

This document describes the items delivered with the CDS Raw Data Extracts and/or CDS Decode Database, as follows:

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I. About ODOT’s Crash Data

ODOT compiles crash data is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation Department of Motor Vehicles as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit cannot guarantee that all qualifying crashes are represented, nor can we assurance that all details pertaining to a single crash are accurate.

Citizen Driver Self-Reporting Considerations

Oregon is an accident self-reporting state by statute. This means not all crashes are attended by law enforcement. Local and state law enforcement agencies do not have enough resources to cover all crashes, nor are they required by law to do so. Officers strive to attend all fatal, serious injury and major crashes that block traffic ways and create unsafe circumstances for other drivers. At this time approximately 50% of crash report cases received, include a police crash report and information from that report is included in the data. Due to the nature of driver self-reporting, some contributing causes, locations, and driver issues will be under-reported. Examples are crashes involving:

- Cell phone use / texting / handheld devices
- Distraction
- Alcohol and /or drugs
- Bicycle vs. vehicle collisions that require no medical transport or emergency response
- Hit-and-run crashes with parked vehicles or fixed objects, because there is no driver information available for DMV to assign the crash to a driver record
- Driver license status
- Crashes in rural parts of the state

See the Disclaimers section at the end of this document for additional information regarding use and interpretation of ODOT’s crash data.

II. Historic Crash Data Considerations

The Crash Data System (CDS) currently contains 226 data elements (including system-generated & calculated fields). Despite data conversion efforts, the CDS as it exists now is different from the versions that existed in 1985, 1995, 2001, 2007, and 2016. Because database expansion, conversion, and enhancements occur on an ongoing basis, data for recent years is not always comparable to data from many years prior. Consider also that the physical road network across the state changes annually in many areas due to construction, jurisdictional transfers, and natural events such as landslides that require re-routing of a highway. Legislation and national safety hot

topics may influence the data that is collected. For these reasons, care must be taken when analyzing or comparing recent data with historic figures.

Effective for 2011 Data

A higher number of crashes may be reported for 2011 and later years compared to earlier years. This is not due to an actual increase in crashes. The higher numbers result, in part, from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to include previously unavailable, non-fatal crash reports to the annual data file. Please keep this change in mind when comparing pre-2011 crash statistics.

Effective for 2015 Data

The option of, “property damage only” (PDO) was discontinued as a “crash severity” option for *Pedestrian or Pedalcyclist-Involved* motor vehicle crashes. The decision to include bicycle and pedestrian collisions with motor vehicles, as at least a “possible injury” is based on the circumstance that provide bicyclists and pedestrians no legal reporting requirement or option when involved in crashes with motor vehicles. As vulnerable road users, it was determined that collisions with motor vehicles must result in at least a “possible injury” despite the lack of formal input from the non-motor vehicular participants. Expect data for this injury category to increase.

Effective for 2016 Data and Ensuing Years

“Property damage only” (PDO) motor vehicle traffic crashes will have a smaller set of data coded. There are three levels of data in the Crash Data System; Crash, Vehicle and Participant. Effective in 2016 the Crash level data will be complete. However, the Vehicle and Participant data elements will be reduced.

“Recreational marijuana” use was legalized July 2016 in Oregon. Available information from police reporting on this element will be included in the 2016 data.

III. Periodic Changes to State Reporting Requirements Impact ODOT’s Crash Data File

Changes to the Oregon Revised Statutes that affect the reporting threshold for submitting traffic crash reports to DMV directly impact the Crash Data file. This may result in a significant difference in the number of crash reports received for analysis and entry into ODOT’s Crash Data System for the year following the change, until the change in the law becomes well known. Statistically significant reductions or increases in annual crash data may result. The Crash Analysis and Reporting Unit recommends that users refer to the Oregon Revised Statutes and their effective dates, when analyzing crash data for significant changes.

Prior to 09/01/1997, legally reportable motor vehicle traffic crashes were those involving death, bodily injury, or damage to personal property in excess of \$500. The threshold for damage to personal property increased to \$1,000 for crashes that occurred between 9/01/1997 and 12/31/2003.

As of 01/01/2004, drivers are required to file an Accident and Insurance Report Form with DMV within 72 hours of a crash, when:

- damage to the driver's vehicle is over \$1,500;
- damage to any vehicle is over \$1,500 and any vehicle is towed from the scene as a result of damage from the accident;
- if injury or death resulted from the accident; or
- If damage to any one person’s property other than a vehicle involved in the accident is over \$1,500.

Effective 01/01/2018, DMV raised the damage threshold to \$2,500. For more information on filing requirements, please contact DMV, www.oregon.gov/odot/dmv.

IV. Explanation of System-generated and Summary Fields

- A. Description of system-generated fields available in Raw Data Extracts and Decode Database

The Raw Data Extract (CDS501) and Decode Database (CDS510) contain fields that were to simplify querying. Correct use of these fields can eliminate the need for writing complex joins and subqueries.

B. Summary & Calculated Fields available in Raw Data Extract (CDS501) and Decode Database (CDS510), CRASH table.

| | |
|---|--|
| LAT_DD: | Latitude represented in decimal degrees |
| LONGTD_DD | Longitude represented in decimal degrees |
| TOT_VHCL_CNT: | total vehicles involved in this crash |
| TOT_FATAL_CNT: | total people killed (<i>not total fatal crashes</i>) |
| TOT_INJ_LVL_A_CNT: | total suspected serious injuries (INJ-A) |
| TOT_INJ_LVL_B_CNT: | total suspected minor injuries (INJ-B) |
| TOT_INJ_LVL_C_CNT: | total possible injuries (INJ-C) |
| TOT_INJ_CNT: | total non-fatal injuries |
| TOT_UNINJD_AGE00_04_CNT: | total participants age 4 and under; code 01 represents newborns thru age 01. <i>Excludes code 00 = age unknown</i> |
| TOT_UNINJD_PER_CNT: | total coded participants who were not injured |
| TOT_PED_CNT: | total injured participants who were pedestrians |
| TOT_PED_FATAL_CNT: | total pedestrians who were killed |
| TOT_PED_INJ_LVL_A_CNT | total pedestrians who were seriously injured |
| TOT_PED_INJ_CNT: | total pedestrians injured in this crash |
| TOT_PEDCYCL_CNT: | total participants in a crash who were pedalcyclists |
| TOT_PEDCYCL_FATAL_CNT: | total pedalcyclists who were killed |
| TOT_PEDCYCL_INJ_LVL_A_CNT | total pedalcyclists who were seriously injured |
| TOT_PEDCYCL_INJ_CNT: | total pedalcyclists injured in this crash |
| TOT_UNKNWN_CNT: | total participants that were an “other” or “unknown” type of non-motorist |
| TOT_UNKNWN_FATAL_CNT: | total "other / unknown type" non-motorist fatalities that occurred in this crash |
| TOT_UNKNWN_INJ_CNT: | total "other / unknown type" non-motorist injuries that occurred in this crash |
| TOT_OCC_CNT: | total vehicle occupants involved in this crash |
| TOT_PER_INVLV_CNT: | total person involved in this crash (sum of vehicle occupants and non-motorists) |
| TOT_SFTY_EQUIP_USED_QTY: | total participants (occupants and non-motorists) in this crash who were using safety equipment |
| TOT_SFTY_EQUIP_UNUSED_QTY: | total participants (occupants and non-motorists) in this crash with no or improper use of safety equipment |
| TOT_SFTY_EQUIP_UNKNWN_QTY: | total participants (occupants and non-motorists) in this crash for whom safety equipment use is unknown |
| TOT_PSNGR_VHCL_OCC_UNRESTRND_FATAL_CNT: | total passenger vehicle occupants killed who were not using safety restraints |
| TOT_MCYCLST_FATAL_CNT: | total motorcycle riders who were killed (operators and passengers) |
| TOT_MCYCLST_INJ_LVL_A_CNT: | total motorcycle riders who were seriously injured |
| TOT_MCYCLST_INJ_CNT: | total motorcycle riders who were injured, non-fatally |
| TOT_MCYCLST_UNHELMTD_FATAL_CNT: | total motorcycle riders killed not wearing a helmet |
| TOT_ALCHL_IMPAIRED_DRVR_INV_FATAL_CNT: | total people killed in crashes involving a DRIVER who had a BAC test result of .08 or higher |
| TOT_DRVR_AGE_01_20_CNT: | total drivers between ages 01 and 20, inclusive |
| LANE_RDWY_DPRT_CRASH_FLG: | Yes/No field indicating whether this crash was due to |

| | |
|--|---------------------------|
| | lane or roadway departure |
|--|---------------------------|

V. Raw Data Extract Files and Column Headers

A. Overview of Raw Data Extract file (CDS501.txt)

The Raw Data Extract files contain all available data on the selected crashes. Each crash case contains three different types of records: Crash, Vehicle and Participant. For each crash case included in the text file:

- One record is written for the crash information. This record is identified by a “1” in the “Record Type” column.
- One record is written for each vehicle that is involved in the crash. These records are identified by a “2” in the “Record Type” column.
- One record is written for each Participant that is involved in the Crash. These records are identified by a “3” in the “Record Type” column. The Vehicle Identifier on the Participant record is used to relate the Vehicle to each Participant who occupied it.

For each case, the Crash record is followed by the first Vehicle record or Non-Motorist record for that crash. Vehicle records are followed by all associated Participant records (vehicle occupants). Additional Vehicle records, Participant records, and Non-Motorist records follow, generally in accordance with the crash's sequence of events.

The “Vehicle Id” value on the Participant records can be used to link each vehicle occupant to its associated vehicle. Please note that Pedestrians, Pedalcyclists, and Unknown Non-Motorists are no longer tied to a “virtual” vehicle. As a result, the “Vehicle Id” value on those Participant records is blank or zero.

All fields are in text-compatible format. No fields are “packed” or “over punched”. Text fields may include leading zeros. Numeric fields that can potentially contain a minus sign have either a zero or a minus in the first character. The decimal point character is included in the output field when it is applicable for the given data item. Examples: a milepoint value of 23.45 may be shown as “0023.45”. A milepoint value of -46.00 may be shown as “-046.00”.

When a field is null in the master SQL database, it is null (represented only by a comma) in the CDS501 raw data extract.

B. Raw Data Extract files

Report template CDS501 was a comma-delimited plain text file until May 2019, when the Crash Data System was upgraded to SQL Server 2017. The CDS501 now has a .CSV file extension. Although it’s still comma-separated, it opens in an MS Excel window. If you prefer the extract to open as a plain text file, simply change the file extension from .CSV to .txt Refer to the **CDS501_RawDataExtract_Layout_rev_6-2020.doc** for field information, data types, and data format.

C. CDS_DataExtract_ColumnHeaders

The Raw Data Extract CDS501 has no column headers. Our decoder may have loaded the headers for you, or provided separate files contain only column headers. These can be imported or inserted into a spreadsheet.

VI. Decode Database

A. Description

The Decode Database is an MS Access 2003 database that is loaded with your requested subset of crash data. There are three (3) master data tables: CRASH, VHCL and PARTIC, and over 40 look-up tables or cross-reference tables. Tables can be exported to MS Excel or saved in .csv format.

B. Built-in Reports

The Decode Database contains two types of built-in reports.

1. Code Tables provide code descriptions for use in deciphering the codes used in the reports. They are:

- - ACTN Action
- - CAUSE Cause
- - ERR Error (usually made by participant)
- - EVNT Event
- - SFTY_EQUIP_USE Safety Equipment Use

2. Data Reports provide summary total or detail information on the crash data contained in the database.

| REPORT NAME | DESCRIPTION |
|--------------------------|---|
| rptIntersection: | summarizes all crashes by intersection and collision type |
| rptPRC_Type: | lists crashes singly; displays detailed information on all facets of a given crash |
| rptPRC_TypeWithCodes: | same as above, except provides interpretation tables for coded data |
| rptSpecificIntersection: | same as (a) above, except user specifies the desired intersection by entering the first and second street numbers (codes) |
| rptSummary: | summarizes all crashes by year and collision type, with totals by crash severity, injury, and other factors |
| rptSum_w/totals: | same as above, except does not provide a break on crash year |

VII. Spatial Data and Default Unlocatable Crash Points

Spatial data (latitude, longitude) are available for years 2007 and later. ODOT's separate linear referencing system (State Highway LRS and Milepoint) allows crashes on ODOT-maintained State Highways to be geo-referenced for all years for which data is available from the crash data file.

An MS Excel file containing the coordinates for all "Default Unlocatable Points" is available. This worksheet lists the default coordinates we use to place points for "unlocatable" crashes for each local jurisdiction.

Unlocatable crashes are crashes that can't be placed on a road network because either the crash report didn't provide enough information to identify the location of the crash, or because linework didn't exist in the OR-Trans layer used for geocoding those particular crash points.

Unlocatable crashes can be isolated using this criteria: UNLOCT_FLG = 1

We deliberately select a default coordinate for these crashes that is **off the road network** but **still within the local jurisdiction** in which the crash occurred. *This is why you'll find clusters of crash points that are unrelated to each other, placed somewhere off the road network (i.e., over a lake, field, or approximately 100 feet away from linework) within a city, county, or urban area.*

The following types of crashes are placed at a default location.

- Crashes that occurred on a highway (mainline, frontage road, ramp, etc.) or mile-pointed county road but at an unknown mile-point (MP = 999.99)
- Local road crashes where the nearest intersecting street or mile-point is unknown
- City street crashes where the distance and/or direction from the nearest intersecting street is unknown

VIII. Contacts

For additional information or assistance, please contact one of the following ODOT Crash Analysis and Reporting Unit staff members.

For assistance with understanding CDS coding protocols, please contact:

Kim Ward, Crash Code Team Leader, 503-986-4247, Kimberlee.S.Ward@odot.state.or.us

For assistance with the Raw Data Extract files or Decode Database, please contact either:

Theresa Heyn, Crash Data Analyst, 503-986-4233, Theresa.A.Heyn@odot.state.or.us or

IX. Disclaimers

Please read important considerations and caveats about ODOT's crash data in our **Crash Data Disclaimers**, here https://www.oregon.gov/odot/Data/documents/Crash_Data_Disclaimers.pdf