

2023 FTA JOINT STATE SAFETY OVERSIGHT AND RAIL TRANSIT AGENCY WORKSHOP

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Session 13

FTA Data – Where to Find It and How to Use It

2023 FTA Joint SSO and RTA Workshop

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Purpose and Agenda

- National Transit Database (NTD)
 - Sources of transit safety data used by FTA
 - Industry reporting requirements
 - Uses of safety data
 - Internal analyses
 - External-facing products
- Project spotlight: SSOA Risk Analysis Report
- Two-Way Q&A



National Transit Database (NTD)

Who reports to the NTD?

- Beneficiaries of Section 5307 funds (Urbanized Area Formula Grants)
- Recipients of Section 5311 funds (Formula Grants for Rural Areas)
 - State DOT Recipients report on behalf of their Section 5311 subrecipients
- Recipients of Section 5311(c) (Tribal Transit Grants)
- Voluntary reporters
 - Includes providers of public transportation that do not receive Federal grants



National Transit Database (NTD)

What safety and security (S&S) data do providers report to the NTD?

Reporter Type	# of Agencies	Safety Data Reporting					
Urban Full Reporters	518	 Detailed Major event reports Monthly Non-major safety summary reports by mode 					
Urban Reduced Reporters	413	Annual totals of:					
Rural Transit Providers	1,176	Major eventsFatalities					
Tribal Transit Providers	116	• Injuries					
Other (Agencies that do not report public transit service to the NTD – includes planning agencies, State DOTs, Intercity bus providers, and asset reporters.)	659	NA					

Who are **Urban Full Reporters**?

Urban agencies that either:

1) Operate rail transit service
Or

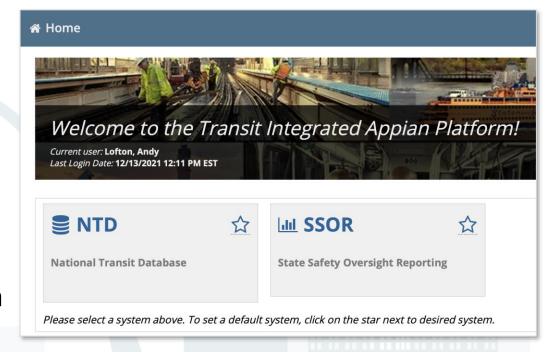
2) Have more than 30 vehicles operated in maximum service

Safety Data Collection Sources

National Transit Database – Managed by the Office of Budget and Policy (TBP)

State Safety Oversight Reporting (SSOR) Tool – Managed by the Office of Safety and Oversight (TSO)

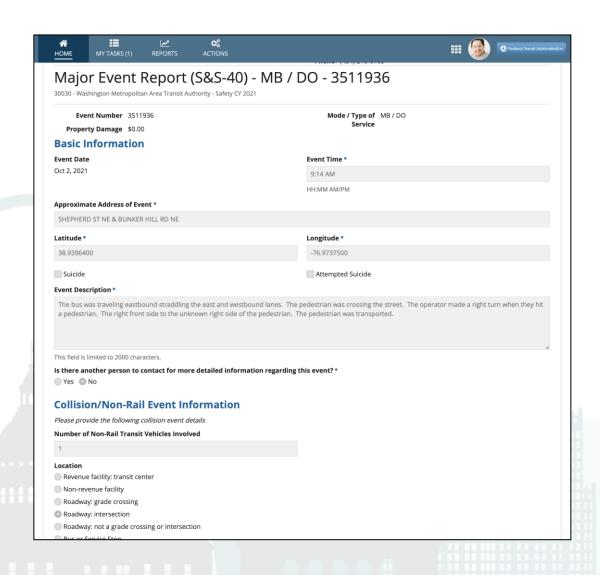
Other Data Sources – The Oversight Tracking System (Otrak); Transit Award Management System (TrAMS). TSO may also gather information through Safety Advisories, Directives, and Requests for Information



Major Event Reporting

Applicable reporters must submit a Major Event Report (S&S-40 form) within 30 days of the event.

- Event Details
 - Location, time, narrative, damages, weather, lighting, vehicle action, other event type-specific details
- Injury and Fatality Details
 - Person type/location
 - Age/gender
 - Suicide
 - Trespasser



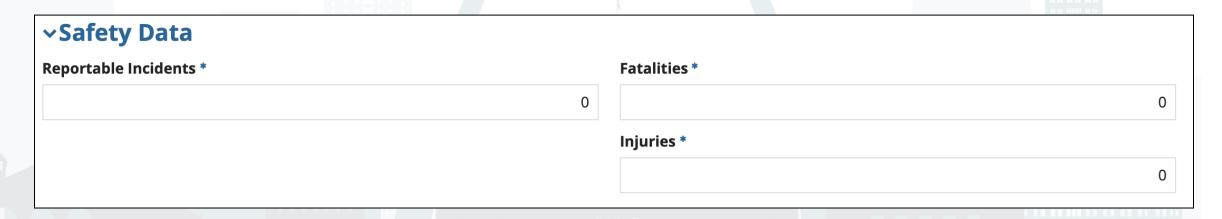
NTD Reduced Reporter Safety Data Reporting

Reduced Reporters report annual safety data totals (RR-20)

- Only 3 agency-wide data points
 - Reportable Incidents
 - Fatalities
 - Injuries
- Based on fiscal year
- Not broken out by mode

Reduced Reporters include:

- Non-rail Urban providers with 30 or fewer vehicles in maximum service
- Rural transit providers
- Tribal transit providers

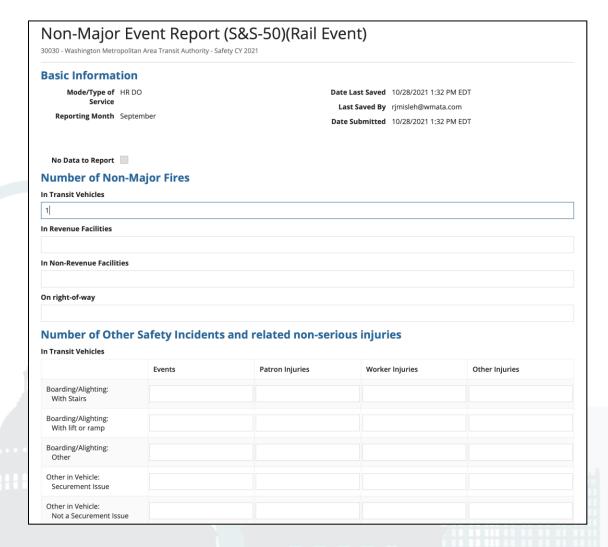


Non-Major Event Reporting

Applicable reporters must submit monthly a Non-Major Summary Report (S&S-50 form) for each mode of service they provide.

Monthly Totals

- Non-major fires by location
- Non-major safety events and related non-major injuries by person type and location (single-non-serious injury events)

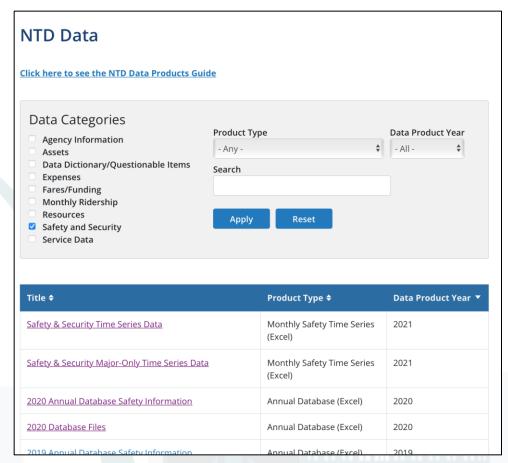


Public NTD Safety Data Products

NTD publishes S&S data products (updated monthly):

- S&S Major-Only Time Series file
 - Annual totals of major events and related data points by agency and mode
- S&S Time Series file
 - Annual totals of event data with non-major data included in some years to address threshold changes
- Major Safety Events
 - Individual major event records for years 2014 to present:

https://data.transportation.gov/Public-Transit/Major-Safety-Events/9ivb-8ae9



https://www.transit.dot.gov/ntd/ntd-data

Internal (FTA) NTD Data Products

The NTD produces data products monthly that are shared internally but are not published publicly

- Major events file, 2008 to present
 - Event-record level data for all major events reported to the NTD since January 2008
 - Supports detailed safety performance analyses
- S&S Snapshot
 - This excel workbook provides summary analyses of NTD S&S data
 - Includes monthly Passenger Miles estimates to support monthly estimated rates
 - Includes an original "Monthly Spotlight" tab each month that presents a specific safety topic defined by TBP



State Safety Oversight Reporting (SSOR)

Who reports to the SSOR?

- State Safety Oversight Agencies (SSOAs)
 - Required by 49 CFR Part 674 to oversee the safety of rail transit agencies in their jurisdiction.

What do SSOAs report to SSOR?

- Agency information, contacts
- Corrective Action Plans
- Hazards (currently disabled)
- SSOA Triennial Audits of RTAs
- RTA Internal Audits
- Causal data for events meeting FTA's definition of Accident

31 SSOAs

reporting oversight data for

64 rail transit agencies

When do SSOAs Report?

- SSOAs can input data throughout the year as information becomes available.
- The Annual Report Package (calendar year period) is submitted by March 15 of the following year.



SSOR Event Data – NTD Integration

- SSOAs do not report events to SSOR
 - NTD is the system of record for all rail transit events
- States are required to investigate events that meet FTA's definition of "accident"
- SSOR automatically identifies these events as they are reported to the NTD and displays them in the SSOR Events Module
- Upon completion of the investigation,
 States add the cause to the event
 record in SSOR

NTD **SSOR** Reporter: RTA Reporter: SSOA RTA submits an event SSOA views the event report to NTD (within 30 record in SSOR days) Upon completion of the If the system determines a investigation, SSOA adds Part 674 threshold has cause to record in SSOR been met, the record is immediately pulled into SSOR

What Events are Accidents?

- Accidents are defined by 49 CFR Part 674 and FTA's Two-Hour Accident Notification Guide.
 - Subset of NTD Major Events
- Accidents require investigation and causal determination

Accident Thresholds

- Fatality (confirmed within 30 days)
- Serious Injury
 - Requires hospitalization for more than 48 hours,
 - Results in a bone fracture (except simple fractures or fingers, toes, or nose),
 - Causes severe hemorrhages, nerve muscle, or tendon damage,
 - Involves an internal organ, or
 - Involved second-degree burns affecting more than 5 percent of the body surface.
- Evacuation of a vehicle or transit facility for life safety reasons
- Derailment
- Runaway train
- Collision between two rail vehicles
- Collision resulting in Substantial Damage (damage that disrupts service and affects the structural strength, performance, or operating characteristics of the asset)



FTA Uses of Safety & Security Data

TSO leverages S&S data for a wide range of program activities

- Development of Published Safety Statistics Reports
- Development of Monthly Safety Spotlight Newsletter Articles
- Safety Risk Management Activities
- Targeted analyses through FTA's State Safety Oversight (SSO Program)
- Bureau of Transportation Statistics (BTS) annual updates of the National Transportation Statistics (NTS) report

Other offices also leverage S&S data for products and processes

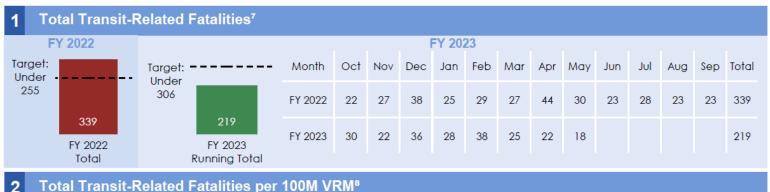
- Prioritization and conduct of Research projects (TRI)
- USDOT Strategic Goals Quarterly Performance Reports (TBP)
- Conditions and Performance (C&P) Report (TBP)



FTA Uses of Safety & Security – Performance Measures

USDOT Strategic Measures on Performance Metrics

- Total Transit-Related Fatalities
- Total Transit-RelatedFatalities per 100M VRM
- Transit Worker Fatalities and Injuries per 100MVRM





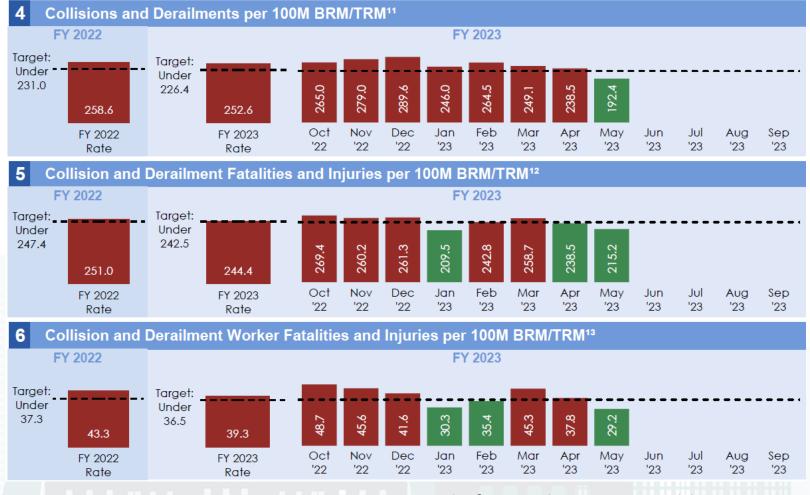


Sample from July 2023 Monthly Report

FTA Uses of Safety & Security – Performance Measures

FTA Strategic Measures on Performance Metrics

- Collisions and
 Derailments per 100M
 BRM/TRM
- 5. Collisions and Derailments Fatalities and Injuries per 100M BRM/TRM
- Collision and
 Derailment Worker
 Fatalities and Injuries
 per 100M BRM/TRM





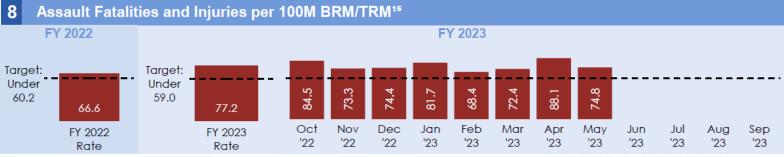
Sample from July 2023 Monthly Report

FTA Uses of Safety & Security – Performance Measures

FTA Strategic Measures on Performance Metrics

- Transit Worker Assault
 Fatalities and Injuries per
 100M BRM/TRM
- 8. Assault Fatalities and Injuries per 100M BRM/TRM





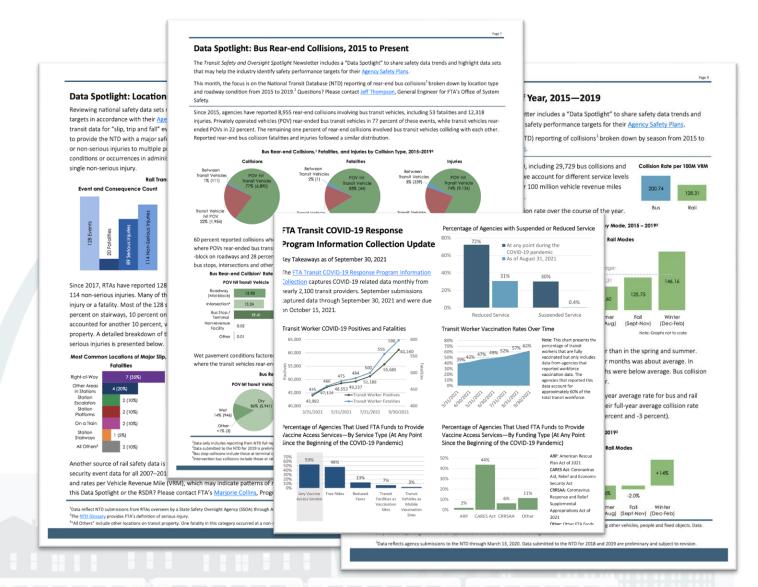


Monthly TSO Spotlight Newsletter Articles

TSO publishes a monthly Spotlight Newsletter that typically includes articles on

- Safety performance data related to a specific topic and/or safety research.
- Other specific topics in Rail or Bus Safety.

TSO Spotlight Newsletter



Targeted Analyses – SSO Program

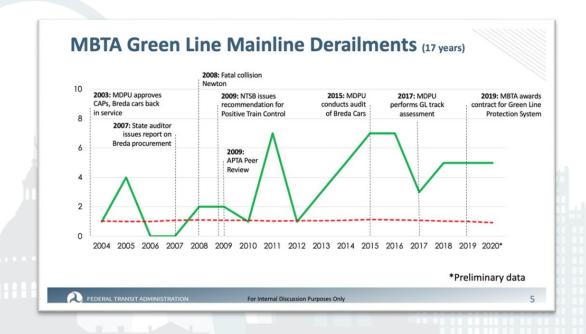
FTA's SSO Program Managers monitor safety concerns in coordination with SSOAs.

As needed, TSO performs analyses of specific concerns or a specific rail transit agency's performance to support monitoring and inform SSO Program oversight decision-making.

Recent examples include:

- MBTA safety performance concerns
- WMATA derailment

Sources: NTD, SSOR



PROJECT SPOTLIGHT: SSOA RISK ANALYSIS REPORT



Project roadmap

- What is the Safety Data Management Program?
- What is the Risk Analysis Report?
 - Purpose
 - Process
 - Technical and programmatic outcomes
 - Next steps



Context

Safety Data Management Program

Purpose

»Prepare data analyses to illustrate rail and bus transit safety outcomes and present trends and patterns in safety event data

Goals

- »Optimize use of safety data sources
- »Integrate data from sources other than the NTD
- »Make safety data more easily accessible and user-friendly



SSOA Risk Analysis Report: Purpose

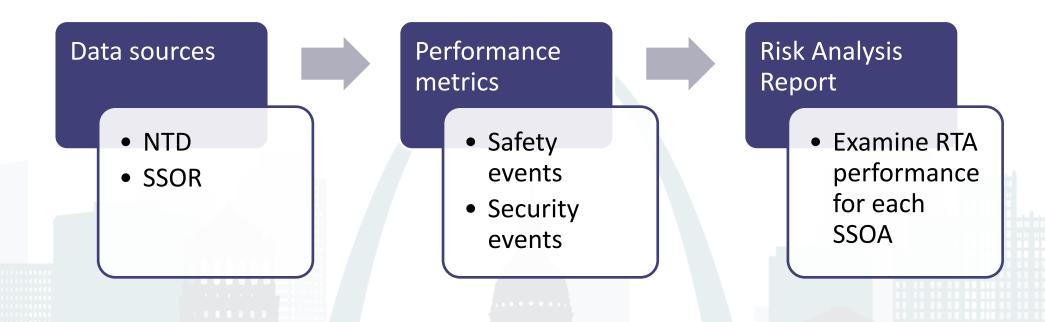
Technical goals

Create a monthly rail safety performance monitoring tool

Programmatic goals

- Optimize use of safety data resources
- Integrate data from multiple sources
- Support FTA staff in assessing and monitoring the safety performance of Rail Transit Agencies (RTAs) within specific State Safety Oversight Agencies (SSOAs)

SSOA Risk Analysis Report: Process



Data sources: NTD and SSOR

- 2014-Present Major Events File
- SS40 Injury Fatality and SS50 Events File
- The latest Complete Monthly Ridership File
- An SSOR Modes Report from the same month as reports 1–3
- A "Profiles" SSOR export from the same month as reports 1–3
- A "Contacts" SSOR export from the same month as reports 1-3



Performance metrics

- Collision Events
- Collision Fatalities
- Collision Injuries
- Train Derailment Events
- Train Derailment Fatalities
- Train Derailment Injuries
- Fire Events
- Fire Fatalities
- Fire Injuries

- Assault and Homicide Events
- Homicide Fatalities
- Assault and Homicide Injuries
- Other Reportable NTD Safety Events
- Other Reportable NTD Safety Event Fatalities
- Other Reportable NTD Safety Event Injuries
- Other Reportable NTD Security Events
- Other Reportable NTD Security Event Fatalities
- Other Reportable NTD Security Event Injuries

*all metrics per 100M VRM

Technical outcomes

- Examination of safety data sources to measure safety performance
- 2. A simple average of each system's 18 scores to yield a single safety performance score for each system
- 3. Generate two reports:
 - 1. RTA summary report
 - 2. SSOA summary report



Report types

- RTA summary report
 - List of RTAs based on average of each system's 18 scores
 - Shows many RTAs and many SSOAs alongside each other
- SSOA summary report
 - Analyzes the RTAs within a given SSOA
 - Smaller data package focusing on SSOA-specific RTAs and modes

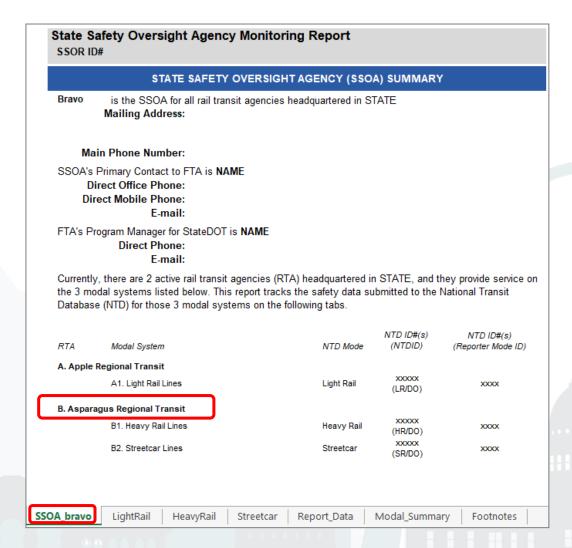


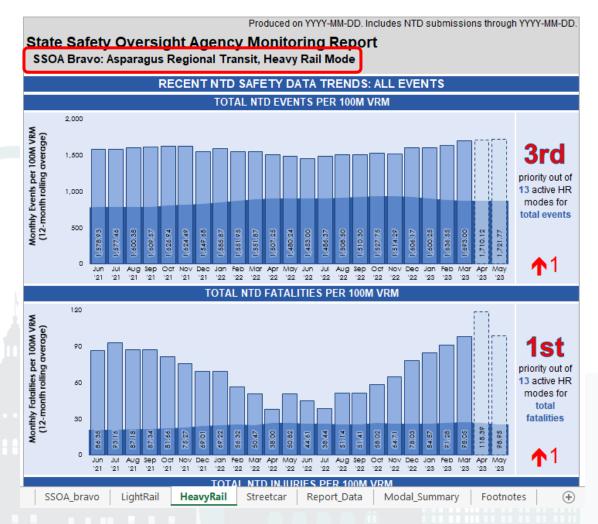
RTA summary report

	Individual Metric Scoring for RMS Prioritization System (Apr '22–Mar '23)																			
				Individ	ual M	etric S	coring	for RI	MS Pr	ioritiz	ation S	Systen	n (Apr	'22-N	lar '23)				Aggrega	te Scoring for RMS Prioritization System (Apr '22–Mar '23)
SSOR Agency/Mode	Collision Event	Collision Fatality Score	Collision Injury Score	Derailment Event Score	Derailment ▼ Fatality Score	Derailment ▼ Injury Score	Fire Event Score	Fire Fatality Score	Fire Injury Score	Assault Event	Assault Fatality Score	Assault Injury	Other Safety Event Score	Other Safety	Other Safety Injury Score	Other Security Event Score	Other Security	Other Security Injury Score	Average Score	SSOA
Agency Asparagus (Heavy Rail)	0.923	0.769	0.923	0.692	0.000	0.000	0.769	0.000	0.000	0.923	0.769	0.923	0.615	0.923	0.692	0.923	0.923	0.923	0.650	SSOA Bravo
Agency Broccoll (Light Kall)	0.957	0.609	0.957	0.739	0.000	0.000	0.696	0.000	0.000	0.652	0.957	0.783	0.522	0.000	0.609	0.913	0.000	0.913	0.517	SSOA Delta
Agency Carrot (Heavy Rail)	0.615	0.462	0.615	0.538	0.000	0.000	0.923	0.000	0.000	0.846	0.000	0.769	0.846	0.769	0.846	0.692	0.000	0.846	0.487	SSOA Echo
Agency Daikon (Light Rail)	0.435	0.957	0.826	0.565	0.000	0.000	0.435	0.000	0.000	0.870	0.783	0.870	0.435	0.000	0.522	0.957	0.000	0.957	0.478	SSOA Delta
Agency Eggplant (Heavy Rail)	0.769	0.692	0.846	0.308	0.000	0.000	0.846	0.000	0.846	0.538	0.538	0.615	0.231	0.462	0.231	0.308	0.692	0.462	0.466	SSOA Golf
Agency Fennel (Heavy Rail)	0.462	0.538	0.692	0.615	0.000	0.000	0.615	0.000	0.000	0.769	0.615	0.846	0.385	0.538	0.385	0.462	0.538	0.692	0.453	SSOA Kilo
Agency Garbanzo (Light Rail)	0.826	0.783	0.391	0.652	0.000	0.000	0.652	0.000	0.000	0.261	0.696	0.348	0.565	0.000	0.565	0.652	0.826	0.652	0.437	SSOA India
Agency Horseradish (Light Rail)	0.870	0.913	0.609	0.000	0.000	0.000	0.957	0.000	0.000	0.478	0.000	0.609	0.348	0.000	0.348	0.870	0.913	0.609	0.418	SSOA Foxtrot
Agency Kale (Light Rail)	0.696	0.826	0.783	0.000	0.000	0.000	0.000	0.000	0.000	0.957	0.913	0.957	0.087	0.000	0.087	0.826	0.000	0.870	0.389	SSOA Juliet
Agency Lemongrass (Heavy Rail)	0.538	0.615	0.000	0.000	0.000	0.000	0.692	0.000	0.000	0.615	0.923	0.538	0.538	0.000	0.615	0.538	0.769	0.538	0.385	SSOA Mike
Agency Mango (Light Rail)	0.174	0.870	0.174	0.391	0.000	0.000	0.000	0.000	0.000	0.783	0.000	0.652	0.696	0.000	0.783	0.609	0.783	0.739	0.370	SSOA Foxtrot
Agency Napa Cabbage (Light Rail)	0.478	0.565	0.652	0.304	0.000	0.000	0.000	0.000	0.000	0.696	0.609	0.826	0.130	0.000	0.174	0.696	0.957	0.522	0.367	SSOA Foxtrot
Agency Onion (Light Rail)	0.043	0.391	0.435	0.000	0.000	0.000	0.522	0.000	0.000	0.609	0.739	0.565	0.652	0.000	0.739	0.783	0.000	0.826	0.350	SSOA November
Agency Potato (Light Rail)	0.913	0.652	0.870	0.000	0.000	0.000	0.000	0.000	0.000	0.913	0.000	0.913	0.304	0.000	0.478	0.522	0.000	0.696	0.348	SSOA Lima
Agency Radish (Heavy Rail)	0.846	0.923	0.000	0.846	0.000	0.000	0.462	0.000	0.000	0.462	0.000	0.000	0.462	0.615	0.462	0.231	0.846	0.000	0.342	SSOA Hotel
Agency Zucchini (Hybrid Rail)	0.333	0.667	0.667	0.000	0.000	0.000	0.667	0.000	0.000	0.333	0.000	0.667	0.667	0.000	0.667	0.667	0.667	0.000	0.333	SSOA Foxtrot
Agency Scallion (Monorail/Automated Guideway)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.833	0.833	0.833	0.833	0.000	0.833	0.833	0.000	0.833	0.324	SSOA Charlie
Agency Tomato (Heavy Rail)	0.231	0.308	0.462	0.385	0.000	0.923	0.231	0.000	0.000	0.308	0.462	0.308	0.077	0.000	0.077	0.615	0.462	0.769	0.312	SSOA Foxtrot
Agency Winter Squash (Heavy Rail)	0.692	0.846	0.769	0.923	0.000	0.000	0.538	0.000	0.000	0.000	0.000	0.000	0.154	0.692	0.154	0.846	0.000	0.000	0.312	SSOA Alpha
Agency Asparagus (Streetcar)	0.520	0.000	0.960	0.440	0.000	0.000	0.840	0.000	0.000	0.840	0.000	0.880	0.560	0.000	0.520	0.000	0.000	0.000	0.309	SSOA Bravo



SSOA summary report





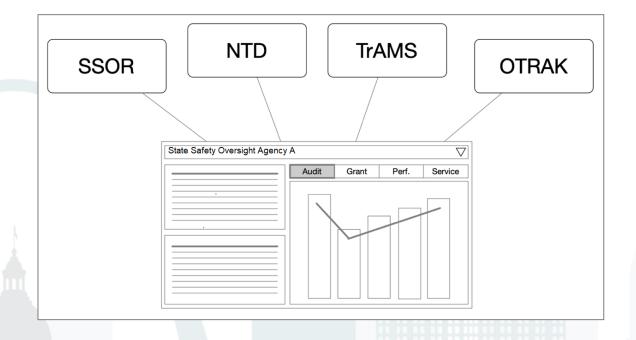


Programmatic outcomes

- Scores are **not** an ordered list of "safe" or "unsafe"
 RTAs and SSOAs
- The SSOA Risk Analysis Report provides datainformed insights that supplement other safety oversight information, tools and programs
- Goal is timely, improved communication between FTA and RTAs/SSOAs

Next steps: technical development

- Integrate safety data from all FTA data sources into a single report interface
- FTA working with Volpe Center to move from research & development to production



Next steps: programmatic development

- Evolve into a **safety prioritization and monitoring program** that is integrated with the current data management applications
- Prioritize the SSOA coordination and intervention activity
- Identify and analyze emerging safety concerns at RTAs
- Use safety information to proactively address safety issues before they become larger problems



TWO-WAY Q&A



Two-Way Q&A

Questions for you:

- 1. Do you conduct safety analysis with data?
- 2. How has safety data or other data in general been a driver of safety improvements?
- 3. What challenges or obstacles have you encountered when trying to make datadriven decisions to enhance transit safety?
- 4. Can you share any success stories or examples where safety data analysis led to significant improvements in your transit agency's safety performance?

What would you like to hear from us?

- About data sources
- About programs/projects

We'd like to hear from you:

- Your data interests
 - What existing data products are useful for you?
 - What would be helpful that does not currently exist?
- Your data capabilities
 - Staffing
 - Software



Contact Information

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