U.S. Department of Transportation
Vehicle Size and Weight Research Updates Brief
Spring 2024

Overview

This Vehicle Size and Weight (VSW) Research Updates Brief provides U.S. Department of Transportation (USDOT) VSW experts with recurring updates about VSW-related projects, research, news, and events. VSW research topics refer to safety, pavement, bridges, mode choice, enforcement, economics, data, technology, regulations, guidance, and other related topics.

Research

Transportation Pooled Fund (TPF)

- *Improving Traffic Detection Through New Innovative i-LST Technology Demonstration Pilot (in progress)* – Federal Highway Administration (FHWA) lead organization.

Transportation Research Record: Journal of Transportation Research Board (TRB)

- *Necessary Infrastructure Accommodations for Automated Trucks and Truck Platoons (in progress)*
- *Asset Management of Bridges Using Uncrewed Aerial Vehicles and Machine Learning Models (in progress)*

U.S. Department of Transportation National University Transportation Center for Safety

- *Estimating the Effects of Vehicle Automation and Vehicle Weight and Size on Crash Frequency and Severity: Phase 1 (in progress)*

National Center for Sustainable Transportation

- *Effects of High Early Strength Concrete Thermal Contraction, Shrinkage and Creep on Pavement Performance (in progress)*
- *Development of Predictive Performance Models and Calibration of Mechanistic Empirical Design Method for Optimized Transportation Infrastructure Management, Considering Life-Cycle Costs and Environmental Impacts (in progress)*

University of California Institute of Transportation (ITS)

- *Assessing Safety, Risk, and Labor Issues Related to Heavy-Duty Automated Vehicles (In Progress)*

USDOT Project

FMCSA Crash Causal Factors Program

The Federal Motor Carrier Safety Administration (FMCSA) is developing the Crash Causal Factors Program (CCFP) to collect and analyze crash data involving commercial motor vehicles (CMVs). The CCFP intends to identify key factors that contribute to crashes involving CMVs, inform countermeasures to prevent these crashes from happening, and establish a foundation for continued data collection, sharing, and analysis. Phase 1 of the CCFP, which focuses on fatalities involving Class 7&8 commercial vehicles, expands on the Large Truck Crash Causation Study (LATCCS) (2001-2003) and incorporates lessons learned through a focused scope, increased sample size, new data elements for collection, and collaboration with state and local jurisdictions. Since 2020, fatal crashes involving CMVs have increased in the United States. This program is an effort to reverse this trend and pursue a long-term goal of zero roadway fatalities. The CCFP also aligns with the safety research recommendations from the TRB Truck Size and Weight Research Roadmap. FMCSA is targeting 2029 to publish a final report for the Phase 1 study.

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Upcoming Events

- CVSA/FMCSA Data Quality and Systems Training – March 5-7, 2024
- CVSA Annual Conference and Exhibition – September 8-12, 2024

VSW in the News

- Bill would give states new power to waive truck weight limits (Freight Waves)
- CO lawmakers consider annual fee for larger vehicle registrations to fund cyclist, pedestrian infrastructure (ABC News Denver)
- Commercial Vehicle Propeller Shaft Market size to Record USD 3.74 billion Growth between 2023 to 2027 (Technavio)
- Navigating the bends in the road to improve highway safety (CCJ)
- First "super load" moving through southern and central Ohio (Ohio Department of Transportation)
- Different Commercial Truck Weight Limits (Christie, Farrell, Lee & Bell)
- Biden-Harris Administration Opens Applications for Over $180 Million in Safety Grants for Commercial Motor Vehicles (FMCSA)

Regulations and Statutory Updates

In February 2024, the U.S. Congress introduced the Modernizing Operations for Vehicles in Emergencies (MOVE) Act, which aims to "remove unnecessary roadblocks and red tape" to avert supply chain disruptions such as what occurred during and after the pandemic. The MOVE Act will expand the circumstances under which the federal government could allow a state to waive federal weight limits along interstate highways for loads "that can easily be dismantled or divided" to include not only natural emergencies involving weather, disease, and wildfires, and other causes but also if supply chains are "substantially impaired in the state, either in terms of slow overall movement, freight traffic congestion, or otherwise." (MOVE Act, 2024)

VSW Case Study – Brooklyn-Queens Expressway Weigh-in-Motion Enforcement Pilot

In 2021, New York passed legislation (SB2740B) that authorizes a pilot program to use Weigh-in-Motion (WIM) technology to remotely issue violations for trucks that exceed legal weight limits on the Brooklyn-Queens Expressway (BQE), part of I-278. The objectives were to extend the lifespan of BQE by deterring trucks that go over the 80,000 lb. legal limit and preserve at-risk infrastructure. NYC DOT has been using WIM technology to monitor and assess truck activity on bridges and roadways for several years. However, this pilot is the first of its kind and sets precedent for using WIM for enforcement purposes.

The city began enforcement of the BQE WIM system in the Queens-bound direction on November 13, 2023, following a 90-day warning period that began in August 2023. Overweight trucks on the Queens-bound direction will be subject to a $650 fine per violation. Installation for the Staten Island-bound direction is anticipated to start with a 90-day warning period to follow.

The *Brooklyn-Queen Expressway Expert Panel Report* released in 2019. This report highlighted current conditions and recommendations for improving the BQE, including the need to deter overweight trucks to avoid potential safety concerns. The BQE is a vital freight corridor for the region. According to the report, over 15,000 trucks cross the BQE daily. Data collected from October 2019 to Jan 2020 showed that 11.1% of trucks exceeded the 80,000 lb legal limit and 27 percent exceeded the Federal Bridge Formula. The BQE has a unique design with a triple-cantilever structure extending roughly 0.4 miles, making it a challenging structure to improve (see figure 1).

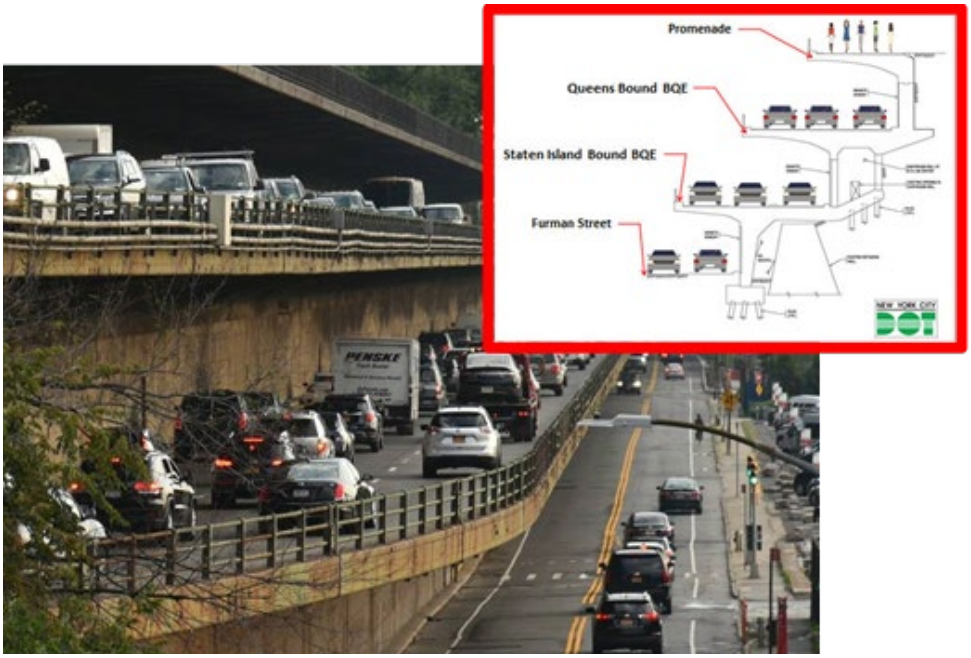

Figure 1: The Brooklyn-Queens Expressway features a 0.4-mile triple cantilever. (Source: NYCDOT)

This pilot also supports the city's freight sustainability goals. In the NYCDOT report titled, *Delivering Green: A vision for sustainable freight network serving New York City*, NYCDOT proposes to build out a WIM network citywide by 2040 of up to 50 locations to inform and potentially enforce truck rules and regulations governing size, weight, and routes. This strategy will help create a culture of compliance to encourage the safe operation of trucks in the city, reduce truck intrusion into residential neighborhoods, and protect unique and aging infrastructure.

Disclaimer: Except for the statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind the States or the public in any way. This document is intended only to provide information regarding existing requirements under the law or agency policies.

Keep in Touch!

For questions or suggested updates to future editions of this VSW Updates Brief, please contact Jeff Purdy, Jeff.Purdy@dot.gov