Data-Driven Safety: Implementing SMS

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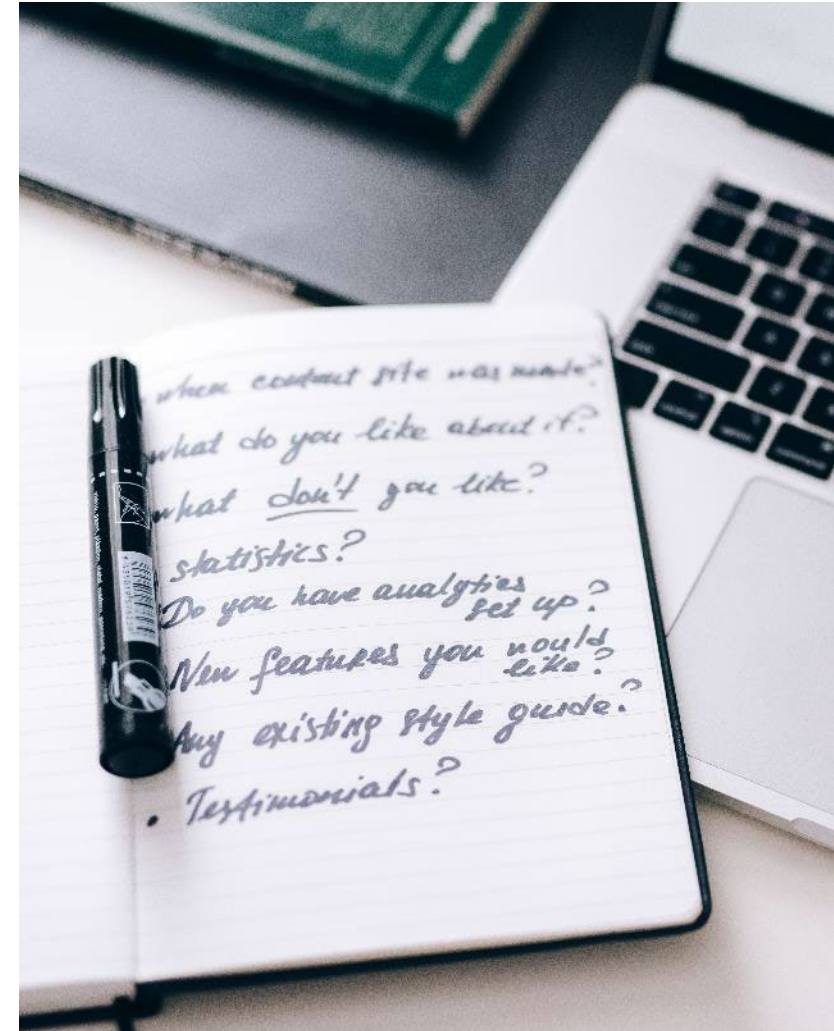**Office of Transit Safety and Oversight (TSO)**

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Agenda

1. SMS & Data Management

2. How to think about your data

3. How to use your data for SMS

4. Key takeaways

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Safety Management Systems (SMS)

Safety Assurance

measure, monitor, evaluate

Safety Risk Management

identify, assess, mitigate

Safety Management Systems (SMS)

Safety Promotion

train, communicate, cultivate positive safety culture

Safety Policy

lead, commit, be accountable

Safety data management & SMS

- SMS is not a linear process with an obvious starting point
- Think of safety data as foundational to SMS and implicit in each pillar
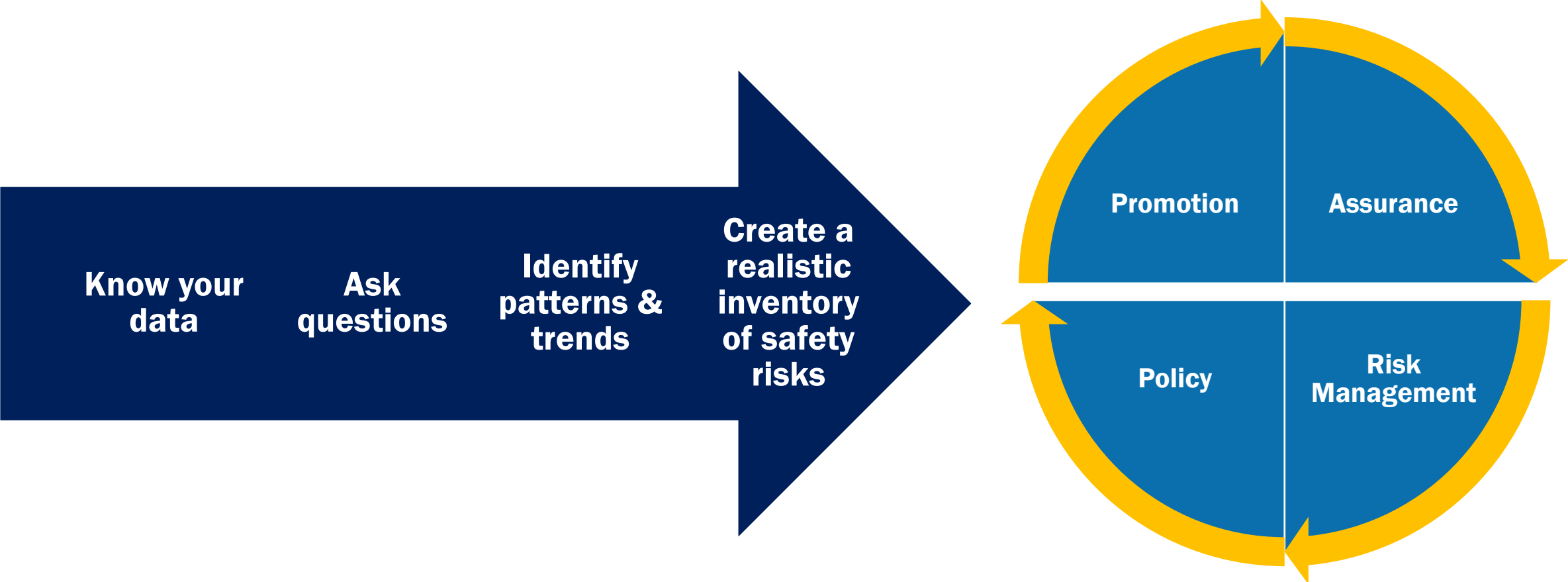- Safety data management and analysis provide an on-ramp to SMS components

Safety Assurance	Safety Risk Management	Safety Policy	Safety Promotion

Safety Data Management

Defining safety data management

- How you **collect**, **organize**, **store**, and **document**, and **use** safety data

- Every component of SMS relies in whole or in part on safety data and good safety data management practices

- No advanced degrees or special tools required: <u>safety data management is for everyone</u>
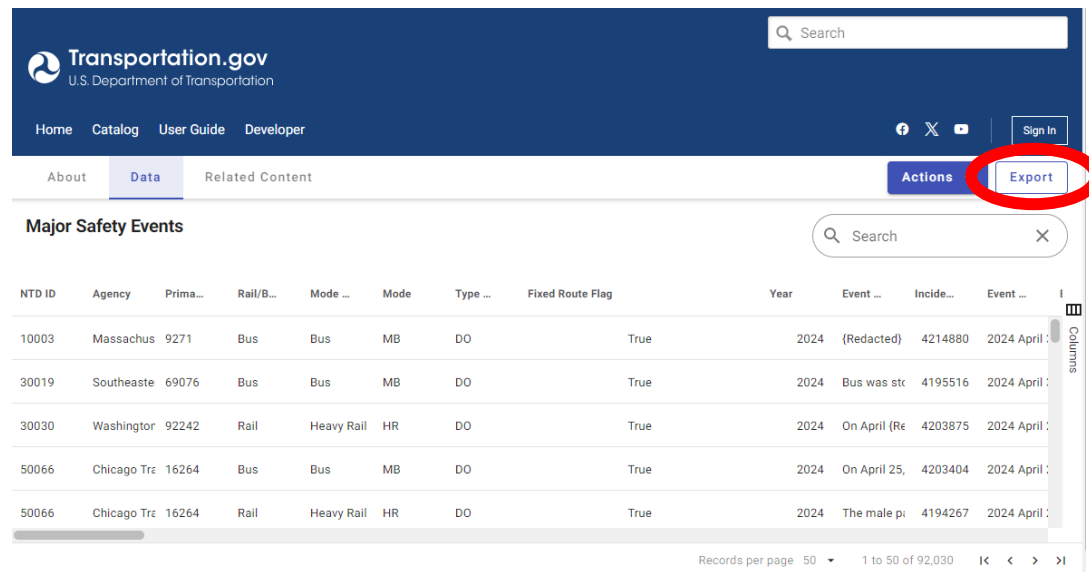
From safety data management to SMS

Know your data → **Ask questions** → **Identify patterns & trends** → **Create a realistic inventory of safety risks**

- Promotion
- Assurance
- Policy
- Risk Management

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Safety data: know and ask

- What safety data do we have and what can it tell us?
  - [NTD Data | FTA (dot.gov)](#)
  - [Major Safety Events | Department of Transportation - Data Portal](#)

- High-level look is achievable with a spreadsheet

	2020	2021	2022	2023
Heavy Rail	**252**	**274**	**311**	**337**
Main Line Derailment	50	53	56	52
Rail Collision	202	221	255	285
Light Rail	**449**	**491**	**589**	**616**
Main Line Derailment	54	32	53	42
Rail Collision	395	459	536	574
Street Car Rail	**169**	**198**	**207**	**249**
Main Line Derailment	15	19	32	34
Rail Collision	154	179	175	215
Grand Total	870	963	1107	1202

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Safety data: identify and act

Identify

- High level trends
  - e.g., increasing numbers of derailments and collisions
- Use those trends to drill down
  - Who / what / when / where of safety data events
  - Engage operators and workers to get additional insight on safety event trends

Use data and practice SMS

- Safety Assurance
  - Identify emerging issues
  - Measure the effectiveness of mitigations
- Safety Risk Management
  - Conduct safety risk assessments
  - Develop mitigations
- Safety Policy
  - Drive accountability
- Safety Promotion
  - Develop effective training and communications

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Data-informed SMS: key takeaways

- Take a broad view and drill down
- Keep it simple, and don't reinvent the wheel
- Utilizing data is a more efficient and effective way of addressing safety issues
- For thought and conversation: technical assistance for data management

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Thank you!

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