



**Department of  
Transportation**

# **CLEAR Updates**

**(Crash Location & Engineering Analysis &  
Reporting)**

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NYS Department of Transportation  
Office of Traffic Safety and Mobility**

# Outline

1. CLEAR overview
2. Site-Specific Safety Planning
3. Application Overview (Site-Specific)
4. Application Demo (Site-Specific)
5. Performance Measures

# CLEAR Overview

## All Users

- ❑ CLEAR Crash Data Viewer (CDV)
- ❑ CLEAR Safety (CS)
- ❑ CLEAR Interactive Crash Editor (ICE)

## DMV Users only

- ❑ Interactive Crash Locator (ICL)

## DOT Users only

- ❑ Intersection Inventory Maintenance (IIM)

CLEAR Crash  
Data Viewer  
(CDV)

CLEAR Safety  
(CS)

Interactive  
Crash Editor  
(ICE)

Interactive  
Crash Locator  
(ICL)

Intersection  
Inventory  
Maintenance  
(IIM)

# CLEAR Crash Data Viewer (CDV)

NYS DOT CLEAR Crash Data Viewer

clear.dot.ny.gov/clear/cdv/query

NEW YORK STATE OF OPPORTUNITY Department of Transportation CLEAR Crash Data Viewer About Help FAQ rzitowsky (admin)

Syracuse Hotel Location

Step 1 - Initialize Step 2 - Location Step 3 - Criteria

Please define any additional criteria (optional):

- Crash Characteristics
- Vehicle Characteristics
- Person Characteristics
- Contributing Factors
- Database Search

Query Form

Province of Ontario, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA | New York State Department of Transportation. Powered by Esri

Query Results

Crash Level Details

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Case Number	Max Injury in Crash	Crash Severity	Access Control	Case Year
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	37706474		PROPERTY DAMAGE	999	2019
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	37732190		PROPERTY DAMAGE	999	2019
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	37753378		PROPERTY DAMAGE	999	2019

1 to 39 of 39 Page 1 of 1

Data Level: Crash Total Records: 39 Filtered Records: 39 Grid Tools: [Map Tools]

RESET ALL SAVE ^ < BACK EXECUTE

<https://clear.dot.ny.gov/clear/cdv/query>

# CLEAR Safety (CS)

Browser: NYSDOT: CLEAR Safety | clear.dot.ny.gov/CLEAR/CS/planning/screening/results/72

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Network Screening Results (05/07/2023 05:58 PM)

Map data © OpenStreetMap contributors, CC-BY-SA | New York State Department Of Transportation. Powered by Esri

Screening Results | Summary | History | Publishing

All | Segments | Intersections | Ramps | EXPORT

Site Description	PSI	Average Crash Frequency		Expected Average Crash Frequency		Excess Expected Average Crash Frequency		Level of Service of Safety		Facility Type
		Rank	Score	Rank	Score	Rank	Score	Rank	Score	
1 to 100 of 266   Page 1 of 3   Row Count: 266										

EXIT Syracuse NS

<https://clear.dot.ny.gov/CLEAR/CS/home>

# CLEAR Interactive Crash Editor (ICE)

NYS DOT: Interactive Crash Editor x +

clear.dot.ny.gov/clear/ice/crash-editor/home

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Home Request Location Candidates **Edit** Crash History

## Crash Details

CRASH DETAILS VEHICLE DETAILS CRASH REPORT

Crash Time: 11:45 AM

Crash Type: COLLISION WITH MOTOR VEHICLE

Collision Type: OVERTAKING

Ped Location: NOT APPLICABLE

Ped Action: NOT APPLICABLE

Traffic Control: TRAFFIC SIGNAL

Road Characteristics: STRAIGHT AND LEVEL

Road Surface Con: SNOW/ICE

Weather: SNOW

Light Condition: DAYLIGHT

SAVE CLOSE

Map data © OpenStreetMap contributors, CC BY-SA | New York State Department Of Transportation. Center Powered by Esri

Search Results DOT Queue My Requests

<input checked="" type="checkbox"/>	Zoom	Relocate	Edit	Case Number	Crash Date	Case Year	Crash Type
<input checked="" type="checkbox"/>				37706474	01/10/2019	2019	COLLISION WITH MOTOR VEHICLE














Rows: 1

<https://clear.dot.ny.gov/clear/ice/crash-editor/home>

# Site-Specific Safety Planning

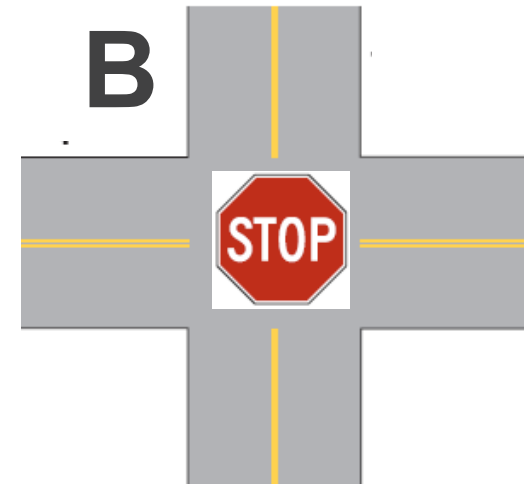
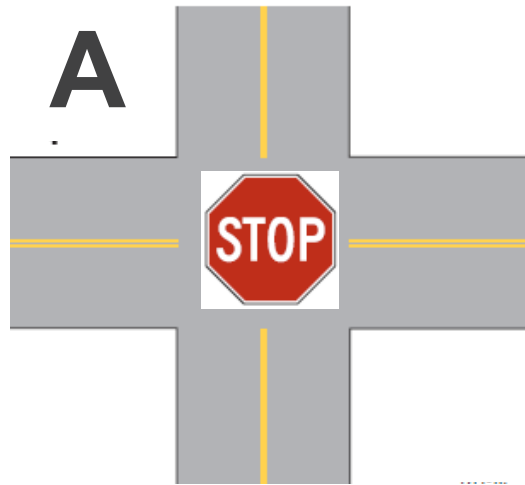
- Identify high crash locations to address site-specific safety issues

# Site-Specific Network Screening

	Crash	Roadway	Traffic	SPF
Average Crash Frequency				
Expected Average Crash Frequency				
Excess Expected Average Crash Frequency				
Level of Service of Safety				



# Site-Specific Network Screening



Measure of Safety	Int. A	Int. B
Average Crash Frequency	10.1	6.8

# Site-Specific Network Screening

Measure of Safety	Int. A	Int. B
Average Crash Frequency (crashes/year)	10.1	6.8
Total Entering Volume (vehicles/day)	10,000	2,500
Crash Rate (crashes/million-vehicles)	2.8	7.5

# Site-Specific Network Screening

1. Establish Focus
2. Identify Network
3. Select Performance Measures
4. Select Screening Method
5. Screen and evaluate results

# 1. Site-Specific – Establish Focus

NYS DOT: CLEAR Safety

clear.dot.ny.gov/CLEAR/CS/planning/screening/scenario/new?scenarioName=Syracuse%20NS&scenarioDescription=Example%20%20for%20NYSAMPO%20conference

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Establish Focus Identify Network Performance Measures Screening Method Summary

Network Screening Establish Focus

Crash Severity **i**

- Fatal (K)
- Incapacitating Injury (A)
- Non-Incapacitating Injury (B)
- Possible Injury (C)
- Property Damage Only (O)

Crash Types **i**

- All Target Crash Types
  - Animal
  - Barrier
  - Collision With Bicyclist
  - Collision With Pedestrian
  - Fire/Explosion
  - Fixed Object
  - Head On
  - Left Turn (Against Other Car)
  - Left Turn (With Other Car)
  - Overtaking
  - Overturn

EXIT Syracuse NS NEXT >

# 2. Site-Specific – Identify Network

Browser: NYSDOT: CLEAR Safety | clear.dot.ny.gov/CLEAR/CS/CLEAR/CS/planning/screening/scenario/72

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Progress: Establish Focus (✓) | Identify Network (●) | Performance Measures (●) | Screening Method (●) | Summary (●)

Network Screening | Identify Network

Network Details | Network Location

Year Range ⓘ  
From: 2019 To: 2022 # of years: 4

Facility Types | Road System

Select the facility types to screen ⓘ  
 All Facility Types  Specified Facility Types

EXIT | Syracuse NS | Please define the network location | < BACK | NEXT >

# 2. Site-Specific – Identify Network

NYSOT: CLEAR Safety x +

clear.dot.ny.gov/CLEAR/CS/CLEAR/CS/planning/screening/scenario/72

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Establish Focus Identify Network Performance Measures Screening Method Summary

Network Screening Identify Network

Network Details Network Location

Please define at least one network feature: [i](#)

Select Features

Select a feature type  
Municipality

Select a county  
SELECT ON MAP or Onondaga

Select a municipality  
SELECT ON MAP or Syracuse (C)

RESET ADD FEATURE

Select Intersections

EXIT Syracuse NS

Find address or place

Map data © OpenStreetMap contributors, CC-BY-SA | New York State Department Of Transportation.

Please define the network location < BACK NEXT >

# 3. Site-Specific – Performance Measures

NYSOT: CLEAR Safety x +

clear.dot.ny.gov/CLEAR/CS/CLEAR/CS/planning/screening/scenario/72

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Establish Focus Identify Network Performance Measures Screening Method Summary

Network Screening Performance Measures

Performance Measures ⓘ

- Average Crash Frequency
- Expected Average Crash Frequency
- Excess Expected Average Crash Frequency
- Level of Service of Safety

Area Weights ⓘ

Urban	<input type="text" value="1"/>
Rural	<input type="text" value="1"/>

EXIT Syracuse NS < BACK NEXT >

# 4. Site-Specific – Screening Method

NYS DOT: CLEAR Safety

clear.dot.ny.gov/CLEAR/CS/CLEAR/CS/planning/screening/scenario/72

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Establish Focus Identify Network Performance Measures Screening Method Summary

Network Screening Screening Method

Screening Method ⓘ

Best Available (Sliding Window or Simple Ranking) ▾

When Sliding Window applies, Use:

Window Length (miles) ⓘ Sliding Increment (miles) ⓘ

0.3 0.1

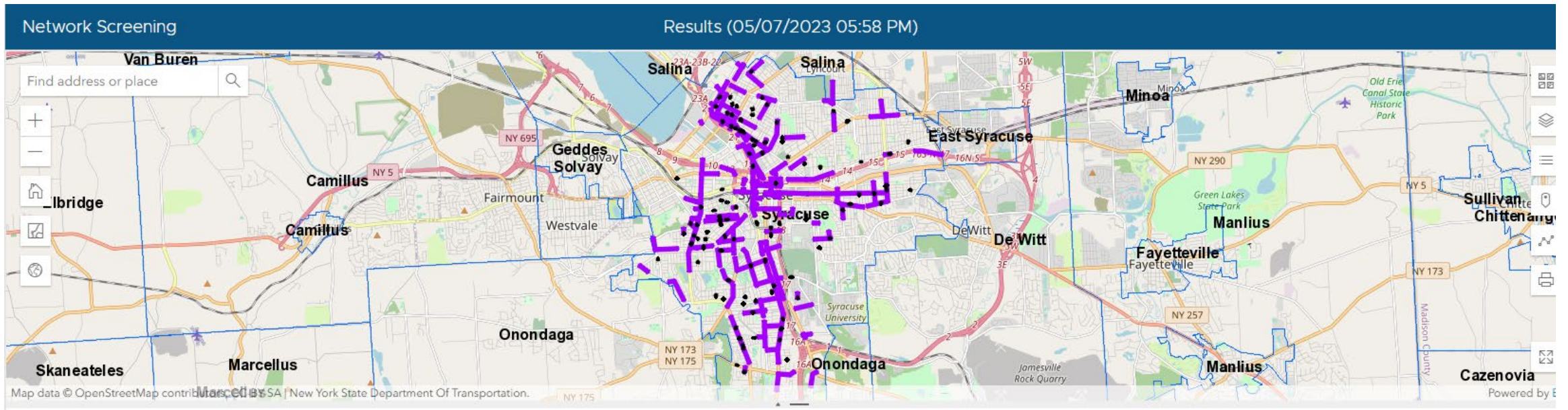
EXIT Syracuse NS < BACK NEXT >



# Site-Specific – Summary

Step	Parameter(s) Used
Establish Focus	<ul style="list-style-type: none"> <li>• City of Syracuse</li> </ul>
Identify Network	<ul style="list-style-type: none"> <li>• 2019-2022</li> <li>• All crashes</li> </ul>
Select Performance Measures	<ul style="list-style-type: none"> <li>• All Available</li> </ul>
Select Screening Method	<ul style="list-style-type: none"> <li>• Best available (Simple Ranking or Sliding Window)</li> </ul>

# 5. Site-Specific – Screen and evaluate results

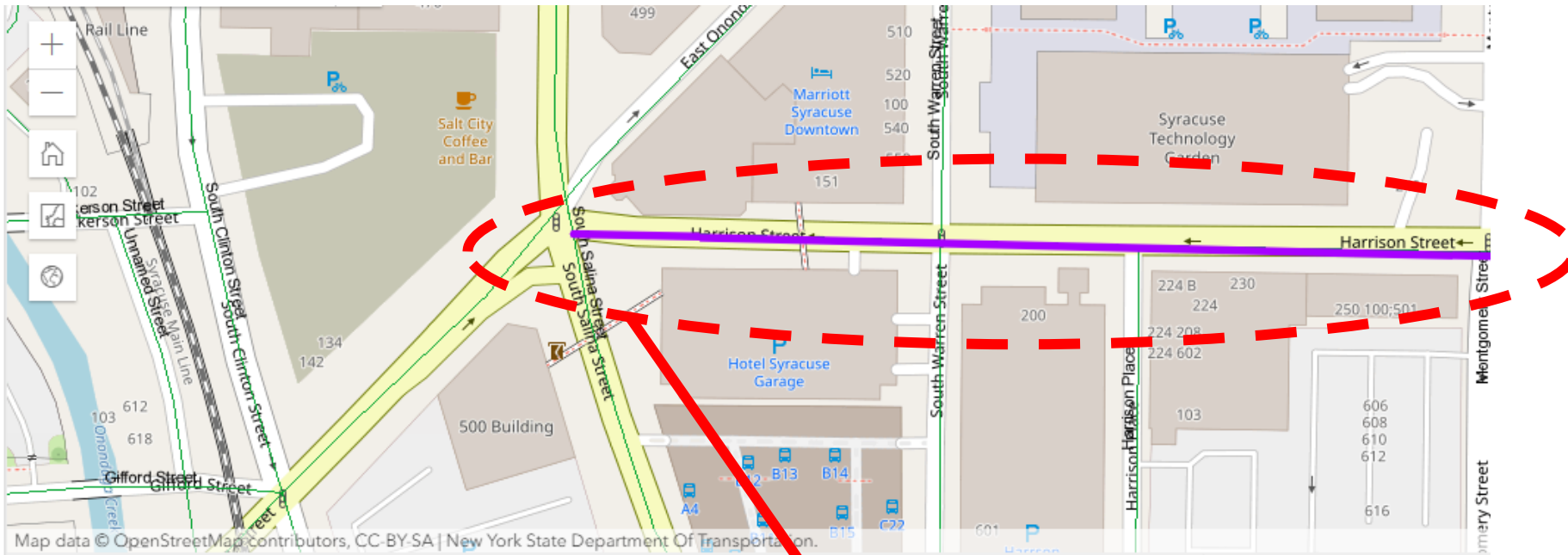


Screening Results Summary History Publishing

All Segments Intersections Ramps EXPORT

Site Description	PSI	Average Crash Frequency		Expected Average Crash Frequency		Excess Expected Average Crash Frequency		Level of Service of Safety		Facility Type	Older Driver	Younger Driver	
		Rank	Score	Rank	Score	Rank	Score	Rank	Score				
Lodi Street from 1.05 to 1.67	1.087	8	34.750	8	30.619	8	27.751	1	4.000	Urban Two-Lane Undivided Free Access Two-Lane Two-Way	N	N	☀️ 🔍
US11 NB from 16.92 to 17.81	0.832	3	58.500	3	55.447	4	47.448	1	4.000	Urban Two-Lane Undivided Free Access Two-Lane Two-Way	N	N	☀️ 🔍
Butternut Street from 0.23 to 0.44	0.784	10	28.750	11	26.778	11	23.691	1	4.000	Urban Multi-Lane Undivided Free Access Five or More Lane Two-Way	N	N	☀️ 🔍

# 5. Site-Specific – Screen and evaluate results



Screening Results   Summary   History   Publishing

All   Segments   Intersections   Ramps

Site Description ▾	Length	PSI	Average Crash Frequency		Expected Average Crash Frequency		Excess Expected Average Crash Frequency		Level of Service of Safety ⓘ	
			Rank	Score	Rank	Score	Rank	Score	Rank	Score
harrison street from 0.00 ▾	▾	▾	▾	▾	▾	▾	▾	▾	▾	▾
Harrison Street from 0.00 to 0.24	0.240	0.007	80	8.000	66	7.754	71	5.996	150	3.000

# Network Screening Performance Measures

1. Average Crash Frequency
2. Expected Average Crash Frequency
3. **Excess Expected Average Crash Frequency**
4. Level of Service of Safety

# 1. Average Crash Frequency

Between 2019-2022, there were 32 KABCO crashes

$$\text{Average Crash Frequency} = \frac{\text{Number of Crashes}}{\text{Number of Years}}$$

$$\text{Average Crash Frequency} = \frac{32 \text{ crashes}}{4 \text{ years}} = 8 \text{ crashes/year}$$

Source: Highway Safety Manual (HSM), Chapter 4, Section 4.4.2.1

## 2. Expected Average Crash Frequency

1. Calculate the Predicted Average Crash Frequency from an SPF
2. Calculate Annual Correction Factor
3. Calculate Weighted Adjustment
4. Calculate First Year EB-adjusted Expected Average Crash Frequency
5. Calculate Final Year EB-adjusted Expected Average Crash Frequency
6. Calculate the Variance of the EB-Adjusted Average Crash Frequency (Optional)
7. Rank Sites

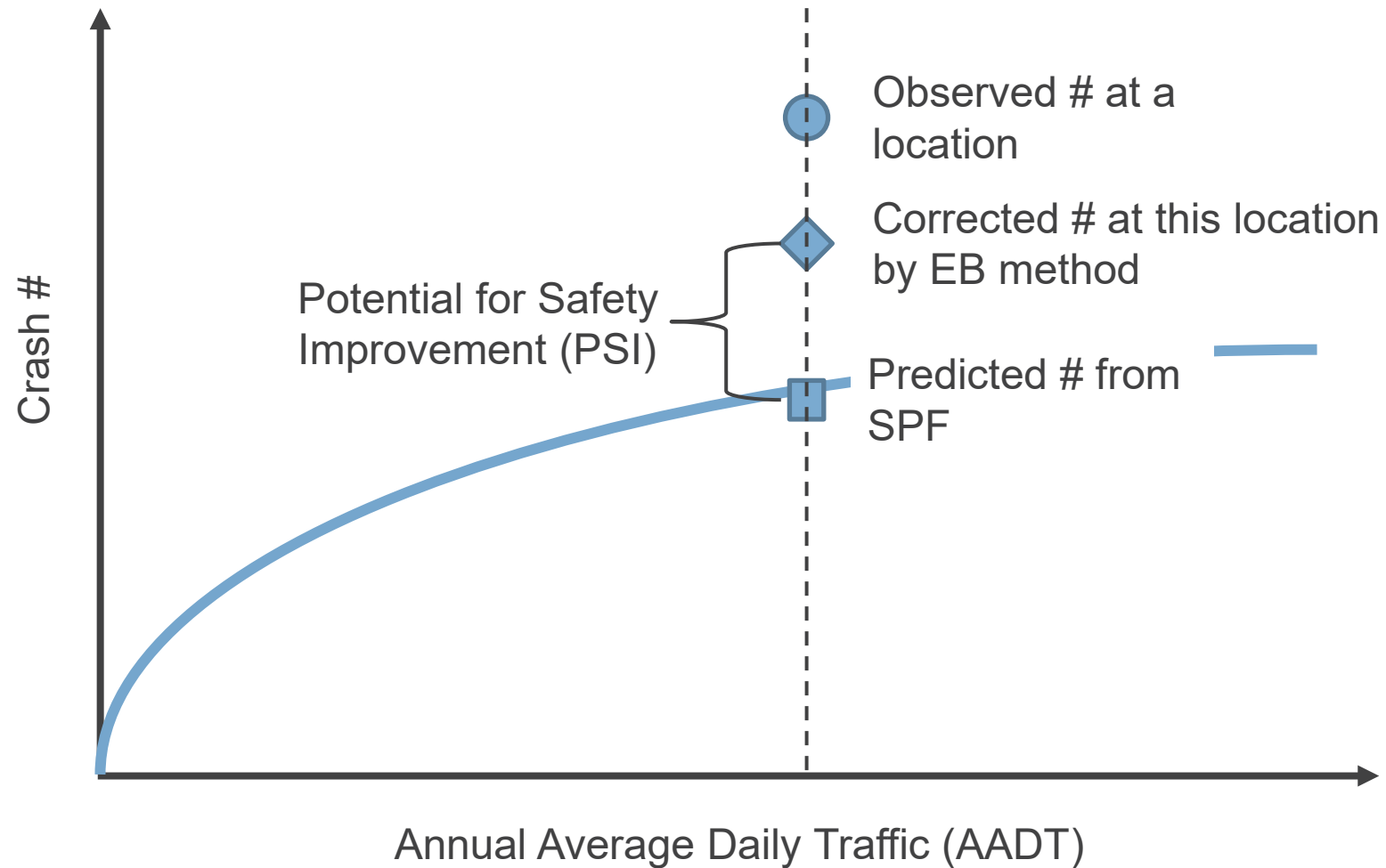
Source: Highway Safety Manual (HSM), Chapter 4, Section 4.4.2.

### 3. Excess Expected Average Crash Frequency

1. Calculate the Expected Average Crash Frequency with Empirical Bayes (EB) Adjustment
2. Calculate the Excess Expected Average Crash Frequency
3. Calculate Severity Weighted Excess (Optional)
4. Rank Sites (PSI)

Source: Highway Safety Manual (HSM), Chapter 4, Section 4.4.2.13

### 3. Potential for Safety Improvement (PSI)





## 4. Level of Service of Safety

Level of Service of Safety	Description
I	<ul style="list-style-type: none"> <li>Indicates a low potential for crash reduction</li> </ul>
II	<ul style="list-style-type: none"> <li>Indicates low to moderate potential for crash reduction</li> </ul>
III	<ul style="list-style-type: none"> <li>Indicates moderate to high potential for crash reduction</li> </ul>
IV	<ul style="list-style-type: none"> <li>Indicates a high potential for crash reduction</li> </ul>

Source: Highway Safety Manual (HSM), Chapter 4, Section 4.4.2.7

# How do I get access to CLEAR?

CLEAR Access Form

For access to any of the CLEAR apps (CLEAR Crash Data Viewer (CDV), CLEAR Safety, Interactive Crash Editor (ICE), SafetyNet) fill out the below form.

By signing this form, the individual accessing any of the CLEAR apps (CLEAR Crash Data Viewer (CDV), CLEAR Safety, Interactive Crash Editor (ICE), SafetyNet) acknowledges that they have read, and will abide by, all prohibitions on release of personal information as outlined in the federal Driver's Privacy Protection Act (18 USC 2721) (<https://dmv.ny.gov/drivers-privacy-protection-act-dppa>), and sections 96 and 96-a of the New York Personal Privacy Protection Law. (<https://opengovernment.ny.gov/system/files/documents/2020/09/pppl.pdf>). I agree, and it is my intent to sign this record/document by electronically submitting this record/document. I understand that my signing and submitting this record/document in this fashion is the legal equivalent of having placed my handwritten signature on the submitted record/document and this affirmation. I understand and agree that by electronically signing and submitting this record/document in this fashion I am affirming to the truth of the information contained therein.

For more information about CLEAR, and the CLEAR apps, go to the Crash Analysis Toolbox at <https://www.dot.ny.gov/divisions/operating/osss/highway/crash-analysis-toolbox>

1. Last Name \*

2. First name \*

Government workers: <https://forms.office.com/g/0fviPbtXDd>

Consultants working on NYSDOT or MPO projects <https://forms.office.com/g/q132qpCNfn>



Department of  
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# What CLEAR resources are available?

The screenshot shows a web browser window displaying the New York State Department of Transportation website. The browser's address bar shows the URL: <https://www.dot.ny.gov/divisions/operating/osss/highway/crash-analysis-toolbox>. The website header includes the New York State logo, navigation links for Services, News, Government, and COVID-19, and a search bar. Below the header, there is a dark blue navigation bar with the Department of Transportation logo and links for Travel, Business, Projects, Employment, and About. The main content area features a breadcrumb trail: **7** > DIVISIONS > OPERATING > OFFICE OF SAFETY & SECURITY SERVICES > HIGHWAY SAFETY > CRASH ANALYSIS TOOLBOX. A sidebar on the left lists navigation options under HIGHWAY SAFETY, with 'Crash Analysis Toolbox' selected. The main content area is titled 'Operations Division Transportation Systems' and includes a banner image of various vehicles. Below the banner, the text reads: 'Safety Program Management and Coordination Bureau'. The main text states: 'CLEAR Crash Data Viewer (CDV), CLEAR Interactive Crash Editor (ICE), and CLEAR Safety (CS) are now live! The links are shown below.' A bulleted list provides links to these tools:
 

- CLEAR Crash Data Viewer (CDV) <https://clear.dot.ny.gov/clear/cdv/>
- CLEAR Interactive Crash Editor (ICE) <https://clear.dot.ny.gov/clear/ice/landing>
- CLEAR Safety (CS) <https://clear.dot.ny.gov/CLEAR/CS/landing>

 Below this list, a note states: 'Government employees and consultants working on NYSDOT projects can be granted access to CLEAR.' Another bulleted list provides access forms:
 

- Access form for government employees <https://forms.office.com/g/0fviPbtXDd>
- Access form for consultants working on NYSDOT projects <https://forms.office.com/g/q132qpCNfn>

 The page concludes with the text: 'If you have further questions, please review the Frequently Asked Questions (FAQ) below.'

<https://www.dot.ny.gov/divisions/operating/osss/highway/crash-analysis-toolbox>

# Contacts

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