

Inclusion of Weighing In Motion systems for direct enforcement in NIST Handbook 44

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Mission statement:

To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve our quality of life.

NIST Office of Weights and Measures (OWM)

NIST



Metric Program



National Legal Metrology Program



International Legal Metrology Program



Laboratory Metrology Program

Mission statement:

Establish uniformity, equity, SI use, and traceability in weights and measures by advancing national and international legal metrology standards, procedures, capabilities, and training

United States Constitution

Article I, Section 8

*The Congress shall have Power to coin Money, regulate the Value thereof, and of foreign Coin, and **fix the Standard of Weights and Measures;***



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U.S. Weights and Measures: Regulations



Facilitate and promote uniformity in weights and measures laws and inspection

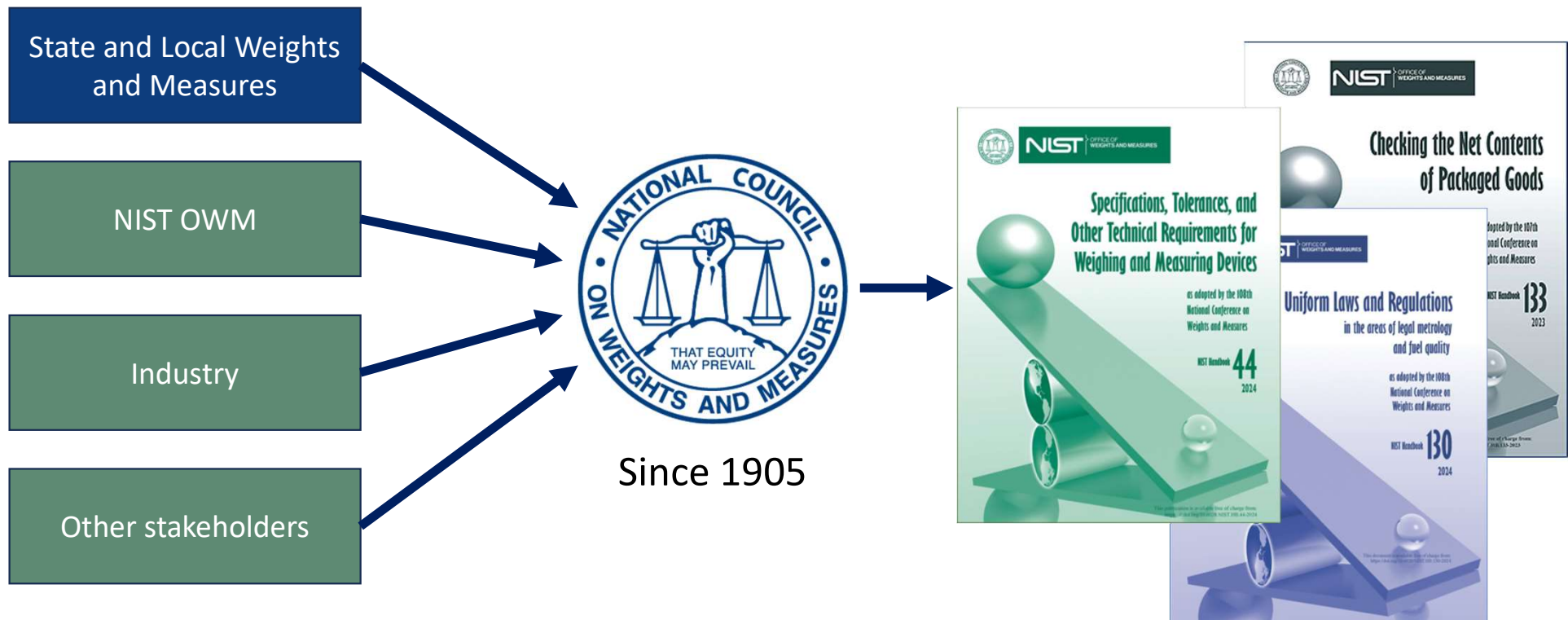
- NIST is a non-regulatory agency
- State and local governments have regulatory responsibility (with some Federal regulation and preemption, e.g., EPA, USDA, FDA)
- NIST is authorized to work with States to secure uniformity in weights and measures laws and inspection
- NIST Handbooks (Documentary Standards developed in partnership with NCWM, States, and industry) are “voluntarily” adopted by States



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Goal: Uniformity in Standards for Marketplace Equity

National Council on Weights and Measures



Standards versus law

- NIST Handbook 44 is a documentary standard, not a law
- Standard proves compliance with the law
- Individual states must decide which standards apply
- States have the authority to develop their own standard



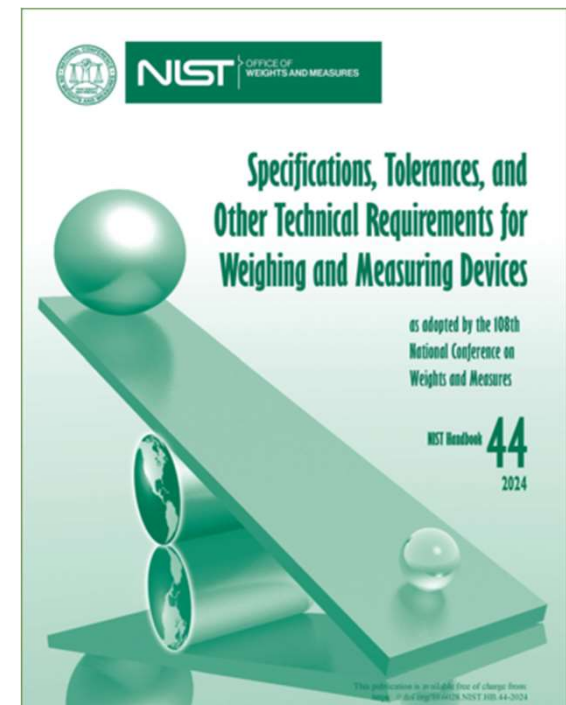
Adoption of NIST Handbooks

NIST Handbook 44

Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices

- 34 States* adopt NIST Handbook 44 and update their regulations on an annual basis
- 18 States* have a law or regulation in force, NIST Handbook 44 used as the basis of adoption, but from an earlier year
- 1 State (North Dakota) has a law / regulation in force, but not based on NIST Handbook 44

* Including territories



Regulation of law enforcement instruments

- Instruments used by law enforcement include breath analyzers, speed meters, and vehicle weighing instruments
- Some instruments are inspected and calibrated by the law enforcement body
- The inspection of weighing instruments is often outsourced to the local Weights and Measures office (whose focuses are commercial devices)
- NIST Handbook 44 is applied as the standard



Section 2.25. Weigh-In-Motion Systems Used for Vehicle Enforcement Screening



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- Screening only. Not for direct enforcement
- Tentative code
- Code not suitable to be used for direct enforcement



Proposal for a new code in NIST Handbook 44 for WIM systems for direct enforcement

Existing WIM standards



- WIM code in NIST Handbook 44 is for screening purposes only
- COST 323 Final Report on WIM systems is a 'pre-standard' document
- ASTM E1318 focuses on field tests, no requirements for legal control
- NMI International WIM standard complete but not widely accepted
- OIML R 134 globally accepted standard for legal metrological applications

- Regulatory function lies with the states and local authorities
- NIST Handbook 44 is a standard
- NIST Handbook 44 is the preferred standard to prove compliance with the law(s)
- Alternatively, other standards can be used by regulators to certify WIM systems
- This often requires new or amended legislation



Implementation New York City

- December 22, 2021: Authorization of the use of WIM systems for direct enforcement of road weight limits signed into law
- Memorandum of agreement with the New York State Department of Agriculture and Markets regarding testing and certification outside the NIST Handbook 44 guidelines
- A stop-gap measure of the New York State Agriculture and Markets law permits such arrangement while relevant national standards are being developed
- Proposal to amend Handbook 44
- This proposal is used as a temporary standard for the certification of the WIM system in NYC



Credit: New York City Department of Transportation

Proposal to amend NIST Handbook 44



May 2022



The Federal Highway Administration (FHWA) asks OWM to assist in the development of a proposal to amend NIST Handbook 44 to include WIM systems for direct enforcement

Aug 2022



A proposal by New York City Department of Transportation (NYC DOT), Kistler and C2SMART was submitted to the National Council on Weights and Measures (NCWM)

Up until July 2024, the submitters promoted the proposal and worked with stakeholders (including NIST OWM) to improve the proposal to address existing concerns and remove possible opposition.

July 2024



The final proposal failed the vote during the 2024 Annual NCWM Meeting.

Main objections to the first proposal

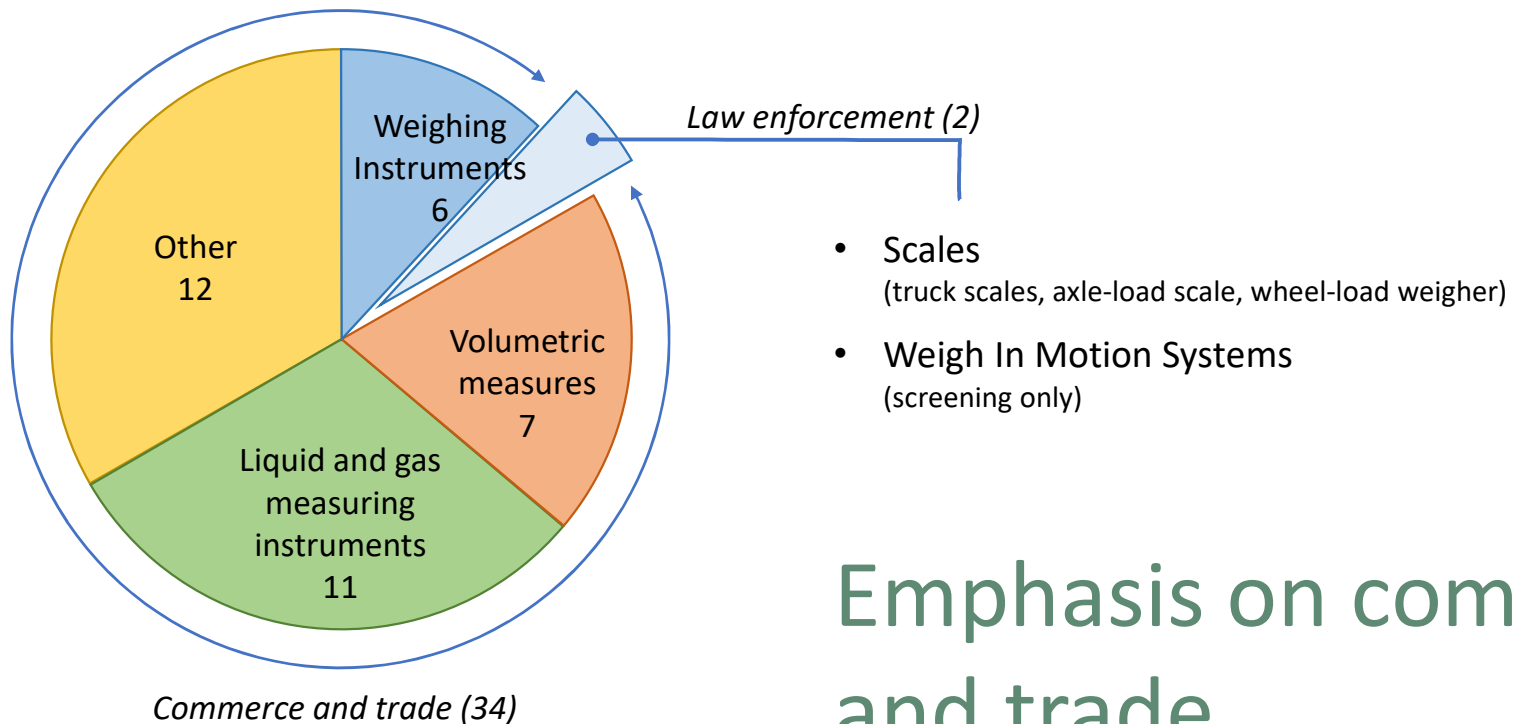


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1. Mandatory acceptance of WIM systems
2. Resources for testing
3. Large tolerance (10% vs 0.1%)

Commerce versus Law enforcement

2024 NIST Handbook 44 instrument categories



Emphasis on commerce and trade

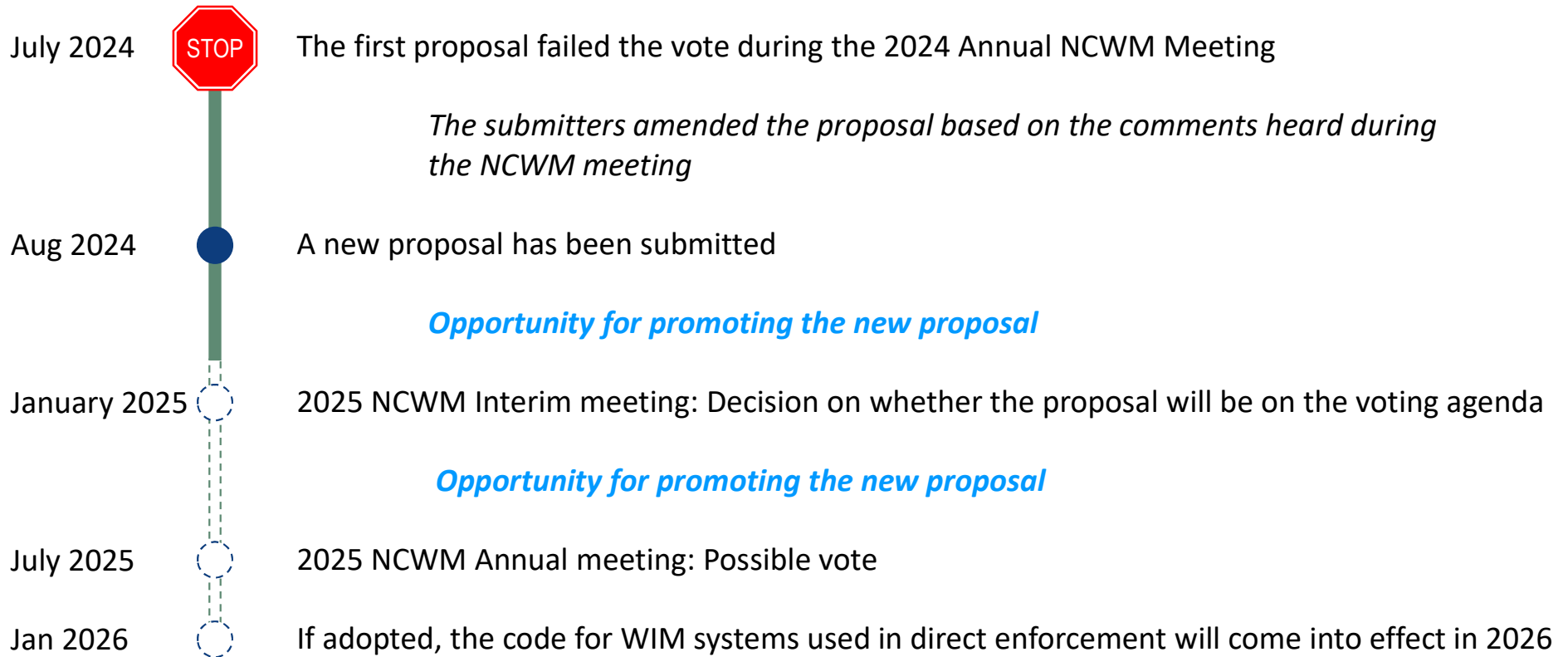
Lessons learned

- Active role by stakeholders (FHWA, CVSA, DOTs) in the promotion of the proposal
- Dialog between State's DOT and Weights & Measures
 - Likelihood of implementation of WIM systems
 - Role of Weights and Measures
 - Agreement on resources
 - Possibility of witness testing
- Continuation of education



Credit: Adobe Stock

Timeline new proposal



Questions? Please contact us!

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