

# **Trucking Toward a New Reality**

**Rebecca M. Brewster**  
**President and COO**  
**American Transportation  
Research Institute**

# ATRI

## Trucking industry's not-for-profit research organization

- **Safety**
- **Mobility**
- **Economic Analysis**
- **Technology**
- **Environment**

[www.TruckingResearch.org](http://www.TruckingResearch.org)

# Board of Directors





# Research Advisory Committee



# 2020 Top Industry Issues

1. Driver Shortage (1)
2. Driver Compensation (3)
3. Truck Parking (5)
4. Compliance, Safety, Accountability (8)
5. Insurance Cost / Availability (#3 in 2005)
6. Driver Retention (6)
7. Tort Reform (#8 in 2011)
8. Economy (10)
9. Detention / Delay (4)
10. Hours-of-Service (2)

## CRITICAL ISSUES IN THE TRUCKING INDUSTRY – 2020



Presented to the  
American Trucking Associations

Prepared by  
The American Transportation Research Institute  
October 2020



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# The More Things Change...

2005	2020
1. Fuel Costs	1. Driver Shortage
2. Driver Shortage	2. Driver Compensation
3. Insurance Costs	3. Truck Parking
4. HOS	4. CSA
5. Tolls / Highway Funding	5. Insurance Cost/Availability
6. Tort Reform / Legal Issues	6. Driver Retention
7. Overlapping / Burdensome Regulations	7. Tort Reform
8. Congestion	8. Economy
9. Environmental Issues	9. Detention/Delay at Customer Facilities
10. Truck Security	10. HOS

# 2020 Top Industry Issues

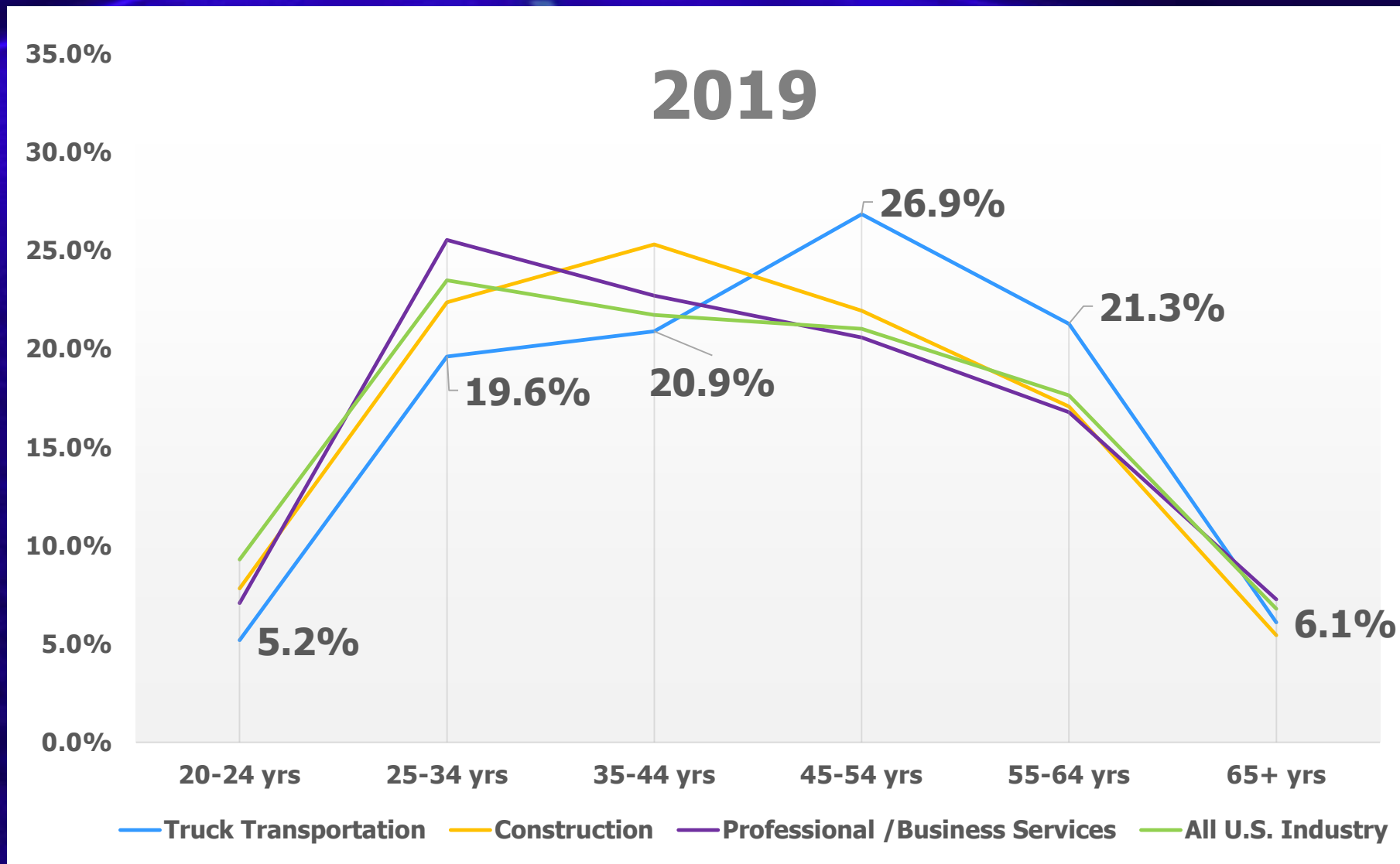
## Commercial Drivers

1. Truck Parking
2. Driver Compensation
3. Detention / Delay
4. Hours-of-Service
5. Driver Training Standards
6. Automated Truck Technology
7. CSA
8. Driver Health & Wellness
9. Speed Limiters
10. ELD Mandate

## Motor Carriers

1. Driver Shortage
2. Driver Retention
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7. Transportation Infrastructure / Congestion / Funding
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# Truck Driver Age Demographics





# Younger Driver Assessment Tool

- **Minnesota Trucking Association Younger Driver Project Team submitted research proposal to ATRI in 2015**
  - ◆ **Selected as top priority research topic by ATRI's Research Advisory Committee**
- **Meta-analysis of research linking crash risk with specific driver traits and the relationship between those traits and driver age**

# Younger Driver Assessment Tool

- **Relationship between driver age and crash risk is well documented**
  - ◆ **Middle age drivers have lower crash rates than young or elderly drivers**
  - ◆ **Younger driver crash risk related to differences in perception, cognition, overestimation of driving skill and failure to understand potential consequences and adjust behavior accordingly**
  - ◆ **Inexperience also contributes to younger driver crash risk but challenging to separate driving inexperience and other age-related factors**



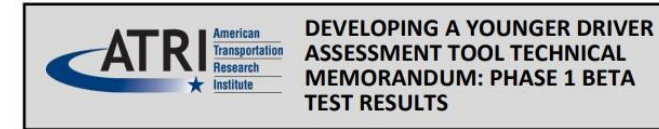
# Younger Driver Assessment Tool

- **Personality traits also linked to driver safety**
- **Health factors favor younger drivers**
  - ◆ **Faster reaction times**
  - ◆ **Better visual acuity**
- **Other health factors with relationship to driver safety**
  - ◆ **Fatigue/sleep disorders**
  - ◆ **Substance abuse**
  - ◆ **Attention-related disorders**
  - ◆ **Mental health conditions**
    - **Sleep disturbances**
    - **Inattention**
    - **Medication side effects**



# Younger Driver Assessment Tool

- **ATRI-developed assessment tool to identify younger drivers with personality characteristics similar to mature, veteran drivers**
- **Beta test of tool included 94 drivers aged 20-60**



August 2021

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# Younger Driver Assessment Tool

- **Measures tested included:**
  - ◆ **Personality traits**
  - ◆ **Reasoning**
  - ◆ **Impulsivity**
  - ◆ **Sensation-seeking**
  - ◆ **Sleep quality**
  - ◆ **Cognitive control**
- **Participating drivers' safety performance measured through MVR and PSP – crashes and safety violations**



# Younger Driver Assessment Tool

- Among statistically significant findings, safest drivers scored highest on Extraversion and Conscientiousness and lowest on Depression and Sleep Latency
- Assessment did show sensitivity to age-related variations in performance
  - ◆ Similar findings for older drivers with less driving experience



# Younger Driver Assessment Tool

- **Next phase will expand sample to include more drivers under 25**
  - ◆ Working with CVTA, carriers with schools, apprenticeship programs
- **Shortened assessment will remove several tests**
  - ◆ BMI assessment – more likely to be predictive of health risks and threats to safety such as poor sleep in older and more seasoned drivers
  - ◆ UPPS-P – though highly sensitive to age, was not predictive of driver safety
  - ◆ Trail-Making Test – due to significant questions about validity in the context of automated administration
  - ◆ Attentional Network Test – the ANT is redundant in theory with the Multi-Source Interference Task and was not well received by the drivers

# 2020 Top Industry Issues

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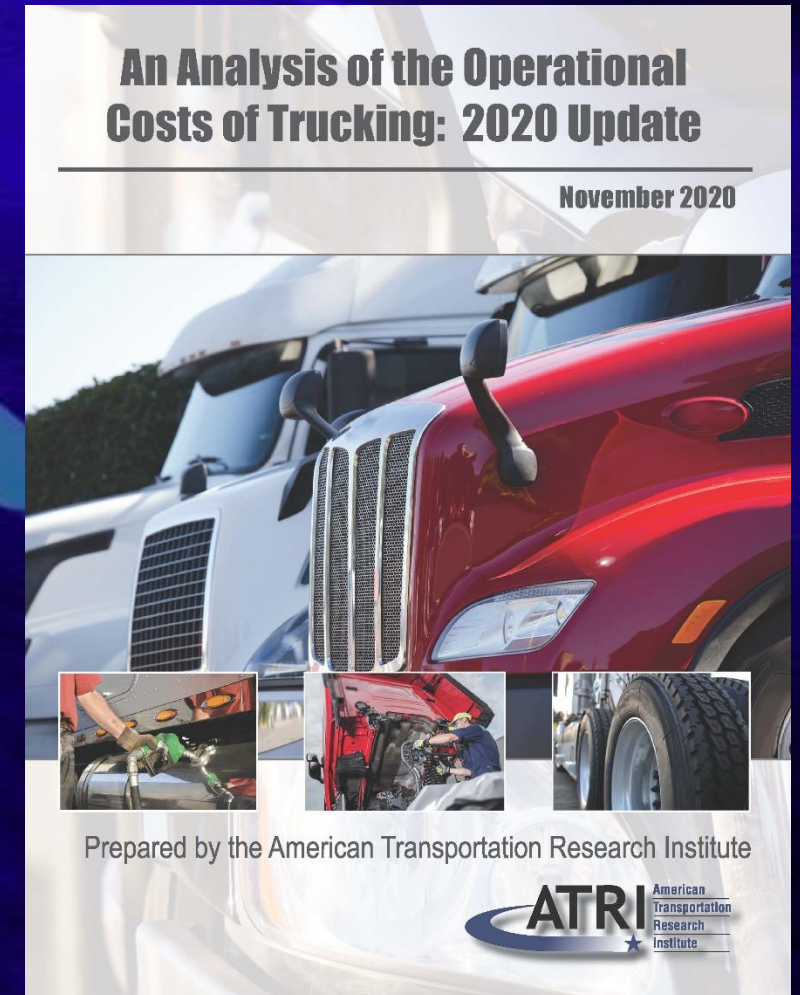
## Motor Carriers

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# Operational Costs of Trucking

- Collects and analyzes real-world motor carrier operational data
- Covers data 2008-2019
- Calculates costs by mile and by hour
- Includes sector, regional analyses
  - ◆ TL, LTL, Specialized/Other
  - ◆ Small vs Large Fleets





# Operational Costs of Trucking

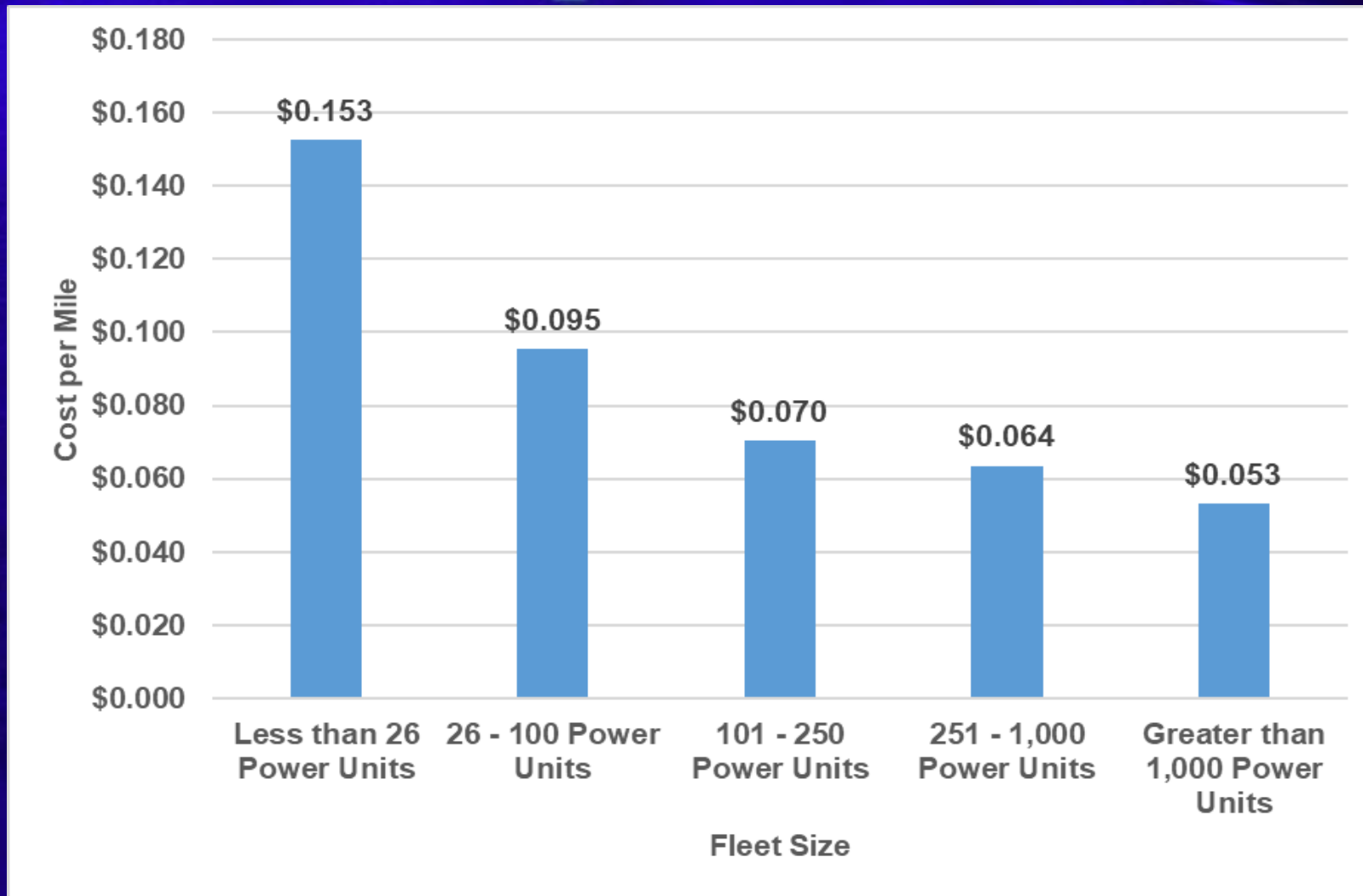
## Average Carrier Costs per Mile

Motor Carrier Costs	2015	2016	2017	2018	2019
<b>Vehicle-based</b>					
Fuel Costs	\$0.403	\$0.336	\$0.368	\$0.433	\$0.396
Truck/Trailer Lease or Purchase Payments	\$0.230	\$0.255	\$0.264	\$0.265	\$0.259
Repair & Maintenance	\$0.156	\$0.166	\$0.167	\$0.171	\$0.143
Truck Insurance Premiums	\$0.074	\$0.075	\$0.075	\$0.084	\$0.068
Permits and Licenses	\$0.019	\$0.022	\$0.023	\$0.024	\$0.023
Tires	\$0.043	\$0.035	\$0.038	\$0.038	\$0.036
Tolls	\$0.020	\$0.024	\$0.027	\$0.030	\$0.034
<b>Driver-based</b>					
Driver Wages	\$0.499	\$0.523	\$0.557	\$0.596	\$0.533
Driver Benefits	\$0.131	\$0.155	\$0.172	\$0.180	\$0.160
<b>TOTAL</b>	<b>\$1.575</b>	<b>\$1.592</b>	<b>\$1.691</b>	<b>\$1.821</b>	<b>\$1.652</b>

# Operational Costs of Trucking

Bonus Type	Average Bonus per Driver	Change 2018-2019
Safety	\$1,373	10.9%
Starting	\$1,846	18.2%
Retention	\$1,218	81.3%

# Insurance Cost per Mile by Fleet Size





# Impact of Rising Insurance Costs

- **Top RAC priority in 2020**
- **Expansion of existing Ops Costs analysis focused on 3 years of motor carrier insurance data and trends**
- **Includes auto liability, cargo, excess coverage, captive participation**
- **Q4 2021 release**

# 2020 Top Industry Issues

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8. Driver Health & Wellness
9. Speed Limiters
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# CSA

## Compliance, Safety, Accountability: Analyzing the Relationship of Scores to Crash Risk

October 2012



Prepared by the American Transportation Research Institute

## Compliance, Safety, Accountability: Evaluating a New Safety Measurement System and Its Implications

December 2012



## Evaluating the Impact of Commercial Motor Vehicle Enforcement Disparities on Carrier Safety Performance

July 2014



Prepared by the American Transportation Research Institute

## ATRI TECHNICAL BRIEF: Commercial Motor Vehicle Enforcement – Top 10 High Performance States

October 2014

Amanda Weber  
Research Analyst  
American Transportation Research Institute  
Minneapolis, MN

Daniel C. Murray  
Vice President, Research  
American Transportation Research Institute  
Minneapolis, MN



## Assessing the Impact of Non-Preventable Crashes on CSA Scores

November 2015



Prepared by the American Transportation Research Institute

## ATRI WHITE PAPER: Compliance, Safety, Accountability: Assessing the New Safety Measurement System and Its Implications – 2013 Update

January 2014

Amanda J. Weber  
Research Associate  
American Transportation Research Institute  
St. Paul, MN



# 2020 Top Industry Issues

## Commercial Drivers

1. **Truck Parking**
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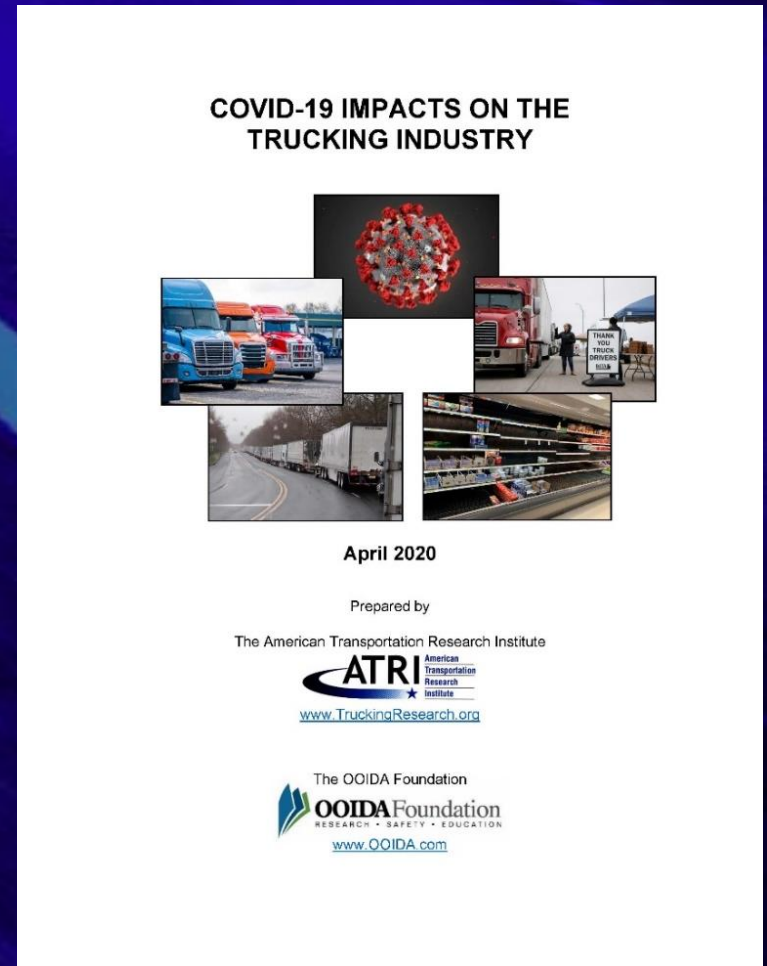
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9. **Detention / Delay**
10. **Hours-of-Service**



# COVID-19 Impacts

- **Joint survey with OOIDA Foundation**
- **5,000+ respondents over 2 weeks**
  - ◆ **77% drivers**
  - ◆ **68.6% fleets fewer than 50 trucks**
  - ◆ **65.5.% TL**



# COVID-19 Impacts

- Overall, 44% reported truck parking “somewhat harder” or “much harder” to find
- Overall, 34% reported longer detention times; more pronounced among smaller fleets
  - ◆ 73% of respondents who reported longer detention times were from fleets of fewer than 50 trucks



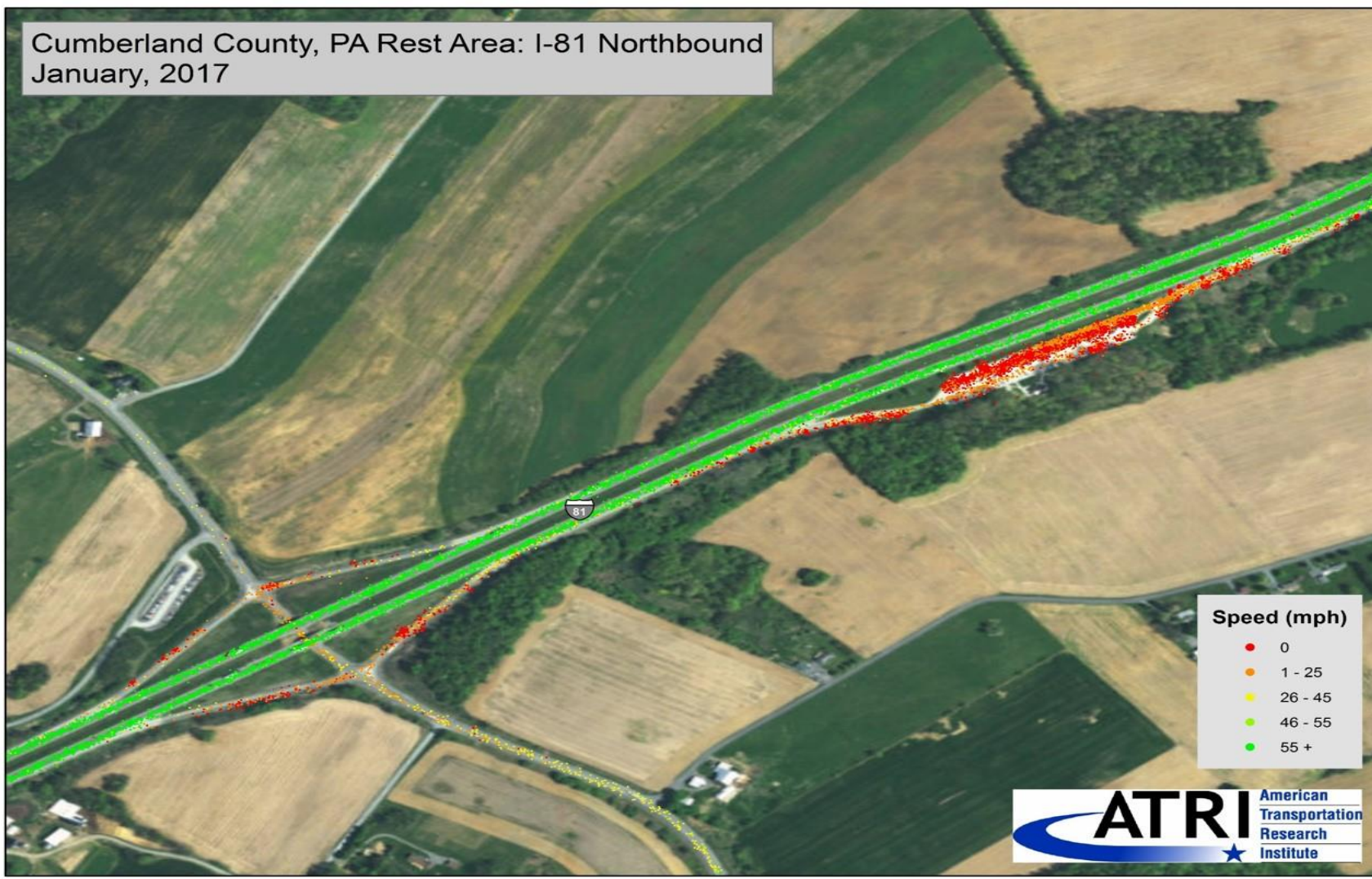
# COVID-19 Impacts





# No Vacancy

Cumberland County, PA Rest Area: I-81 Northbound  
January, 2017



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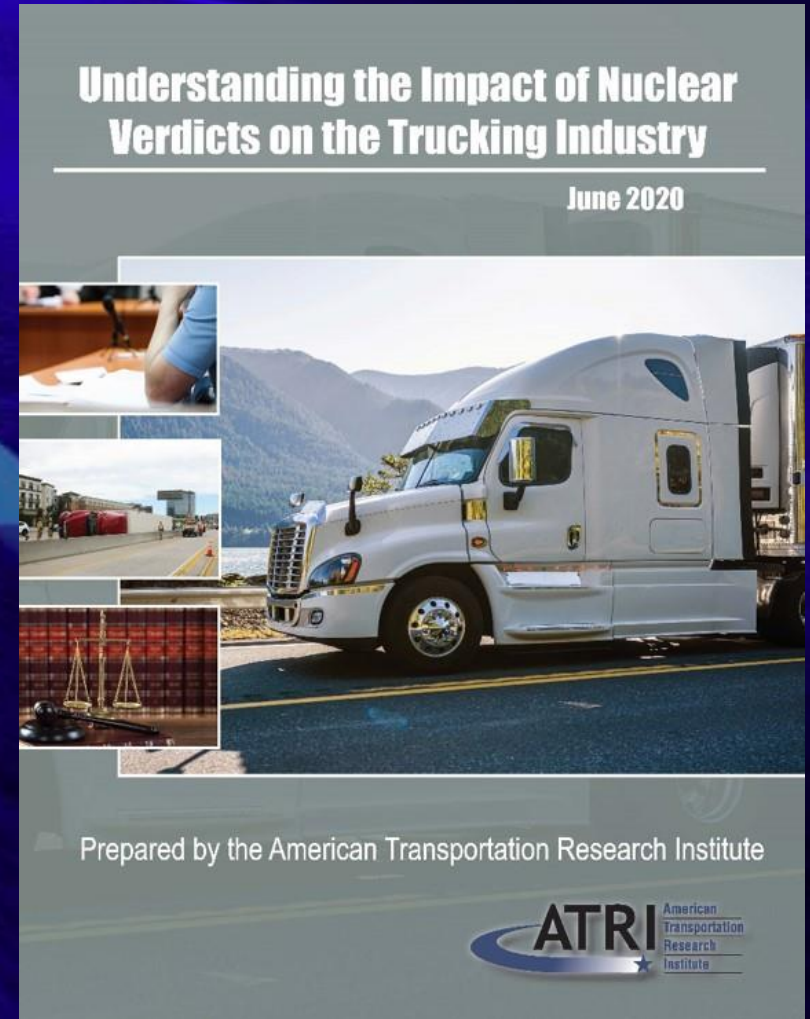
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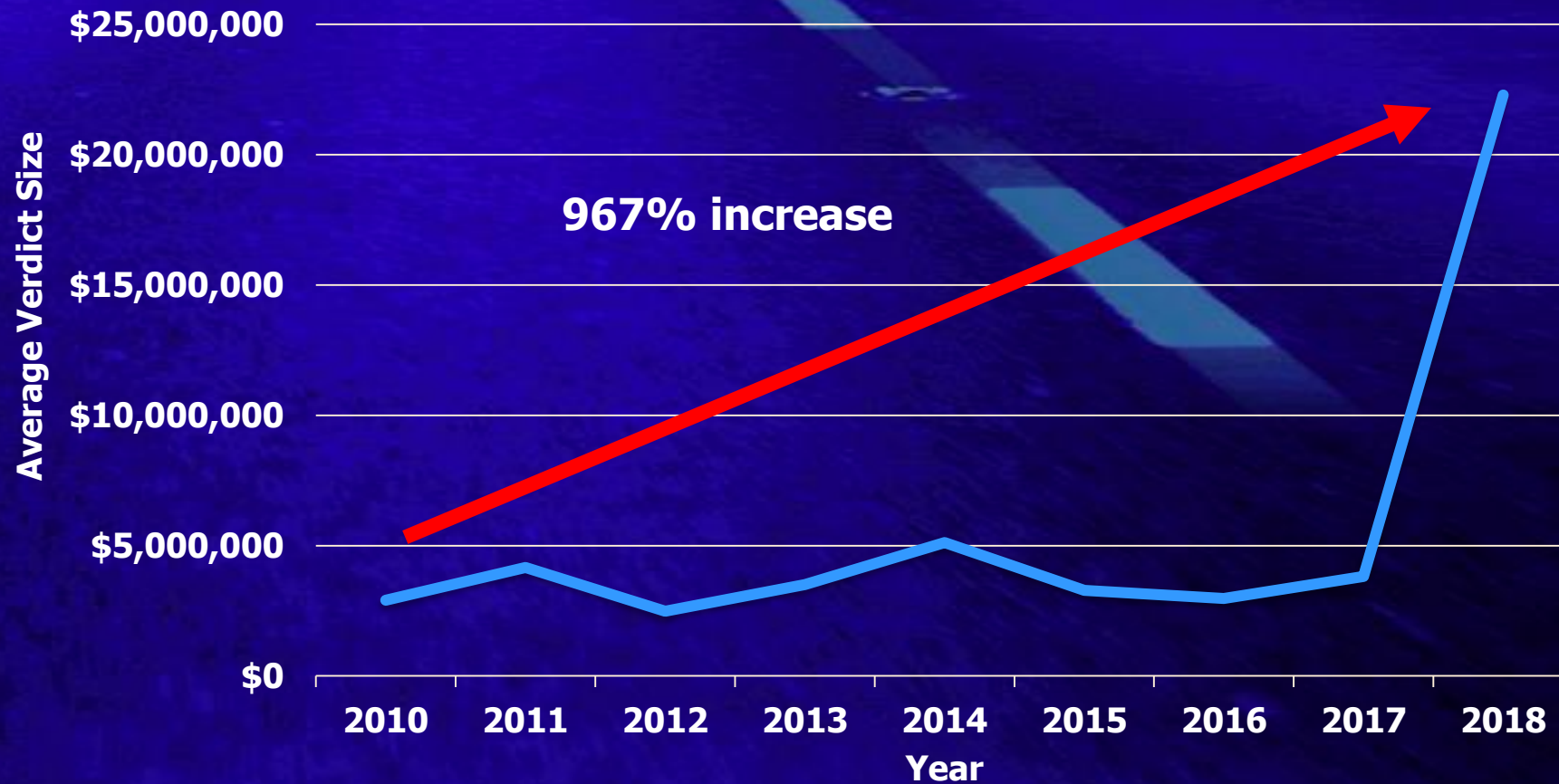


# Nuclear Verdict Impacts

- Comprehensive analysis of 600+ cases spanning 15 years
- In-depth interviews with defense and plaintiff attorneys, as well as insurance industry and safety experts
- Detailed analysis of litigation financing
- Mitigation strategies from other industries

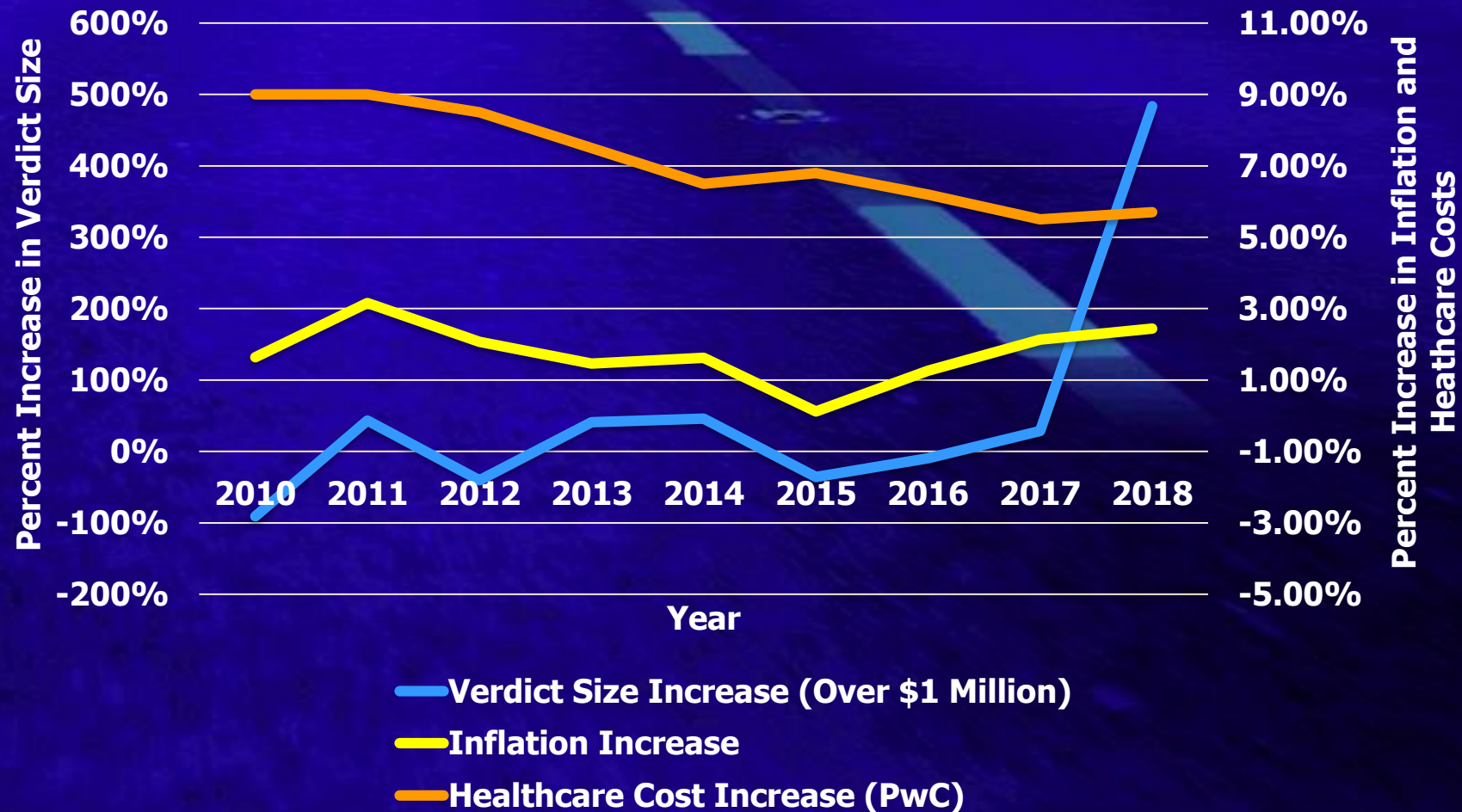


# Average Verdicts Greater than \$1 Million by Year

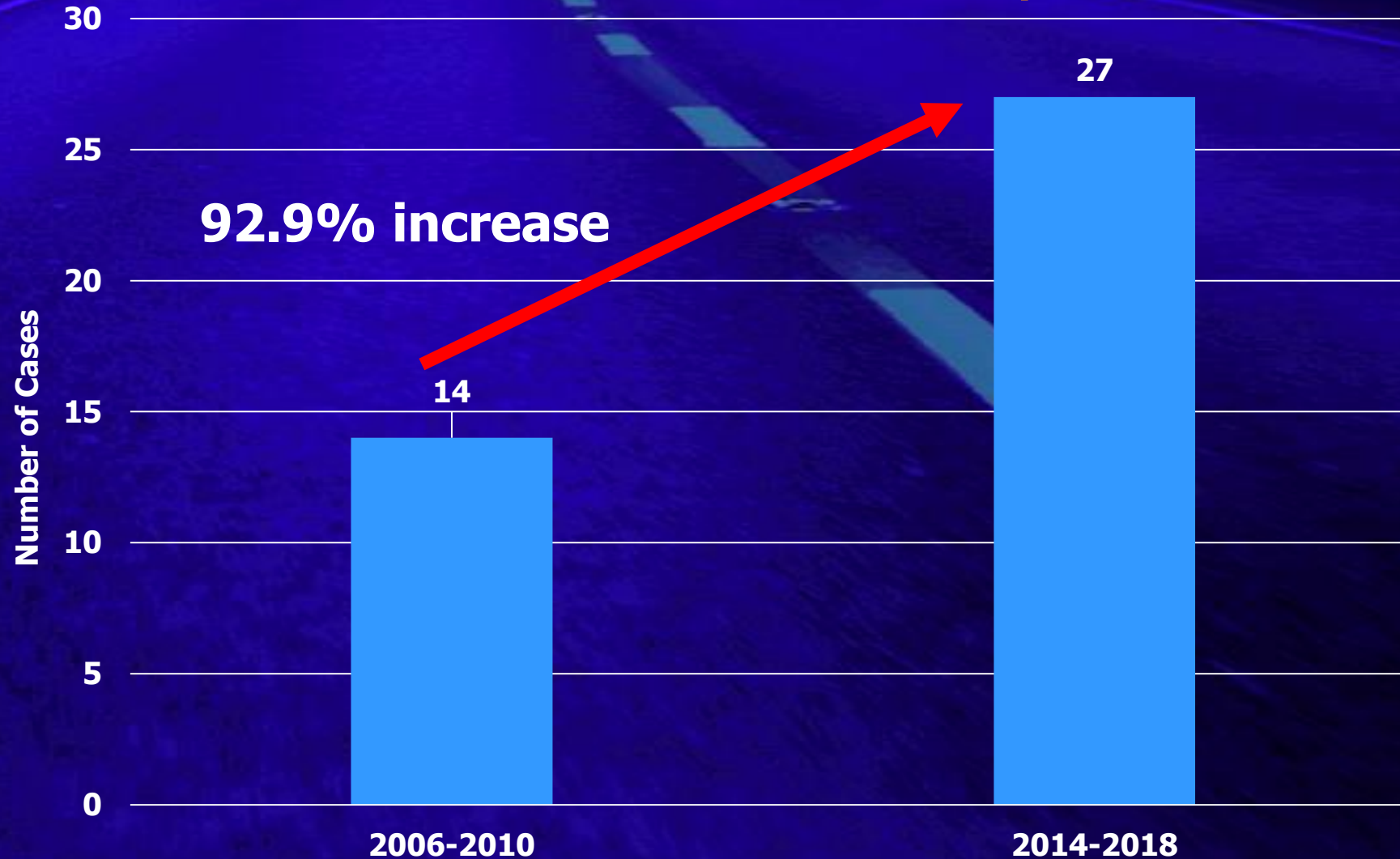




# Average Verdict Size / Inflation / Healthcare Costs

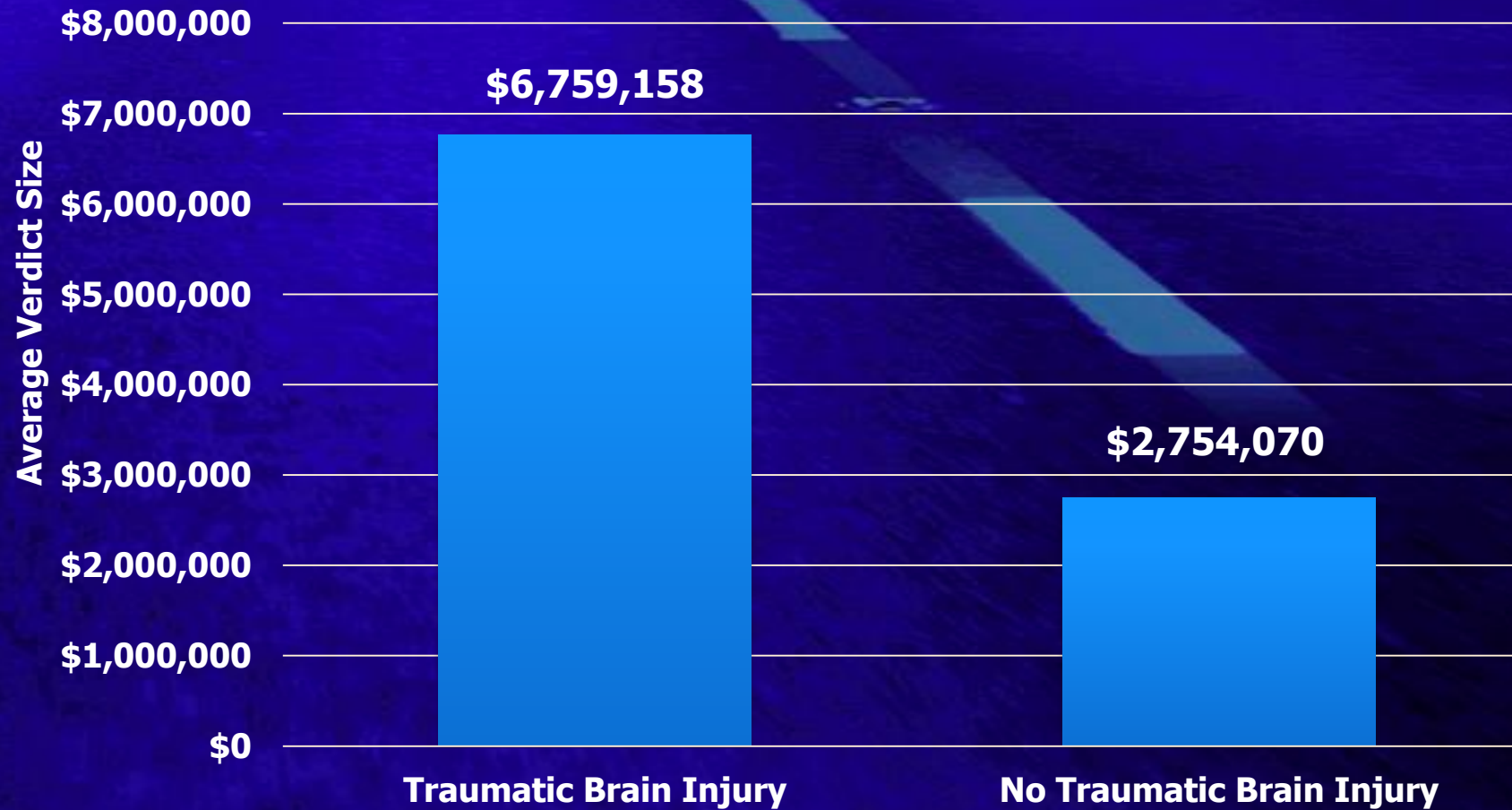


# Cases with Verdicts \$10M+





# Average Verdict Size by Injury Sustained



# Average Verdict Size by Children Involved in Crash





# **Nuclear Verdict Impacts**

## **Motor Carrier Costs**

- **Insurance companies are increasing premiums, implementing stricter underwriting standards / more selective with who they insure**
- **All motor carriers are experiencing an increase in premiums, regardless of size or year established**
- **The rising cost of insurance is causing carriers to close their doors**

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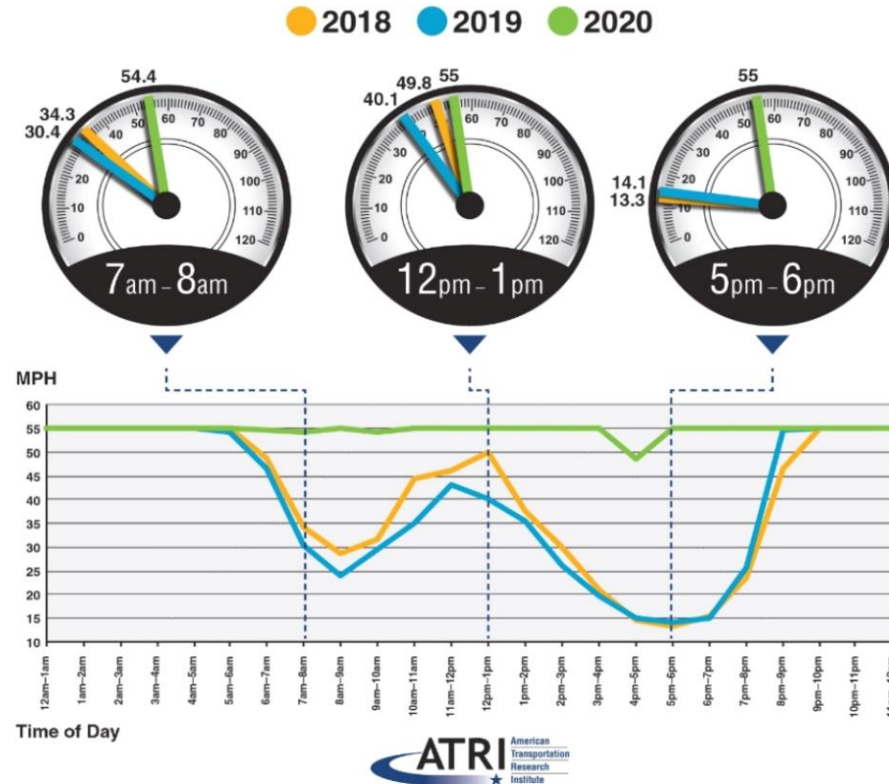
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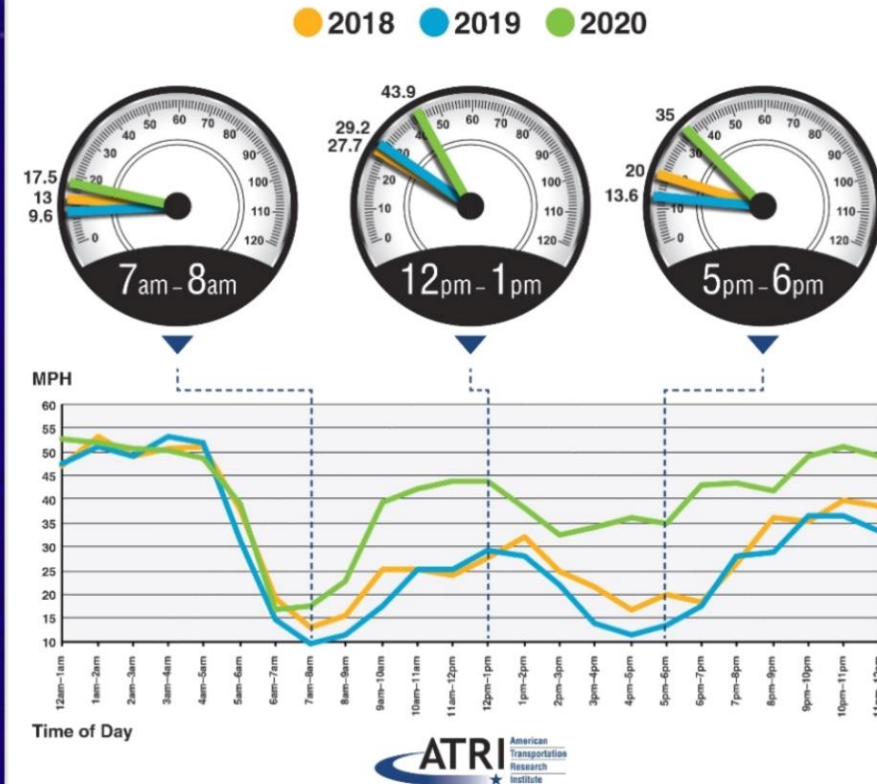


# Congestion Down during COVID

Average Speed by Time of Day  
Atlanta: I-285 at I-85 (North)  
Third Week of March 2018-2020



Average Speed by Time of Day  
Queens, NY: I-495  
Third Week of March 2018-2020



# Operational Costs of Trucking

## Average Carrier Costs per Hour

Motor Carrier Costs	2015	2016	2017	2018	2019
<b>Vehicle-based</b>					
Fuel Costs	\$16.13	\$13.45	\$14.50	\$17.07	\$15.62
Truck/Trailer Lease or Purchase Payments	\$9.20	\$10.20	\$10.39	\$10.45	\$10.21
Repair & Maintenance	\$6.23	\$6.65	\$6.58	\$6.72	\$5.62
Truck Insurance Premiums	\$2.98	\$3.00	\$2.95	\$3.32	\$2.68
Permits and Licenses	\$0.78	\$0.88	\$0.92	\$0.95	\$0.90
Tires	\$1.72	\$1.41	\$1.50	\$1.50	\$1.42
Tolls	\$0.79	\$0.97	\$1.05	\$1.17	\$1.34
<b>Driver-based</b>					
Driver Wages	\$19.95	\$20.91	\$21.97	\$23.50	\$21.01
Driver Benefits	\$5.22	\$6.18	\$6.78	\$7.10	\$6.31
<b>TOTAL</b>	<b>\$62.98</b>	<b>\$63.66</b>	<b>\$66.65</b>	<b>\$71.78</b>	<b>\$65.11</b>



# 2021 Top Truck Bottlenecks

## 2021 TOP TRUCK BOTTLENECKS • BY THE NUMBERS

AVERAGE PEAK  
HOUR TRUCK  
SPEED:

**43.0  
mph**



**33.9%**  
year-over-year

TOP 100 BOTTLENECKS  
WITH AVERAGE TRUCK  
SPEEDS <45 MPH:

**25%**

NUMBER OF STATES  
WITH AT LEAST ONE  
TOP 100 BOTTLENECK:

**29**



# 2021 Top 10 Truck Bottlenecks

Rank	Location	Average Peak Speed	Y-o-Y Change in Average Peak Speed
1	Fort Lee, NJ: I-95 at SR 4	31.3	39.4%
2	Cincinnati, OH: I-71 at I-75	40.1	11.5%
3	Atlanta, GA: I-285 at I-85 (North)	34.4	53.5%
4	Atlanta, GA: I-20 at I-285 (West)	40.9	12.6%
5	Houston, TX: I-45 at I-69/US 59	31.4	53.7%
6	Chicago, IL: I-290 at I-90/I-94	25.4	57.6%
7	Chattanooga, TN: I-75 at I-24	46.8	-1.8%
8	St. Louis, MO: I-64/I-55 at I-44	46.1	10.1%
9	Rye, NY: I-95 at I-287	45.7	12.0%
10	San Bernardino, CA: I-10 at I-15	40.7	25.1%



# 2021 Top Research Priorities

- **Understanding How to Best Integrate 18-20 Year Olds into the Trucking Industry**
- **Charging Infrastructure Considerations for Electric Trucks**
- **Marijuana and Other Drugs: Impacts of Decriminalization on the Trucking Industry**
- **Understanding the Environmental Impacts of Zero Emission Vehicles**
- **Quantifying the Impacts of Driver-Facing Cameras on Fleets and Drivers**

# Supporting the Industry's Research Agenda

- **Participate in ATRI surveys/data collection – Operational Costs, Top Industry Issues Survey**
- **Encourage your drivers to participate**
- **Recommend research ideas**

**[www.TruckingResearch.org](http://www.TruckingResearch.org)**





# 2021 Top Industry Issues Survey

## TAKE THE 2021 TOP INDUSTRY ISSUES SURVEY

Since 2005, ATRI's Top Industry Issues Survey has served as a unique and vital tool for the trucking industry. Just a few minutes of your time will provide valuable information to ensure the long-term health of the industry. Make your voice heard by using the QR code at the top of this card or visit:

<https://www.research.net/r/2021-Top-Industry-Issues>

You may also take the survey by visiting the survey section on ATRI's homepage at [TruckingResearch.org](https://www.TruckingResearch.org).

And, after you take the survey, please share this card with an industry colleague and ask that they take a few minutes to provide their input on the top industry issues.



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SCAN ME



# Questions?

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