National Safety Council

Distracted Driving: Latest Data and Risk Management Best Practices

April 28, 2021

Our Mission: To make the world's roads & drivers safer

Artificial Intelligence

Behavioral Science

Mobile Sensing

Internet of Things (IoT)

CAMBRIDGE MOBILE TELEMATICS

How is Telematics Data Analyzed?

We convert raw data from mobile sensors into precise trip details

Extract vehicle dynamics: braking, acceleration, velocity

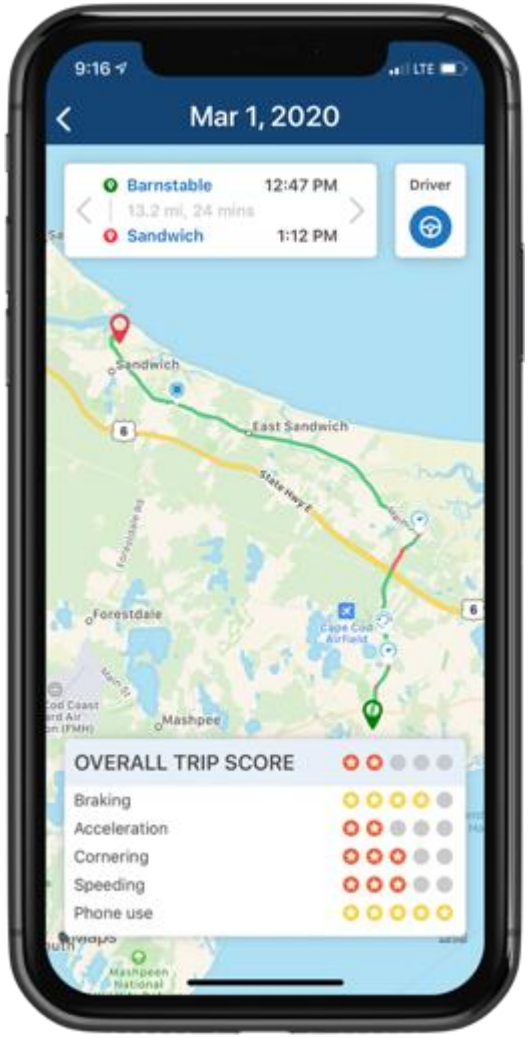
Map-matching algorithm handling noisy position data with *prepending*

Extract phone distraction metrics

Machine learning to classify transport mode and driver/ passenger

Mileage & speed estimation from accel data

Unique data advantage: Millions of users using phone *and* optional Tag



What Data is Collected?

The following data is required to accurately assess driving risk and motivate drivers to improve

Smartphone app

- **Accelerometer data** helps identify mileage and is used in the calculation of phone motion, screen interaction, and acceleration-based (hard braking, acceleration, and excessive speeding) events)
- **Gyroscope data** is used in the calculation of phone motion, screen interaction, and acceleration-based events
- **GPS data** helps detect when the vehicle is moving, provide a view of the trip route, and determines the speed limits encountered for speeding events, <u>but location is not its own measurement</u>

DriveWell Tag

- **High-frequency accelerometer data** detects when and how the vehicle is moving, is used to calculate overall mileage, and identifies acceleration-based events

What smartphone permissions are required?

- **Location**: to collect GPS data
- **Bluetooth:** to connect to the Tag
- **Motion & activity**: helps to detect when a trip starts & stops

Privacy Practices

No Data is Sold
Consumer data is not used for any other services besides those offered by CMT.

Minimum Amount of Data
CMT only collects the minimum personal information necessary to provide its services. In general, the only PII CMT collects is Unique Identifier, GPS coordinates, and IP address.

End-to-End Encryption
From collection to storage, data is encrypted at transfer and at rest.

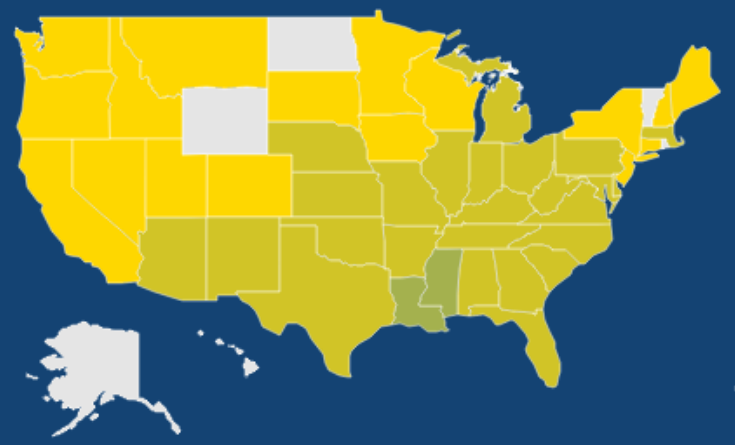
Transparency
CMT provides a clear explanation to its users of what data is collected and how it is used.

Retention
Data is only stored for as long as it's necessary to provide CMT's services.

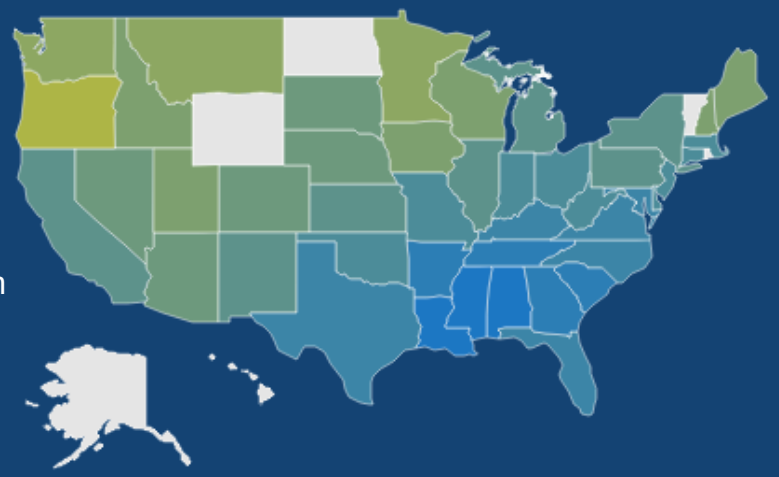
Consent
Users can withdraw consent to CMT processing their data at any time.

Phone distraction is rising nationally

2017



2019



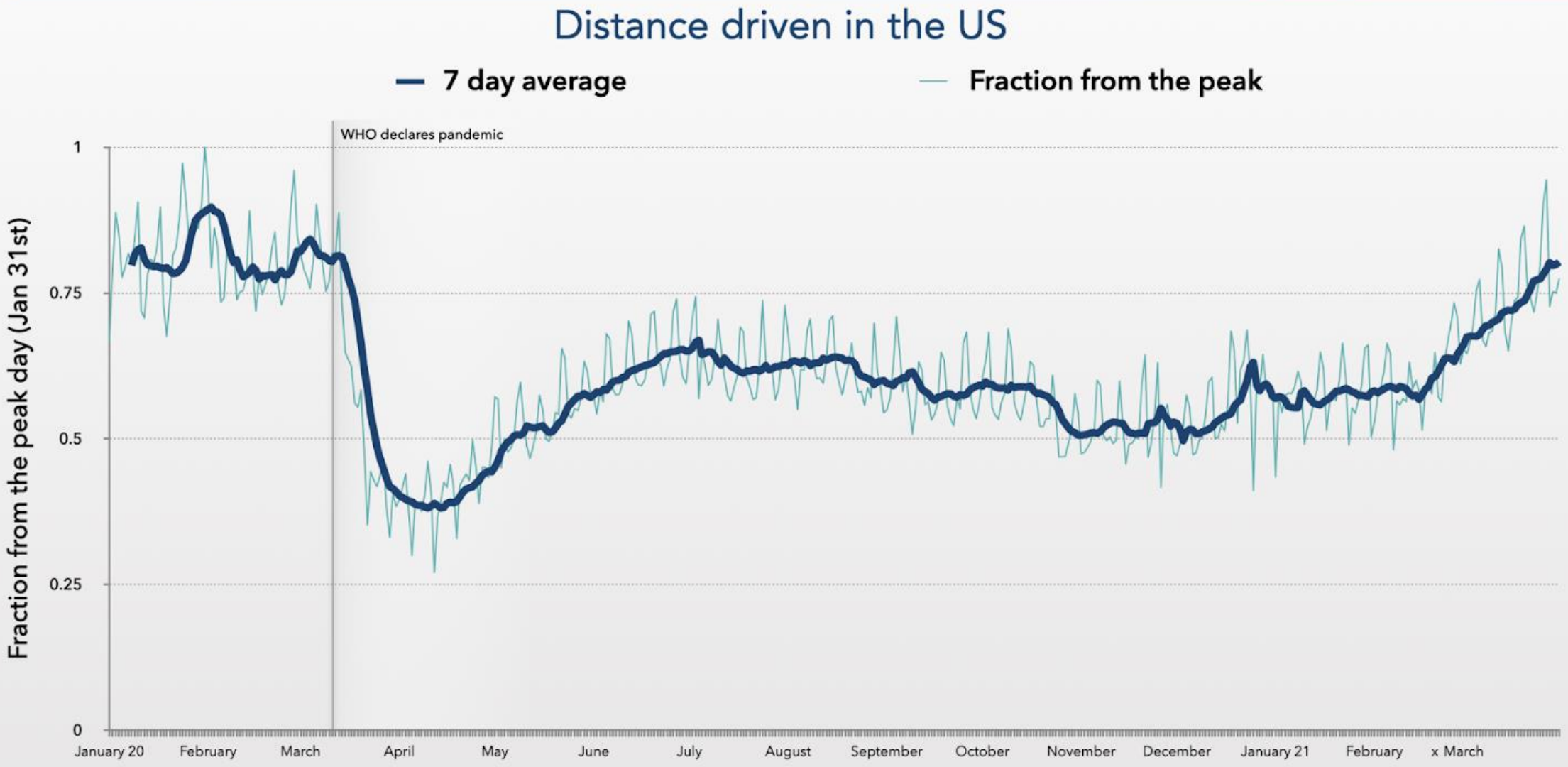
20% 26% 32% 38% 44% 50%

Share of daytime trips that include a phone distraction

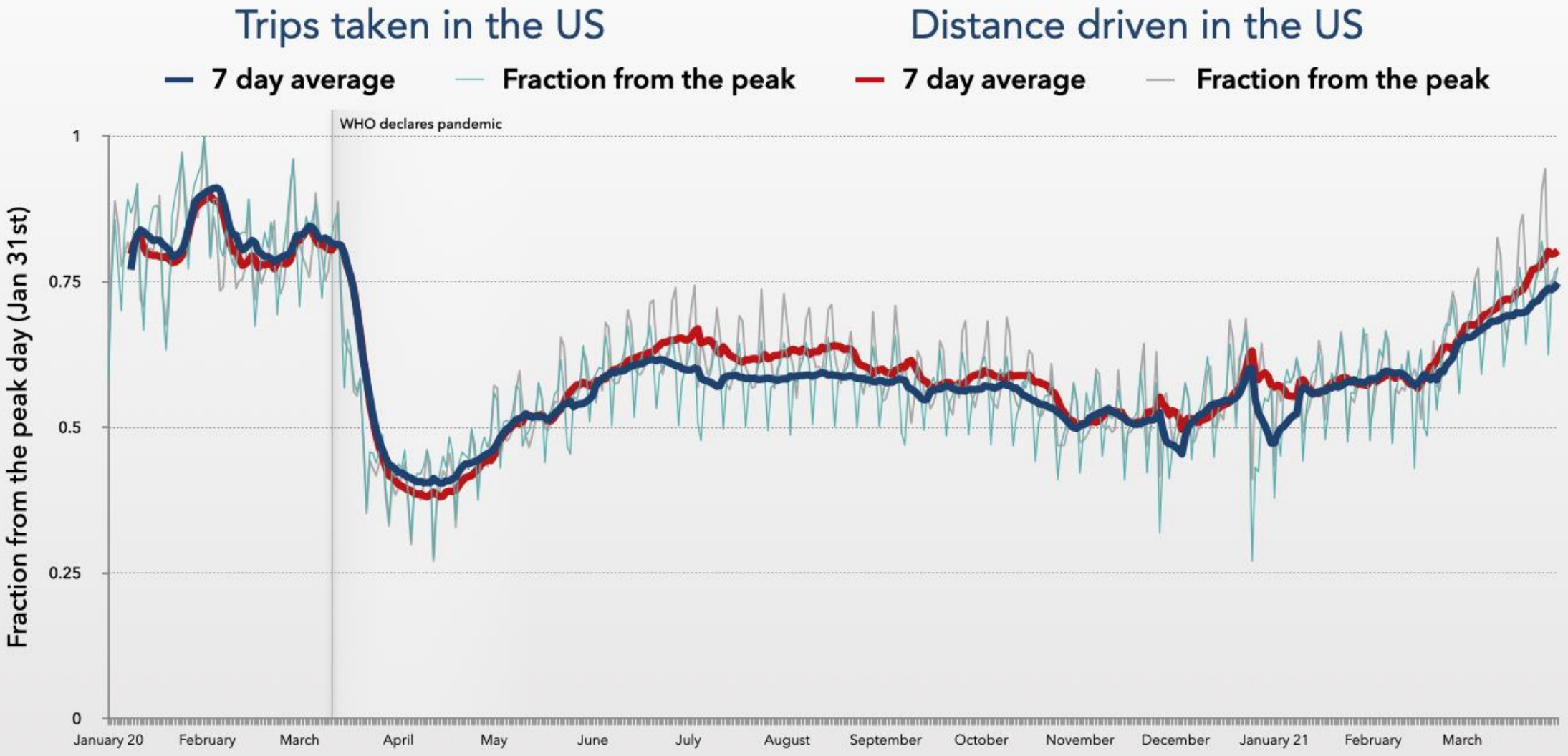
Source: CMT, Data Science Group. 2020

- 41% of day trips involve distraction
- Distraction has increased by 15% in the last 3 years
- The share of distracted trips sees heights of 50% (Mississippi)
- Throughout much of the Midwest, the average distraction speed is 20 mph

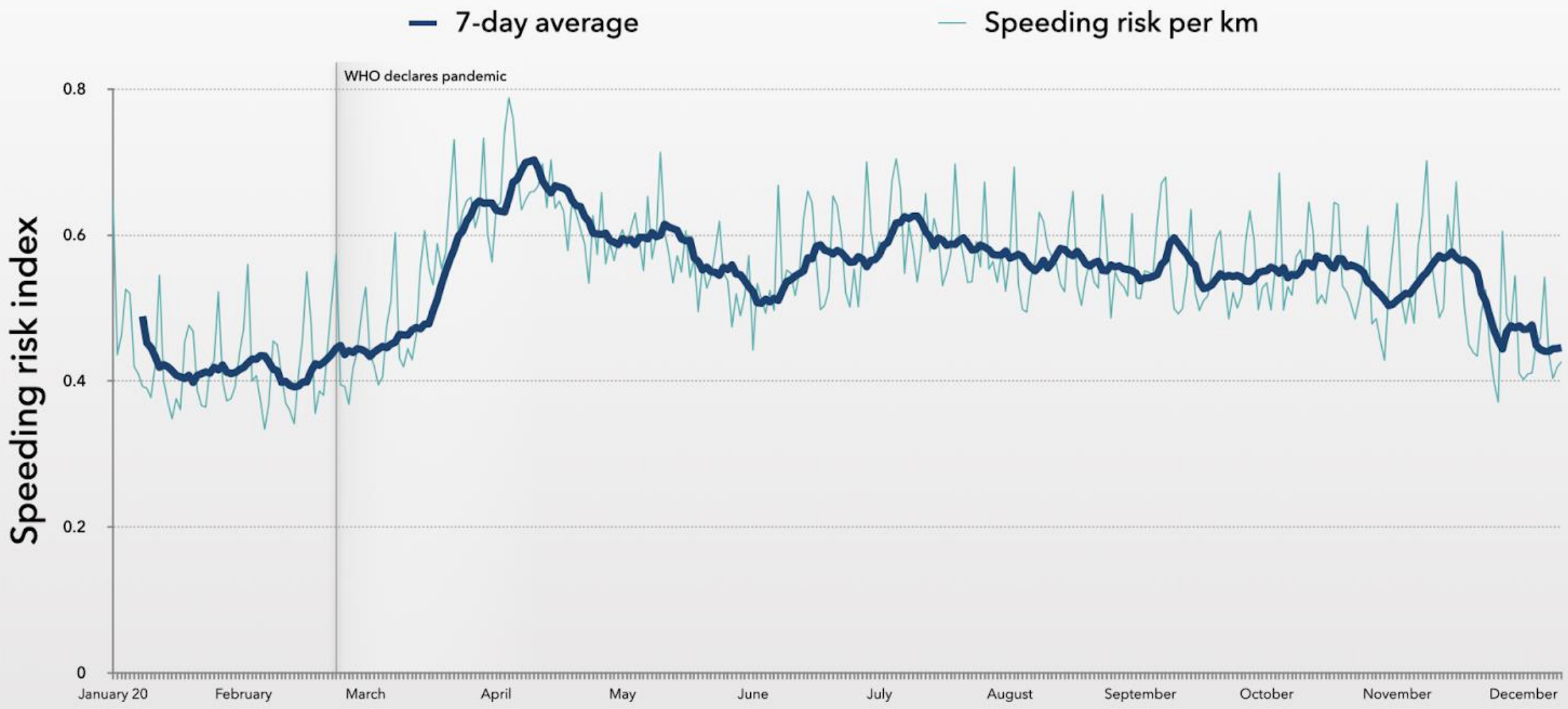
Driving fell more than 60 percent from pre-pandemic peak



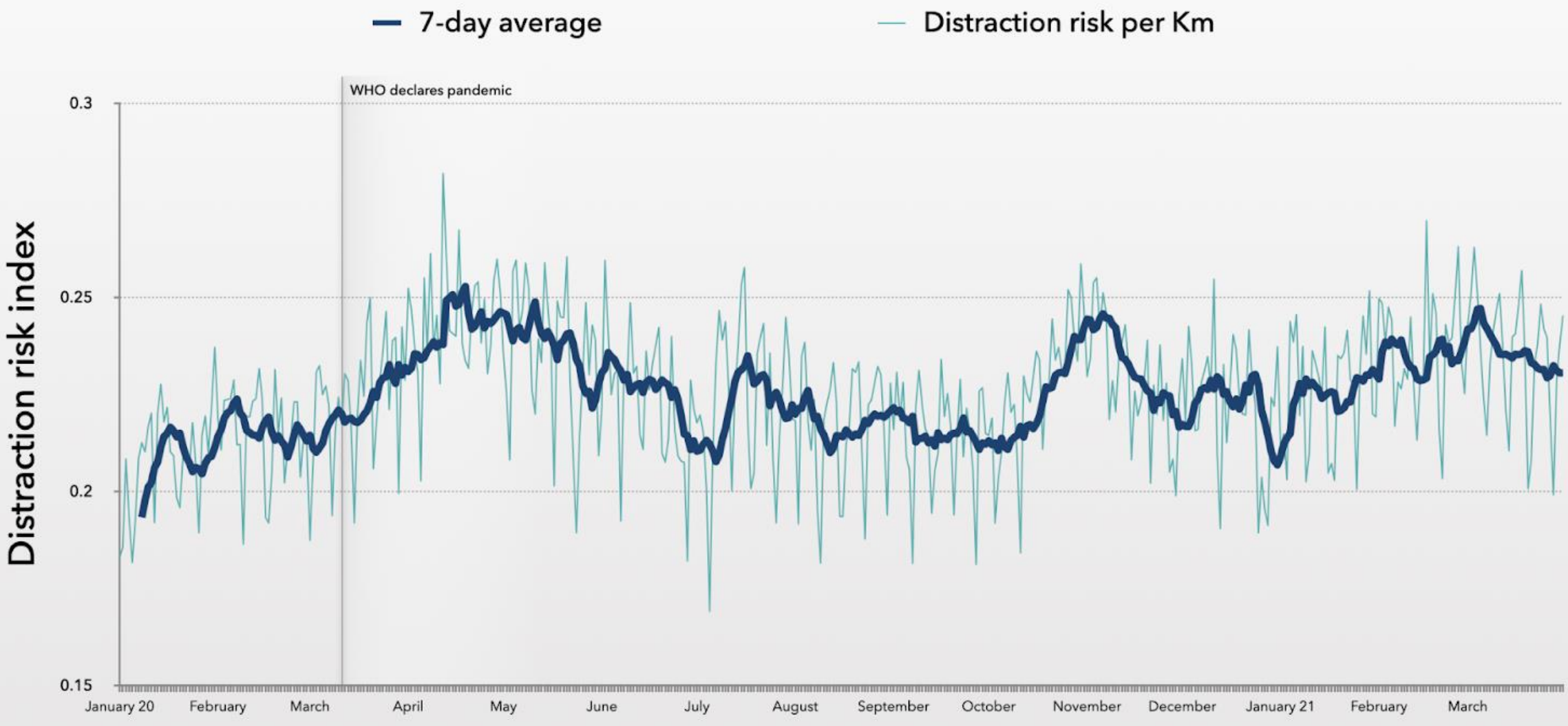
Trips taken are already back to pre-pandemic peak level



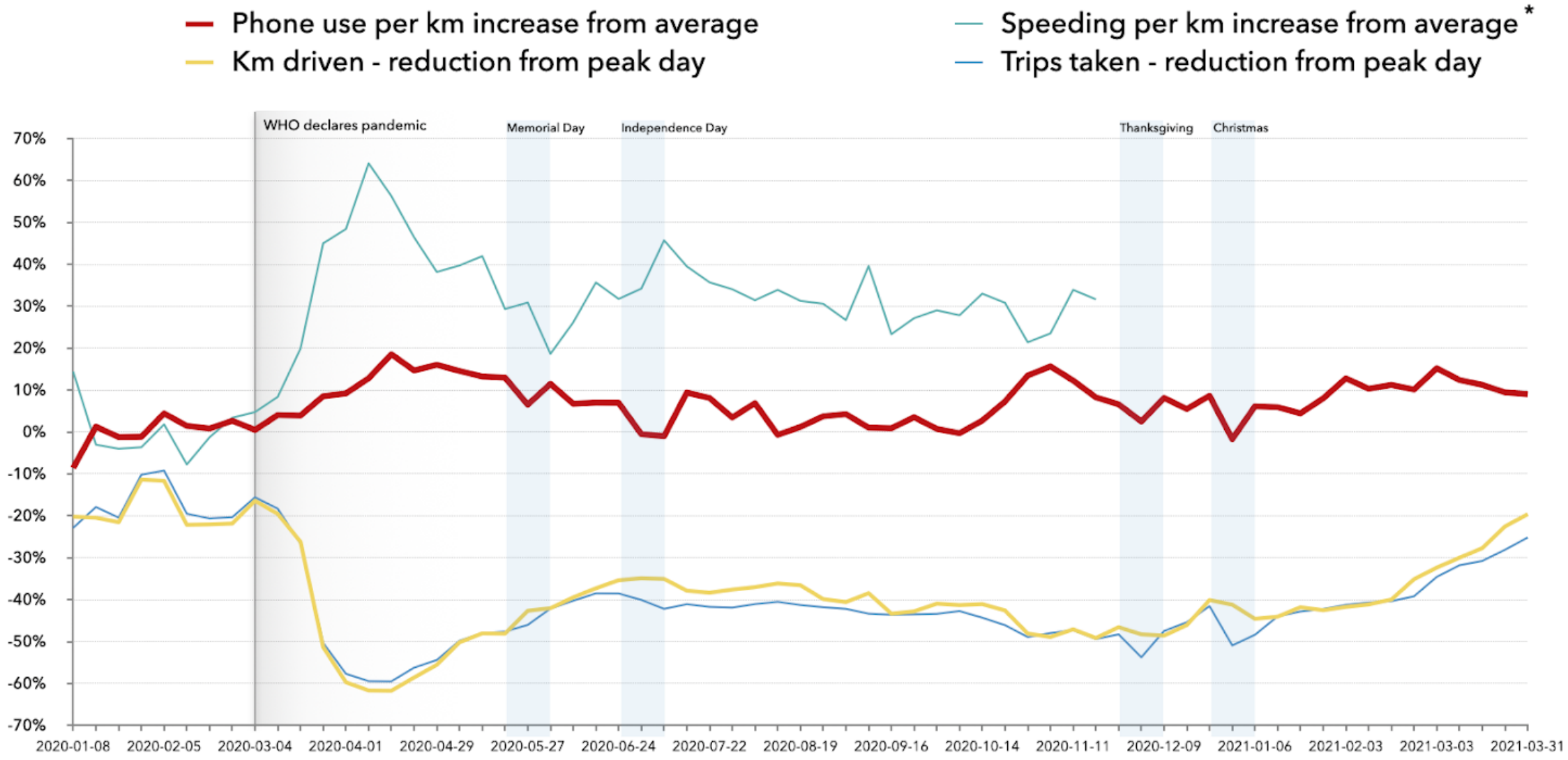
As trips taken dropped by 50%, speeding risk increased by 45%



Distraction increased by nearly 20% but never really came back to pre-pandemic levels



Rise in risky behavior correlates with less traffic

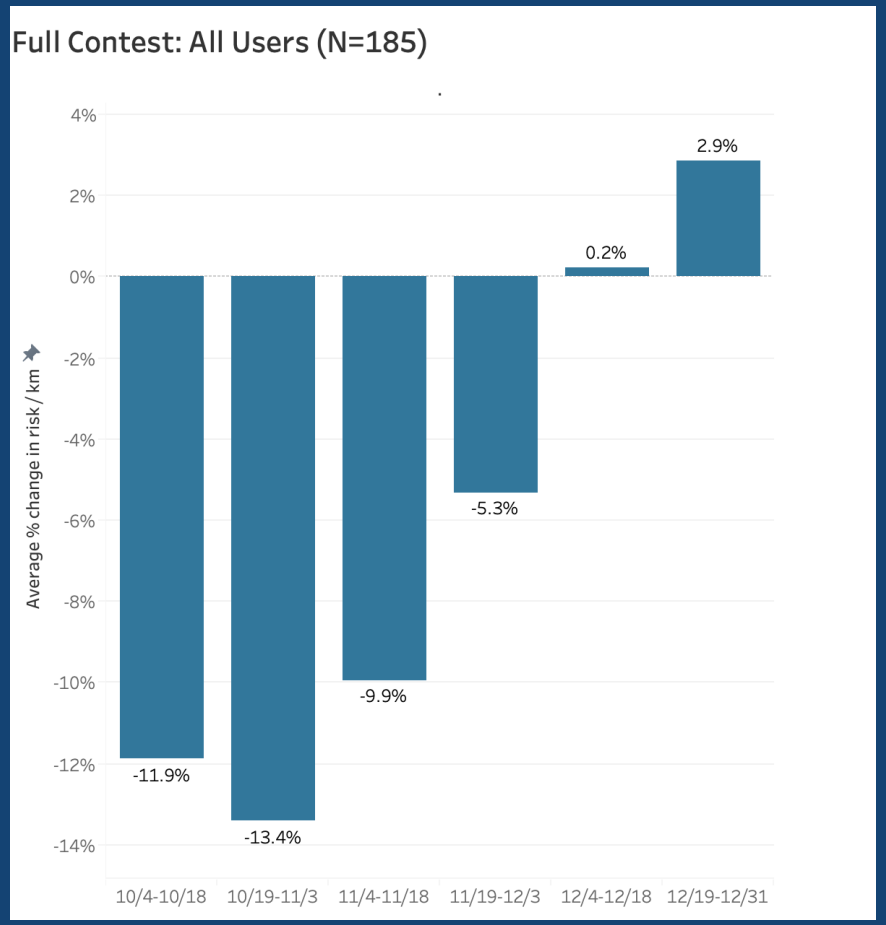


* A change in speeding calculation methodology in December 2020 prevents us from providing a fair comparison with the data from that point onwards

Oklahoma's Safest Driver 2020

- Partnership with "The Oklahoma Challenge"
- Ran Oct. 1 through December 31, 2020
- CMT's Safest Driver App measures speeding, phone distraction, hard braking, rapid acceleration & sharp turning
- As many as 252 teen drivers engaged at peak
- 185 teen drivers recorded trips through entire contest
- Random drawings for participating drivers; winners for overall safety, least distracted

All Drivers Saw Early Improvement



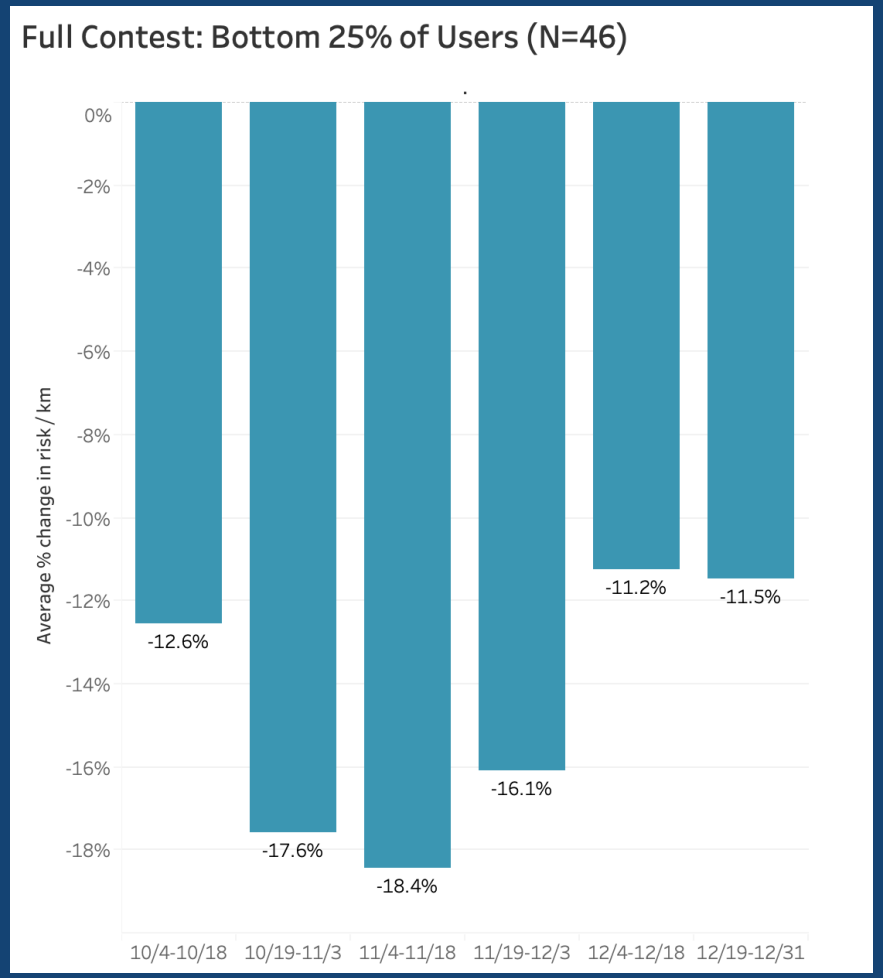
Baselines taken during first 3 days of participation

All drivers (n=185) saw immediate reduction in driving risk while contest was still front-of-mind

Holiday and vacation periods saw return to riskier behavior

All behaviors reduced through end except speeding – went up 13.1% in final weeks

Riskiest Drivers Sustained Improvement



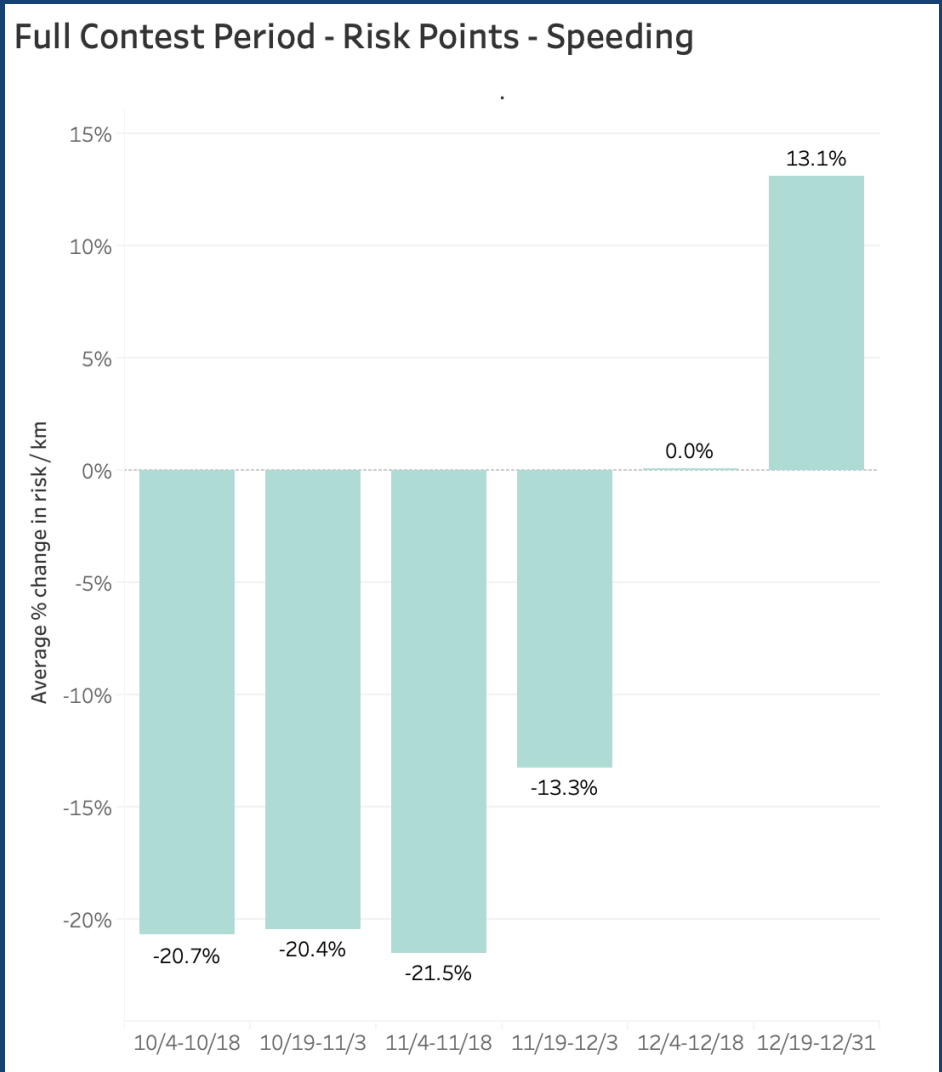
Riskiest quartile of drivers (n=46) improved more, and sustained their improvement.

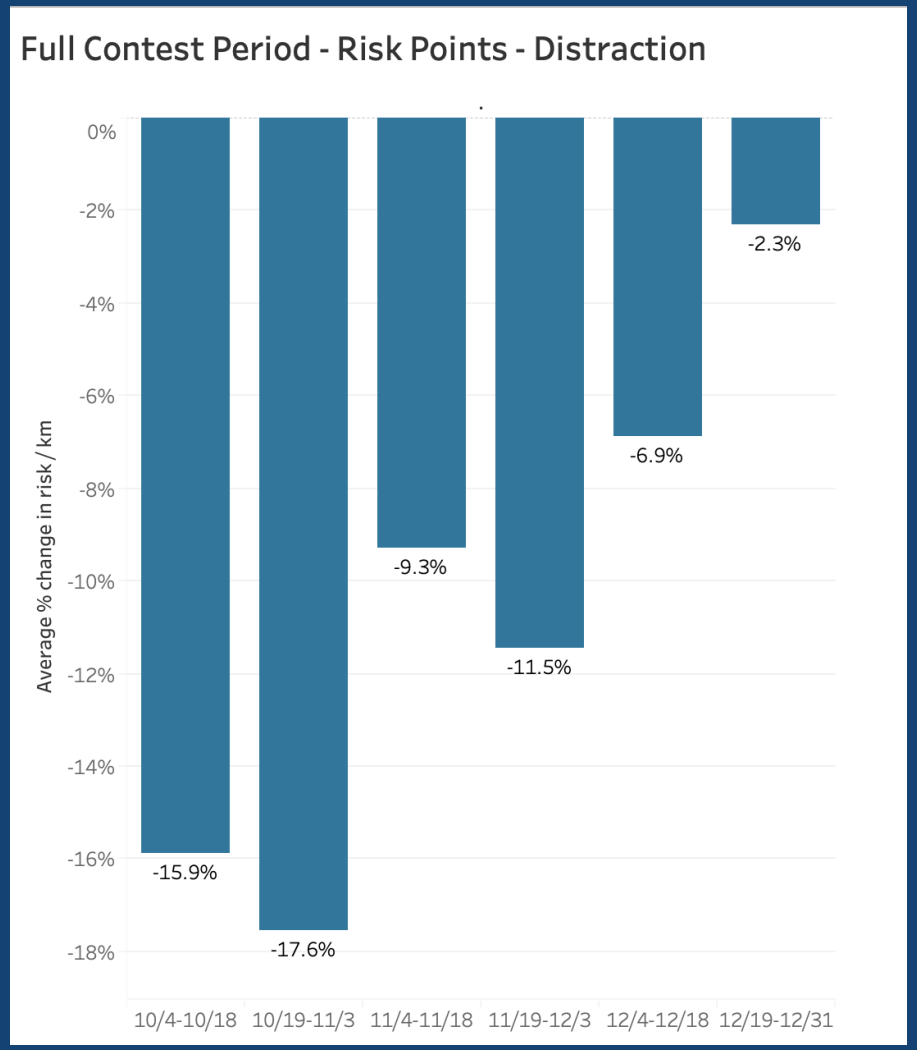
At peak, 18.4% reduction in all risky driving behavior

By end of contest, still maintained 11.5% reduction in all risky behavior

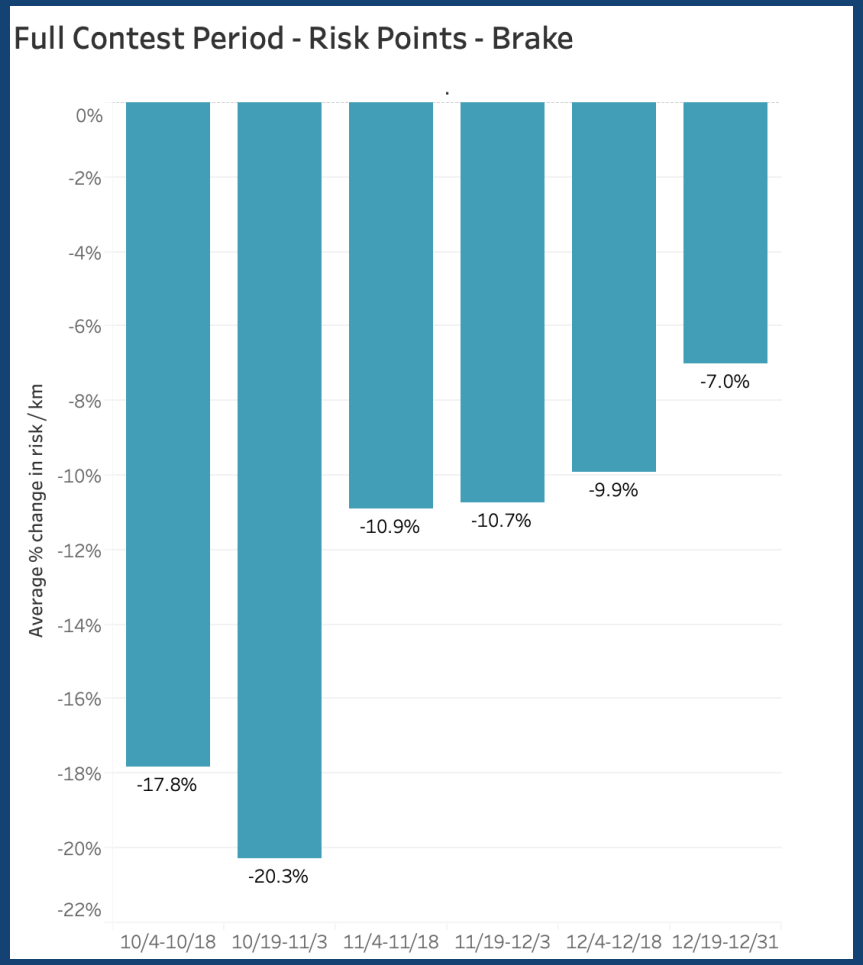
Speeding & Distraction Hardest to Stop (n=185)

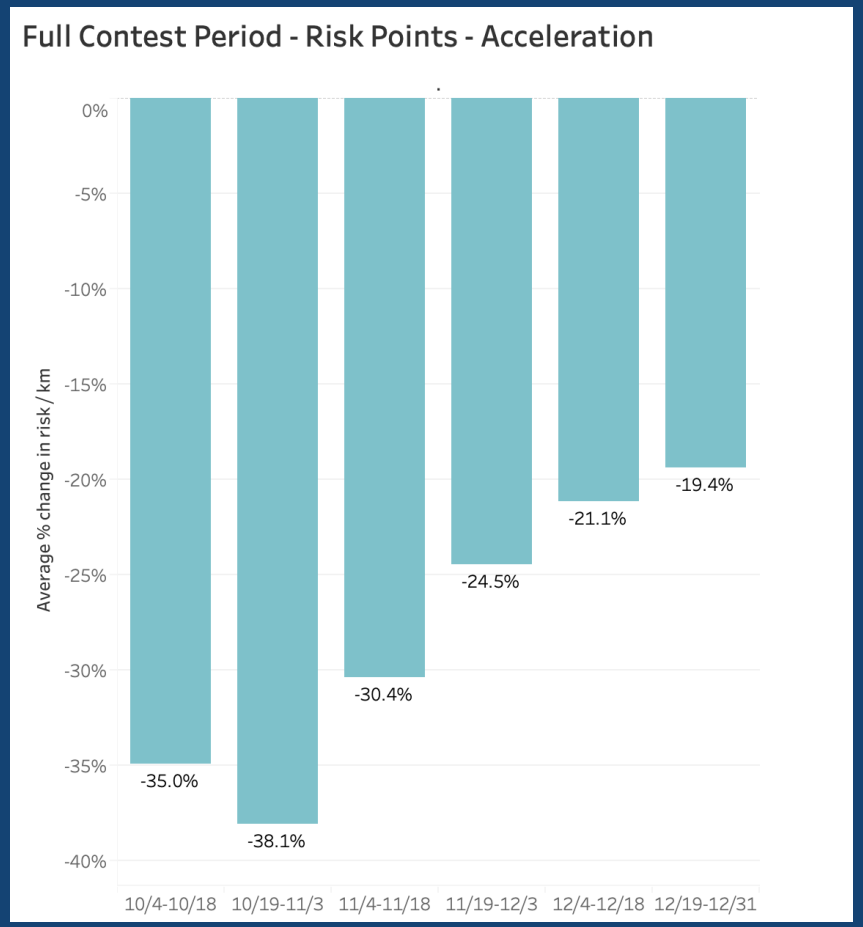
CAMBRIDGE MOBILE TELEMATICS





Braking & Acceleration Improved (n=185)





Prior Safe Driving Contests

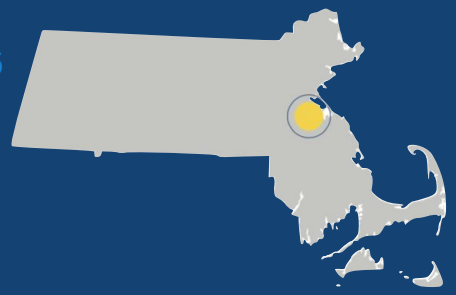
- CMT partnered with Vision Zero cities Boston, Seattle, San Antonio, and Los Angeles.
- Through Safest Driver Contest partnerships with these cities, CMT was able to provide the technology necessary to combat distracted driving by incentivizing drivers to change their behavior.

SAN ANTONIO'S SAFEST DRIVER 2018

29% reduction in distraction
17% reduction in hard braking
45% reduction in speeding

BOSTON'S SAFEST DRIVER 2016

47% reduction in distraction
37% reduction in hard braking
35% reduction in speeding



LA'S SAFEST DRIVER 2019

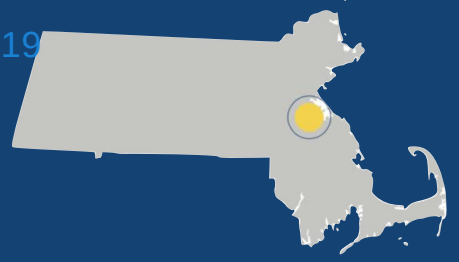
25% overall reduction
35% reduction in speeding
30% reduction in distraction

SEATTLE'S SAFEST DRIVER 2017

35% reduction in distraction
30% reduction in hard braking
28% reduction in speeding

BOSTON'S SAFEST DRIVER 2019

48% reduction in distraction
57% reduction in hard braking
38% reduction in speeding



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Thank you!

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