

ISWIM
International Society for Weigh in Motion

Webinar: “Benefitting from Weigh-in-Motion Data”

Monday, December 14, 2020, 14:00-16:00 (CET), on-line

Use of Weigh-in-Motion Data for Improving Pavement, Bridge, Weight Enforcement, and Freight Logistics Practices

National Cooperative Highway Research Program (NCHRP)
Project 20-05, Synthesis Topic 50-03

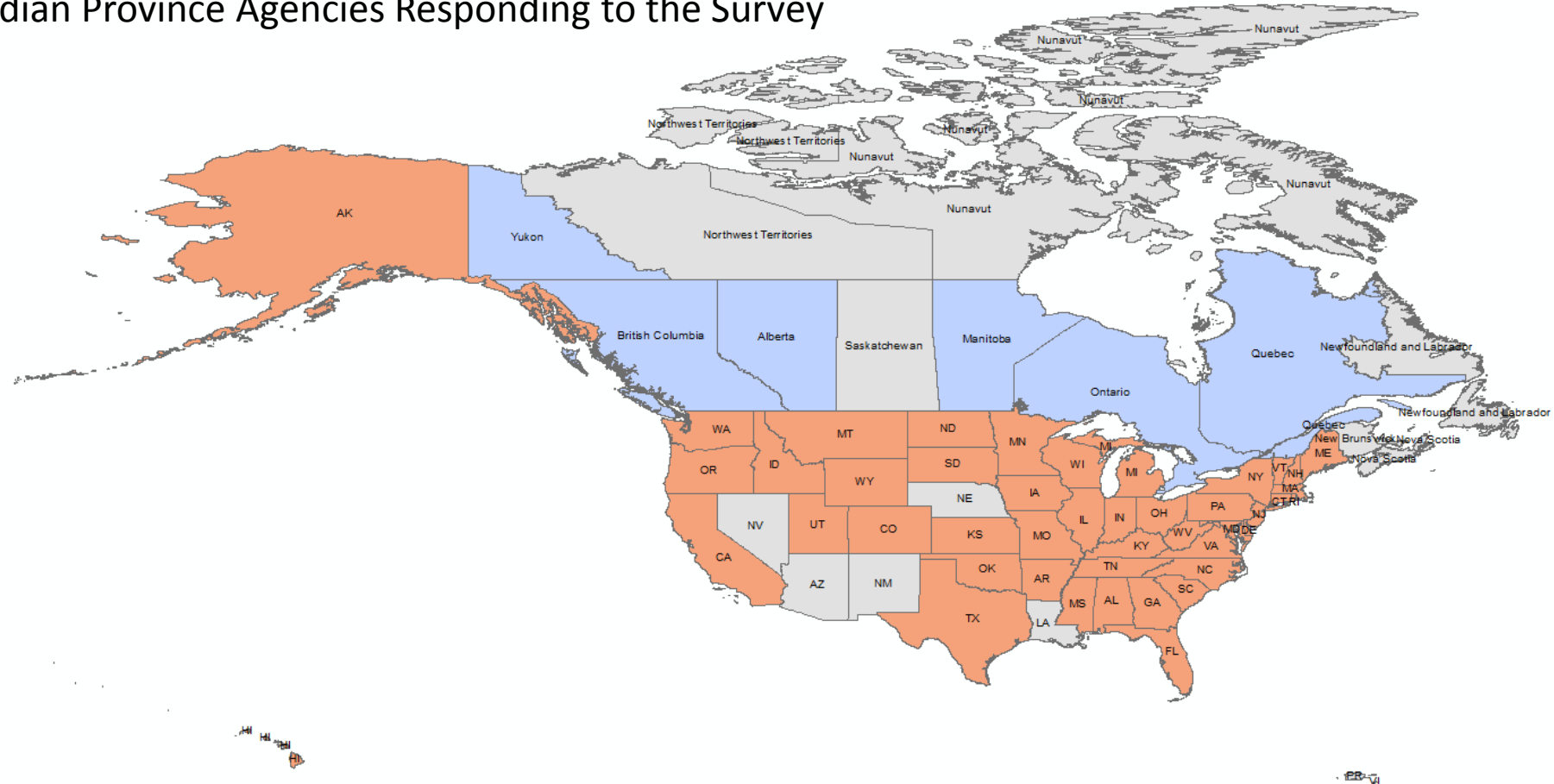
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The University of Texas at Austin – Center for Transportation Research

Methodology

- Background
- Literature Review
- DOT Survey
- Case Studies (Interviews)
- Results and Conclusions

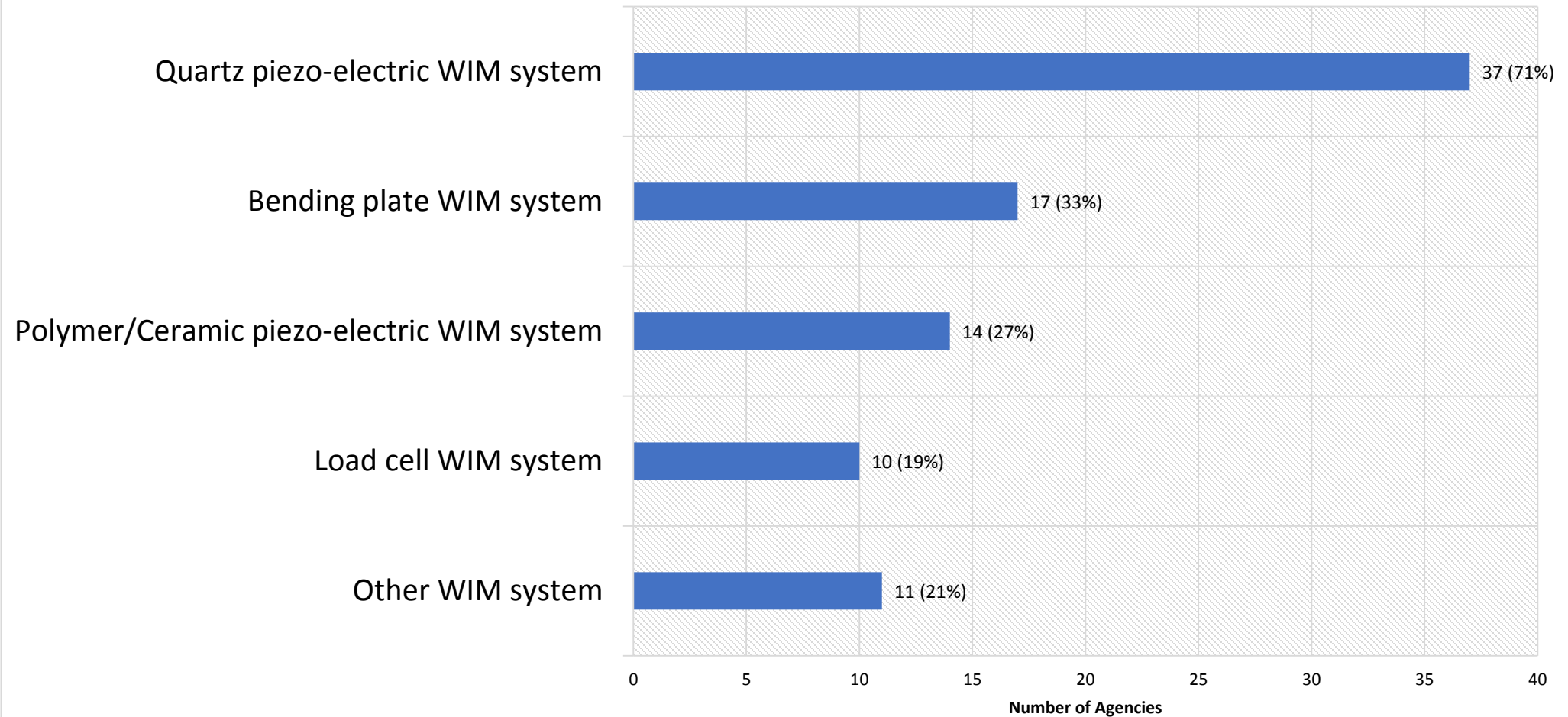
State of the Practice Survey

- US State Agencies Responding to the Survey
- Canadian Province Agencies Responding to the Survey



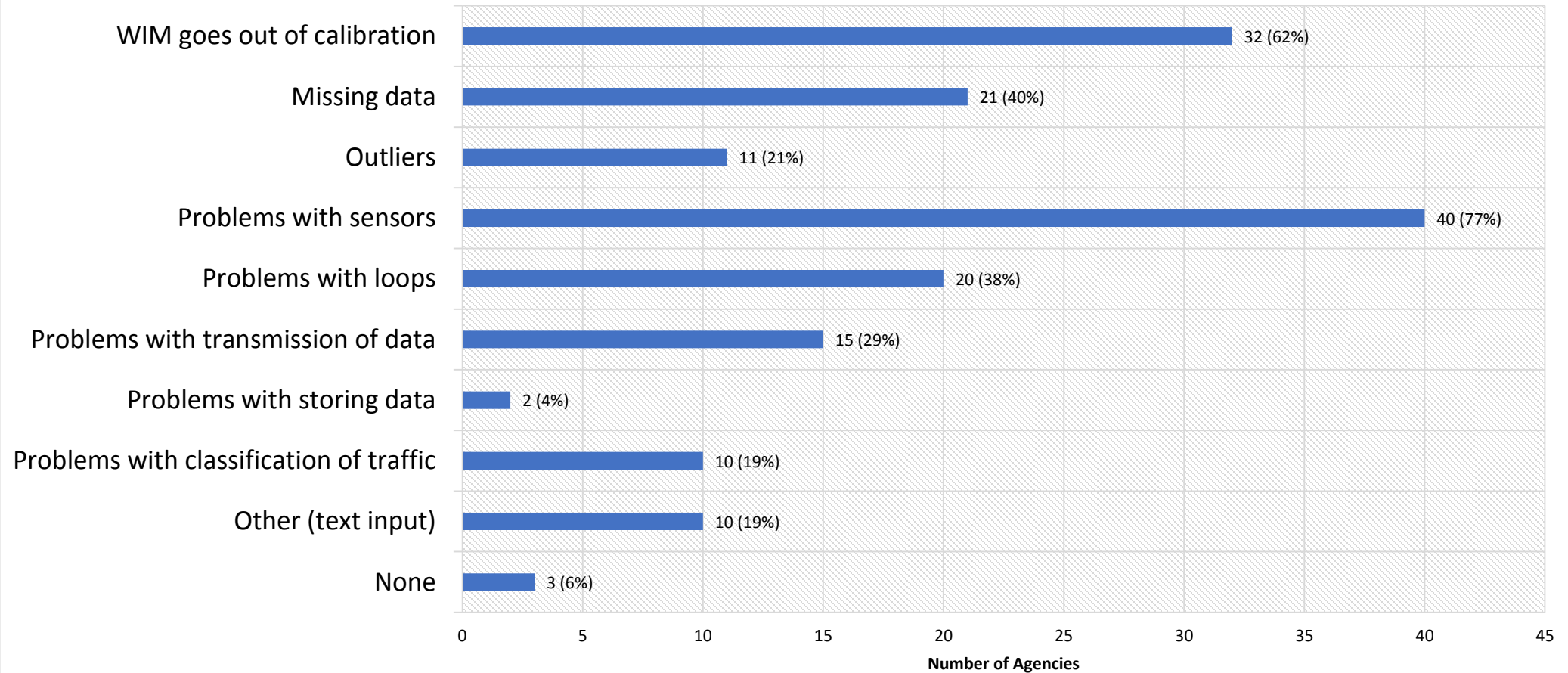
State of the Practice Survey

What WIM systems does your Agency have?



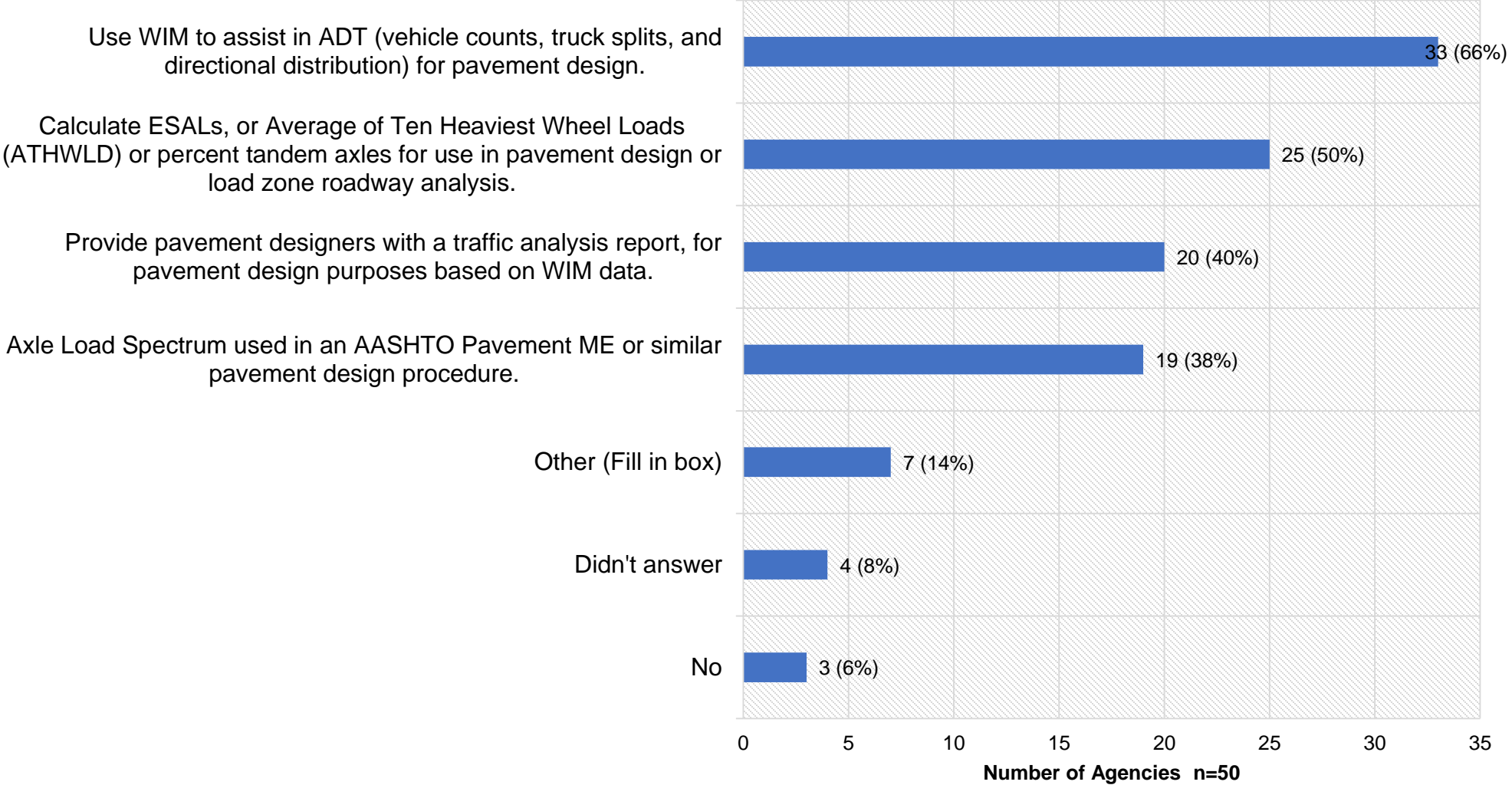
State of the Practice Survey

What are any significant problems you have with WIM data?



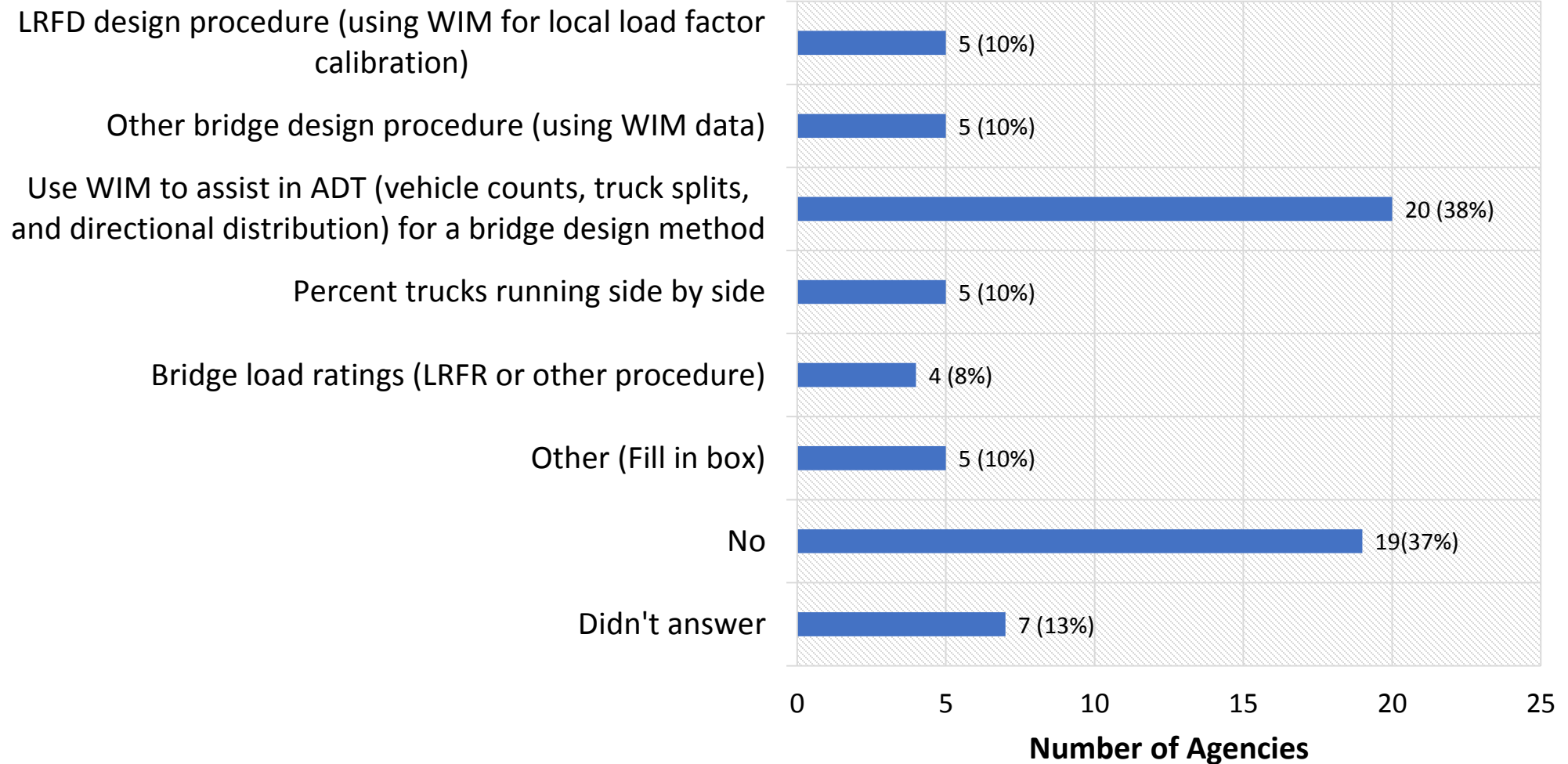
State of the Practice Survey

Do you use WIM data in pavement design?



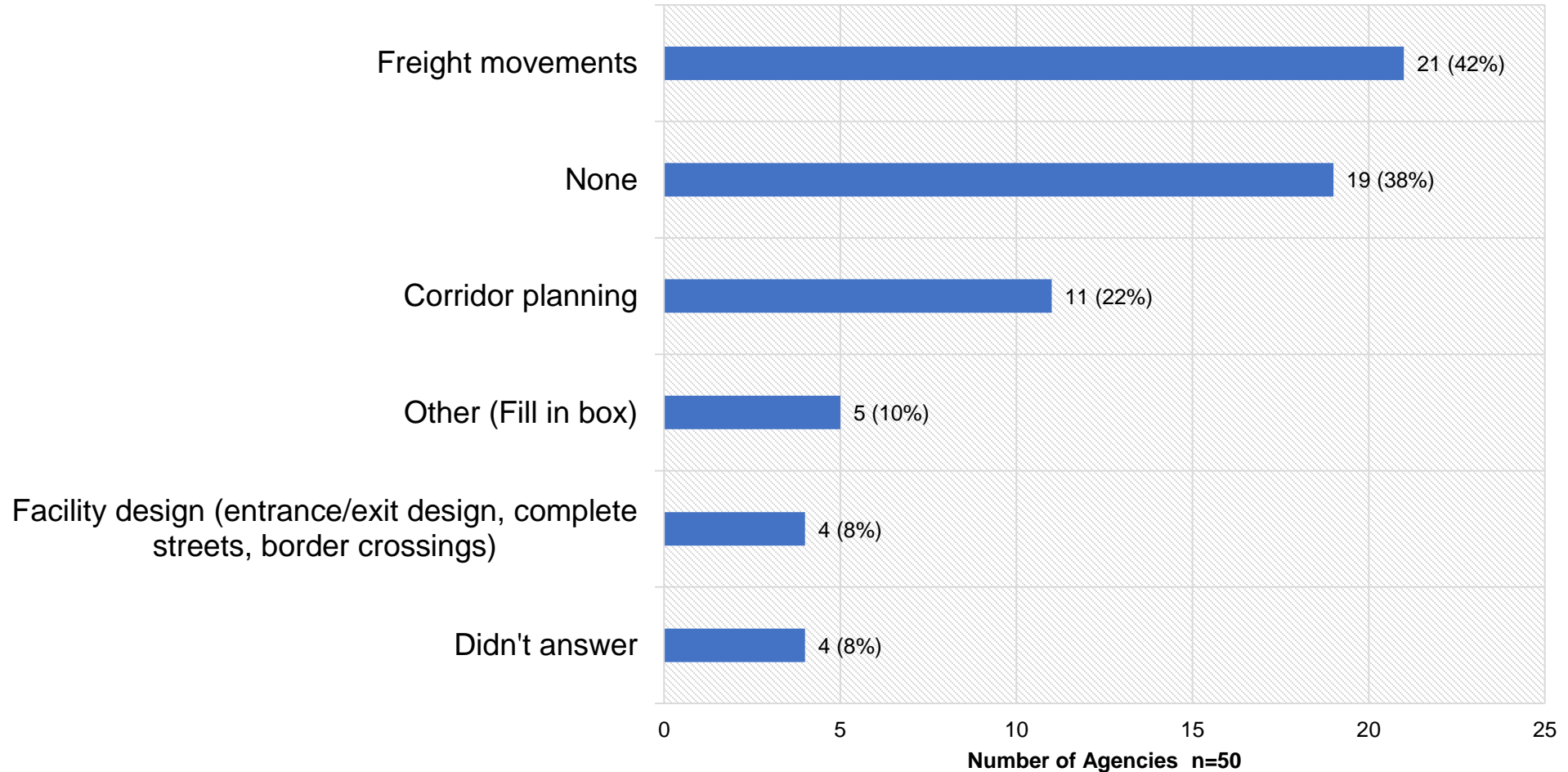
State of the Practice Survey

Do you use WIM data in bridge applications?



State of the Practice Survey

Do you use WIM data in freight planning or logistics?



Survey

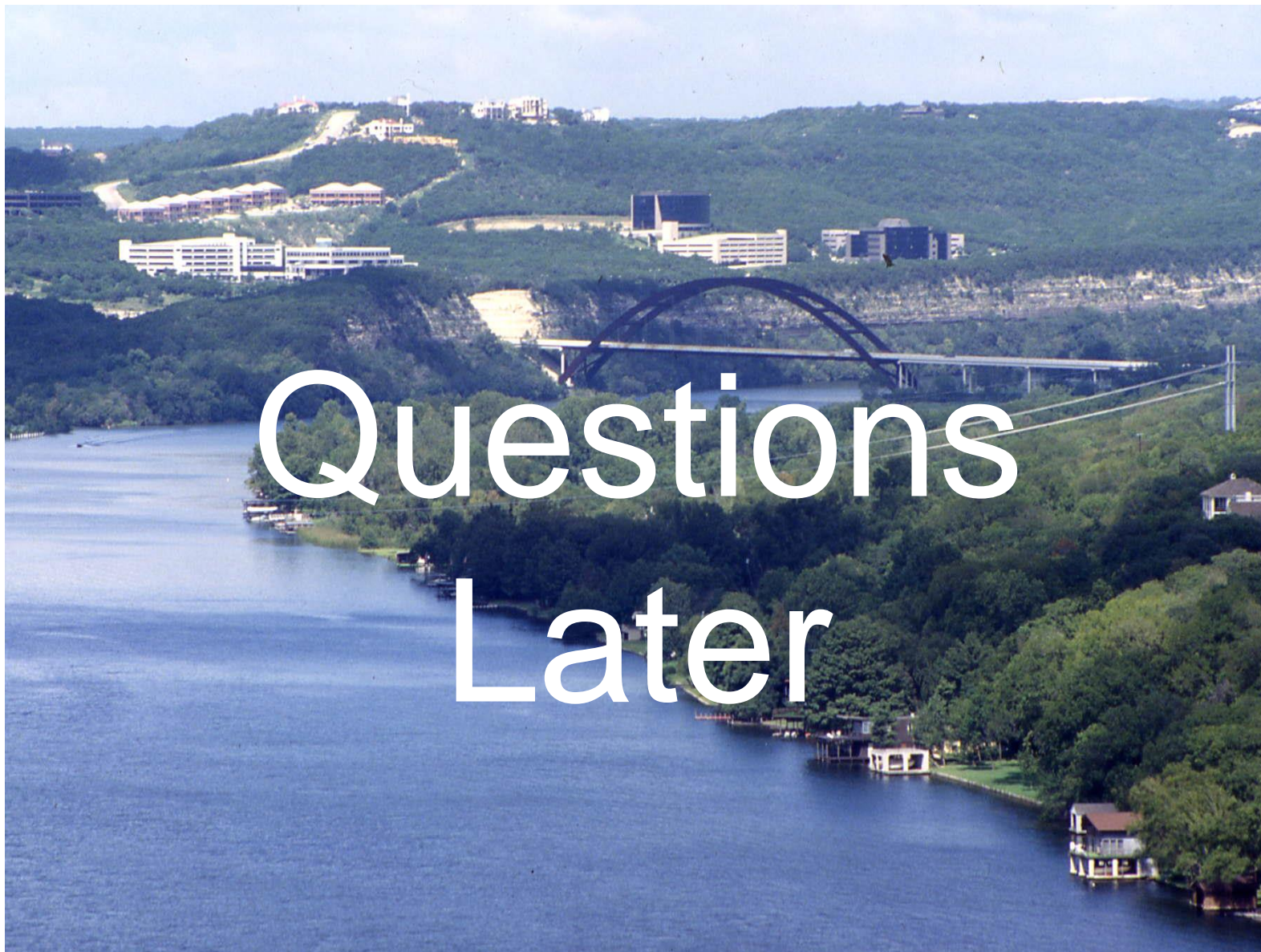
- Calibration is a concern
- One agency is actively using WIM data for freight planning. Others are interested.
- May be opportunities to augment or even supplant WIM data with purchased freight and commodity data available from data aggregation and analytics (Big Data) companies.
- To obtain useful data, agencies need a sufficiently large WIM network, with enough stations.
- DOT staff collecting WIM data are sometimes unsure what is done with the data by others in the agency, and the DOT staff who could use the data do not know it is available or how it could help them.

Interviews - Caltrans, MnDOT, FDOT, Maryland DOT, and TDOT

- FDOT working with the U of F to use AI with WIM and image data to understand freight flows. This includes commodity type and load (empty, partial, and full trucks). This is an innovative use of the data that could benefit all DOTs.
- Caltrans is working on research with the University of California at Irvine to study whether more data can be collected using inductive loops to possibly study freight flows by truck type.

Results and Conclusions: Knowledge Gaps and Research Areas

- Calibration.
- Optimize data collection.
- Visualization techniques may help users connect data across an agency. More research is needed to show the various internal divisions within transportation agencies the data and how it fits together to inform better decisions.
- Can additional databases can be acquired and used in freight planning, as well as the application of data mining and AI analysis of current data from WIM and other data collection sensors in a DOT's network.



Questions Later