Development of the CT Roadway Safety Management (CRSMS) Tool

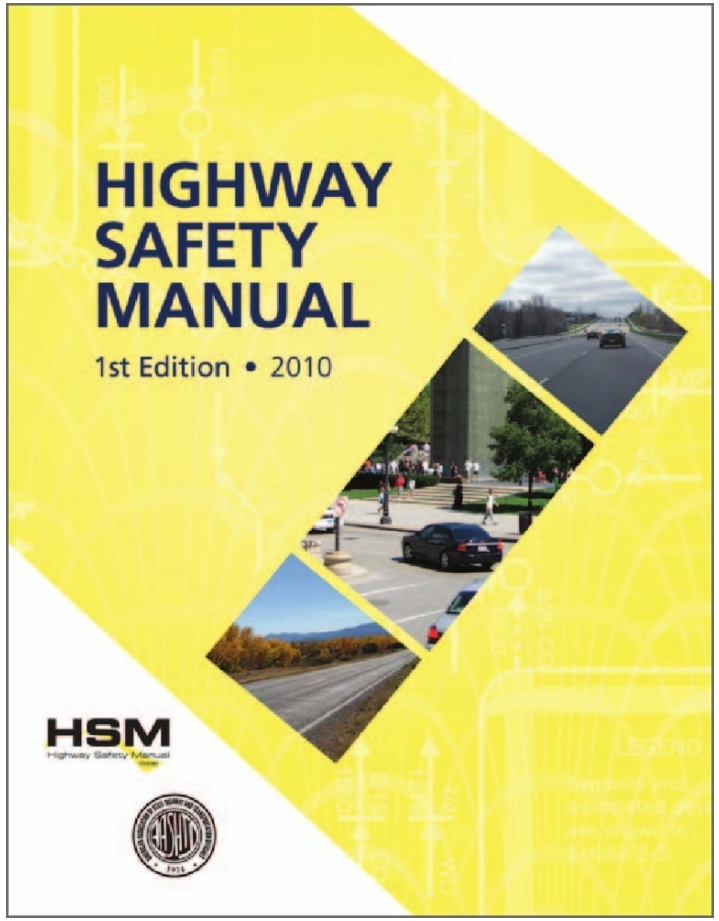
Northeast Transportation Safety Conference

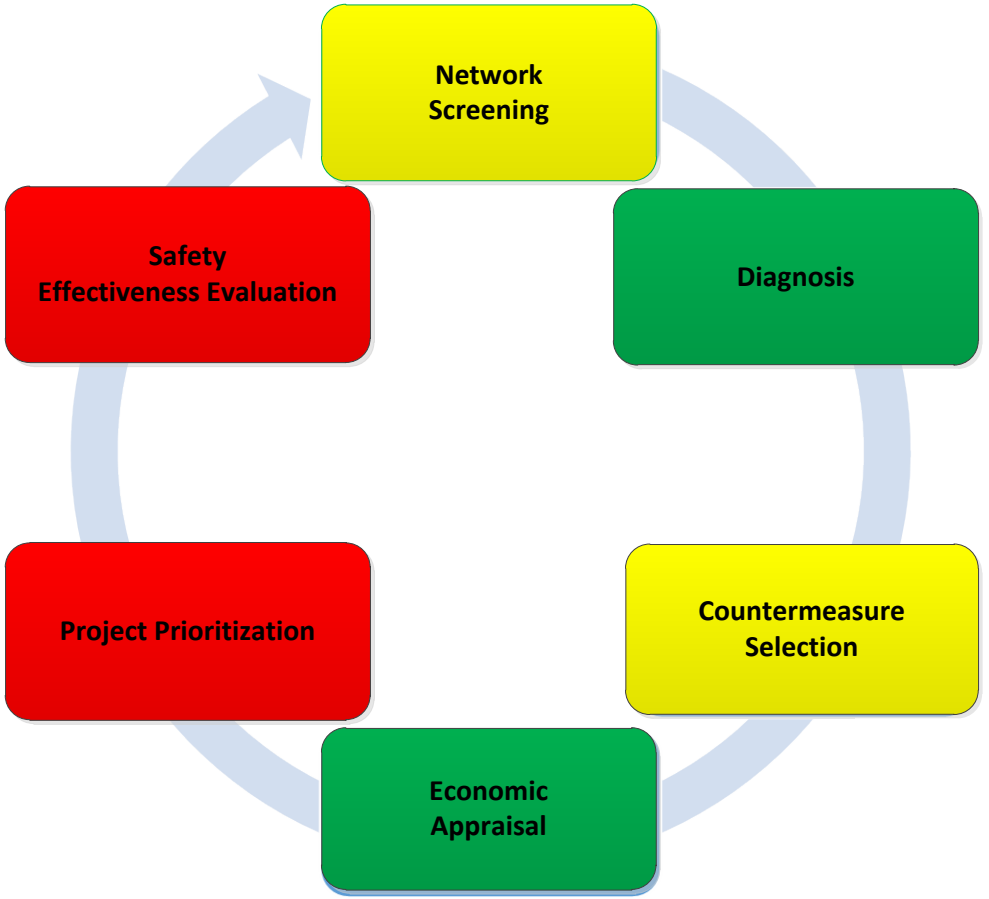
October 28-29, 2019 – Burlington, VT

Agenda

- Project Background
- Changes in Practice
- Highlights of CRSMS Tool
- Screenshots of Select Modules
- Challenges & Lessons Learned
- Next Steps

Highway Safety Manual





Changes in Practice

BEFORE

- Annual Hot Spot Locations
- Manual Query/Diagrams/Charts/Test
- No formal project analysis documentation
- Reactive project planning

AFTER

- Screening any time by geographical area
- Convenient data access & chart/test creation
- Save records of entire project analysis process
- Proactive project planning

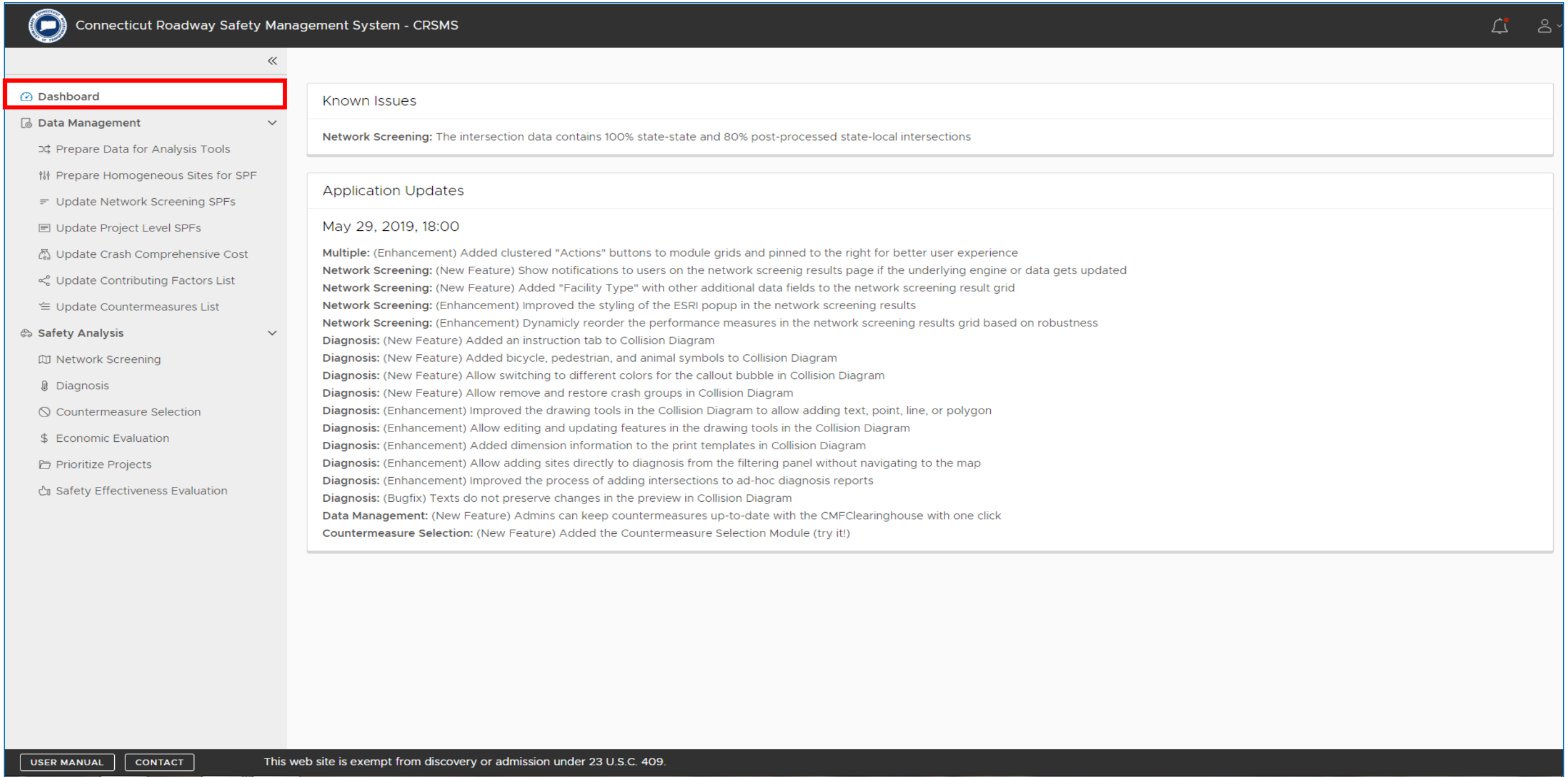
Highlights of the CRSMS Tool

- Web-based application & easy access
- Easy data manipulation & homogeneous segmentation
- Screening by geographical areas, emphasis areas, crash types & severity levels, roads, facility types, etc.
- Multiple performance measures & screening methods
- Visualize results on maps
- Multiple diagnosis tools including maps, statistic tests, charts, collision diagrams, crash trees, etc.
- Select & compare countermeasure using CMF Clearinghouse data
- Create reports, share, download & save

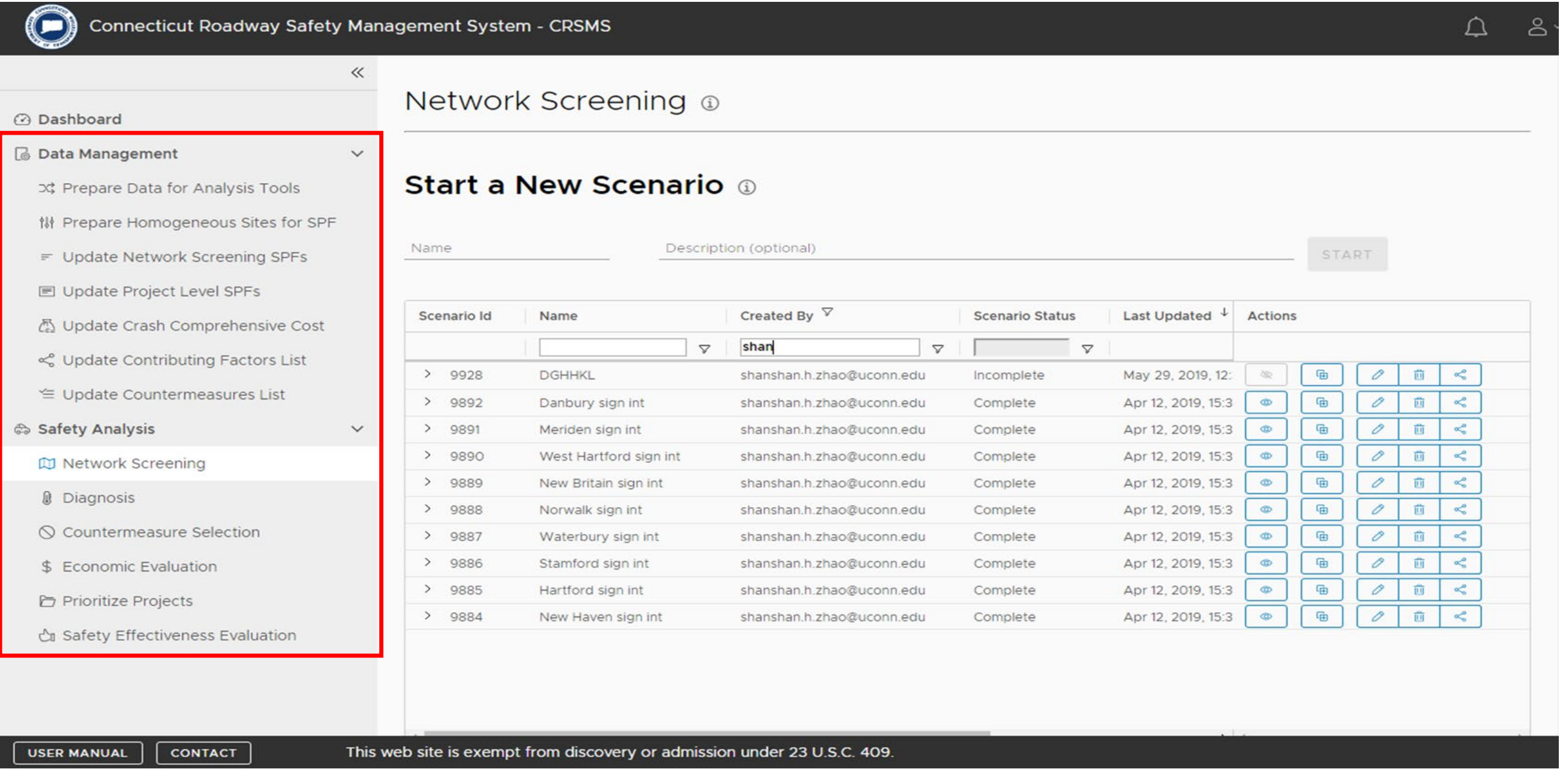
Practical Application

- Used by CTDOT to identify locations for improvements
- Used by consultants contracted with CTDOT
- Introduced to CT local transportation agencies
- Open to other state DOTs nationwide
- Over 100 users: CTDOT, COGs, researchers, other DOTs

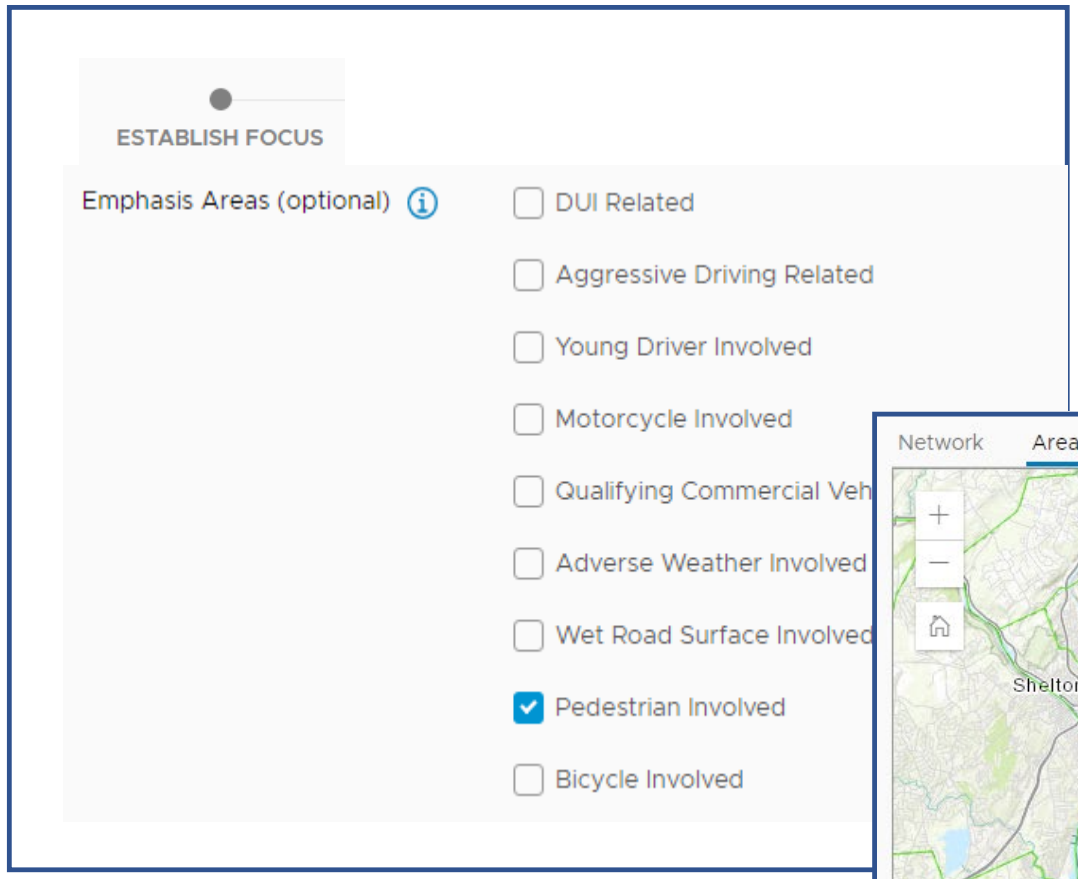
CRSMS Dashboard

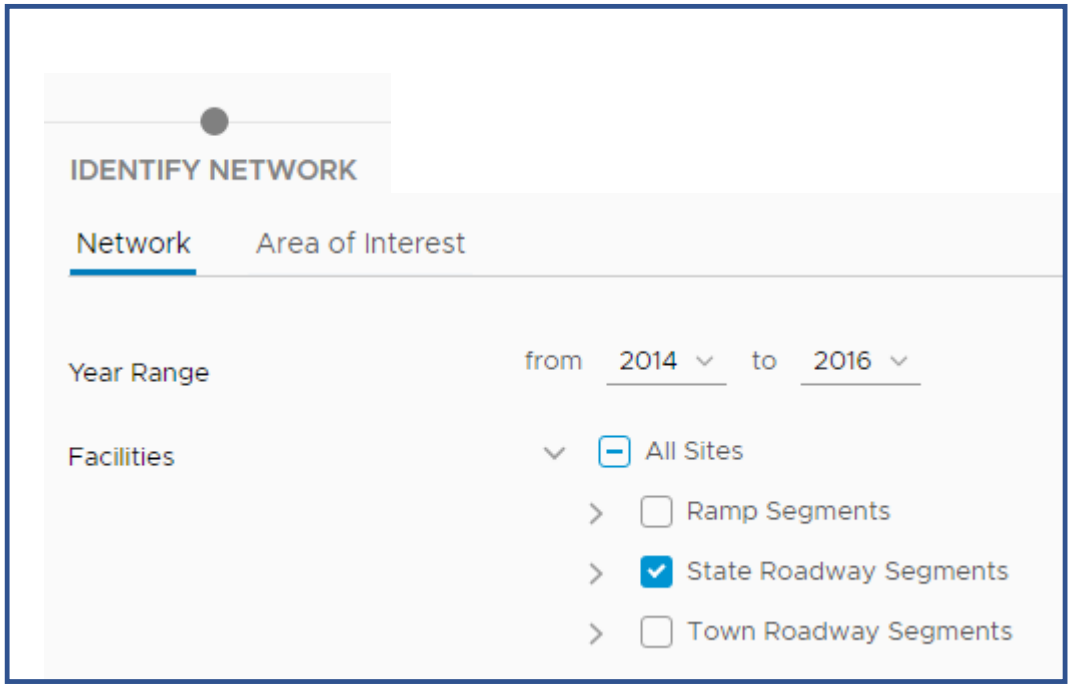


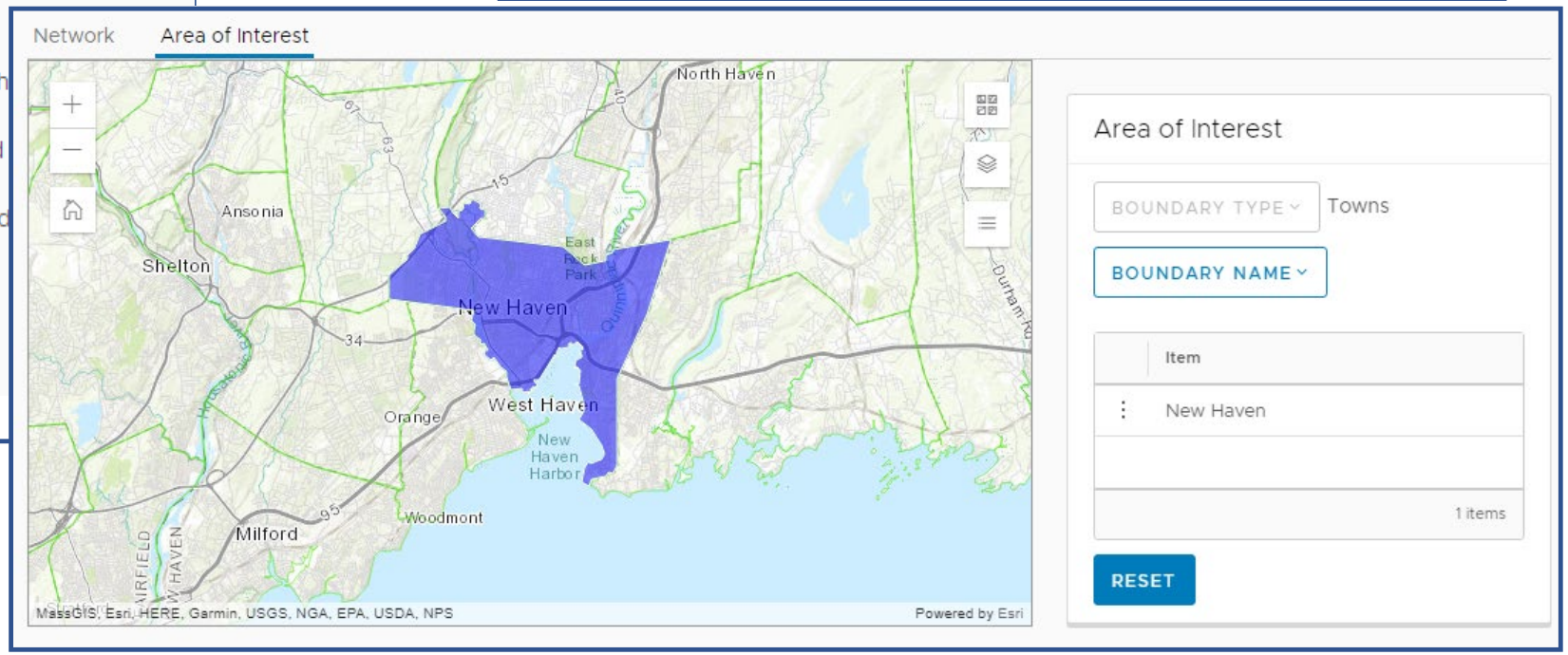
CRSMS Modules



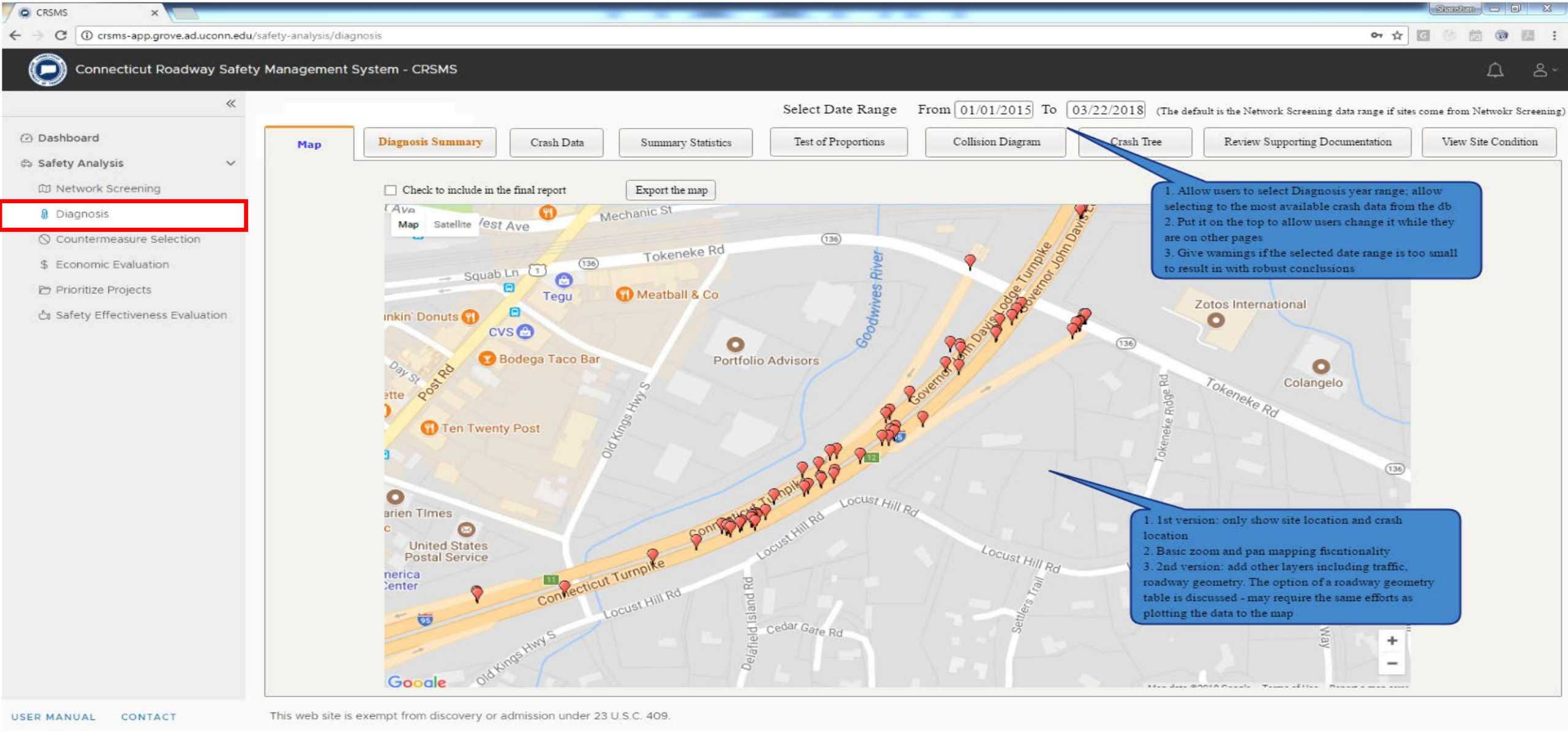
Network Screening



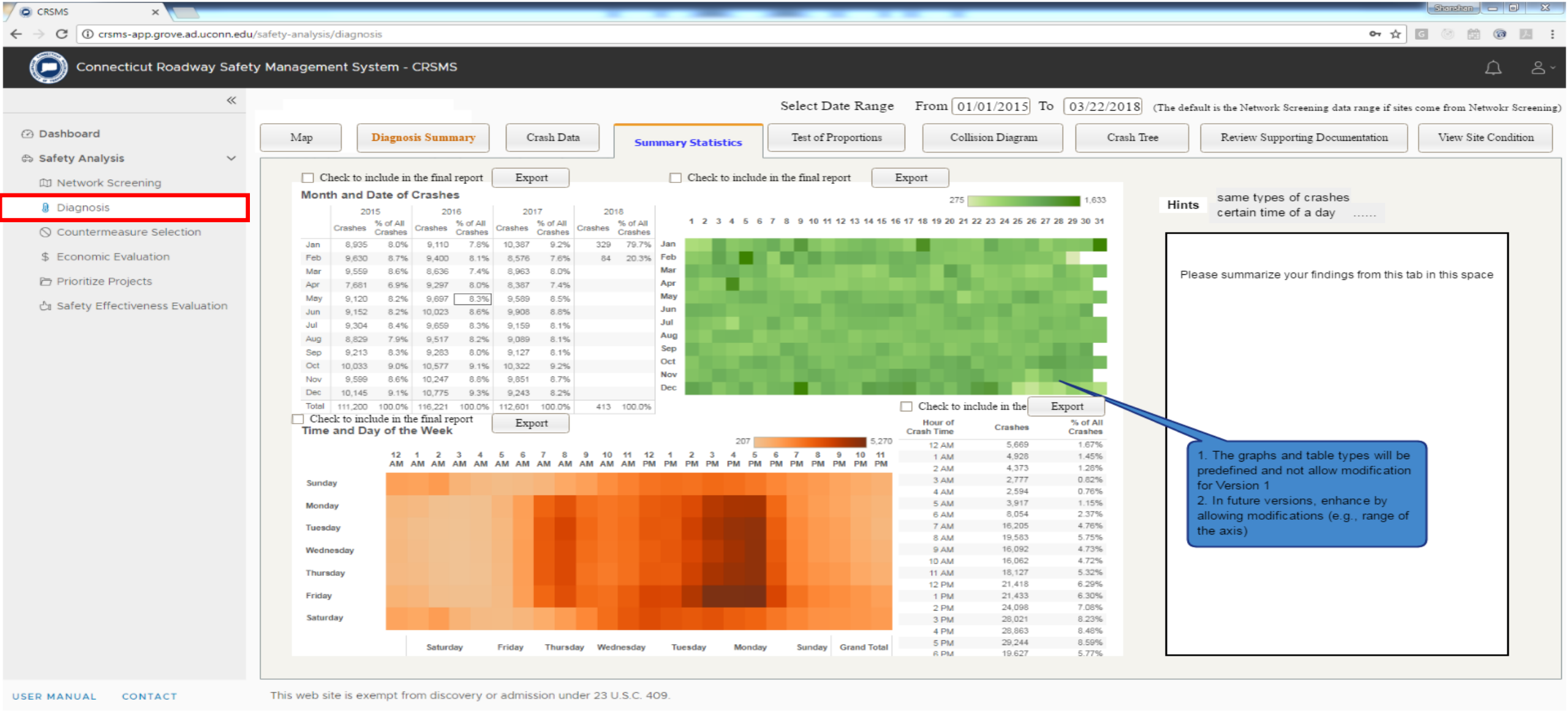




Diagnosis – Geolocation



Diagnosis – Crash Summaries



Diagnosis – Collision Diagram

Diagnosis – Site Conditions

CRSMS

crsms-app.grove.ad.uconn.edu/safety-analysis/diagnosis

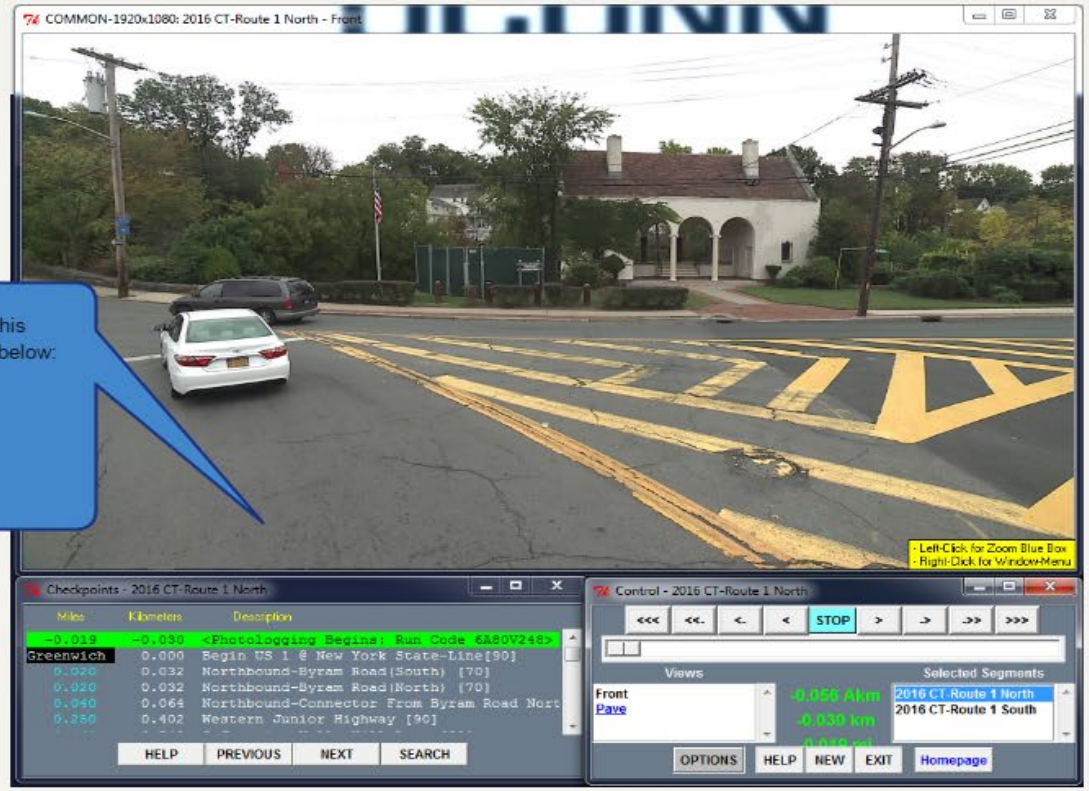
Connecticut Roadway Safety Management System - CRSMS

- Dashboard
- Safety Analysis
  - Network Screening
  - Diagnosis
  - Countermeasure Selection
  - Economic Evaluation
  - Prioritize Projects
  - Safety Effectiveness Evaluation

Select Date Range From 01/01/2015 To 03/22/2018 (The default is the Network Screening data range if sites come from Networkr Screening)

Map | Diagnosis Summary | Crash Data | Summary Statistics | Test of Proportions | Collision Diagram | Crash Tree | Review Supporting Documentation | View Site Condition

Check to include in the final report



Depending on access to different APIs, this component could use one or more from the below:
1. CTDOT Digitial Highway
2. Google Streeview
3. Bing BirdEye
4. Mapillary

Check to include in the final report

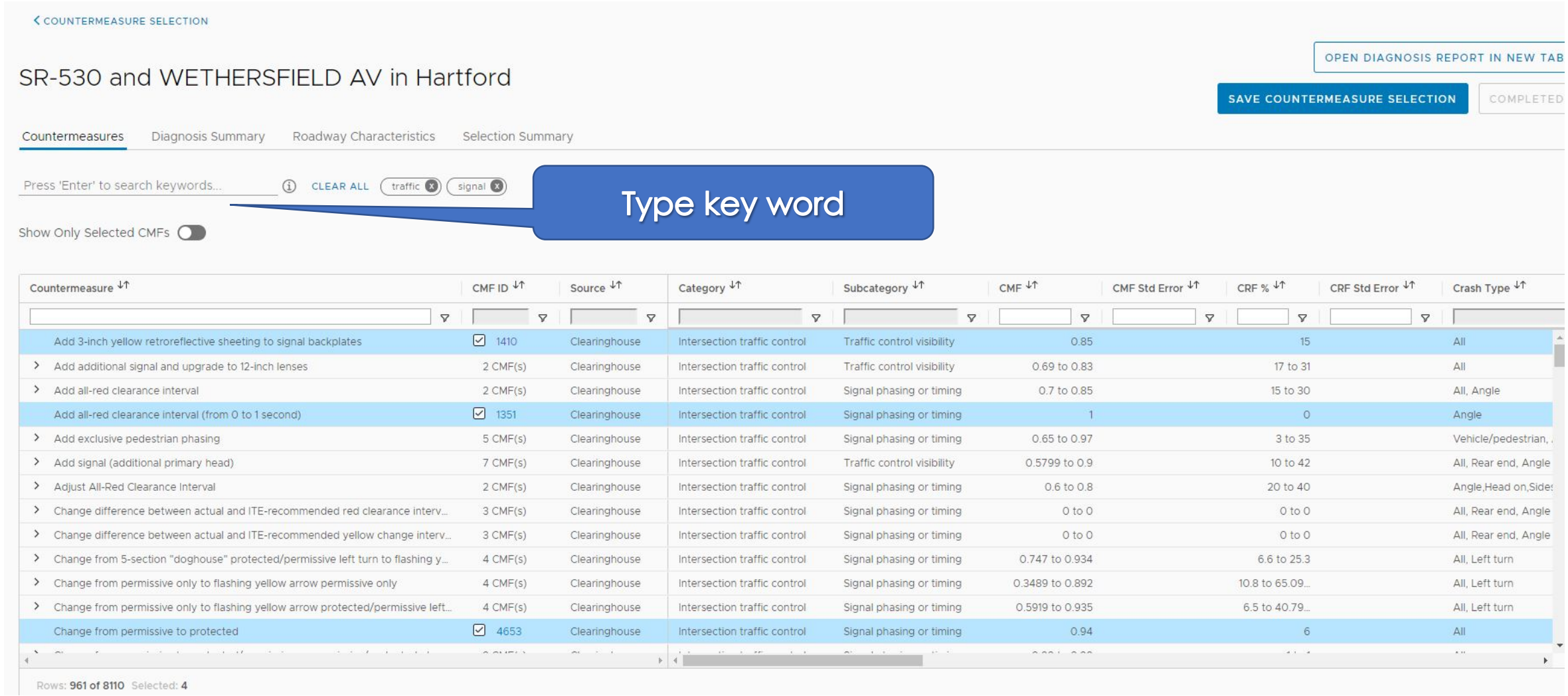
Hints: clustered at a location | same types of crashes | certain time of a day | .....

Please summarize your findings from this tab in this space

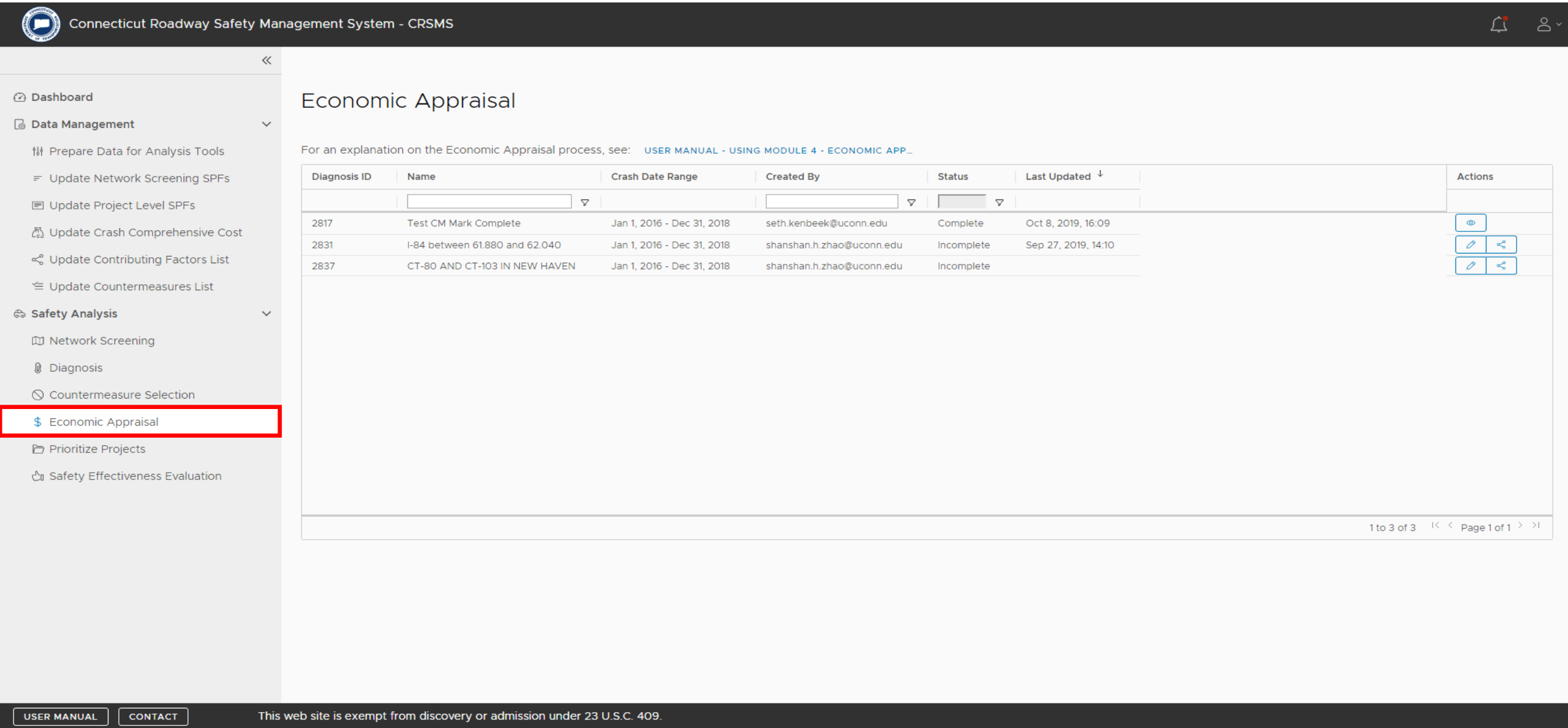
USER MANUAL CONTACT

This web site is exempt from discovery or admission under 23 U.S.C. 409.

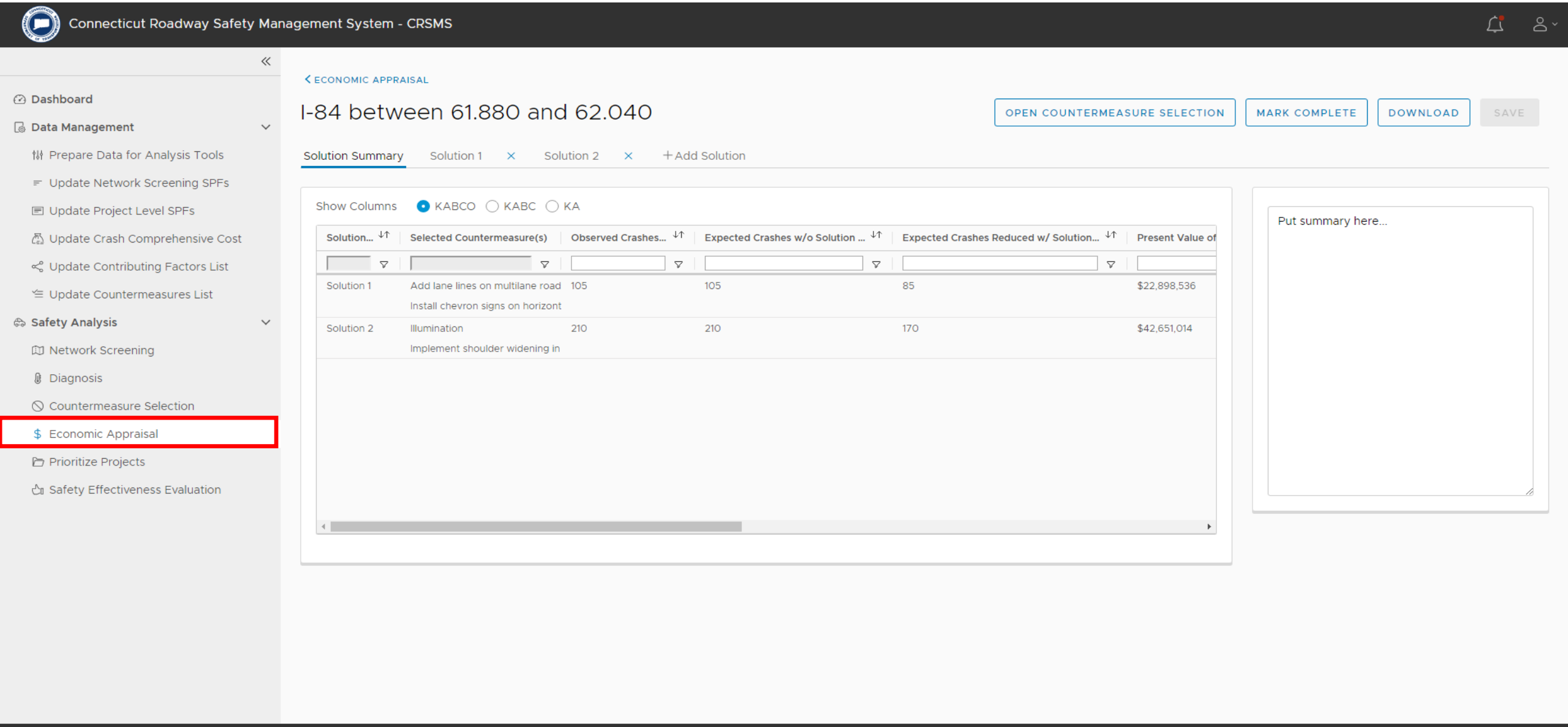
Countermeasure Selection



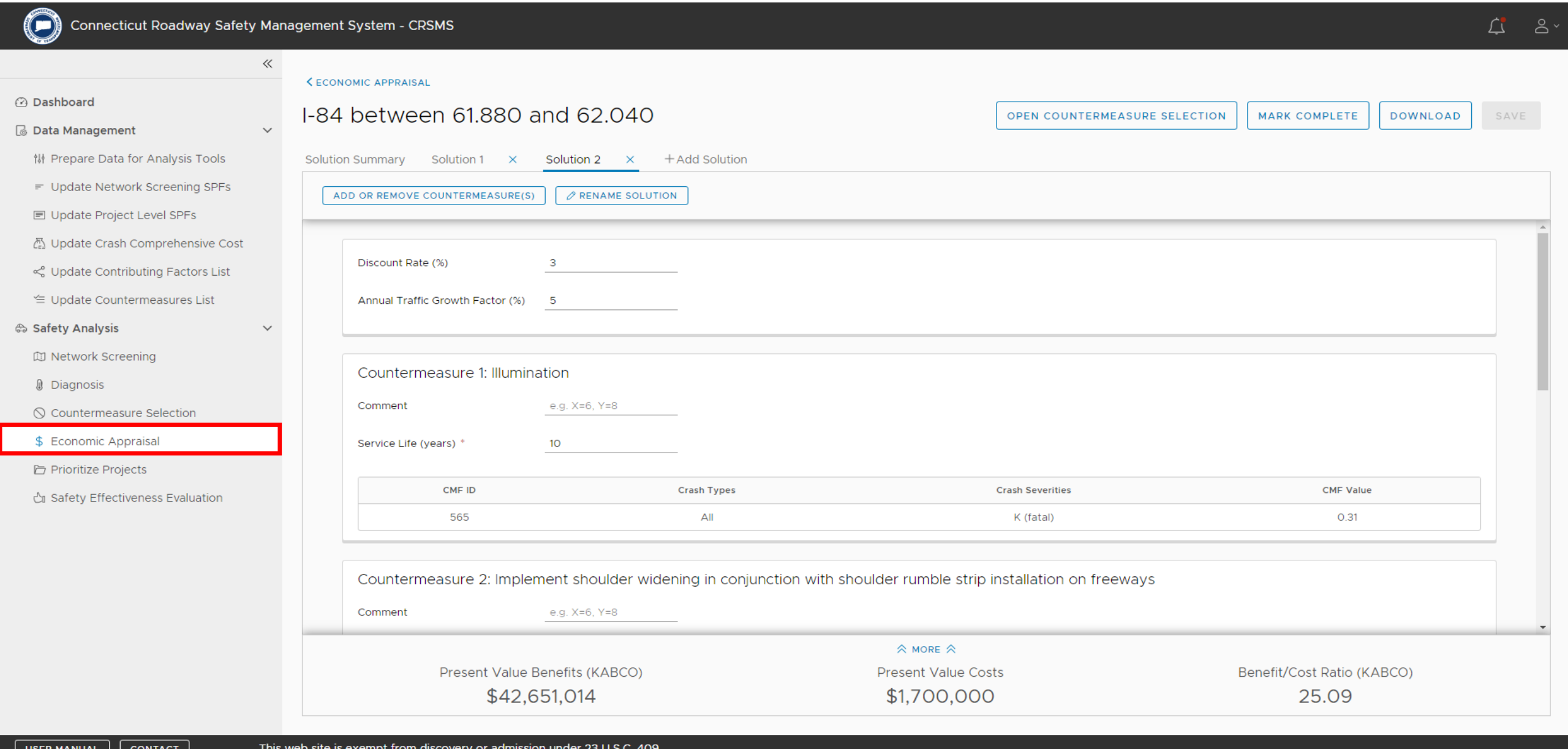
Economic Appraisal



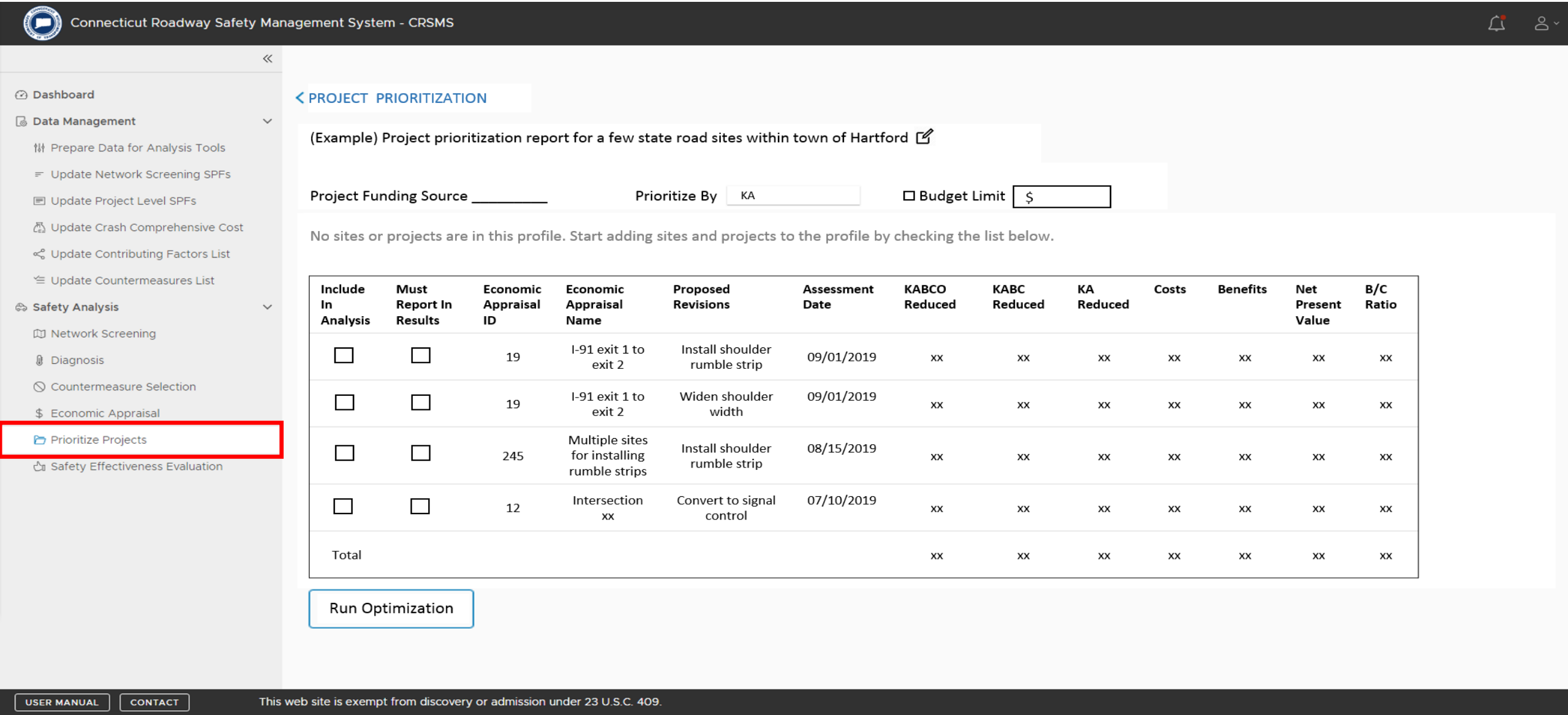
Economic Appraisal



Economic Appraisal



Project Prioritization



Challenges/Lessons Learned

- Lacking certain safety data could delay robust analysis
- Collaborate with relevant data stewards
- Develop plans to collect missing data that meet multiple needs (not just safety)
- Regular collaboration & communication between client & development team
- Have back-ups for personnel - overlapping expertise is desirable
- Prioritize & balance bug fixes, enhancements & new developments

Next Steps

- Deliver Remaining Modules
- Additional Training and Workshops
- Integration with Other Data-Driven Projects at CTDOT (e.g., data linkage)
- Work with other States to promote Roadway Safety nationwide

For More Information

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