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Risky Behavior Survey Findings: Drivers of Large Trucks

2024 Northeast Commercial Vehicle Safety Summit

UMassAmherst

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umass SAFE Traffic Safety Research Program

University of Massachusetts Amherst

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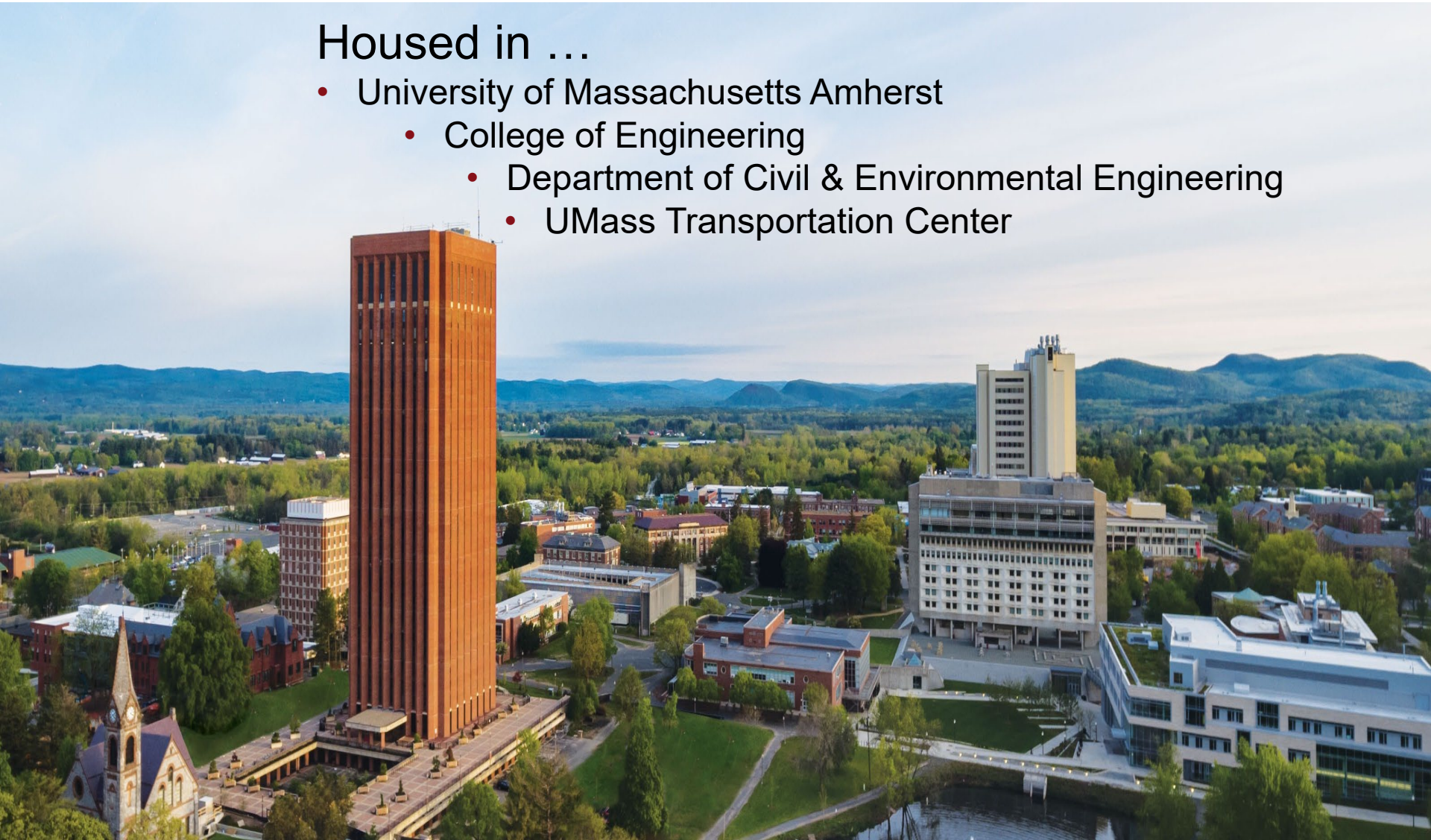
- University of Massachusetts Amherst
  - College of Engineering
    - Department of Civil & Environmental Engineering
      - UMass Transportation Center



Project Samples

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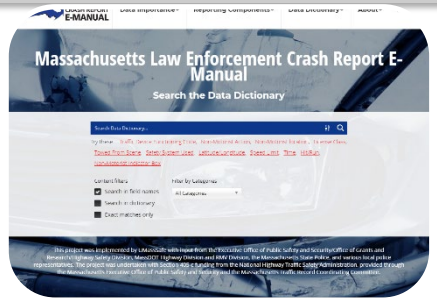
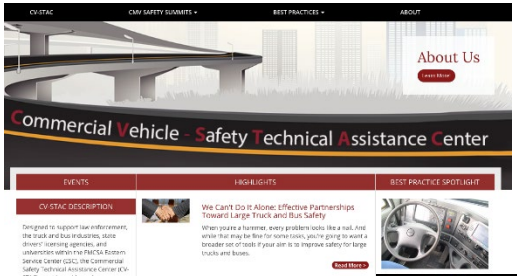
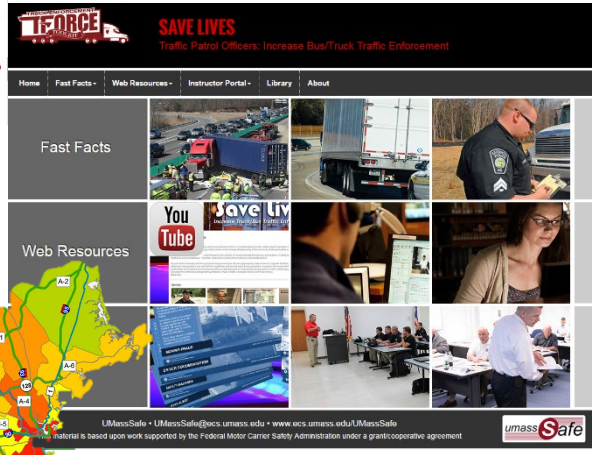


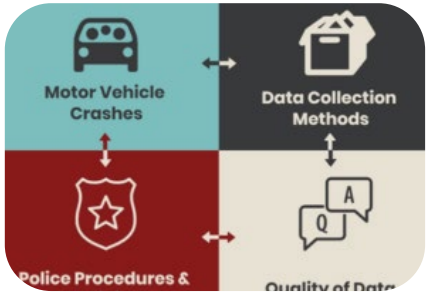
Law Enforcement Crash Report E-Manual

Supervisor Crash Report Review & Narrative Guidelines



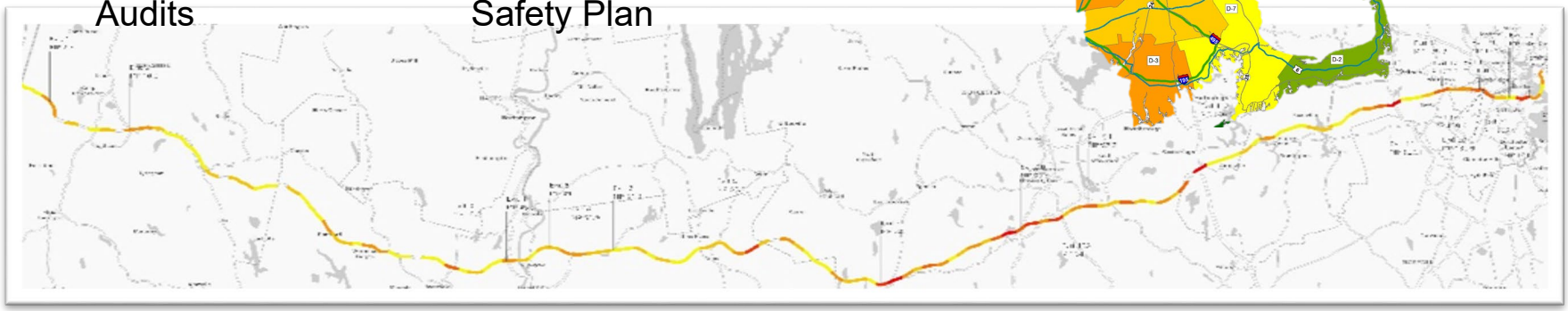
COMMERCIAL VEHICLE SAFETY SUMMIT





Crash Data Quality Audits

Strategic Highway Safety Plan



Safety Data Quality

LEO-Reported Data
- Crash
- Inspection
- Citation

LEOs understand importance of quality data and improve record-keeping

Provide stakeholders with statistics to better align enforcement, infrastructure, licensing, efforts

Data Quality
- Analysis
- Training / Education
- Resources

Analysis
- Enforcement activity programming
- Strategic planning (LEAs & DOT)
- Holistic safety programming

FMCSA HP Task: Driver Survey

- Online self-reported survey of 20 multiple choice questions (~4 minutes)
- Aiming to quantify driver's attitudes and reported behaviors of risky driving topics
  - Sending a text message
  - Exceeding HOS regs
  - Driving after consuming alcohol & cannabis
- Distribution through state and federal trucking associations, Facebook, and respondent acquisition services
- Convene a *CMV Data-Driven Safety Work Group* of ESC stakeholders to guide use of findings
- Share results to inform safety programming efforts for improved efficiency and industry-relations

Respondent Demographics

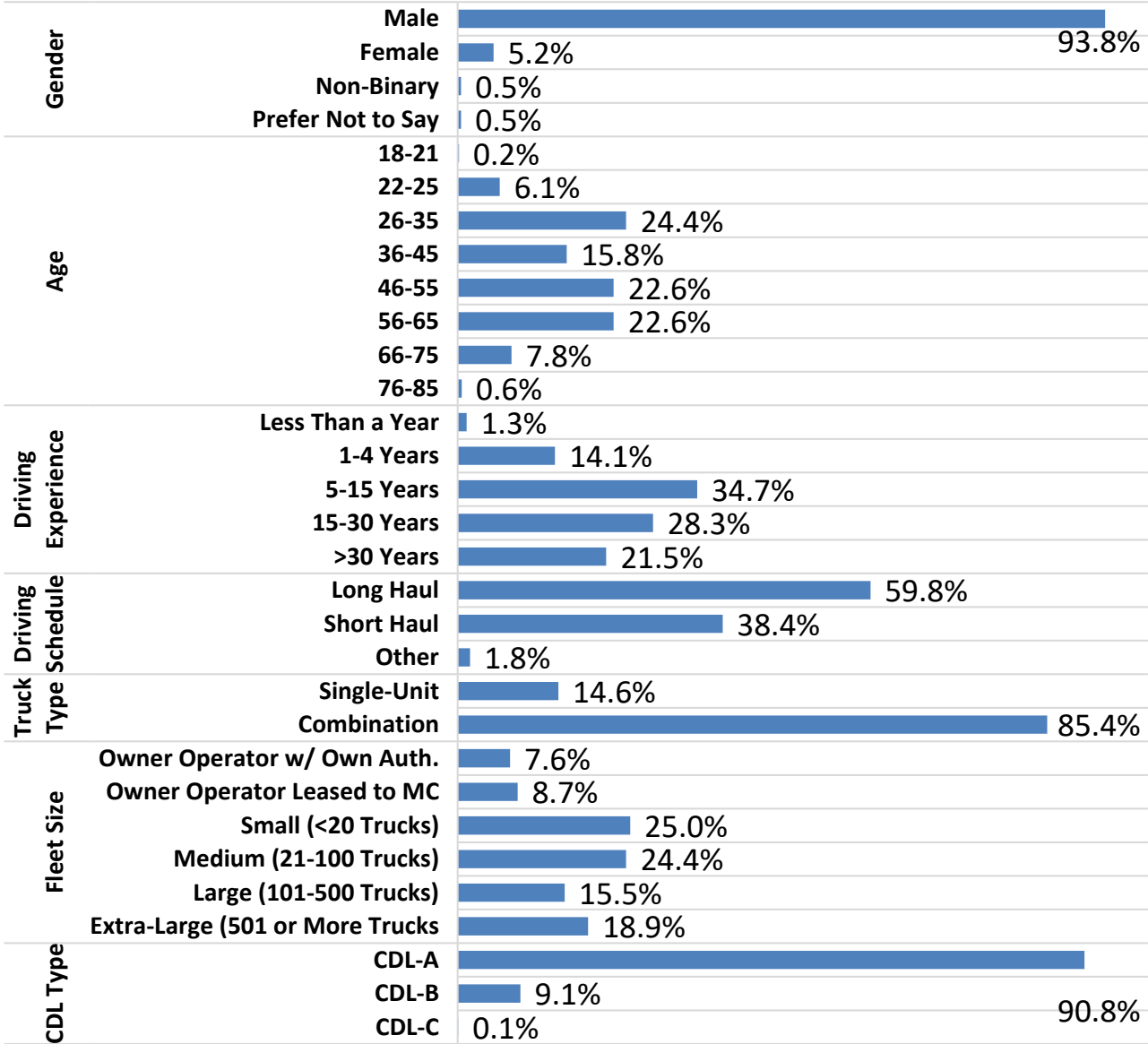
Screener question requirements

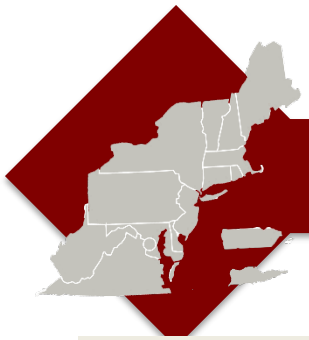
(1) at least one of the top three states they reported operating a CMV within was in the ESC;

(2) they possessed a Class A or Class B commercial driver's license (CDL);

(3) at least 50% of their work-for-pay was as a driver of a large truck requiring a CDL.; and,

(4) a content-knowledge question, "How many reflective triangles are required to be in your CMV?" (Answer: three).





Self-Reported Driving Experiences

19%	9%	60%
Involved in at least one **crash** in the prior three years	Received at least one **moving violation** in the prior 12 months	Received at least one **roadside safety inspection** in the prior 12 months

Crash Involvement

Drivers with **5-15 years of experience,** as well as driver **aged 36-45** were more likely to report being involved in a crash.

Drivers of **extra-large carriers**, as well as **owner-operators with own authority (O-O w/OA)**, were least likely to report crash involvement.

Moving Violations

Drivers with **5-15 years of experience,** as well as **long-haul schedules** were more likely to report receiving a moving violation.

Drivers of **extra-large fleets**, as well as drivers **aged 46-65** were less likely to report receiving a moving violation.

Roadside Safety Inspections

Drivers with less than **five years of experience,** as well as those with a **short haul schedule** were less likely to report receiving a roadside inspection.

Self-Reported Risky Driving Behaviors

43.6%

of respondents reported having sent a **text message** while driving in the three months prior

35.4%

of respondents reported having exceeded **Hours-of-Service** (HOS) regulations in the three months prior

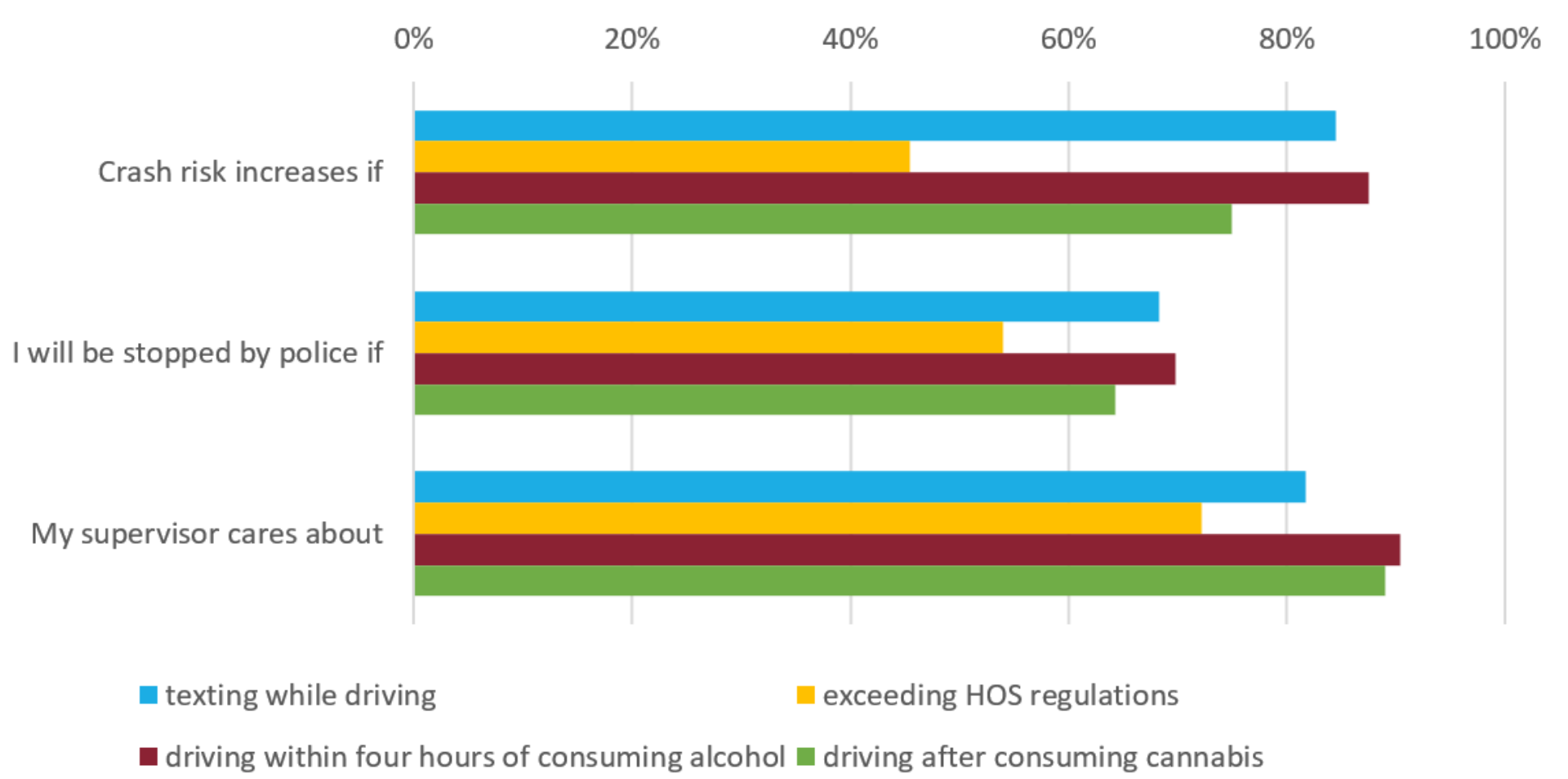
3.1%

of respondents reported having driven within four hours of consuming **alcohol** in the three months prior

3.2%

of respondents reported having driven after consuming **cannabis** in the three months prior

Beliefs Regarding Risky Behaviors



Methodology

Driver-respondent characteristic group (ex. fleet size)

Direct

Likelihood of engaging in the risky behavior

Indirect

Effects of beliefs on behaviors

Indirect

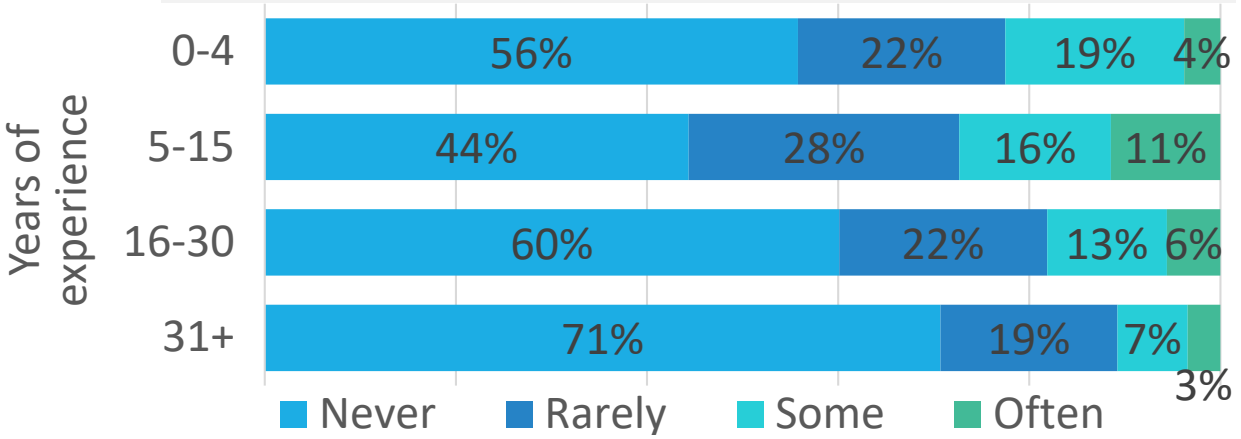
Safety belief in relation to crash risk, being stopped by police, and supervisor caring

Texting: Behavior

43.6%

of respondents reported having sent a **text message** while driving in the three months prior

Predicted probability of reported frequencies of texting while driving by years of experience



Risky driver characteristics more likely to text while driving

- 5-15 years' experience
- Aged 36-45 & 46-55 & 56-65
- Owner-operators with own authority & small size fleets

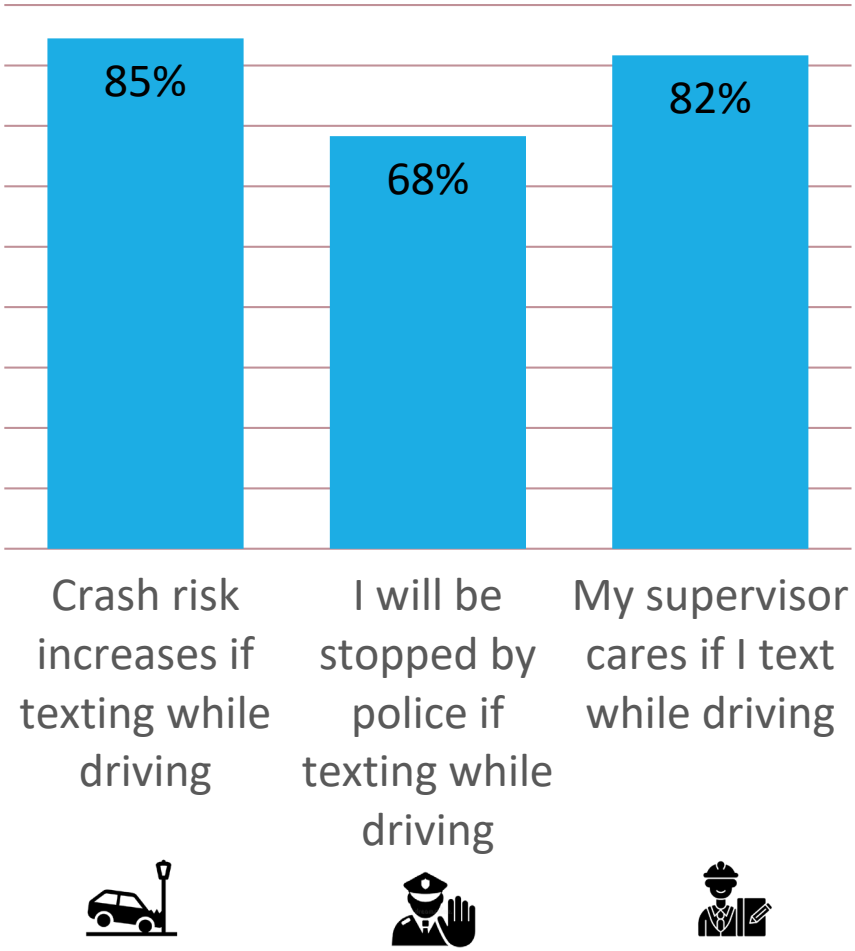
Safe driver characteristics less likely to text while driving

- 31+ years' experience
- Aged 26-35
- Extra-large size fleets

Drivers with short-haul schedules were more likely to report 'often' texting while driving compared to long haul (8.4% vs 5.6%).

Texting: Beliefs

While driving a large commercial truck, do you agree with the following statements?



Characteristics of Significance

Agree the chance of a crash increases
- Extra-large size fleets
- Short haul schedule
- 31+ years' experience

Disagree they may be stopped by police
- Long haul schedule

Disagree their supervisor would care
- Owner operators with own authority & small size fleets
- Single-unit truck type

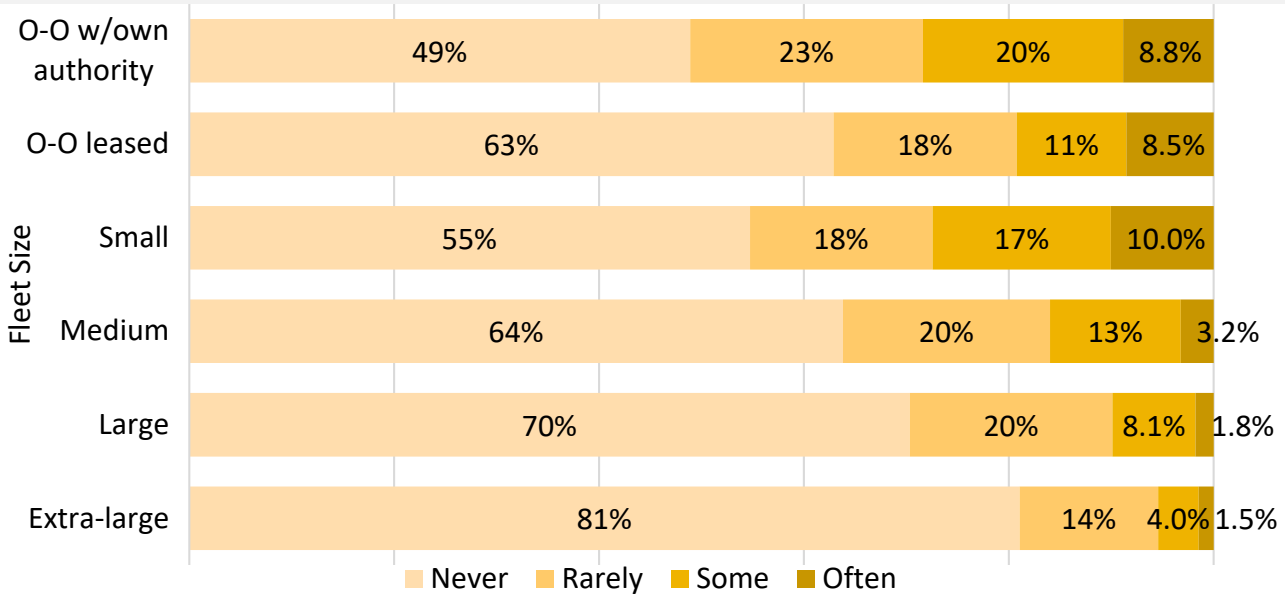
Hours-of-Service: Behaviors

35.4%

of respondents reported having exceeded **Hours-of-Service** (HOS) regulations in the three months prior

Drivers who reported 'sometimes' or 'rarely' exceeding HOS were more likely to report having received moving violations, and to a lesser extent, roadside inspections, compared to those who reported 'never' exceeding HOS.

Predicted probability of exceeding HOS by frequency and fleet size



Risky driver characteristics more likely to exceed HOS

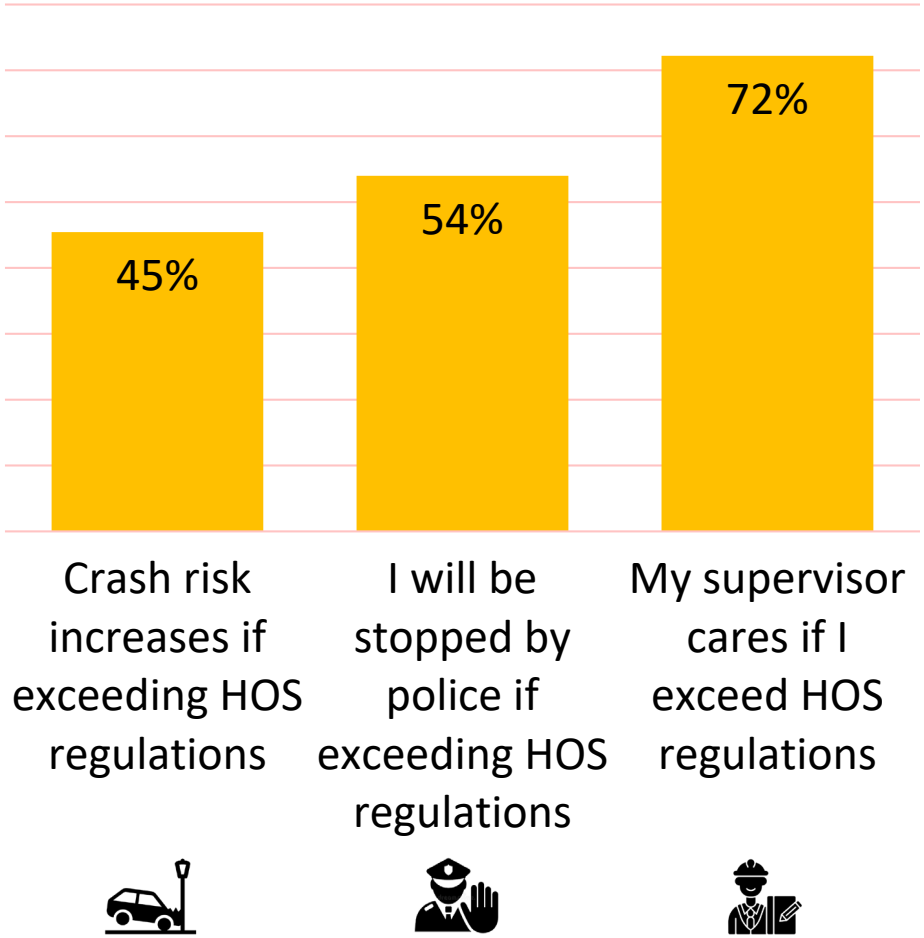
- Long haul schedule
- Owner-operators with own authority & small size fleets
- 5-15 years' experience
- Age 46-55

Safe driver characteristics less likely to exceed HOS

- Short haul schedule
- Extra-large size fleets
- Drivers with 16-30 & 31+ years' experience

Hours of Service: Beliefs

While driving a large commercial truck, do you agree with the following statements?



Characteristics of Significance

Disagree the <u>chance of a crash increases</u>

- Long haul schedule
- Combination truck type
- Owner-operators with own authority, owner-operators leased & small size fleets
- Drivers aged 46-55 & 56-65

Disagree their <u>supervisor would care</u>

- Single-unit truck type
- Owner-operators with own authority & small size fleets
- Drivers aged 46-55

Alcohol – Behaviors

3.1%

of respondents reported having driven within four hours of consuming **alcohol** in the three months prior

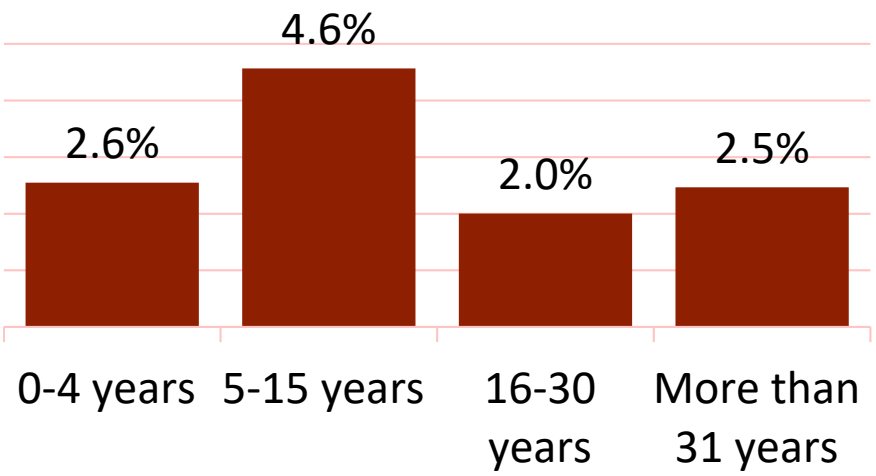
Risky driver characteristics more likely to drive after consuming alcohol

- Single-unit truck type
- 5-15 years' experience

Safe driver characteristics less likely to drive after consuming alcohol

- Combination truck type
- 16-30 & 31+ years' experience
- Age 46-55

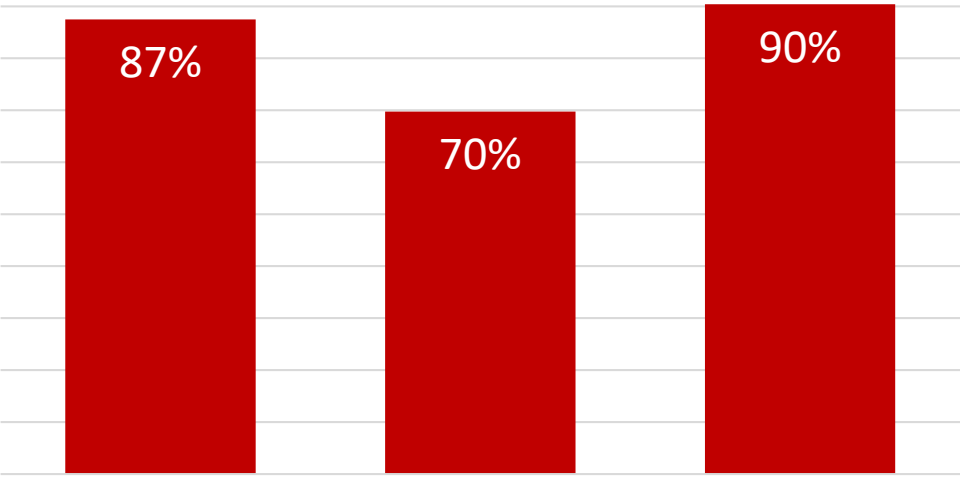
Predicted probability of alcohol use by driver's years of experience



- Drivers who reported alcohol use were more likely to report having received moving violations and/or involvement in crashes.
- Drivers of small fleets who reported the belief that their supervisor did not care had a relatively higher likelihood of driving within four hours of consuming alcohol compared to drivers of other fleet sizes who reported the same belief.

Alcohol: Beliefs

While driving a large commercial truck, do you agree with the following statements?



Crash risk increases if driving within four hours of consuming alcohol

I will be stopped by police if driving within four hours of consuming alcohol

My supervisor cares if I drive within four hours of consuming alcohol

Characteristics of Significance

Agree the <u>chance of a crash increases</u>

- Large & extra-large size fleets

Disagree they may be <u>stopped by police</u>

- Combination truck type
- Small size fleets
- 31+ years' experience
- Aged 46-55

Disagree their <u>supervisor would care</u>

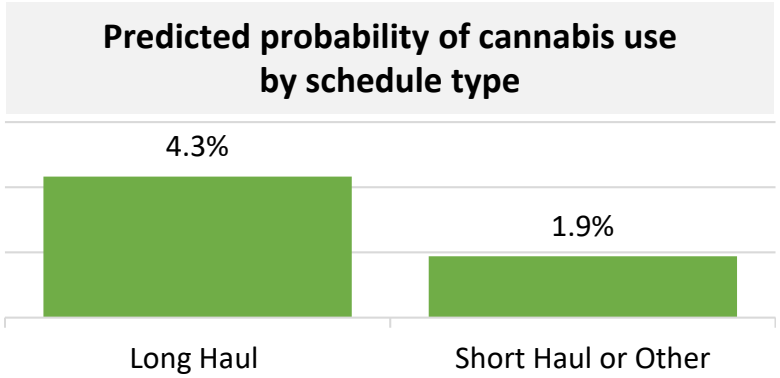
- 31+ years' experience

Those of small fleets who disagreed their supervisor cares about alcohol consumption had a higher likelihood to engage in the behavior compared to drivers of other fleet types with the same belief.

Cannabis: Behaviors

3.2%

of respondents' reported having driven after consuming **cannabis** in the three months prior



Risky driver characteristics more likely to drive after consuming cannabis

- Long haul schedule
- 5-15 years' experience

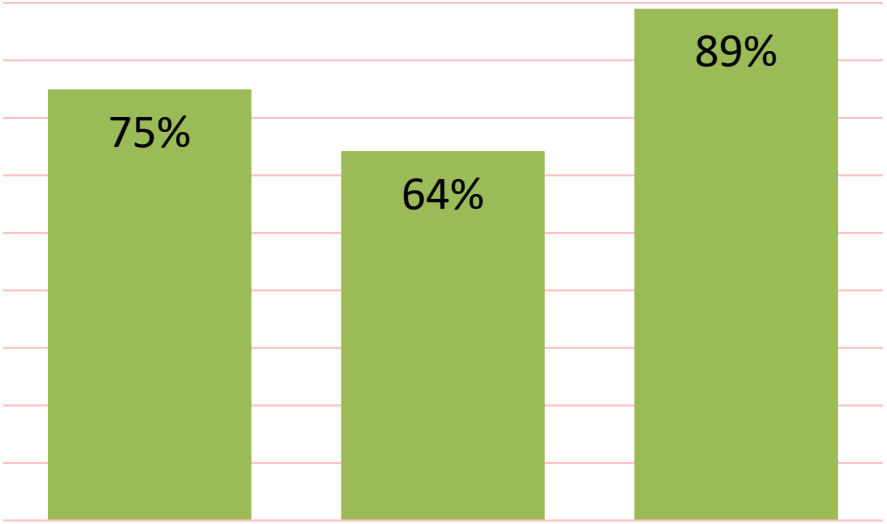
Safe driver characteristics less likely to drive after consuming cannabis

- Short haul schedule

Drivers of extra-large fleets who agreed that crash risk increases if driving after consuming cannabis, were less likely to engage in the behavior, compared to drivers from other fleet sizes who reported the same belief.

Cannabis: Beliefs

While driving a large commercial truck, do you agree with the following statements?



Characteristics of Significance

Agree the <u>chance of a crash increases</u>
- 31+ years' experience

Disagree they may be <u>stopped by police</u>
- Long haul schedule
- 31+ years' experience
- Aged 46-55

Agree they may be <u>stopped by police</u>
- Short-haul schedule
- Extra-large size fleet

Disagree their <u>supervisor would care</u>
- Owner-operators with own authority

Cross-Theme Correlations

	Reported driving after consuming alcohol and/or cannabis	
	'Never' (95% of total respondents)	*'Yes'* (*rarely, some, often*) (5.3% of total respondents)
Probability to report exceeding HOS	32%	77%
Probability to report texting while driving	47%	78%

		Reported driving while exceeding HOS (% of total respondents)	
		'Yes'	*'Never'*
Reported texting while driving (% of total respondents)	*'Yes'*	25%	19%
	'Never'	11%	46%

Characteristics of Significance

Red Light Warning Signs

5-15 years of experience

- More likely to report texting, exceeding HOS regulations, and consuming alcohol before driving
- Believed they would be stopped by law enforcement for alcohol and cannabis

Owner-operators with own authority and drivers of **small fleet size** groups

- More likely to report exceeding HOS and disagreed that crash risk increases and their supervisor would care
- More likely to report texting while driving and disagreed their supervisor would care

Long haul schedule

- More likely to report exceeding HOS regulations and disagreed that crash risk increases or that they would be stopped by law enforcement
- Disagreed that crash risk increases or that they would be stopped by law enforcement when texting while driving
- More likely to report cannabis use and disagreement that law enforcement would stop them when driving after consuming cannabis

Aged 46-55

- More likely to report both texting while driving and exceeding HOS regulations, while also disagreeing that crash risk increases when engaging in either behavior
- Disagreed they would be stopped by law enforcement for cannabis or alcohol use

Characteristics of Significance

Green Light Role Modeling Factors

31+ years of experience

- Less likely to report texting while driving, exceeding HOS regulations, and driving after consuming alcohol
- Agreed that crash risk increases when texting while driving or driving after consuming cannabis

Extra-large fleet sizes

- Less likely to report texting while driving and exceeding HOS regulations, while also agreeing that **crash risk** increases when engaging in either behavior.
- Agreed their **supervisor cares** about HOS regulations
- Agreed they would be **stopped by law enforcement** when driving after consuming alcohol or cannabis

Next Steps: Utilizing These Findings

- What attitudes and behaviors should programming focus on?
- What do we know about changing behavior?
- What works? What doesn't?
- What programming would make a difference?
- What stakeholders need to be involved?
- What are the next steps?

Stakeholders to Engage With

- FMCSA
- Trucking Associations
- Law Enforcement /MCSAP
- DPU
- SDLA
- Others

Possible Programming

- Traffic safety culture
- Social norms
- Media campaigns
- Utilizing intervention agents
- Public information & education
- Enforcement
- Other

Contact us!

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