Transportation Advisory Committee

Meeting date: January 27, 2025

Agenda Item #: 7 (Attachment E)

Crash Data Process

Agenda item type: Discussion

Summary
A summary of the regional crash data process, including pathways, data flows between organizations and resulting data quality challenges.

Background
Crash data is an important tool used to understand and guide efforts to mitigate fatal and serious injury crashes on the regional transportation system. Crash data helps stakeholders understand where crashes occur, the causes of crashes, and the travel modes of people affected by crashes.

DRCOG staff prepare regional crash data for the Denver region after crash data is collected by law enforcement agencies and processed by the Colorado Department of Revenue and Colorado Department of Transportation. Errors and other challenges can inadvertently occur at each stage of collection and processing. DRCOG staff has engaged with member governments, state and federal agencies, law enforcement agencies, safety advocates, software vendors and more to learn about crash data process and current issues and challenges with crash data in Colorado.

Action by others
None

Previous discussion/action
None

Recommendation
None

Attachment
Staff presentation

For more information
If you need additional information, please contact Erik Braaten, Senior Safety Planner, Transportation Planning and Operations at 303-480-6711 or ebraaten@drcog.org.

Crash data process

Transportation Advisory Committee – January 27, 2025
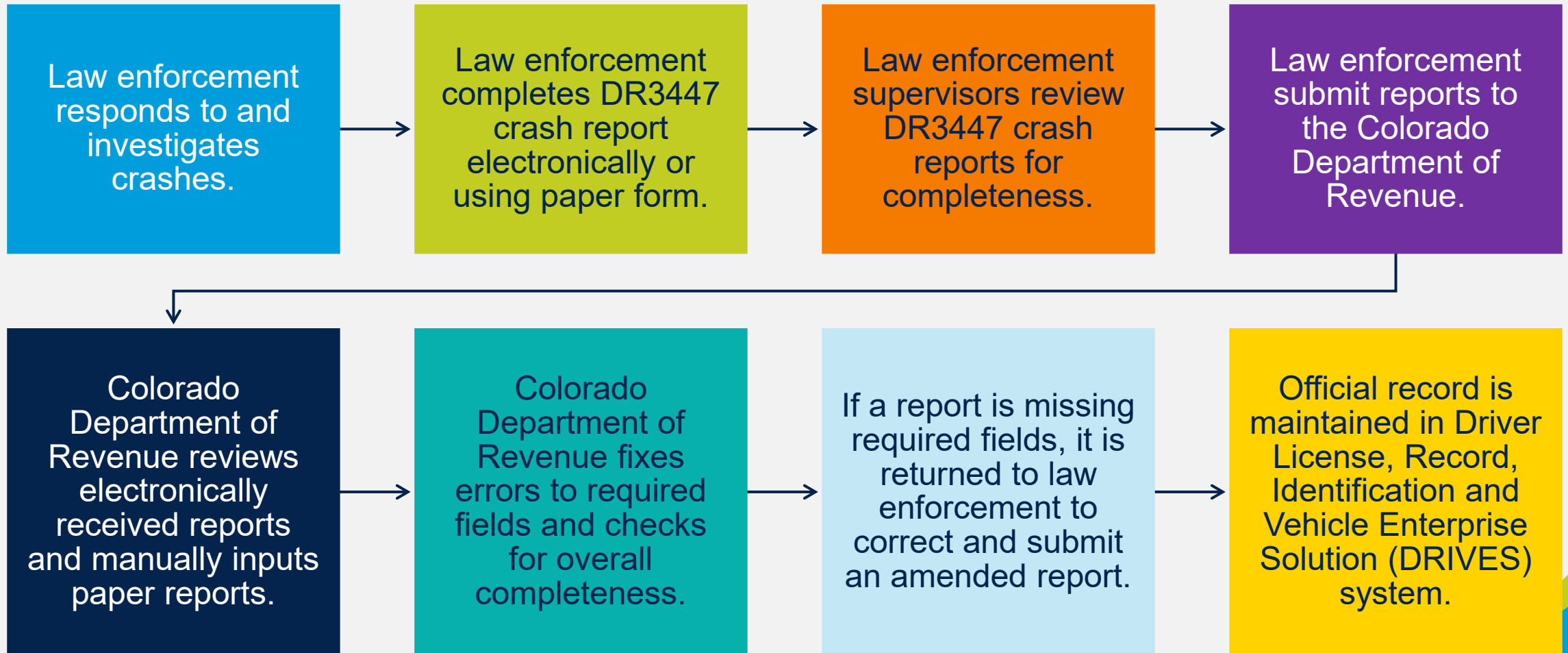
Agenda

- Data collection.
  - General steps.
  - Challenges.
- Data processing.
  - General steps.
  - Challenges.
- Crash data collection, processing, and analysis model.
- Next steps.

Data collection introduction

- The State of Colorado requires law enforcement agencies to complete and submit to the **Colorado Department of Revenue a standard form called the DR3447** after investigating a crash.

- Law enforcement agencies **train differently and use different software and hardware** when collecting crash data but there is a **general path for data collection**.

Data collection general steps

Law enforcement agencies and Colorado Department of Revenue

Law enforcement responds to and investigates crashes.	Law enforcement completes DR3447 crash report electronically or using paper form.	Law enforcement supervisors review DR3447 crash reports for completeness.	Law enforcement submit reports to the Colorado Department of Revenue.
Colorado Department of Revenue reviews electronically received reports and manually inputs paper reports.	Colorado Department of Revenue fixes errors to required fields and checks for overall completeness.	If a report is missing required fields, it is returned to law enforcement to correct and submit an amended report.	Official record is maintained in Driver License, Record, Identification and Vehicle Enterprise Solution (DRIVES) system.

Data collection challenges

- Errors.

- Missing data.

- Inconsistency.
  - Spelling and street name conventions.
  - Non-motorist form not being filled out.

- Underreporting.
  - Impairment.
  - Non-motorist crashes.

Data collection challenge: location

- Location methods prescribed in Investigating Officer's Crash Reporting Manual:
  - Latitude and Longitude.
    - On scene.
    - Computer aided dispatch.
  - Intersection, and appropriate off-set.
  - Route and mile point, and appropriate off-set.
- Observed in data but incorrect and more difficult to geocode:
  - Address.
  - Block location.

Underreporting: Impairment

- Limited observation that impairment is underreported in CDOT and DRCOG crash data.
- Reasons for some discrepancies.
  - Officer **hesitancy to indicate** impairment suspected.
  - If individuals are **deceased on scene, they will not be tested**.
  - **Hospitals test for drugs or alcohol for drug interaction** concerns during treatment, not to collect data for law enforcement.
  - **Autopsy results can take weeks to months**, and amended reports are often not filed with this new information.
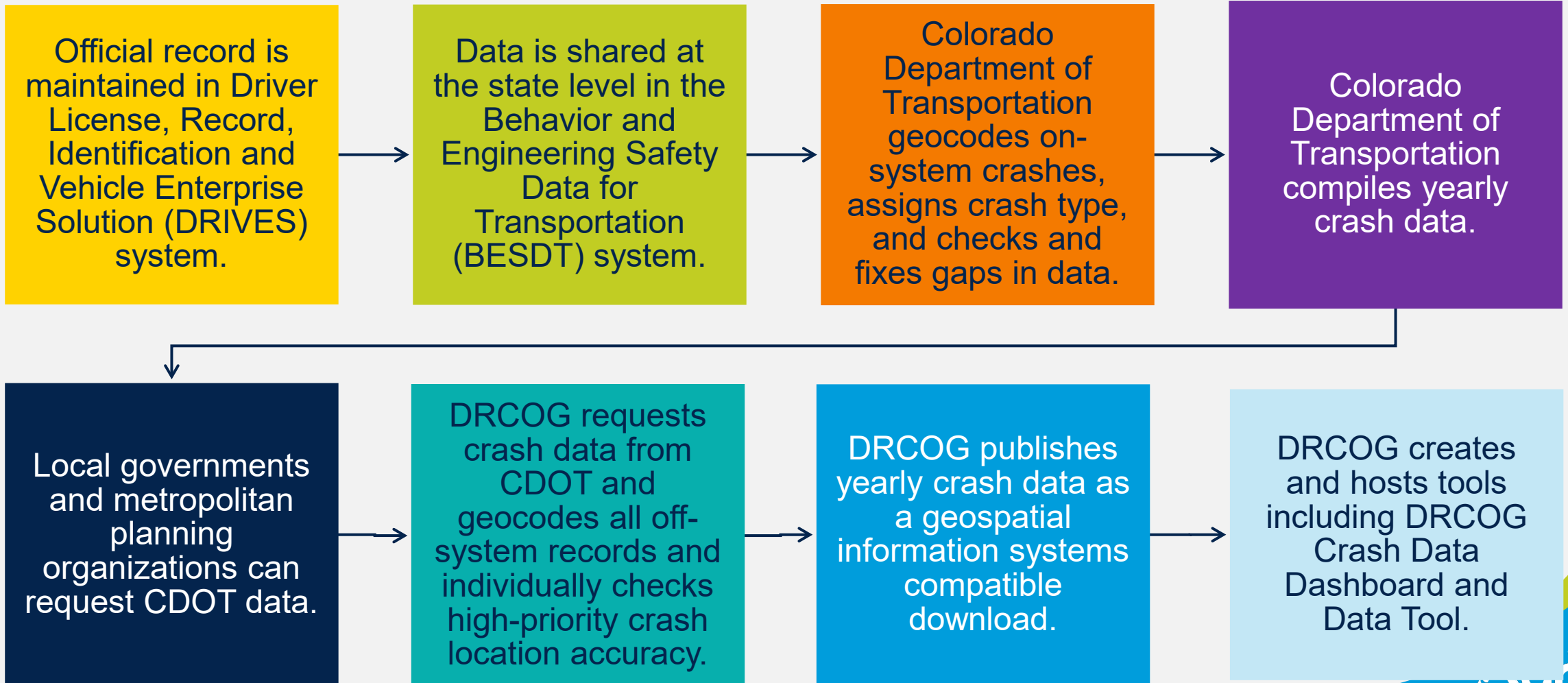
Underreporting: Non-motorist crashes

- Some non-motorist crashes occur which **may not seem serious** at the time by those involved, leading to **no crash report** being filed.

- Due to the definition of a crash, **if a collision occurs between non-motorists, even if it results in serious injury or fatality, a crash report will not be filed**, potentially leaving a gap in data which could inform safety decisions.

Data processing general steps

Colorado Department of Revenue, Colorado Department of Transportation, and DRCOG

Official record is maintained in Driver License, Record, Identification and Vehicle Enterprise Solution (DRIVES) system.

→

Data is shared at the state level in the Behavior and Engineering Safety Data for Transportation (BESDT) system.

→

Colorado Department of Transportation geocodes on-system crashes, assigns crash type, and checks and fixes gaps in data.

→

Colorado Department of Transportation compiles yearly crash data.

Local governments and metropolitan planning organizations can request CDOT data.

→

DRCOG requests crash data from CDOT and geocodes all off-system records and individually checks high-priority crash location accuracy.

→

DRCOG publishes yearly crash data as a geospatial information systems compatible download.

→

DRCOG creates and hosts tools including DRCOG Crash Data Dashboard and Data Tool.

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Data processing challenges

- **Potential for data to be lost** between law enforcement agencies, the Colorado Department of Revenue, and Colorado Department of Transportation due to data **transmission issues**.
  - Field types that are **incompatible** between systems.
  - Field name **misalignment** between records management systems and state expectations.
- Geocoding methods can assign **improper location coordinates**.
- Data can be **coded incorrectly or be missing substantial amounts** of information.

Crash data collection, processing and analysis model

- [Graphical representation](#) of some of the **ways crash data can flow** in Colorado and the Denver region.

- Built based on conversations held with **Crash Data Consortium** stakeholders.

Next steps

- DRCOG continues to work with crash data stakeholders through the **Crash Data Consortium**.
    - Upcoming meeting on **February 20, 2025**.
    - **Prioritizing strategies** from the Final Report.
- DRCOG anticipates publishing **2023 crash data** for the Denver region and **updating** the **DRCOG Crash Data Dashboard** to cover the **years 2019 – 2023** within the next few months.
- **Colorado Task Force on Drunk and Impaired Driving** subcommittee on **Improving Traffic Data Accuracy**.

Thank you

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