

## Risk Models: Prioritizing Areas of High Risk

The Federal Railroad Administration (FRA) promotes and regulates safety throughout the nation's railroad industry. As part of its safety oversight role, FRA inspectors conduct inspections to ensure railroads' and other parties' compliance with regulations.

To support the inspection activities, FRA is developing risk models to associate a risk score with each inspection point. The models allow for prioritization of inspection points to enable FRA to use its resources more effectively by focusing on areas of high risk. Models have been developed for the FRA disciplines:

- Grade Crossing and Trespasser Safety
- Hazardous Materials
- Mechanical Equipment
- Operating Practices
- Signals and Train Controls
- Track

The models focus on data relevant to each discipline's specific needs that can guide inspectors' activities. In addition, the scores can be used as a factor within inspectors' focused inspection processes to enhance the inspectors' safety oversight role. FRA will continue to refine the models by exploring new methods, technologies, and data to allow it to adapt to ever-changing industry initiatives and safety needs.

## Data Visualization: Getting Data to Stakeholders

FRA continuously examines emerging tools and technologies in its efforts to provide internal and external stakeholders with innovative and intuitive ways to explore safety data. The use of industry-leading visualization techniques and tools for examining and understanding data has become a critical part of FRA's data environment.

FRA developed dashboards for internal stakeholders to present and visualize safety data in a manner relevant to their needs. In addition, FRA enhanced the public-facing safety data website with interactive dashboards to enable users to efficiently explore and derive value from safety data. The interactive dashboards allow users more autonomy over their inquiries and allow users to quickly find and compare safety performance on factors of interest over multiple years.

The implementation and availability of data visualization has also increased the ability of FRA to rapidly respond to data inquiries. New reports can be rapidly created and used for recurring data inquiries. This allows FRA to respond to continually emerging needs while maintaining existing reporting objectives.