Using the National Transit Database (NTD) to Support Safety Analysis in an SMS

January 6, 2022

**Public Transportation Agency Safety Plan
Technical Assistance Center
(PTASP TAC)**

U.S. Department of Transportation
Federal Transit Administration

Objective

- Review safety performance data reported by Section 5307 recipients and subrecipients to the NTD

- Review ways transit agencies can use this data to support SMS activities

Agenda

- Data available in the NTD

- Using NTD data to support SMS activities

  - Safety performance targets and demonstration

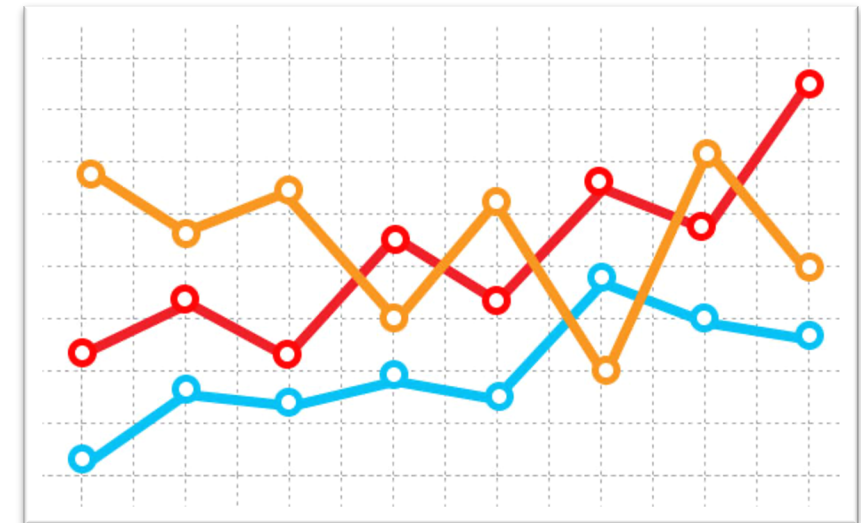 - Using NTD data to support safety performance monitoring

- Q&A

Data Available in the NTD

Overview of the NTD

- Repository of data about financial, operating, and asset conditions of transit systems

- Designed to support local, State, and regional planning efforts and help governments and other decision-makers make multi-year comparisons and perform trend analyses

Urban Reporters

Recipient and subrecipient transit providers of Section 5307 funds report to the NTD as urban reporters

Full Reporters

- Any reporter who operates rail or more than 30 vehicles in maximum service
- Report safety information by mode
- Report information on major mechanical failures
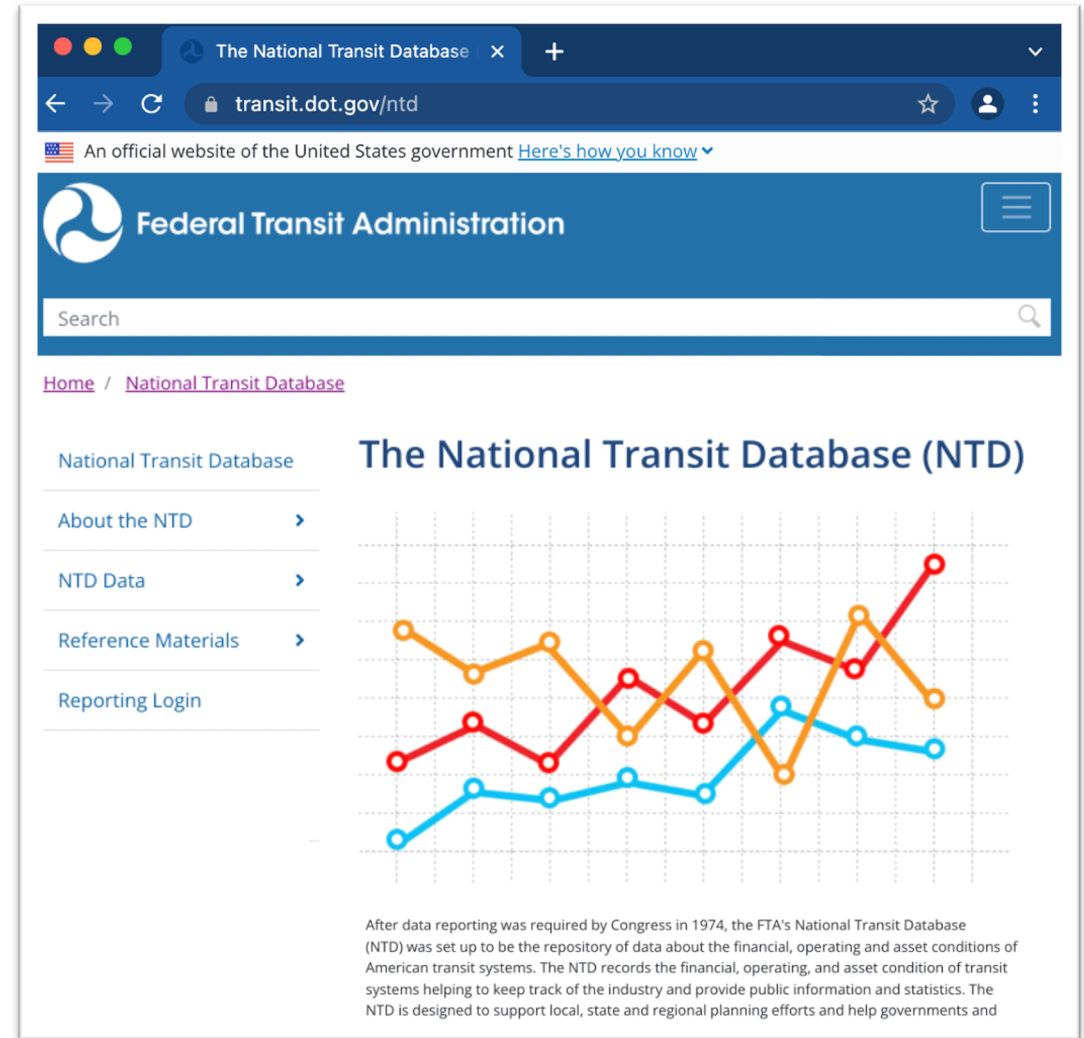
Reduced Reporters

- Reporters who do not operate rail and operate fewer than 30 vehicles in maximum service
- Report limited safety information
- Do not report major mechanical failures

Where can we find this data?

FTA publishes data reported to the NTD on its public-facing NTD website

http://transit.dot.gov/ntd

Where can we find this data?

Data products are available for many different categories and reporting years

Selected Available Data Products

Full Reporters

Safety & Security Major-Only Time Series Data

Monthly Module Data Release

Annual Database Vehicle Maintenance

Major Safety Events

Reduced Reporters

Annual Database Safety Information

Annual Database Service

Using NTD Data to Support an SMS

NTD Data in the SMS

- Data collected through the NTD can be used to support many aspects of an agency's SMS

- Particularly, NTD data can be useful for benchmarking and performance monitoring for SMS elements:

  - Setting safety performance targets (SPTs)

  - Supporting Safety Risk Management (SRM)

  - Establishing safety objectives

PTASP Regulation Requirements For SPTs

- **The Agency Safety Plan must include performance targets based on the safety performance measures established in FTA's National Public Transportation Safety Plan (§ 673.11(a)(3))**

- The Plan establishes four safety performance measures (SPMs)

- Transit agencies set seven SPTs per mode

SPMs	SPTs
1. Fatalities	1. Total fatalities by mode
	2. Number of fatalities per VRM by mode
2. Injuries	3. Total injuries by mode
	4. Number of injuries per VRM by mode
3. Safety Events	5. Total safety events by mode
	6. Number of safety events per VRM by mode
4. System Reliability	7. Mean miles between major mechanical failures by mode

Relevant Data Reported to the NTD by Urban Reporters

Data Point	Full Reporter	Reduced Reporter
Fatalities	Ongoing	Annually*
Injuries	Ongoing	Annually*
Major Safety Events	Ongoing	Annually*
Major Mechanical Failures	Annually	N/A
Service	Monthly	Annually

* Total events only, not broken out by mode or event type

NTD Data to Support SPT Development

SPMs	SPTs	Full Reporter	SReduced Reporter
1. Fatalities	1. Total fatalities by mode 2. Number of fatalities per VRM by mode	• Safety & Security Major-Only Time Series Data • Monthly Module Data Release	• Annual Database Safety Information • Annual Database Service
2. Injuries	3. Total injuries by mode 4. Number of injuries per VRM by mode	• Safety & Security Major-Only Time Series Data • Monthly Module Data Release	• Annual Database Safety Information • Annual Database Service
3. Safety Events	5. Total safety events by mode 6. Number of safety events per VRM by mode	• Safety & Security Major-Only Time Series Data • Monthly Module Data Release	• Annual Database Safety Information • Annual Database Service
4. System Reliability	7. Mean miles between major mechanical failures by mode	• Annual Database Vehicle Maintenance	N/A

Demonstration:
Calculating Fatalities by Mode

Please see webinar recording for video content.

Demonstration:
Calculating Fatality Rate

Please see webinar recording for video content.

PTASP Regulation Requirements for SRM

- **SRM:** A process for identifying hazards and analyzing, assessing, and mitigating safety risk (§ 673.5)
- **Safety risk:** The composite of predicted severity and likelihood of the potential effect of a hazard (§ 673.5)

Likelihood X **Severity** = **Safety Risk**

Examples: NTD Data Available to Support SRM

Safety Risk	Full Reporters	Reduced Reporters
Likelihood	• Major Safety Events • Monthly Module Data Release	• Annual Database Safety Information • Annual Database Service
Severity	• Major Safety Events • Monthly Module Data Release	

Demonstration: Accessing Data on Yard Derailments

Please see webinar recording for video content.

Demonstration:
Accessing Data on Demand Response Modes

Please see webinar recording for video content.

PTASP Regulation Requirements for Safety Objectives

- **The Agency Safety Plan must include safety objectives as part of the written statement of safety management policy (§ 673.23(a))**
- Safety objectives:
  - Provide a broad description of the agency's overarching safety goals, which usually reflect the agency's unique needs and circumstances
  - Can be brief, high-level statements that set the foundation for safety performance targets that may be used to assess safety performance and the effectiveness of the SMS

Sample Safety Objectives

- "Strive for continuous improvement in safety performance"
- "Reduce major safety events by 5 percent over last fiscal year"
- "Reduce rear-end bus collisions in line with our peers"
- "Support community initiatives to reduce pedestrian fatalities and injuries"

Examples: NTD Data Available to Support Safety Objectives

Safety Objectives	Full Reporters	Reduced Reporters
Safety Performance Information	• Major Safety Events • Monthly Module Data Release • Annual Database Vehicle Maintenance	• Annual Database Safety Information • Annual Database Service

Benchmarking Safety Performance

Agencies may explore their safety performance in relation to the rest of the industry or to specific subsets of the industry

How does my agency compare to...

Transit Industry

Agencies with the Same Modes

Agencies with Similar VRM

Agencies in my State

Examples: Benchmarking Safety Performance

How does my agency compare to…	When it comes to…
Industry	• Total fatalities reported by year • Total rear-ending collisions reported by year
Modes	• Number of collisions with persons reported for demand response over the previous three years • Number of fires reported for bus over the previous five years
Agencies with Similar VRM	• Average miles per major mechanical failure per year • Number of collisions with pedestrians by year
Agencies in my State	• Total property damage in 2019 • Fires in or on vehicles over the previous decade

PTASP Resource

[Accessing and Using Safety And Security Event Data](#) available in the [PTASP TAC Resource Library](#)
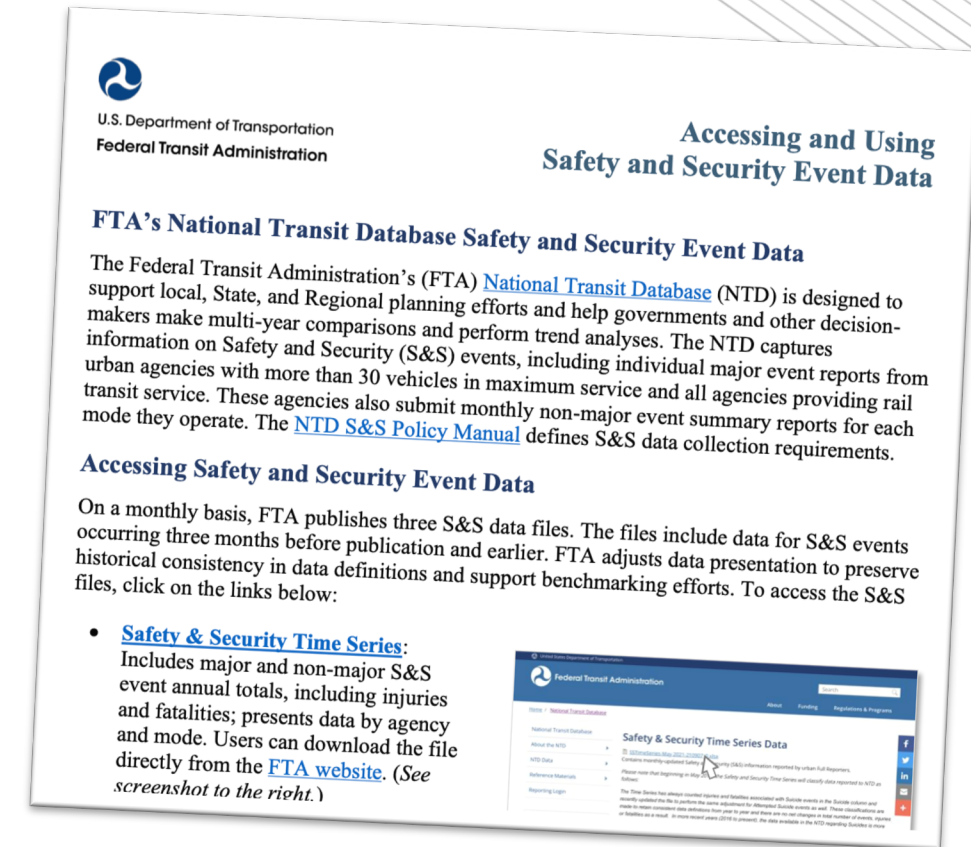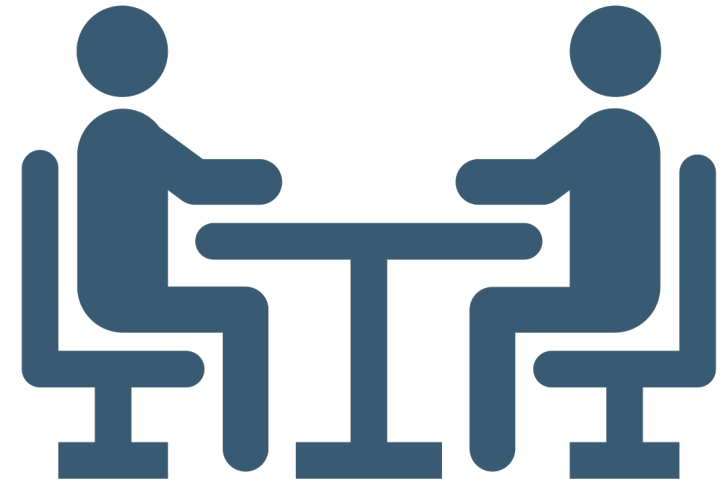
Technical Assistance

The TAC help desk remains open to assist the transit industry with PTASP questions, including questions about ASP development and implementation

1-877-827-7243

Monday – Friday, 9 a.m. - 8 p.m. ET

PTASP-TAC@dot.gov

Questions about accessing NTD data and NTD data products?

Contact the NTD Help Desk for assistance with accessing NTD data and questions about NTD data products

1-888-252-0936

Monday – Friday, 8 a.m. - 7 p.m. PM ET

NTDHelp@dot.gov

Links and Contact Information

Technical Assistance Center

www.transit.dot.gov/PTASP-TAC

Frequently Asked Questions

www.transit.dot.gov/PTASP-FAQs

transit.dot.gov/PTASP-TAC

1 - 877 - 827 - 7243

PTASP-TAC@dot.gov

PTASP Technical Assistance Center
943 Glenwood Station Lane, Suite 102
Charlottesville, VA 22901

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