

Crash Analysis for the KYOVA Region

Ohio River Valley Tri-State SS4A Initiative

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Meet the Presenters

Bethany Wild

Transportation Planner
KYOVA Interstate Planning Commission

Bethany is a Transportation Planner with KYOVA Interstate Planning Commission, where she leads regional planning work across the tri-state Ohio River Valley. On the SS4A initiative, her focus is the crash analytics that drive the region's high-injury network and the prioritization logic behind it.

Jonah Mackay

Client Success Manager
Citian

Jonah is a Client Success Manager at Citian. He works directly with Cities, Counties, States, and MPOs on the implementation, rollout and ongoing use of CRASH. He works closely with agency staff to optimize their use of safety data and the CRASH platform to translate fragmented data into the queries, rankings, and outputs that feed their safety plans.

About KYOVA Interstate Planning Commission

Bethany Wild // KYOVA Interstate Planning Commission

Who We Are

KYOVA Interstate Planning Commission is the metropolitan planning organization serving the **Huntington, WV, Ashland, KY, Ironton, OH** tri-state urbanized area along the Ohio River Valley.

KYOVA **coordinates regional transportation planning across three states**, working with member jurisdictions to develop long-range transportation plans, short-range improvement programs, and special studies **that address the region's unique multi-state mobility needs.**

3

States
KY · OH · WV

360,000

Estimated
Population

38,404

Crashes
(2019-2024)

181

Fatal crashes
since 2019

KYOVA's SS4A Award

Bethany Wild // KYOVA Interstate Planning Commission

Ohio River Valley Tri-State Comprehensive Safety Action Plan

Plan Completion: 2027 (scheduled)

Project Scope

- Tri-state coverage across KY, OH, and WV
- Focus on eliminating roadway fatalities and serious injuries
- Emphasis on high-risk corridors and underserved communities
- Clean up & ensure accurate crash data

Planning Goals

- Develop a data-driven Comprehensive Safety Action Plan that implements the SSA
- Identify and prioritize high-injury network locations
- Establish a regional safety performance framework

Key Milestones

- Project Start: Spring 2025
- Crash Data Analysis: Ongoing
- First Stakeholder Meeting: May 2026
- Plan Adoption: 2027

Building the Plan: The Data Problem

Bethany Wild // Jonah Mackay, Citian

The Cross-State Challenge

A regional safety action plan covering three states inherits three crash databases. Kentucky, Ohio, and West Virginia each maintain their own repository, with distinct schemas, coding conventions, access procedures, and degrees of preprocessing required before the records are analysis-ready.

Producing a defensible picture of crash patterns at the segment and intersection level across the KYOVA footprint depends on **consolidating those three sources** and querying them **as one dataset**.

Three separate state crash databases

Inconsistent data schemas across jurisdictions

No unified query environment for the region

Difficulty identifying cross-boundary corridors

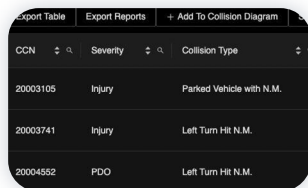
About Citian & CRASH

Jonah Mackay // Citian

Citian is a software company transforming how state & local agencies plan, prioritize, and deliver transportation investments.

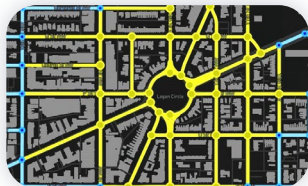
CRASH is Citian's platform for transportation safety analysis. It consolidates crash data management, analysis, and visualization in a single environment. CRASH allows users to **pinpoint risk hotspots, prioritize interventions, and quantify impact** for fast confident decisions.

Refine
Crash Data

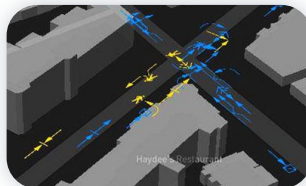


Export Table	Export Reports	+ Add To Collision Diagram
CCN	Severity	Collision Type
20003105	Injury	Parked Vehicle with N.M.
20003741	Injury	Left Turn Hit N.M.
20004552	PDO	Left Turn Hit N.M.

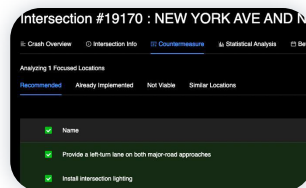
Identify a High-
Priority Intersection



Create Collision
Diagram



Compliance, Costs
& Cost-Benefit
Analysis



Generate Reporting
& Programming



How KYOVA Uses CRASH

Jonah Mackay // Citian

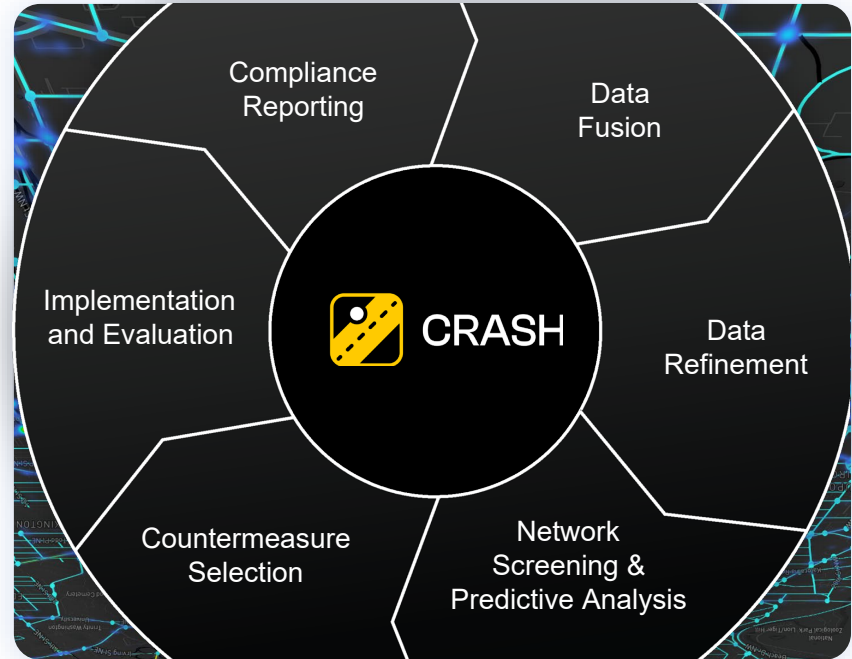
KYOVA's SS4A crash analysis is especially augmented by two CRASH capabilities:

01 Proximity-Based Crash Querying

Helps users understand safety patterns at specific locations. Users can define a buffer around any corridor, intersection, local dataset, or custom geometry and return every crash inside it.

02 Segment & Intersection Ranking

Sets the order of investigation and Investment. Every segment and intersection in the region is ranked using crash frequency, severity weighting, and other parameters tuned to KYOVA's analytical framework, producing a ranked location list that drives SS4A implementation sequencing.



Proximity-Based Crash Querying

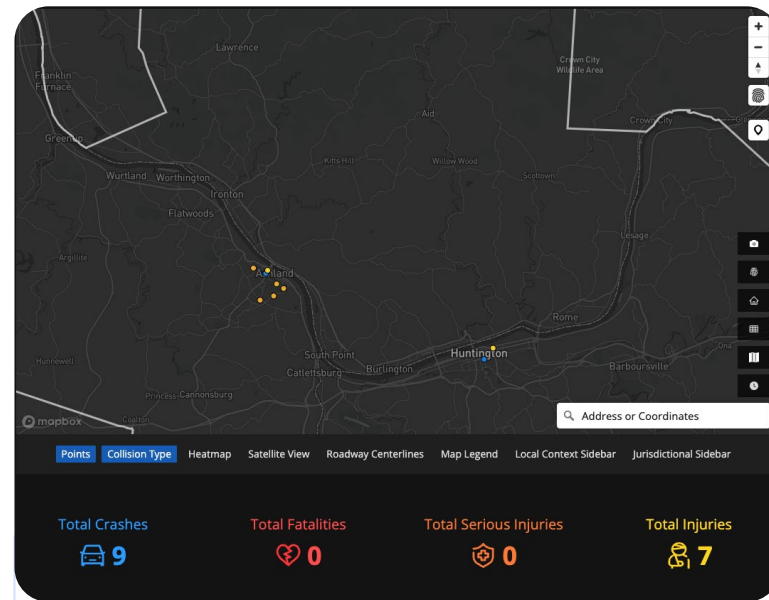
Jonah Mackay // Citian

What It Does

CRASH allows users to consider custom areas — a radius, a corridor, custom shape, or local context dataset — and the platform returns every crash inside it across the integrated dataset

How KYOVA Applies It

- Analyze crashes within custom boundaries
- Review crashes within a set distance of schools, transit stops, and other pedestrian generators
- Monitor progress along priority corridors



A map of all crashes involving a bicyclist within 100 ft of the existing bicycle network in 2024.

Segment & Intersection Ranking

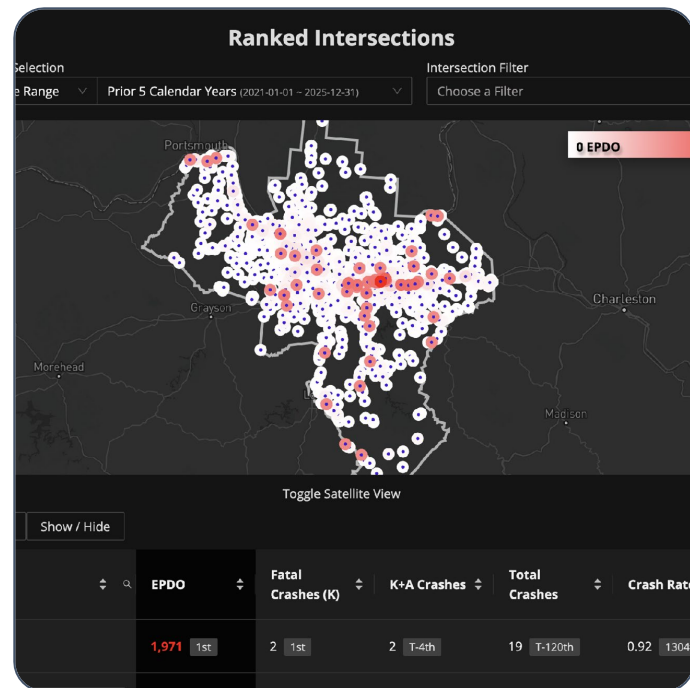
Jonah Mackay // Citian

Ranking Methodology

CRASH scores each segment and intersection across the region using crash frequency, severity, crash-type composition, and more. Rankings are computed at the regional scale and can be filtered by geography, functional classification, or any combination of crash attributes.

How KYOVA Applies It

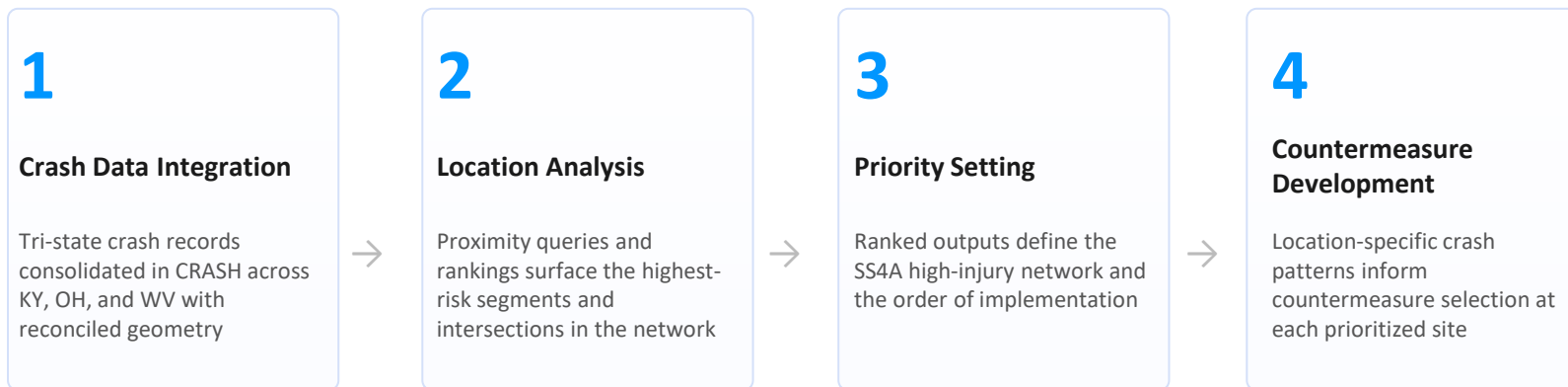
- Produce a single ranked high-injury network spanning all three states
- Use the ranking to sequence site-specific safety investigations and countermeasure development
- Align the ranked output with SS4A implementation phases and federal funding cycles



From Analysis to Action

Jonah Mackay // Citian

CRASH outputs feed the SS4A deliverables directly. The ranked locations and proximity-based pattern findings establish the analytical record behind KYOVA's countermeasure recommendations and implementation sequencing.



Live Demonstration

Jonah Mackay // Citian

We will now move into KYOVA's CRASH environment and walk through three typical workflows:

01

Proximity-Based Crash Queries

We will execute a proximity query on for pedestrian crashes near existing bus stops in Huntington, reviewing the returned crash records and areas of concern.

02

Segment & Intersection Rankings

We will quickly rank all segments and intersections across the KYOVA region, identify a location to address, and generate countermeasure recommendations specific to that location.

03

Geographic Queries

Requests for analysis are often based on geography, not crash data. We will review a typical way of querying and analyzing crashes within a custom area.

In Summary

Jonah Mackay // Citian

KYOVA's SS4A Goals

01

Develop a data-driven
Comprehensive Safety Action Plan



02

Identify and prioritize high-injury
network locations



03

Establish a regional safety
performance framework



How CRASH Supports

Unified environment, data-lake, and analysis
tools for SS4A development

Automated, customizable rankings of
segments, intersections, and corridors
regionwide

Allows users to evaluate the impact of
potential countermeasures and perform
Before-and-After Studies

Thank You

Questions & Discussion

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