



SAFETY ANALYSIS APPLICATION: Promoting Safety on Every Project

Until now, agencies have struggled to provide safety reports for diagnosis and countermeasure selection on all projects, according to FHWA guidelines, and limited the safety impact of their resource investments. Fortunately, Numetric's Safety Analysis app is about to make this challenge obsolete.

PROBLEM: THE SPEED OF SAFETY ANALYSIS CANNOT KEEP UP WITH PROJECT VOLUME

Diagnosis and Countermeasure Selection play critical roles in the Federal Highway Administration's (FHWA) prescribed Highway Safety Management Process. The goal of diagnosis is to "understand the crash patterns and identify the underlying factors contributing to crashes at sites identified from network screening."¹ Countermeasure selection identifies "the most effective countermeasure(s) to address or mitigate the underlying safety issues identified in [diagnosis] at the specific site."² Ideally, both should be applied not just on safety-motivated projects, but on "resurfacing, rehabilitation, reconstruction, and expansion projects," as well.²

Unfortunately, the realities of safety analysis and reports make this virtually impossible for your team. Your agency must manually query, combine, and analyze spatial, relational, and other data using disparate tools and systems — an incredibly time-consuming process. You might outsource this work to external consultants, but the results are largely the same:

- 1. A single report takes weeks to produce — too slow to keep up with the large volume of agency projects.**
- 2. Your agency is forced to decide which projects will get safety reports — and which ones won't.**
- 3. Most safety reports are not available until well into the final design phase — far too late to make a real impact on safety.**
- 4. Inevitably, the vast majority of your agency's projects move forward without considering safety at all.**
- 5. This diminishes the culture of safety and safety ROI within your agency.**

SOLUTION: AUTOMATE ANALYSIS AND REPORTS IN A PURPOSE-BUILT APP

Automating the busywork of pulling, joining, and analyzing data resolves the current capacity problem of diagnosis and countermeasure selection — especially when it is performed in an application that is built for this specific purpose. Numetric's Safety Analysis app lets you instantly perform crash diagnosis by road segment, intersection, or countermeasure, automatically calculate the benefit-cost ratio of any countermeasure, and generate a safety report in seconds, so safety can be considered on every agency project.

Safety Analysis Application Features

- Project-based analysis of roadways, curves and intersections
- HSM-driven recommendations
- Automated treatment benefit calculations
- One-click generation of safety reports as shareable PDFs

"We're serious about our zero fatalities goal, and Safety Analysis is going to help us get to that ultimate goal. Now, when we pick our safety projects, instead of just dividing things up equally, we can invest the money where the highest and greatest benefit-cost ratio manifests itself."

ROBERT MILES

Director, Traffic & Safety
Utah Department of Transportation

APPLICATION FEATURES

Numetric's Safety Analysis application empowers your agency to meet FHWA guidelines and perform robust diagnosis and countermeasure selection on all projects — safety-motivated or otherwise. The result: you can consider safety at every stage of a project and maximize your agency's safety ROI against dollars invested.

Project-based Analysis

Perform crash diagnosis by route, milepoint, segment, intersection, or countermeasure. At each location, use auto-generated benefit-cost ratios to gauge the benefits of each applied treatment and prioritize locations accordingly.

Data-driven Recommendations

Filter crash data at any given location according to crashes by milepoints, total crashes, or crash cost. For each location, view top countermeasures by maximum benefit or unique benefit and see annual cost savings, annual crash reduction, and annual severe crash reduction — all automatically calculated in a split-second using tried-and-true Highway Safety Manual (HSM) formulas.

Customizable Treatment Calculations

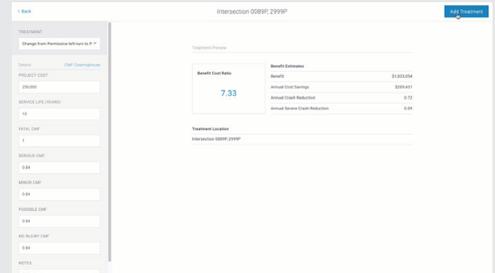
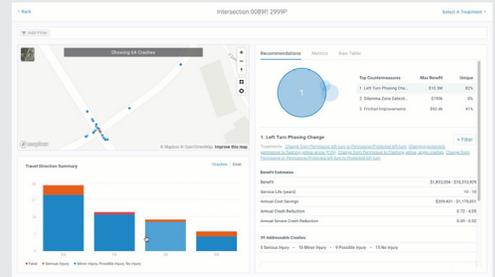
Instantly see the estimated project cost for any given treatment. On each, check or modify crash modification factors (CMFs) to fit your preferences and see how these changes affect estimates — i.e., benefit cost ratio, annual cost savings, annual crash reduction, and annual severe crash reduction.

Safety Report Generator

With one click, create a robust safety report — including: each specific road segment; crash types present in each segment; crash severity within the body of crashes; recommendations to mitigate crashes; estimated benefits; service life; and annual cost savings for each countermeasure — as a shareable PDF to enable smarter safety resource investments.

BENEFITS

With Numetric's Safety Analysis application, agencies are empowered to consider safety at every stage of every project — safety, resurfacing, rehabilitation, reconstruction, or expansion. When the app's safety reports are used early and often, they provide critical insights at each stage, ensure a stronger culture of safety, and maximize safety ROI across all resource investments.



Empower your agency to consider safety on all projects

With our off-the-shelf, configurable Traffic Safety Analytics Platform and our suite of purpose-built applications, Numetric is dedicated to empowering you to achieve greater confidence and consensus around resource investment decisions and save more lives on your roadways. To see how we can empower you, **request a custom demo at numetric.com.**

1. "Reliability of Safety Management Methods: Diagnosis," FHWA, 2016.

2. "Reliability of Safety Management Methods: Countermeasure Selection," FHWA, 2016.