

Missouri State Highway Patrol

MISSOURI CRASH ANALYSIS REPORTING SYSTEM

2024 MUCR Web Service Specifications

*Auto-Entry Data Provisioning Instructions for
2024 Missouri Uniform Crash Report*

Version 1.9

January 1, 2024

TABLE OF CONTENTS

1.0	OVERVIEW OF REQUIREMENT.....	3
2.0	BEGINNING AGENCY SERVICE.....	4
3.0	PROCESSING FLOWCHART	4
4.0	RECORD LAYOUT	6
4.1	CRASH XML SCHEMA.....	6
4.2	DELETE CRASH RECORD REQUESTS	17
4.3	CRASH REPORT IMAGE & COLLISION DIAGRAM FILES.....	17
5.0	THE AUTO-INPUT PROCESS.....	17
5.1	EXPLANATION OF MATERIALS PROVIDED.....	17
5.1.1	CRASH REPORT FORM.....	17
5.1.2	MISSOURI UNIFORM CRASH REPORT PREPARATION MANUAL.....	17
5.1.3	2012 MUCR FIELD SPECIFICATION MANUAL.....	17
5.1.4	ACCIDENT.XSD.....	17
5.1.5	ACCIDENT WSDL.....	17
5.2	SOFTWARE AND CONNECTIVITY REQUIREMENTS	18
5.3	COLLISION DIAGRAM REQUIREMENTS	18
5.4	PROCESSING	18
5.4.1	FIGURE 2 ENTITY RELATIONSHIP DIAGRAM DEPICTING DATA RELATIONSHIPS	19
5.5	EXCEPTION PROCESSING	20
5.6	TESTING PROCESS.....	20
5.6.1	CRASH FORM PDF.....	21
5.6.2	DATA LAYOUT	32
5.6.3	DATA QUALITY CONTROL	32
5.6.4	TEST CASES.....	32
6.0	SUPPORT.....	33
7.0	SPECIFICATION DISCLAIMER.....	33
8.0	CHANGE LOG	33

1.0 OVERVIEW OF REQUIREMENT

The Missouri State Highway Patrol (MSHP), the Missouri Department of Transportation (MoDOT), local and county law enforcement agencies, as well as other local, county and state governmental agencies are desirous of finding ways to reduce the effort/time required to populate the Missouri Crash Analysis Reporting System (MOCARS), formerly the Statewide Traffic Accident Records System (STARS), with motor vehicle crash data/reports.

One way to do this is to provide a process for agencies to electronically submit their crash data/reports to MOCARS. This will allow the MSHP to automatically validate and load crash information/report images; reduce paper flow; and improve data accuracy, completeness, and timeliness.

Currently, the MSHP, Patrol Records Division, crash report entry process for a majority of Missouri law enforcement agencies is an electronic/automated process; however, a few agencies submit hard copy crash reports requiring a manual entry process. Since a majority of the crash report data fields must be manually entered, the probability for data entry errors is increased. The Patrol Records Division technician also enters crash report data in a somewhat random “non-crash report form flow format,” i.e., data are not entered as they appear on the crash report form. This forces the user to “screen hop” around fields to enter the data in the system. The electronic, auto entry system, will eliminate most of this error prone entry procedure.

This document presents what an agency or vendor must provide to successfully submit electronic crash data/reports to the MSHP-MOCARS via a web service environment. The documented processes centers on the production of a set of XML records to be sent to MOCARS and highlights how the XML schema corresponds to the 2024 Missouri Uniform Crash Report (MUCR) form including edits that should be performed in order to validate the data. This document, along with the MUCR Field Specification for XML document, item 5.1.3 below, will also allow an agency or vendor, if they choose, to build an application with the appropriate validation rules to ensure electronic crash data are accepted into the MOCARS database. The crash report form entry windows can be initially populated with default crash information contained in the enclosed code tables, which will speed up the entry process and reduce the probability of data entry errors.

In summary, this automated approach should be followed as it provides the following benefits:

- Streamlining of crash data submissions.
- Improved accuracy and completeness of data.
- Improved data entry technician throughput.
- Increased timeliness of data entry and crash report processing.

2.0 BEGINNING AGENCY SERVICE

Before an agency can begin submitting MUCR reports/data electronically, their agency must be added to the MOCARS Web Service. To do so, the vender must follow the outlined steps.

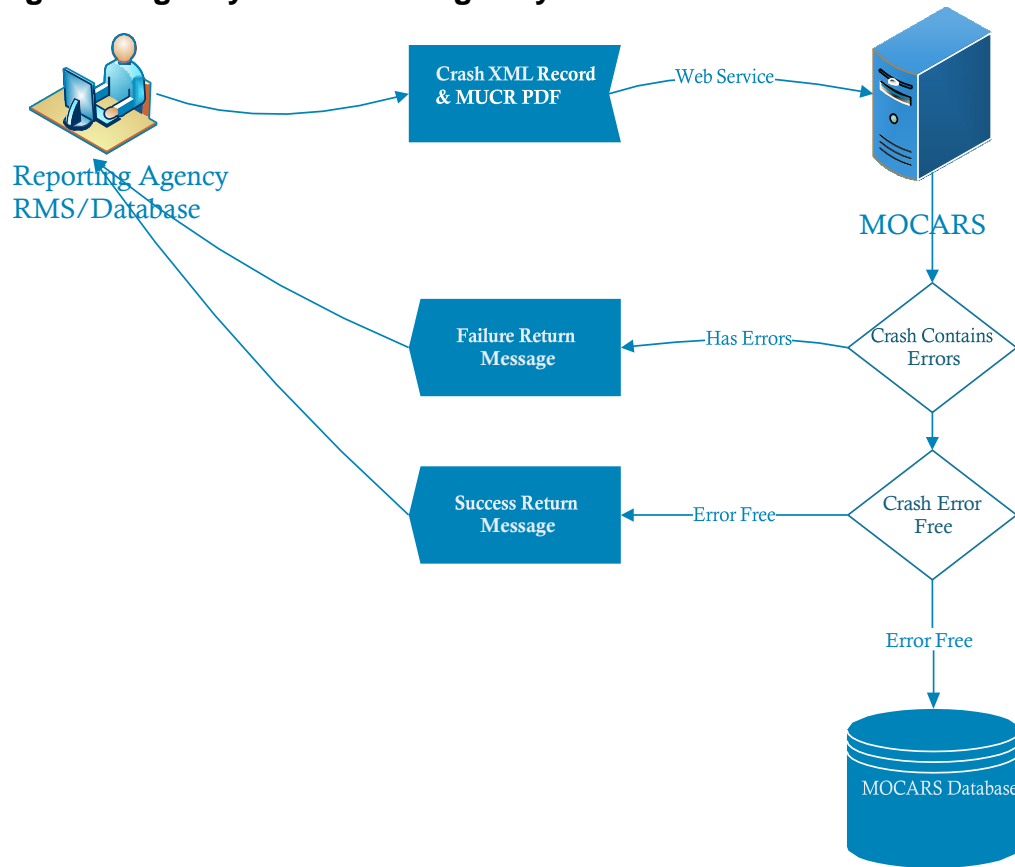
- 1) Set up new agency/administrator in your RMS.
- 2) Upon completion, email the Agency Name/ORI to MSHP, Patrol Records Division, Senior Program Specialist John Bassett at John.Bassett@mshp.dps.mo.gov and Roger Branson, Jr. at Roger.BransonJr@mshp.dps.mo.gov.
 - a) Identify the agency that will begin posting crash reports/data to MOCARS via the online submission process.
 - b) In the "Subject" line enter the following text "Please add [*agency name*] [*agency ORI*] to the list of accepted e-MOCARS users."
 - c) "CC" the new agency administrator contact on the e-mail request to Mr. Bassett and Mr. Branson.
- 3) You will receive an email communication from the MSHP regarding the next steps for the MOCARS electronic data submission process.

Agencies will not be able to submit and will receive an error back without completing these steps.

3.0 PROCESSING FLOWCHART

The schematic below illustrates what the MSHP views as the ideal working relationship between themselves and crash data supplying agencies/vendors.

- Agency, or their contracted vendor, will develop an application using the supplied MOCARS technical specifications to migrate data from the applicable MUCR form to an automated system, such as a local record management system/database.
- Agency will electronically submit the crash data to the MSHP as XML records and a PDF of the completed MUCR.
- The MSHP will validate the crash data via the MOCARS Web Service.
- Validated reports/data will be entered in the MOCARS database. A success message will be returned to the agency.
- Record/field errors will be identified, and failure messages will also be returned to the submitting agency. **The agency has 35 days to correct and resubmit the erroneous crash report/data. Any crash record with an error will not be submitted to the MOCARS database. If the crash record was previously submitted, then re-submitted with errors, the crash record/field in MOCARS will remain in the database in its original form with no updates to the crash.**

Figure 1 Agency / Vendor & Highway Patrol Flow

4.0 RECORD LAYOUT

4.1 Crash XML Schema

The table below is a physical representation of the XML crash record.

- **Ref #** - Corresponds to the element ID in the MOCARS 2024 MUCR Field Specification for XML document. Please refer to it for a detailed explanation of that element and any edits.
- **Form** – Refers to the hard copy form found in the Missouri Uniform Crash Report Preparation Manual. NOHC = Not on hard copy.

Element:	Ref #:	Type:	Length	Form:
<crash>				
<ReviewNotes>	MSHP Only	String	4000	NOHC
<FatpotRNum>	MSHP Only	String	10	NOHC
<AgencyOriginationId>	0.03	String	9	1
<ReportCaseNumber>	0.04	String	15	1
<LongForm>	1.02	String	1	NOHC
<AgencyName>	1.03	String	40	1
<LeftTheScene>	1.04	Boolean		1
<VehiclesLeftScene>	1.04a-d	String	3	1
<AccidentCleared>	1.05	String	1	1
<PropertyDamageOnly>	1.06	Boolean		1
<NumberInjured>	1.07	Integer		1
<NumberKilled>	1.08	Integer		1
<NumberVehicles>	1.09	Integer		1
<AccidentDateUnknown>	1.10	String	1	NOHC
<AccidentDate>	1.11	Datetime		1
<AccidentTimeUnknown>	1.12	String	1	NOHC
<AccidentTime>	1.13	String	4	1
<NotifiedDate>	1.14	Datetime		1
<TimeNotified>	1.15	String	4	1
<TimeArrived>	1.16	String	4	1
<ArrivalTimeNA>	1.17	String	1	NOHC
<DateRoadWayClearance>	1.17.1	Datetime		1
<DateRoadWayClearanceNA>	1.17.2	Boolean	1	1
<TimeRoadWayClearance>	1.17.3	String	4	1
<TimeRoadWayClearanceNA>	1.17.4	Boolean	1	1
<InvestigationDate>	1.18	Datetime		1
<InvestigatorAtScene>	1.19	Boolean		1
<CrashType>	1.20	String	2	1
<Roadway>	1.21	String	1	1
<DirectionalAnalysis>	1.22	String	2	1
<CVEInvolvement1>	1.23	Boolean		1
<CVEInvolvement2>	1.24	Boolean		1
<EvidentiaryPhotos>				
<Taken>	1.25	Boolean		1
<ByWhom>	1.26	String	50	1
<InvestigatingAgency>	1.27	Boolean		1

<AvailableFrom>	1.28	String	48	1
</EvidentiaryPhotos>				
<EvidentiaryVideo>				
<Taken>	1.28.1	Boolean		1
<ByWhom>	1.28.2	String	50	1
<InvestigatingAgency>	1.28.3	Boolean		1
<AvailableFrom>	1.28.4	String	48	1
</EvidentiaryVideo>				
<Reconstruction>				
<Taken>	1.29	Boolean		1
<ByWhom>	1.30	String	52	1
<InvestigatingAgency>	1.31	Boolean		1
<AvailableFrom>	1.32	String	48	1
</Reconstruction>				
<CountyCode>	1.33	String	3	2
<MunicipalityCode>	1.34	String	4	2
<MunicipalityName>	1.35	String	64	2
<Troop>	1.36	String	4	2
<BeatZone>	1.37	String	4	2
<GpsLatitude>	1.38	String	9	2
<GpsLongitude>	1.39	String	9	2
<OnLocationRoute>	1.40	String	6	2
<OnLocationStreet>	1.41	String	50	2
<OnLocationHighway>	1.42	String	4	2
<OnLocationBlock>	1.43	String	5	2
<RoadwayDirection>	1.44	String	2	2
<IntersectingRoute>	1.45	String	6	2
<IntersectingBlock>	1.46	String	5	2
<Intersecting>	1.47	String	50	2
<IntersectingDirection>	1.48	String	2	2
<Location>	1.49	String	1	2
<DistanceFrom>	1.50, 1.51	String	4	2
<DistanceFromMeasure>	1.50, 1.51	String	5	2
<DistanceFromNA>	1.52	Boolean		2
<OnSpeedLimit>	1.53	String	2	2
<AtSpeedLimit>	1.54	String	2	2
<RoadwayMaintainedBy>	1.55	String	1	2
<GeoCode>	1.56	String	11	2
<Trafficway>	1.57	String	1	2
<RoadwayAlignment>	1.58	String	1	2
<RoadwayProfile>	1.59	String	1	2
<IntersectionType>	1.60	String	2	2
<RoadwayConditions>	1.61a-b	String	2	2
<RoadwaySurface>	1.62	String	1	2
<WeatherConditions>	1.63a-c	String	2	2
<LightCondition>	1.64	String	1	2
<PropertyDamageNone>	1.65	Boolean		3
<PropertyDamageMODOT>	1.66	Boolean		3
<PropertyDamageCounty>	1.67	Boolean		3
<PropertyDamageMunicipality>	1.68	Boolean		3

<WitnessNoneIdentified>	1.69	Boolean		4
<WitnessesInNarrative>	1.70	Boolean		4
<ReportingOfficerDSN>	1.71	String	10	10
<ReportingOfficerTroop>	1.72	String	4	10
<ReportingOfficerBeatZone>	1.73	String	4	10
<ReportingOfficerName>	1.74	String	40	10
<ReviewingOfficerDSN>	1.75a	String	10	10
<ReviewingOfficerName>	1.75b	String	40	10
<ReviewingOfficer2DSN>	1.76a	String	10	10
<ReviewingOfficer2Name>	1.76b	String	40	10
<NonMotoristNA>	1.78	Boolean		5
<SHP105_325> (For MSHP reports only.)	1.79	Boolean		NOHC
<AgencyRecordId>	1.80	String	10	NOHC
<VendorCode>	1.81	String	2	NOHC
<Vehicles>				
<Vehicle>				
<VehicleNumber>	2.01	Integer		7A
<DriverPresenceCode>	2.02	String		NOHC
<DriverLicenseNumber>	2.03	String	20	7A
<DriverLicenseState>	2.04	String	2	7A
<DriverLicenseStatus>	2.05	String	1	7A
<DriverLicenseType>	2.06	String	1	7A
<DriverLicenseClass>	2.07	String	2	7A
<DriverLicenseCdIClass>	2.08	String	2	7A
<AlcoholInterlockRequiredOnLicense>	2.08.1	String	1	7A
<AlcoholInterlockPresent>	2.08.2	String	1	7A
<Endorsements>	2.09.1	String	2	7A
<EndorsementCode1>	2.09.2	String	1	7A
<EndorsementCode2>	2.09.3	String	1	7A
<ProofOfInsurance>	2.10	String	2	7A
<InsuranceExpired>	2.11	Boolean		7A
<InsuranceCompany>	2.12	String	40	7A
<InsurancePhone>	2.13	String	20	7A
<InsuranceDriverVehicle>	2.14	String	1	7A
<InsurancePolicyNA>	2.15	Boolean		7A
<InsurancePolicyNumber>	2.16	String	30	7A
<VisionObstructedCodes>	2.17	String Array	2	7A
<VehicleType>	2.18	String	1	7B
<BodyType>	2.19	String	2	7B
<OtherVehicleCode>	2.20	String	1	7B
<VehicleBusType>	2.21	String	1	7B
<NumberOfWheels>	2.22	String	1	7B
<NumberTrailerTowedUnits>	2.22.1	String	2	7B
<TrailerTowedUnit>				
<Year>	2.22.2	String	4	7B
<MakeCode>	2.22.3	String	4	7B
<MakeName>	2.22.4	String	65	7B
<MakeModel>	2.22.5	String	65	7B
<LicenseNumber>	2.22.6	String	12	7B
<LicenseState>	2.22.7	String	4	7B

<LicenseYear>	2.22.8	String	4	7B
<Vin>	2.22.9	String	20	7B
</TrailerTowedUnit>				
<AutomationSystemInVehicle>	2.23.1	String	1	7B
<AutomationSystemLevelEngagedCode>	2.23.2	String	2	7B
<DriverCededControlCode>	2.23.3	String	1	7B
<VehicleYear>	2.23	String	4	7B
<VehicleMakeCode>	2.24	String	4	7B
<VehicleModel>	2.25	String	50	7B
<VehicleMakeName>	2.26	String	65	7B
<VehicleColor1>	2.27a	String	3	7B
<VehicleColor2>	2.27b	String	3	7B
<NumberOfOccupants>	2.28	String	3	7B
<VehicleLicenseNumber>	2.29	String	12	7B
<TemporaryTag>	2.29.1	String	1	7B
<VehicleLicenseState>	2.30	String	2	7B
<VehicleLicenseYear>	2.31	String	4	7B
<VinNumber>	2.32	String	20	7B
<OwnerSameAsDriver>	2.33	Boolean		7B
<OwnerPhoneSameAsDriver>	2.34	Boolean		7B
<TowedFromScene>	2.36	Boolean		7B
<TowedDueToDisablingDamage>	2.37	Boolean		7B
<TowedBy>	2.38	Boolean		7B
<TowingCompany>	2.39	String	40	7B
<TowedByAddress>				
<Address1>	2.40	String	50	7B
<Address2>	2.41	String	50	7B
<City>	2.42	String	30	7B
<State>	2.43	String	2	7B
<ZipCode>	2.44	String	10	7B
<PhoneNumber>	2.45	String	20	7B
</TowedByAddress>				
<VehicleDamageNone>	2.46	Boolean		7B
<InitialImpactNumber>	2.47	String	2	7B
<DamageAreas>	2.48	String Array	2	7B
<PublicConveyance>	2.49	Boolean	1	7B
<VehicleElectronicRideHailing>	2.49.1	Boolean	1	7B
<CompassDirection>	2.50	Boolean	1	6
<PedalcycleToFromSchool> Retired	2.51	Boolean	1	7B
<VehiclePullingAnother> Retired	2.52	Boolean	1	7B
<GcvwRating>	2.53	String	1	7B
<EmergencyVehicleInvolvement>	2.54	String	1	7B
<EmergencyVehicleInvolvementOther>	2.55	String	1	7B
<ContributingTrafficConditions>	2.56	String	1	7B
<ProbableContributingCircumstances>	2.57	String Array	2	7D
<SequenceOfEvents>	2.58	String Array	2	7C
<AnimalCodes>	2.59, 2.60	String Array	2	7C
<FixedObjectCodes>	2.61	String Array	2	7C
<WorkZone>	2.64	String	1	7E
<TypeWorkZone>	2.64.1	String	2	7E

<WorkZoneCrashLocation>	2.64.2	String	2	7E
<LawEnforcementPresent>	2.64.3	String	1	7E
<WorkersPresent>	2.65	String	1	7E
<TrafficControl>	2.66	String	2	7F
<OtherControls>	2.67	String Array	2	7F
<ControlMalfunctioning>	2.68	String	1	7F
<MarijuanaUse>	2.93	String	1	7C
<CMVNa>	2.69	Boolean		7H
<IsTrain>		Boolean		
<Operator>				
<VehicleNumber>	3.01	Integer		7
<PersonNumber>	3.03	Integer		NOHC
<LastName>	3.04	String	55	7A
<FirstName>	3.05	String	50	7A
<MiddleInitial>	3.06	String	50	7A
<Suffix>	3.07	String	3	7A
<Address>				
<Address1>	3.08	String	50	7A
<Address2>	3.09	String	50	7A
<City>	3.10	String	30	7A
<State>	3.11	String	2	7A
<ZipCode>	3.12	String	10	7A
<PhoneNumber>	3.22	String	20	7A
</Address>				
<DateOfBirth>	3.13	Datetime		7A
<DateOfBirthUnknown>	3.13.1	Boolean		NOHC
<Sex>	3.14	String	1	7A
<SeatLocation>	3.15	String	2	7A
<InjuryLevel>	3.16	String	1	7A
<Transport>	3.17	String	1	7A
<Ejection>	3.18	String	1	7A
<AirBag1>	3.19	String	2	7A
<AirBag2>	3.19.1	String	2	7A
<AirBag3>	3.19.2	String	2	7A
<AirBag4>	3.19.3	String	2	7A
<SafetyDevice1>	3.20	String	2	7A
<SafetyDevice2>	3.21	String	2	7A
<ImproperUse>	3.21.2	String	1	7A
<AlcoholUse>	3.35	String	2	7C
<DistractedCodes>	2.63	String Array	2	7D
<PedalCyclist> Retired		Boolean		
</Operator>				
<Owner>				
<VehicleNumber>	3.01	Integer		7
<PersonNumber>	3.03	Integer		NOHC
<LastName>	3.04	String	55	7B
<FirstName>	3.05	String	50	7B
<MiddleInitial>	3.06	String	50	7B
<Suffix>	3.07	String	3	7B
<Address>				
<Address1>	3.08	String	50	7B

<Address2>	3.09	String	50	7B
<City>	3.10	String	30	7B
<State>	3.11	String	2	7B
<ZipCode>	3.12	String	10	7B
<PhoneNumber>	3.22	String	20	7B
</Address>				
</Owner>				
<Occupants>				
<Occupant>				
<VehicleNumber>	3.01	Integer		7
<PersonNumber>	3.03	Integer		NOHC
<LastName>	3.04	String	55	7G
<FirstName>	3.05	String	50	7G
<MiddleInitial>	3.06	String	50	7G
<Suffix>	3.07	String	3	7G
<Address>				
<Address1>	3.08	String	50	7G
<Address2>	3.09	String	50	7G
<City>	3.10	String	30	7G
<State>	3.11	String	2	7G
<ZipCode>	3.12	String	10	7G
<PhoneNumber>	3.22	String	20	7G
</Address>				
<DateOfBirth>	3.13	Datetime		7G
<DateOfBirthUnknown>	3.13	Boolean		NOHC
<Sex>	3.14	String	1	7G
<SeatLocation>	3.15	String	2	7G
<InjuryLevel>	3.16	String	1	7G
<Transport>	3.17	String	1	7G
<Ejection>	3.18	String	1	7G
<AirBag>	3.19	String	2	7G
<AirBag2>	3.19.1	String	2	7G
<AirBag3>	3.19.2	String	2	7G
<AirBag4>	3.19.3	String	2	7G
<SafetyDevice1>	3.20	String	2	7G
<SafetyDevice2>	3.21	String	2	7G
<ImproperUse>	3.21.2	String	1	7G
</Occupant>				
</Occupants>				
<CMV>				
<LastName>	2.71	String	50	7H
<SameAsOwner >	2.75	Boolean		7H
<PhoneSameAsOwner>	2.81	Boolean		7H

<Address>				
<Address1>	2.76	String	50	7H
<Address2>	2.77	String	50	7H
<City>	2.78	String	30	7H
<State>	2.79	String	2	7H
<ZipCode>	2.80	String	10	7H
<PhoneNumber>	2.82	String	20	7H
</Address>				
<CarrierInterstate>	2.83	String	1	7H
<IccNumber>	2.84	String	10	7H
<UsDotNumber>	2.85	String	8	7H
<CargoBodyType>	2.86	String	2	7H
<HazmatPlacardDisplayed>	2.87	String	1	7H
<Hazmat4DigitNumber>	2.88	String	4	7H
<HazmatClass>	2.89	String	3	7H
<HazmatCargoPresent>	2.90	String	1	7H
<HazmatCargoRelease>	2.91	String	1	7H
<HazmatName>	2.92	String	100	7H
</CMV>				
</Vehicle>				
</Vehicles>				
<NonMotorists>				
<NonMotorist>				
<PersonNumber>	3.03	Integer		5
<LastName>	3.04	String	55	5
<FirstName>	3.05	String	50	5
<MiddleInitial>	3.06	String	50	5
<Suffix>	3.07	String	3	5
<Address>				
<Address1>	3.08	String	50	5
<Address2>	3.09	String	50	5
<City>	3.10	String	30	5
<State>	3.11	String	2	5
<ZipCode>	3.12	String	10	5
<PhoneNumber>	3.22	String	20	5
</Address>				
<DateOfBirth>	3.13	Datetime		5
<DateOfBirthUnknown>	3.13	Boolean		
<Sex>	3.14	String	1	5
<InjuryLevel>	3.16	String	1	5
<Transport>	3.17	String	1	5
<SafetyDevice1>	3.20	String	2	5
<SafetyDevice2>	3.21	String	2	5
<SafetyDevice3>	3.21.1	String	2	5
<NonMotoristType>	3.24	String	1	5
<PedestrianOccupant>	3.24.1	String	1	5
<PedestrianConveyanceTypeCode>	3.24.2	String	1	5
<OccOfAnimalDevice>	3.24.3	String	1	5
<OnMotorizedPedalcycle>	3.24.4	String	1	5
<PedestrianSpecialFunction>	3.25	String	1	5

<StruckByVehicle>	3.27	String	3	5
<Location>	3.28	String	2	5
<BicycleLaneFacility>	3.28.1	String	1	5
<ContributingCircumstances>	3.29	String	2	5
<DistractedCodes>	3.30	String	2	5
<CrossingRoad>	3.31	String	2	5
<CrossingRoad2>	3.32	String	2	5
<OtherActions>	3.33	String	2	5
<OriginDestination>	3.34	String	1	5
<AlcoholUse>	3.35	String	2	5
</ NonMotorist>				
</ NonMotorists>				
<PropertyDamages>	4.01			
<PropertyDamageOwner>				
<Owner>				
<LastName>	4.02	String	55	3
<FirstName>	4.03	String	50	3
<MiddleInitial>	4.04	String	50	3
<Suffix>	4.05	String	3	3
<Address>				
<Address1>	4.06	String	50	3
<Address2>	4.07	String	50	3
<City>	4.08	String	30	3
<State>	4.09	String	2	3
<ZipCode>	4.10	String	10	3
<PhoneNumber>	4.11	String	20	3
</Address>				
</Owner>				
<PropertyDescription>	4.12	String	100	3
<DamageDescription>	4.13	String	100	3
</PropertyDamageOwner>				
</PropertyDamages>				
<Witnesses>	5.01			
<Witness>				
<LastName>	5.02	String	55	4
<FirstName>	5.03	String	50	4
<MiddleInitial>	5.03.1	String	50	4
<Suffix>	5.04	String	3	4
<Address>				
<Address1>	5.05	String	50	4
<Address2>	5.06	String	50	4
<City>	5.07	String	30	4
<State>	5.08	String	2	4
<ZipCode>	5.09	String	10	4
<PhoneNumber>	5.10	String	20	4
</Address>				
</Witness>				
</Witnesses>				
<Trains>				
<Train>				

<VehicleNumber>	6.01	Integer		T
<RetractableFlangeNA>	6.02	Boolean		T
<TrainId>	6.03	String	15	T
<LeadEngineNumber>	6.04	String	8	T
<LeadEngineMake>	6.05	String	40	T
<LeadEngineModel>	6.06	String	40	T
<EngineerCertificate>	6.07	Boolean		T
<EngineerCertificateExpirationDate>	6.08	Datetime		T
<EngineerCertificateExpirationDateNA>	6.08.1	Boolean		T
<HeadLightInUse>	6.09	String	1	T
<HornInUse>	6.10	String	1	T
<BellInUse>	6.11	String	1	T
<NumberOfOccupants>	6.12	String	3	T
<NumberOfCars>	6.13	String	3	T
<SpeedOfTrain>	6.14	String	2	T
<DistanceToLeadEngine>	6.15	String	20	T
<TrackOwnerAddress>	6.16	String	108	F
<TrainOwnerAddress>	6.17	String	108	F
<CrossingTrafficControlDevices>	6.18	String Array	1	T
<CrossingGateDown>	6.19	String	1	T
<CrossingLightsFlashing>	6.20	String	1	T
<CrossingBellRinging>	6.21	String	1	T
<AdvancedWarningSigns>	6.22	String	1	T
<SignToRailDistance>	6.23, 6.24	String	4	T
<SignToRailDistanceMeasure>	6.23, 6.24	String		T
<CrossingSurfaceType>	6.25	String	26	T
<DOTCrossingID>	6.26	String	20	T
<QuietZone>	6.27	String	2	T
<SequenceOfEvents>	2.58	String Array	2	T
<ProbableContributingCircumstances>	2.57	String Array	2	T
<Engineer>				
<VehicleNumber>	6.01			T
<PersonNumber>	3.01			NOHC
<LastName>	3.04	String	55	T
<FirstName>	3.05	String	50	T
<MiddleInitial>	3.06	String	50	T
<Suffix>	3.07	String	3	T
<Address>				
<Address1>	3.08	String	50	T
<Address2>	3.09	String	50	T
<City>	3.10	String	30	T
<State>	3.11	String	2	T
<ZipCode>	3.12	String	10	T
<PhoneNumber>	3.22	String	20	T
</Address>				
<DateOfBirth>	3.13	Datetime		T
<DateOfBirthUnknown>	3.13	Boolean		NOHC
<Sex>	3.14	String	1	T
<SeatLocation>	3.15	String	2	T
<InjuryLevel>	3.16	String	1	T

<Transport>	3.17	String	1	T
<Ejection>	3.18	String	1	T
<AirBag1>	3.19	String	2	T
<AirBag2>	3.19.1	String	2	T
<AirBag3>	3.19.2	String	2	T
<AirBag4>	3.19.3	String	2	T
<SafetyDevice1>	3.20	String	2	T
<SafetyDevice2>	3.21	String	2	T
<SafetyDevice3>	3.21.1	String	2	T
<DistractedCodes>	3.30	String	2	5
</Engineer>				
<Conductor>				
<VehicleNumber>	6.01			T
<PersonNumber>	3.01			NOHC
<LastName>	3.04	String	55	T
<FirstName>	3.05	String	50	T
<MiddleInitial>	3.06	String	50	T
<Suffix>	3.07	String	3	T
<Address>				
<Address1>	3.08	String	50	T
<Address2>	3.09	String	50	T
<City>	3.10	String	30	T
<State>	3.11	String	2	T
<ZipCode>	3.12	String	10	T
<PhoneNumber>	3.22	String	20	T
</Address>				
<DateOfBirth>	3.13	Datetime		T
<DateOfBirthUnknown>	3.13	Boolean		NOHC
<Sex>	3.14	String	1	T
<SeatLocation>	3.15	String	2	T
<InjuryLevel>	3.16	String	1	T
<Transport>	3.17	String	1	T
<Ejection>	3.18	String	1	T
<AirBag1>	3.19	String	2	T
<AirBag2>	3.19.1	String	2	T
<AirBag3>	3.19.2	String	2	T
<AirBag4>	3.19.3	String	2	T
<SafetyDevice1>	3.20	String	2	T
<SafetyDevice2>	3.21	String	2	T
</Conductor>				
<Occupants>				
<Occupant>				
<VehicleNumber>	6.01			T
<PersonNumber>	3.01			NOHC
<LastName>	3.04	String	55	T
<FirstName>	3.05	String	50	T
<MiddleInitial>	3.06	String	50	T
<Suffix>	3.07	String	3	T
<Address>				
<Address1>	3.08	String	50	T

<Address2>	3.09	String	50	T
<City>	3.10	String	30	T
<State>	3.11	String	2	T
<ZipCode>	3.12	String	10	T
<PhoneNumber>	3.22	String	20	T
</Address>				
<DateOfBirth>	3.13	Datetime		T
<DateOfBirthUnknown>	3.13	Boolean		NOHC
<Sex>	3.14	String	1	T
<SeatLocation>	3.15	String	2	T
<InjuryLevel>	3.16	String	1	T
<Transport>	3.17	String	1	T
<Ejection>	3.18	String	1	T
<AirBag1>	3.19	String	2	T
<AirBag2>	3.19.1	String	2	T
<AirBag3>	3.19.2	String	2	T
<AirBag4>	3.19.3	String	2	T
<SafetyDevice1>	3.20	String	2	T
<SafetyDevice2>	3.21	String	2	T
</Occupant>				
</Occupants>				
<TrainCrews>				
<Occupant>				
<VehicleNumber>	6.01			T
<PersonNumber>	3.01			NOHC
<LastName>	3.04	String	55	T
<FirstName>	3.05	String	50	T
<MiddleInitial>	3.06	String	50	T
<Suffix>	3.07	String	3	T
<Address>				
<Address1>	3.08	String	50	T
<Address2>	3.09	String	50	T
<City>	3.10	String	30	T
<State>	3.11	String	2	T
<ZipCode>	3.12	String	10	T
<PhoneNumber>	3.22	String	20	T
</Address>				
<DateOfBirth>	3.13	Datetime		T
<DateOfBirthUnknown>	3.13	Boolean		NOHC
<Sex>	3.14	String	1	T
<SeatLocation>	3.15	String	2	T
<InjuryLevel>	3.16	String	1	T
<Transport>	3.17	String	1	T
<Ejection>	3.18	String	1	T
<AirBag1>	3.19	String	2	T
<AirBag2>	3.19.1	String	2	T
<AirBag3>	3.19.2	String	2	T
<AirBag4>	3.19.3	String	2	T
<SafetyDevice1>	3.20	String	2	T
<SafetyDevice2>	3.21	String	2	T

</TrainCrew>				
</Occupant>				
</Train>				
</Trains>				
</Crash>				

4.2 Delete Crash Record Requests

To delete crash records/data previously submitted to the statewide repository, MOCARS, agencies should contact the MSHP, Patrol Records Division, at:

Missouri State Highway Patrol
Patrol Records Division
P.O. Box 568
Jefferson City, Missouri 65102
(573) 526-6113

4.3 Crash Report Image & Collision Diagram Files

Each crash data file submitted electronically must have an accompanying image of the completed MUCR. This image must be submitted as a PDF file created from the agency / vendor of the applicable MUCR form. The collision diagram will be within the PDF file.

5.0 THE AUTO-INPUT PROCESS

5.1 Explanation of Materials Provided

A number of documents have been provided, that together, form an overall picture of what needs to be done to submit crash data electronically.

5.1.1 Crash Report Form

This form is required to accurately record a crash. This refers to a copy of the applicable Missouri Uniform Crash Report (MUCR).

5.1.2 Missouri Uniform Crash Report Preparation Manual

This manual provides detailed instruction on the completion/reporting requirements of the Missouri Uniform Crash Report form.

5.1.3 MOCARS 2024 MUCR Field Specification for XML Document

This specification document contains all the field edits and values. These values and edits are subject to change over time and will be reflected in either the change log of the manual or an updated manual.

5.1.4 Accident.xsd (Removed)

~~Describes the elements of the accident.xml.~~

5.1.5 Accident WSDL

Test WSDL: <https://webtest.modot.mo.gov/HPWebservices/CrashService.asmx>

5.2 Software and Connectivity Requirements

Web Service will be used by agencies to submit MUCR information, report images, and collision diagrams to MSHP-MOCARS. Report images and collision diagrams will be in PDF format.

5.3 Collision Diagram Requirements

As prescribed by the MUCR Preparation Manual, a collision diagram **MUST** be included on all crash reports where enough evidence and/or facts can be obtained to adequately depict the crash scene. Crash reports noting the investigation was made at the scene should contain a collision diagram as should reports where the investigation was not made at the scene, but enough information was obtained to complete a diagram. The diagram can be created via an online diagram-drawing tool, or by scanning the hand prepared diagram. The selected method of drawing must allow for the capability to clearly and accurately recreating the crash environment/scene.

In addition to detailed crash data, supporting graphics (i.e., report image (PDF) and applicable collision diagram) must be included in each crash data record submitted to the MSHP-MOCARS database. **If no report image (PDF) or required collision diagram is submitted with a crash data record, the data record will be treated as an error and will not be saved to the database. The agency will have 35 days to correct any errors and resubmit.**

5.4 Processing

The intent of the processing described above is not to dictate the manner in which an agency solution is implemented, but to provide a guideline for capturing crash data that ensures reports/data sent to the MSHP can be processed and accepted in the MSHP-MOCARS database. In short, MSHP intends to receive a complete XML record of crash data and supporting PDF files for the report images and collision diagrams.

The MSHP will accept electronic or hard copy, paper submission of motor vehicle crash reports/data, but not both, for a single crash report unless prior approval is granted by the MSHP on a case-by-case basis. **Should a submitting agency find it necessary to change its submission type (electronic or hard copy) during or after system testing, the agency must obtain approval from the MSHP prior to implementing such change.**

It is understandable that most of the time a crash file will contain data describing new crashes to be entered in the MOCARS database. However, in such cases, when it is intended to modify or delete a crash record already in the MOCARS database, the following steps should be followed:

- For modification, the complete XML record and crash report PDF must be resubmitted. When the record already exists in the MOCARS database, as would be

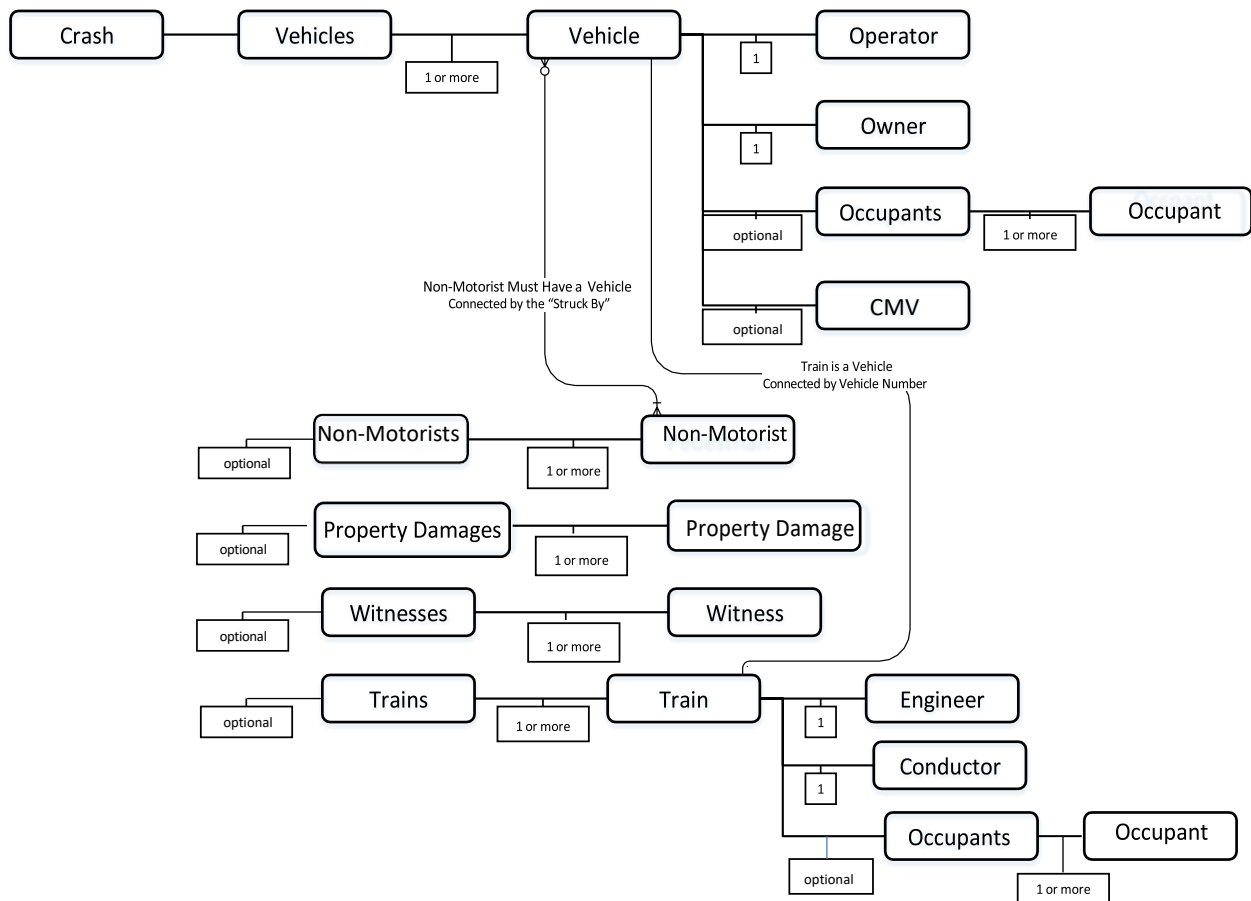
the case for a modification, the old record is deleted out of the database and the new record is inserted.

- For deletion, an agency should contact the MSHP, Patrol Records Division, at (573) 526-6113.

The diagram below shows the top layer view relational data structure described in the 3.0 output file section. A few important points to note include the following:

- Only one crash record is allowed for each crash.
- A crash can optionally have one or more Damage to Property Other Than Vehicles records.
- A crash can optionally have one or more witness records.
- A crash will involve one or more vehicles.
- One vehicle can optionally contain one or more persons.
- A vehicle could be a railway vehicle/train.

5.4.1 Figure 2 Entity Relationship Diagram Depicting Data Relationships



All the information depicted by the entities above and, therefore by the file layouts, is covered in detail by the *2024 Missouri Uniform Crash Report Preparation Manual*. This publication provides instructions on how an officer should complete a MUCR form and serves, in conjunction with the MOCARS 2024 MUCR Field Specification for XML, as a reference for data formats and contents that need to be captured. Both documents should be read thoroughly and followed since they describe how the entity file attributes map to the MUCR form and the meaning of each field.

5.5 Exception Processing

Electronic Submission Compliance Testing:

During the initial start-up phase, a period of testing will be required. Testing is done on the application level. If a vendor tests its application and passes, either any agency that uses the approved application can submit records to MSHP-MOCARS, or the MSHP may require each agency using the vendor's application complete the required testing process.

During testing, an entire crash record will be rejected if there are any errors with the data. The database will not be updated, and the vendor will be notified of the error(s) and of the need to resubmit the data record again. **For this reason, an agency must continue to submit paper/hard copy crash reports for entry into the MOCARS database until it, or its vendor, passes compliance testing.** It is worth mentioning, if any crash record does not come with an associated report image or collision diagram, it will be considered as an error. Each crash record received by MSHP will undergo edit checks described in the MOCARS 2024 MUCR Field Specification for XML document. When an error(s) is encountered, a response message will be generated and returned detailing the specific error(s).

The message will reflect data that did not pass the edits mentioned in item 5.1.3 above in this document. The submitting/reporting agency must correct erroneous records within 35 days from the erroneous submission/validation. The MSHP reserves the right to discontinue the crash report auto entry submission process with any submitting entity for any reason(s) it deems necessary. The MSHP will inform the affected submitting agency of the action in writing and the reason(s) for the discontinuance.

Once the testing phase is over and agency/vendor data have passed the initial quality assurance process, MSHP will populate the MOCARS database with the agency/vendor error free production MUCR records/data.

5.6 Testing Process

Testing prior to submissions of a new agency or vendor's data will be comprised of three parts.

5.6.1 Crash Form PDF

A prototype print of the applicable PDF Missouri Uniform Crash Report must be approved by the MSHP, Patrol Records Division, before they will be accepted into the MOCARS. It is imperative that all printed forms exactly reproduce the current, applicable MUCR including, but not limited to, form field names, box lengths, lines and delineators, check boxes, shaded areas, and page order. Data entered by the agency must be capable of being printed from PDF forms with the following font types and point sizes to ensure report prints are acceptable.

Field Text Font Type: **Times New Roman**

Field Text Point Size: **10 Point**

Field Text Format: **Bold**

Caption Text Font Type: Helvetica or Arial

Caption Text Point Size: 6 Point

Caption Text Format: Normal

The Missouri Uniform Crash Report Preparation Manual (MUCRPM) was created with a paper/hard copy submission in mind. With more and more agencies submitting crash records electronically, some of the directions given in the manual are inaccurate or directions are not given for electronic submission. Some of the field attribute values are also different for manual versus electronic reporting. The purpose of this document is to make note of some of the major differences between the MUCRPM and the PDF of the Missouri Uniform Crash Report (MUCR) associated with electronic submission.

The first difference is the County and Municipality Fields in Section 2-Location.

2 - LOCATION	
COUNTY	MUNICIPALITY

These fields must contain both the name of the county/municipality and its corresponding code noted in the respective code table. For example, if the crash occurred in Jefferson City, Cole County, the MUCR County field would note 026 Cole. The Municipality field would be 1240 Jefferson City.

The second main difference is with the number of driver/vehicle pages. When officers manually completed MUCRs on paper/hard copy forms, the driver/vehicle page was a double-sided page with fields for two drivers/vehicles. If the crash had an odd number of vehicles, the box next to “Page Not Used” at the top of the blank page was marked. With the ability to generate the PDF, this is no longer needed for electronically submitted reports. A Section 7 - Drivers, Vehicles, Owners, & Occupants page is completed for each “vehicle” associated with the motor vehicle crash. Therefore, there should be no blank Section 7 - Drivers, Vehicles, Owners, & Occupants pages.

The ordering of the pages shall be:

- 1) **Section 1 - General Crash Information, Section 2 - Location, Section 3 - Damage to Property Other Than Vehicles, Section 4 - Witness, and Section 5 - Non-Motorist:** This will always be page 1.
- 2) **Section 6 - Collision Diagram:** This will always be page 2.
- 3) **Section 7 - Drivers, Vehicles, Owners, & Occupants:** This will always be page 3.
- 4) **Additional Section 7 - Drivers, Vehicles, Owners, & Occupants page(s):** If there is more than one “vehicle” involved in the crash, then an additional Section 7 - Drivers, Vehicles, Owners, & Occupants page will follow for each vehicle involved in the crash. Ex. A three-vehicle crash would require a total of three Section 7 - Drivers, Vehicles, Owners, & Occupants pages.
- 5) **Subsection 7H - Commercial Motor Vehicle and Section 8 - Codes:** After the Section 7 vehicle page(s) has been completed/included, then include the Subsection 7H - Commercial Motor Vehicle and Section 9 - Codes page. This will immediately follow the last Section 7 page.
- 6) **Section 9 - Narrative/Statements, and Section 10 - Reporting And Reviewing Officer Information:** After the Subsection 7H - Commercial Motor Vehicle and Section 8 - Codes page has been included, then include the completed Section 9 - Narrative/Statements, and Section 10 - Reporting And Reviewing Officer Information page.
- 7) **Section 11 - Narrative/Statements:** If there is not enough space in Section 9 - Narrative/Statements, then additional narrative information is recorded in Section 11 - Narrative/Statements. This page would follow the Section 9 - Narrative/Statements, and Section 10 - Reporting and Reviewing Officer Information page. If there is ample space in Section 9 Narrative/Statements for the narrative/statements, then Section 11 - Narrative/Statements is not included in the MUCR PDF.
- 8) **Narrative/Statement Continuation/Supplement:** This page/form is used if there is not ample space in Section 11 - Narrative/Statements of the crash report. Include here if needed. (See MUCRPM for more information.)
- 9) **Non-Motorists/Occupants Continuation/Supplement:** This page/form is used if there is not ample space in Section 5 - Non-Motorist and/or Section 7G - Occupants of the crash report to record all non-motorists and/or vehicle occupants involved in the motor vehicle crash. Include here as needed. (See MUCRPM for more information.)
- 10) **Railway Vehicle Continuation/Supplement.** This page is completed/included when there is a railway train/vehicle involved in the motor vehicle crash and will be the last page of the MUCR PDF. (See MUCRPM for more information.)

Next, if there is not ample space in Section 3 - Damage to Property Other Than Vehicles, such as multiple damaged property owners, then additional damaged property and owner information must be recorded in either Section 9 - Narrative/Statements; Section 11 - Narrative/Statements, if applicable; or the Narrative/Statement Continuation/Supplement form, if applicable. Please identify this information as such in the respective section. Ex. **Damage to Property Other Than Vehicles cont.** Frank Smith, 123 Main Street, Anywhere, Missouri, 65123, Damaged U.S. mailbox and sheared post.

3 — DAMAGE TO PROPERTY OTHER THAN VEHICLES	
<input type="checkbox"/> None	
LIST OWNER'S NAME & ADDRESS, DESCRIPTION OF PROPERTY, AND DAMAGE. <input type="checkbox"/> MoDOT <input type="checkbox"/> County <input type="checkbox"/> Municipality	

Section 6- Collision Diagram: Page 2 of ____

This will always be page 2 of the MUCR PDF.

6. COLLISION DIAGRAM		Compass Direction Before Crash Event(s) (Circle One)		V1 N E S W U		V2 N E S W U		V3 N E S W U		V4 N E S W U		V5 N E S W U		V6 N E S W U		REPORT # _____ PAGE _____ OF _____	
																INDICATE NORTH	
INDICATE ROAD NAMES																DIAGRAM NOT TO SCALE	

Subsection 7H - Commercial Motor Vehicle and Section 8 - Codes

This page always follows the last Section 7 - Drivers, Vehicles, Owners, & Occupants page.

REPORT # _____ PAGE _____ OF _____										
7H — COMMERCIAL MOTOR VEHICLE <input type="checkbox"/> NA Required on vehicle if "Yes" was answered to questions in parts 1 and 2 in CMV involvement criteria and vehicle meets one of the three criteria in part 2.										
VEHNO.	MOTOR CARRIER IDENTIFICATION (Leasee, etc.) — NAME & ADDRESS (Street, City, State, Zip) <input type="checkbox"/> SAO							PHONE NUMBER	<input type="checkbox"/> SAO	
COMMERCIAL / NON-COMMERCIAL		<input type="checkbox"/> Interstate Carrier	<input type="checkbox"/> Not In Commerce — Government Vehicle	<input type="checkbox"/> Not In Commerce — Other Vehicle	MC / MX / ICC NO.		USDOT NO.			
<input type="checkbox"/> Intrastate Carrier		<input type="checkbox"/> Not In Commerce — Rental Vehicle								
CARGO BODY TYPE	<input type="checkbox"/> Enclosed Box	<input type="checkbox"/> Flatbed	<input type="checkbox"/> Concrete Mixer	<input type="checkbox"/> Garbage / Refuse	<input type="checkbox"/> Pole Trailer	<input type="checkbox"/> Vehicle Towing Another Veh.	<input type="checkbox"/> Intermodal Container Chassis	<input type="checkbox"/> NA (No Cargo Body)	<input type="checkbox"/> Other Unknown	
<input type="checkbox"/> Cargo Tank	<input type="checkbox"/> Dump	<input type="checkbox"/> Auto Transporter	<input type="checkbox"/> Grain / Chip / Gravel	<input type="checkbox"/> Log						
HAZARDOUS MATERIALS	PLACARD DISPLAYED <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	4-DIGIT NO.	CLASS	HM CARGO PRESENT <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	HM CARGO RELEASED <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	HAZARDOUS MATERIAL NAME				
8 — CODES										
ROADWAY CONDITION CODES 1. Dry 2. Wet 3. Snow 4. Ice / Frost 5. Slush 7. Standing Water 8. Moving Water 9. Other (Explain) 11. Mud, Dirt, Gravel 12. Sand U. Unknown (Explain)			ROADWAY SURFACE CODES 1. Concrete 2. Asphalt 3. Brick 4. Gravel 5. Dirt / Sand 6. Multi-surface 7. Cobblestone 8. Other (Explain) U. Unknown (Explain)			LIGHT CONDITION CODES 1. Daylight 2. Dark-Lighted 3. Dark-Unlighted 6. Dark-Unknown Lighting 7. Other (Explain) 8. Dawn / Dusk U. Unknown (Explain)		WEATHER / ENVIRONMENTAL CONDITION CODES 1. Clear 2. Cloudy 3. Rain 4. Snow 5. Sleet / Hail 6. Freezing (Temp) 7. Fog / Mist 10. Severe Crosswinds 11. Other (Explain) 12. Blowing Snow 13. Smoke / Smog U. Unknown (Explain)		
SEAT LOCATION XX — Not Known M — Motorcycle CP — Commercial Passenger CE — Occupant — Enclosed Load Area OU — Occupant — Unenclosed Load Area RC — Rail Crew VE — Riding on Motor Vehicle Exterior (non-trailing unit) SS — Sleeper Section of Cab (truck) TU — Trailing Unit SV — Other (Explain in Narrative) NA — Not Applicable		INJURY (Enter Numerical Value) 1. (K) Fatal Injury 2. (A) Suspected Serious Injury 3. (B) Suspected Minor Injury 4. (C) Possible Injury 5. (O) No Apparent Injury U. Unknown N. NA		TRANSPORTED (For Medical Treatment) 1. No 2. EMS 3. Other U. Unknown N. NA		EJECTION 1. NA 2. No 3. Partially 4. Totally U. Unknown		AIRBAG 1. None / Not Applicable 3. Not Deployed 4. Removed 5. Deployed — Front 6. Deployed — Side 7. Deployed — Curtain 8. Deployed — Other (Knee, Air Belt, etc.) 10. Deployment Unknown U. Air Bag Presence Unknown		
SAFETY DEVICES 1. None 2. Not Used 3. Shoulder Belt Only 4. Lap Belt Only 5. Shoulder and Lap Belt 7. DOT Compliant MC Helmet 8. No Helmet 10. Booster Seat 11. Child Restraint — Forward Facing 12. Child Restraint — Rear Facing 13. Other Helmet 14. Reflective Clothing 15. Other (Explain) 16. Child Restraint — Type Unknown 17. Stretcher 18. Wheelchair 19. Lighting 20. Reflectors U. Use Unknown N. Not Applicable										
PERSONAL CONVEYANCE TYPE CODES 1. Scooter — Mobility Assistance / Motorized 2. Scooter — Stand-up / Motorized 3. Stand-up / Non-motorized 4. Stand-up / Motorized-Other				5. Stroller 6. Rideable Toy 7. Other (Explain)				BICYCLE LANE / FACILITY CODES 1. Signed Route (No Pavement Marking) 2. Shared Lane Markings 3. On-street Bike Lanes 4. On-street Buffered Bike Lanes 5. Separated Bike Lanes 6. Off-street Trails / Sidepaths 7. Other (Explain) U. Unknown N. Not Applicable		
DISTRACTED / INATTENTIVE CODES 1. External Distraction 2. Passengers 3. Stereo / Audio / Video Equipment 4. Navigation Device				5. Communication Device — Hand-held 6. Communication Device — Hands Free 7. Communication Device — Texting / E-mailing 8. Communication Device — Web Browsing				9. Eating / Drinking 10. Reading 11. Tobacco Use 12. Grooming		
13. Computer Equipment / Electronic Games / etc. 14. Adjusting Vehicle Controls 15. Other (Explain)										
ENDORSEMENT CODES 1. H — Hazardous Materials 2. N — Tank Vehicle 3. P — Passenger 4. S — School 5. T — Double / Triple Trailers 6. X — Combination of Tank Vehicle and Hazardous Materials 7. Other Non-commercial License Endorsements (e.g., Motorcycle, etc.)										
VEHICLE TYPE CODES 1. Motor Vehicle In Transport 2. Parked Motor Vehicle 3. Working Motor Vehicle U. Unknown				OTHER VEHICLE CODES 1. Riding Mower / Garden Tractor 2. Golf Cart 3. Snowmobile 4. Forklift 6. Low Speed Vehicle (LSV) 7. Other (Explain)						
VEHICLE ACTION / SEQUENCE OF EVENTS (Items with double-asterisk [**] require additional coding) 1. Going Straight 2. Overtaking 3. Making Right Turn 4. Right Turn on Red 5. Making Left Turn 6. Making U-Turn 7. Skidding / Sliding 8. Stopping / Stopping 9. Start In Traffic 10. Start From Parked 11. Backing 12. Stopped In Traffic 13. Parked 14. Changing / Merging Lanes 15. Avoiding 16. Cross Median 17. Cross Center Of Road 18. Cross Road 19. Airborne 20. Ran Off Roadway — Right 21. Ran Off Roadway — Left 22. Overturn / Rollover 23. Fire / Explosion 24. Immersion 25. Jackknife 26. Cargo / Equipment Loss / Shift 27. Equipment Failure 28. Separation Of Units 29. Returned To Roadway 30. Collision Inv. Pedestrian (**) 31. Collision Inv. Bicycle / Pedalcycle (**) 32. Collision Inv. Railway Vehicle 33. Collision Inv. Animal (**) 34. Collision Inv. MV in Transport 35. Collision Inv. Parked MV 36. Collision Inv. Fixed Object (**) 37. Collision Inv. Other Object (Explain) 38. Other Non-collision 41. Collision Inv. Working MV 42. Downhill Runaway 43. Fell / Jumped From MV 44. Thrown / Falling Object 46. Ran Off Roadway — Other (Explain) 47. Cross Separator 48. Collision Inv. Other Non-motorist (**) 49. Struck By Falling, Shifting Cargo, Object Set In Motion by Motor Vehicle 50. End Departure (T-intersection, Dead-end, etc.)										
ANIMAL CODES FOR VEHICLE ACTION / SEQUENCE OF EVENTS 60. Deer 61. Farm Animal 62. Dog 63. Other Animal U. Unknown										
FIXED OBJECT CODES FOR VEHICLE ACTION / SEQUENCE OF EVENTS 20. Tree / Stump (Standing) 21. Embankment / Driveway / Ground / Rock Bluff 22. Guardrail Face 23. Utility Pole / Guy Wire 24. Fence 25. Street Light Support 26. Culvert 27. Highway Traffic Sign Post / Support 28. Bridge Pier / Abutment / Support 29. Curb 30. Mail Box 31. Concrete Traffic Barrier 32. Building 33. Traffic Signal Support 34. Impact Attenuator / Crash Cushion 35. Fire Hydrant 36. Other (Explain) 37. Bridge Parapet End 38. Bridge Rail 39. Guardrail End 40. Other Traffic Barrier 41. Overhead Sign Support 42. Ditch 43. Other Post / Pole / Support 44. Wall 45. Cable Barrier 46. Bridge Overhead Structure 47. Overhead Line / Cable U. Unknown										
PROBABLE CONTRIBUTING CIRCUMSTANCES (Items with double-asterisk [**] require additional coding) 1. Vehicle Defects (Explain) 3. Improperly Stopped in Roadway 4. Speed — Exceeded Limit 5. Too Fast For Conditions 6. Improper Passing 7. Failure to Obey Traffic Signs, Signals, or Officer 8. Wrong Side (Not Passing) 9. Following Too Close 10. Improper Signal 11. Improper Backing 12. Improper Turn 13. Improper Lane Usage / Change 14. Wrong Way 15. Improper Start From Park 16. Improperly Parked 17. Failed To Yield 18. Alcohol 19. Drugs 20. Physical Impairment (Explain) 21. Distracted / Inattentive (**) 23. Vision Obstructed 24. Driver Fatigue / Asleep 25. Failed to Dim Headlights 26. Failed to Use Lights 27. Improper Towing / Pushing 28. Overcorrected 29. Improper Riding / Clinging To Vehicle Exterior 30. Failed To Secure Load / Improper Loading 31. Animals in Roadway 32. Object / Obstruction in Roadway 33. Other (Explain)										

5.6.2 Data & Report Layout

The agency/vendor will provide a sample of test crash reports to ensure that the data/reports being submitted is in the correct layout/format as outlined in item 4.0 and item 5.6.1. The test crash reports will be composed of the crash types and crash scenarios outlined in item 5.6.4 Test Cases.

5.6.3 Data Quality Control

Data quality control edits and code validation edits will be conducted on the same test crash reports as the data layout testing. The agency/vendor must be able to pass these edits before the MSHP will allow the agency/vendor to submit data electronically to the MOCARS.

5.6.4 Test Cases

Test crash reports will need to be submitted for all the following:

Test crash reports involving a motor vehicle in transport for the following crash types:

- Overturning
- Fire/Explosion
- Immersion
- Jackknife
- Fell/Jumped from MV
- Cargo/Equip Loss/Shift
- Other Non-Collision
- Thrown or Falling Object
- Animal
- Pedalcycle
- Fixed Object
- Other Object
- Pedestrian
- Railway Vehicle
- Motor Vehicle in Transport
- Parked Motor Vehicle
- Working Motor Vehicle
- Other Non-Motorist.

These crash types are listed in Section 1 - General Crash Information of the MUCR form and there is a detailed explanation of each starting on page 29 of the 2024 Missouri Uniform Crash Report Preparation Manual.

In addition, test crash reports involving the following will need to be submitted:

- Private property/non-traffic crash.
- Unknown driver crash.
- A crash with large number of passengers (50 plus) such as a school bus, motor coach. or passenger train.
- Bus crash with one of the bus options (school bus, intercity, transit/commuter, charter/tour, or other - see pages 77 through 79 of the MUCR Preparation Manual) selected in the vehicle body type

field, Section 7B.

- A crash where 15 Sequence of Events are noted for a single vehicle.
- A motorcycle crash.
- An ATV crash.
- A crash in which "other vehicle" is selected in the vehicle body type field and an "other vehicle" code is entered, Section 7B of the MUCR.
- An emergency vehicle.
- A commercial motor vehicle crash with Subsection 7H completed.
- A crash involving a non-motorist and completion of Section 5.

6.0 SUPPORT

The MSHP, Patrol Records Division, will support and provide assistance with any issues that agencies/vendors may have with using the web services described in this document, understanding and implementing the edits described in the *MOCARS 2024 MUCR Field Specification for XML* document, and comprehending information in the *2024 MUCR Preparation Manual*. However, the MSHP does not have the resources to provide technical support or serve as a "help desk" for law enforcement agencies or officers needing assistance using their RMS or related crash report software. It is the agency's/vendor's responsibility to provide any and all support to their RMS/software users.

7.0 SPECIFICATION DISCLAIMER

The data specifications provided in this document as well as in the document *MOCARS 2024 MUCR Field Specifications for XML* document and *2024 MUCR Preparation Manual* are believed to be thorough and complete. However, there is always the possibility that these specifications and manual may change due to oversights. Should this occur, agencies that electronically submit data to the MOCARS must agree to change their crash file processing.

8.0 CHANGE LOG

10/19/2022

Changed the length of XML element <Location> from 1 to 2.

Element:	Ref #:	Type:	Length	Form:
<Location>	3.28	String	2	5

01/20/2023

Increase the length of the following XML elements for address from 40 to 50 characters.

<Address1>	2.40	String	50	7B
<Address2>	2.41	String	50	7B

03/23/2023

Changed the length of the following XML elements for DSN from 5 to 10 characters.

Element:	Ref #:	Type:	Length	Form:
----------	--------	-------	--------	-------

<ReportingOfficerDSN>	1.71	String	10	10
<ReviewingOfficerDSN>	1.75a	String	10	10
<ReviewingOfficer2DSN>	1.76a	String	10	10

03/28/2023

Added the XML element <OnMotorizedPedalcycle>

<OnMotorizedPedalcycle>	3.24.4	String	1	5
-------------------------	--------	--------	---	---

07/06/2023

Removed item 5.1.4

5.1.4 Accident.xsd (Removed)~~Describes the elements of the accident.xml.~~**10/12/2023**

Added the XML element <EngineerCertificateExpirationDateNA>

<EngineerCertificateExpirationDateNA>	6.08.1	Boolean		T
---------------------------------------	--------	---------	--	---

11/14/2023

Page 24, updated page one of the Missouri Uniform Crash Report form to reflect the changes to the pedalcyclist on a motorized pedalcycle in Section 5 -- Non-motorist. Also, page 30 updated the Non-Motorists / Occupants Continuation / Supplement form of the Missouri Uniform Crash Report to reflect the changes to the pedalcyclist on a motorized pedalcycle in Section 5 -- Non-motorist.

05/09/2024

Page 14, Removed elements/tags <TrackOwnerAddress> and <TrainOwnerAddress> from the Crash XML Schema.

Page 16, changed element/tag <TrainCrew> to <Occupant>.

</Occupant>				
</Occupants>				
<TrainCrews>				
<TrainCrew> <Occupant>				

Page 17, changed the element/tag </TrainCrews> to </Occupant>.

</TrainCrew>				
</TrainCrews> </Occupant>				
</Train>				

10/10/2024

Page 4, updated information for item 2.0 Beginning Agency Service. Page 20, updated information for item 5.5 Exception Processing - Electronic Submission Compliance Testing.

2.0 BEGINNING AGENCY SERVICE

Before an agency can begin submitting MUCR reports/data electronically, their agency must be added to the MOCARS Web Service. To do so, the vender must follow the outlined steps.

- 4) Set up new agency/administrator in your RMS.
- 5) Upon completion, email the Agency Name/ORI to MSHP, Patrol Records Division, Senior Program Specialist John Bassett at John.Bassett@mshp.dps.mo.gov and Roger Branson, Jr. at Roger.BransonJr@mshp.dps.mo.gov.
 - a) Identify the agency that will begin posting crash reports/data to MOCARS via the online submission process.
 - b) In the "Subject" line enter the following text "Please add [*agency name*] [*agency ORI*] to the list of accepted e-MOCARS users."
 - c) "CC" the new agency administrator contact on the e-mail request to **Mr. Bassett and Mr. Branson.**
- 6) You will receive an email communication from the MSHP regarding the next steps for the MOCARS electronic data submission process.

5.5 Exception Processing

Electronic Submission Compliance Testing:

During the initial start-up phase, a period of testing will be required. Testing is done on the application level. If a vendor tests its application and passes, either any agency that uses the approved application can submit records to MSHP-MOCARS, or the MSHP may require each agency using the vendor's application complete the required testing process.