

TRANSPORTATION RESEARCH BOARD

**NTSB and TRB Webinar: Leading Future
Improvements in Transportation Safety**

**Tuesday, March 5, 2019
2:00-3:30 PM ET**

Purpose

Discuss 2019-2020 [NTSB's Most Wanted List](#) and TRB's Critical Issues in Transportation 2019 [report](#).

Learning Objectives

At the end of this webinar, you will be able to:

- Define safety elements from the TRB and NTSB reports
- Describe how these issues will affect current and future transportation initiatives
- Determine how to incorporate these issues into transportation planning and policy





National Transportation Safety Board



Safety Board
Transportation
National



2019-2020 NTSB
**MOST
WANTED
LIST** OF
TRANSPORTATION
SAFETY
IMPROVEMENTS

**Critical changes needed
to reduce transportation
accidents, injuries,
and fatalities.**



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE



What is the Most Wanted List ?

- Specific safety recommendations: Can and should be implemented in two years.
- Broad, longstanding issues that threaten the traveling public.

Overview

- Critical changes to ALL modes to save lives
- Awareness and dialogue: industry, elected officials, public
- Investigation is only the beginning



The List !!



- Eliminate Distraction
- End alcohol & other drug impairment
- Safe shipment of Hazmat - all modes
- Full implementation - Positive Train Control
- Develop strategy to manage speed

The List !! - continued



- Improve Charter & Air Taxi safety
- Crash Avoidance Technology = standard
- Reduce Fatigue – related crashes
- Improve Medical fitness screening
- Strengthen Occupant Protection

Great Multi-Tasker ????



Eliminate Distractions

NTSB



Types of Distractions



Not while operating !!

A graphic illustration of a human head in profile, facing right. The head is rendered in a semi-transparent blue style. From the brain area, several bright blue light rays emanate outwards. Surrounding the head are several white icons representing different substances: a marijuana leaf on the left, a syringe at the top, two pills at the top right, a steaming coffee cup at the bottom left, and a bottle of alcohol with a glass at the bottom right. The entire graphic is set against a dark background with a grid pattern.

**End Alcohol and Other
Drug Impairment**



End Substance Impairment in Transportation

- Since 2000, 160,000 motor vehicle deaths
- NTSB investigations consistently find car accidents across m

10,000 Deaths – This year

.05 Nationwide

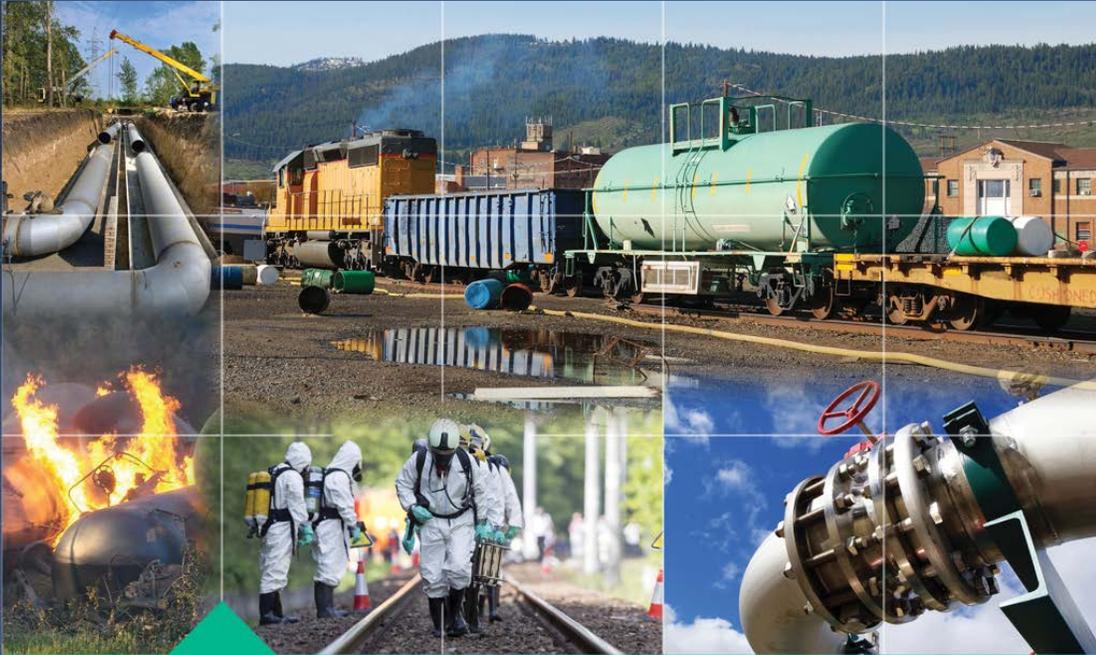
Chemistry Anyone ?

- Diphenhydramine ++
- Common Drugs
 - Allergy & Colds
 - Blood Pressure
 - Anxiety
 - Muscle relaxants
 - ETC--- Lots of ETC...



NTSB

Don't Spill !!!



**Ensure the Safe
Shipment of
Hazardous Materials**

NTSB

Improve Rail Tank Car Safety

- Tank car flammable transport up exponentially
- DOT-111 cars not up to the task but cheap
- Ruptures, fires, explosions, environmental damage

Lac-Mégantic, Quebec - 7/8/13



47 Fatalities

“Air Traffic Control” for Trains



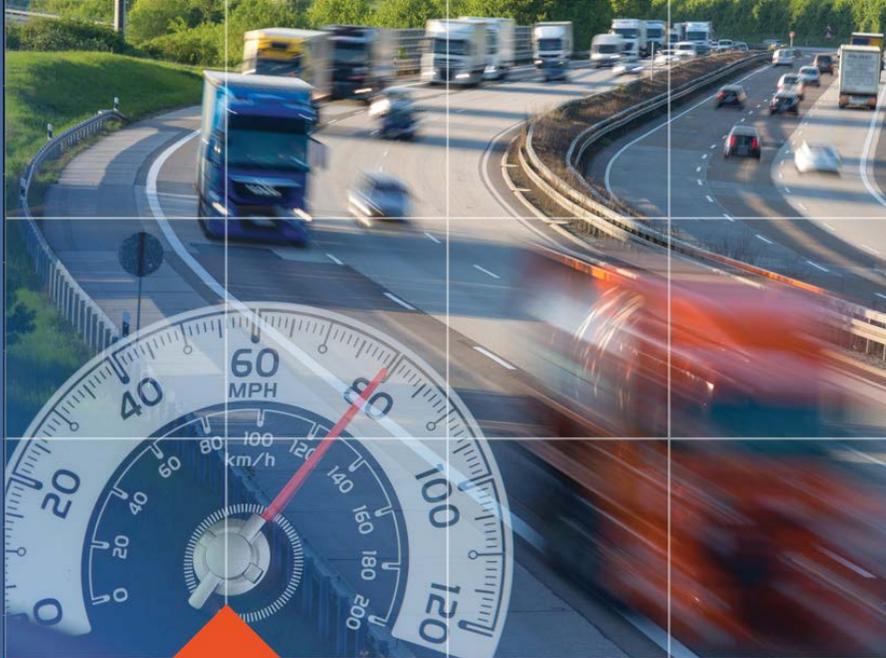
**Fully Implement
Positive Train Control**

Stop rail accidents before they happen

Mandated by Congress in 2015

**Still not implemented nationwide,
as required**

Speed Kills: $F = MA$



Implement a Comprehensive Strategy to Reduce Speeding-Related Crashes

10,000 Deaths annually

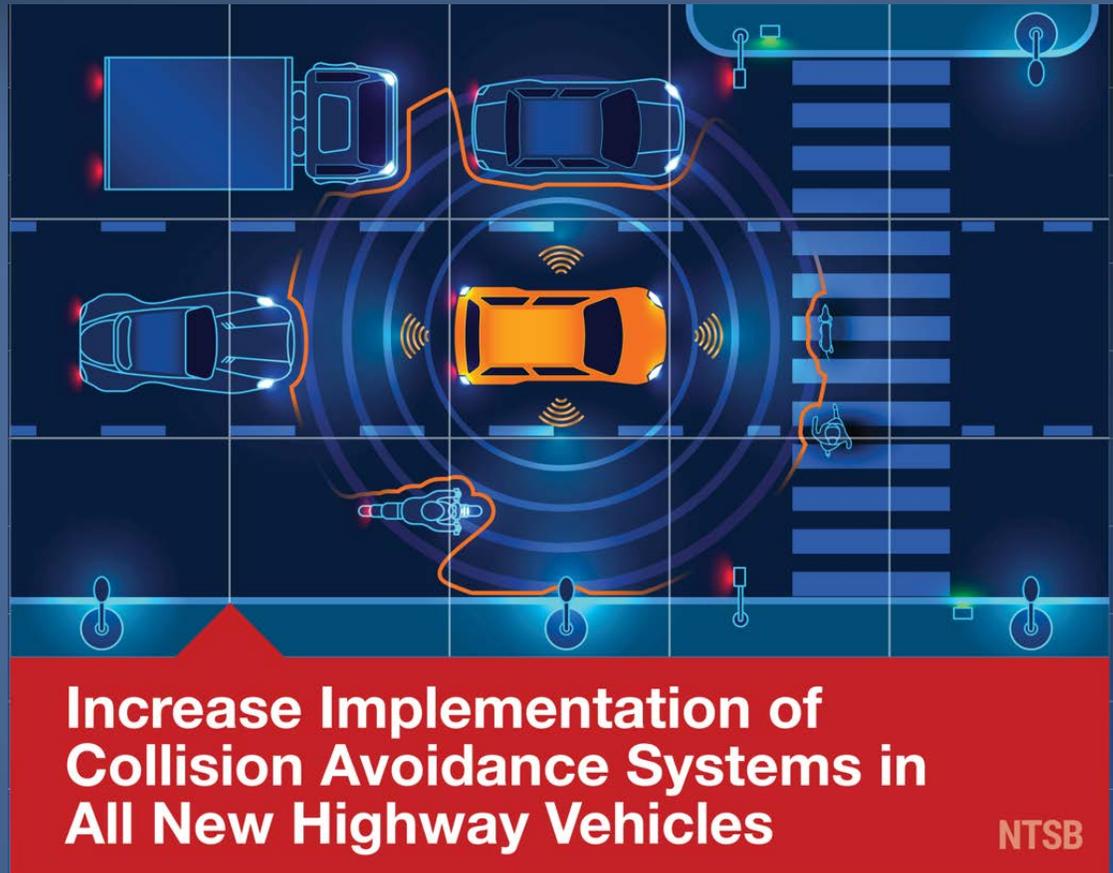
\$52 Billion annually



Flt Data Monitoring & Controlled Flight Into Terrain (Proportional)



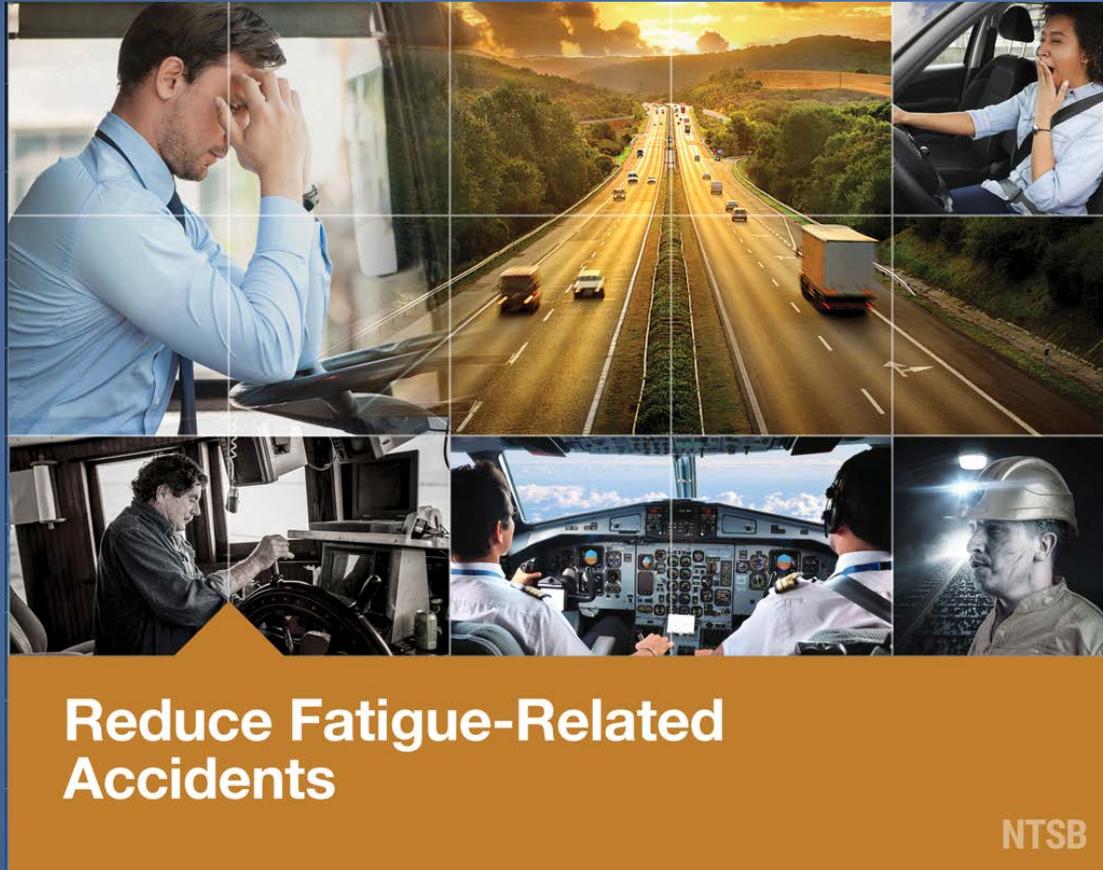
Make it STANDARD !!



Advise consumers



“Fatigue makes cowards of us all”



Manage it !!!

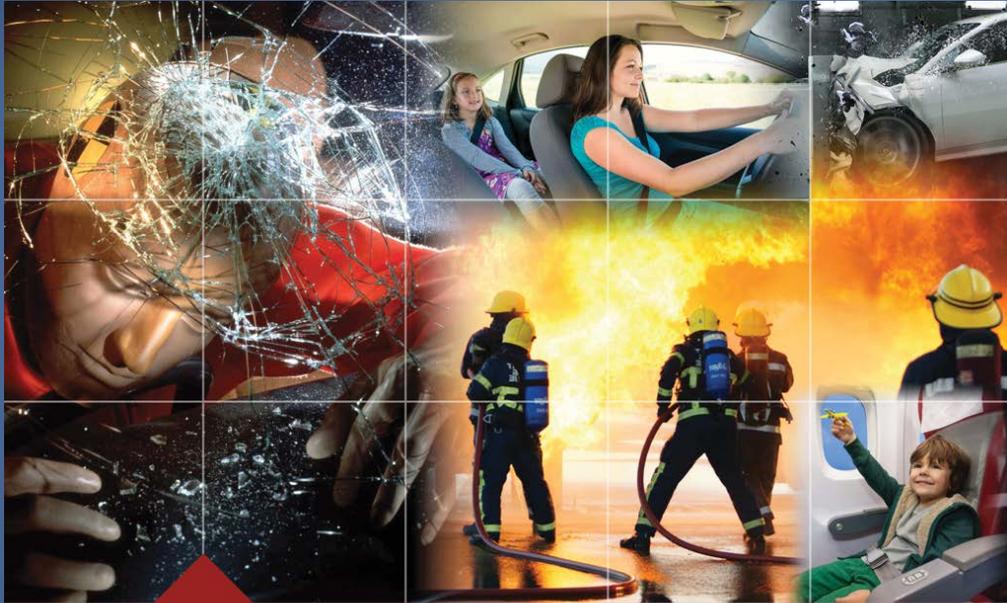
- Medication
- Habits
- OSA

Other modes should match aviation !



Require Medical Fitness

Avoid the second impact



Strengthen Occupant Protection

NTSB



What Can be Done?





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Learn more about the
Most Wanted List at
www.NTSB.gov/MostWanted



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CRITICAL ISSUES IN TRANSPORTATION 2019

The National Academies of
SCIENCES • ENGINEERING • MEDICINE



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Critical Issues in Transportation 2019

- *Critical Issues in Transportation 2019* poses a series of challenging questions about potential critical issues that may arise 10 to 20 years into the future.
- Intent: to frame high-level questions that can be addressed during the next 5 to 10 years through research, policy analysis, and debate to help society prepare for the potentially unprecedented changes that lie ahead.
- Organized into 12 topic areas, with 63 individual issues
- The TRB Executive Committee is responsible for the report and for the selection of topics and issues.

Critical Issue Topics

- Transformational Technologies & Services
- Serving a Growing and Shifting Population
- Energy/Sustainability
- Resilience/Security
- Safety/Public Health
- Equity
- Governance
- System Performance/Asset Management
- Funding/Finance
- Goods Movement
- Institutional and Workforce Capacity
- Research/Innovation

Safety/Public Health

- Adopting proven and new safety technologies
- Semi-automated vehicle safety issues
- Public health's linkage to transportation
- Mitigation of pollution from transportation
- Operator fatigue management
- Safety issues of new aviation and maritime technologies
- Safety management and safety culture
- Impacts of marijuana and other drugs
- Pedestrian and cyclist deaths and injuries

Adopting Proven and New Safety Technologies

- Accelerating the adoption of crash protection measures that have been proven effective, such as air bags, energy-absorbing materials, and safety belt use and helmet laws, as well as adoption of the safest road designs
- Transferring lessons that can be learned from those states and localities that have been successful in reducing deaths and injuries through implementing safety countermeasures that work
- Reversing the sharp decline in highway traffic safety enforcement in some jurisdictions

Semi-automated Vehicle Safety Issues

- How will drivers adapt to the safety features of semi-automated safety technologies?
- Effectively regulating semi-automated driving to address the risks of increased distraction and inattentiveness
- How to reduce the death and injury resulting from distractions from technology that is available and used by transportation operators, or from erosion of operator skills as reliance on semi-automation grows
- What are the net safety benefits of semi-automated technologies even if they do increase distraction-related crashes?
- How will drivers of conventional vehicles respond to CAVs that may operate more slowly and cautiously?

Public Health's Linkage to Transportation

- Traffic crashes as a public health issue
- Transportation's role in public health
 - the effects of emissions, noise, and urban heat islands
 - the spread of infectious diseases
 - fatigue, stress, and chronic disease among transportation operators
- Access to public health facilities, particularly for the disabled, the elderly, and the economically disadvantaged
- Active transportation as a health measure

Mitigation of Pollution from Transportation

- People living or working near roadway environments or near ports, rail yards, airports, and other transportation facilities appear to be at an increased risk from motor vehicle emissions. This increased risk disproportionately affects lower income groups and minorities.
- Recent studies have shown that noise pollution is contributing to major health problems.
- Which mitigation measures can be justified and implemented and which need more research to reduce health risks for those living near major transportation emission sources?

Operator Fatigue Management

- Operator fatigue is an ongoing major safety concern and a source of incidents and accidents in all modes of transportation.
- What are the most effective regulatory, management, and technological approaches to detecting and managing fatigue?
- How can proven strategies gain more widespread application, and what evidence would inform policy makers about the benefits of additional appropriate requirements for transportation operators to reduce the risk to their workers and the public?

Safety Issues of New Aviation and Maritime Technologies

- Managing risk to the traveling public from unmanned aircraft systems (UASs)
 - Integrating drones into managed airspace
- Regulating short-haul, low-altitude passenger aviation trips by battery-powered aircraft
 - Managing airspace to avoid conflicts between such passenger trips and low-altitude drones,
 - What public-sector infrastructure would be needed, and how could it be paid for?
- How could maritime drones, autonomous vessels, and manned vessels coexist and be safely managed in existing traffic lanes?

Safety Management and Safety Culture

- As transportation systems become increasingly complex and confront risks that are hard to estimate, it becomes increasingly difficult for safety regulators to write simple and effective rules to ensure safety.
- How can regulators and industry be incentivized to strengthen their safety management systems and safety cultures in ways that will encourage firms to achieve safety levels beyond what can be realized through compliance with existing rules and standards?

Impacts of Marijuana and Other Drugs

- Marijuana legalization and growing opioid addiction may increase drug-related deaths and injuries in transportation.
- What might expanded legalization of marijuana and increased opioid abuse mean for impaired driving in the years ahead and for appropriate safety responses?
- How do other legal and illegal drugs affect driving performance and which drugs should drivers be tested for following incidents and crashes?

Pedestrian and Cyclist Deaths and Injuries

- Despite long-term trends in reduced death and injury rates in highway transportation due to improved vehicles and infrastructure, the United States is experiencing rapid growth in pedestrian and cyclist deaths (a 46% increase in pedestrian deaths since 2009) and is falling behind the safety level being achieved in other industrialized democracies.
- Which strategies would be most effective in reducing the growing number of pedestrian and cyclist deaths and injuries?

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www.trb.org

Policy Snapshot

www.trb.org/criticalissues

Full Report

<https://www.nap.edu/download/25314>

Today's Speakers

- Jeffrey Paniati, *Institute of Transportation Engineers*
 - Vice Chairman Bruce Landsberg, *National Transportation Safety Board*
 - Neil Pedersen, *Transportation Research Board*
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Get Involved with TRB

- Getting involved is free!
- Join a Standing Committee (<http://bit.ly/2jYRrF6>)
- Become a Friend of a Committee (<http://bit.ly/TRBcommittees>)
 - Networking opportunities
 - May provide a path to become a Standing Committee member
- For more information: www.mytrb.org
 - Create your account
 - Update your profile

TRB turns 100 on November 11, 2020



Help TRB:

- Promote the value of transportation research;
- Recognize, honor, and celebrate the TRB community; and
- Highlight 100 years of accomplishments.

Learn more at

www.TRB.org/Centennial

MOVING IDEAS: ADVANCING SOCIETY—100 YEARS OF TRANSPORTATION RESEARCH