Regional Crash Data Needs Assessment

Denver Regional Council of Governments

Regional Crash Data Consortium – March 29, 2024

Introduction

Crash data is an invaluable tool used by local governments, the State of Colorado, federal agencies and many other stakeholders to improve traffic safety and save lives in the Denver region. The Denver Regional Council of Governments is committed to improving the accuracy, use and coordination of crash data at the regional level. DRCOG received 405c traffic records improvement grants from the National Highway Traffic Safety Administration for federal fiscal year 2023 and 2024 to investigate and demonstrate the value of a regional crash data consortium to inventory the needs of the region and to work to identify and address common issues with crash data collection, processing and analysis.

DRCOG staff developed the needs assessment to inform and guide the consortium's work throughout federal fiscal year 2024 and beyond. The needs assessment accompanies DRCOG's Regional Crash Data Inventory. The inventory outlines broad themes DRCOG staff heard from stakeholders throughout the state and the Denver region. The "Stakeholder engagement process" section in the Regional Crash Data Inventory contains information on how DRCOG staff collected and compiled the data for this needs assessment.

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Reading the Regional Needs Assessment

The Needs Assessment has been built in the format of a matrix with the following headings:

- Item
- Cross-reference to inventory
- Need
- Priority
- Sub-parts
- Potential strategies
- Potential resources
- Potential barriers

Item: Unique identifier for the identified needs.

Cross-reference to inventory: A quick reference field for users to find where in the Regional Crash Data Inventory more information about each need can be found.

Need: Regional needs identified by consortium stakeholders.

Priority: Priority assigned to each need ranging from low, medium and high.

Subparts: Some but not all needs contain subsidiary components.

Potential strategies: Potential strategies that may be used by stakeholders to achieve each need.

Potential resources: Potential resources that may be used to achieve each need, or stakeholders and partners who may serve specific roles in accomplishing each need.

Potential barriers: Potential barriers that may pose challenges to accomplishing the identified need.

Potential strategies, resources and barriers are not exhaustive but represent the Denver Regional Council Governments' staff's current understanding of each need and initial ideas for addressing each as of the publication of this assessment in early 2024.

Regional Needs Assessment

Item	Cross-reference to inventory	Need	Priority	Subparts	Potential strategies	Potential resources	Potential barriers
Geospatial-1	4.1	Increase number of records with accurate latitude and longitude	High	Increase number of records with latitude and longitude from law enforcement; increase number of records in state data with latitude and longitude	Coordination with law enforcement; acquire technological solutions; require latitude and longitude; increase number of coding staff; increase number of records submitted electronically; develop model policies	Law enforcement, Crash Manual Task Force, Colorado Department of Transportation, vendors, 405c	Agency capacity; technology; current policy
Geospatial-2	4.1	Improve geospatial accuracy of records in the Colorado Department of Transportation and DRCOG datasets	High		Connect crash records to All Road Network of Linear Referenced Data and linear referencing system; work with vendors; coordination with law enforcement	DRCOG, Esri Roads and Highways, Colorado Department of Transportation, All Road Network of Linear Referenced Data, Vendors, 405c	Agency capacity; linear referencing system integration challenges; availability of data to join to linear referencing system
Geospatial-3	4.4	Improve regional geospatial crash analysis	Medium	Develop or acquire regional processing, analysis or mapping tools; incorporate additional data such as traffic volumes and Level of Service of Safety with a linear referencing system	Evaluate existing examples in region and explore what kind of tools and analysis would be desired; develop regional crash data dashboard	DRCOG, Esri Roads and Highways, Colorado Department of Transportation, All Road Network of Linear Referenced Data, Vendors, 405c	Existing and planned projects (for example dashboards, vendor contracts) at state and local levels; linear referencing system integration challenges

Item	Cross-reference to inventory	Need	Priority	Subparts	Potential strategies	Potential resources	Potential barriers
Timeliness-1	4.2	Improve the timeliness of crash data delivery to stakeholders from the Colorado Department of Transportation	High		Improve completeness of submitted reports; streamline and innovate processes; catalog common challenges; increase number of records submitted electronically	Colorado Department of Transportation, Colorado Department of Revenue, law enforcement, 405c	Agency capacity
Quality-1	3.4, 4.1, 4.3	Improve data quality of fields of submitted reports	High	Improve consistency of submitted data; reduce number of errors present	Facilitate trainings on completing the DR3447 crash report form and why the data is important; investigate current collection methodologies; improve crash manual instructions; shared records management system; Standardize data transmission and storage	Law enforcement, Crash Manual Task Force, Colorado Department of Transportation, Federal Highway Administration	Legacy reporting systems integrated with other systems; cost of new technology or systems; different agency policies
Quality-2	4.2, 4.3	Improve completeness of submitted reports	High		Require additional fields for reports; Facilitate trainings on completing the DR3447 crash report form and why the data is important	Law enforcement, Crash Manual Task Force, Colorado Department of Transportation, Colorado Department of Revenue	

Item	Cross-reference to inventory	Need	Priority	Subparts	Potential strategies	Potential resources	Potential barriers
Quality-3	2.2, 3.2, 4.3	Address underreporting of data	Medium	Bike and pedestrian; impairment suspected	Trainings; improved crash manual instructions; standardize report taking; local governments work with their law enforcement agencies	Law enforcement, Crash Manual Task Force, local governments	Multiple sources of data and ways of collecting and verifying data; officer hesitancy
Quality-4	4.1, 4.3	Explore opportunities for improving law enforcement technologies or systems	Low		Peer analysis of other states and metropolitan planning organizations; explore funding for new software or equipment	405c, other grant programs	Legacy software systems and hardware integrated with other systems; cost
Capacity-1	3.3, 5.1	Build consortium partnerships	High		Law enforcement outreach; continued consortium meetings	DRCOG, Crash Manual Task Force, law enforcement, Statewide Traffic Records Advisory Committee	
Capacity-2	Introduction	Research successful consortium structures	Medium			DRCOG	
Capacity-3	Introduction	Explore funding opportunities for continued management of consortium activities	Medium			DRCOG, 405c, other grants	

Item	Cross-reference to inventory	Need	Priority	Subparts	Potential strategies	Potential resources	Potential barriers
Accessibility-1	3.3	Develop a single, standardized and geolocated data source	Medium		Aggregate data at the metropolitan planning organization level; develop and maintain a robust database at a state agency	DRCOG, Colorado Department of Transportation, Office of Information Technology, 405c	Data sharing or privacy agreements
Accessibility-2	3.3	Improve data sharing and agency collaboration	Medium		Facilitate greater data sharing; joint policy recommendations and shared best practices; trainings on how to use data	DRCOG, Colorado Department of Transportation, Federal Highway Administration, Colorado Information Sharing Consortium	Data sharing or privacy agreements
Accessibility-3	3.3	Improve transparency about data processing, stages of quality control, issues being addressed, procedures for accessing data and accompanying documentation	Low		Periodic updates from agencies	Colorado Department of Transportation, Colorado Department of Revenue, DRCOG	
Accessibility-4	3.4	Improve analyst access to crash diagrams and narratives	Low		Source diagrams from law enforcement; develop model policies	Law enforcement, local governments	Multiple sources of data and ways of collecting and verifying data; different agency policies

Item	Cross-reference to inventory	Need	Priority	Subparts	Potential strategies	Potential resources	Potential barriers
Integration-1	2.2, 3.1, 4.6	Integrate additional data sources with crash data	Medium	Integrate emergency responder and hospital data with crash data; integrate legal, citation and toxicology with crash data	Develop relationships with additional partners; peer analysis of other states and metropolitan planning organizations; develop and implement new unique identifier system for crashes	Colorado Department of Public Health and Environment, Colorado Hospital Association, fire districts, law enforcement, Colorado Department of Revenue, Colorado Department of Transportation, Office of Information Technology, Colorado Department of Public Safety, Colorado Bureau of Investigation	Data sharing or privacy agreements; unique identifier challenges
Integration-2	4.5	Reconcile differences between law enforcement and Colorado Department of Transportation and DRCOG datasets	Low		Periodically compare local law enforcement data against state or regional data	DRCOG, Colorado Department of Transportation, law enforcement, local governments, 405c	Data sharing or privacy agreements; different agency policies

Conclusion

Over federal fiscal year 2023, the Denver Regional Council of Governments engaged with dozens of stakeholders throughout the Denver region and the State of Colorado as a part of its work to investigate and demonstrate the value of a regional crash data consortium, inventory the needs of the region and to work to identify and address common issues with crash data collection, processing and analysis. The Regional Crash Data Inventory report — which accompanies this assessment — presents a detailed summary of the engagement results. The inventory documents the engagement strategy of the consortium and relays the data sources, analysis objectives, and issues and challenges experienced by stakeholders as communicated to DRCOG. The inventory's findings have informed the development of the regional needs assessment. The needs assessment lays out the crash data needs of the Denver region, potential strategies, and resources that stakeholders could employ to remedy these needs, and potential barriers to progress on each need. These potential strategies, resources and barriers are not exhaustive and represent DRCOG's current understanding of each need as of the publication of this assessment. The needs assessment sets a foundation to guide consortium activities through federal fiscal year 2024 and beyond.