

Appendix F
MERGE Mega Data Plan

Mega Project Data Collection Plan

This attachment to the City of Greeley, Colorado’s *Mobility Enhancements for Regional Growth and Equity (MERGE)* FY 2024 Multimodal Project Discretionary Grant (MPDG) application outlines the plan for data collection and analysis to evaluate the impacts of the proposed project five years after its significant completion of construction. The research aims to assess the effects of the project on three outcome criteria: 1) Safety, 2) Climate Change, Resiliency, and the Environment, 3) Equity, Multimodal Options, and Quality of Life.

Figure 1: Concept Map



The research will adopt a mixed-methods approach combining quantitative and qualitative data to comprehensively assess the identified outcome criteria. This will allow the project team to gather both objective data and capture users’ perceptions and experiences.

Outcome Criterion – Safety

Project Outcomes Measure: Actual annual average crash and injuries eliminated (compared to the predicted reduction in the Project area)

Predicted Project Impact: According to the MPDG application and Benefit Cost Analysis (BCA), the new, safer interchange and associated improvements are projected to achieve a **reduction of 640 vehicular crashes and 278 injuries in its first twenty years of operation.**

Measure Methodology Summary

1. To assess the safety impacts, pre-project and post-project accident rates and emergency response times within the project area will be compared. The data will be analyzed to assess if there are significant changes within the five-year time frame. Additionally, a spatial analysis can be conducted to identify any crash hotspots of motorized and non-motorized transportation.
2. User interviews may be conducted to identify perceived and tangible safety concerns. Any notable changes will be discussed in the context of the completed project.



Outcome Criterion – Climate Change, Resiliency, and the Environment

Project Outcomes Measure: Actual annual Greenhouse Gas reduction (compared to projected annual Greenhouse Gas reduction)

Predicted Project Impact: The MPDG application and BCA predict that the Project will result in a total estimated reduction of **6,464 metric tons annually of Greenhouse Gas** emissions derived from an increase in vehicle speed that comes from congestion relief. Stated another way, **40% less air pollutants** will be emitted annual than the ‘no build’ scenario.

Measure Methodology Summary

1. Over the five-year period, climate-related parameters within the project area will be collected. More specifically, air quality tests will be conducted to determine if less air pollutants have been emitted in comparison to the ‘no build’ scenario. Currently, multiple agencies collect this data in some capacity, including CDOT, the Department of Public Health & Environment, and the North Front Range MPO.
2. Pop-up user events could be hosted at the mobility hub to gauge how people are using the new infrastructure and if there has been a modal switch from pre-construction to post-construction conditions.

Outcome Criterion – Equity, Multimodal Options, and Quality of Life

Project Outcomes Measure: Actual annual modal shift

Predicted Project Impact: The MPDG application and BCA predict that by implementing the proposed project, improvements will result in an estimated **20% transit efficiency**. This benefit will result in a reduction in emissions, vehicle operating costs, and infrastructure wear and tear.

Measure Methodology Summary

1. Over the five-year period, ridership within GET will be collected. Data will also be collected within the project area to determine if more multimodal usage has increased in comparison to before the project.

Outcome Criterion – Equity Multimodal Options and Quality of Life

Project Outcomes Measure: Reduction in Average Transit Trip Travel Time

Predicted Project Impact: The City of Greeley conservatively estimates the **average transit trip travel time will be reduced by 20%**. With the construction of the two interchanges and mobility hub, transit will be able to travel more efficiently through the project area.



Measure Methodology Summary

1. As stated in the 2045 Greeley on the Go Transportation Plan, a key performance measure is 'Travel time on major corridors'. The performance target set by the transit agency is to 'Maintain current average travel times and maintain on-peak travel delay of not more than 20 percent over the next 10 years.' This target applies to all major corridors within the service area.
2. For the project area it is expected that the average transit trip travel time will be reduced by 20%. For transit routes that travel through the project area, trip times can be collected by the transit agency and compared to pre-project completion times.