Regional Transportation Committee

Meeting date: October 15, 2024

Agenda Item #: 4 (Attachment B)

DRCOG Crash Data Dashboard Demonstration

Agenda item type: Discussion

Summary
A presentation on the background and formation of the DRCOG Crash Data Dashboard and a demonstration of the dashboard's analysis capabilities.

Background
DRCOG staff developed the Crash Data Dashboard in 2024 to provide the public, local governments, and other stakeholders the ability to visualize and analyze crash data through a free-to-use web-based platform. The data underlying the dashboard covers a rolling five-year period of crash data for the Denver region and will be updated annually as new data is made available. The current data is for years 2018 through 2022.

The dashboard is structured around themed tabs with maps and charts that can be used to analyze the crash data and additional reference data layers to give the crash data context. Each of the dashboard elements can be filtered using a wide array of selectors, providing an easy way for users explore the data and examine the specific aspects of crash data they are most interested in exploring. The dashboard contains many features and ways to interact with the data, so supplemental information regarding the dashboard structure, underlying data definitions, and the overall use of the dashboard is available on the 'About' tab directly within the dashboard.

Every data point in the dashboard reflects human lives impacted by a crash, a reminder that behind the statistics are real people and real communities. A goal of this effort is to increase access to regional crash data and reduce serious crashes through positive behavioral and institutional shifts informed by data-driven analysis. The Denver region is working towards a goal of zero crash-related fatalities, and this new dashboard is one more tool to help achieve that objective.

DRCOG staff will provide an overview of the creation of the dashboard and demonstrate some of the functions of the dashboard.

Action by others
None

Previous discussion/action
None

Recommendation
None

Attachment
DRCOG Crash Data Dashboard presentation

For more information
If you need additional information, please contact Byron Schuldt, Senior Geographic Information System Specialist, Regional Planning and Development, at 303-480-6797 or bschuldt@drcog.org.

DRCOG Crash Data Dashboard

Regional Transportation Committee: October 15, 2024

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Background

- Motivations:
  - Meet a need for **regional tools** and **pre-packaged analysis**.
  - **Continued safety crisis** in the region.
  - Growing **DRCOG capacity** and **data expertise**.
- Objectives:
  - Provide **easy access** into insights from complex crash data.
  - Provide **central location** for regional crash statistics.
  - **Spur more action** to achieve Regional Vision Zero.

Data source

- Crash data collected by law enforcement.
- Data is transmitted to the Colorado Department of Revenue, then to the Colorado Department of Transportation (CDOT).
- CDOT data is the basis of DRCOG crash data product and source for many local governments and organizations.
- Data years: rolling five-year window.
  - Currently: 2018 – 2022.
  - Will be updated annually.

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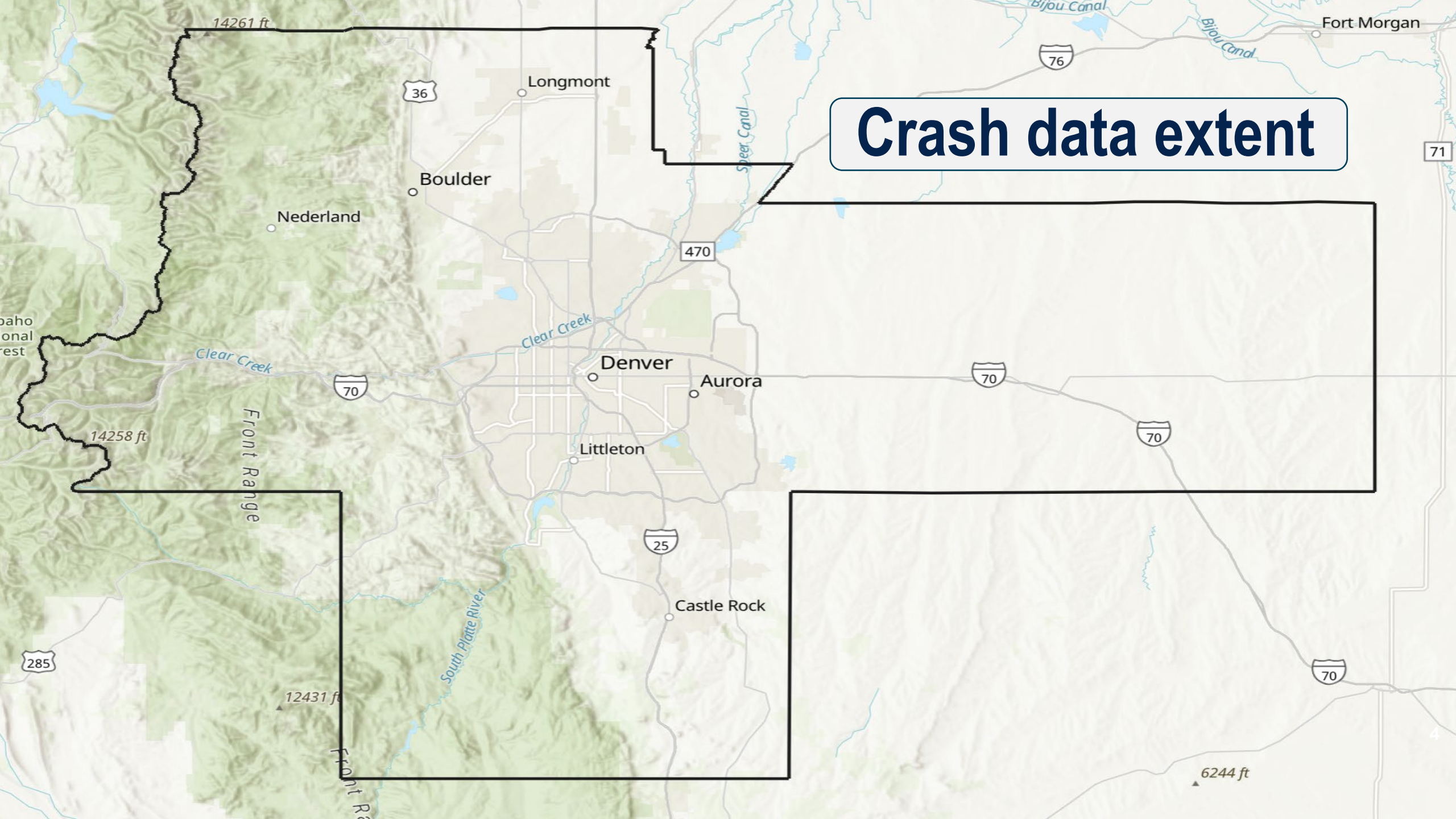
Crash data extent
14261 ft
Longmont
Boulder
Nederland
Fort Morgan
Bijou Canal
Bijou Canal
Speer Canal
Clear Creek
Clear Creek
Denver
Aurora
Littleton
Front Range
14258 ft
South Platte River
Castle Rock
12431 ft
6244 ft
36
76
71
470
70
70
70
25
285
70

Quality control and processing

- Geolocate records not on the CDOT system.
- Clean the address fields.
- Snap to the road network (2022 data onwards).
- Manual checks for fatal, serious injury, non-motorist crash locations.

Stakeholder engagement

Winter 2024

- Internal discussion about objectives and audience.
- Software and data assessment: what are the possibilities and limitations?
- Use assessment to guide questions for stakeholders.

Spring 2024

- Internal engagement: transportation, regional planning, and Way2Go.
- External engagement: Regional Vision Zero Working Group and Crash Data Consortium.

Summer 2024

- Translated input into prioritized technical features where possible.
- Built first draft and solicited input from stakeholders.
- Incorporated input to hone features and launched final draft.

What we heard

- Internal:
  - Filter by custom area.
  - Identify top intersections.
  - Understand trends in crash types and severity.
  - Understand trends in bike and pedestrian crashes.
- External:
  - Ensure accuracy of data.
  - Quickly identify hotspots.
  - Compare crash types and trends in different parts of the region.
  - Analyze trends over time and assess countermeasure efficacy.

Key features

- Filter by attributes:
  - Date range.
  - Municipality.
  - County.
  - Mode of travel.
  - Severity.
  - Crash type.
  - And more!
- Themed tabs:
  - Where?
  - When?
  - Why?
  - How?
  - Who?
  - Vulnerable road users.
  - About.

Dashboard demonstration

Every data point in the dashboard reflects one or more human lives impacted by a crash, reminding us that behind the statistics are real people and real communities.

https://gis.drcog.org/crashdashboard

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Lessons learned

- Engage with stakeholders **early in the process**.
  - Be open to feedback and ideas, but prioritization is important.
- **Data cleaning** was the most time-intensive task.
- Some design decisions have **no 'right' or 'wrong' answer**.
  - Example: More features but slower versus fewer features but quicker.
- Exposing data on a granular scale **highlights errors and inconsistencies**.
- Be aware of **public perceptions** about your subject matter.

Next steps

- Upcoming promotion, including creating a video tutorial.
- Update data annually.
- Update design and functionality as additional feedback is received.

Thank you.
Questions or Comments?

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or

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