Next Generation Approaches to CMV Analytics

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Progress Toward Full Prediction

Phase I
Statistical Analysis (Crash Data Only)

Phase II
Risk and Mitigation Modelling (Precursors, Crashes, and Mitigation)

Phase III
Full Risk Lifecycle and Predictive Analytics Model

We Are Here
Tools in the Toolbox

“Classic” Analytics
- ADVANCE

Data Collection
- eCrash
- eCite
- eWeight
- MapClick
- einspect

Tactical and Predictive Analytics
- Tactical Analytics Viewer
- Risk Lifecycle Predictor

New Systems
Next Generation of Traditional Analytics Tools
Sample Risk to Enforcement Calculation
Tactical Enforcement View (Prototype)
Risk and Mitigation Loop

1. Evaluate Risk (Collect Data)
2. Build Representative Model (Analysis)
3. Create Mitigation Strategy (Planning)
4. Test Strategy (Execution)
5. Use Outcomes to Inform How Mitigation Impacted Risk (Review)
6. Use Outcomes to Inform How Mitigation Impacted Risk (Review)
7. Evaluate Risk (Collect Data)

This cycle illustrates the continuous process of risk evaluation, model building, strategy creation, testing, and outcome review in the context of mitigation.
There are a lot of factors to assessing risk including:

- Economic Development
- Driver Behavior
- Road Construction and Work Zones
It Gets Even More Complicated…
Finding the Right Balance of Addressing Risk…

Mitigation (Limited by Finite Resources)

Risk
Our Strategy…

- Tactical Data-Driven Enforcement
- "Classic" Analytics (Traditional Strategic Planning)
- Predictive Analytics “Whole Picture” Planning
The Problem With Prediction...
Progress Toward Full Prediction

We Are Here

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Full Risk Lifecycle and Predictive Analytics Model
Measuring Our Progress
(How Will We Know When We Get There?)

Understanding and Participation in the Safety Picture From Everyone

Outcomes are Measured Based on Mitigation Strategies

Predictive Models are Demonstrated to be Better Than What We’re Doing Now

Data and Enforcement Tools In-Development and In-Place That Reflect All of This