist with statewide coverage for the past 10 years plus the current year, very close to year-to-date (i.e., monthly data transfers). The current data has been collected utilizing the 2001 Iowa crash report form (see Appendix G); however, a new crash form will be initiated January 1st, 2015 (see Appendix H). Thus, nearly immediately, the need for configurability to adapt to data changes will be realized. Crash records can be divided into the general categories of crash-wide, unit-based (vehicle and driver), and person-based (injured person and non-motorists). Currently, the Iowa crash record database is divided into several tables per these categories and sub-categories within (see Appendix I). These records are currently uploaded into Oracle Spatial on a monthly basis and are available via both Oracle Spatial and REST endpoints. Lookup tables are also available via Oracle Spatial. For public release, these data will need to be cleansed of personal data; however, there is an interest internally to have these personal data available.

Further information and use cases are available at:

- http://www.iowadot.gov/tsda/crash.html
- http://www.iowadot.gov/tsda/crashreports.html
- http://www.iowadot.gov/tsda/crashmaps.html)

3.5.2.2 Roadway: Iowa roadway data exist with statewide coverage for the past 10 years plus. Historically, the primary roadway data, GIMS, is published on the DOT's website http://www.iowadot.gov/gis/downloads/default.aspx. The GIMS data includes segmental attributes regarding road centerlines (geometric and traffic), structures, and rail crossings. However, these data are also available via Oracle Spatial and are transitioning to a more modern data structure with Iowa DOT's Linear Referencing System (LRS) as a base. Initial roadway data inclusion would primarily center around the GIMS road centerline data but also include background data/layers initially. It is anticipated that these additional layers will be included as analytical layers at a later time.

Further information and use cases are available at:

- http://www.iowadot.gov/tsda/roadway.html
- http://www.iowadot.gov/tsda/roadwayreports.html

3.5.2.3 Driver: More than 2 million Iowans maintain some type of driver's license or identification card. The data records include information from ID card holders, drivers that have been ticketed for driving without a license, expired licenses, and suspended drivers. Driver data are anticipated to be added to the web-based, safety analysis tool at a later time. It is anticipated that these data will be cleansed of personal data, including location information except on a jurisdictional level.

Further information and use cases are available at:

- http://www.iowadot.gov/tsda/driver.html
- http://www.iowadot.gov/tsda/driverreports.html

3.5.2.4 Vehicle: Vehicle records provide information on the identification and ownership of vehicles registered in the state. Data may include owner's name, plate history, vehicle color, list price, number of cylinders, weight, odometer reading, and title information. Included in the registration information are those commercial vehicles registered under the International Registration Plan. Vehicle data are anticipated to be added to the web-based, safety analysis tool at a later time. It is anticipated that these data will be cleansed of personal data, including location information except on a jurisdictional level.

Further information and use cases are available at:

- http://www.iowadot.gov/tsda/vehicle.html
- http://www.iowadot.gov/tsda/vehiclereports.html

3.5.2.5 Citation/Adjudication: When a citation is issued by an Iowa law enforcement officer, the data from that ticket is transmitted to the court system. Citation/adjudication data are anticipated to be added to the web-based, safety analysis tool at a later time. It is anticipated that these data will be cleansed of personal data, including location information except on a jurisdictional level, and may only be available on a summarized level.

Further information and use cases are available at:

- http://www.iowadot.gov/tsda/citation.html
- http://www.iowadot.gov/tsda/citationreports.html

3.5.2.6 Injury Surveillance System (ISS)/Emergency Medical Services (EMS): Medical service data collected in Iowa includes Iowa's emergency medical services runs, outpatients (including emergency department), hospital discharges, and a trauma registry that includes injured persons who receive care in Iowa. Iowa's ETS run data system involves the capturing of service provider demographics and patient treatment data. The demographic portion includes agency name, agency certification level, and several other data points used to identify a state-certified organization that provides ETS to Iowan's. The treatment data includes every segment of the treatment provided by ETS, including non-treatment details, such as the type of dispatch, scene location, response time, scene time, and facility arrival time. Details on provider analysis and treatment include provider impression, vital signs, possible injury, cause of injury, motor vehicle impact, procedures performed, and medications provided. ISS/EMS data are anticipated to be added to the web-based, safety analysis tool at a later time. It is anticipated that these data will be cleansed of personal data, including location information except on a jurisdictional level, and may only be available on a summarized level.

Further information and use cases are available at:

- http://www.iowadot.gov/tsda/iss.html
- http://www.iowadot.gov/tsda/issreports.html

3.5.3 Additional Layers

Beyond the NHTSA data 6-pack (see Definitions for a link to further information), Iowa has developed many additional layers utilizing these data. Existent data layers will be included as both informational and operational layers. From an informational standpoint, these layers will be available for reference and users will be able to click them for identifying information. From an operational standpoint, users will be able to select these layers and utilize them to select features from other layers per the Initialization Module. Accommodation for inclusion of future layers will be enabled via configurability.

3.5.3.1 Pre-processed data layers: Pre-processed data layers include many layers that have resulted from other Iowa data summarizations, consolidations, analyses, and combinations of data. These layers often merge our disparate datasets to serve operational needs. Examples of current and planned pre-processed data layers include:

- Safety Improvement Candidate Location (SICL) lists
  - intersection (point)
  - interchange (point, line, and/or polygon)
  - segment (line)
  - curve (line)
- Comparable/average rates and densities
  - intersection (point)
  - interchange (point, line, and/or polygon)
  - segment (line)
  - curve (line)
- County and city summarized data (polygon)

3.5.3.2 Background data/layers: Background data layers include many layers that will initially serve as background layers but later will be included as operational layers. These background layers will contain attributes that should be available from an informational standpoint initially. Later, inclusion of these layers for querying and reporting will be enabled. Examples of current background layers include:

- county boundaries
- corporate limits
- rivers
- lakes
- rail
- intersections
- interchanges
- curves
- segmentation
- aerial images/Google Earth

For more information related to Iowa data and some of the uses of these data, please reference http://www.iowadot.gov/tsda/.

3.6 Anticipated Timeframe

For details regarding individual feature expected timeframes, please see Appendix A. Within Appendix A, anticipated timeframes are indicated by the phase and timeframe columns. These phases and timeframes indicate an anticipated schedule; however as stated earlier, the Iowa DOT is open to input regarding plausibility. Phase 1 items are divided into a prototype phase (6 months) and a base functionality phase (1 year). Phase 1 addresses the primary thrust of the project, to have a functional web browser-based, server/client-based, GIS-based, open access safety analysis, visualization, and exploration resource available within 1 year of contract initiation. Phase 2 items address extended functionality, primarily to provide the vision and encourage development of architecture to account for future enhancements.

- Phase 1 (year 1) – architecture and base functionality
  - 2 months
    - architecture plan, including:
      - use of Iowa DOT existing infrastructure
      - data connections/linkages
      - functionality plan per modules
      - configuration plan per data types and modules
  - 6 months – functional prototype
    - fundamental architecture upon which all else relies
      - use of Iowa DOT existing infrastructure
      - data connections/linkages
    - basic, prototype functionality via public web per modules
    - basic, prototype configuration capability per data types and modules
  - 1st year – functional base system
    - essential 1st level functionality per requirements table building on prototype per modules
    - initial data types
    - training materials
- Phase 2 (year 2) – extended functionality
- Phases 3 (year 3) – 6 (year 6) – further extended functionality, if needed

3.7 Software Licenses

Bidders shall provide all necessary software licenses required for the system. The cost of all software, including licenses, should be included in the schedule of prices.

3.8 Project Management

3.8.1 Project Manager

Bidders shall designate the project manager who will have overall, daily responsibility for the project. . This person will be responsible for the project management and coordination with Iowa DOT and others as necessary to most effectively manage time and resources.

3.8.2 Project Kick-Off Meeting

A project kick-off meeting will be scheduled by Iowa DOT with the successful bidder to coordinate the project schedule. The kick-off meeting will focus on the project requirements, schedule, staffing and coordination necessary for the project implementation.

The successful bidder's key staff must attend the kick-off meeting.

3.8.3 Progress Meetings

Progress meetings will be led and organized by Iowa DOT staff. Meetings may be held in person or by conference call as agreed by both parties.

An electronic progress schedule will be established and shared between Iowa DOT and successful bidder to monitor and track up-to-date progress. The structure and content of the report will be determined between the two parties.

3.9 Training

Bidders shall provide and describe training session(s). Training shall be defined and included in the bid response.

3.10 Maintenance and Technical Support

3.10.1 Maintenance

Bidders shall provide all available maintenance options with each level of maintenance offered. Costs shall be listed in the Schedule of Prices. Maintenance begins after the successful installation and acceptance by Iowa DOT of the overall deployed system.

3.10.2 Support

Bidders shall list all options available for 24/7/365 support, including but not limited to including an escalation plan for calls received.

3.11 Acceptance Testing

Acceptance testing shall apply as per section 6.22.

3.12 Iowa DOT Responsibilities

Iowa DOT will provide staff assistance to the awarded vendor as needed throughout the project as mutually agreed upon.

The Iowa DOT will provide access to information contained within its databases as needed.

Section 4 Form and Content of RFP Responses

4.1 Instructions

The following instructions prescribe the format and content of the Bid Response. They are designed to facilitate a uniform review process. Failure to adhere to the proposal format may result in the rejection of the Bid Response.

It is the request of the Iowa DOT that the following section headings be used in the bidder responses to this RFP and that they be arranged in the order as listed in the proposal. Bidders should provide a table of contents and should label divider tabs. Responses must be in sufficient detail to permit an understanding and comprehensive evaluation of the bidder's response.

4.1.1 The Bid Response shall be typewritten on 8.5" x 11" paper (bound securely, double sided is allowed) and sent in a sealed envelope.

4.1.2 The Bid Response shall be divided into two parts: (1) the Technical Response and (2) the Cost Proposal. **The Cost Proposal shall be in a separate sealed envelope**.

Example:

Technical Envelope(s) Contain(s):	Cost Proposal Envelope Contains:
Original Technical Response & Copies	Original Cost Proposal & Copies
Electronic copy of the Technical Response	Electronic Copy of the Cost Proposal
Public Copy if submitted	
Electronic Public Copy on same CD if submitted	

The envelopes shall be labeled with the information found on the cover sheet:

[RFP Title] [RFP Number]
[Issuing Officer's Name]
[Bidder's Name and Address]
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

The Iowa DOT shall not be responsible for misdirected packages or premature opening of Bid Responses if a Bid Response is not properly labeled.

4.1.3 One (1) original, one (1) removable media (example: CD or flash drive) each in a sealed envelope, ***and*** the additional number of copies of the Contractor Bid Response defined on the Procurement Timetable in the cover section, shall be timely submitted to the Issuing Agent.

4.1.4 If the Bidder designates any information in its Bid Response as confidential pursuant to Section 2.20, the Bidder must also submit one (1) copy of the Bid Response from which confidential information has been excised as provided in Section 2.20 marked **"Public Copy"**.

4.1.5 Bidders may include promotional materials as company information but they shall not take the place of the bid response and will not be considered for the award unless they enhance the response to a specific requirement.

4.1.6 Attachments shall be referenced in the Bid Response.

4.1.7 If a Bidder proposes more than one method of meeting these requirements, each shall be labeled and submitted separately. Each will be evaluated separately.

4.2 Technical Proposal (Response)

The following documents shall be included in the Technical Response in the order given below:

4.2.1 Transmittal Letter (Required) An individual authorized to legally bind the Bidder shall sign the transmittal letter. The letter shall include the Bidder's mailing address, electronic mail address, fax number, and telephone number. Any request for confidential treatment of information shall be included in the transmittal letter in accordance with the provisions of Section 2.20 In addition to the specific statutory basis supporting the request, an explanation why disclosure of the information is not in the best interest of the public is required. The transmittal letter shall also contain the name, address, electronic mail address and telephone number of the individual authorized to respond to the Iowa DOT about the confidential nature of the information.

4.2.2 Table of Contents The Bidder should include a table of contents of its Bid Response and submit the check list of submittals per Attachment # 3.

4.2.3 Executive Summary The Bidder shall prepare an executive summary and overview of the goods and/or services it is offering, including all of the following information:

4.2.3.1 Statements that demonstrate that the Bidder has read, understands and agrees with the terms and conditions of the RFP including the contract provisions in Section 6.

4.2.3.2 An overview of the Bidder's plans for complying with the requirement s of this RFP. (Including project management approach).

4.2.3.3 Any other summary information the Bidder deems to be pertinent.

4.2.4 Specifications and Technical Requirements The Bidder shall answer whether or not it will comply with each requirement in Section 3 of the RFP. Bidders shall explain how it will comply with each requirement in Section 3. **Merely repeating the requirements may be considered non-responsive and may disqualify the Bidder.** Bid Responses must identify any deviations from the requirements of this RFP or requirements the Bidder cannot satisfy. Any deviations from the requirements of the RFP or any requirement of the RFP that the Bidder cannot satisfy may disqualify the Bidder.

4.2.5 Company Background Information provide the following general background information:

4.2.5.1 Name, address, telephone number, fax number and e-mail address of the Bidder including all d/b/a's or assumed names or other operating names of the Bidder.

4.2.5.2 Form of business entity, i.e., corporation, partnership, proprietorship, limited liability company.

4.2.5.3 State of incorporation, state of formation, or state of organization.

4.2.5.4 The location(s) (including address and telephone numbers) of the offices and other facilities that relate to the Bidder's performance under the terms of the RFP.

4.2.5.5 Local office address and phone number (if any).

4.2.5.6 Number of employees.

4.2.5.7 Type of business.

4.2.5.8 Name, address, e-mail address and telephone number of the Bidder's representative to contact regarding all contractual and technical matters concerning the Bid Response.

4.2.5.9 Name, address, e-mail address and telephone number of the Bidder's representative to contact regarding scheduling and other arrangements.

4.2.5.10 Name, contact information and qualifications of any sub-Contractors who will be involved with this project.

4.2.5.11 Bidder's accounting firm.

4.2.5.12 The successful Contractor will be required to register to do business in Iowa before payments can be made. For contractor registration documents, go to: http://www.iowadotpurchasing.com

4.2.6 Experience

The Bidder must provide the following information regarding its experience:

4.2.6.1 Number of years in business.

4.2.6.2 Number of years' experience with providing the types of goods and/or services sought by the RFP.

4.2.6.3 The level of technical experience in providing the types of goods and/or services sought by the RFP.

4.2.6.4 A list all of all goods and/or services similar to those sought by this RFP that the Bidder has provided to other businesses or governmental entities.

4.2.6.5 References from three (3) previous or current customers or clients knowledgeable of the Bidder's performance in providing goods and/or services similar to the goods and/or services described in this RFP and a contact person, e-mail address and telephone number for each reference.

4.2.7 Personnel

The Bidder must provide resumes for all key personnel who will be involved in providing the goods and/or services contemplated by this RFP.

The following information must be included in the resumes:

4.2.7.1 Full name**.**

4.2.7.2 Education.

4.2.7.3 Years of experience and employment history particularly as it relates to the requirements of the RFP**.**

4.2.8 Financial Information (short list bidders only)

The Bidder may be asked to provide the following financial information:
Short listed Bidders at the time of presentation, see Section 2.31.

4.2.8.1 Audited financial statements for the last 3 years. Privately held companies may substitute Credit reports.

4.2.8.2 A minimum of three (3) financial references. Privately held companies may substitute: Letters of Reference from the bank.

4.2.9 Terminations, Litigation, Debarment

The Bidder must provide the following information for the past five (5) years: (also see Attachment 1)

4.2.9.1 Has the Bidder had a contract for goods and/or services terminated for any reason? If so, provide full details regarding the termination.

4.2.9.2 Describe any damages or penalties assessed against or dispute resolution settlements entered into by the Bidder under any existing or past contracts for goods and/or services. Provide full details regarding the incident, including the dollar amount of damages, penalties and settlement payments.

4.2.9.3 Describe any order, judgment or decree of any Federal or State authority barring, suspending or otherwise limiting the right of the Bidder to engage in any business, practice or activity.

4.2.9.4 A list and summary of all litigation or threatened litigation, administrative or regulatory proceedings, or similar matters to which the Bidder or its officers have been a party, if any. The Bidder must also state whether it or any owners, officers, or primary partners have ever been convicted of a felony. Failure to disclose these matters may result in rejection of the Bid Response or in termination of any subsequent contract.

4.2.9.5 Any irregularities discovered in any of the accounts maintained by the Bidder on behalf of others, describe the circumstances and disposition of resolving the irregularities.

The above disclosures are a continuing requirement of the Bidder. The Bidder shall provide written notification to the Iowa DOT of any such matter commencing or occurring after submission of a Bid Response, and with respect to the successful Contractor, following execution of the Resulting Contract.

4.2.10 Certification Letter (Attachment 1)

The Bidder shall sign and submit with the Bid Response the document included as Attachment 1 (Certification Letter) in which the Bidder shall make the certifications included in Attachment 1.

4.2.11 Acceptance of Terms and Conditions

The Bidder shall specifically agree that the Bid Response is predicated upon the acceptance of all terms and conditions stated in the RFP. If the Bidder objects to any term or condition, the Bidder must specifically take exception per the RFP page and section and provide the reason for the objection. Objections or responses that materially alter the RFP may be deemed non-responsive and result in rejection of the Bid response.

4.2.12 Authorization to Release Information (Attachment 2)

The Bidder shall sign and submit with the Bid Response the document included as Attachment 2 (Authorization to Release Information Letter) in which the Bidder authorizes the release of information to the Iowa DOT.

4.2.13 Firm Bid Proposal Terms

The Bidder shall guarantee in writing the availability of the goods and/or services offered and that all Bid Response terms, including price, will remain firm a minimum of 180 days following the deadline for submitting Bid Responses.

4.2.14 Proposal Guarantee, Bid Bond

If a Proposal Guarantee/Bid Bond,) is required by this RFP, it will be indicated on the Bid Response sheet located in the "Cover Section" page 3 and standard terms and conditions.

The Bidder shall submit a bid bond, certified or cashier's check made payable to the Iowa DOT in the amount specified on the Bid Response page. The proposal guarantee shall be in the form of a certified check or credit union certified share draft, cashier's check, or bank draft drawn on a solvent bank or credit union. Certified checks or credit union certified share drafts shall bear an endorsement signed by a responsible official of such bank or credit union as to the amount certified. Cashier's checks or bank drafts shall be made payable either to the Contracting Authority or to the bidder and, where made payable to the bidder, shall contain an unqualified endorsement to the Contracting Authority signed by the bidder or his authorized agent.

Bid bond may be used for the proposal guarantee in lieu of that specified above. ***A bid bond must be submitted on Iowa Department of Transportation Form No. 131084 included in the packet or bid will be rejected.***

If the Bidder elects to use a bond, a surety licensed to do business in Iowa on a form acceptable to the Iowa DOT must issue the bond.

The bid proposal security shall be forfeited if the Bidder chosen to receive the contract withdraws its response after the Iowa DOT issues a Notice of Intent to Award, does not honor the terms offered in its response, or does not negotiate contract terms in good faith. Security submitted by Bidders will be returned when the responses expire, are rejected, or the Iowa DOT enters into a contract with the successful Bidder, whichever is earliest.

The proposal guarantee of the qualified responsive low bidder will be retained until a contract is entered into and the required Bonds and Insurance Certificates filed. All other bid securities will be returned after the award has been made.

4.2.15 Work Plan

The Bidder shall address each technical requirement in Section 3 of the RFP and explain how it plans to approach each requirement. Responses must be fully responsive to project requirements. **Merely repeating the requirements will be considered non-responsive and may disqualify the Bidder.** Responses must identify any deviations from the requirements of this RFP or requirements the Bidder cannot satisfy. Any deviations from the requirements of the RFP or any requirement of the RFP that the Bidder cannot satisfy may disqualify the Bidder.

4.3 Schedule of Prices – Cost Proposal

Bidders shall provide a cost proposal for the proposed items listed in the **Schedule of Prices.** . Use additional pages for the detail information requested. The amounts should exclude state and federal taxes except for taxes required to be withheld for employment purposes. The Iowa DOT is a tax exempt entity. **Cost proposal must be submitted in a separate envelope.**

Section 5 Evaluation and Selection

5.1 Introduction

This section describes the evaluation process that will be used to determine which Bid response provides the greatest benefit to the Iowa DOT based on the evaluation criteria in Section 5.4

5.2 Evaluation Committee

The Iowa DOT intends to conduct a comprehensive, fair, and impartial evaluation of Bid Responses received in response to this RFP. The Iowa DOT will use an evaluation committee to review and evaluate the Bid Responses. The Evaluation Committee shall consist of members with; special expertise in procurement of the product(s) and/or service(s) that are the subject of this RFP, knowledge of the Iowa DOT's requirements for these product(s) and/or service(s), or technical expertise in communications, or data processing. Bidders may not contact members of the evaluation team except at the Iowa DOT's request.

5.3 Overview of Evaluation

All bid responses will be first evaluated to determine if they comply with the mandatory requirements of the RFP. To be deemed a Responsible Bidder any proposed bid response must comply with the mandatory requirements. Failure to meet the mandatory requirements will result in the response being rejected. In the event that all Bidders do not meet the mandatory requirement, the Iowa DOT reserves the right to continue the evaluation of the responses and to select the response most closely meeting the requirements specified in this RFP.

5.4 Evaluation Criteria

The response evaluation criteria shall be used by the Evaluation Committee for purposes of award. Items are not listed in any particular order of importance. All submitted, short listed, bid responses will be given a point rating and total score. A low rating may result from incomplete or unclear responses to specific criteria.

Evaluation Criteria
Overall content of written submitted proposal information
o Overall solution o System functionality
Business Knowledge
o Knowledge of Industry Standards and Applications
Work Experience in Required Skill Sets
o Experience in the development of similar transportation-related software o Project management o Company experience o References
Vendor Presentation
o Scoring is based on the vendor's presentation and responses to Iowa DOT questions
Cost – See Schedule of Prices

Weighting of evaluation categories is not available to the bidders prior to the bid opening.

5.5 Recommendation of the Evaluation Committee

The final evaluation will be based on the criteria as listed in Section 5.4

5.6 Protest of Award

Protest of award shall be made in accordance with the Iowa Administrative Code 761-20.4(6)”e”.

Section 6 Contract Terms and Conditions

6.1 Contract Terms and Conditions

The contract(s) that the Iowa DOT expects to award as a result of this RFP will be based upon the Bid Response submitted by the successful Contractor and the RFP. The contract between the Iowa DOT and the successful Contractor shall be a combination of the specifications, terms and conditions of the RFP, including the terms contained in the Iowa DOT's attachment(s)**,** the offer of the Contractor contained in the Bid Response, written clarifications or changes made in accordance with the provisions of the RFP herein and any other terms deemed necessary by the Iowa DOT, except that no objection or amendment by a Contractor to the RFP requirements shall be incorporated by reference into the Contract unless the Iowa DOT has explicitly accepted the Contractor's objection or amendment in writing.

The contract terms contained in Section 6 are not intended to be a complete listing of all contract terms but are provided only to enable contractors to better evaluate the costs associative with the RFP and the potential resulting contract. Contractors should plan on such terms being included in any contract awarded as a result of this RFP. All costs associated with complying with these requirements should be included in the pricing proposal or any pricing quoted by the contractor.

By submitting a Bid Response, each Contractor acknowledges its acceptance of the RFP specifications and the contract terms and conditions without change except as otherwise expressly stated in its Bid Response. If a Contractor takes exception to a provision, it must state the reason for the exception and set forth in its Bid Response the specific contract language it proposes to include in place of the provision. Exceptions that materially change the contract terms and conditions or the requirements of the RFP may be deemed non-responsive by the Iowa DOT, in its sole discretion, resulting in possible rejection of the Bid Response. The Iowa DOT reserves the right to either award a contract(s) without further negotiation with the successful Contractor or to negotiate contract terms with the successful Contractor if the best interests of the State would be served.

6.2 Contract Period

The term of the Contract will begin and end on the dates indicated in the RFP Procurement Timetable, unless extended or terminated earlier in accordance with the termination provisions of this Contract. The Iowa DOT shall have the sole option to renew the Contract for up to the number of annual renewals specified on the Procurement Timetable.

6.3 Contractor Qualification Requirement

Prior to execution of a contract with a contractor, the contractor must qualify to do business with the State of Iowa.

6.4 Equipment Delivery Schedule

The equipment shall be delivered as agreed upon between the successful Contractor and the Iowa DOT.

6.5 Installation and Implementation

Upon award of a Contract, the Iowa DOT shall negotiate an installation and implementation schedule with the successful Contractor. Extended installation time

periods may be considered when the extension is in the best interest of the Iowa DOT.

6.6 Scope of Work (Services)

The services to be performed pursuant to and as a result of this contract by the contractor are described in Project Specifications, Section 3, and in the Appendices and are made a part hereof by this reference.

The contractor shall prepare and deliver specifications to the Iowa DOT which will detail the design, technical and functional capabilities, and other attributes related to the project, all as more fully described in Section 3.

Amendments to Scope of Services and Specifications. The parties agree that the Scope of Services and the specifications may be revised, replaced, amended or deleted at any time during the term of this Contract to reflect changes in service or performance standards upon the mutual written consent of the parties.

Industry Standards. Services rendered pursuant to this Contract shall be performed in a professional and workmanlike manner in accordance with the terms of this Contract and with generally acceptable industry standards of performance for similar tasks and projects. In the absence of a detailed specification for the performance of any portion of this Contract, the parties agree that the applicable specification shall be the generally accepted industry standard.

As long as the Iowa DOT notifies the contractor promptly of any services performed in violation of this standard, the contractor will re-perform the services, at no cost to Iowa DOT, such that the services are rendered in the above-specified manner.

Non-Exclusive Rights. This Contract is not exclusive. The Iowa DOT reserves the right to select other contractors to provide services similar or identical to the Scope of Services described in this Contract during the term of this Contract.

6.7 Licenses

The Bidder shall include the cost for all software licenses and annual software maintenance fees require for its work. The Bidder must furnish a written copy of the software Terms and Conditions of software agreement with the submitted response.

6.8 Labor Regulations

The Contractor shall give all notices and comply with all codes, laws, ordinances, rules and regulations of any public authority having jurisdiction that bears on the performance of its work.

6.9 Contract Termination

It is imperative that the contractor consistently provides high quality services. Below are procedures that will be utilized in the event that the contract must be terminated due to the contractor's lack of ability to produce required results:

6.9.1 Immediate Termination by the Iowa DOT

The Iowa DOT may terminate this contract in writing for any of the following reasons effective immediately without advance notice:

6.9.1.1 In the event the contractor is required to be certified or licensed as a condition precedent to providing services, the revocation or loss of such license or certification will result in immediate termination of the Contract effective as of the date on which the license or certification is no longer in effect;

6.9.1.2 The Iowa DOT determines that the actions, or failure to act, of the contractor, its agents, employees or subcontractors have caused, or reasonably could cause, a client's life, health or safety to be jeopardized;

6.9.1.3 The contractor fails to comply with confidentiality laws or provisions;

6.9.1.4 The contractor furnished any statement, representation or certification in connection with this Contract or the RFP which is materially false, deceptive, incorrect or incomplete;

6.9.2 Termination for Cause

The occurrence of any one or more of the following events shall constitute cause for the Iowa DOT to declare the contractor in default of its obligations under this Contract.

6.9.2.1 The contractor fails to perform to the Iowa DOT's satisfaction, per Section 3 Project Specification requirements.

6.9.2.2 The Iowa DOT determines that satisfactory performance of this Contract is substantially endangered or that a default is likely to occur.

6.9.2.3 The contractor fails to make substantial and timely progress toward performance and deliverables within the contract.

6.9.2.4 The contractor consistently misses deadlines agreed upon with the Iowa DOT project managers.

6.9.2.5 The contractor replaces key personnel with individuals who have less experience, knowledge and skills in the areas of their responsibilities.

6.9.2.6 The contractor staff's knowledge, skills, and experience are unacceptable to the Iowa DOT and do not reflect what the contractor represented the skill sets of their staff that would be assigned to this engagement.

6.9.2.7 The contractor's staff turnover is unacceptably high to Iowa DOT.

6.9.2.8 The contractor fails to effectively manage contractor staff time and/or assignments.

6.9.2.9 The contractor's quality of work is unacceptable to Iowa DOT (i.e. incorrect results, standards are not followed).

6.9.2.10 The contractor's quantity of work is unacceptable to Iowa DOT. The contractor fails to perform additional assignments as requested.

6.9.2.11 The contractor does not respond to critical issues and/or fails to participate in problem resolution when asked. This includes requests for support in the evenings and weekends.

6.9.2.12 The contractor's deliverable(s) cause a major outage to the Iowa DOT's IT infrastructure.

6.9.2.13 The contractor becomes subject to any bankruptcy or insolvency proceeding under federal or state law to the extent allowed by applicable federal or state law including bankruptcy laws; the contractor terminates or suspends its business; or the Iowa DOT reasonably believes that the contractor

has become insolvent or unable to pay its obligations as they accrue consistent with applicable federal or state law.

6.9.2.14 The contractor has failed to comply with applicable federal, state and local laws, rules, ordinances, regulations and orders when performing within the scope of this Contract.

6.9.2.15 The contractor has engaged in conduct that has or may expose the Iowa DOT to liability, as determined in the Iowa DOT's sole discretion.

6.9.2.16 The contractor has infringed any patent, trademark, copyright, trade dress or any other intellectual property right.

6.9.3 Notice of Default

If there is a default event caused by the contractor, the Iowa DOT shall provide written notice to the contractor requesting that the breach or noncompliance be remedied within the period of time specified in the Iowa DOT's written notice to the contractor. If the breach or noncompliance is not remedied by the date in the written notice, the Iowa DOT may either:

6.10.3.1 Immediately terminate the contract without additional written notice.

6.10.3.2 Enforce the terms and conditions of the contract and seek any legal or equitable remedies.

6.9.4 Termination Upon Notice

Following 30 days written notice, the Iowa DOT may terminate this Contract in whole or in part without the payment of any penalty or incurring any further obligation to the contractor. Following termination upon notice, the contractor shall be entitled to compensation, upon submission of invoices and proper proof of claim, for services provided under this Contract to the Iowa DOT up to and including the date of Termination.

6.9.5 Termination Due to Lack of Funds or Change in Law

The Iowa DOT shall have the right to terminate this Contract without penalty by giving thirty (30) days written notice to the contractor as a result of any of the following:

6.9.5.1 Adequate funds are not appropriated or granted to allow the Iowa DOT to operate as required and to fulfill its obligations under this Contract.

6.9.5.2 Funds are de-appropriated or not allocated or if funds needed by the Iowa DOT, at the Iowa DOT's sole discretion, are insufficient for any reason.

6.9.5.3 The Iowa DOT's authorization to operate is withdrawn or there is a material alteration in the programs administered by the Iowa DOT.

6.9.5.4 The Iowa DOT's duties are substantially modified.

6.9.6 Remedies of the Contractor in Event of Termination by the Iowa DOT

In the event of termination of this Contract for any reason by the Iowa DOT, the Iowa DOT shall pay only those amounts, if any, due and owing to the contractor for services actually rendered up to and including the date of termination of the contract and for which the Iowa DOT is obligated to pay pursuant to this Contract. Payment will be made only upon submission of invoices and proper proof of the contractor's claim. This provision in no way limits the remedies available to the Iowa DOT under

this Contract in the event of termination. However, the Iowa DOT shall not be liable for any of the following costs:

6.9.6.1 The payment of unemployment compensation to the contractor's employees.

6.9.6.2 The payment of workers' compensation claims, which occur during the contract or extend beyond the date on which the contract terminates.

6.9.6.3 Any costs incurred by the vendor in its performance of the contract, including, but not limited to, startup costs, overhead or other costs associated with the performance of the contract.

6.9.6.4 Any taxes that may be owed by the contractor in connection with the performance of this Contract, including, but not limited to, sales taxes, excise taxes, use taxes, income taxes or property taxes.

6.9.7 Vendor Termination Duties

The contractor, upon receipt of notice of termination or upon request of the Iowa DOT, shall:

6.9.7.1 Cease work under this Contract and take all necessary and appropriate steps to limit disbursements and minimize costs, and furnish a report within thirty (30) days of the date of notice of termination, describing the status of all work under the contract, including, without limitation, results accomplished, conclusions resulting therein, any other matters the Iowa DOT may require.

6.9.7.2 Immediately cease using and return to the Iowa DOT any personal property or materials provided by the Iowa DOT to the contractor.

6.9.7.3 Comply with the Iowa DOT's instructions for the timely Transfer of any active files and work product produced by the contractor under this Contract.

6.9.7.4 Cooperate in good faith with the Iowa DOT, its employees, agents and contractors during the transition period between the notification of termination and the substitution of any replacement contractor.

6.9.7.5 Issue credit to the Iowa DOT for any payments made by the Iowa DOT for services that were inappropriately billed for services that were not rendered by the contractor.

6.9.7.6 Immediately deliver to the Iowa DOT any and all Deliverables for which the Iowa DOT has made payment (in whole or part) that are in the possession or under the control of the Contractor or its agents or subcontractors in whatever stage of development and form of recordation such property is expressed or embodied as that time.

6.9.8 Unacceptable Deliverables

The contractor shall be required to perform the work for each deliverable in accordance with the terms, conditions, and representations of this Contract.

6.10 Contractor's Insurance Requirements

The resulting Contract will require the successful Contractor to maintain insurance coverage(s) of the type and in the amounts set forth below.

• It shall be the Contractor's responsibility to have liability insurance covering all of the project operations incident to contract completion and the Contractor(s) must have on file with the Contracting Authority a current "Certificate of Insurance" prior to award of contract. The certificate shall identify the insurance company firm name and address, contractor firm name, policy period, type of policy, limits of coverage, and scope of work covered (single contract or statewide). This requirement shall apply with equal force, whether the work is performed by persons employed directly by the Contractor(s) including a subcontractor, persons employed by a subcontractor(s), or by an independent contractor(s).

• In addition to the above, the Contracting Authority shall be included as an insured party, or a separate owner's protective policy shall be filed showing the Contracting Authority as an insured party.

• The liability insurance shall be written by an insurance company (or companies) qualified to do business in Iowa. For independent contractors engaged solely in the transportation of materials, the minimum coverage provided by such insurance shall be not less than that required by Chapter 325A, Code of Iowa, for such truck operators or contract carriers as defined therein. For all other contractors, subcontractors, independent contractors, and the Contracting Authority, the minimum coverage by such
insurance shall be as follows:

• *Comprehensive General Liability* including Contractual Liability;
• Contingent Liability; Explosion, Collapse and Underground Drainage
• Damage; Occurrence Basis Bodily Injury: Broad Form Personal Injury; Broad Form Property Damage.

Bodily Injury
The contractor will purchase and maintain throughout the term of this contract the following minimum limits and coverage:

• Each person	$750,000
• Each accident/occurrence	$750,000
• Workers Compensation	$750,000
• Statutory Limits	$750,000
• Employer's liability	$750,000
• Pollution Liability	$750,000
• Occupation Disease	$750,000

Operations

• Property Damage	$250,000 each occurrence

The Contractor(s) shall require all subcontractor(s) meet the above insurance requirements.

The Certificate of Insurance must include the following;

• Iowa Department of Transportation must be listed as an additional insured
• Proposal Number
• Proposal Description
• Letting Date and Contract Period

6.11 Performance Bond

Not required for this RFP.

6.12 Force Majeure

Neither Contractor nor the Iowa DOT shall be liable to the other for any delay or failure of performance of this Contract; and no delay or failure of performance shall constitute a default or give rise to any liability for damages if, and only to the extent that, such delay or failure is caused by a "force majeure". As used in this Contract, "force majeure" includes acts of God, war, civil disturbance and any other causes which are beyond the control and anticipation of the party effected and which, by the exercise of reasonable diligence, the party was unable to anticipate or prevent.

Failure to perform by a subcontractor or an agent of the Contractor shall not be considered a "force majeure" unless the subcontractor or supplier is prevented from timely performance by a "force majeure" as defined in this Contract. "Force majeure" does not include: financial difficulties of the Contractor or any parent, subsidiary, affiliated or associated company of Contractor; claims or court orders which restrict Contractor's ability to deliver the goods or services contemplated by this Contract.

If a "force majeure" delays or prevents Contractor's performance, the Contractor shall immediately commence to use its best efforts to directly provide alternate, and to the extent possible, comparable performance. Comparability of performance and the possibility of comparable performance shall be reasonably determined solely by the Iowa DOT.

During any such period, the Contractor shall continue to be responsible for all costs and expenses related to alternative performance.

This Section shall not be construed as relieving the Contractor of its responsibility for any obligation which is being performed by a subcontractor or supplier of services unless the subcontractor or supplier is prevented from timely performance by a "force majeure" as described here.

6.13 Indemnification by Contractor

The Contractor agrees to defend, indemnify and hold the Iowa DOT, and the State of Iowa, its employees, agents, board members, appointed officials and elected officials, harmless from any and all demands, debts liabilities, damages, loss, claims, suits or actions, settlements, judgments, costs and expenses, including the reasonable value of time expended by the Attorney General's Office, and the costs and expenses and attorney fees of other counsel required to defend the Iowa DOT or the State of Iowa related to or arising from: Any violation or breach of this Contract including without limitation any of the Contractor's representations or warranties; or Any acts or omissions, including, without limitation, negligent acts or omissions or willful misconduct of Contractor, its officers, employees, agents, board members, contractors, subcontractors, or counsel employed by Contractor in the performance of this Contract, or any other reason in connection with the goods and services provided under this Contract; or Claims for any violation of any intellectual property right including but not limited to infringement of patents, trademarks, trade dress, trade secrets, or copyrights arising from the any of the goods or service performed in accordance with this Contract; or The Contractor's performance or attempted performance of this Contract; or *Any failure by the Contractor to comply with all local, State and Federal laws and* regulations; or Any failure by the

Contractor to make all reports, payments and withholdings required by Federal and State law with respect to social security, employee income and other taxes, fees or costs required by the Contractor to conduct business in the State of Iowa.

The Contractor's duty to indemnify as set forth in this section shall survive the expiration or termination of this Contract and shall apply to all acts taken in the performance of this Contract regardless of the date any potential claim is made or discovered by the STATE.

6.14 Indemnification by Iowa DOT

The State shall, only to the extent consistent with Article VII, Section 1 of the Iowa Constitution and Iowa Code Chapter 669, indemnify and hold harmless the Contractor from and against any and all costs, expenses, loses, claims, damages and liabilities arising directly out of the negligence or wrongful acts or omissions of any employee of the Iowa DOT while acting within the scope of the employee's office of employment in connection with the performance of this Contract.

At the option of the Iowa DOT, the Contractor shall be represented by the Attorney General of the State or special counsel retained by the Iowa DOT or the Attorney General of the State with respect to any litigation brought by or against the Contractor or such persons with respect to any claims, damages, judgments, liabilities or causes of action to which such persons may be subject and to which they are entitled to be indemnified hereunder.

Indemnification under this Section shall survive the termination of this Contract and shall include reasonable fees and expenses of counsel and expenses of litigation. If the Iowa DOT shall have made any indemnity payments pursuant to this Section and the person to or on behalf of whom such payments are made thereafter shall collect any of such amounts from others, such person shall promptly repay such amounts to the Iowa DOT, without interest.

6.15 Payment

Contractor shall be compensated based on deliverables. Invoices shall be sent after each deliverable, and payment shall be made after acceptance testing is completed. Potential deliverables are Hardware, Software, Installation, Maintenance & Support, enhancements and/or upgrades.

The Iowa DOT will not pay any additional costs, altered from bid price, unless this has been approved by the Iowa DOT, prior to work performed.

6.16 Travel Expenses

Travel expenses shall not be allowed.

6.17 Care of Property

The contractor shall be responsible for the proper custody and care of any the State-owned tangible personal property furnished for the contractor's use in connection with the performance of the contract, and the contractor will reimburse the Iowa DOT for such property's loss or damage caused by the contractor, normal wear and tear excepted.

6.18 Contractor Conduct

The contractor shall adhere to State and other written established work rules. The Iowa DOT Workplace Environment Policies and Procedures will be provided to the

contractor. These rules consist of commonly accepted, professional business conduct.

6.19 Public Contract Termination

The Provisions of Iowa Law as contained in Chapter 573A of the Code of Iowa, an Act to provide for termination of contracts for the construction of public improvements when construction or work thereon is stopped because of national emergency shall apply to and be a part of this Contract, and shall be binding upon all parties hereto including sub-contractors and sureties upon any bond given or filed in connection herewith.

Legislative Changes. The Contractor expressly acknowledges that the contracted Deliverables are subject to legislative change by either the federal or state government. Should either legislative body enact measures which alter the project, the Contractor shall not hold the Agency liable in any manner for the resulting changes. The Agency shall use best efforts to provide thirty (30) days' written notice to the Contractor of any legislative change. During the thirty (30) – day period, the parties shall meet and make a good faith effort to agree upon changes to the Contract to address the legislative change. Nothing in this Subsection shall affect or impair the Agency's right to terminate the Contract pursuant to the termination provisions.

Repayment Obligation. In the event that any State and/or federal funds are deferred and/or disallowed as a result of any audits or expended in violation of the laws applicable to the expenditure of such funds, the Contractor shall be liable to the Agency for the full amount of any claim disallowed and for all related penalties incurred. The requirements of this paragraph shall apply to the Contractor as well as any subcontractors.

6.20 Confidential Information

6.20.1 The Contractor's employees, agents and subcontractors may have access to confidential information maintained by the Iowa DOT to the extent necessary to carry out its responsibilities under the Contract. The Contractor shall presume that all information received pursuant to this Contract is confidential unless otherwise designated by the Iowa DOT. The Contractor shall provide to the Iowa DOT a written description of its policies and procedures to safeguard confidential information. Policies of confidentiality shall address, as appropriate, information conveyed in verbal, written, and electronic formats. The Contractor must designate one individual who shall remain the responsible authority in charge of all data collected, used, or disseminated by the Contractor in connection with the performance of the Contract. The Contractor shall provide adequate supervision and training to its agents, employees and subcontractors to ensure compliance with the terms of this Contract. The private or confidential information shall remain the property of the Iowa DOT at all times.

6.20.2 No confidential information collected, maintained, or used in the course of performance of the Contract shall be disseminated by Contractor except as authorized by law and only with the prior written consent of the Iowa DOT, either during the period of the Contract or thereafter. Any data supplied by the Iowa DOT to the Contractor or created by the Contractor in the course of the performance of this Contract shall be considered the property of the Iowa DOT. The Contractor must

return any and all data collected, maintained, created or used in the course of the performance of the Contract in whatever form it is maintained promptly at the request of the Iowa DOT. The Contractor may be held civilly or criminally liable for improper disclosure of confidential information.

6.20.3 In the event that a subpoena or other legal process is served upon the Contractor for records containing confidential information, the Contractor shall promptly notify the Iowa DOT and cooperate with the Iowa DOT in any lawful effort to protect the confidential information.

6.20.4 The Contractor shall immediately report to the Iowa DOT any unauthorized disclosure of confidential information.

6.20.5 The Contractor's obligations under this section shall survive termination or expiration of this Contract.

6.21 Contractor Warranties

Construction of Warranties Expressed in this Contract with Warranties Implied by Law. All warranties made by the Contractor in all provisions of this Contract and the Bid Response by the Contractor, whether or not this Contract specifically denominates the Contractor's promise as a warranty or whether the warranty is created only by the Contractor's affirmation or promise, or is created by a description of the materials and services to be provided, or by provision of samples to the Iowa DOT shall not be construed as limiting or negating any warranty provided by law, including without limitation, warranties which arise through course of dealing or usage of trade. The warranties expressed in this Contract are intended to modify the warranties implied by law only to the extent that they expand the warranties applicable to the goods and services provided by the Contractor.

The Contractor warrants that the all the concepts, materials produced, the work product and the information, data, designs, processes, inventions, techniques, devices, and other such intellectual property furnished, used, or relied upon by the Contractor or the Iowa DOT will not infringe any copyright, patent, trademark, trade dress, or other intellectual property right of the Contractor or others. Any intellectual property provided to the Iowa DOT pursuant to the terms of this Contract, shall be wholly original with the Contractor or the Contractor has secured all applicable interests, rights, licenses, permits, or other intellectual property rights in such concepts, materials and work.

The Contractor represents and warrants that the concepts, materials and the Iowa DOT's use of same and the exercise by the Iowa DOT of the rights granted by this Contract shall not infringe upon any other work, other than material provided by the Iowa DOT to the Contractor to be used as a basis for such materials, or violate the rights of publicity or privacy of, or constitute a libel or slander against, any person, firm or corporation and that the concepts, materials and works will not infringe upon the copyright, trademark, trade name, literary, dramatic, statutory, common law or any other rights of any person, firm or corporation or other entity.

The Contractor warrants that all of the services to be performed hereunder will be rendered using sound, professional practices and in a competent and professional manner by knowledgeable, trained and qualified personnel. The Contractor warrants

that the deliverables under this Contract will operate in conformance with the terms and conditions of this Contract.

The Contractor warrants that it has full authority to enter into this Contract and that it has not granted and will not grant any right or interest to any person or entity, which might derogate, encumber, or interfere with the rights granted to the Iowa DOT.

The Contractor warrants that all obligations owed to third parties with respect to the activities contemplated to be undertaken by the Contractor pursuant to this Contract are or will be fully satisfied by the Contractor so that the Iowa DOT will not have any obligations with respect thereto.

The Contractor warrants that it is the owner of or otherwise has the right to use and distribute the software, the materials owned by the Contractor and any other materials, and methodologies used in connection with providing the services contemplated by this Contract.

The Contractor warrants that any software used in connection with the Internet Service shall not contain any Trojan horses, worms, viruses or other disabling devices.

The Contractor expressly warrants to the standards in the industry all aspects of the goods and services provided by it or used by the Contractor and the Iowa DOT in performance of this Contract.

Contractor warrants that during the term of this Contract and any extension or renewal term, the Contractor shall continually use and integrate the most current and up-to-date technology commercially available into the Internet Service and any components necessary for the Internet Service to function subject to the prior written approval of the Iowa DOT.

6.22 Acceptance Testing

Deliverables shall be subject to the Agency's Acceptance Testing and Acceptance,. Upon completion of all work to be performed by Contractor with respect to any Deliverable, Contractor shall deliver a written notice to the Agency certifying that the Deliverable meets and conforms to applicable Specifications and is ready for the Agency to conduct Acceptance Tests; provided, however, that Contractor shall pretest the Deliverable to determine that it meets and operates in accordance with applicable Specifications prior to delivering such notice to the Agency. At the Agency's request, Contractor shall assist the Agency in performing Acceptance Tests at no additional cost to the Agency. Within a reasonable period of time after the Agency has completed its Acceptance Testing, the Agency shall provide Contractor with written notice of Acceptance or Non-acceptance with respect to each Deliverable that was evaluated during such Acceptance Testing. If the Agency determines that a Deliverable satisfies its Acceptance Tests, the Agency shall provide Contractor with notice of Acceptance with respect to such Deliverable. If the Agency determines that a Deliverable fails to satisfy its Acceptance Tests, the Agency shall provide Contractor with notice of Non-acceptance with respect to such Deliverable. In the event the Agency provides notice of Non-acceptance to Contractor with respect to any Deliverable, Contractor shall correct and repair such Deliverable and submit it to the Agency within ten (10) days of Contractor's receipt of notice of Non-acceptance so that the Agency may re-conduct its Acceptance Tests

with respect to such Deliverable. In the event the Agency determines, after re-conducting its Acceptance Tests with respect to any Deliverable that Contractor has attempted to correct or repair pursuant to this section, that such Deliverable fails to satisfy its Acceptance Tests, then the Agency shall have the continuing right, at its sole option, to:

(i) require Contractor to correct and repair such Deliverable within such period of time as the Agency may specify in a written notice to Contractor;
(ii) refuse to accept such Deliverable without penalty and without any obligation to pay any fees or other amounts associated with such Deliverable (or receive a refund of any fees or amounts already paid with respect to such Deliverable);
(iii) accept such Deliverable on the condition that any fees or other amounts payable with respect thereto shall be reduced or discounted to reflect, to the Agency's satisfaction, the Deficiencies present therein and any reduced value or functionality of such Deliverable or the costs likely to be incurred by the Agency to correct such Deficiencies; or
(iv) terminate this Contract and/or seek any and all available remedies, including damages. Notwithstanding the provisions of Section E.1 of this Contract, the Agency may terminate this Contract pursuant to this section without providing Contractor with any notice or opportunity to cure provided for in Section E.1.

The Agency's right to exercise the foregoing rights and remedies, including termination of this Contract, shall remain in effect until Acceptance Tests are successfully completed to the Agency's satisfaction and the Agency has provided Contractor with written notice of Final Acceptance. If the Agency determines that all Deliverables satisfy its Acceptance Tests, the Agency shall provide Contractor with notice of Final Acceptance with respect to such Deliverables. Contractor's receipt of any notice of Acceptance, including Final Acceptance, with respect to any Deliverable(s) shall not be construed as a waiver of any of the Agency's rights to enforce the terms of this Contract or require performance in the event Contractor breaches this Contract or any Deficiency is later discovered with respect to such Deliverable(s).

Attachment # 1 – Certification Letter

Alterations to this document are prohibited (see Section 2.12.15)

Note: Effective Date follows signature of last page

Ms. Renee R. Shirley, Director of Purchasing
Iowa Department of Transportation
Office of Finance
Purchasing Section
800 Lincoln Way
Ames, Iowa 50010

Re: Bid Response CERTIFICATIONS

Dear Ms. Shirley:

I certify that the contents of the Bid Response submitted on behalf of authorized Vendor/Contractor Company name designated in response to Iowa Department of Transportation's Request for Proposal (RFP) designated on the cover page and specified following the signature line of this document are true and accurate. I also certify I have not knowingly made any false statements in its Bid Response as the representative for the Vendor/Contractor.

Certification of Independence

I certify that I am a representative of the Contractor expressly authorized to make the following certifications on behalf of the Contractor. By submitting a Bid Response in response to the RFP, I certify on behalf of the Contractor the following:

1. The Bid Response has been developed independently, without consultation communication or agreement with any employee or consultant to the Iowa DOT or any Participating Agency, or with any person serving as a member of the evaluation committee.
2. The Bid Response has been developed independently, without consultation, communication or agreement with any other contractor or parties for the purpose of restricting competition.
3. Unless otherwise required by law, the information found in the Bid Response has not been and will not be knowingly disclosed directly or indirectly prior to the Iowa DOT's issuance of the Notice of Intent to Award the contract.
4. No attempt has been made or will be made by the Contractor to induce any other Contractor to submit or not to submit a Bid Response for the purpose of restricting competition.
5. No relationship exists or will exist during the contract period between the Contractor and the Iowa DOT or any Participating Agencies that interferes with fair competition or constitutes a conflict of interest.

Certification Regarding Debarment

6. I certify that, to the best of my knowledge, neither Contractor nor any of its principals: (a) are presently or have been debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by a Federal Agency or State Agency; (b) have within a three year period preceding this Bid Response been convicted of, or had a civil judgment rendered against them for commission of fraud, a criminal offense in connection with obtaining, attempting to obtain, performing a public (federal, state, or local) transaction or contract under a public transaction, violation of antitrust statutes commission of embezzlement, theft, forgery, falsification or destruction of records, making false statements, or receiving stolen property; (c) are presently indicted for, or criminally or civilly charged by a government entity (federal, state, or local) with the commission of any of the offenses enumerated in (b) of this certification; and (d) have not within a three year period preceding this Bid Response had one or more public transactions (federal, state, or local) terminated for cause. This certification is a material representation of fact upon which the Iowa DOT has relied upon when this transaction was entered into. If it is later determined that the Contractor knowingly

rendered an erroneous certification, in addition to other remedies available, the Iowa DOT may pursue available remedies including suspension, debarment, or termination of the contract.

Certification Regarding Registration, Collection, and Remission of Sales and Use Tax

7. Pursuant to Iowa Code Sections 423.2(10) and 423.5(8) (2009) a retailer in Iowa or a retailer maintaining a business in Iowa that enters into a contract with a state agency must register, collect, and remit Iowa sales tax and Iowa use tax levied under Iowa Code chapter 423 on all sales of tangible personal property and enumerated services. Contractors are required to certify their compliance with sales tax registration, collection, and remission requirements and provides potential consequences if the certification is false or fraudulent.

By submitting a Bid Response in response to (RFP), the Contractor certifies the following: (check the applicable box)

_ Contractor is registered with the Iowa Department of Revenue, collects, and remits Iowa sales and use taxes as required by Iowa Code chapter 432; or

_ Contractor is not a “retailer” or a “retailer maintaining a place of business in this state” as those terms are defined in Iowa Code subsections 423.1(42) and (43).

Contractor also acknowledges that the Iowa Department of Transportation may declare the Contractor’s Bid Response or resulting contract void if the above certification is false. The Contractor also understands that fraudulent certification may result in the Iowa Department of Transportation or its representative filing for damages for breach of contract in additional to other remedies available to Iowa Department of Transportation.

Sincerely,

_____	_____
[Signature of authorized representative]	**[Print Name and Title]**
_____	_____
[Printed Name of Contractor Organization]	**[Date]**

Request for Proposal Number: _____

Attachment #2 – Authorization to Release Information Letter

Alterations to this document are prohibited (see Section 2.12.15)

Note: Effective Date follows signature of last page

Ms. Renee R. Shirley, Director of Purchasing
Iowa Department of Transportation
Office of Finance
Purchasing Section
800 Lincoln Way
Ames, Iowa 50010

Re: AUTHORIZATION TO RELEASE INFORMATION

Dear Ms. Shirley:

I certify that I am an authorized representative of the Vendor/Contractor and hereby authorize the Iowa Department of Transportation or a member of the Evaluation Committee to obtain information regarding its performance on other contracts, agreements or other business arrangements, its business reputation, and any other matter pertinent to evaluation and the selection of a successful Contractor in response to Request for Proposal Number (RFP) designated on the cover page and specified following the signature line of this document.

The Contractor acknowledges that it may not agree with the information and opinions given by such person or entity in response to a reference request. The Contractor acknowledges that the information and opinions given by such person or entity may hurt its chances to receive contract awards from the State or may otherwise hurt its reputation or operations. The Contractor is willing to take that risk. The Contractor hereby releases, acquits and forever discharges the State of Iowa, the Iowa DOT, Participating Agencies, their officers, directors, employees and agents from any and all liability whatsoever, including all claims, demands and causes of action of every nature and kind affecting the undersigned that it may have or ever claim to have relating to information, data, opinions, and references obtained by the Iowa DOT or the Evaluation Committee in the evaluation and selection of a successful Contractor in response to the RFP.

The Contractor authorizes representatives of the Iowa DOT or the Evaluation Committee to contact any and all of the persons, entities, and references which are, directly or indirectly, listed, submitted, or referenced in the Contractor's Bid Response submitted in response to the RFP.

The Contractor further authorizes any and all persons, entities to provide information, data, and opinions with regard to its performance under any contract, agreement, or other business arrangement, its ability to perform, business reputation, and any other matter pertinent to the evaluation of the Contractor's Bid Response. The Contractor hereby releases, acquits and forever discharges any such person or entity and their officers, directors, employees and agents from any and all liability whatsoever, including all claims, demands and causes of action of every nature and kind affecting the Contractor that it may have or ever claim to have relating to information, data, opinions, and references supplied to the Iowa DOT or the Evaluation Committee in the evaluation and selection of a successful contractor in response to the RFP.

A photocopy or facsimile of this signed Authorization is as valid as an original.

Sincerely,

_____	_____
[Signature of authorized representative]	**[Print Name and Title]**
_____	_____
[Printed Name of Contractor Organization]	**[Date]**

Request for Proposal Number: _____

Attachment # 3 Requirements Check List
Proposal No: 13605
Development of a Web Based Safety Analysis Tool

Section	RFP REFERENCE	PAGE NUMBER IN CONTRACTOR's RESPONSE
Cover	Bid Response Sheet	
4.3	Schedule of Prices -Cost Proposal	*In separate sealed envelope w/original proposal*.
2.2/2.5	Acknowledgement that Proposal is not based on oral representations	
2.3/2.6	Vendor signed Addenda *if issued*. Posted on internet website: **www.iowadotpurchasing.com**	
3	Scope of Work	
4.1.3	One (1) Original hard copy (marked), and 1 Removable Media # of copies as specified (Procurement Timetable).	
4.1.4	One (1) Public Copy with Confidential Information Excised – If Applicable	
4.2.1	Transmittal Letter	
4.2.5	Background Information	
4.2.5.10	Subcontractors	
4.2.6	Experience – Including 3 References	
4.2.7	Personnel	
4.2.9	Termination, Litigation, Debarment	
4.2.10	Certification Letter **(Attachment 1)**	
4.2.11	Acceptance of Terms and Conditions	
4.2.12	Authorization to Release Information **(Attachment 2)**	
4.2.13	Firm Bid Proposal Terms	
4.2.15	Work Plan	

This page is supplied as a checklist and is not intended to be considered a required bid document

Bidder _____

_____

_____

SEALED BID

PROPOSAL NO: _____

PROPOSAL DESCRIPTION: _____

LETTING DATE: _____

Iowa Department of Transportation
PURCHASING – SEALED BID RESPONSE
800 Lincoln Way
Ames, Iowa 50010

Appendix A

Requirements Table

Desired Functions/Features for the Web-based Safety Analysis, Visualization, and Exploration Resource (Web-SAVER)

Reference #		Category/Module		Details	Phase	Timeframe	Priority
1	**General**				1		
	1.1			Web browser-based solution, accessible to the public all days/all times (24 hours/day, 365 days/year)	1	6 months	pass/fail
	1.2			Application response must be acceptable to the user (desired is 10 seconds or less but w/ some latitude based on request size/complexity)	1	6 months	scored
	1.3			User-friendliness and ease-of-use must be maintained w/in the differing user levels	1	6 months	scored
	1.4			Immediate user feedback via counts and user optional charts/graphs must be available	1	6 months	scored
	1.5			The application should require minimal presence on the user's computer and utilize commonly/freely available software on the user's computer (e.g., browsers)	1	6 months	pass/fail
		1.5.1		Installation requirements directly due to Web-SAVER on the user's computer should be minimal.	1	6 months	pass/fail
		1.5.2		Application available across a wide variety of devices - e.g., desktop computer, laptop computer, tablet, mobile devices, smartphones	1	1 year	pass/fail
	1.6			Ability to present GIS maps via the internet	1	6 months	pass/fail
		1.6.1		Display active data layers (see Appendix J - Data for a list of existent and future datasets)			
			1.6.1.1	Crash (see Appendix J section 1 and Appendices G, H, and I)	1	6 months	pass/fail
			1.6.1.2	Roadway (see Appendix J section 2 and http://www.iowadot.gov/gis/downloads/default.aspx)	1	6 months	pass/fail
			1.6.1.3	Driver (data not currently available but see Appendix J section 3 for envisioned data)	2		desired
			1.6.1.4	Vehicle (data not currently available but see Appendix J section 4 for envisioned data)	2		desired
			1.6.1.5	Injury Surveillance System (ISS)/Emergency Medical Services (EMS) (data not currently available)	3		desired
			1.6.1.6	Citation/Adjudication (data not currently available)	3		desired
		1.6.2		Display background data layers (see Appendix J - Data section 8)	1	6 months	pass/fail
	1.7			Provision of a rich suite of GIS navigation and other miscellaneous tools (buttons), e.g.,	1	6 months	scored
		1.7.1		Navigation			
			1.7.1.1	zoom in (box or click)			
			1.7.1.2	zoom out (box or click)			
			1.7.1.3	pan			
			1.7.1.4	zoom to full extent (all layers)			
			1.7.1.5	zoom to active layer			
			1.7.1.6	zoom to selected features of active layers			
			1.7.1.7	zoom in 200%			
			1.7.1.8	zoom out 200%			
			1.7.1.9	zoom previous (several prior			
			1.7.1.10	automatic labelling of features of known layers based on zoom level			
		1.7.2		Miscellaneous			
			1.7.2.1	generic information tool for all layers			
			1.7.2.2	information tool w/ variants based on known layers (e.g., crash, road)			
			1.7.2.3	pointer/rectangular graphics selector (multiplicity enabled)			
			1.7.2.4	quick rectangular selector (multiplicity enabled)			
			1.7.2.5	measuring tool			
			1.7.2.6	non-layer-based graphics drawing (point, circle, rectangle, polygon)			
			1.7.2.7	select features using selected graphics			
			1.7.2.8	clear selection			
			1.7.2.9	labelling tools w/ options (plain text, line from feature to text, road shields)			
			1.7.2.10	text entry w/ options			
			1.7.2.11	north arrow w/ options			
	1.8			Ability for users to create or add layers, e.g., beats/patrol areas, project extents/areas, etc. for use in spatial selection, background, etc.	2		scored
	1.9			Ability for administrators to update/modify standard features per configuration tables - data, queries, reports, etc.	1		pass/fail
	1.10			Heat map capability to help users identify concentrations of crashes that disaggregate as users zoom in	1	1 year	scored
	1.11			Ability for users to save drawn features (point(s), circle(s), line(s)/polyline(s), or polygon(s) - (multiples/combinations allowed)) and retrieve for later use (see section 2.7 below)	2		scored
	1.12			Ability for users to save selection sets from modules (e.g., query, report, stack) and retrieve for later use	2		scored
	1.13			Ability for users to transfer their saved objects or selection sets via standard transfer options outside this tool (e.g., e-mail, LAN, FTP)	2		scored
	1.14			Ability for users to modify map layer legends and save as defaults/preferences	2		scored
	1.15			Ability for users to apply standardized legends for common topics	2		scored
	1.16			Ability for users to access context sensitive Help			
		1.16.1		Prototype	1	6 months	scored
		1.16.2		Fully Functional	1	1 year	scored
2	**Initialization**						
	2.1	Jurisdictional Filtering		Ability to open maps jurisdictionally/multi-jurisdicationally (i.e., multiple selections w/in a single jurisdiction type) via a map, list, a combination, or other interface, e.g.,			scored
				City	1	1 year	
				Urban Area (Federal Highway Administration (FHWA)	2		
				County	1	6 months	
				Metropolitan Planning Organization (MPO)	2		
				Regional Planning Affiliation (RPA)	2		
				Iowa State Patrol (ISP) District	1	1 year	
				Iowa Department of Natural Resources (DNR) District	2		
				Iowa Department of Natural Resources (DNR) Wildlife Management Areas	2		
				Iowa Department of Natural Resources (DNR) Wildlife Depredation Program Areas	2		
				Iowa Department of Transportation (DOT) District	1	1 year	
				School District	2		
				Area Education Agency (AEA)	2		
				Statewide	1	6 months	
	2.2	Zooming		Ability to query and zoom using a particular road name, address, or the like (similar to Google/Bing)	2		scored
	2.3	Zooming		A finder selection ability that zooms utilizing background layers (e.g., reference posts (mileposts), cities, etc.)	2		scored
	2.4	Zooming		Coordinate-based navigation that zooms to user-entered longitude/latitude or other coordinates (e.g., UTM)	2		scored
	2.5	Selection Map		Ability to select crashes using quick/one-time use selection tools (circles, rectangles, polygons)	1	6 months	scored
	2.6	Selection Map/Pre-processed data layers		Ability to spatially select crashes within the analysis area (w/ standard GIS buffering options) per, e.g.,	1		scored
		2.6.1		those jurisdictions listed in section 2.1 above	1	6 months	scored
		2.6.2		drawn features (point(s), circle(s), line(s)/polyline(s), or polygon(s) - (multiples/combinations allowed))	1		scored
		2.6.3		map coordinates w/ buffer distance	1		scored
		2.6.4		selected features of another layer, pre-existent or user-developed, e.g.,	1		scored
			2.6.4.1	jurisdictional layers (existent)	1	6 months	
			2.6.4.2	intersection database (existent)	1	1 year	
			2.6.4.3	interchange database (existent)	2	1 year	
			2.6.4.4	segmentatation database - primary and secondary (existent)	1	6 months	
			2.6.4.5	curves (existent)	2	1 year	
			2.6.4.6	rivers (existent)	1	6 months	
			2.6.4.7	rail lines/rail crossings (existent)	1	6 months	
			2.6.4.8	Safety Improvement Candidate Location (SICL) lists layers	2		
			2.6.4.9	Comparables/Expected Values layers	2		
			2.6.4.10	beats/patrol areas (user-defined)	2		
			2.6.4.11	project extents/areas (user-defined)	2		
	2.7	Selection Map		Ability to save drawn features (e.g., as a layer file) and retrieve for later use - see Section 1.11 above	2		scored
	2.8	Topical Selection		Ability to utilize standard queries for querying/filtering of data from common, general interest topics, e.g., those already existent within Iowa's CMaT and SAVER software (see Appendix B and Appendix C) (see section 3.9 below)			
		2.8.1		CMaT Filters (see Appendix B - CMaT Functionality section M.4.11)	1	6 months	scored
		2.8.2		SAVER Menus (see Appendix C - SAVER Functionality sections M.2 - M.9)	1	1 year	scored
			2.8.2.1	Quick SAVER (Appendix C - Section M.2)			
			2.8.2.2	Jurisdictional (Appendix C - Section M.3)			
			2.8.2.3	Profiles (Appendix C - Section M.4)			
			2.8.2.4	Transparency (5%) (Appendix C - Section M.5)			
			2.8.2.5	Key Emphases Areas (KEA) (Appendix C - Section M.6)			
			2.8.2.6	KEA Driver Age (Appendix C - Section M.7)			
			2.8.2.7	KEA Occupant Protection (Appendix C - Section M.8)			
			2.8.2.8	Annual Press Releases (Appendix C - Section M.9)			
3	**Query/Filter Module**						
	3.1	Query Mode		Ability for users to specify data fields to query as a one-time, user-initiated method of subset specification.	1	1 year	scored
		3.1.1		Defined fields			
		3.1.2		Numeric fields			
		3.1.3		Text fields			
	3.2	Filter Mode		Ability for users to specify data fields to filter in a constant, instantly applied method of subset specification, with on/off toggle.	1	6 months	scored
		3.2.1		Defined fields			
		3.2.2		Numeric fields			
		3.2.3		Text fields			
	3.3	SQL-defined Mode		Ability for users to utilize/modify the SQL defined by the query/filter selections to create specialized queries.	2		scored
	3.4	Queryable Data		Ability for users to query/filter various datasets should exist, with administrators able to expand these queryable datasets as they become available. (see Appendix J - Data for a list of existent and future datasets)			
		3.4.1		Crash (see Appendix J section 1 and Appendices G, H, and I)	1	6 months	pass/fail
		3.4.2		Roadway (see Appendix J section 2 and http://www.iowadot.gov/gis/downloads/default.aspx)	1	1 year	scored
		3.4.3		Driver (data not currently available but see Appendix J section 3 for envisioned data)	2		desired
		3.4.4		Vehicle (data not currently available but see Appendix J section 4 for envisioned data)	2		desired
		3.4.5		Injury Surveillance System (ISS)/Emergency Medical Services (EMS) (data not currently available)	3		desired
		3.4.6		Citation/Adjudication (data not currently available)	3		desired
	3.5	Selection Set Save/Load		Ability for users to save their query selections and load them later, creating user-defined, “standardized” selection sets.	2		scored
	3.6	Standardized Selection Sets		Ability to have pre-defined, standardized queries for users to select from rather than specifying query criteria themselves.	2		scored
		3.6.1		Administrator defined.			
		3.6.2		User-defined, administrator reviewed and implemented.			
	3.7	Trending Queries		Ability to track, display, and utilize queries being accessed frequently, e.g., as a result of a news event or weather condition.	2		desired
	3.8	Query/Filter Interface		Presentation of the query/filter options via a user-friendly, understandable GUI.	1	1 year	scored
	3.9	Quick Queries/Filters		Presentation of standard query options via a quickly accessed GUI. (see Section 2.8 above)	1	1 year	scored

4	**Report Generation Module**						
	4.1	Reports	Ability for users to display summarized data in a one or two page format (e.g., akin to standard CMaT reports, see Appendix E)				
		4.1.1		Standard - reports developed and provided by administrators	1	6 months	scored
		4.1.2		Report Development Kit (RDK) - reports developed by users utilizing a visual drag-and-drop environment	2		scored
		4.1.3		Ability for administrators to monitor and include user-developed reports	2		scored
	4.2	Tables	Ability for users to present data in a tabular, spreadsheet-ready format (e.g., akin to the standard SAVER reports, see Appendix F)				
		4.2.1		Case-based - case-by-case listings with varying numbers of fields, ranging from minimal to all.	1	6 months	scored
		4.2.2		Year-based - year-based summaries with specified fields to define the columns and the rows.	1	6 months	scored
		4.2.3		Summary - reports similar to year-based reports but summarized over the total timeframe.	1	1 year	scored
	4.3	Charts/Graphs	Ability for users to visualize data in charts/graphs formats (e.g., line, bar, or pie).				
		4.3.1		Type: scatter, line, horizontal bar, vertical bar, pie, etc.	1	6 months	scored
		4.3.2		Format Options: color, black & white, shading, etc.	1	1 year	scored
		4.3.3		Display: pop-up vs. continuous display (docked, undocked), titles, headers, etc.	1	1 year	scored
	4.4	Reportable Data	Ability for users to generate reports using various datasets should exist, with administrators able to expand these reportable datasets as they become available. (see Appendix J - Data for a list of existent and future datasets)				
		4.4.1		Crash (see Appendix J section 1 and Appendices G, H, and I)	1	6 months	pass/fail
		4.4.2		Roadway (see Appendix J section 2 and http://www.iowadot.gov/gis/downloads/default.aspx)	1	1 year	scored
		4.4.3		Driver (data not currently available but see Appendix J section 3 for envisioned data)	2		desired
		4.4.4		Vehicle (data not currently available but see Appendix J section 4 for envisioned data)	2		desired
		4.4.5		Injury Surveillance System (ISS)/Emergency Medical Services (EMS) (data not currently available)	3		desired
		4.4.6		Citation/Adjudication (data not currently available)	3		desired
	4.5	Report Set Save/Load	Ability for users to save their report selections and load them later, creating user-defined, “standardized” report sets.		2		scored
	4.6	Standardized Report Sets	Ability to have pre-defined, standardized report sets for users to select from rather than specifying report selections themselves.		2		scored
		4.6.1		Administrator defined.			
		4.6.2		User-defined, administrator reviewed and implemented.			
	4.7	Trending Reports	Ability to track, display, and utilize reports being accessed frequently, e.g., as a result of a news event or weather condition.		2		scored
	4.8	Report Interface	Presentation of the reporting options via a user-friendly, understandable GUI.		1	1 year	scored
	4.9	Quick Reports	Presentation of standard report options via a quickly accessed GUI.		1	1 year	scored
	4.10	Print/Download/Export	Ability for users to print and download/export generated reports to standard export options, including both data (e.g., .csv, .txt, .xls) and image (e.g., .bmp, .jpg) formats.				
		4.10.1		Print	1	6 months	scored
		4.10.2		Download/Export	1	1 year	scored
	4.11	Sharing/Social Media	Ability for users share their reports via social media.		2		
5	**Collision Diagramming**						
	5.1	Crash Magic Online	Ability for users to seamlessly connect to Crash Magic Online, already utilized by Iowa DOT.		1	1 year	scored
	5.2	Custom-built/Alternate	Iowa DOT is open to an alternate option for collision diagramming.		1	1 year	scored
6	**Visualization Module**						
	6.1	Output/Display Maps	Ability for users to display the results of selections, queries, etc. via map displays and other visual options, e.g., (see Appendices E and F for examples)				
		6.1.1		Simple, crash point maps	1	6 months	scored
		6.1.2		Stacked maps - point, line, consolidated point	1	1 year	scored
		6.1.3		Thematic linear segments based on crash experience	2		
		6.1.4		Heat mapping (similar to section 1.10 above)	1	1 year	scored
	6.2	Visualization Set Save/Load	Ability for users to save their visualization selections and load them later, creating user-defined, “standardized” visualization sets.		2		
	6.3	Standardized Visualization Sets	Ability to have pre-defined, standardized visualization sets for users to select from rather than specifying visualization selections themselves.		2		scored
		6.3.1		Administrator defined.			
		6.3.2		User-defined, administrator reviewed and implemented.			
	6.4	Layout Preparation	Ability for users to generate layouts which include maps, tables, charts, etc.				
		6.4.1		Standard layout templates	2		scored
		6.4.2		User-developed layouts via a visual, drag and drop environment (i.e., a Layout Development Kit)	2		scored
	6.5	Layout Set Save/Load	Ability for users to save their layout selections and load them later, creating user-defined, “standardized” layout sets.		2		scored
	6.6	Standardized Layout Sets	Ability to have pre-defined, standardized layout sets for users to select from rather than specifying layout selections themselves.		2		scored
		6.6.1		Administrator defined.			
		6.6.2		User-defined, administrator reviewed and implemented.			
	6.7	Trending Visualizations	Ability to track, display, and utilize visualizations being accessed frequently, e.g., as a result of a news event or weather condition.		2		scored
	6.8	Visualization Interface	Presentation of the visualization options via a user-friendly, understandable GUI.		1	1 year	scored
	6.9	Quick Visualization	Presentation of standard visualization options via a quickly accessed GUI.		1	1 year	scored
	6.10	Print/Download/Export	Ability for users to print and download/export generated visualizations to appropriate standard export options, including both data (e.g., .csv, .txt, .xls) and/or image (e.g., .bmp, .jpg) formats.				
		6.10.1		Print	1	6 months	scored
		6.10.2		Download/Export	1	1 year	scored
	6.11	Sharing/Social Media	Ability for users share their visualizations via social media.		2		
7	**Special Operations Module**						
	7.1	Special Operations	Ability for users to utilize special operations for combining datasets, assessing priority locations, etc., e.g.,				
		7.1.1		Crash rate calculation	2		scored
				Point (intersection)			
				Line/polyline (segment)			
				Polygon (area/jurisdication			
		7.1.2		Crash density calculation	2		scored
				Point (intersection)			
				Line/polyline (segment)			
				Polygon (area/jurisdication			
		7.1.3		Safety Performance Function (SPF) application.	2		desired
		7.1.4		Crash Modification Factor (CMF) application.	2		desired
8	**Raw Data Extracs/Export/Download Module**						
	8.1	Extract/Export/Download	Ability for users to download the raw data in entirety or subsets, based on the selectino set via a variety of formats (e.g., ESRI shapefile, .kmz, .csv, .txt, .xls).		1	1 year	scored
9	**Project Module**						
	9.1	Project	Ability for users to save their current work and retrieve/open it later.		1	1 year	scored
	9.2	Transferability	Ability for users to transfer their projects to another device via standard transfer options (e.g., e-mail, LAN, FTP).		1	1 year	scored
10	**Training**						
	10.1	System Training	Training will be provided to appropriate Iowa DOT staff for use and maintenance of the system.		1	1 year	scored
	10.2	Training Materials	Training materials will be developed for use and maintenance of the system.				
		10.2.1		Online Tutorial	1	1 year	scored
		10.2.2		Webinars/Web Training	1	1 year	scored
		10.2.3		Self-paced Training	1	1 year	scored
		10.2.4		Context-sensitive help (see section 1.16 above)	1	1 year	scored

Appendix B

CMaT Functionality

(intended as examples of current capabilities)

Catalog of CMaT Functionality

Category	Class	Option	Sub-Option
Menu			
M.1	File		
	M.1.1	Change County or Counties	
	M.1.2	Export Selection as	
		M.1.2.1	Shape File (.shp)
		M.1.2.2	Comma-Delimited Text File (.csv)
	M.1.3	Save Selection	
	M.1.4	Load Saved Selection	
	M.1.5	Delete Saved Selection(s)	
	M.1.6	Save Map	
	M.1.7	Print Map	
	M.1.8	Exit	
M.2	Tools		
	M.2.1	Finders	
		M.2.1.1	City
		M.2.1.2	County
		M.2.1.3	Crash - Agency Case Number
		M.2.1.4	Crash - DOT Case Number
		M.2.1.5	Intersection - Road/Rail
		M.2.1.6	Intersection - Road/River
		M.2.1.7	Intersection - Road/Road
		M.2.1.8	Map Coordinate
		M.2.1.9	Milepost
		M.2.1.10	Node
		M.2.1.11	Township
	M.2.2	Incident Select Symbol Settings	
	M.2.3	Layer Settings	
	M.2.4	Setup Geography	
	M.2.5	Stack Incidents (Filters Apply)	
	M.2.6	Auto-Stack Incidents	
	M.2.7	Clear Stacks	
	M.2.8	Stack Settings	
	M.2.9	Options	
	M.2.10	Incident Selection	
	M.2.11	Map	
	M.2.12	Help	
M.3	Options		
	M.3.1	Scale Bar	
	M.3.2	Scale Bar Settings	
	M.3.3	Inset Map	
	M.3.4	Autohide Inset Map	
	M.3.5	Spatial Distance Settings	
	M.3.6	Active Analysis Layer	
		M.3.6.1	Iowa DOT Crashes
	M.3.7	Active Layer Statistics	
M.4	Incident Selection		
	M.4.1	Point	
	M.4.2	Rectangle	
	M.4.3	Polygon	
	M.4.4	Route Segment	
	M.4.5	Case Number Sub-Filter	
	M.4.6	Select Using a Finder	
		M.4.6.1	City
		M.4.6.2	County
		M.4.6.3	Crash - Agency Case Number
		M.4.6.4	Crash - DOT Case Number
		M.4.6.5	Intersection - Road/Rail

Catalog of CMaT Functionality

Category	Class	Option	Sub-Option
		M.4.6.6	Intersection - Road/River
		M.4.6.7	Intersection - Road/Road
		M.4.6.8	Map Coordinate
		M.4.6.9	Milepost
		M.4.6.10	Node
		M.4.6.11	Township
	M.4.7	Select All Incidents (Filters Apply)	
	M.4.8	Clear Selection	
	M.4.9	Fit Selected Features	
	M.4.10	Auto-Fit Selected Features	
	M.4.11	Filters	
		M.4.11.1	City
		M.4.11.2	County
		M.4.11.3	Crash Severity
		M.4.11.4	Day of Month
		M.4.11.5	Day of Week
		M.4.11.6	Driver Age
		M.4.11.7	Driver Contributing Circumstances
		M.4.11.8	Drug Alcohol Related
		M.4.11.9	Light Conditions
		M.4.11.10	Major Cause
		M.4.11.11	Manner of Crash
		M.4.11.12	Month
		M.4.11.13	Number of Vehicles
		M.4.11.14	Surface Condition
		M.4.11.15	Time of Day
		M.4.11.16	Type of Roadway
		M.4.11.17	Vehicle Action
		M.4.11.18	Vehicle Configuration
		M.4.11.19	Vehicle Fixed Object Struck
		M.4.11.20	Vehicle Travel Direction
		M.4.11.21	Weather Conditions
		M.4.11.22	Year
		M.4.11.23	Hide All
		M.4.11.24	Reset All Filters
		M.4.11.25	Reset All Filters When Program Starts
	M.4.12	Charts	
		M.4.12.1	County
		M.4.12.2	Crash Severity
		M.4.12.3	Day of Month
		M.4.12.4	Day of Week
		M.4.12.5	Drug Alcohol Related
		M.4.12.6	Light Conditions
		M.4.12.7	Major Cause
		M.4.12.8	Manner of Crash
		M.4.12.9	Month
		M.4.12.10	Number of Vehicles
		M.4.12.11	Surface Condition
		M.4.12.12	Type of Roadway
		M.4.12.13	Weather Conditions
		M.4.12.14	Year
		M.4.12.15	Hide All
	M.4.13	Reports	
		M.4.13.1	Abbreviated Crash
		M.4.13.2	Crash Detail
		M.4.13.3	Driver and Time Summary
		M.4.13.4	Location Map

Catalog of CMaT Functionality

Category	Class	Option	Sub-Option
		M.4.13.5	Major Cause Summary
		M.4.13.6	Report Settings
M.5	Map		
	M.5.1	Fit All	
	M.5.2	Previous	
	M.5.3	Next	
	M.5.4	Zoom In	
	M.5.5	Zoom Out	
	M.5.6	Pan Map	
	M.5.7	Select	
M.6	Help		
	M.6.1	About Crash Mapping Analysis Tool	
Buttons			
B.1	View Entire Map		
B.2	Previous Map View		
B.3	Next Map View		
B.4	Zoom In		
B.5	Zoom Out		
B.6	Pan Map		
B.7	Select Incidents		
B.8	Show Info for Selected Incidents		

Appendix C

SAVER Functionality

(intended as examples of current capabilities)

Catolog of SAVER Features

Category	Class	Option	Sub-Option
Menu			
M.1	ArcView SAVER		
		Start SAVER	
M.2	Quick SAVER		
		Menu Operational Information (help)	
		Select Iowa DOT Case Number	
		Select Local Law Enforcement Case Number	
		Select Primary Route Crashes	
		Select County Signed Road Crashes	
		Select 911/Literal Route Crashes	
		Select Crash Date Range	
		Specify Crash Severity	
		Distance Units - Feet	
		Distance Units - Miles	
		Export Raw SAVER Data	
		Export Raw SAVER Vehicle-specific Data	
		Export Raw SAVER Driver-specific Data	
		Export Raw SAVER Injured Person-specific Data	
		Export Raw SAVER Shapefiles	
		Add/Delete Crash Years	
M.3	Jurisdictional		
		City	
		Urban Area (Federal)	
		County	
		Metropolitan Planning Organization (MPO)	
		Regional Planning Affiliation (RPA)	
		Iowa State Patrol (ISP) District	
		Iowa Department of Transportation (DOT) District	
		Civil Township	
		Township/Range/Section	
		Area Education Agency (AEA)	
		School District	
		Iowa DNR Districts	
		Iowa DNR Wildlife Management Areas	
		Iowa DNR Wildlife Depredation Program Area	
M.4	Profiles		
		Menu Operational Information (help)	
		Count	
		Rural Crashes	
		Urban Crashes	
		Animal-related	
		Heavy Truck-involved	
		Icy, Snowy, Slushy	
		Impairment (Drug/Alcohol)-involved	
		Inattentive/Distracted-involved	
		Intersection-related	
		Motorcycle-involved	
		Multi-vehicle Crossed Centerline (MV CC) (undivided)	
		Multi-vehicle Crossed Median (MV CM) (divided)	
		Multiple Fatality	
		Older Driver (65+)-involved	
		Single Vehicle Ran-Off-Road (SV ROR)	
		Speed-related	
		Unprotected Injured Person-involved	
		Younger Driver (14 to 20)-involved	
		Non-Animal-related	
		Batch Query Toggle	
		Clear Selected Crashes	
		Add/Delete Crash Years	
		Add/Delete road Years	
		Set Crash Themes Active	
		Set Crash Themes Non-Active	
		Set Crash Themes Visible	
		Set Crash Themes Non-Visible	
		Set All Themes Non Active	
M.5	Transparency (5%)		
		Menu Operational Information (help)	
		Impairment (Drug/Alcohol)-involved	
		Intersection-related (similar)	
		Multi-vehicle Crossed Centerline (MV CC) (undivided)	
		Multi-vehicle Crossed Median (MV CM) (divided)	
		Single Vehicle Ran-Off-Road (SV ROR)	

Catolog of SAVER Features

Category	Class	Option	Sub-Option
		Speed-related	
		Unprotected Injured Person-involved (similar)	
M.6	Key Emphases Area (KEA)		
		Menu Operational Information (help)	
		Animal-related	
		Asleep/fainted/fatigued	
		Bus (non-school)-involved	
		Erratic, reckless, careless, negligent, or aggressive driving	
		Farm Vehicle/Equipment-involved	
		Fixed Object Struck	
		Heavy Truck-involved	
		Icy, Snowy, Slushy	
		Impairment (Drug/Alcohol)-involved	
		Inattentive/Distracted-involved	
		Inattentive/Distracted: Use of phone or other device	
		Intersection-related	
		Median-involved Overturn/Rollover	
		Motorcycle-involved	
		Multi-vehicle Crossed Centerline (MV CC) (undivided)	
		Multi-vehicle Crossed Median (MV CM) (divided)	
		Multiple Fatality	
		Pedacycle-involved	
		Pedestrian-involved	
		Ran Stop Sign	
		Ran Traffic Signal	
		School Bus-involved	
		Single Vehicle Ran-Off-Road (SV ROR)	
		Speed-related	
		Train-involved	
		Wrong Way or Wrong Side	
M.7	KEA Driver Age		
		Menu Operational Information (help)	
		Younger: 14 to 20	
		Younger: 14-15	
		Younger: 16-17	
		Younger: 18-19	
		Younger: 14-19	
		Younger: 15-24	
		Younger: 20-24	
		Older: 65+	
		Older: 65-74	
		Older: 75+	
		Specify Driver Age Range	
M.8	KEA Occupant Protection		
		Menu Operational Information (help)	
		Unprotected Injured Person-involved	
		Unhelmeted Motorcyclist Injured Person-involved	
		Unbelted Injured Person-involved	
		Unbelted Backseat Injured Person-involved	
		Unrestrained Children (Age < 11) Injured Person-involved	
		Unrestrained Children (Age <= 5) Injured Person-involved	
		Unrestrained Children (Age 6 - 10) Injured Person-involved	
M.9	Annual Press Releases		
		Menu Operational Information (help)	
		Animal-related	
		Farm Vehicle/Equipment-involved	
		Motorcycle-involved	
		Pedacycle-involved	
		Pedestrian-involved	
		Vision Obstructed: Trees/Crops	
M.10	Legends		
		Menu Operational Information (help)	
		Batch Legend Toggle	
		City/County Toggle	
		Apply All Background Legends	
		Roads	
		Rail	
		Rivers	
		Lakes	
		Corporate Limits	
		Set Crash Severity Stack Themes Active	
		Set Injury Status Stack Themes Active	
		Crash Severity	
		Injury Status	
		Inattentive/Distracted	
		Impairment (Drug/Alcohol)	
		Older Driver (65+)	
		Speed-related	
		Younger Driver (14 to 20)	
		Wild-Animal	
		Icy, Snowy, Slushy	
		Unbelted Injured Person-involved	
		Intersection-related	
		Heavy Truck	
		Motorcycle	
		MV CC/CM	
		Multiple Fatality	
		SV ROR	
		All Crashes	
Buttons (inherent to ArcView GIS 3.2/3.3)			
B.1	Save Project		
	Add Themes		

Catolog of SAVER Features

Category	Class	Option	Sub-Option				
	Theme Properties						
	Edit Legend						
	Open Theme Table						
	Find						
	Locate Address						
	Query Builder						
	Zoom to Full Extent						
	Zoom to Active Theme(s)						
	Zoom to Selected						
	Zoom In						
	Zoom Out						
	Zoom to Previous Extent						
	Select Features Using Graphic						
	Clear Selected Features						
	Help						
	Identify						
	Pointer						
	Vertex Edit						
	Select Feature						
	Zoom In						
	Zoom Out						
	Pan						
	Measure						
	Hot Link						
	Area of Interest						
	Label						
	Banner Text						
	Draw Point, Circe, Rectangle, Polygon						
Dialog							
D.1	File						
		Maps					
			New				
			Select				
			Save				
			Load				
			Close				
			Hide				
		Tables					
			Theme Tables				
			Select				
			Save				
			Load				
			Close				
			Hide				
		Projects					
			Save				
			Open				
D.2	Count						
		Location Description					
D.3	Location						
		Region					
		Point					
		Feature					
		Polygon					
		Save					
		Load					
		Count					
		Run Location					
		Set Buffer					
		Reset/Clear					
D.4	Query						
		Define Query					
			Background				
				Corporate Limits			
				County Borders			
				Crash Nodes			
				Lake Milepost			
				Rail			
				River			
				Road			
					Controls		
					Direction Lane		
					Road Information		
					Road Inventory		
					Shoulders		
					Surfaces		
					Traffic		
			Crash				
				Crash Type			
				Location/Time			
				Severity Level			
				Environmental			
				Driver			
				Vehicle			
				Vehicle Damage			
				Roadway			
				Injury			
				Non-Injury			
				Non-Motorist			
				Work Zone			
				Commercial Vehicle			
				Case Information			

Catolog of SAVER Features

Category	Class	Option	Sub-Option				
				Location Tool Information			
		Count					
			Location Description				
		Define Buffer					
		Run Query					
		Save Query					
		Load Query					
		Specify Logic					
		Reset/Clear					
		Background					
			Corporate Limits				
			County Borders				
			Crash Nodes				
			Lake Milepost				
			Rail				
			River				
			Road				
				Controls			
				Direction Lane			
				Road Information			
				Road Inventory			
				Shoulders			
				Surfaces			
				Traffic			
		Crash					
D.5	Report						
		Count					
		Run Reports					
		Report Types					
			Background				
				Corporate Limits			
				County Borders			
				Crash Nodes			
				Lake Milepost			
				Rail			
				River			
				Road			
			Crash				
				Iowa 1979			
				Iowa 2001			
					Case-Based		
						Accident Summary Sheet	
						Minimal	
						Brief	
						Long	
						Detailed	
						Ultimate	
						Event	
						Pivot Table	
					Year-based		
						Severity	
							Air Bag Deployment
							County
							Contributing Circumstances (Driver 1st)
							Contributing Circumstances (Driver 2nd)
							Contributing Circumstances (Environment)
							Contributing Circumstances (Roadway)
							Day of Week
							Driver Age
							Driver Condition
							Driver Gender
							Driver License State
							Drug/Alcohol-related
							Drug Test Results
							Ejection
							Extent of Damage
							First Harmful Event
							Fixed Object Struck
							Injured Age
							Light Conditions
							Lighting
							Location of First Harmful Event
							Major Cause
							Manner of Crash/Collision
							Month
							Most damaged Area
							Most Harmful Event
							Non-Motorist Type
							Occupant Protection
							Point of Initial Impact
							Report Type
							Roadway Junction/Feature
							Seating Position
							Speed Limit
							Surface Condition
							Time of Day - 2 hour
							Time of Day - 1 hour
							Time of Day - 30 minutes
							Traffic Controls
							Trapped?
							Underride/Override

Catolog of SAVER Features

Category	Class	Option	Sub-Option				
							Vehicle Action
							Vehicle Configuration
							Vehicle Defect
							Vision Obscurement
							Weather Conditions
						Crash Severity	
							Air Bag Deployment
							County
							Contributing Circumstances (Driver 1st)
							Contributing Circumstances (Driver 2nd)
							Contributing Circumstances (Environment)
							Contributing Circumstances (Roadway)
							Day of Week
							Driver Age
							Driver Condition
							Driver Gender
							Driver License State
							Drug/Alcohol-related
							Drug Test Results
							Ejection
							Extent of Damage
							First Harmful Event
							Fixed Object Struck
							Injured Age
							Light Conditions
							Lighting
							Location of First Harmful Event
							Major Cause
							Manner of Crash/Collision
							Month
							Most damaged Area
							Most Harmful Event
							Non-Motorist Type
							Occupant Protection
							Point of Initial Impact
							Report Type
							Roadway Junction/Feature
							Seating Position
							Speed Limit
							Surface Condition
							Time of Day - 2 hour
							Time of Day - 1 hour
							Time of Day - 30 minutes
							Traffic Controls
							Trapped?
							Underride/Override
							Vehicle Action
							Vehicle Configuration
							Vehicle Defect
							Vision Obscurement
							Weather Conditions
						Injury Status	
							Air Bag Deployment
							Air Bag Switch Status
							County
							Contributing Circumstances (Driver 1st)
							Contributing Circumstances (Driver 2nd)
							Contributing Circumstances (Environment)
							Contributing Circumstances (Roadway)
							Crash Severity
							Day of Week
							Driver Age
							Driver Condition
							Driver Gender
							Driver License State
							Drug/Alcohol-related
							Drug Test Results
							Ejection
							Ejection Path
							Extent of Damage
							First Harmful Event
							Fixed Object Struck
							Injured Age
							Injured Gender
							Light Conditions
							Lighting
							Location of First Harmful Event
							Major Cause
							Manner of Crash/Collision
							Month
							Most damaged Area
							Most Harmful Event
							Non-Motorist Type
							Occupant Protection
							Point of Initial Impact
							Report Type
							Roadway Junction/Feature
							Seating Position
							Speed Limit
							Surface Condition
							Time of Day - 2 hour
							Time of Day - 1 hour

Catolog of SAVER Features

Category	Class	Option	Sub-Option				
							Time of Day - 30 minutes
							Traffic Controls
							Trapped?
							Underride/Override
							Vehicle Action
							Vehicle Configuration
							Vehicle Defect
							Vision Obscurement
							Weather Conditions
						County	
							Alcohol Test Given
							Contributing Circumstances (Driver 1st)
							Contributing Circumstances (Driver 2nd)
							Contributing Circumstances (Environment)
							Contributing Circumstances (Roadway)
							County
							Crash Severity
							Day of Week
							Driver Age
							Driver Condition
							Driver Gender
							Driver License State
							Drug/Alcohol-related
							Drug Test Given
							First Harmful Event
							Fixed Object Struck
							Injured Age
							Injured Gender
							Injury Status
							Light Conditions
							Lighting
							Location of First Harmful Event
							Major Cause
							Manner of Crash/Collision
							Most Harmful Event
							Non-Motorist Action
							Non-Motorist Condition
							Non-Motorist Contributing Circumstances
							Non-Motorist Location
							Non-Motorist Safety Equipment
							Non-Motorist Type
							Occupant Protection
							Report Type
							Roadway Junction/Feature
							Seating Position
							Speed Limit
							Surface Condition
							Time of Day - 2 hour
							Time of Day - 1 hour
							Time of Day - 30 minute
							Traffic Controls
							Vehicle Action
							Vehicle Configuration
							Vehicle Defect
							Vision Obscurement
							Weather Conditions
							Workers Present?
							Work Zone Location
							Work Zone Type
						Day of Week	
							Alcohol Test Given
							Contributing Circumstances (Driver 1st)
							Contributing Circumstances (Driver 2nd)
							Contributing Circumstances (Environment)
							Contributing Circumstances (Roadway)
							County
							Crash Severity
							Day of Week
							Driver Age
							Driver Condition
							Driver Gender
							Driver License State
							Drug/Alcohol-related
							Drug Test Given
							First Harmful Event
							Fixed Object Struck
							Injured Age
							Injured Gender
							Injury Status
							Light Conditions
							Lighting
							Location of First Harmful Event
							Major Cause
							Manner of Crash/Collision
							Month
							Most Harmful Event
							Non-Motorist Action
							Non-Motorist Condition
							Non-Motorist Contributing Circumstances
							Non-Motorist Location
							Non-Motorist Safety Equipment
							Non-Motorist Type

Catolog of SAVER Features

Category	Class	Option	Sub-Option				
							Occupant Protection
							Report Type
							Roadway Junction/Feature
							Seating Position
							Speed Limit
							Surface Condition
							Time of Day - 2 hour
							Time of Day - 1 hour
							Time of Day - 30 minute
							Traffic Controls
							Vehicle Action
							Vehicle Configuration
							Vehicle Defect
							Vision Obscurement
							Weather Conditions
							Workers Present?
							Work Zone Location
							Work Zone Type
						Month	
							Alcohol Test Given
							Contributing Circumstances (Driver 1st)
							Contributing Circumstances (Driver 2nd)
							Contributing Circumstances (Environment)
							Contributing Circumstances (Roadway)
							County
							Crash Severity
							Day of Week
							Driver Age
							Driver Condition
							Driver Gender
							Driver License State
							Drug/Alcohol-related
							Drug Test Given
							First Harmful Event
							Fixed Object Struck
							Injured Age
							Injured Gender
							Injury Status
							Light Conditions
							Lighting
							Location of First Harmful Event
							Major Cause
							Manner of Crash/Collision
							Most Harmful Event
							Non-Motorist Action
							Non-Motorist Condition
							Non-Motorist Contributing Circumstances
							Non-Motorist Location
							Non-Motorist Safety Equipment
							Non-Motorist Type
							Occupant Protection
							Report Type
							Roadway Junction/Feature
							Seating Position
							Speed Limit
							Surface Condition
							Time of Day - 2 hour
							Time of Day - 1 hour
							Time of Day - 30 minute
							Traffic Controls
							Vehicle Action
							Vehicle Configuration
							Vehicle Defect
							Vision Obscurement
							Weather Conditions
							Workers Present?
							Work Zone Location
							Work Zone Type
						Time of Day	
							Alcohol Test Given
							Contributing Circumstances (Driver 1st)
							Contributing Circumstances (Driver 2nd)
							Contributing Circumstances (Environment)
							Contributing Circumstances (Roadway)
							County
							Crash Severity
							Day of Week
							Driver Age
							Driver Condition
							Driver Gender
							Driver License State
							Drug/Alcohol-related
							Drug Test Given
							First Harmful Event
							Fixed Object Struck
							Injured Age
							Injured Gender
							Injury Status
							Light Conditions
							Lighting
							Location of First Harmful Event
							Major Cause

Catolog of SAVER Features

Category	Class	Option	Sub-Option				
							Manner of Crash/Collision
							Month
							Most Harmful Event
							Non-Motorist Action
							Non-Motorist Condition
							Non-Motorist Contributing Circumstances
							Non-Motorist Location
							Non-Motorist Safety Equipment
							Non-Motorist Type
							Occupant Protection
							Report Type
							Roadway Junction/Feature
							Seating Position
							Speed Limit
							Surface Condition
							Traffic Controls
							Vehicle Action
							Vehicle Configuration
							Vehicle Defect
							Vision Obscurement
							Weather Conditions
							Workers Present?
							Work Zone Location
							Work Zone Type
		Save					
		Load					
		Hide					
		Charts/Graphs					
		Components					
		Create					
		Save Reports					
		Load Report					
		Delete Reports					
		Reset/Clear					
D.6	Display						
		All Data					
			Corp Limits				
			Crashes				
			Lakes				
			Mileposts				
			Nodes				
			Rail				
			River				
			Roads				
		Crash Data					
		Road Data					
		Stack					
			Run				
			Batch				
			Thematic				
			Totals				
			Remove				
			Rate				
			Save				
			Load				
			Export				
			Add				
		Export Image					
		Collision Diagram					
		Label					
			Street Names				
			Highways				
			City Names				
		Remove					
		Zoom In					
		Zoom Out					
		Add Theme					
		Delete Theme					
		Rename Map					
		Refresh Map					
D.7	Defaults						
		Print Font Size					
			Small				
			Medium				
			Large				
		Colors/Sizes					
		Directories					
		Labels					
		Agency Info					
		Analyst Info					
		Stack Radius					
		Zoom Level					
D.8	Session						
		Print Font Size					
		Directories					
		Agency Info					
		Analyst Info					
		Stack Radius					
		Zoom Level					
D.9	Exit Saver						
D.10	Exit ArcView						
D.11	Help						

Category	Description
M.1	
M.2	
	Allows entry and selection of crashes using a known Iowa DOT Case Number in <4-digit year + 6-digit case number> in YYYYCCCCCC format
	Allows entry and selection of crashes using a known Local Law Enforcement Case Number
	Identifies primary routes available within the active crash data themes, lists them, and allows single or multiple selection of these routes. Once selection occurs, queries the active crash data themes for selected routes. Can do this starting from a selection set and will, in that case, only list routes available within selected crashes. Please note that data errors may cause listing of invalid routes for the county
	Identifies county signed routes available within the active crash data themes, lists them, and allows single or multiple selection of these routes. These routes may be listed multiple times if they meet with another county signed route at an intersection. Once selection occurs, queries the active crash data themes for selected routes. Can do this starting from a selection set and will, in that case, only list routes available within selected crashes. Please note that data errors may cause listing of invalid routes for the county.
	Identifies E911/Literal routes available within the active crash data themes, lists them, and allows single or multiple selection of these routes. These routes will likely be listed multiple times if they meet with another E911 route at an intersection. Selecting just the main route name without intersection indication will return segment-based crashes along the E911 route. Once selection occurs, queries the active crash data themes for selected routes. Can do this starting from a selection set and will, in that case, only list routes available within selected crashes. Please note that data errors may cause listing of invalid routes for the county.
	Identifies maximum and minimum dates within the active crash data themes and shows them in a Start Date/End Date dialog, allows user entry of alternate date ranges, and selects crashes from the active crash data themes based on these user-defined dates. Entry of the same date twice (i.e., in both the start and end date) will result in selection from that one day.
	Identifies available crash severities within the active crash data themes and shows them in a Crash Severity specification dialog, allows user selection of alternate crash severities, and selects crashes from the active crash data themes based on these user-defined severities
	Switches units to feet
	Switches units to miles
	Exports information related to selected crashes of active themes from all SAVER data tables
	Exports information related to selected crashes of active themes from all SAVER data tables based on the vehicle table selection set for each. This means that a selection set must have been made within the vehicle table and this is usually done when limiting to a particular type of vehicle, e.g., motorcycles. Only those records related to the type of vehicle selected are exported
	Exports information related to selected crashes of active themes from all SAVER data tables based on the driver table selection set for each. This means that a selection set must have been made within the driver table and this is usually done when limiting a particular type of driver, e.g., younger drivers. Only those records related to the type of driver selected are exported
	Exports information related to selected crashes of active themes from all SAVER data tables based on the injured person table selection set for each. This means that a selection set must have been made within the injured person table and this is usually done when limiting to a particular type of injured person, e.g., unbelted persons. Only those records related to the type of injured person selected are exported
	Opens a dialog which allows specification of data years to add or delete from the currently active view
M.3	
M.4	
	Generates count of selected crashes of active crash themes categorized by year, county, crash severity, and injury status
	Queries crash database for those crashes outside 25 feet of indicated corporate limits boundaries
	Queries crash database for those crashes inside 25 feet of indicated corporate limits boundaries
	Queries animal-related crashes from the active crash themes based on the MajorCause field
	Queries heavy truck-related crashes from the active crash themes based on the Vehicle Configuration field
	Queries icy, snowy, or slushy-related crashes from the active crash themes based on the Surface Conditions field
	Queries impairment (drug/alcohol)-related crashes from the active crash themes based on the derived field Drug/Alcohol-related
	Queries intersection-related crashes from the active crash themes based on the Type of Roadway Junction/Feature field
	Queries motorcycle-related crashes from the active crash themes based on the Vehicle Configuration field
	Queries multi-vehicle crossed centerline/crossed median crashes (MV CC/CM)
	Queries multiple fatality-related crashes from the active crash themes based on the Fatalities field
	Queries older driver-related crashes from the active crash themes based on the Driver Age field
	Queries single vehicle run-off-road (SV ROR) crashes from the active crash themes by querying for only 1 vehicle involved in the crash and any Sequence of Event equal to Ran Off Road, Right, Straight, or Left.
	Queries speed-related crashes from the active crash themes based on the Contributing Circumstances, Driver field
	Queries unbelted, injured person-involved crashes from the active crash themes based on the Occupant Protection field
	Queries younger driver-related crashes from the active crash themes based on the Driver Age field.
	Queries non-animal-related crashes from the active crash themes based on the MajorCause field
	Toggles batch query operations either on or off. Default is off. If off, queries, counts, and other choices under this menu operate on only the current view. If on, these choices operate on all views iteratively
	Unselects crashes in active crash themes
	Opens a dialog box which allows selection of crash years to add or delete from view
	Opens a dialog box which allows selection of road years to add or delete from view
	Sets all crash themes in view active
	Sets all crash themes in view non-active
	Sets all crash themes in view visible
	Sets all crash themes in view non-visible
	Sets all themes (crash and otherwise) non-active
M.5	
	Queries impairment (drug/alcohol)-related crashes from the active crash themes based on the derived field Drug/Alcohol-related
	Queries intersection-related crashes from the active crash themes based on the Type of Roadway Junction/Feature field
	Queries multi-vehicle crossed centerline/crossed median crashes (MV CC/CM) from the active crash themes
	Queries single vehicle run-off-road (SV ROR) crashes from the active crash themes by querying for only 1 vehicle involved in the crash and any Sequence of Event equal to Ran Off Road, Right, Straight, or Left

Category	Description
	Queries speed-related crashes from the active crash themes based on the Contributing Circumstances, Driver field
	Queries unbelted, injured person-involved crashes from the active crash themes based on the Occupant Protection field
M.6	
M.7	
M.8	
M.9	
	Queries animal-related crashes from the active crash themes based on the MajorCause field
	Queries farm vehicle/equipment-involved crashes from the active crash themes based on the Vehicle Configuration field
	Queries motorcycle-related crashes from the active crash themes based on the Vehicle Configuration field
	Queries pedacycle-related crashes from the active crash themes based on the Non-Motorist Type field
	Queries pedestrian-related crashes from the active crash themes based on the Non-Motorist Type field
	Trees/Crops: Queries vision obstructed - trees/crops-related crashes from the active crash themes based on the Vision Obscured field
M.10	
	Toggles between application of selected legends to just the current view/map or to all views/maps in the project. Default is just the current view
	Toggles between use of the county-based or city-based legend libraries. Default is county
B.1	

Category	Description
	When you have graphics selected on a layout, click this button to zoom to these graphics
	Zooms in to the position you click or the area you define on a layout
	Zooms out from the position you click or the area you define on a layout
	At any time, you can pan the layout by dragging it in any direction with the Pan tool
D.1	This option is used to open and save maps, tables, and projects
	This button creates a new map
	This button causes all available view to appear in a list, from which you can select a view and open it
	This button causes the map to completely close. If you have not saved it, it will no longer be retrievable
D.2	This option performs a simple count of selected features(typically crash activity) within a specified map region.
D.3	
D.4	Lets you select features by defining a query based on their attributes
	This button is used to begin selecting the variety of query parameters
	Crash type attributes.
	Location and Time attributes.
	Severity Level attributes.
	Environmental attributes.
	Driver related attributes.
	Vehicle related attributes.
	Vehicle damage attributes.
	Roadway related attributes.
	Injury related attributes.
	Non-Injury related attributes.
	Non-motorist attributes.
	Work zone attributes.
	Commercial vehicle related attributes.
	Case information attributes.

Category	Description
	Location Tool information attributes.
	This button activates the count routine for a selected map region, as long as at least one theme has been activated
	This button is used to save a query, if desired
	This button is used to load a saved query
	This button is used to select the form of Boolean logic to be used by the query
	This button clears all choices from whatever parameter selection process you are performing
D.5	This option generates a variety of reports.
	This button activates the count routine for a selected map region, as long as at least one theme has been activated
	This button will run a report, as long as one has been defined and loaded

Category	Description

Category	Description

Category	Description

Category	Description
	This button allows you to save a set of report selection set
	This button allows you to load a saved report selection set
	This button will allow you to save individual reports
	This button will allow you to delete selected reports
	This button clears all choices from whatever parameter selection process you are performing
D.6	This option activates or deactivates themes on the map. It is used for map display manipulation
	This button allows you to activate some or all of the themes available within a given map
	This button allows you to activate and/or show some or all of the available crash data themes within a given map by year
	This button removes any street, city, and highway labels on the active map
	This button allows you to show street, city, and highway names on the map
	This button allows you to import and add an ArcView theme to your project
D.7	This option sets option defaults
	Setting this default allows the user to select either a small, medium, or large font size for reports. This is governed
	This default includes the name, office, and address of the analyst's agency
	This default includes the name of the analyst as well as his or her title
D.8	This option sets default options for the current session only
D.9	This option closes SAVER
D.10	This option closes both SAVER and ArcView
D.11	

Appendix D

CMaT Download Instructions - FTP

(intended to provide access to current, limited software)

[Please forward this to others in your office or organization that may have or want CMAT. If the note was forwarded to you, please send contact information to Michael.Pawlovich@dot.iowa.gov.]

If you do not have CMAT or wish to upgrade to the latest version, follow the installation instructions document "CMAT 4.5.1 External Install.docx" (after downloading) available on the FTP site: ftp://165.206.203.34/TrafficSafety/TrafficSafetyPublic/**.** New installations include the latest upgrades and data; thus, will not need to run the data update below (i.e., new installations stop here).

Data Upgrade Only

Crash Mapping Analysis Tool "CMAT" is a map-based software provided free by the Iowa DOT that gives quick access to 10 years of crash data on all public roads in Iowa. These instructions are for Windows 7, CMaT v. 4.5.1 users. If you have another version of Windows or CMaT, contact **Michael.Pawlovich@dot.iowa.gov.**

To check if you have CMAT installed, look for the CMAT icon on your desktop (red car). You can also look for one of this folder: C:\Program Files (x86)\CTRE\Mapping Analysis Tool\

Note the appropriate folder location for the rest of these instructions. Updating your data should NOT require an administrator and you can leave this note open while you follow these steps:

1. Check that you have all the current CMAT data on your C:\ drive. Under the appropriate folder from above, a "Statewide" subfolder should exist and contain about 71 files. If not, you need to copy the CMAT "Statewide" ZIP file from ftp://165.206.203.34/TrafficSafety/TrafficSafetyPublic/ to your C:\ drive before proceeding. Download the "Statewide.zip" file to your desktop and extract to the appropriate folder location from above with the addition of the subdirectory of "Statewide" (e.g., the files from the ZIP file should be extracted to "C:\Program Files\CTRE Mapping Analysis Tool\Statewide" for Windows XP, v. 3.7 users). Make sure the contents of the "Statewide" folder are NOT read-only. This may require IT personnel and will complete the upgrade to the latest data (i.e., skip to step 4 if you do this).

2. Follow this link to the FTP site ftp://165.206.203.34/TrafficSafety/TrafficSafetyPublic/

   a. Download "**W7_64bitCMATcrashes2004-2014Ver451_20140326(.exe)**". Download to your desktop and discard after "installation" is complete.

3. Run the downloaded file.

   a. Check the box to allow the files to overwrite the existing files. Click "Unzip" and WinZip self-extractor will place the new files in the default file location.
   b. Close the WinZip window after the files have been successfully unzipped.

   If the ".exe" file gives you trouble, you can use the ".zip" version (**"CMaT_consolidated_2004-2014_20140326.zip"**) and manually extract the files to the appropriate folder from above with the addition of the subdirectory of "Statewide". Make sure the contents of the "Statewide" folder are NOT read-only.

4. Open CMAT and reload your data by using **File->Change County or Counties**. Switching your county(-ies) is not necessary as you can simply reload the same county(-ies). This step updates CMAT's internal tracking.

5. Delete the downloaded file(s) from your desktop.

Appendix E

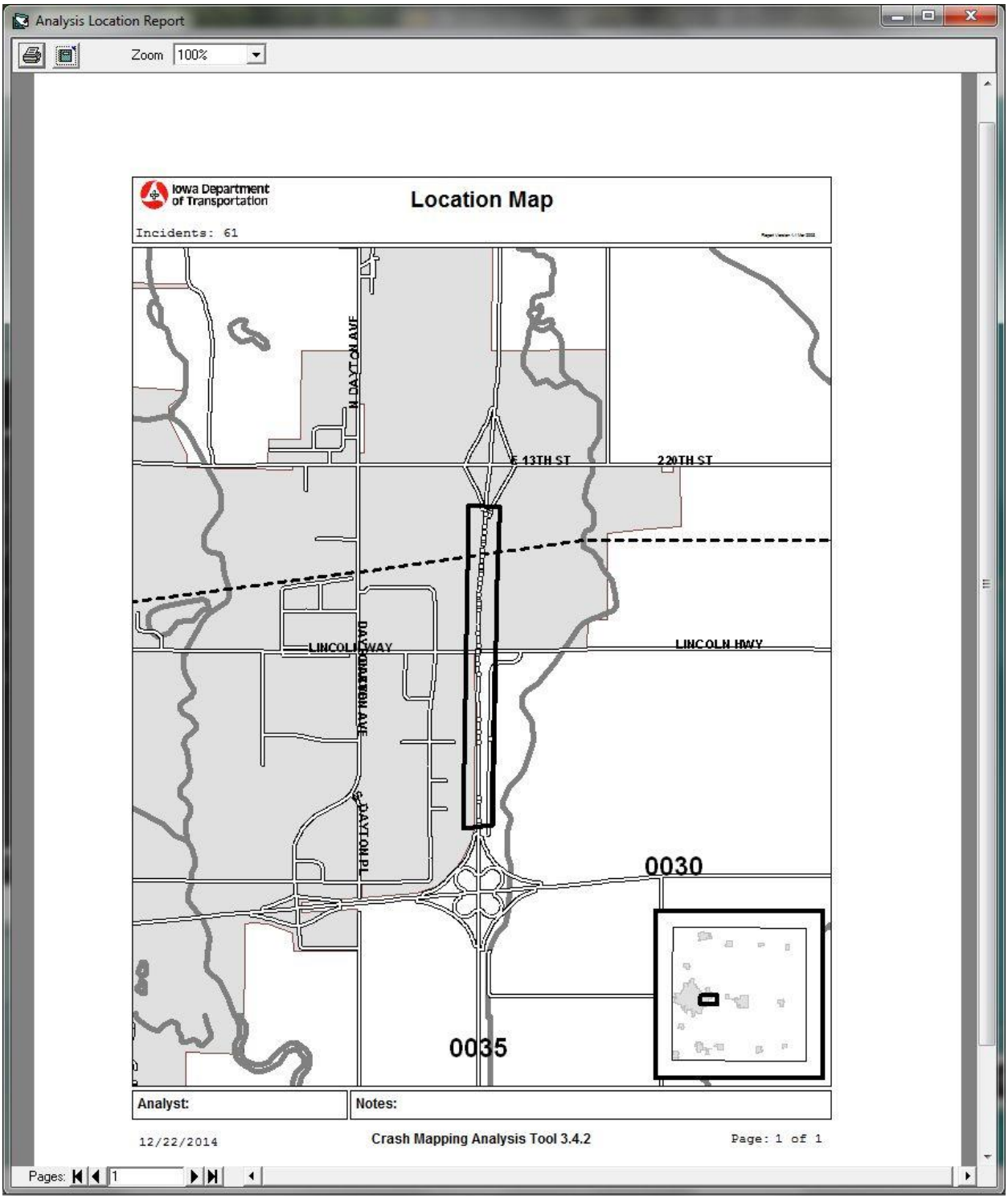
CMaT Example Reports

(intended as examples of current capabilities)

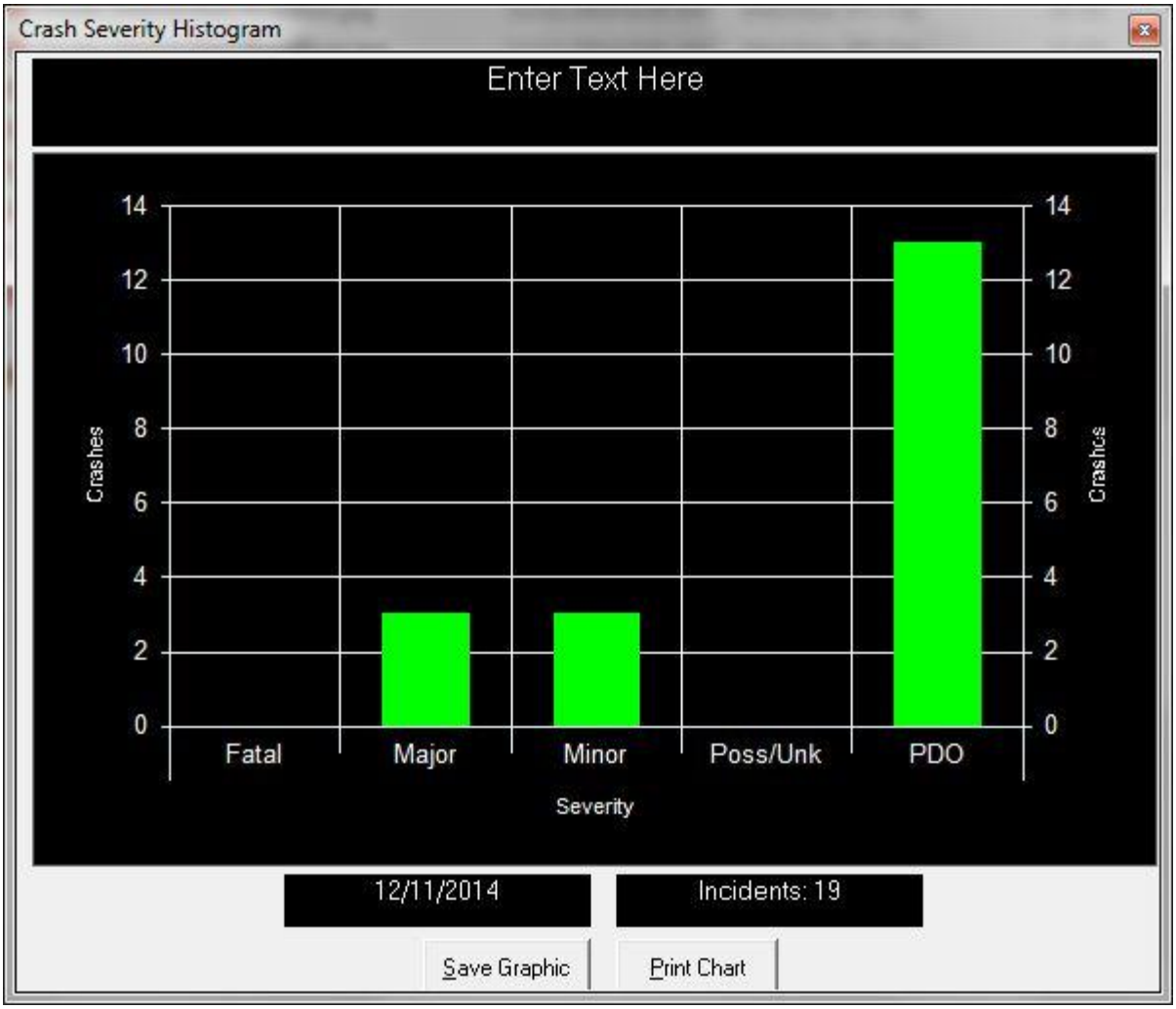
Appendix E: CMaT Report Examples

The following are sample reports from the Iowa CMaT system. These samples are meant to be illustrative, not required, formats:

Crash Location Map



Crash Severity Histogram



Major Cause Summary

Crash Major Cause Summary

Zoom 100%

Iowa Department of Transportation

Major Cause Summary

Analysis Years: 2007 [4], 2008 [3], 2009 [2], 2010 [2], 2011 [2], 2012 [1], 2013 [2], 2014 [3]

Crash Summary:

Fatal	–
Major Injury	3
Minor Injury	3
Possible/Unknown	–
PDO	13
Total Crashes	19

Injury Summary:

Fatal	–
Major Injury	5
Minor Injury	8
Possible	–
Unknown	–
Total Injuries	13

Surface Condition Summary:

Dry	8
Wet	1
Ice	6
Snow	2
Slush	–
Sand/Dirt/Oil/Gravel	–
Water	–
Other	–
Unknown	–
Not Reported	2
Total Crashes	19

TOT Property Damage: $127,750

AVG Property Damage: $6,724

Major Cause Summary:

2	Animal
	Ran Traffic Signal
2	Ran Stop Sign
	Crossed Centerline
	FTYROW: At Uncontrolled Intersection
	FTYROW: Making Right Turn on Red Signal
2	FTYROW: From Stop Sign
	FTYROW: From Yield Sign
	FTYROW: Making Left Turn
	FTYROW: From Driveway
	FTYROW: From Parked Position
	FTYROW: To Pedestrian
1	FTYROW: Other (explain in narrative)
	Traveling Wrong Way or on Wrong Side of Rd
3	Driving Too Fast for Conditions
	Exceeded Authorized Speed
1	Made Improper Turn
	Improper Lane Change
1	Followed Too Close
	Disregarded Railroad Signal
	Disregarded Warning Sign
	Operating Vehicle in Reckless/Aggressive Manner
	Improper Backing
	Illegally Parked/Unattended
1	Swerving/Evasive Action
	Over-Correcting/Over-Steering
	Downhill Runaway
	Equipment Failure
	Separation of Units
	Ran Off Road - Right
1	Ran Off Road - Straight
	Ran Off Road - Left
1	Lost Control
	Inattentive/Distracted By: Passenger
	Inattentive/Distracted By: Use of Phone or Other
	Inattentive/Distracted By: Fallen Object
	Inattentive/Distracted By: Fatigued/Asleep
1	Other: Vision Obstructed
	Oversized Load/ Oversized Vehicle
	Cargo/Equipment Loss or Shift
	Other: Other Improper Action
1	Unknown
2	Other: No Improper Action
	None Indicated

Selection Filter:

((YEAR <> 2004 and YEAR <> 2005 and YEAR <> 2006))

Analyst:

Notes:

12/11/2014 Crash Mapping Analysis Tool Page: 1 of 1

Pages: 1

Driver and Time Summary

Driver and Time Summary

Zoom 100%

Iowa Department of Transportation

Driver and Time Summary

Crash Time of Day Summary:

From / To	00:00 01:59	02:00 03:59	04:00 05:59	06:00 07:59	08:00 09:59	10:00 11:59	12:00 13:59	14:00 15:59	16:00 17:59	18:00 19:59	20:00 21:59	22:00 23:59	NR	Total	%
SUN	-	-	-	-	-	-	-	-	1	-	-	-	-	1	5
MON	-	-	-	-	-	-	-	1	1	1	-	-	-	3	16
TUE	-	-	-	1	1	-	1	2	-	-	1	-	-	6	32
WED	-	-	-	-	-	-	-	1	1	-	-	-	-	2	11
THU	-	-	-	1	-	-	-	1	-	-	-	-	-	2	11
FRI	1	-	-	-	-	1	-	1	-	-	-	-	-	3	16
SAT	-	-	-	-	-	1	-	-	-	-	-	1	-	2	11
Tot.	1			2	1	2	1	6	3	1	1	1		19	
%	5			11	5	11	5	32	16	5	5	5			100

Driver Age/Gender Summary:

Age	Male	Female	NR	Drivers	%
<14	-	-	-		
14	-	-	-		
15	-	-	-		
16	-	1	-	1	3
17	-	-	-		
18	1	-	-	1	3
19	-	-	-		
20	-	-	-		
21 to 24	4	-	-	4	12
25 to 29	1	-	-	1	3
30 to 34	4	-	-	4	12
35 to 39	-	-	-		
40 to 44	3	2	-	5	15
45 to 49	1	2	-	3	9
50 to 54	5	-	-	5	15
55 to 59	4	-	-	4	12
60 to 64	-	-	-		
65 to 69	-	-	-		
70 to 74	2	1	-	3	9
75 to 79	-	-	-		
80 to 84	1	-	-	1	3
85 to 89	-	-	-		
90 to 94	-	-	-		
95 plus	-	-	-		
NR	-	-	1	1	3
Drivers	26	6	1	33	
%	79	18	3		100

Drug/Alcohol Summary:

	Total	%
Drug		
Alcohol, Less than Statutory		
Alcohol, Statutory		
Drug/Alcohol, Less than Statutory		
Drug/Alcohol, Statutory		
Refused		
Under Influence of Alc/Drugs/Meds		
None Indicated	19	100
Total Crashes	19	100

Fixed Object Struck Summary:

	Vehs.	%
Bridge/Bridge rail/Overpass		
Underpass/Structure Support		
Culvert		
Ditch/Embankment	2	6
Curb/Island/Raised Median		
Guardrail		
Concrete Barrier		
Tree		
Pole - Utility/Light/Etc	1	3
Sign Post	1	3
Mailbox		
Impact Attenuator		
Other Fixed Object		
None	29	88
Total Vehicles	33	100

Selection Filter:

((YEAR <> 2004 and YEAR <> 2005 and YEAR <> 2006))

Analyst:

Notes:

12/11/2014 Crash Mapping Analysis Tool Page: 1 of 1

Pages: 1

Crash Report – Abbreviated

Abbreviated Crash Listing

Zoom 100%

Iowa Department of Transportation

Abbreviated Crash Report

Date	DOT Case #	Agency Case #	City	Crash Sev.	Literal Description
02/13/2007	2007207045	07-2065		PDO	E041 / LINCOLN HWY
09/05/2007	2007390609	07-13033		Major	LINCOLN HWY AND 580TH
11/13/2007	2007403927	07-16988		PDO	1/4 MILE EAST OF 580TH ON LINCOLNWAY
11/20/2007	2007406272	07-17500		PDO	0 / 580TH AVE and E041 / LINCOLN HWY
02/12/2008	2008425255	08-2214		PDO	0 / 580TH AVE AND E041 / LINCOLN HWY
03/30/2008	2008434436	08-4603		PDO	32092 580TH AVE
10/22/2008	2008468827	08-15828		Major	0 / 580TH AVE and E041 / LINCOLN HWY
02/13/2009	2009492989	09-2211		PDO	LINCOLN HWY. AND 580TH AVE.
12/04/2009	2009539730	09-17725		PDO	LINCOLN HWY AND 580TH AVENUE
01/07/2010	2010550522	10-266		PDO	1/4 MILE WEST OF 580TH ON LINCOLN HWY
02/08/2010	2010555425	10-1870		PDO	E041 / LINCOLN HWY and 580TH AVE
05/07/2011	2011651002	11-5636		Minor	E041 / LINCOLN HWY and 580TH AVE
10/11/2011	2011651555	11-13902		Minor	LINCOLN HWY AND 580TH AVENUE
01/30/2012	2012670670	12-1248		PDO	57375 LINCOLN HWY.
03/05/2013	2013729308	13-000253		PDO	WEST OF 580TH AVENUE ON LINCOLN HIGHWAY
07/26/2013	2013751343	13-000873		Minor	580TH AVE AND LINCOLN HWY
02/17/2014	2014789270	14-000212		PDO	E041/LINCOLN HWY AND 580TH AVE
03/13/2014	2014790857	14-000300		Major	E041/LINCOLN HWY AND 580TH AVE
09/13/2014	2014818112	14-001077	Ames	PDO	E041/LINCOLN HWY

Selection Filter:

((YEAR <> 2004 and YEAR <> 2005 and YEAR <> 2006))

Analyst:

Notes:

12/11/2014 Crash Mapping Analysis Tool Page: 1 of 1

Pages: 1

Crash Report – Detailed

CMAT Crash Detail Report

Zoom 100%

Iowa Department of Transportation

Crash Detail Report

2007207045 02/13/2007 15:59 E041 / LINCOLN HWY
County:85 City:

Major Cause: Driving too fast for conditions
Roadway Type: Non-intersection: No special feature
Severity: PDO
Manner of Crash: Rear-end
Fatalities: 0
Surface Conditions: Snow
Major Injuries: 0
Light Conditions: Daylight
Minor Injuries: 0
Weather Conditions: Blowing sand/soil/dirt/snow
Possible Injuries: 0
Drug/Alc Involved: none indicated
Unknown Injuries: 0
Property Damage: $3000
Number of Vehicles: 2

	Unit 1	Unit 2	Unit 3
Init Trav Dir:	East	East	0
Veh Action:	Essentially straight	Essentially straight	0
Configuration:	Passenger car	4-tire light truck	0
Driver Age:	18	50	0
Driver Gender:	M	M	
Driver Cond:	Normal	Normal	0
Drivr Contr 1:	Too fast for conditions	none	0
Drivr Contr 2:	not reported	not reported	0
Fixed Object:	none	none	0

2007390609 09/05/2007 17:25 LINCOLN HWY AND 580TH
County:85 City:

Major Cause: Other: No improper action
Roadway Type: Intersection: Four-way intersection
Severity: Major
Manner of Crash: Broadside
Fatalities: 0
Surface Conditions: Dry
Major Injuries: 2
Light Conditions: Daylight
Minor Injuries: 4
Weather Conditions: Clear
Possible Injuries: 0
Drug/Alc Involved: none indicated
Unknown Injuries: 0
Property Damage: $8500
Number of Vehicles: 2

	Unit 1	Unit 2	Unit 3
Init Trav Dir:	South	East	0
Veh Action:	Essentially straight	Essentially straight	0
Configuration:	Passenger car	Passenger car	0
Driver Age:	16	30	0
Driver Gender:	F	M	
Driver Cond:	Normal	Normal	0
Drivr Contr 1:	not reported	none	0
Drivr Contr 2:	not reported	not reported	0
Fixed Object:	Pole: utility/light/etc	none	0

12/11/2014 Crash Mapping Analysis Tool Page: 1 of 10

Pages: 1

Appendix F

SAVER Example Reports

(intended as examples of current capabilities)

Appendix F: SAVER Report Examples

The following are sample reports from the Iowa SAVER system. These samples are meant to be illustrative, not required, formats:

Selection Map

Count Report – Display/Print Version

Crash Analysis Resources - Iowa Department of Transportation Office of Traffic and Safety - Windo...

Y:\Exchange_data_dataqualityandanalysisc

File Edit View Favorites Tools Help

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Crash Analysis Resources - Iowa Department of Transp...

2009 - 2013 Reportable Crash History
Lincoln Way between Clark Ave/Walnut Ave and US 69/Duff Ave
Ames, Iowa
(*2014 data remain preliminary - downloaded 12/15/2014)

		Crashes						Injuries					
Year	**County**	**Crashes**	**Fatal**	**Major**	**Minor**	**Poss/Unk**	**PDO**	**Injuries**	**Fatalities**	**Major**	**Minor**	**Possible**	**Unknown**
2009	Story	36	0	0	5	6	25	15	0	0	7	8	0
2010	Story	30	0	0	1	4	25	7	0	0	1	6	0
2011	Story	40	1	1	4	8	26	20	1	3	4	12	0
2012	Story	29	0	1	5	5	18	14	0	1	5	8	0
2013	Story	26	0	2	5	4	15	11	0	2	5	4	0
	Totals:	161	1	4	20	27	109	67	1	6	22	38	

meeting the following criteria:
(This feature currently not operational.)

Feature Count Report (Monday, January 12, 2015 11:31:08 AM Central Standard Time)
produced using: Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
by:
Michael D. Pawlovich, Ph.D., P.E.
Traffic Safety/Crash Data Engineer
Iowa Department of Transportation
Highway Division, Engineering Bureau, Traffic and Safety
800 Lincoln Way
Ames, Iowa 50010

copy version

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Count Report – Copy/Paste Version

Crash Analysis Resources - Iowa Department of Transportation Office of Traffic and Safety - Windo...

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2009 - 2013 Reportable Crash History
Lincoln Way between Clark Ave/Walnut Ave and US 69/Duff Ave
Ames, Iowa
(*2014 data remain preliminary - downloaded 12/15/2014)

		Crashes						Injuries					
Year	**County**	**Crashes**	**Fatal**	**Major**	**Minor**	**Poss/Unk**	**PDO**	**Injuries**	**Fatalities**	**Major**	**Minor**	**Possible**	**Unknown**
2009	Story	36	0	0	5	6	25	15	0	0	7	8	0
2010	Story	30	0	0	1	4	25	7	0	0	1	6	0
2011	Story	40	1	1	4	8	26	20	1	3	4	12	0
2012	Story	29	0	1	5	5	18	14	0	1	5	8	0
2013	Story	26	0	2	5	4	15	11	0	2	5	4	0
	Totals:	161	1	4	20	27	109	67	1	6	22	38	

meeting the following criteria:
(This feature currently not operational.)

Feature Count Report (Monday, January 12, 2015 11:31:08 AM Central Standard Time)
produced using: Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
by:
Michael D. Pawlovich, Ph.D., P.E.
Traffic Safety/Crash Data Engineer
Iowa Department of Transportation
Highway Division, Engineering Bureau, Traffic and Safety
800 Lincoln Way
Ames, Iowa 50010

print version

Report – Case-based: Minimal

_Case Based: Minimal

Crash_Key	CaseNumber	LECaseNum	XCoordinat	YCoordinat	Date	Time	County	System	Route	Cardinal	MainRamp	OverUnder
2009001864	2009486277	09-889	448927	4652493	20090114	1133	Story	Local Road			Mainline	
2009003699	2009488724	09-1644	449241	4652500	20090123	1938	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009003943	2009489049	09-1881	448929	4652501	20090126	1812	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009006109	2009491785	09-003023	449469	4652498	20090209	710	Story	US Route	US 69	Southbound (SB)	Mainline	
2009006488	2009492283	09-3067	449469	4652498	20090209	1804	Story	US Route	US 69	Northbound (NB)	Mainline	
2009007704	2009493677	09-003363	448929	4652501	20090213	1350	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009009648	2009495949	09-3293	449198	4652507	20090212	1544	Story	Local Road			Mainline	
2009010068	2009496433	09-4724	449424	4652499	20090304	1326	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009017171	2009504770	09-008741	449197	4652523	20090421	1400	Story	Local Road			Mainline	
2009017864	2009505550	09-10106	449157	4652501	20090507	1944	Story	US Route	US 69	Southbound (SB)	Mainline	
2009023202	2009511498	09-13092	448930	4652504	20090612	2104	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009024144	2009512543	09-13603	449323	4652486	20090619	1458	Story	Local Road			Mainline	
2009028392	2009517324	09-16010	449198	4652501	20090720	1239	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009030048	2009519220	09-017224	449469	4652490	20090804	835	Story	US Route	US 69	Northbound (NB)	Mainline	
2009030050	2009519222	09-15247	449468	4652488	20090710	1550	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009030056	2009519230	09-17142	449328	4652500	20090803	1225	Story	US Route	US 69	Southbound (SB)	Mainline	
2009034314	2009524100	09-018981	449469	4652498	20090825	2046	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009035578	2009525532	09-021003	448948	4652502	20090917	1225	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009037827	2009528075		449397	4652499	20090930	1552	Story	US Route	US 69	Northbound (NB)	Mainline	
2009039166	2009529561	09-021648	449364	4652499	20090925	1215	Story	US Route	US 69	Northbound (NB)	Mainline	
2009039178	2009529575	09-22750	449443	4652500	20091010	1102	Story	US Route	US 69	Northbound (NB)	Mainline	
2009039543	2009529982	09-022948	449168	4652502	20091013	1345	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009040297	2009530824	09-23065	448929	4652501	20091015	1507	Story	US Route	US 69	Southbound (SB)	Mainline	
2009044351	2009535413	09-25046	448999	4652503	20091110	1304	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009044911	2009536032	09-25177	449166	4652502	20091112	1118	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009045900	2009537126	09-25686	449197	4652501	20091119	1701	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009047076	2009538419	09-25687	449197	4652503	20091119	1716	Story	US Route	US 69	Southbound (SB)	Mainline	
2009047434	2009538824	09-26462	449268	4652500	20091130	1552	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009047435	2009538825	09-26474	449383	4652499	20091130	1803	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009050578	2009542232	09-26936	448928	4652503	20091206	1801	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009050582	2009542236	09-27229	448929	4652501	20091210	1249	Story	US Route	US 69	Both North and South	Mainline	
2009052255	2009544054	09-27823	448929	4652501	20091218	1315	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009052257	2009544056	09-27835	448929	4652501	20091218	1720	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009053007	2009544897	09-27072	448930	4652504	20091208	1405	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2009053414	2009545345	09-28510	449196	4652501	20091229	1543	Story	US Route	US 69	Southbound (SB)	Mainline	
2009056443	2009563025	09-20884	448930	4652504	20090915	2026	Story	US Route	US 69	Southbound (SB)	Mainline	
2010001897	2010549423	10-000678	448929	4652501	20100111	1230	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2010001902	2010549429	10-00457	449410	4652499	20100108	1140	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2010001912	2010549440	10-322	448926	4652506	20100106	1130	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2010005399	2010554129	10-1815	449199	4652502	20100126	2046	Story	US Route	US 69	No Travel Direction Consistent	Mainline	
2010005403	2010554133	10-1960	449412	4652499	20100129	1054	Story	US Route	US 69	Northbound (NB)	Mainline	
2010005421	2010554157	10-2418	449197	4652501	20100204	1757	Story	US Route	US 69	No Travel Direction Consistent	Mainline	

Report – Case-based Brief

_Case Based: Brief

Crash_Key	CaseNumber	LECaseNum	XCoordinat	YCoordinat	Date	Time	Day	TimeDay	TimeRange	County	System
2009001864	2009486277	09-889	448927	4652493	20090114	1133	Wednesday	Wednesday - 10:00 AM to 11:5	10:00 AM to 11:59 AM	Story	Local Road
2009001864	2009486277		0	0		0					
2009003699	2009488724	09-1644	449241	4652500	20090123	1938	Friday	Friday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	US Route
2009003699	2009488724		0	0		0					
2009003943	2009489049	09-1881	448929	4652501	20090126	1812	Monday	Monday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	US Route
2009003943	2009489049		0	0		0					
2009006109	2009491785	09-003023	449469	4652498	20090209	710	Monday	Monday - 6:00 AM to 7:59 AM	6:00 AM to 7:59 AM	Story	US Route
2009006109	2009491785		0	0		0					
2009006488	2009492283	09-3067	449469	4652498	20090209	1804	Monday	Monday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	US Route
2009006488	2009492283		0	0		0					
2009007704	2009493677	09-003363	448929	4652501	20090213	1350	Friday	Friday - Noon to 1:59 PM	Noon to 1:59 PM	Story	US Route
2009007704	2009493677		0	0		0					
2009007704	2009493677		0	0		0					
2009009648	2009495949	09-3293	449198	4652507	20090212	1544	Thursday	Thursday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	Local Road
2009009648	2009495949		0	0		0					
2009010068	2009496433	09-4724	449424	4652499	20090304	1326	Wednesday	Wednesday - Noon to 1:59 PM	Noon to 1:59 PM	Story	US Route
2009010068	2009496433		0	0		0					
2009017171	2009504770	09-008741	449197	4652523	20090421	1400	Tuesday	Tuesday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	Local Road
2009017171	2009504770		0	0		0					
2009017864	2009505550	09-10106	449157	4652501	20090507	1944	Thursday	Thursday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	US Route
2009023202	2009511498	09-13092	448930	4652504	20090612	2104	Friday	Friday - 8:00 PM to 9:59 PM	8:00 PM to 9:59 PM	Story	US Route
2009023202	2009511498		0	0		0					
2009024144	2009512543	09-13603	449323	4652486	20090619	1458	Friday	Friday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	Local Road
2009024144	2009512543		0	0		0					
2009028392	2009517324	09-16010	449198	4652501	20090720	1239	Monday	Monday - Noon to 1:59 PM	Noon to 1:59 PM	Story	US Route
2009028392	2009517324		0	0		0					
2009030048	2009519220	09-017224	449469	4652490	20090804	835	Tuesday	Tuesday - 8:00 AM to 9:59 AM	8:00 AM to 9:59 AM	Story	US Route
2009030048	2009519220		0	0		0					
2009030050	2009519222	09-15247	449468	4652488	20090710	1550	Friday	Friday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	US Route
2009030050	2009519222		0	0		0					
2009030056	2009519230	09-17142	449328	4652500	20090803	1225	Monday	Monday - Noon to 1:59 PM	Noon to 1:59 PM	Story	US Route
2009030056	2009519230		0	0		0					
2009034314	2009524100	09-018981	449469	4652498	20090825	2046	Tuesday	Tuesday - 8:00 PM to 9:59 PM	8:00 PM to 9:59 PM	Story	US Route
2009034314	2009524100		0	0		0					
2009035578	2009525532	09-021003	448948	4652502	20090917	1225	Thursday	Thursday - Noon to 1:59 PM	Noon to 1:59 PM	Story	US Route
2009035578	2009525532		0	0		0					
2009035578	2009525532		0	0		0					
2009037827	2009528075		449397	4652499	20090930	1552	Wednesday	Wednesday - 2:00 PM to 3:59	2:00 PM to 3:59 PM	Story	US Route
2009037827	2009528075		0	0		0					
2009039166	2009529561	09-021648	449364	4652499	20090925	1215	Friday	Friday - Noon to 1:59 PM	Noon to 1:59 PM	Story	US Route
2009039166	2009529561		0	0		0					
2009039166	2009529561		0	0		0					

Report – Case-based: Ultimate

_Case Based: Ultimate

Crash_Key	CaseNumber	LECaseNum	XCoordinat	YCoordinat	ReportType	Date	Time	Day	TimeDay	TimeRange	County	
2009001864	2009486277	09-889	448927	4652493	2001 Officer TraCS	20090114	1133	Wednesday	Wednesday - 10:00 AM to 11:5	10:00 AM to 11:59 AM	Story	A
2009001864	2009486277		0	0			0					
2009003699	2009488724	09-1644	449241	4652500	2001 Officer TraCS	20090123	1938	Friday	Friday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	A
2009003699	2009488724		0	0			0					
2009003943	2009489049	09-1881	448929	4652501	2001 Officer TraCS	20090126	1812	Monday	Monday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	A
2009003943	2009489049		0	0			0					
2009006109	2009491785	09-003023	449469	4652498	2001 Officer TraCS	20090209	710	Monday	Monday - 6:00 AM to 7:59 AM	6:00 AM to 7:59 AM	Story	A
2009006109	2009491785		0	0			0					
2009006488	2009492283	09-3067	449469	4652498	2001 Officer TraCS	20090209	1804	Monday	Monday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	A
2009006488	2009492283		0	0			0					
2009007704	2009493677	09-003363	448929	4652501	2001 Officer TraCS	20090213	1350	Friday	Friday - Noon to 1:59 PM	Noon to 1:59 PM	Story	A
2009007704	2009493677		0	0			0					
2009007704	2009493677		0	0			0					
2009009648	2009495949	09-3293	449198	4652507	2001 Officer TraCS	20090212	1544	Thursday	Thursday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	A
2009009648	2009495949		0	0			0					
2009010068	2009496433	09-4724	449424	4652499	2001 Officer TraCS	20090304	1326	Wednesday	Wednesday - Noon to 1:59 PM	Noon to 1:59 PM	Story	A
2009010068	2009496433		0	0			0					
2009017171	2009504770	09-008741	449197	4652523	2001 Officer TraCS	20090421	1400	Tuesday	Tuesday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	A
2009017171	2009504770		0	0			0					
2009017864	2009505550	09-10106	449157	4652501	2001 Officer TraCS	20090507	1944	Thursday	Thursday - 6:00 PM to 7:59 PM	6:00 PM to 7:59 PM	Story	A
2009023202	2009511498	09-13092	448930	4652504	2001 Officer TraCS	20090612	2104	Friday	Friday - 8:00 PM to 9:59 PM	8:00 PM to 9:59 PM	Story	A
2009023202	2009511498		0	0			0					
2009024144	2009512543	09-13603	449323	4652486	2001 Officer TraCS	20090619	1458	Friday	Friday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	A
2009024144	2009512543		0	0			0					
2009028392	2009517324	09-16010	449198	4652501	2001 Officer TraCS	20090720	1239	Monday	Monday - Noon to 1:59 PM	Noon to 1:59 PM	Story	A
2009028392	2009517324		0	0			0					
2009030048	2009519220	09-017224	449469	4652490	2001 Officer TraCS	20090804	835	Tuesday	Tuesday - 8:00 AM to 9:59 AM	8:00 AM to 9:59 AM	Story	A
2009030048	2009519220		0	0			0					
2009030050	2009519222	09-15247	449468	4652488	2001 Officer TraCS	20090710	1550	Friday	Friday - 2:00 PM to 3:59 PM	2:00 PM to 3:59 PM	Story	A
2009030050	2009519222		0	0			0					
2009030056	2009519230	09-17142	449328	4652500	2001 Officer TraCS	20090803	1225	Monday	Monday - Noon to 1:59 PM	Noon to 1:59 PM	Story	A
2009030056	2009519230		0	0			0					
2009034314	2009524100	09-018981	449469	4652498	2001 Officer TraCS	20090825	2046	Tuesday	Tuesday - 8:00 PM to 9:59 PM	8:00 PM to 9:59 PM	Story	A
2009034314	2009524100		0	0			0					
2009035578	2009525532	09-021003	448948	4652502	2001 Officer TraCS	20090917	1225	Thursday	Thursday - Noon to 1:59 PM	Noon to 1:59 PM	Story	A
2009035578	2009525532		0	0			0					
2009035578	2009525532		0	0			0					
2009037827	2009528075		449397	4652499	2001 Officer Paper	20090930	1552	Wednesday	Wednesday - 2:00 PM to 3:59	2:00 PM to 3:59 PM	Story	A
2009037827	2009528075		0	0			0					
2009039166	2009529561	09-021648	449364	4652499	2001 Officer TraCS	20090925	1215	Friday	Friday - Noon to 1:59 PM	Noon to 1:59 PM	Story	A
2009039166	2009529561		0	0			0					
2009039166	2009529561		0	0			0					

Report – Year-based: Severity by Major Cause

_Year - Severity: Major Cause (Numerical)

Year	MajorCause	TotalCrash	FatalCrash	MajInjCrash	MilnjCrash	PUInjCrash	PDOCrash	TotalInj	Fatalities	MajorInj	MinorInj	PossInj	Uninjured	UnkInj	NotReport
2009	Animal														
	Ran Traffic Signal	3				1	2	2				2	4		
	Ran Stop Sign														
	Crossed centerline														
	FTYROW: At uncontrolled inte														
	FTYROW: Making right turn o														
	FTYROW: From stop sign	1			1			1			1		2		
	FTYROW: From yield sign														
	FTYROW: Making left turn	5			1		4	2			2		10		
	FTYROW: From driveway	5			1		4	1			1		10		
	FTYROW: From parked positi	1					1						2		
	FTYROW: To pedestrian														
	FTYROW: Other (explain in na	1					1						2		
	Traveling wrong way or on wro														
	Driving too fast for conditions	7			1	2	4	3			1	2	14		
	Exceeded authorized speed														
	Made improper turn														
	Improper Lane Change														
	Followed too close	6			1	1	4	3			2	1	11		
	Disregarded RR Signal														
	Disregarded Warning Sign														
	Operating vehicle in an erratic/														
	Improper Backing														
	Illegally Parked/Unattended														
	Swerving/Evasive Action														
	Over correcting/over steering														
	Downhill runaway														
	Equipment failure														
	Separation of units														
	Ran off road - right														
	Ran off road - straight														
	Ran off road - left														
	Lost Control														
	Inattentive/distracted by: Pass														
	Inattentive/distracted by: Use														
	Inattentive/distracted by: Falle														
	Inattentive/distracted by: Fatig														
	Other (explain in narrative): Vis														
	Oversized Load/Vehicle														
	Cargo/equipment loss or shift														
	Other (explain in narrative): Ot	7				2	5	3				3	12		
	Unknown														
	Other (explain in narrative): No														
	None indicated														
2010	Animal														
	Ran Traffic Signal	2					2						4		

Report – Year-based: Crash Severity by Major Cause

_Year - Crash Severity: Major Cause (Numerical)

Year	MajorCause	TotalCrash	FatalCrash	MajInjCrash	MinInjCrash	PUInjCrash	PDOCrash
2009	Animal						
	Ran Traffic Signal	3				1	2
	Ran Stop Sign						
	Crossed centerline						
	FTYROW: At uncontrolled inte						
	FTYROW: Making right turn o						
	FTYROW: From stop sign	1			1		
	FTYROW: From yield sign						
	FTYROW: Making left turn	5			1		4
	FTYROW: From driveway	5			1		4
	FTYROW: From parked positi	1					1
	FTYROW: To pedestrian						
	FTYROW: Other (explain in na	1					1
	Traveling wrong way or on wro						
	Driving too fast for conditions	7			1	2	4
	Exceeded authorized speed						
	Made improper turn						
	Improper Lane Change						
	Followed too close	6			1	1	4
	Disregarded RR Signal						
	Disregarded Warning Sign						
	Operating vehicle in an erratic/						
	Improper Backing						
	Illegally Parked/Unattended						
	Swerving/Evasive Action						
	Over correcting/over steering						
	Downhill runaway						
	Equipment failure						
	Separation of units						
	Ran off road - right						
	Ran off road - straight						
	Ran off road - left						
	Lost Control						
	Inattentive/distracted by: Pass						
	Inattentive/distracted by: Use						
	Inattentive/distracted by: Falle						
	Inattentive/distracted by: Fatig						
	Other (explain in narrative): Vis						
	Oversized Load/Vehicle						
	Cargo/equipment loss or shift						
	Other (explain in narrative): Ot	7				2	5
	Unknown						
	Other (explain in narrative): No						
	None indicated						
2010	Animal						
	Ran Traffic Signal	2					2

Report – Year-based: Month by Surface Conditions

_Year - Month: Surface Conditions (Numerical)

Year	CSurfCond	January	February	March	April	May	June	July	August	September	October	November	December
2009	Dry	1	4	1	1	1		2	2	4	2	6	2
	Wet	1					2		1		1		1
	Ice												
	Snow	1											2
	Slush												
	Sand/mud/dirt/oil/gravel												
	Water (standing/moving)												
	Other (explain in narrative)												1
	Unknown												
	Not Reported												
2010	Dry	3		2	4	2	3	1	2	2	2	1	2
	Wet	1	1	1				1					1
	Ice												
	Snow												
	Slush												
	Sand/mud/dirt/oil/gravel												
	Water (standing/moving)												
	Other (explain in narrative)	1											
	Unknown												
	Not Reported												
2011	Dry	1	2	5	1	2	4	3	5		3	1	4
	Wet	2	3				1						
	Ice												
	Snow		3										
	Slush												
	Sand/mud/dirt/oil/gravel												
	Water (standing/moving)												
	Other (explain in narrative)												
	Unknown												
	Not Reported												
2012	Dry		1	2	1	2	2		3	4	4	4	1
	Wet		1	1	1				1		1		
	Ice												
	Snow												
	Slush												
	Sand/mud/dirt/oil/gravel												
	Water (standing/moving)												
	Other (explain in narrative)												
	Unknown												
	Not Reported												
2013	Dry	1	3	2	2		1	1	6		1	2	

Report – Year-based: Time of Day by Day of Week

_Year - Time of Day: Day of Week (Numerical)

Year	DayOfWeek	N0000_0155	N0200_0355	N0400_0555	N0600_0755	N0800_0955	N1000_1155	N1200_1355	N1400_1555	N1600_1755	N1800_1955	N2000_2155	N2200_2355
2009	Sunday										1		
	Monday				1			2	1		3		
	Tuesday					1		2	3			2	
	Wednesday						1	1	1				
	Thursday						1	2	2	2	1		
	Friday							3	2	1	1	1	
	Saturday						1						
2010	Sunday				1			1	1				
	Monday						1	3		1			
	Tuesday							2	2			1	
	Wednesday						2	1					
	Thursday						1	2		3	1		
	Friday						3			1			
	Saturday							1	1	1			
2011	Sunday												
	Monday					1		1	1	1			
	Tuesday					1			4	1	1		
	Wednesday						2	1	1	2	2		
	Thursday						1		1		1		
	Friday						1	5	2	4	2	1	
	Saturday	1						1			1		
2012	Sunday								3				

Stack Map – Total Crashes

Stack Map – Crash Severity

Stack Map – Total Crashes w/ Lines and Features Adjusted

Stack Map – Total Crashes w/ Lines and Features Adjusted

Appendix G

2001

Iowa Crash Report Form

&

Code Sheet

Form 433003
01-01

MAIL REPORTS TO:
Iowa Department of Transportation
Office of Driver Services
Park Fair Mall, 100 Euclid Avenue
P.O. Box 9204
Des Moines, Iowa 50306-9204

PLEASE TYPE OR PRINT

Iowa Department of Transportation
INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

Sheet of

Law Enforcement Case Numbers:

Legal Intervention? ☐ Private Property? ☐

LOCATION

Date of Accident | Time of Accident Hrs. | County | Accident occurred within corporate limits of (city)

If accident occurred outside of city limits show general vicinity miles N NE E SE S SW W NW of nearest city

On Road, Street, or Highway: | At Intersection with:

Note: Unless accident occurred at an intersection which is completely described above, use the space below to give the exact location from a milepost or definable intersection, bridge, or railroad crossing, using two distances and directions if necessary.

Feet Miles N NE E SE S SW W NW or and Feet Miles N NE E SE S SW W NW of

Milepost Number Or Definable intersection, bridge, or railroad crossing

County: _____ Route: _____
X-Coordinate: _____
Y-Coordinate: _____

If Divided Highway, Provide Route (Cardinal) Travel Direction
NB SB EB WB

UNIT 1

Driver's Name (Last, First, Middle) | Address | City | State | Zip

Date of Birth | Driver's License Number | Citation Charge 1. 2. 3. 4.

Male Female | State | Class | Endorsements | Restrictions

Alcohol Test Given? 1. None 2. Blood 3. Urine 4. Breath 5.Vitreous 9. Refused Test Results:

Drug Test Given? 1. None 2. Blood 3. Urine 9. Refused Pos. Neg.

Owner's Name (Last, First, Middle) | Address | City | State | Zip

Insurance Co. Name | Insurance Policy # | License Plate # | State | Year

VIN # | Year | Make | Model | Style | Tow # Private? ☐ | Approximate Cost to Repair or Replace $

Initial Travel Direction | Vehicle Action | Speed Limit | Point of Initial Impact | Most Damaged Area | Extent of Damage | Underride/ Override

Total Occupants | Traffic Controls | Vehicle Config. | Cargo Body Type | Vehicle Defect | Driver Condition | Vision Obscured | Contributing Circumstances, Driver (up to two)

Commercial Trailer License Plate # | Attached to Power Unit: State Year | Attached to Trailer Unit: State Year | Emergency Vehicle Type | Emergency Status

Carrier Name | Address | City | State | Zip

US DOT # or MC # | Number of Axles | Gross Vehicle Weight Rating | Placard # | Hazardous Materials Released?

UNIT 2

Driver's Name (Last, First, Middle) | Address | City | State | Zip

Date of Birth | Driver's License Number | Citation Charge 1. 2. 3. 4.

Male Female | State | Class | Endorsements | Restrictions

Alcohol Test Given? 1. None 2. Blood 3. Urine 4. Breath 5.Vitreous 9. Refused Test Results:

Drug Test Given? 1. None 2. Blood 3. Urine 9. Refused Pos. Neg.

Owner's Name (Last, First, Middle) | Address | City | State | Zip

Insurance Co. Name | Insurance Policy # | License Plate # | State | Year

VIN # | Year | Make | Model | Style | Tow # Private? ☐ | Approximate Cost to Repair or Replace $

Initial Travel Direction | Vehicle Action | Speed Limit | Point of Initial Impact | Most Damaged Area | Extent of Damage | Underride/ Override

Total Occupants | Traffic Controls | Vehicle Config. | Cargo Body Type | Vehicle Defect | Driver Condition | Vision Obscured | Contributing Circumstances, Driver (up to two)

Commercial Trailer License Plate # | Attached to Power Unit: State Year | Attached to Trailer Unit: State Year | Emergency Vehicle Type | Emergency Status

Carrier Name | Address | City | State | Zip

US DOT # or MC # | Number of Axles | Gross Vehicle Weight Rating | Placard # | Hazardous Materials Released?

If Property other than vehicles damaged explain | Object Damaged | Estimate of Damage $

Owner's Full Name (Last, First, Middle) | Was owner or tenant notified? 1 – Yes 9 - Unknown 2 – No

Street or RFD | City, State, & Zip Code

Unit 1	Unit 2	SEQUENCE OF EVENTS
		First Event
		Second Event
		Third Event
		Fourth Event
		Most Harmful Event (by vehicle)
		First Harmful Event of Crash (use codes 11-42 only)

ACCIDENT ENVIRONMENT

Location of First Harmful Event | Weather Conditions (up to two)

Manner of Crash/Collision

Light Conditions | Surface Conditions

ROADWAY CHARACTERISTICS

Major Contributing Circumstances:

Environment | Location

Roadway | Type

Type of Roadway Junction/Feature | Workers Present?

WORKZONE RELATED? Yes No

NON-MOTORIST

Type |___| Location |___|

Action |___| Condition |___|

Safety Equipment |___|

Contributing Circumstances |___|___|

Unit No. of Vehicle Striking |___|

Motorcycle Seating Position
01 - Motorcycle Driver
04 - Motorcycle Passenger
88 - Other (explain in narrative)

SEATING POSITION

01	02	03
04	05	06
07	08	09

10 - Sleeper Section
11 - Enclosed Cargo Area
12 - Unenclosed Cargo Area
13 - Trailing Unit
14 - Exterior
15 - Pedestrian
16 - Pedalcyclist
17 - Pedalcyclist, passenger
88 - Other (explain in narrative)
99 - Unknown

DRIVERS

	Phone	Sex	Unit No.	Seating Position	Injury Status	Occupant Protection	Airbag Deployment	Airbag Switch Status	Ejection	Ejection Path	Trapped
DRIVER OF UNIT 1	Transported to:			Transported by:							
DRIVER OF UNIT 2	Phone										
	Transported to:			Transported by:							

PERSONS INJURED

Name	Date of Birth	Sex	Unit No.	Seating Position	Injury Status	Occupant Protection	Airbag Deployment	Airbag Switch Status	Ejection	Ejection Path	Trapped
Name 1.	Date of Birth										
Address	Transported to:		Transported by:								
Name 2.	Date of Birth										
Address	Transported to:		Transported by:								
Name 3.	Date of Birth										
Address	Transported to:		Transported by:								
Name 4.	Date of Birth										
Address	Transported to:		Transported by:								

DIAGRAM

DIAGRAM WHAT HAPPENED: *Instruction*

Number each vehicle and show direction of travel by arrow:

Use solid line to show path before accident.:

Use dotted line to show path after accident.:

Show pedestrian by.:

Show railroad by.:

Show utility poles by.:

Show motorcycles by.:

Show animal by.:

INDICATE NORTH

NARRATIVE

Describe what happened (refer to vehicles by number)

WITNESS

Name (Last, First)	Street or RFD	City	State	Zip	Phone

Signature of Officer	Badge No.	Time Officer Notified of Accident Hrs.	Time Officer Arrived At Scene Hrs.
Name of Agency	Date of Report	Investigation made at scene? Y N	Supplemental Information Will Follow? Y N / T.I. #
Report Reviewed by	Date Reviewed	Report Given to All Drivers? Y N	Other Technical Investigating Agency

Form 433013
01-01

MAIL REPORTS TO:
Iowa Department of Transportation, Office of Driver Services
Park Fair Mall, 100 Euclid Avenue, P.O. Box 9204
Des Moines, Iowa 50306-9204

Supplemental

Iowa Department of Transportation

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

Sheet of

Law Enforcement Case Numbers:

PLEASE TYPE OR PRINT

Date of Accident	Time of Accident Hrs.	Accident occurred within corporate limits of (city)	On Road, Street, or Highway:	At Intersection with:	County

UNIT —

Driver's Name (Last, First, Middle) | Address | City | State | Zip

Date of Birth | Driver's License Number | Citation Charge 1. 2. 3. 4.

Male ○ Female ○ | State | Class | Endorsements | Restrictions

Alcohol Test Given? |___| 1. None 2. Blood 3. Urine 4. Breath 5.Vitreous 9. Refused Test Results: _____

Drug Test Given? |___| 1. None 2. Blood 3. Urine 9. Refused Pos. ○ Neg. ○

Owner's Name (Last, First, Middle) | Address | City | State | Zip

Insurance Co. Name | Insurance Policy # | License Plate # | State | Year

VIN # | Year | Make | Model | Style | Tow # Private ☐ | Approximate Cost to Repair or Replace $

Initial Travel Direction |___| | Vehicle Action |___|___| | Speed Limit |___|___| | Point of Initial Impact |___|___| | Most Damaged Area |___|___| | Extent of Damage |___| | Underride/ Override |___|

Total Occupants |___|___| | Traffic Controls |___|___| | Vehicle Config. |___|___| | Cargo Body Type |___|___| | Vehicle Defect |___|___| | Driver Condition |___| | Vision Obscured |___|___| | Contributing Circumstances, Driver (up to two) |___|___| |___|___|

Commercial Trailer License Plate # | Attached to Power Unit: _____ State Year | Attached to Trailer Unit: _____ State Year | Emergency Vehicle Type |___| | Emergency Status |___|

Carrier Name | Address | City | State | Zip

US DOT # ○ or MC # ○ |___|___|___|___|___|___|___| | Number of Axles | Gross Vehicle Weight Rating | Placard # |___|___|___|___| - |___| | Hazardous Materials Released? |___|

UNIT —

Driver's Name (Last, First, Middle) | Address | City | State | Zip

Date of Birth | Driver's License Number | Citation Charge 1. 2. 3. 4.

Male ○ Female ○ | State | Class | Endorsements | Restrictions

Alcohol Test Given? |___| 1. None 2. Blood 3. Urine 4. Breath 5.Vitreous 9. Refused Test Results: _____

Drug Test Given? |___| 1. None 2. Blood 3. Urine 9. Refused Pos. ○ Neg. ○

Owner's Name (Last, First, Middle) | Address | City | State | Zip

Insurance Co. Name | Insurance Policy # | License Plate # | State | Year

VIN # | Year | Make | Model | Style | Tow # Private ☐ | Approximate Cost to Repair or Replace $

Initial Travel Direction |___| | Vehicle Action |___|___| | Speed Limit |___|___| | Point of Initial Impact |___|___| | Most Damaged Area |___|___| | Extent of Damage |___| | Underride/ Override |___|

Total Occupants |___|___| | Traffic Controls |___|___| | Vehicle Config. |___|___| | Cargo Body Type |___|___| | Vehicle Defect |___|___| | Driver Condition |___| | Vision Obscured |___|___| | Contributing Circumstances, Driver (up to two) |___|___| |___|___|

Commercial Trailer License Plate # | Attached to Power Unit: _____ State Year | Attached to Trailer Unit: _____ State Year | Emergency Vehicle Type |___| | Emergency Status |___|

Carrier Name | Address | City | State | Zip

US DOT # ○ or MC # ○ |___|___|___|___|___|___|___| | Number of Axles | Gross Vehicle Weight Rating | Placard # |___|___|___|___| - |___| | Hazardous Materials Released? |___|

UNIT —

Driver's Name (Last, First, Middle) | Address | City | State | Zip

Date of Birth | Driver's License Number | Citation Charge 1. 2. 3. 4.

Male ○ Female ○ | State | Class | Endorsements | Restrictions

Alcohol Test Given? |___| 1. None 2. Blood 3. Urine 4. Breath 5.Vitreous 9. Refused Test Results: _____

Drug Test Given? |___| 1. None 2. Blood 3. Urine 9. Refused Pos. ○ Neg. ○

Owner's Name (Last, First, Middle) | Address | City | State | Zip

Insurance Co. Name | Insurance Policy # | License Plate # | State | Year

VIN # | Year | Make | Model | Style | Tow # Private ☐ | Approximate Cost to Repair or Replace $

Initial Travel Direction |___| | Vehicle Action |___|___| | Speed Limit |___|___| | Point of Initial Impact |___|___| | Most Damaged Area |___|___| | Extent of Damage |___| | Underride/ Override |___|

Total Occupants |___|___| | Traffic Controls |___|___| | Vehicle Config. |___|___| | Cargo Body Type |___|___| | Vehicle Defect |___|___| | Driver Condition |___| | Vision Obscured |___|___| | Contributing Circumstances, Driver (up to two) |___|___| |___|___|

Commercial Trailer License Plate # | Attached to Power Unit: _____ State Year | Attached to Trailer Unit: _____ State Year | Emergency Vehicle Type |___| | Emergency Status |___|

Carrier Name | Address | City | State | Zip

US DOT # ○ or MC # ○ |___|___|___|___|___|___|___| | Number of Axles | Gross Vehicle Weight Rating | Placard # |___|___|___|___| - |___| | Hazardous Materials Released? |___|

If Property other than vehicles damaged explain	Object Damaged	Estimate of Damage $
Owner's Full Name (Last, First, Middle)		Was owner or tenant notified? |___| 1 – Yes 2 – No 9 - Unknown
Street or RFD	City, State, & Zip Code	

If Property other than vehicles damaged explain	Object Damaged	Estimate of Damage $
Owner's Full Name (Last, First, Middle)		Was owner or tenant notified? |___| 1 – Yes 2 – No 9 - Unknown
Street or RFD	City, State, & Zip Code	

Unit __	Unit __	Unit __	SEQUENCE OF EVENTS
|__|__|	|__|__|	|__|__|	First Event
|__|__|	|__|__|	|__|__|	Second Event
|__|__|	|__|__|	|__|__|	Third Event
|__|__|	|__|__|	|__|__|	Fourth Event
|__|__|	|__|__|	|__|__|	Most Harmful Event (by vehicle)

NON-MOTORIST

Type \|___\| Location \|___\|

Action \|___\| Condition \|___\|

Safety Equipment \|___\|

Contributing Circumstances \|___\|___\|

Unit No. of Vehicle Striking \|___\|

Motorcycle Seating Position
01 - Motorcycle Driver
04 - Motorcycle Passenger
88 - Other (explain in narrative)

SEATING POSITION

01	02	03
04	05	06
07	08	09

10 - Sleeper Section
11 - Enclosed Cargo Area
12 - Unenclosed Cargo Area
13 - Trailing Unit
14 - Exterior
15 - Pedestrian
16 - Pedalcyclist
17 - Pedalcyclist, passenger
88 - Other (explain in narrative)
99 - Unknown

		Sex	Unit No.	Seating Position	Injury Status	Occupant Protection	Airbag Deployment	Airbag Switch Status	Ejection	Ejection Path	Trapped
DRIVERS	DRIVER OF UNIT ____										
	Phone										
	Transported to:	Transported by:									
	DRIVER OF UNIT ____										
	Phone										
	Transported to:	Transported by:									
	DRIVER OF UNIT ____										
	Phone										
	Transported to:	Transported by:									
PERSONS INJURED	**Name**	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								
	Name	Date of Birth									
	Address	Transported to:	Transported by:								

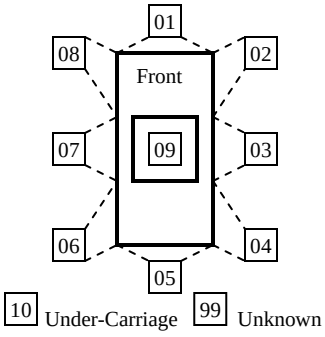
Driver/Vehicle Characteristics

Initial Travel Direction
(prior to coded Vehicle Action)
1 - North
2 - East
3 - South
4 - West
9 - Unknown

N
W E
S

Vehicle Action
01 - Movement essentially straight
02 - Turning left
03 - Turning right
04 - Making U-turn
05 - Overtaking/passing
06 - Changing lanes
07 - Entering traffic lane (merging)
08 - Leaving traffic lane
09 - Backing
10 - Slowing/stopping
11 - Stopped for stop sign/signal
12 - Legally Parked
13 - Illegally Parked/Unattended
88 - Other (explain in narrative)
99 - Unknown

Point of Initial Impact
Most Damaged Area



Extent of Damage
1 - None
2 - Minor damage
3 - Functional damage
4 - Disabling damage
5 - Severe, vehicle totaled
9 - Unknown

Underride/Override
1 - None
2 - Underride, compartment intrusion
3 - Underride, no compartment intrusion
4 - Underride, compartment intrusion unknown
5 - Override, moving vehicle
6 - Override, parked/stationary vehicle
9 - Unknown

Traffic Controls
01 - No controls present
02 - Traffic signals
03 - Flashing traffic control signal
04 - Stop signs
05 - Yield signs
06 - No Passing Zone (marked)
07 - Warning sign
08 - School zone signs
09 - Railway crossing device
10 - Traffic director
11 - Workzone signs
88 - Other control (explain in narrative)
99 - Unknown

Vehicle Configuration
01 - Passenger car
02 - Four-tire light truck (pick-up, panel)
03 - Van or mini-van
04 - Sport utility vehicle
05 - Single-unit truck (2-axle, 6-tire)
06 - Single-unit truck (>= 3 axles)
07 - Truck/trailer
08 - Truck tractor (bobtail)
09 - Tractor/semi-trailer
10 - Tractor/doubles
11 - Tractor/triples
12 - Other heavy truck (cannot classify)
13 - Motor home/recreational vehicle
14 - Motorcycle
15 - Moped/All-Terrain Vehicle
16 - School bus (seats > 15)
17 - Small school bus (seats 9 - 15)
18 - Other bus (seats > 15)
19 - Other small bus (seats 9 - 15)
20 - Farm vehicle/equipment
21 - Maintenance/construction vehicle
22 - Train
88 - Other (explain in narrative)
99 - Unknown

Cargo Body Type
01 - Not applicable

Truck Cargo Type:
02 - Van/enclosed box
03 - Dump truck (grain, gravel)
04 - Cargo tank
05 - Flatbed
06 - Concrete mixer
07 - Auto transporter
08 - Garbage/refuse
09 - Other truck cargo type (explain in narrative)

Trailer type:
10 - Small utility (one axle)
11 - Large utility (2+ axles)
12 - Boat
13 - Camper
14 - Large mobile home
15 - Oversize load
16 - Towed vehicle
17 - Pole
18 - Other trailer type (explain in narrative)
99 - Unknown

Vehicle Defect
01 - None
02 - Brakes
03 - Steering
04 - Blowout
05 - Other tire defect (explain in narrative)
06 - Wipers
07 - Trailer hitch
08 - Exhaust
09 - Headlights
10 - Tail lights
11 - Turn signal
12 - Suspension
88 - Other (explain in narrative)
99 - Unknown

Driver Condition
1 - Apparently normal
2 - Physical impairment
3 - Emotional (e.g., depressed, angry, disturbed)
4 - Illness
5 - Asleep, fainted, fatigued, etc.
6 - Under the influence of alcohol/drugs/medications
8 - Other (explain in narrative)
9 - Unknown

Vision Obscured
01 - Not obscured
02 - Trees/crops
03 - Buildings
04 - Embankment
05 - Sign/billboard
06 - Hillcrest
07 - Parked vehicles
08 - Moving vehicles
09 - Person/object in or on vehicle
10 - Blinded by sun or headlights
11 - Frosted windows/windshield
12 - Blowing snow
13 - Fog/smoke/dust
88 - Other (explain in narrative)
99 - Unknown

Contributing Circumstances, Driver (up to two)
01 - Ran traffic signal
02 - Ran stop sign
03 - Exceeded authorized speed
04 - Driving too fast for conditions
05 - Made improper turn
06 - Traveling wrong way or on wrong side of road
07 - Crossed centerline
08 - Lost Control
09 - Followed too close
10 - Swerved to avoid: vehicle, object, non-motorist, or animal in roadway
11 - Over correcting/over steering
12 - Operating vehicle in an erratic, reckless, careless, negligent, or aggressive manner

Failed to yield right-of-way:
13 - From stop sign
14 - From yield sign
15 - Making left turn
16 - Making right turn on red signal
17 - From driveway
18 - From parked position
19 - To pedestrian
20 - At uncontrolled intersection
21 - Other (explain in narrative)

Inattentive/distracted by:
22 - Passenger
23 - Use of phone or other device
24 - Fallen object
25 - Fatigued/asleep

Other (explain in narrative):
26 - Vision obstructed
27 - Other improper action
28 - No improper action

99 - Unknown

Emergency Vehicles

Emergency Vehicle Type
1 - Not applicable
2 - Police
3 - Fire
4 - Ambulance
5 - Towing
6 - Military
7 - Maintenance
9 - Unknown

Emergency Status
1 - Yes, in emergency
2 - No, not in emergency
3 - Not applicable
9 - Unknown

Hazardous Materials Released? (Cargo Only)
1 - Yes
2 - No
3 - Not applicable
9 - Unknown

Iowa Department of Transportation

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT CODE SHEET

Form 433014
01-01

Workzone Related?

Location
1 - Before work zone warning sign
2 - Between advance warning sign and work area
3 - Within transition area for lane shift
4 - Within or adjacent to work activity
5 - Between end of work area and "End Work Zone" sign
8 - Other work zone area (explain in narrative)
9 - Unknown

Type
1 - Lane closure
2 - Lane shift/crossover (head-to-head traffic)
3 - Work on shoulder or median
4 - Intermittent or moving work
8 - Other type of work zone (explain in narrative)
9 - Unknown

Workers Present?
1 - Yes
2 - No
9 - Unknown

Accident Environment

Location of First Harmful Event
1 - On Roadway
2 - Shoulder
3 - Median
4 - Roadside
5 - Gore
6 - Outside trafficway
9 - Unknown

Manner of Crash/Collision
1 - Non-collision
2 - Head-on
3 - Rear-end
4 - Angle, oncoming left turn
5 - Broadside
6 - Sideswipe, same direction
7 - Sideswipe, opposite direction
9 - Unknown

Light Conditions
1 - Daylight
2 - Dusk
3 - Dawn
4 - Dark, roadway lighted
5 - Dark, roadway not lighted
6 - Dark, unknown roadway lighting
9 - Unknown

Weather Conditions (up to two)
01 - Clear
02 - Partly cloudy
03 - Cloudy
04 - Fog, smoke
05 - Mist
06 - Rain
07 - Sleet, hail, freezing rain
08 - Snow
09 - Severe winds
10 - Blowing sand, soil, dirt, snow
88 - Other (explain in narrative)
99 - Unknown

Surface Conditions
1 - Dry
2 - Wet
3 - Ice
4 - Snow
5 - Slush
6 - Sand, mud, dirt, oil, gravel
7 - Water (standing, moving)
8 - Other (explain in narrative)
9 - Unknown

Roadway Characteristics

Contributing Circumstances, Environment
1 - None apparent
2 - Weather conditions
3 - Physical obstruction
4 - Pedestrian action
5 - Glare
6 - Animal in roadway
7 - Previous accident
8 - Other (explain in narrative)
9 - Unknown

Contributing Circumstances, Roadway
01 - None apparent
02 - Road surface condition
03 - Debris
04 - Ruts, holes, bumps
05 - Work Zone (construction, maintenance, utility)
06 - Worn, travel-polished surface
07 - Obstruction in roadway
08 - Traffic control device inoperative, missing, obscured
09 - Shoulders (none, low, soft, high)
10 - Non-highway work
11 - Non-contact vehicle
99 - Unknown

Type of Roadway Junction/Feature
Non-intersection:
01 - No special feature
02 - Bridge/overpass/underpass
03 - Railroad crossing
04 - Business drive
05 - Farm/residential drive
06 - Alley intersection
07 - Crossover in median
08 - Other non-intersection (explain in narrative)
Intersection:
11 - Four-way intersection
12 - T - intersection
13 - Y - intersection
14 - Five-leg or more
15 - Offset four-way intersection
16 - Intersection with ramp
17 - On-ramp merge area
18 - Off-ramp diverge area
19 - On-ramp
20 - Off-ramp
21 - With bike/pedestrian path
22 - Other intersection (explain in narrative)
99 - Unknown

Harmful Events

Sequence of Events
Most Harmful Event
First Harmful Event
Pre-crash events:
01 - Ran off road, right
02 - Ran off road, straight
03 - Ran off road, left
04 - Crossed centerline/median
05 - Animal or object in roadway
06 - Evasive action (swerve, panic braking, etc.)
07 - Downhill runaway
08 - Cargo/equipment loss or shift
09 - Equipment failure (tires, brakes, etc.)
10 - Separation of units
Non-collision events:
11 - Overturn/rollover
12 - Jackknife
13 - Other non-collision (explain in narrative)
Collision with:
20 - Non-motorist (see non-motorist type)
21 - Vehicle in traffic
22 - Vehicle in/from other roadway
23 - Parked motor vehicle
24 - Railway vehicle/train
25 - Animal
26 - Other non-fixed object (explain in narrative)
Collision with fixed object:
30 - Bridge/bridge rail/overpass
31 - Underpass/structure support
32 - Culvert
33 - Ditch/embankment
34 - Curb/island/raised median
35 - Guardrail
36 - Concrete barrier (median or right side)
37 - Tree
38 - Poles (utility, light, etc.)
39 - Sign post
40 - Mailbox
41 - Impact attenuator
42 - Other fixed object (explain in narrative)
Misc. events:
50 - Fire/explosion
51 - Immersion
52 - Hit and run
99 - Unknown

Injury/Protective Devices

Injury Status
1 - Fatal
2 - Incapacitating
3 - Non-incapacitating
4 - Possible
5 - Uninjured
9 - Unknown

Occupant Protection
1 - None used
2 - Shoulder and lap belt used
3 - Lap belt only used
4 - Shoulder belt only used
5 - Child safety seat used
6 - Helmet used
8 - Other (explain in narrative)
9 - Unknown

Airbag Deployment
1 - Deployed front of person
2 - Deployed side of person
3 - Deployed both front/side
4 - Other deployment (explain in narrative)
5 - Not deployed
6 - Not applicable
9 - Unknown

Airbag Switch Status
1 - Switch in ON position
2 - Switch in OFF position
3 - No ON/OFF switch present
9 - Unknown

Ejection
1 - Not ejected
2 - Partially ejected
3 - Totally ejected
4 - Not applicable (motorcycle, bicycle, etc.)
9 - Unknown

Ejection Path
1 - Not ejected/not applicable
2 - Through front windshield
3 - Through side window/door
4 - Through roof
5 - Through back window/tailgate
9 - Unknown

Trapped
1 - Not trapped
2 - Freed by non-mechanical means
3 - Extricated by mechanical means
9 - Unknown

Non-Motorist

Type
1 - Pedestrian
2 - Pedalcyclist (bicycle, tricycle, unicycle, pedal car)
3 - Skater
8 - Other (explain in narrative)
9 - Unknown

Location (prior to impact)
1 - Marked crosswalk at intersection
2 - At intersection, no crosswalk
3 - Non-intersection crosswalk
4 - Driveway access crosswalk
8 - Other non-intersection (explain in narrative)
9 - Unknown

Action
1 - Entering or crossing roadway
2 - Walking, running, jogging, playing, cycling
3 - Working
4 - Pushing vehicle
5 - Approaching or leaving vehicle
6 - Playing or working on vehicle
7 - Standing
8 - Other (explain in narrative)
9 - Unknown

Condition
1 - Apparently normal
2 - Physical impairment
3 - Emotional (e.g., depressed, angry, disturbed)
4 - Illness
5 - Asleep, fainted, fatigued, etc.
6 - Under the influence of alcohol/drugs/medications
8 - Other (explain in narrative)
9 - Unknown

Safety Equipment
1 - Helmet
2 - Reflective clothing
3 - Lighting
4 - None
8 - Other (explain in narrative)
9 - Unknown

Contributing Circumstances
01 - Improper crossing
02 - Darting
03 - Lying or sitting in roadway
04 - Failure to yield right of way
05 - Not visible (dark clothing)
06 - Inattentive (talking, eating, etc.)
07 - Failure to obey traffic signs, signals, or officer
08 - Wrong side of road
88 - Other (explain in narrative)
99 - Unknown

Appendix H

2015

Iowa Crash Report Form

&

Code Sheet

Iowa Department of Transportation
Form 433003 (06-13)

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

Law Enforcement Case Numbers:

MAIL REPORTS TO: Iowa Department of Transportation, Office of Driver Services, P.O. Box 9204, Des Moines, Iowa 50306-9204

Date of Accident	Time of Accident	County	Accident occurred within corporate limits of (city):

UNIT 1

Driver's Last Name	First Name	Middle Name

Address	City	State	ZIP Code

Date of Birth	Driver License Number	CDL Yes No	Citation Charge: 1.	3.
			2.	4.

Male Female	State	Class	Endorsement	Restrictions

Alcohol Test Given:	Test Results:	Drug Test Given:	Pos. Neg.	Re-exam: Yes No	Reason for Re-Exam Request:

Owner's Last Name	First Name	Middle Name

Address	City	State	ZIP Code

License Plate No.	State:	Year:	VIN:	Color:	Year:	Make:	Model:	Style:
Trailer Plate No.:	State:	Year:	VIN:	Tow:	Tow No.:	Towed to:	Approx. Cost to Repair or Replace	

Insurance Company Name:	Insurance Co. Phone Number:	Insurance Policy Number

Initial Travel Direction	Veh. Action	Veh. Config.	Cargo Body Type	Vehicle Defect	Point of Initial Impact	Most Damaged Area	Extent of Damage	Total Occ.in Veh.

Special Veh. Func	Emergency Status	Bus Use	Driver Condition	Vision Obscured	Contributing Circumstances Driver (up to two)	Driver Distractions	Speed Limit

Traffic Controls	Horizontal Alignment	Vertical Alignment	SEQUENCE OF EVENTS	First Event	Second Event	Third Event	Fourth Event	Most Harmful Event

COMMERCIAL

Carrier Name/Lessee			
Street Address	City	State	ZIP Code

Number of Axles	Gross Veh. Weight Rating	US DOT Number	MC Number	Underride/Override

Haz Mat Involvement	Haz Mat Placard	Placard Number	Haz Mat Released	Haz Mat Class	Haz Mat Name

Trailer Plate:	State	Year	VIN
Trailer Plate:	State	Year	VIN

Converter Dolly	Dolly Plate:	State	Plate Year	VIN

PERSONS IN UNIT 1 INJURED

DRIVER OF UNIT 1	Phone Number:	Transported to:	Transported By:

Sex	Seating Position	Injury Status	Occupant Protection	Airbag Deployment	Ejection	Ejection Path	Trapped/extricated	Source of Transport	Died at scene/enroute

Name 1:	Phone:	DOB:	Address:	Trans. to:	Trans. By:
Name 2:	Phone:	DOB:	Address:	Trans. to:	Trans. By:
Name 3:	Phone:	DOB:	Address:	Trans. to:	Trans. By:
Name 4:	Phone:	DOB:	Address:	Trans. to:	Trans. By:

Iowa Department of Transportation
Form 433003 (06-13)

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

Law Enforcement Case Numbers:

MAIL REPORTS TO: Iowa Department of Transportation, Office of Driver Services, P.O. Box 9204, Des Moines, Iowa 50306-9204

UNIT 2

Driver's Last Name	First Name	Middle Name
Address	City	State / ZIP Code

Date of Birth	Driver License Number	CDL Yes No	Citation Charge: 1.	3.
Male Female / State / Class / Endorsement / Restrictions			2.	4.

Alcohol Test Given:	Test Results:	Drug Test Given:	Pos. Neg.	Re-exam: Yes No	Reason for Re-Exam Request:

Owner's Last Name	First Name	Middle Name
Address	City	State / ZIP Code

License Plate No.	State:	Year:	VIN:	Color:	Year:	Make:	Model:	Style:
Trailer Plate No.:	State:	Year:	VIN:	Tow:	Tow No.:	Towed to:	Approx. Cost to Repair or Replace	

Insurance Company Name:	Insurance Co. Phone Number:	Insurance Policy Number

Initial Travel Direction	Veh. Action	Veh. Config.	Cargo Body Type	Vehicle Defect	Point of Initial Impact	Most Damaged Area	Extent of Damage	Total Occ.in Veh.
Special Veh. Func	Emergency Status	Bus Use	Driver Condition	Vision Obscured	Contributing Circumstances Driver (up to two)		Driver Distractions	Speed Limit
Traffic Controls	Horizontal Alignment	Vertical Alignment	SEQUENCE OF EVENTS	First Event	Second Event	Third Event	Fourth Event	Most Harmful Event

COMMERCIAL

Carrier Name/Lessee			
Street Address	City	State	ZIP Code
Number of Axles	Gross Veh. Weight Rating	US DOT Number	MC Number	Underride/Override

Haz Mat Involvement	Haz Mat Placard	Placard Number	Haz Mat Released	Haz Mat Class	Haz Mat Name

Trailer Plate:	State	Year	VIN
Trailer Plate:	State	Year	VIN
Converter Dolly	Dolly Plate:	State	Plate Year	VIN

PERSONS INJURED IN UNIT 2

DRIVER OF UNIT 2	Phone Number:	Sex	Seating Position	Injury Status	Occupant Protection	Airbag Deployment	Ejection	Ejection Path	Trapped/extricated	Source of Transport	Died at scene/enroute
	Transported to:									Transported By:	

Name 1:	Phone:	DOB:										
Address:	Trans. to:									Trans. By:		
Name 2:	Phone:	DOB:										
Address:	Trans. to:									Trans. By:		
Name 3:	Phone:	DOB:										
Address:	Trans. to:									Trans. By:		
Name 4:	Phone:	DOB:										
Address:	Trans. to:									Trans. By:		

Iowa Department of Transportation
Form 433003 (06-13)

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

Law Enforcement Case Numbers:

MAIL REPORTS TO: Iowa Department of Transportation, Office of Driver Services, P.O. Box 9204, Des Moines, Iowa 50306-9204

LOCATION

Date of Accident	Time of Accident	County	Accident occurred within corporate limits of (city):	Legal Intervention? ☐	Private Property? ☐

If accident occurred outside of city limits show general vicinity: miles N NE E SE S SW W NW of nearest city

County: _____ Route: _____

X-Coordinate: _____

Y-Coordinate: _____

On Road, Street, or Highway: | At intersection with:

Note: Unless accident occurred at an intersection which is completely described above, use the space below to give the exact location from a milepost or definable intersection, bridge, or railroad crossing, using two distances and directions if necessary.

Feet or Miles N NE E SE S SW W NW and Feet or Miles N NE E SE S SW W NW of

Milepost Number or Definable intersection, bridge, or railroad crossing

If Divided highway, Provide Route (Cardinal) Travel Direction NB SB EB WB

ACCIDENT ENVIRONMENT

Location of First Harmful Event ☐☐ Weather Conditions (up to two) ☐☐

Manner of Crash/Collision ☐☐ ☐☐

Light Conditions ☐ Surface Conditions ☐☐

ROADWAY CHARACTERISTICS

Major Contributing Circumstances Environment ☐☐

Roadway ☐☐

Type of Roadway Junction/Feature ☐☐

FRA No. ☐☐☐☐☐☐☐

First Harmful Event (Crash)	WORKZONE RELATED?	Yes	No	Activity	Location	Type	Workers Present
☐☐		◯	◯	☐☐	☐☐	☐☐	☐☐

NON MOTORISTS

	Name 1:	Phone Number:	Date of Birth:	Sex	Struck by Unit No.	Injury Status	Non-Motorist Type	Location (prior to impact)	Action (prior to crash)	Condition	Safety Equipment	Contributing Circumstances	Source of Transport	Died at Scene/Enroute
	Address:	Alcohol Test Given ☐ Test Results:	Drug Test Given ☐ Pos ◯ Neg ◯	Charged: Yes ◯ No ◯										
	Transported to:	Transported By:												
	Name 2:	Phone Number:	Date of Birth:											
	Address:	Alcohol Test Given ☐ Test Results:	Drug Test Given ☐ Pos ◯ Neg ◯	Charged: Yes ◯ No ◯										
	Transported to:	Transported By:												

NON VEHICULAR PROPERTY DAMAGE

If Property other than vehicles damaged explain.	Object Damaged	Estimate of Damage $
Owner's Last Name	First Name / Middle Name	Phone Number
Address	City / State / ZIP Code	Was owner or tenant notified? 1 = Yes 2 = No 9 = Unknown ☐
If Property other than vehicles damaged explain.	Object Damaged	Estimate of Damage $
Owner's Last Name	First Name / Middle Name	Phone Number
Address	City / State / ZIP Code	Was owner or tenant notified? 1 = Yes 2 = No 9 = Unknown ☐

WITNESS

Last Name	First Name	Address	City	State	ZIP Code	Phone Number:
Last Name	First Name	Address	City	State	ZIP Code	Phone Number:
Last Name	First Name	Address	City	State	ZIP Code	Phone Number:
Last Name	First Name	Address	City	State	ZIP Code	Phone Number:
Last Name	First Name	Address	City	State	ZIP Code	Phone Number:

Signature of Officer:	Badge Number:	Time Officer Notified of Accident Hrs.	Time Officer Arrived at Scene Hrs.
Name of Agency:	Date of Report:	Investigation made at scene? Y ◯ N ◯	Supplemental Information will follow? Y ◯ N ◯ / T.I. No.:
Report Reviewed By:	Date of Review:	Report given to all Drivers? Y ◯ N ◯	Other Technical Investigating Agency:

Iowa Department of Transportation
Form 433003 (06-13)

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

Law Enforcement Case Numbers:

MAIL REPORTS TO: Iowa Department of Transportation, Office of Driver Services, P.O. Box 9204, Des Moines, Iowa 50306-9204

DIAGRAM

DIAGRAM WHAT HAPPENED (attach additional sheet(s) if needed): *Instruction*

Number each vehicle and show direction of travel by arrow:

INDICATE NORTH

Use solid line to show path before accident:

Use dotted line to show path after accident:

Show pedestrian by:

Show railroad by:

Show utility poles by:

Show motorcycle by:

Show animal by:

NARRATIVE

Describe what happened (attach additional sheet(s) if needed)

Iowa Department of Transportation
Form 433014 (10-13)

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT CODE SHEET

Vehicle Characteristics

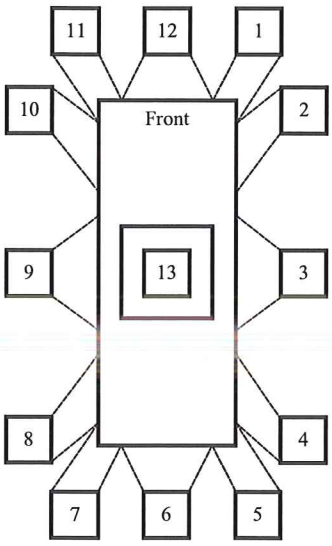
Initial Travel Direction (prior to coded Vehicle Action)

1 - North
2 - East
3 - South
4 - West
99 - Unknown

Vehicle Action

1 - Movement essentially straight
2 - Turning Left
3 - Turning right
4 - Making U-turn
5 - Overtaking/passing
6 - Changing lanes
7 - Entering traffic lane (merging)
8 - Leaving traffic lane
9 - Backing
10 - Slowing/stopping (decelerating)
11 - Stopped in traffic
12 - Legally parked
13 - Illegally parked/unattended
14 - Negotiating a curve
15 - Starting in road
16 - Accelerating in road
17 - Leaving a parked position
18 - Entering a parked position
98 - Other (explain in narrative)
99 - Unknown

Point of Initial Impact Most Damaged Area



14 - Undercarriage
15 - Non-collision/no damage
16 - Cargo loss
98 - Other (explain in narrative)
99 - Unknown

Vehicle Configuration

1 - Passenger car
2 - Four-tire truck (pick-up)
3 - Sport utility vehicle
4 - Passenger van (seats <9)
5 - Passenger van (seats 9-15)
6 - Cargo/panel van
7 - Single-unit truck (2-axle, 6-tire)
8 - Single-unit truck (>=3 axles)
9 - Other light truck (<=10,000 lbs)
10 - Vehicle <=10,000lbs, placarded for hazardous materials
11 - Truck/trailer
12 - Truck tractor (bobtail)
13 - Tractor/semi-trailer
14 - Tractor/doubles
15 - Tractor/triples
16 - Other heavy truck (>10,000 lbs) (cannot classify)
17 - Motorcycle
18 - 3-wheeled, enclosed
19 - 3-wheeled, unenclosed
20 - Moped
21 - Motor home/recreational vehicle
22 - School bus (seats >15)
23 - Small school bus (seats 9-15)
24 - Other bus (seats >15)
25 - Other small bus (seats 9-15)
26 - Farm tractor
27 - Farm equipment (explain in narrative)
28 - All-terrain vehicle (ATV)
29 - Snowmobile
30 - Golf cart
31 - Street legal, low-speed vehicle
32 - Limousine/taxi (seats 8 or less)
33 - Limousine/taxi (seats 9-15)
34 - Limousine/taxi (seats >15)
35 - Maintenance/construction vehicle
36 - Train
98 - Other (explain in narrative)
99 - Unknown

Vehicle Defect

1 - None
2 - Brake system
3 - Steering
4 - Blowout
5 - Other tire defect (explain in narrative)
6 - Wheels
7 - Windows/windshield
8 - Wipers
9 - Mirrors
10 - Trailer hitch/truck coupling, safety chain
11 - Headlights
12 - Tail lights
13 - Turn signal
14 - Body/doors
15 - Power train
16 - Suspension
17 - Exhaust
18 - Safety systems
98 - Other (explain in narrative)
99 - Unknown

Towed Field

1 - Driven away
2 - Disabled - privately arranged
3 - Disabled - officer arranged
4 - Not disabled - privately arranged
5 - Not disabled - officer arranged
6 - Abandoned/left at scene

Extent of Damage

1 - None
2 - Minor Damage
3 - Functional damage
4 - Disabling damage
5 - Severe, vehicle totalled
9 - Unknown

Commercial Motor Vehicle

Converter Dolly

1 - Yes
2 - No dolly used
3 - No informatiom/label or unreadable
9 - Unknown

Gross Vehicle Weight Rating (GVWR)

1 - 10,000 lbs or less
2 - 10,001 lbs -26,000 lbs
3 - 26,001 lbs or more

Hazardous Materials (cargo only)

Involvement

1 - Yes
2 - No
3 - Not applicable
99 - Unknown

Placard

1 - Yes
2 - No
3 - Not applicable
99 - Unknown

Released

1 - Yes
2 - No
3 - Not applicable
99 - Unknown

Underride / Override

1 - None
2 - Underride, compartment intrusion
3 - Underride, no compartment intrusion
4 - Underride, compartment intrusion unknown
5 - Override, moving vehicle
6 - Override, parked/stationary vehicle
8 - Other
9 - Unknown

Cargo Body Type

1 - Not applicable
2 - Van/enclosed box
3 - Dump (grain/gravel)
4 - Cargo tank
5 - Flatbed
6 - Concrete mixer
7 - Auto transporter
8 - Garbage/refuse
9 - Hopper (grain, chips, gravel)
10 - Pole trailer
11 - Log trailer
12 - Intermodal container chassis
13 - Small utility trailer (one-axle)
14 - Large utility trailer (2+axles)
15 - Boat
16 - Camper
17 - Large mobile home
18 - Oversize load
19 - Towed vehicle
20 - Bus
98 - Other (explain in narrative)
99 - Unknown

Special Vehicles

Special Function of Vehicle

1 - No special function
2 - Police
3 - Fire
4 - Ambulance
5 - Incident response vehicle
6 - Non-transport emergency service vehicle
7 - Military
8 - Snow plow
9 - Taxi
10 - School
98 - Other (explain in narrative)
99 - Unknown

Emergency Status

1 - Not applicable
2 - Yes, warning equipment used
3 - Yes, warning equipment not used
4 - No, non-emergency, non-transport
5 - No, non-emergency, transport
99 - Unknown

Bus Use

1 - School (public or private)
2 - Transit/commuter
3 - Intercity
4 - Charter/tour
5 - Shuttle
6 - Modified for personal/private use
7 - Church
98 - Other (explain in narrative)
99 - Unknown

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT CODE SHEET

Driver Characteristics

Contributing Circumstances, Driver (up to two)

1 - Ran traffic signal
2 - Ran Stop sign
3 - Exceeded authorized speed
4 - Driving less than the posted speed limit
5 - Driving too fast for conditions
6 - Lost control
7 - Followed too close
8 - Operating vehicle in a reckless, erratic careless, negligent manner
9 - Improper or erratic lane changing
10 - Aggressive driving/road rage
11 - Made improper turn
12 - Failed to yield to emergency vehicle
13 - Traveling wrong way/on wrong side
14 - Traveling on prohibited traffic way
15 - Over-correcting/over-steering
16 - Failed to keep in proper lane
17 - Failure to signal intentions
18 - Swerved to avoid: vehicle, object non-motorist, or animal in roadway
19 - Starting or backing improperly
20 - Failure to dim lights/have lights on
21 - Vehicle stopped on railroad tracks
22 - Vehicle drove around grade crossing gates

Passing
30 - On wrong side
31 - Where prohibited by signs/markings
32 - With insufficient distance/inadequate visibility
33 - Through/around barrier
96 - Other passing (explain in narrative)

Failed to yield right-of-way (FTYROW):
40 - From Stop sign
41 - From Yield sign
42 - Making left turn
43 - Making right turn on red signal
44 - From driveway
45 - From parked position
46 - To non-motorist
47 - At uncontrolled intersection
97 - Other FTYROW (explain in narrative)

Other (explain in narrative):
50 - Vision obstructed
51 - Operating without required equipment
52 - Failure to obey displayed vehicle warnings or instructions
53 - Disregarded signs/road markings
54 - Illegal off-road driving
55 - Towing improperly
56 - Getting off/out of vehicle
57 - Overloading/improper loading with passengers/cargo

58 - Operator inexperience

88 - No improper action

98 - Other (explain in narrative)
99 - Unknown

Driver Re-Examination Needed:

1 - Yes (explain in narrative)
2 - No

Driver Distraction:

1 - Not applicable/no driver
2 - Not distracted

Electronic devices:
3 - Manual operation of an electronic communication device (texting, typing, dialing)
4 - Talking on hand-held device
5 - Talking on hands free device
6 - Adjusting devices (radio, climate)
96 - Other activity with electronic device (explain in narrative)

Other distraction inside vehicle:
10 - Passenger
11 - Unrestrained animal
12 - Eating or drinking related
13 - Smoking related
14 - Reaching for object(s)/fallen object(s)
15 - Inattentive/lost in thought
16 - Looked but did not see
97 - Other distraction inside vehicle (explain in narrative)

98 - Distraction outside vehicle (explain in narrative)
99 - Unknown

Driver Condition

1 - Apparently normal
2 - Emotional (e.g., depressed, angry)
3 - Asleep/fatigued
4 - Illness/fainted
5 - Medical condition (seizure, reaction)
6 - Under the influence of alcohol
7 - Under the influence of drugs/meds
8 - Physical impairment
9 - Walks with a cane/crutches
10 - Paraplegic/wheelchair restricted
11 - Impaired due to previous injury
12 - Hearing impaired/deaf
13 - Visually impaired
98 - Other (explain in narrative)
99 - Unknown

Vision Obscured

1 - Not obscured
2 - Trees/crops
3 - Embankment
4 - Hillcrest
5 - Building(s)
6 - Sign/billboard
7 - Parked vehicle(s)
8 - Moving vehicle(s)
9 - Person/object in or on vehicle
10 - Blinded by sun or headlights
11 - Broken/dirty windshield
12 - Frosted windows/windshield
13 - External mirrors
14 - Blowing snow
15 - Fog/smoke/dust
16 - Splash/spray of passing vehicle
17 - Inadequate vehicle lighting
18 - Exterior angle/blind spot on vehicle
98 - Other (explain in narrative)
99 - Unknown

Alcohol/Drug Testing

Alcohol Test Given

1 - None
2 - Blood
3 - Urine
4 - Breath
5 - Vitreous
9 - Refused

Drug Test Given

1 - None
2 - Blood
3 - Urine
9 - Refused

Accident Environment

Location of First Harmful Event

1 - On roadway
2 - Shoulder
3 - Median
4 - Roadside
5 - Gore
6 - Outside trafficway
7 - In parking lane/zone
8 - Continuous left turn lane
9 - Separator
98 - Other (explain in narrative)
99 - Unknown

Manner of Crash/Collision

1 - Non-collision (single vehicle)
2 - Head-on (front to front)
3 - Rear end (front to rear)
4 - Angle, oncoming left turn
5 - Broadside (front to side)
6 - Sideswipe, same direction
7 - Sideswipe, opposite direction
8 - Rear to rear
9 - Rear to side
98 - Other (explain in narrative)
99 - Unknown

Weather Conditions (up to two)

1 - Clear
2 - Cloudy
3 - Fog, smoke, smog
4 - Freezing rain/drizzle
5 - Rain
6 - Sleet, hail
7 - Snow
8 - Blowing snow
9 - Severe winds
10 - Blowing sand, soil, dirt
98 - Other (explain in narrative)
99 - Unknown

Surface Conditions

1 - Dry
2 - Wet
3 - Ice/Frost
4 - Snow
5 - Slush
6 - Mud, dirt
7 - Water (standing or moving)
8 - Sand
9 - Oil
10 - Gravel
98 - Other (explain in narrative)
99 - Unknown

Light Conditions

1 - Daylight
2 - Dusk
3 - Dawn
4 - Dark, roadway lighted
5 - Dark, roadway not lighted
6 - Dark, unknown roadway lighting
9 - Unknown

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT CODE SHEET

Work Zone Related?

Work Zone Activity

1 - Construction
2 - Maintenance
3 - Utility
98 - Other (explain in narrative)
99 - Unknown

Location

1 - Before work zone warning sign
2 - Advance warning area
3 - Transition area
4 - Within or adjacent to work activity
5 - Termination area
98 - Other (explain in narrative)
99 - Unknown

Type

1 - Lane closure
2 - Lane switch/crossover
3 - Work on shoulder or median
4 - Intermittent or moving work
98 - Other (explain in narrative)
99 - Unknown

Workers Present?

1 - Workers only
2 - No workers present
3 - Workers and officer present
4 - Law enforcement only
5 - No one present
98 - Other (explain in narrative)
99 - Unknown

Harmful Events

Sequence of Events --- Most harmful Event --- First Harmful Event

Pre-crash events:
1 - Ran off road, right
2 - Ran off road, straight
3 - Ran off road, left
4 - Crossed centerline (undivided)
5 - Crossed median (divided)
6 - Evasive action (swerve, panic braking, avoidance)
7 - Downhill runaway
8 - Cargo/equipment loss or shift
9 - Equipment failure (tires, brakes, etc.)
10 - Towed portion came apart (separation of units)
11 - Loss of traction
12 - Trailer fishtailing or swaying
13 - Animal (avoided hitting)
94 - Other pre-crash (explain in narrative)

Non-collision events:
20 - Overturn/rollover
21 - Jackknife
22 - Non-contact vehicle (phantom)
23 - Vehicle went airborne
24 - Fell/jumped from vehicle
95 - Other non-collision (explain in narrative)

Collision with:
30 - Thrown or falling object
31 - Animal
32 - Non-motorist (see non-motorist section - NOT a unit)
33 - Vehicle in traffic
34 - Re-entering roadway
35 - Parked motor vehicle
36 - Work zone maintenance equipment
37 - Railway vehicle/train
38 - Struck/struck by object/cargo/person from other vehicle
96 - Other non-fixed object (explain in narrative)

Collision with fixed object:
40 - Bridge overhead structure
41 - Bridge pier or support
42 - Bridge/bridge rail parapet
43 - Curb/island/raised median
44 - Ditch
45 - Embankment
46 - Ground
47 - Culvert/pipe opening
48 - Guardrail - face
49 - Guardrail - end
50 - Concrete traffic barrier (median or right side)
51 - Other traffic barrier (explain in narrative)
52 - Cable barrier
53 - Impact attenuator/crash cushion
54 - Utility pole/light support
55 - Traffic sign support
56 - Traffic signal support
57 - Other post/pole/support (explain in narrative)
58 - Fire hydrant
59 - Mailbox
60 - Tree
61 - Landscape/shrubbery
62 - Snow bank
63 - Fence
64 - Wall
65 - Building
97 - Other fixed object (explain in narrative)

Miscellaneous events:
70 - Fire/explosion
71 - Immersion
72 - Hit and run
73 - Eluding law enforcement
74 - Gas inhalation/asphyxiation
75 - Vehicle out of gear/rolled
98 - Other (explain in narrative)
99 - Unknown

Roadway Characteristics

Contributing Circumstances, Environment

1 - None apparent
2 - Weather conditions
3 - Visual obstruction
4 - Non-motorist action
5 - Glare
6 - Animal in roadway
7 - Severe crosswind
98 - Other (explain in narrative)
99 - Unknown

Contributing Circumstances, Roadway

1 - None apparent
2 - Surface condition (e.g., wet, icy)
3 - Debris
4 - Ruts, holes, bumps
5 - Work Zone (roadway-related)
6 - Slippery, loose, or worn surface
7 - Obstruction in roadway
8 - Traffic control obscured
9 - Shoulders (none, low, soft, high)
10 - Non-highway work
11 - Traffic backup, prior crash
12 - Traffic backup, regular congestion
13 - Traffic backup, prior non-recurring incident
14 - Disabled vehicle
98 - Other (explain in narrative)
99 - Unknown

Type of Roadway Junction/Feature

Non-intersection:
1 - Non-junction/no special feature
2 - Bike lanes
3 - Railroad grade crossing
4 - Driveway access (within)
5 - Driveway access (related, not in)
6 - Alley
7 - Crossover-related
96 - Other intersection (explain in narrative

Intersection-related:
10 - Roundabout
11 - Traffic circle
12 - Four-way intersection
13 - T-intersection
14 - Y-intersection
15 - Five points or more
16 - L-intersection
17 - Shared use path or trail
18 - Intersection with ramp
97 - Other intersection (explain in narrative)

Interchange-related:
20 - On-ramp merge area
21 - Off-ramp, diverge area
22 - On-ramp
23 - Off-ramp
24 - Mainline, between ramps
98 - Other interchange (explain in narrative)

99 - Unknown

Traffic Controls

1 - No controls present
2 - Traffic signals
3 - Flashing traffic control signal
4 - Stop signs
5 - Yield signs
6 - No passing zone (marked)
7 - Warning sign
8 - School zone signs
9 - Railway crossing device
10 - Traffic director (person)
11 - Work zone sign
12 - Inoperative (not functioning properly)
13 - Traffic sign missing
98 - Other (explain in narrative)
99 - Unknown

Horizontal Alignment (curve):

1 - Straight
2 - Traversing curve to left
3 - Traversing curve to right
98 - Other (explain in narrative)
99 - Unknown

Vertical Alignment (grade):

1 - Level
2 - At crest
3 - Traversing uphill
4 - Traversing downhill
5 - At sag (bottom of hill)
98 - Other (explain in narrative)
99 - Unknown

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT CODE SHEET

Injury/Protective Devices

Injury Status

1 - Fatal
2 - Suspected serious/incapacitating
3 - Suspected minor/non-incapacitating
4 - Possible (complaint of pain/injury)
5 - Uninjured
7 - Fatal, not crash-related
9 - Unknown

Died at Scene/Enroute

1 - Not applicable
2 - Died at scene
3 - Died enroute
4 - Died at hospital
5 - Died later (w/in 30 days)
98 - Other (explain in narrative)
99 - Unknown

Source of Transport

1 - Not transported
2 - EMS air
3 - EMS ground
4 - Law enforcement
5 - Parent/spouse/friend
6 - Self
7 - To funeral home/morgue
98 - Other (explain in narrative)
99 - Unknown

Non-motorist (see non-motorist section below)

1 - Pedestrian
2 - Pedalcyclist (bicycle, tricycle, unicycle,pedal car)
3 - Pedalcycle passenger
4 - In or on building
5 - Horse and Buggy
6 - Skater, personal conveyance, wheelchair
98 - Other non-motorist (explain in narrative)
99 - Unknown

Seating Position

1	2	3	1st Row
4	5	6	2nd Row
7	8	9	3rd Row
10	11	12	4th Row
13	14	15	5th Row

16 - In 6th row or greater
17 - In enclosed passenger/cargo area
18 - In unenclosed passenger/cargo area
19 - Sleeper
20 - Trailing unit
21 - Riding on exterior of vehicle
22 - Hanging onto vehicle
23 - Passenger of motorcycle/moped/ATV
98 - Other vehicle-related (explain in narrative)
99 - Unknown

Trapped/Extricated

1 - Not trapped/applicable
2 - Extricated by non-mechanical means
3 - Extricated by mechanical means
9 - Unknown

Ejection

1 - Not applicable
2 - Not ejected
3 - Partially ejected
4 - Totally ejected
9 - Unknown

Occupant Protection

1 - Not applicable
2 - None used
3 - Shoulder and lap belt used
4 - Lap belt only used
5 - Shoulder belt only used
6 - Child safety seat (forward-facing)
7 - Child safety seat (rear-facing)
8 - Child safety seat (type unknown)
9 - Booster seat
10 - Helmet (DOT compliant)
11 - Helmet (other)
98 - Other (explain in narrative)
99 - Unknown

Airbag Deployment

1 - Not applicable
2 - Airbag turned off
3 - Not deployed
4 - Deployed front of person
5 - Deployed side of person
6 - Deployed both front/side
7 - Deployed curtain
98 - Other deployment (explain in narrative)
99 - Unknown

Ejection Path

1 - Not ejected/not applicable
2 - Through front windshield
3 - Through side window
4 - Through side door
5 - Through roof
6 - Through back window
7 - Through back door/tailgate opening
98 - Other (explain in narrative)
99 - Unknown

Non-Motorist

Location (prior to impact)

Intersection:

1 - Within marked crosswalk
2 - Within unmarked crosswalk
3 - Not within crosswalk
4 - Unknown location

Non-intersection (midblock):

5 - Within marked crosswalk
6 - Within unmarked crosswalk
7 - Not within crosswalk
8 - Unknown location

9 - Parking lane/zone
10 - Pedalcycle lane
11 - Sidewalk
12 - Driveway access
13 - Shared path or trail
14 - Shoulder/roadside
15 - Median/crossing island
16 - Non-trafficway
17 - Travel lane, other location

98 - Other (explain in narrative)
99 - Unknown

Action (prior to crash)

1 - Entering or crossing roadway
2 - Waiting to cross roadway
3 - Going to/coming from school
4 - Working in trafficway
5 - Approaching or leaving vehicle
6 - Entering/exiting vehicle
7 - Playing on or working on vehicle
8 - Disabled vehicle-related/pushing vehicle

Movement:

10 - Along roadway with traffic
11 - Along roadway against traffic
12 - Along roadway (direction unknown)
13 - On shoulder/median
14 - On sidewalk

98 - Other (explain in narrative)
99 - Unknown

Condition

1 - Apparently normal
2 - Emotional (e.g., depressed, angry)
3 - Asleep/fatigued
4 - Illness/fainted
5 - Medical condition (seizure, reaction)
6 - Under the influence of alcohol
7 - Under the influence of drugs/meds
8 - Physical impairment
9 - Walks with a cane/crutches
10 - Paraplegic/wheelchair restricted
11 - Impaired due to previous injury
12 - Hearing impaired/deaf
13 - Visually impaired/blind

98 - Other (explain in narrative)
99 - Unknown

Safety Equipment

1 - Not applicable
2 - None
3 - Helmet
4 - Reflective clothing
5 - Lighting
6 - Protective pads
7 - Multi-equipment (explain in narrative)
98 - Other (explain in narrative)
99 - Unkown

Contributing Circumstances

1 - No improper action
2 - Not visible (dark clothing)
3 - Improper crossing
4 - Darting/dashing
5 - Inattentive (talking, eating, texting)
6 - Riding/walking on wrong side of road
7 - Failure to obey traffic signs, signals, or officer
8 - Failure to yield right-of-way
9 - Failure to have lights on when required
10 - Operating without required equipment
11 - Improper riding (more riders than seats)
12 - Improper turn/merge
13 - Improper passing
14 - Passing with insufficient distance or inadequate visibility
15 - Improper/erratic lane changing
16 - Failure to remain in proper lane
17 - Operating in a reckless, erratic, careless, negligent manner
18 - Improper exit/entry from trafficway
19 - In roadway improperly (standing, sitting, lying, working, playing)
20 - Disabled vehicle-related (working on, pushing, leaving/approaching)
21 - Entering/exiting parked/standing vehicle
98 - Other (explain in narrative)
99 - Unknown

Appendix I

2001

Iowa Crash Data Format

(non-personal data)

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
CaseNumber	Case Number - Iowa DOT		4 digit year + number assigned by MVD (e.g., 2001002534)	Numeric: Integer	10	0
LECaseNum	Law Enforcement Case Number		The case number as assigned by the law enforcement agency.	Character	20	0
XCoord	X-Coordinate (UTM NAD 83 Zone 15N meters)		Easting value for crash location in UTM NAD 83 Zone 15N meters	Numeric: Decimal	11	4
YCoord	Y-Coordinate (UTM NAD 83 Zone 15N meters)		Northing value for crash location in UTM NAD 83 Zone 15N meters	Numeric: Decimal	12	4
ReportType	Report Type		Indicates the type of report insomuch as who sent it in.	Numeric: Integer	1	0
		1	1977 Officer			
		2	1977 Driver			
		3	Pre-1977 Driver			
		4	1979 Officer			
		5	1979 Driver			
		6	2001 Driver			
		7	2001 TraCS			
		8	2001 Officer			
DOTDstrct	Iowa DOT District Number		Number indicating each Iowa Department of Transportation District	Numeric: Integer	1	0
		1	District 1 (Central)			
		2	District 2 (Northeast)			
		3	District 3 (Northwest)			
		4	District 4 (Southwest)			
		5	District 5 (Southeast)			
		6	District 6 (East Central)			
ISPDstrct	ISP District Number		Number indicating each Iowa State Patrol (ISP) District area	Numeric: Integer	2	0
		1	District 1 (Des Moines) - (central)			
		2	District 2 (Osceola) - (south central)			
		3	District 3 (Council Bluffs) - (south west)			
		4	District 4 (Denison) - (west central)			
		5	(non-existent)			
		6	District 6 (Spencer) - (north west)			
		7	District 7 (Fort Dodge) - (north west central)			
		8	District 8 (Mason City) - (north north east central)			
		9	District 9 (Cedar Falls) - (norh east central)			
		10	District 10 (Oelwein) - (north east)			
		11	District 11 (Cedar Rapids) - (east central)			
		12	District 12 (Stockton) - (east east central)			
		13	District 13 (Mt. Pleasant) - (south east)			
		14	(non-existent)			
		15	(no specific area)			
		16	(no specific area)			
RPA	RPA Number		Number indicating each Regional Planning Affiliation (RPA) area	Numeric: Integer	2	0
		1	Upper Explorerland Regional Planning Commission (UERPC)			
		2	North Iowa Area Council of Governments (NIACOG)			
		3	Northwest Iowa Planning and Development Commision (NWIPDC)			
		4	Siouxland Regional Transportation Planning Association (SRTPA)			
		5	MIDAS Council of Governments (MIDAS)			
		6	Region Six Planning Commission (Region 6)			
		7	Iowa Northland Regional Transportation Authority (INRTA)			
		8	East Central Intergovernmental Association (ECIA)			
		9	Bi-State Regional Commission (BSRC)			
		10	East Central Iowa Council of Governments (ECICOG)			
		11	Central Iowa Region Transportation Planning Alliance (CIRTPA)			
		12	Region XII Council of Governments (Region XII)			
		13	Southwest Iowa Planning Council (SWIPCO)			
		14	ATURA Transportation Planning Affiliation (ATURA)			
		15	Area 15 Regional Planning Commission (Area 15)			
		16	Southeast Iowa Regional Planning Commission (SEIRPC)			
		17	Chariton Valley Transportation Planning Commission (CVTPA)			
		18	MAPA Rural Transportation Planning Affiliation (MAPA COG)			
MPO	MPO Number		Number indicating each Metropolitan Planning Organization (MPO) area	Numeric: Integer	2	0
		1	Ames Area Metropolitan Planning Organization (AAMPO)			
		2	Corridor Metropolitan Planning Organization (CMPO)			
		3	Metropolitan Area Planning Agency (MAPA)			
		4	Bi-State Regional Commission (BSRC)			
		5	Des Moines Area Metropolitan Planning Organization (DMAMPO)			
		6	Dubuque Metropolitan Area Transportation Study (DMATS)			
		7	Johnson County Council of Governments (JCCOG)			
		8	Siouxland Interstate Metropolitan Planning Council (SIMPCO)			
		9	Iowa Northland Regional Council of Governments (INRCOG)			
County	County Number		Number indicating each County	Numeric: Integer	2	0
		1	Adair			
		2	Adams			
		3	Allamakee			
		4	Appanoose			
		5	Audubon			
		6	Benton			
		7	Black Hawk			
		8	Boone			
		9	Bremer			
		10	Buchanan			
		11	Buena Vista			
		12	Butler			
		13	Calhoun			
		14	Carroll			
		15	Cass			
		16	Cedar			
		17	Cerro Gordo			
		18	Cherokee			
		19	Chickasaw			
		20	Clarke			
		21	Clay			
		22	Clayton			
		23	Clinton			
		24	Crawford			
		25	Dallas			
		26	Davis			
		27	Decatur			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		28	Delaware			
		29	Des Moines			
		30	Dickinson			
		31	Dubuque			
		32	Emmet			
		33	Fayette			
		34	Floyd			
		35	Franklin			
		36	Fremont			
		37	Greene			
		38	Grundy			
		39	Guthrie			
		40	Hamilton			
		41	Hancock			
		42	Hardin			
		43	Harrison			
		44	Henry			
		45	Howard			
		46	Humboldt			
		47	Ida			
		48	Iowa			
		49	Jackson			
		50	Jasper			
		51	Jefferson			
		52	Johnson			
		53	Jones			
		54	Keokuk			
		55	Kossuth			
		56	Lee			
		57	Linn			
		58	Louisa			
		59	Lucas			
		60	Lyon			
		61	Madison			
		62	Mahaska			
		63	Marion			
		64	Marshall			
		65	Mills			
		66	Mitchell			
		67	Monona			
		68	Monroe			
		69	Montgomery			
		70	Muscatine			
		71	O'Brien			
		72	Osceola			
		73	Page			
		74	Palo Alto			
		75	Plymouth			
		76	Pocahontas			
		77	Polk			
		78	Pottawattamie			
		79	Poweshiek			
		80	Ringgold			
		81	Sac			
		82	Scott			
		83	Shelby			
		84	Sioux			
		85	Story			
		86	Tama			
		87	Taylor			
		88	Union			
		89	Van Buren			
		90	Wapello			
		91	Warren			
		92	Washington			
		93	Wayne			
		94	Webster			
		95	Winnebago			
		96	Winneshiek			
		97	Woodbury			
		98	Worth			
		99	Wright			
CityBR	City Base Records (GIMS) Number		Number indicating each City using the Base Records (GIMS) number	Numeric: Integer	4	0
UrbanArea	FHWA Urban Area Code		Code FHWA assigns to Urban Areas, perhaps supplemented by Iowa DOT.	Numeric: Integer	4	0
		46	Council Bluffs			
		71	Des Moines			
		74	Davenport			
		148	Cedar Rapids			
		150	Waterloo			
		156	Sioux City			
		206	Dubuque			
		327	Iowa City			
		422	Ames			
		801				
		803	Atlantic			
		804	Boone			
		805	Carroll			
		806	Centerville			
		808	Charles City			
		810	Clarinda			
		811	Clear Lake			
		812	Creston			
		813	Decorah			
		814	Denison			
		815	Estherville			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		816	Fairfield			
		817	Fort Madison			
		818	Grinnell			
		819	Harlan			
		820	Independence			
		821	Indianola			
		823	Keokuk			
		824	Knoxville			
		825	Le Mars			
		826	Maquoketa			
		827	Mount Pleasant			
		828	Muscatine			
		829	Newton			
		830	Oelwein			
		831	Oskaloosa			
		832	Pella			
		833	Perry			
		834	Red Oak			
		835	Shenandoah			
		836	Spencer			
		837	Storm Lake			
		838	Washington			
		839	Waverly			
		840	Webster City			
		841	Glenwood			
		842	Nevada			
		845	Anamosa			
		846	Manchester			
		848	Sioux Center			
		849	Humboldt			
		850	Marquette			
		851	Mount Vernon - Lisbon			
		852	Orange City - Alton			
		853	Spirit Lake - Okoboji			
		854	Tama - Toledo			
		872	Burlington			
		873	Clinton			
		874	Fort Dodge			
		876	Marshalltown			
		877	Mason City			
		878	Ottumwa			
CvlTwpID	Civil Township ID Number		Number indicating each Civil Township	Numeric: Integer	4	0
TwnRngSect	Township Range Section		Character string indicating Township, Range, and Section	Character	11	0
SchDst1011	School District Boundary Name - 2010-2011		Name of School Districts from 2010-2011	Character	60	0
AEA1011	AEA Number		Number indicating Area Education Agency (AEA)	Numeric: Integer	3	0
StID1011	School District State ID Number		Number indicating School District State ID	Numeric: Integer	4	0
DNRDstrct	DNR District Number		Number indicating each Iowa Department of Natural Resources (DNR) District area	Numeric: Integer	2	0
		1	Northwest			
		2	Southwest			
		3	Central			
		4	Northeast			
		5	Southeast			
DNRWldMgm	DNR Wildlife Management Area Number		Number indicating each DNR Wildlife Management Area	Numeric: Integer	2	0
		1	Great Lakes			
		2	Prairie Lakes			
		3	Clear Lake			
		4	Black Hawk			
		5	Cedar-Wapsi			
		6	Upper Iowa			
		7	Maquoketa			
		8	Missouri River			
		9	Nishnabotna			
		10	Grand River			
		11	Saylorville			
		12	Red Rock			
		13	Iowa River			
		14	Rathbun			
		15	Sugema			
		16	Odessa			
DNRWldDepr	DNR Wildlife Depredation Program Area Number		Number indicating each DNR Wildlife Depredation Program Area	Numeric: Integer	1	0
		1	Northwest			
		2	Southwest			
		3	Central			
		4	Northeast			
		5	Southeast			
DNRFldOff	DNR Field Office Number		Number indicating each DNR Field Office	Numeric: Integer	1	0
		1	Northeast (1)			
		2	North Central (2)			
		3	Northwest (3)			
		4	Southwest (4)			
		5	South Central (5)			
		6	Southeast (6)			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
FirstHarm	First Harmful Event			Numeric: Integer	2	0
		11	Non-collision events: Overturn/rollover			
		12	Non-collision events: Jackknife			
		13	Non-collision events: Other non-collision (explain in narrative)			
		20	Collision with: Non-motorist (see non-motorist type)			
		21	Collision with: Vehicle in traffic			
		22	Collision with: Vehicle in/from other roadway			
		23	Collision with: Parked motor vehicle			
		24	Collision with: Railway vehicle/train			
		25	Collision with: Animal			
		26	Collision with: Other non-fixed object (explain in narrative)			
		30	Collision with fixed object: Bridge/bridge rail/overpass			
		31	Collision with fixed object: Underpass/structure support			
		32	Collision with fixed object: Culvert			
		33	Collision with fixed object: Ditch/embankment			
		34	Collision with fixed object: Curb/island/raised median			
		35	Collision with fixed object: Guardrail			
		36	Collision with fixed object: Concrete barrier (median or right side)			
		37	Collision with fixed object: Tree			
		38	Collision with fixed object: Poles (utility, light, etc.)			
		39	Collision with fixed object: Sign post			
		40	Collision with fixed object: Mailbox			
		41	Collision with fixed object: Impact attenuator			
			Collision with fixed object: Other fixed object (explain in narrative)			
		50	Miscellaneous events: Fire/explosion			
		51	Miscellaneous events: Immersion			
		52	Miscellaneous events: Hit and run			
		77	Not Reported			
		99	Unknown			
CrCoManner	Manner of Crash/Collision			Numeric: Integer	2	0
		1	Non-collision			
		2	Head-on			
		3	Rear-end			
		4	Angle, oncoming left turn			
		5	Broadside			
		6	Sideswipe, same direction			
		7	Sideswipe, opposite direction			
		9	Unknown			
		77	Not Reported			
MajorCause	Major Cause		Derived.	Numeric: Integer	2	0
		1	Animal			
		2	Ran Traffic Signal			
		3	Ran Stop Sign			
		4	Crossed centerline			
		5	FTYROW: At uncontrolled intersection			
		6	FTYROW: Making right turn on red signal			
		7	FTYROW: From stop sign			
		8	FTYROW: From yield sign			
		9	FTYROW: Making left turn			
		10	FTYROW: From driveway			
		11	FTYROW: From parked position			
		12	FTYROW: To pedestrian			
		13	FTYROW: Other (explain in narrative)			
		14	Traveling wrong way or on wrong side of road			
		15	Driving too fast for conditions			
		16	Exceeded authorized speed			
		17	Made improper turn			
		18	Improper Lane Change			
		19	Followed too close			
		20	Disregarded RR Signal			
		21	Disregarded Warning Sign			
		22	Operating vehicle in an erratic/reckless/careless/negligent/aggressive manner			
		23	Improper Backing			
		24	Illegally Parked/Unattended			
		25	Swerving/Evasive Action			
		26	Over correcting/over steering			
		27	Downhill runaway			
		28	Equipment failure			
		29	Separation of units			
		30	Ran off road - right			
		31	Ran off road - straight			
		32	Ran off road - left			
		33	Lost Control			
		34	Inattentive/distracted by: Passenger			
		35	Inattentive/distracted by: Use of phone or other device			
		36	Inattentive/distracted by: Fallen object			
		37	Inattentive/distracted by: Fatigued/asleep			
		38	Other (explain in narrative): Vision obstructed			
		39	Oversized Load/Vehicle			
		40	Cargo/equipment loss or shift			
		41	Other (explain in narrative): Other improper action			
		42	Unknown			
		43	Other (explain in narrative): No improper action			
		77	Not Reported			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
DrugAlcRel	Drug or Alcohol Related		Derived from Alcohol results, Drug results, and driver conditions.	Numeric: Integer	1	0
		1	Drug			
		2	Alcohol (< Statutory)			
		3	Alcohol (Statutory)			
		4	Drug/Alcohol (< Statutory)			
		5	Drug/Alcohol (Statutory)			
		6	Refused			
		7	Under Influence of Alcohol/Drugs/Medications			
		8	None Indicated			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Vehicle Unit Number		Number indicating which vehicle.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and V3UnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
SeqEvents1	Sequence of Events 1st Event			Numeric: Integer	2	0
		1	Ran off road, right			
		2	Ran off road, straight			
		3	Ran off road, left			
		4	Crossed centerline/median			
		5	Animal or object in roadway			
		6	Evasive action (swerve, panic braking, etc.)			
		7	Downhill runaway			
		8	Cargo/equipment loss or shift			
		9	Equipment failure (tires, brakes, etc.)			
		10	Separation of units			
		11	Non-collision events: Overturn/rollover			
		12	Non-collision events: Jackknife			
		13	Non-collision events: Other non-collision (explain in narrative)			
		20	Collision with: Non-motorist (see non-motorist type)			
		21	Collision with: Vehicle in traffic			
		22	Collision with: Vehicle in/from other roadway			
		23	Collision with: Parked motor vehicle			
		24	Collision with: Railway vehicle/train			
		25	Collision with: Animal			
		26	Collision with: Other non-fixed object (explain in narrative)			
		30	Collision with fixed object: Bridge/bridge rail/overpass			
		31	Collision with fixed object: Underpass/structure support			
		32	Collision with fixed object: Culvert			
		33	Collision with fixed object: Ditch/embankment			
		34	Collision with fixed object: Curb/island/raised median			
		35	Collision with fixed object: Guardrail			
		36	Collision with fixed object: Concrete barrier (median or right side)			
		37	Collision with fixed object: Tree			
		38	Collision with fixed object: Poles (utility, light, etc.)			
		39	Collision with fixed object: Sign post			
		40	Collision with fixed object: Mailbox			
		41	Collision with fixed object: Impact attenuator			
		42	Collision with fixed object: Other fixed object (explain in narrative)			
		50	Miscellaneous events: Fire/explosion			
		51	Miscellaneous events: Immersion			
		52	Miscellaneous events: Hit and run			
		77	Not reported			
		99	Unknown			
SeqEvents2	Sequence of Events 2nd Event		See SeqEvents1 values.	Numeric: Integer	2	0
SeqEvents3	Sequence of Events 3rd Event		See SeqEvents1 values.	Numeric: Integer	2	0
SeqEvents4	Sequence of Events 4th Event		See SeqEvents1 values.	Numeric: Integer	2	0
MostHarm	Most Harmful Event		See SeqEvents1 values.	Numeric: Integer	2	0
FixObjStr	Fixed Object Struck (by vehicle)		Fixed object struck by vehicle (derived).	Numeric: Integer	2	0
		1	Collision with fixed object: Bridge/bridge rail/overpass			
		2	Collision with fixed object: Underpass/structure support			
		3	Collision with fixed object: Culvert			
		4	Collision with fixed object: Ditch/embankment			
		5	Collision with fixed object: Curb/island/raised median			
		6	Collision with fixed object: Guardrail			
		7	Collision with fixed object: Concrete barrier (median or right side)			
		8	Collision with fixed object: Tree			
		9	Collision with fixed object: Poles (utility, light, etc.)			
		10	Collision with fixed object: Sign post			
		11	Collision with fixed object: Mailbox			
		12	Collision with fixed object: Impact attenuator			
		13	Collision with fixed object: Other fixed object (explain in narrative)			
		14	None (no fixed object struck)			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Commercial Vehicle Unit Number		Number indicating which commercial vehicle.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and CUnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
Axles	Number of Axles		Number of axles for the commercial vehicle.	Numeric: Integer	2	0
GVWR	Gross Vehicle Weight Rating		Gross vehicle weight rating (GVWR) for the commercial vehicle.	Numeric: Integer	6	0
Placard	Placard #		The placard number for the hazardous materials being transported.	Numeric: Integer	6	0
		777777	Not reported.			
HazMatRel	Hazardous Materials Released?		Indication of release of hazardous materials.	Character	2	0
		1	Yes			
		2	No			
		3	Not applicable			
		9	Unknown			
		77	Not reported.			
HazMat_PL	HazMat_PL		Indication of a placard.	Numeric: Integer	6	0
		7	Not reported.			
CVLPState1	License Plate State (power unit attached)		State the unit attached to the power unit is licensed in.	Character	2	0
		AL	Alabama			
		AK	Alaska			
		AZ	Arizona			
		AR	Arkansas			
		CA	California			
		CO	Colorado			
		CT	Connecticut			
		DE	Delaware			
		FL	Florida			
		GA	Georgia			
		HI	Hawaii			
		ID	Idaho			
		IL	Illinois			
		IN	Indiana			
		IA	Iowa			
		KS	Kansas			
		KY	Kentucky			
		LA	Louisiana			
		ME	Maine			
		MD	Maryland			
		MA	Massachusetts			
		MI	Michigan			
		MN	Minnesota			
		MS	Mississippi			
		MO	Missouri			
		MT	Montana			
		NE	Nebraska			
		NV	Nevada			
		NH	New Hampshire			
		NJ	New Jersey			
		NM	New Mexico			
		NY	New York			
		NC	North Carolina			
		ND	North Dakota			
		OH	Ohio			
		OK	Oklahoma			
		OR	Oregon			
		PA	Pennsylvania			
		RI	Rhode Island			
		SC	South Carolina			
		SD	South Dakota			
		TN	Tennessee			
		TX	Texas			
		UT	Utah			
		VT	Vermont			
		VA	Virginia			
		WA	Washington			
		DC	Washington DC			
		WV	West Virginia			
		WI	Wisconsin			
		WY	Wyoming			
		XX	Not reported.			
CVLPYear1	License Plate Year (power unit attached)		License year for unit attached to the power unit.	Numeric: Integer	4	0
		7777	Not reported.			
CVLPState2	License Plate State (power unit attached)		State the unit attached to a trailer unit is licensed in.	Character	2	0
			(see CVLPState1 definitions)			
CVLPYear2	License Plate Year (power unit attached)		License year for unit attached to a trailer unit.	Numeric: Integer	4	0
		7777	Not reported.			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Vehicle Unit Number		Number indicating which vehicle the driver was operating.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and D1UnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
DriverAge	Driver Age		Age of driver derived from Date of Birth and Crash Date.	Numeric: Integer	3	0
DAgeBin1	Driver Ages by primarily 5 year bins		Driver Age field divided into bins by primarily 5 year age ranges.	Numeric: Integer	2	0
		1	DriverAge < 14			
		2	DriverAge = 14			
		3	DriverAge = 15			
		4	DriverAge = 16			
		5	DriverAge = 17			
		6	DriverAge = 18			
		7	DriverAge = 19			
		8	DriverAge = 20			
		9	DriverAge >= 21 and DriverAge <= 24			
		10	DriverAge >= 25 and DriverAge <= 29			
		11	DriverAge >= 30 and DriverAge <= 34			
		12	DriverAge >= 35 and DriverAge <= 39			
		13	DriverAge >= 40 and DriverAge <= 44			
		14	DriverAge >= 45 and DriverAge <= 49			
		15	DriverAge >= 50 and DriverAge <= 54			
		16	DriverAge >= 55 and DriverAge <= 59			
		17	DriverAge >= 60 and DriverAge <= 64			
		18	DriverAge >= 65 and DriverAge <= 69			
		19	DriverAge >= 70 and DriverAge <= 74			
		20	DriverAge >= 75 and DriverAge <= 79			
		21	DriverAge >= 80 and DriverAge <= 84			
		22	DriverAge >= 85 and DriverAge <= 89			
		23	DriverAge >= 90 and DriverAge <= 94			
		24	DriverAge >= 95 and DriverAge <= 98 (actually, 98 is 98 and greater)			
		77	Not reported.			
		99	Unknown			
DriverDOB	Driver Date of Birth		Driver's date of birth in YYYYMMDD format (e.g., 19850316).	Numeric: Integer	8	0
		77777777	Not reported.			
DriverGen	Driver Gender			Character	2	0
		M	Male			
		F	Female			
		U	Unknown			
		NR	Not reported.			
Charged	Driver Charged?			Numeric: Integer	2	0
		1	Yes			
		2	No			
		3	Not applicable.			
		9	Unknown			
		77	Not reported.			
AlcTest	Alcohol Test Administered			Numeric: Integer	1	0
		1	None			
		2	Blood			
		3	Urine			
		4	Breath			
		5	Vitreous			
		9	Refused			
		77	Not reported.			
AlcResult	Alcohol Test Results		Number in decimal format (e.g., 0.10) representing Blood Alcohol Content.	Numeric: Decimal	5	3
DrugTest	Drug Test Administered			Numeric: Integer	2	0
		1	None			
		2	Blood			
		3	Urine			
		9	Refused			
		77	Not reported.			
DrugResult	Drug Test Results			Numeric: Integer	2	0
		1	Positive			
		2	Negative			
		77	Not reported.			
DriverCond	Driver Condition			Numeric: Integer	2	0
		1	Apparently normal			
		2	Physical impairment			
		3	Emotional (e.g. depressed/angry/disturbed)			
		4	Illness			
		5	Asleep/fainted/fatigued/etc.			
		6	Under the influence of alcohol/drugs/medications			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not reported.			
DContCirc1	Contributing Circumstances 1 - Driver			Numeric: Integer	2	0
		1	Ran traffic signal			
		2	Ran stop sign			
		3	Exceeded authorized speed			
		4	Driving too fast for conditions			
		5	Made improper turn			
		6	Traveling wrong way or on wrong side of road			
		7	Crossed centerline			
		8	Lost Control			
		9	Followed too close			
		10	Swerved to avoid: vehicle/object/non-motorist/or animal in roadway			
		11	Over correcting/over steering			
		12	Operating vehicle in an erratic/reckless/careless/negligent/aggressive manner			
		13	FTYROW: From stop sign			
		14	FTYROW: From yield sign			
		15	FTYROW: Making left turn			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		16	FTYROW: Making right turn on red signal			
		17	FTYROW: From driveway			
		18	FTYROW: From parked position			
		19	FTYROW: To pedestrian			
		20	FTYROW: At uncontrolled intersection			
		21	FTYROW: Other (explain in narrative)			
		22	Inattentive/distracted by: Passenger			
		23	Inattentive/distracted by: Use of phone or other device			
		24	Inattentive/distracted by: Fallen object			
		25	Inattentive/distracted by: Fatigued/asleep			
		26	Other (explain in narrative): Vision obstructed			
		27	Other (explain in narrative): Other improper action			
		28	Other (explain in narrative): No improper action			
		77	Not reported.			
		99	Unknown			
DContCirc2	Contributing Circumstances 2 - Driver		See DContCirc1 values.	Numeric: Integer	2	0
VisionObs	Vision Obscurement			Numeric: Integer	2	0
		1	Not obscured			
		2	Trees/crops			
		3	Buildings			
		4	Embankment			
		5	Sign/billboard			
		6	Hillcrest			
		7	Parked vehicles			
		8	Moving vehicles			
		9	Person/object in or on vehicle			
		10	Blinded by sun or headlights			
		11	Frosted windows/windshield			
		12	Blowing snow			
		13	Fog/smoke/dust			
		77	Not reported.			
		88	Other (explain in narrative)			
		99	Unknown			
DL_State	Driver's License State			Character	2	0
		AL	Alabama			
		AK	Alaska			
		AZ	Arizona			
		AR	Arkansas			
		CA	California			
		CO	Colorado			
		CT	Connecticut			
		DE	Delaware			
		FL	Florida			
		GA	Georgia			
		HI	Hawaii			
		ID	Idaho			
		IL	Illinois			
		IN	Indiana			
		IA	Iowa			
		KS	Kansas			
		KY	Kentucky			
		LA	Louisiana			
		ME	Maine			
		MD	Maryland			
		MA	Massachusetts			
		MI	Michigan			
		MN	Minnesota			
		MS	Mississippi			
		MO	Missouri			
		MT	Montana			
		NE	Nebraska			
		NV	Nevada			
		NH				
		NJ	New Jersey			
		NM	New Mexico			
		NY	New York			
		NC	North Carolina			
		ND	North Dakota			
		OH	Ohio			
		OK	Oklahoma			
		OR	Oregon			
		PA	Pennsylvania			
		RI	Rhode Island			
		SC	South Carolina			
		SD	South Dakota			
		TN	Tennessee			
		TX	Texas			
		UT	Utah			
		VT	Vermont			
		VA	Virginia			
		WA	Washington			
		DC	Washington DC			
		WV	West Virginia			
		WI	Wisconsin			
		WY	Wyoming			
		XX	Not reported.			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
EContCirc	Contributing Circumstances - Environment			Numeric: Integer	2	0
		1	None apparent			
		2	Weather conditions			
		3	Physical obstruction			
		4	Pedestrian action			
		5	Glare			
		6	Animal in roadway			
		7	Previous accident			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not Reported			
Weather1	Weather Conditions 1			Numeric: Integer	2	0
		1	Clear			
		2	Partly cloudy			
		3	Cloudy			
		4	Fog/smoke			
		5	Mist			
		6	Rain			
		7	Sleet/hail/freezing rain			
		8	Snow			
		9	Severe winds			
		10	Blowing sand/soil/dirt/snow			
		77	Not Reported			
		88	Other (explain in narrative)			
		99	Unknown			
Weather2	Weather Conditions 2		See Weather1 values.	Numeric: Integer	2	0
Light	Light Conditions			Numeric: Integer	2	0
		1	Daylight			
		2	Dusk			
		3	Dawn			
		4	Dark - roadway lighted			
		5	Dark - roadway not lighted			
		6	Dark - unknown roadway lighting			
		9	Unknown			
		77	Not Reported			
CSurfCond	Surface Conditions		Crashwide surface conditions.	Numeric: Integer	2	0
		1	Dry			
		2	Wet			
		3	Ice			
		4	Snow			
		5	Slush			
		6	Sand/mud/dirt/oil/gravel			
		7	Water (standing/moving)			
		8	Other (explain in narrative)			
		9	Unknown			
		77				

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Vehicle Unit Number		Number indicating which vehicle the injured person was in.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and IUnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
PersonNum	Injured Person Number		Number indicating which injured person.	Numeric: Integer	3	0
		777	Not reported.			
PersonKey	Combined Crash_Key and INumber		Crash_Key*1000+PersonNum	Numeric: Integer		0
InjStatus	Injury Status/Severity			Numeric: Integer	2	0
		1	Fatal			
		2	Incapacitating			
		3	Non-incapacitating			
		4	Possible			
		5	Uninjured			
		9	Unknown			
		77	Not reported.			
InjuredAge	Age of Injured Person		Age of injured person derived from Date of Birth and Crash Date.	Numeric: Integer	3	0
InjuredDOB	Date of Birth of Injured Person		Driver's date of birth in YYYYMMDD format (e.g., 19850316).	Numeric: Integer	8	0
		77777777	Not reported.			
InjuredGen	Gender of Injured Person			Character	2	0
		M	Male			
		F	Female			
		U	Unknown			
		NR	Not reported.			
Seating	Seating Position			Numeric: Integer	2	0
		1	Driver/Motorcycle Driver			
		2	Front Seat Middle			
		3	Front Seat Passenger Side			
		4	Rear Seat Driver Side/Motorcycle Passenger			
		5	Rear Seat Middle			
		6	Rear Seat Passenger Side			
		7	Third Seat Driver Side			
		8	Third Seat Middle			
		9	Third Seat Passenger Side			
		10	Sleeper Section			
		11	Enclosed Cargo Area			
		12	Unenclosed Cargo Area			
		13	Trailing Unit			
		14	Exterior			
		15	Pedestrian			
		16	Pedalcyclist			
		17	Pedalcyclist passenger			
		77	Not reported.			
		88	Other (explain in narrative)			
		99	Unknown			
OccProtect	Occupant Protection			Numeric: Integer	2	0
		1	None used			
		2	Shoulder and lap belt used			
		3	Lap belt only used			
		4	Shoulder belt only used			
		5	Child safety seat used			
		6	Helmet used			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not reported.			
Ejection	Ejection			Numeric: Integer	2	0
		1	Not ejected			
		2	Partially ejected			
		3	Totally ejected			
		4	Not applicable (motorcycle/bicycle/etc.)			
		9	Unknown			
		77	Not reported.			
EjectPath	Ejection Path			Numeric: Integer	2	0
		1	Not ejected/not applicable			
		2	Through front windshield			
		3	Through side window/door			
		4	Through roof			
		5	Through back window/tailgate			
		9	Unknown			
		77	Not reported.			
AirbagDep	Airbag Deployment			Numeric: Integer	2	0
		1	Deployed front of person			
		2	Deployed side of person			
		3	Deployed both front/side			
		4	Other deployment (explain in narrative)			
		5	Not deployed			
		6	Not applicable			
		9	Unknown			
		77	Not reported.			
AirbagSw	Airbag Switch Status			Numeric: Integer	2	0
		1	Switch in ON position			
		2	Switch in OFF position			
		3	No ON/OFF switch present			
		9	Unknown			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		77	Not reported.			
Trapped	Occupant Trapped?			Numeric: Integer	2	0
		1	Not trapped			
		2	Freed by non-mechanical means			
		3	Extricated by mechanical means			
		9	Unknown			
		77	Not reported.			
TransTo	Transported To:		Medical facility the injured person was transported to.	Character	20	0
TransBy	Transported By:		Medical service the injured person was transported by.	Character	20	0

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
Date	Date of Crash		Crash date in YYYYMMDD format (e.g., 20010422)	Numeric: Integer	8	0
Month	Month			Numeric: Integer	2	0
		1	January			
		2	February			
		3	March			
		4	April			
		5	May			
		6	June			
		7	July			
		8	August			
		9	September			
		10	October			
		11	November			
		12	December			
DayOfMonth	Day of Month	1-31	Valid values depend on month and year (leap year).	Numeric: Integer	2	0
Year	Year			Numeric: Integer	4	0
Day	Day of Week			Numeric: Integer	1	0
		1	Sunday			
		2	Monday			
		3	Tuesday			
		4	Wednesday			
		5	Thursday			
		6	Friday			
		7	Saturday			
Time	Time of Crash		Crash time in 24-hour format (HHMM) (e.g., 1230)	Numeric: Integer	4	0
TimeStr	Time of Crash in String Format		Crash time in 24-hour format (HH:MM) (e.g., 12:30)	String	5	0
TimeDay	Time of Day/Day of Week in Bins		Time of Day and Day of Week combined and into bin definitions	Numeric: Integer	3	0
		101	Sunday, 12 midnight to 1:59 AM			
		201	Monday, 12 midnight to 1:59 AM			
		301	Tuesday, 12 midnight to 1:59 AM			
		401	Wednesday, 12 midnight to 1:59 AM			
		501	Thursday, 12 midnight to 1:59 AM			
		601	Friday, 12 midnight to 1:59 AM			
		701	Saturday, 12 midnight to 1:59 AM			
		102	Sunday, 2:00 AM to 3:59 AM			
		202	Monday, 2:00 AM to 3:59 AM			
		302	Tuesday, 2:00 AM to 3:59 AM			
		402	Wednesday, 2:00 AM to 3:59 AM			
		502	Thursday, 2:00 AM to 3:59 AM			
		602	Friday, 2:00 AM to 3:59 AM			
		702	Saturday, 2:00 AM to 3:59 AM			
		103	Sunday, 4:00 AM to 5:59 AM			
		203	Monday, 4:00 AM to 5:59 AM			
		303	Tuesday, 4:00 AM to 5:59 AM			
		403	Wednesday, 4:00 AM to 5:59 AM			
		503	Thursday, 4:00 AM to 5:59 AM			
		603	Friday, 4:00 AM to 5:59 AM			
		703	Saturday, 4:00 AM to 5:59 AM			
		104	Sunday, 6:00 AM to 7:59 AM			
		204	Monday, 6:00 AM to 7:59 AM			
		304	Tuesday, 6:00 AM to 7:59 AM			
		404	Wednesday, 6:00 AM to 7:59 AM			
		504	Thursday, 6:00 AM to 7:59 AM			
		604	Friday, 6:00 AM to 7:59 AM			
		704	Saturday, 6:00 AM to 7:59 AM			
		105	Sunday, 8:00 AM to 9:59 AM			
		205	Monday, 8:00 AM to 9:59 AM			
		305	Tuesday, 8:00 AM to 9:59 AM			
		405	Wednesday, 8:00 AM to 9:59 AM			
		505	Thursday, 8:00 AM to 9:59 AM			
		605	Friday, 8:00 AM to 9:59 AM			
		705	Saturday, 8:00 AM to 9:59 AM			
		106	Sunday, 10:00 AM to 11:59 AM			
		206	Monday, 10:00 AM to 11:59 AM			
		306	Tuesday, 10:00 AM to 11:59 AM			
		406	Wednesday, 10:00 AM to 11:59 AM			
		506	Thursday, 10:00 AM to 11:59 AM			
		606	Friday, 10:00 AM to 11:59 AM			
		706	Saturday, 10:00 AM to 11:59 AM			
		107	Sunday, 12:00 noon to 1:59 PM			
		207	Monday, 12:00 noon to 1:59 PM			
		307	Tuesday, 12:00 noon to 1:59 PM			
		407	Wednesday, 12:00 noon to 1:59 PM			
		507	Thursday, 12:00 noon to 1:59 PM			
		607	Friday, 12:00 noon to 1:59 PM			
		707	Saturday, 12:00 noon to 1:59 PM			
		108	Sunday, 2:00 PM to 3:59 PM			
		208	Monday, 2:00 PM to 3:59 PM			
		308	Tuesday, 2:00 PM to 3:59 PM			
		408	Wednesday, 2:00 PM to 3:59 PM			
		508	Thursday, 2:00 PM to 3:59 PM			
		608	Friday, 2:00 PM to 3:59 PM			
		708	Saturday, 2:00 PM to 3:59 PM			
		109	Sunday, 4:00 PM to 5:59 PM			
		209	Monday, 4:00 PM to 5:59 PM			
		309	Tuesday, 4:00 PM to 5:59 PM			
		409	Wednesday, 4:00 PM to 5:59 PM			
		509	Thursday, 4:00 PM to 5:59 PM			
		609	Friday, 4:00 PM to 5:59 PM			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		709	Saturday, 4:00 PM to 5:59 PM			
		110	Sunday, 6:00 PM to 7:59 PM			
		210	Monday, 6:00 PM to 7:59 PM			
		310	Tuesday, 6:00 PM to 7:59 PM			
		410	Wednesday, 6:00 PM to 7:59 PM			
		510	Thursday, 6:00 PM to 7:59 PM			
		610	Friday, 6:00 PM to 7:59 PM			
		710	Saturday, 6:00 PM to 7:59 PM			
		111	Sunday, 8:00 PM to 9:59 PM			
		211	Monday, 8:00 PM to 9:59 PM			
		311	Tuesday, 8:00 PM to 9:59 PM			
		411	Wednesday, 8:00 PM to 9:59 PM			
		511	Thursday, 8:00 PM to 9:59 PM			
		611	Friday, 8:00 PM to 9:59 PM			
		711	Saturday, 8:00 PM to 9:59 PM			
		112	Sunday, 10:00 PM to 11:59 PM			
		212	Monday, 10:00 PM to 11:59 PM			
		312	Tuesday, 10:00 PM to 11:59 PM			
		412	Wednesday, 10:00 PM to 11:59 PM			
		512	Thursday, 10:00 PM to 11:59 PM			
		612	Friday, 10:00 PM to 11:59 PM			
		712	Saturday, 10:00 PM to 11:59 PM			
		113	Sunday, unknown time			
		213	Monday, unknown time			
		313	Tuesday, unknown time			
		413	Wednesday, unknown time			
		513	Thursday, unknown time			
		613	Friday, unknown time			
		713	Saturday, unknown time			
TimeBin	Time of Day in 2 hour bins.		Time of Day consolidated into 12 2-hour bins.	Numeric: Integer	2	0
		1	00:00 - 01:59 (Midnight to 1:59AM)			
		2				
		3	04:00 - 05:59 (4:00 AM to 5:59 AM)			
		4	06:00 - 07:59 (6:00 AM to 7:59 AM)			
		5	08:00 - 9:59 (8:00 AM to 9:59 AM)			
		6	10:00 - 11:59 (10:00 AM to 11:59 AM)			
		7	12:00 - 13:59 (Noon to 1:59 PM)			
		8	14:00 - 15:59 (2:00 PM to 3:59 PM)			
		9	16:00 - 17:59 (4:00 PM to 5:59 PM)			
		10	18:00 - 19:59 (6:00 PM to 7:59 PM)			
		11	20:00 - 21:59 (8:00 PM to 9:59 PM)			
		12	22:00 - 23:59 (10:00 PM to 11:59 PM)			
TimeBin1	Time of Day in 1 hour bins.		Time of Day consolidated into 24 1-hour bins.	Numeric: Integer	2	0
		1	00:00 - 00:59 (Midnight to 12:59AM)			
		2	01:00 - 01:59 (1:00 AM to 1:59 AM)			
		3	02:00 - 02:59 (2:00 AM to 2:59 AM)			
		4	03:00 - 03:59 (3:00 AM to 3:59 AM)			
		5	04:00 - 4:59 (4:00 AM to 4:59 AM)			
		6	05:00 - 05:59 (5:00 AM to 5:59 AM)			
		7	06:00 - 06:59 (6:00 AM to 6:59 AM)			
		8	07:00 - 07:59 (7:00 AM to 7:59 AM)			
		9	08:00 - 08:59 (8:00 AM to 8:59 AM)			
		10	09:00 - 09:59 (9:00 AM to 9:59 AM)			
		11	10:00 - 10:59 (10:00 AM to 10:59 AM)			
		12	11:00 - 11:59 (11:00 AM to 11:59 AM)			
		13	12:00 - 12:59 (Noon to 12:59 PM)			
		14	13:00 - 13:59 (1:00 PM to 1:59 PM)			
		15	14:00 - 14:59 (2:00 PM to 2:59 PM)			
		16	15:00 - 15:59 (3:00 PM to 3:59 PM)			
		17	16:00 - 16:59 (4:00 PM to 4:59 PM)			
		18	17:00 - 17:59 (5:00 PM to 5:59 PM)			
		19	18:00 - 18:59 (6:00 PM to 6:59 PM)			
		20	19:00 - 19:59 (7:00 PM to 7:59 PM)			
		21	20:00 - 20:59 (8:00 PM to 8:59 PM)			
		22	21:00 - 21:59 (9:00 PM to 9:59 PM)			
		23	22:00 - 22:59 (10:00 PM to 10:59 PM)			
		24	23:00 - 23:59 (11:00 PM to 11:59 PM)			
TimeBin30	Time of Day in 30 minute bins.		Time of Day consolidated into 48 30-minute bins.	Numeric: Integer	2	0
		1	00:00 - 00:59 (Midnight to 12:29AM)			
		2	00:30 - 00:59 (00:30 AM to 00:59 AM)			
		3	01:00 - 01:29 (1:00 AM to 1:29 AM)			
		4	01:30 - 01:59 (01:30 AM to 01:59 AM)			
		5	02:00 - 02:29 (2:00 AM to 2:29 AM)			
		6	02:30 - 02:59 (2:30 AM to 2:59 AM)			
		7	03:00 - 03:29 (3:00 AM to 3:29 AM)			
		8	03:30 - 03:59 (3:30 AM to 3:59 AM)			
		9	04:00 - 04:29 (4:00 AM to 4:29 AM)			
		10	04:30 - 04:59 (4:30 AM to 4:59 AM)			
		11	05:00 - 05:29 (5:00 AM to 5:29 AM)			
		12	05:30 - 05:59 (5:30 AM to 5:59 AM)			
		13	06:00 - 06:29 (6:00 AM to 6:29 AM)			
		14	06:30 - 06:59 (6:30 AM to 6:59 AM)			
		15	07:00 - 07:29 (7:00 AM to 7:29 AM)			
		16	07:30 - 07:59 (7:30 AM to 7:59 AM)			
		17	08:00 - 08:29 (8:00 AM to 8:29 AM)			
		18	08:30 - 08:59 (8:30 AM to 8:59 AM)			
		19	09:00 - 09:29 (9:00 AM to 9:29 AM)			
		20	09:30 - 09:59 (9:30 AM to 9:59 AM)			
		21	10:00 - 10:29 (10:00 AM to 10:29 AM)			
		22	10:30 - 10:59 (10:30 AM to 10:59 AM)			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		23	11:00 - 11:29 (11:00 AM to 11:29 AM)			
		24	11:30 - 11:59 (11:30 AM to 11:59 AM)			
		25	12:00 - 12:59 (Noon to 12:29 PM)			
		26	12:30 - 12:59 (12:30 PM to 12:59 PM)			
		27	13:00 - 13:29 (1:00 PM to 1:29 PM)			
		28	13:30 - 13:59 (1:30 PM to 1:59 PM)			
		29	14:00 - 14:29 (2:00 PM to 2:29 PM)			
		30	14:30 - 14:59 (2:30 PM to 2:59 PM)			
		31	15:00 - 15:29 (3:00 PM to 3:29 PM)			
		32	15:30 - 15:59 (3:30 PM to 3:59 PM)			
		33	16:00 - 16:29 (4:00 PM to 4:29 PM)			
		34	16:30 - 16:59 (4:30 PM to 4:59 PM)			
		35	17:00 - 17:29 (5:00 PM to 5:29 PM)			
		36	17:30 - 17:59 (5:30 PM to 5:59 PM)			
		37	18:00 - 18:29 (6:00 PM to 6:29 PM)			
		38	18:30 - 18:59 (6:30 PM to 6:59 PM)			
		39	19:00 - 19:29 (7:00 PM to 7:29 PM)			
		40	19:30 - 19:59 (7:30 PM to 7:59 PM)			
		41	20:00 - 20:29 (8:00 PM to 8:29 PM)			
		42	20:30 - 20:59 (8:30 PM to 8:59 PM)			
		43	21:00 - 21:29 (9:00 PM to 9:29 PM)			
		44	21:30 - 21:59 (9:30 PM to 9:59 PM)			
		45	22:00 - 22:29 (10:00 PM to 10:29 PM)			
		46	22:30 - 22:59 (10:30 PM to 10:59 PM)			
		47	23:00 - 23:29 (11:00 PM to 11:29 PM)			
		48	23:30 - 23:59 (11:30 PM to 11:59 PM)			
Lighting	Derived Light Conditions		Daylight, dawn, dusk, and darkness conditions derived from crash data and NOAA indications of sunrise and sunset.	Numeric: Integer	1	0
		1	Daylight			
		2	Darkness			
		3	Morning Twilight (dawn) (civil twilight - 30 minutes after sunrise)			
		4	Evening Twilight (dusk) (civil twilight - 30 minutes before sunset)			
		9	Unknown			
Daylight	Daylight Hours on Day of Crash		Duration of daylight on the day the crash occurred. (non-twilight hours)	Numeric: Integer	4	0
Darkness	Darkness Hours on Day of Crash		Duration of darkness on the day the crash occurred. (non-twilight hours)	Numeric: Integer	4	0
LocFstHarm	Location of First Harmful Event			Numeric: Integer	2	0
		1	On Roadway			
		2	Shoulder			
		3	Median			
		4	Roadside			
		5	Gore			
		6	Outside trafficway			
		9	Unknown			
		77	Not reported.			
RuralUrban	Rural/Urban			Character	2	0
		R	Rural			
		U	Urban			
		NR	Not reported or non-located/unlocated.			
County	County			Numeric: Integer	2	0
		1	Adair			
		2	Adams			
		3	Allamakee			
		4	Appanoose			
		5	Audubon			
		6	Benton			
		7	Black Hawk			
		8	Boone			
		9	Bremer			
		10	Buchanan			
		11	Buena Vista			
		12	Butler			
		13	Calhoun			
		14	Carroll			
		15	Cass			
		16				
		17	Cerro Gordo			
		18	Cherokee			
		19	Chickasaw			
		20	Clarke			
		21	Clay			
		22	Clayton			
		23	Clinton			
		24	Crawford			
		25	Dallas			
		26	Davis			
		27	Decatur			
		28	Delaware			
		29	Des Moines			
		30	Dickinson			
		31	Dubuque			
		32	Emmet			
		33	Fayette			
		34	Floyd			
		35	Franklin			
		36	Fremont			
		37	Greene			
		38	Grundy			
		39	Guthrie			
		40	Hamilton			
		41	Hancock			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		42	Hardin			
		43	Harrison			
		44	Henry			
		45	Howard			
		46	Humboldt			
		47	Ida			
		48	Iowa			
		49	Jackson			
		50	Jasper			
		51	Jefferson			
		52	Johnson			
		53	Jones			
		54	Keokuk			
		55	Kossuth			
		56	Lee			
		57	Linn			
		58	Louisa			
		59	Lucas			
		60	Lyon			
		61	Madison			
		62	Mahaska			
		63	Marion			
		64	Marshall			
		65	Mills			
		66	Mitchell			
		67	Monona			
		68	Monroe			
		69	Montgomery			
		70	Muscatine			
		71	O'Brien			
		72	Osceola			
		73	Page			
		74	Palo Alto			
		75	Plymouth			
		76	Pocahontas			
		77	Polk			
		78	Pottawattamie			
		79	Poweshiek			
		80	Ringgold			
		81	Sac			
		82	Scott			
		83	Shelby			
		84	Sioux			
		85	Story			
		86	Tama			
		87	Taylor			
		88	Union			
		89	Van Buren			
		90	Wapello			
		91				
		92	Washington			
		93	Wayne			
		94	Webster			
		95	Winnebago			
		96	Winneshiek			
		97	Woodbury			
		98	Worth			
		99	Wright			
City	City		Crash records city number. Unique within a county.	Numeric: Integer	2	0
CityBR	Base Records City Number		City number from Base Records.	Numeric: Integer	4	0
CityName	City Name		Text city name.	Character	25	0
UrbanArea	FHWA Urban Area Code		Code FHWA assigns to Urban Areas, perhaps supplemented by Iowa DOT.	Numeric: Integer	4	0
		46	Council Bluffs			
		71	Des Moines			
		74	Davenport			
		148	Cedar Rapids			
		150	Waterloo			
		156	Sioux City			
		206	Dubuque			
		327	Iowa City			
		422	Ames			
		801	Algona			
		803	Atlantic			
		804	Boone			
		805	Carroll			
		806	Centerville			
		808	Charles City			
		810	Clarinda			
		811	Clear Lake			
		812	Creston			
		813	Decorah			
		814	Denison			
		815	Estherville			
		816	Fairfield			
		817	Fort Madison			
		818	Grinnell			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		819	Harlan			
		820	Independence			
		821	Indianola			
		823	Keokuk			
		824	Knoxville			
		825	Le Mars			
		826	Maquoketa			
		827	Mount Pleasant			
		828	Muscatine			
		829	Newton			
		830	Oelwein			
		831	Oskaloosa			
		832	Pella			
		833	Perry			
		834	Red Oak			
		835	Shenandoah			
		836	Spencer			
		837	Storm Lake			
		838	Washington			
		839	Waverly			
		840	Webster City			
		841	Glenwood			
		842	Nevada			
		845	Anamosa			
		846	Manchester			
		848	Sioux Center			
		849	Humboldt			
		850	Marquette			
		851	Mount Vernon - Lisbon			
		852	Orange City - Alton			
		853	Spirit Lake - Okoboji			
		854	Tama - Toledo			
		872	Burlington			
		873	Clinton			
		874	Fort Dodge			
		876	Marshalltown			
		877	Mason City			
		878	Ottumwa			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
XCoord	X-Coordinate (UTM NAD 83 Zone 15)		Easting value for crash location in UTM NAD 83 Zone 15	Numeric: Decimal	11	4
YCoord	Y-Coordinate (UTM NAD 83 Zone 15)		Northing value for crash location in UTM NAD 83 Zone 15	Numeric: Decimal	12	4
ZCoord	Y-Coordinate (UTM NAD 83 Zone 15)		Altitude value for crash location in UTM NAD 83 Zone 15	Numeric: Decimal	11	4
LaneDir	Lane Direction for Divided Primary Roads		Provides lane direction for divided primary roads	Numeric: Integer	1	0
		1	NB/EB			
		2	SB/WB			
		4	Contains both strings.			
OverUnder	Overpass/Underpass Information		Indicates whether crash occurred on overpass or on underpass for grade separations.	Numeric: Integer	1	0
		1	On overpass.			
		2	On underpass.			
LitDesc	Literal Description		Literal Description as developed by Location Tool.	Character	255	0
GIMSDate	GIMS Snapshot Date		Date of roadway snapshop file used for crash point location.	Numeric: Integer	8	0
LocToolV	Location Tool Version			Character	3	0
Captured	Date of Location Assignment/Capture		Date crash point location was last assigned for crash.	Numeric: Integer	8	0

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
MSLink	MSLink Key Field for GIMS		GIMS MSLink for associating crash data with roads	Numeric: Integer	8	0

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Unit Number of Vehicle Striking (Vehicle Unit Number)		Number indicating which vehicle struck the non-motorist.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and NMUnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
PersonNum	Number of Non-Motorist		Number indicating which non-motorist.	Numeric: Integer	3	0
		777	Not reported.			
PersonKey	Combined Crash_Key and NMNumber		Crash_Key*1000+PersonNum	Numeric: Integer	13	0
NM_Type	Non-Motorist Type			Numeric: Integer	2	0
		1	Pedestrian			
		2	Pedalcyclist (bicycle/tricycle/unicycle/pedal car)			
		3	Skater			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not reported.			
NM_Loc	Non-Motorist Location			Numeric: Integer	2	0
		1	Marked crosswalk at intersection			
		2	At intersection - no crosswalk			
		3	Non-intersection crosswalk			
		4	Driveway access crosswalk			
		8	Other non-intersection (explain in narrative)			
		9	Unknown			
		77	Not reported.			
NM_Action	Non-Motorist Action			Numeric: Integer	2	0
		1	Entering or crossing roadway			
		2	Walking/running/jogging/playing/cycling			
		3	Working			
		4	Pushing vehicle			
		5	Approaching or leaving vehicle			
		6	Playing or working on vehicle			
		7	Standing			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not reported.			
NM_Cond	Non-Motorist Condition			Numeric: Integer	2	0
		1	Apparently normal			
		2	Physical impairment			
		3	Emotional (e.g. depressed/angry/disturbed)			
		4	Illness			
		5	Asleep/fainted/fatigued/etc.			
		6	Under the influence of alcohol/drugs/medications			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not reported.			
NM_Safety	Non-Motorist Safety Equipment			Numeric: Integer	2	0
		1	Helmet			
		2	Reflective clothing			
		3	Lighting			
		4	None			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not reported.			
NMContCirc	Contributing Circumstancs - Non-Motorist			Numeric: Integer	2	0
		1	Improper crossing			
		2	Darting			
		3	Lying or sitting in roadway			
		4	Failure to yield right of way			
		5	Not visible (dark clothing)			
		6	Inattentive (talking/eating/etc.)			
		7	Failure to obey traffic signs/signals/officer			
		8	Wrong side of road			
		77	Not reported.			
		88	Other (explain in narrative)			
		99	Unknown			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
System	Road System		System of road with highest functional class. (derived)	Numeric: Integer	1	0
		1	Interstate			
		2	US Route			
		3	Iowa Route			
		4	Farn to Market Route			
		5	Local Road			
		9	Construction			
Route	Route		Route of road with highest functional class then lowest route number. (derived)	Numeric: Integer	4	
SystemStr	Route in String Format with System		Route with system indication in string format. (derived)	Character	8	0
Cardinal	Cardinal Direction of Vehicles		Cardinal Direction of vehicles on primary roads. (derived)	Numeric: Integer	1	0
		1	Northbound (NB)			
		2	Eastbound (EB)			
		3	Southbound (SB)			
		4	Westbound (WB)			
		5	Both North and South			
		6	Both East and West			
		7	Ramp			
		8	No Travel Direction Consistent with Route			
		9	Unknown - Not Indicated - Unlocated			
Ramp	Mainline or Ramp		Location of crash with regard to Mainline or Ramp. (derived)	Numeric: Integer	1	0
		1	Ramp			
		2	Mainline			
CoRoadRte	County Road Route		Listing of all County Road Routes associated with crash. (derived)	Character	21	0
Literal	Derived Literal Description		Literal Description as derived from MSLinks associated with crash.	Character	254	0
Road_Class	Road Classification		Road classification of road with highest class. (derived)	Numeric: Integer	1	0
		1	Interstate			
		2	US Route			
		3	Iowa Route			
		4	Secondary Road			
		5	Municipal Road			
		6	Institutional Road			
		8	Other			
		9	Unknown			
IntClass	Intersection Class		Intersection class for intersection-related crashes. (derived)	Numeric: Integer	2	0
		1	Interstate - Interstate			
		2	Interstate - US Route			
		3	Interstate - IA Route			
		4	Interstate - Secondary			
		5	Interstate - Municipal			
		6	Interstate - Institutions			
		7	US Route - US Route			
		8	US Route - IA Route			
		9	US Route - Secondary			
		10	US Route - Municipal			
		11	US Route - Institutions			
		12	IA Route - IA Route			
		13	IA Route - Secondary			
		14	IA Route - Municipal			
		15	IA Route - Institutions			
		16	Secondary - Secondary			
		17	Secondary - Municipal			
		18	Secondary - Institutions			
		19	Municipal - Municipal			
		20	Municipal - Institutions			
		21	Institutions - Institutions			
		99	Unlocated or Unknown			
		77	Not Indicated as an Intersection			
SystemConc	Concatenated System		System of all roads associated with crash. (derived)			
RContCirc	Contributing Circumstances - Roadway			Numeric: Integer	2	0
		1	None apparent			
		2	Road surface condition			
		3	Debris			
		4	Ruts/holes/bumps			
		5	Work Zone (construction/maintenance/utility)			
		6	Worn/travel-polished surface			
		7	Obstruction in roadway			
		8	Traffic control device inoperative/missing/obscured			
		9	Shoulders (none/low/soft/high)			
		10	Non-highway work			
		11	Non-contact vehicle			
		77	Not reported.			
		99	Unknown			
RoadType	Type of Roadway Junction/Feature			Numeric: Integer	2	0
		1	Non-intersection: No special feature			
		2	Non-intersection: Bridge/overpass/underpass			
		3	Non-intersection: Railroad crossing			
		4	Non-intersection: Business drive			
		5	Non-intersection: Farm/residential drive			
		6	Non-intersection: Alley intersection			
		7	Non-intersection: Crossover in median			
		8	Non-intersection: Other non-intersection (explain in narrative)			
		11	Intersection: Four-way intersection			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		12	Intersection: T - intersection			
		13	Intersection: Y - intersection			
		14	Intersection: Five-leg or more			
		15	Intersection: Offset four-way intersection			
		16	Intersection: Intersection with ramp			
		17	Intersection: On-ramp merge area			
		18	Intersection: Off-ramp diverge area			
		19	Intersection: On-ramp			
		20	Intersection: Off-ramp			
		21	Intersection: With bike/pedestrian path			
		22	Intersection: Other intersection (explain in narrative)			
		77	Not reported.			
		99	Unknown			
Paved	Paved or not		Indicates whether crash occurred on a paved road or not. (derived)	Numeric: Integer	1	0
		1	Paved			
		2	Unpaved			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Vehicle Unit Number		Number indicating which vehicle.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and RUnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
SpeedLimit	Speed Limit			Numeric: Integer	2	0
		0	0 MPH			
		5	5 MPH			
		10	10 MPH			
		15	15 MPH			
		20	20 MPH			
		25	25 MPH			
		30	30 MPH			
		35	35 MPH			
		40	40 MPH			
		45	45 MPH			
		50	50 MPH			
		55	55 MPH			
		60	60 MPH			
		65	65 MPH			
TrafCont	Traffic Controls			Numeric: Integer	2	0
		1	No controls present			
		2	Traffic signals			
		3	Flashing traffic control signal			
		4	Stop signs			
		5	Yield signs			
		6	No Passing Zone (marked)			
		7	Warning sign			
		8	School zone signs			
		9	Railway crossing device			
		10	Traffic director			
		11	Workzone signs			
		77	Not reported.			
		88	Other control (explain in narrative)			
		99	Unknown			

Field Name	Field Description	Values		Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
CSeverity	Crash Severity			Numeric: Integer	1	0
		1	Fatal			
		2	Major Injury			
		3	Minor Injury			
		4	Possible/Unknown			
		5	Property Damage Only			
Fatalities	Number of Fatalities		Crashwide total of all fatalities.	Numeric: Integer	3	0
Injuries	Number of Injuries		Crashwide total of all injuries, excluding fatalities.	Numeric: Integer	3	0
MajInjury	Number of Major Injuries		Crashwide total of all major injuries.	Numeric: Integer	3	0
MinInjury	Number of Minor Injuries		Crashwide total of all minor injuries.	Numeric: Integer	3	0
PossInjury	Number of Possible Injuries		Crashwide total of all possible injuries.	Numeric: Integer	3	0
UnkInjury	Number of Unknown Injuries		Crashwide total of all unknown injuries.	Numeric: Integer	3	0
PropDmg	Amount of Property Damage		Crashwide total of property damage, including non-vehicular.	Numeric: Integer	9	0
Vehicles	Number of Vehicles		Number of vehicles involved in the crash.	Numeric: Integer	2	0
TOccupants	Total Number of Occupants		Crashwide total of occupants in all vehicles.	Numeric: Integer	3	0

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Vehicle Unit Number		Number indicating which vehicle the injured person was in.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and IUnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
PersonNum	Injured Person Number		Number indicating which injured person.	Numeric: Integer	3	0
		777	Not reported.			
PersonKey	Combined Crash_Key and INumber		Crash_Key*1000+PersonNum	Numeric: Integer	13	0
InjStatus	Injury Status/Severity			Numeric: Integer	2	0
		1	Fatal			
		2	Incapacitating			
		3	Non-incapacitating			
		4	Possible			
		5	Uninjured			
		9	Unknown			
		77	Not reported.			
InjuredAge	Age of Injured Person		Age of injured person derived from Date of Birth and Crash Date.	Numeric: Integer	3	0
InjuredDOB	Date of Birth of Injured Person		Driver's date of birth in YYYYMMDD format (e.g., 19850316).	Numeric: Integer	8	0
		77777777	Not reported.			
InjuredGen	Gender of Injured Person			Character	2	0
		M	Male			
		F	Female			
		U	Unknown			
		NR	Not reported.			
Seating	Seating Position			Numeric: Integer	2	0
		1	Driver/Motorcycle Driver			
		2	Front Seat Middle			
		3	Front Seat Passenger Side			
		4	Rear Seat Driver Side/Motorcycle Passenger			
		5	Rear Seat Middle			
		6	Rear Seat Passenger Side			
		7	Third Seat Driver Side			
		8	Third Seat Middle			
		9	Third Seat Passenger Side			
		10				
		11	Enclosed Cargo Area			
		12	Unenclosed Cargo Area			
		13	Trailing Unit			
		14	Exterior			
		15	Pedestrian			
		16	Pedalcyclist			
		17	Pedalcyclist passenger			
		77	Not reported.			
		88	Other (explain in narrative)			
		99	Unknown			
OccProtect	Occupant Protection			Numeric: Integer	2	0
		1	None used			
		2	Shoulder and lap belt used			
		3	Lap belt only used			
		4	Shoulder belt only used			
		5	Child safety seat used			
		6	Helmet used			
		8	Other (explain in narrative)			
		9	Unknown			
		77	Not reported.			
Ejection	Ejection			Numeric: Integer	2	0
		1	Not ejected			
		2	Partially ejected			
		3	Totally ejected			
		4	Not applicable (motorcycle/bicycle/etc.)			
		9	Unknown			
		77	Not reported.			
EjectPath	Ejection Path			Numeric: Integer	2	0
		1	Not ejected/not applicable			
		2	Through front windshield			
		3	Through side window/door			
		4	Through roof			
		5	Through back window/tailgate			
		9	Unknown			
		77	Not reported.			
AirbagDep	Airbag Deployment			Numeric: Integer	2	0
		1	Deployed front of person			
		2	Deployed side of person			
		3	Deployed both front/side			
		4	Other deployment (explain in narrative)			
		5	Not deployed			
		6	Not applicable			
		9	Unknown			
		77	Not reported.			
AirbagSw	Airbag Switch Status			Numeric: Integer	2	0
		1	Switch in ON position			
		2	Switch in OFF position			
		3	No ON/OFF switch present			
		9	Unknown			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		77	Not reported.			
Trapped	Occupant Trapped?			Numeric: Integer	2	0
		1	Not trapped			
		2	Freed by non-mechanical means			
		3	Extricated by mechanical means			
		9	Unknown			
		77	Not reported.			
TransTo	Transported To:		Medical facility the injured person was transported to.	Character	20	0
TransBy	Transported By:		Medical service the injured person was transported by.	Character	20	0

Field Name	Field Description		Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Vehicle Unit Number		Number indicating which vehicle the driver was operating.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and V1UnitNum		Crash_Key*1000+UnitNum	Numeric: Integer	13	0
VConfig	Vehicle Configuration			Numeric: Integer	2	0
		1	Passenger car			
		2	Four-tire light truck (pick-up/panel)			
		3	Van or mini-van			
		4	Sport utility vehicle			
		5	Single-unit truck (2-axle/6-tire)			
		6	Single-unit truck (>= 3 axles)			
		7	Truck/trailer			
		8	Truck tractor (bobtail)			
		9	Tractor/semi-trailer			
		10	Tractor/doubles			
		11	Tractor/triples			
		12	Other heavy truck (cannot classify)			
		13	Motor home/recreational vehicle			
		14	Motorcycle			
		15	Moped/All-Terrain Vehicle			
		16	School bus (seats > 15)			
		17	Small school bus (seats 9-15)			
		18	Other bus (seats > 15)			
		19	Other small bus (seats 9-15)			
		20	Farm vehicle/equipment			
		21	Maintenance/construction vehicle			
		22	Train			
		23	Other (explain in narrative)			
		77	Not reported.			
		99	Unknown			
VYear	Vehicle Year		Vehicle year in YYYY format.	Numeric: Integer	4	0
		7777	Not reported.			
Make	Vehicle Make		(currently undefined)	Character	4	0
Model	Vehicle Model		(currently undefined)	Character	12	0
Style	Vehicle Style		(currently undefined)	Character	12	0
EmerVeh	Emergency Vehicle Type			Numeric: Integer	2	0
		1	Not applicable			
		2	Police			
		3	Fire			
		4	Ambulance			
		5	Towing			
		6	Military			
		7	Maintenance			
		9	Unknown			
		77	Not reported.			
EmerStatus	Emergency Status			Numeric: Integer	2	0
		1	Yes - in emergency			
		2	No - not in emergency			
		3	Not applicable			
		9	Unknown			
		77	Not reported.			
Occupants	Total Occupants		Occupants in vehicle.	Numeric: Integer	2	0
		777	Not reported.			
CargoBody	Cargo Body Type			Numeric: Integer	2	0
		1	Not applicable			
		2	Truck Cargo Type: Van/enclosed box			
		3	Truck Cargo Type: Dump truck (grain/gravel)			
		4	Truck Cargo Type: Cargo tank			
		5	Truck Cargo Type: Flatbed			
		6	Truck Cargo Type: Concrete mixer			
		7	Truck Cargo Type: Auto transporter			
		8	Truck Cargo Type: Garbage/refuse			
		9	Truck Cargo Type: Other truck cargo type (explain in narrative)			
		10	Trailer type: Small utility (one axle)			
		11	Trailer type: Large utility (2+ axles)			
		12	Trailer type: Boat			
		13	Trailer type: Camper			
		14	Trailer type: Large mobile home			
		15	Trailer type: Oversize load			
		16	Trailer type: Towed vehicle			
		17	Trailer type: Pole			
		18	Trailer type: Other trailer type (explain in narrative)			
		77	Not reported.			
		99	Unknown			
Defect	Vehicle Defect			Numeric: Integer	2	0
		1	None			
		2	Brakes			
		3	Steering			
		4	Blowout			
		5	Other tire defect (explain in narrative)			
		6	Wipers			
		7	Trailer hitch			
		8	Exhaust			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		9	Headlights			
		10	Tail lights			
		11	Turn signal			
		12	Suspension			
		77	Not reported.			
		88	Other (explain in narrative)			
		99	Unknown			
InitDir	Initial Direction of Travel			Numeric: Integer	2	0
		1	North			
		2	East			
		3	South			
		4	West			
		9	Unknown			
		77	Not reported.			
VAction	Vehicle Action			Numeric: Integer	2	0
		1	Movement essentially straight			
		2	Turning left			
		3	Turning right			
		4	Making U-turn			
			Overtaking/passing			
		6	Changing lanes			
		7	Entering traffic lane (merging)			
		8	Leaving traffic lane			
		9	Backing			
		10	Slowing/stopping			
		11	Stopped for stop sign/signal			
		12	Legally Parked			
		13	Illegally Parked/Unattended			
		88	Other (explain in narrative)			
		77	Not reported.			
		99	Unknown			
VLP_State	License Plate State			Character	2	0
		AL	Alabama			
		AK	Alaska			
		AZ	Arizona			
		AR	Arkansas			
		CA	California			
		CO	Colorado			
		CT	Connecticut			
		DE	Delaware			
		FL	Florida			
		GA	Georgia			
		HI	Hawaii			
		ID	Idaho			
		IL	Illinois			
		IN	Indiana			
		IA	Iowa			
		KS	Kansas			
		KY	Kentucky			
		LA	Louisiana			
		ME	Maine			
		MD	Maryland			
		MA	Massachusetts			
		MI	Michigan			
		MN	Minnesota			
		MS	Mississippi			
		MO	Missouri			
		MT	Montana			
		NE	Nebraska			
		NV	Nevada			
		NH	New Hampshire			
		NJ	New Jersey			
		NM	New Mexico			
		NY	New York			
		NC	North Carolina			
		ND	North Dakota			
		OH	Ohio			
		OK	Oklahoma			
		OR	Oregon			
		PA	Pennsylvania			
		RI	Rhode Island			
		SC	South Carolina			
		SD	South Dakota			
		TN	Tennessee			
		TX	Texas			
		UT	Utah			
		VT	Vermont			
		VA	Virginia			
		WA	Washington			
		DC	Washington DC			
		WV	West Virginia			
		WI	Wisconsin			
		WY	Wyoming			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
		XX	Not reported.			
VLP_Year	License Plate Year		License plate year in YYYY format.	Numeric: Integer	4	0
		7777	Not reported.			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
UnitNum	Vehicle Unit Number		Number indicating which vehicle the driver was operating.	Numeric: Integer	3	0
		777	Not reported.			
UnitKey	Combined Crash_Key and V2UnitNum		Crash_Key*1000+UnitNum		13	0
InitImpact	Point of Initial Impact			Numeric: Integer	2	0
		1	Front			
		2	Passenger side - front			
		3	Passenger side - middle			
		4	Passenger side - rear			
		5	Rear			
		6	Driver side - rear			
		7	Driver side - middle			
		8	Driver side - front			
		9	Top			
		10	Under-Carriage			
		77	Not reported.			
		99	Unknown			
MostDamage	Most Damaged Area			Numeric: Integer	2	0
		1	Front			
		2	Passenger side - front			
		3	Passenger side - middle			
		4	Passenger side - rear			
		5	Rear			
		6	Driver side - rear			
		7	Driver side - middle			
		8	Driver side - front			
		9	Top			
		10	Under-Carriage			
		77	Not reported.			
		99	Unknown			
Damage	Extent of Damage			Numeric: Integer	2	0
		1	None			
		2	Minor damage			
		3	Functional damage			
		4	Disabling damage			
		5	Severe - vehicle totaled			
		9	Unknown			
		77	Not reported.			
UnderOver	Underride/Override			Numeric: Integer	2	0
		1	None			
		2	Underride - compartment intrusion			
		3	Underride - no compartment intrusion			
		4	Underride - compartment intrusion unknown			
		5	Override - moving vehicle			
		6	Override - parked/stationary vehicle			
		9	Unknown			
		77	Not reported.			
RepairCost	Approximate Cost to Repair or Replace		Estimated dollar value of repairs to vehicle.	Numeric: Integer	9	0
Towed	Was vehicle towed?		Indicates whether vehicle was towed or not (2007 and after)	Numeric: Integer	1	0
		1	Yes			
		2	No			

Field Name	Field Description	Values	Values Descriptions	Field Type	Field Width	Field Precision
Crash_Key	Crash Key - SAVER Internal Unique Identifier		4 digit year + arbitrarily assigned unique number (e.g., 2001000025)	Numeric: Integer	10	0
WZ_Related	Workzone Related?			Character	1	0
		1	Yes			
		2	No			
WZ_Loc	Location			Numeric: Integer	2	0
		1	Before work zone warning sign			
		2	Between advance warning sign and work area			
			Within transition area for lane shift			
		4	Within or adjacent to work activity			
		5	Between end of work area and End Work Zone sign			
		8	Other work zone area (explain in narrative)			
		9	Unknown			
		77	Not reported.			
WZ_Type	Type			Numeric: Integer	2	0
		1	Lane closure			
		2	Lane shift/crossover (head-to-head traffic)			
		3	Work on shoulder or median			
		4	Intermittent or moving work			
		8	Other type of work zone (explain in narrative)			
		9	Unknown			
		77	Not reported.			
Workers	Workers Present?			Numeric: Integer	2	0
		1	Yes			
		2	No			
		9	Unknown			
		77	Not reported.			

Appendix J

Data –

Current & Future

Desired Data for the Web-based Safety Analysis, Visualization, and Exploration Resource (Web-SAVER)

				Phase	Timeframe
1	Crash				
		Non-personal			6 months
		Personal - internal DOT/authorized personnel only		3	
2	Roadway				
		LRS Transport Links/Nodes w/ TAS IDs		1	1 year
		GIMS tables per safety views		1	1 year
			Road		
			Road Information		
			Road Inventory		
			Direction Lane		
			Shoulders		
			Surface		
			Traffic		
			Curve		
			Grade		
			Duplicate Route		
			Highway Performance Measuring System (HPMS)		
		Intersections		2	
		Interchanges		2	
		Segmentation		2	
		Curves		2	
		Bridges/Structures		2	
		Rail Lines/Crossings		2	
		Scenic Byways		2	
		Bike Trails/Recreational Trails		2	
3	Driver			2	
		Base Demographics			
			Age		
			Gender		
			Height		
			Weight		
			City		
			County		
		Licensing			
			Class		
			Endorsements		
			Restrictions		
		History			
			Convictions		
			Suspensions		
4	Vehicle			2	
		Vehicle Description			
			Year		
			Make		
			Model		
			Style		
			Cylinders		
			Fuel		
			Weight		
			GVWR		
			Color		
		Registration Information			
			County		
			Plate Type		
			Designation		
		History (CarFax-ish)			
			Crash History		
			Cumulative Damage		

5	Injury Surveillance System (ISS)/Emergency Medical Services (EMS)				3	
6	Citation/Adjudication				3	
7	Pre-processed Data Layers				2	
		SICL			2	
			Intersection			
			Segment			
			Interchange			
			Curve			
		Frequencies, Densities, Rates			2	
			Intersection			
			Segment			
			Interchange			
			Curve			
		Summariezed Data			2	
			City			
			County			
			Additional			
8	Background					
		Polygonal Boundaries				
			Counties		1	6 months
			Corporate Limits		1	6 months
			Iowa DOT			
				Districts	1	6 months
				Planning Areas		
			Iowa State Patrol (ISP) Districts		1	6 months
			Iowa DNR			
				Districts	1	1 year
				Wildlife Management Areas	1	1 year
				Wildlife Depredation Areas	1	1 year
			Metropolitan Planning Organization (MPO) Boundaries		2	
			Regional Planning Affiliation (RPA) Boundaries		2	
			Survey Townships (Township, Range, Section)		3	
			Congressional Townships		3	
			Schools			
				Zones	3	
				Districts	1	
				Area Education Agencies (AEAs)	1	6 months
		Linear Features				
			LRS Transport Links/Nodes w/ TAS IDs		1	6 months
			GIMS tables per safety views		1	6 months
			Intersections		1	1 year
			Interchanges		1	1 year
			Segmentation		1	1 year
			Curves		1	1 year
			Pavement Management		2	
			Bridges/Structures		1	1 year
			Rail Lines/Crossings		1	1 year
			Scenic Byways		1	1 year
			Bike Trails/Recreational Trails		1	1 year
			Projects		2	
				Past		
				Current		
				Future		

Appendix K

Iowa DOT GIS Policy – 300.21

Iowa Department of Transportation
Policies and Procedures Manual

Title		Policy No.
GIS/Geographic Information System		**300.21**
Responsible Office	Related Policies and Procedures	
Performance and Technology Division	030.01, 030.11	
Effective/Revision Dates	Approval(s)	
9-24-2013	*John R. Selmer*	

Authority: Director of the Performance & Technology Division.

Contents: This policy establishes responsibilities, procedures, and guidance for the development and use of GIS hardware, software, systems and applications.

Affected Offices: All

Who to Contact for Policy Questions: Spatial Manager in the Performance & Technology Division; telephone 515-239-1949.

Definitions:

Business Date – Effective start date of the business data.

Enterprise Spatial Portfolio – A catalog of spatial data, approved software, approved technologies and accessible data.

Geospatial Steering Committee –A committee comprised of division directors or designees responsible to govern the use of geospatial technologies by leveraging existing and future capibilities and developing/implementing geospatial initatives.

Geospatial Web Services (GWS) – Software used to help users find, access, and manipulate data on the web from a distributed network. GWS are designed to collect data once and update or edit it in real time.

GIS/Geographic Information System – A collection of computer software, hardware, data and personnel used to manipulate, analyze and present information tied to a spatial location.

IPSC/Information Processing Steering Committee – A committee comprised of division directors or designees.

LDP/Low Distortion Projection – A mapping method used to minimize distance error.

LRM/Linear Referencing Method - A method for locating a feature along a linear network by referencing it to a known point. (Coordinate Route, Reference Post, Mile point, Literal Description, Stationing, Address Ranges, etc.).

LRS/Linear Referencing System – A system of procedures for determining and retaining a set of locations along linear features. The system includes linear referencing method(s), procedures

and workflows for storing, maintaining, and retrieving location information about the linear network.

Major GIS Initiatives – Updates or new systems that require more than 1000 hours or $100,000 to complete.

Minor GIS Initiatives - Updates or new systems that require less than 1000 hours to complete.

Spatial Data - Location or position graphically represented as points, lines, polygons, routes and raster images. Spatial data is usually stored as coordinates and topology that can be mapped and is often accessed, manipulated or analyzed through Geographic Information Systems (GIS).

Forms: None.

Policy and Procedure:

I. Policy

The Department shall incorporate spatial data into Department business practices, databases and enterprise systems in a manner that will allow integration and information sharing among staff and customers of the Department.

The projections, coordinate systems and linear referencing methods listed below shall be used to the fullest extent possible. In all cases, metadata shall fully define the native coordinate system, projection, geodetic datum, accuracy estimates on survey positions, and/or linear referencing methods used**.**

A. Geospatial Data Collection and Creation

1. Projections/coordinate systems used by the Department:

    a. Iowa LRS Lambert Conformal Conic (LCC)

    b. State Plane Coordinate System Iowa North

    c. State Plane Coordinate System Iowa South

    d. Low Distortion Projection (LDP)

    e. WGS 1984 Web Mercator

    f. Universal Transverse Mercator 14 & 15

    g. Latitude & Longitude

2. Linear referencing methods used by the Department

    a. Coordinate route

    b. Reference Post

c. Mile Point

d. Literal Description

e. Datum Reference

f. Stationing

B. Data Storage and Maintenance

1. The Department's enterprise spatial data shall be stored and maintained in approved enterprise spatial database(s), or have a means to link business data to existing spatial location through direct database connections or geospatial web services.

2. GIS software used by the Department to view or edit spatial data shall be capable of making direct connections to enterprise spatial database(s) or comply with Department approved geospatial web services.

3. All spatial data not defined as confidential by Department policy is intended to be shared through the Department's geospatial web services and available to Department employees through direct database connections.

4. Spatial data related to the road network, shall store a business date plus a datum reference and/or a properly formatted LRM.

C. GIS System Development.

The director of the office requesting GIS system development shall coordinate activities with the Performance & Technology Division to ensure new or modified software, systems or technology initiatives enhance the Department's GIS information processing systems. Initiatives will be developed and processed in accordance with this policy and Policy No. 030.01, *Information Processing Procedures* as follows:

1. Major GIS initiatives or modifications shall be developed in coordination with the following groups:

   a. IPSC

   b. Performance & Technology Division

   c. The Department's GIS Steering Committee

   d. Information Technology Division

2. Minor GIS initiatives or modifications shall be developed in coordination with the following groups:

   a. Performance & Technology Division

   b. Information Technology Division

D. Roles and Responsibilities.

1. IPSC will be responsible for establishing information processing standards and providing strategic guidance for IT activities, in accordance with Policy No. 030.01, *Information Processing Procedures*.

2. GIS Steering Committee shall:

   a. Coordinate, develop, and maintain strategic geospatial goals, standards, and investments among divisions and offices.

   b. Ensure GIS initiatives align with the Department's strategic plan.

3. Performance & Technology Division shall:

   a. Provide coordination of the GIS framework layers and other Department-wide GIS systems, and software.

   b. Chair the Department's Geospatial Steering Committee.

   c. Maintain GIS standards; and in conjunction with the GIS Steering Committee, develop and maintin the Department's GIS's strategic direction.

   d. Manage geospatial web services.

   e. Provide support and assistance in developing minor & major GIS initiatives.

   f. Review all new spatial database, software, remote sensing, mobile spatial data collection and spatial web service technologies requests and advise the IPSC concerning whether the request meets the Department's spatial standards.

   g. Manage spatial self-service tools that leverage spatial web services.

   h. Create and maintain an enterprise spatial portfolio that documents enterprise spatial data, systems,software and technology.

4. Information Technology Division shall:

   a. Develop, support and maintain spatial applications and systems.

   b. Coordinate with GIS staff and consultants in the development of spatial automation needs.

   c. Maintain the infrastructure required for the geospatial framework.

   d. Work with the Performance & Technology Division to plan future GIS framework needs, including capacity planning and functionality enhancements for increased usage.

5. Data Custodian – Every division with geospatial data shall:

a. Collect, maintain and manage spatial data in accordance with Department GIS standards, policy and governance.

b. Perform quality assurance and quality control reviews of their spatial data.

c. Make spatial data available and useable via the Department's spatial infrastructure.

d. Actively pursue collaborative spatial data sharing across the Department.

II. Goals

The following underlying principles should be used to guide the on-going development and maintenance of GIS policy:

A. Alignment.

1. GIS efforts align with the Department's strategic initiatives.

2. GIS is used to support Department performance measures

B. Spatial Data Management.

1. Data custodians have full control over their spatial data.

2. Spatial (GIS) objects are imbedded into enterprise databases.

C. Accessibility.

1. GIS data is available for on-demand mapping.

2. GIS data not defined as confidential is available to all users.

3. GIS data and functionality are available to field staff.

4. GIS data is available as a web service to Department customers.

D. Integration.

1. GIS infrastructure is integrated with IT infrastructure

2. GIS standards are aligned with IT standards.

3. All GIS-enabled enterprise applications have seamless GIS functionality.

4. Geospatial web services support open source GIS standards

Any exceptions to this policy must be approved by the Director of the Performance and Technology Division.

Appendix L

Information Technology Division
Standards and Procedures

Information Technology Division
Standards and Procedures

Procedure Number: IT00.201

Section: HWY, OPFIN, PPM, MTR, ENT

Title: Information Processing Software Development Procedures

Effective Date: 10/1/2008

Revision Date: 10/1/2008

Contact: Debra Shafer, Paul Varnum, and Hale Strasser, Support Team Managers
Barb Espeland, Enterprise Services Manager

Approval: Steve Gast, IT Division Director

Description:
This policy describes the procedures for the Software Development Life Cycle

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Definitions:

Application – Computer software written by DOT IT Staff or outside contractors, which is maintained by DOT IT Staff.

Application and Program Development - The business requirements gathering, designing, coding, testing, implementing, and deploying of Information Processing applications and programs through either new application development or enhancement of an existing application.

Application Developer – A Development Support Team member tasked with creating or modifying an application.

Application Owner – The manager of the Office(s) responsible for the data (also known as the Custodian), whether in an automated or manual state.

Application Support Team Manager – The person in charge of managing an application Development Support Team.

Confidential Data – All data deemed confidential by the data owner or by state or federal regulations. Examples of confidential data include: passwords, SSN, home phone/address, credit card number and security code, bank account number, bank routing number, employee wage garnishments, employee disciplinary actions, and driving violations.

Development Service Request (DSR) – A DOT developed application which is used to create a formal request for work to be completed by a Development Support Team. This electronic document must be submitted to request work to be done before any application development or enhancement work begins.

Development Support Team – Composed of IT Division staff members who are assigned to a Division of the DOT with the task of Application and Program Development.

Enterprise Services – An office within the IT Division composed of staff who are responsible for the DOT's infrastructure, which is made up of the following components: network, security, server, database, mainframe, data center operations and telecommunications.

High Risk – An application that handles confidential data or resides outside of the DOT internal network.

Program Inventory – A DOT developed tool used to inventory application and program source code.

Service Request - A DOT developed application which is used to create a formal request for work to be completed by Enterprise Services. This electronic document must be submitted to request work to be done before any infrastructure or communications work begins.

Software Development Life Cycle – A conceptual model that describes the stages involved in developing and maintaining Applications.

Source Code Repository – A software product that manages a secure area where large amounts of program source code are kept. This product is used to standardize the process of storing code and handles version control.

System Access – A DOT developed tool used to control access to applications.

Team Leader – A Development Support Team Member who oversees a specific business area, assigns work to others and oversees their work.

Time Management – A DOT developed application used to track time spent on IT projects.

Forms:

Procedure:

I. General

A. To ensure that DOT Application and Program Development meets quality guidelines and that the software maintenance is carried out in an acceptable manner, all application development shall follow a Software Development Life Cycle standard.

B. A Division hiring a consultant to perform application development work for the DOT shall ensure that the requirements stated in this procedure are followed by the consultants and by the Division.

C. This procedure establishes the minimum mandatory steps for the DOT Software Development Life Cycle.

II. Software Development Life Cycle Steps:

A. Request and Design:

1. The using office identifies a need for new/enhanced software and consults with the Application Owner. If appropriate, the Application Owner submits a Development Service Request (DSR), which is routed to the appropriate Divisions for approval, preliminary estimate, and prioritization. See P&P 030.01.

2. The DSR is then routed to the Development Support Team for assignment to a Team Leader or an Application Developer.

3. The Team Leader or Application Developer negotiates a scope of work for the DSR with the Application Owner. The scope of work is communicated to the requestor for approval.

4. The Team Leader or Application Developer may need to meet with Enterprise Services staff to determine the infrastructure architecture required to support the application. This will include elements related to the location of the application and database servers (i.e. on the DOT Internal Network, Demilitarization Zone (DMZ), or outside the DOT network), use of VPN, server configuration, database configuration and capacity, and on-going operation and support requirements. If it is determined that infrastucture or communications work needs to be completed, the Application Support Team Manager or Team Leader will create a Service Request summarizing the tasks needing completed.

5. The Application Developer creates a detailed estimate from the scope of work.

6. If the detailed estimate for the DSR is significantly larger (> 125%) than the preliminary estimate, then the Application Developer creates a work order for the DSR authorizing the additional expenditure of time. This work order is routed back to the Application Owner or their Division designee for approval.

B. Development:

1. After the scope of work has been negotiated and the detailed estimate has been prepared and approved, work begins on the development or enhancements requested in

the DSR.

2. As the DSR is being worked on, new programs generated by the DSR shall be added to the DOT Program Inventory system.

3. As the DSR is being worked on, if work is discovered that is significantly outside of the DSR's scope of work, a DSR work order should be created to extend the scope to include the new work. The work order is initiated by the Team Leader or Application Developer and is routed to the Application Owner or Division designee for approval.

4. Status reports will be given to the Divisions supported by each of the Development Support teams on a regular basis.

5. Applications which transmit confidential data outside of the DOT Internal Network must encrypt the data during transmission using a DOT approved encryption method.

6. The application changes shall be tested by Development Support Team staff, Application Owner and/or using offices. Once the changes have been approved by the Application Owner, the application changes are moved into the Source Code Repository and production environment by the Team Leader or designee.

7. New high risk applications must go through a detailed security review with Enterprise Services Security personnel. Any exceptions to security standards will be documented and approved by IT Management.

8. External web-based applications shall be tested with the current DOT approved security tool.

C. Implementation:

1. Access to all new applications shall be maintained through System Access.

2. As programs are implemented, the source code for those programs shall be checked into the source code repository. If, for any reason changes must be backed out of the production environment, those changes should also be backed out of the source code repository.

3. Each Application Development Support Team shall maintain a detailed Change Control process. The change control process documents the actual steps involved to move an application to the production environment.

4. The Application Owner shall give verbal approval to close the DSR once the work has been completed and all programs have been implemented in compliance with the DSR. Upon receiving approval to close the DSR, the Application Developer will close the project in Time Management and approve the DSR.

5. The DSR is routed to the Application Support Team Manager for approval.

6. The DSR is then routed back to the originating office for User Acceptance.