

# National State of Practice on Local Road Asset Management

Pete Torola PE, Research Engineer  
Michigan Technological University



# Agenda

- Goals
- Methods
- Summary of Findings
  - Statewide Champions
  - Peer States
  - Lessons Learned
  - Individual Scoring Measures

## Local Road Asset Management State of Practice

### Project Report

January 18, 2023

Peter Torola, Research Engineer  
Center for Technology & Training



Michigan Tech  
Civil, Environmental, and  
Geospatial Engineering

# Goal of the Study

- Determine national state of practice
- Incentives and directives for adoption
- Find best practices and lessons learned
- Identify Michigan peers
- What could benefit Michigan?



# Methods of the Study

# Data Collection

## Method 1: Traditional literature review

### Primary Terms

borough	pavement condition index	road asset management
city	pavement condition data	road guide
county	pavement guide	road manual
engineer conference	pavement management	road plan
local agency asset management	pavement manual	road report
maintenance program	pavement plan	town
maintenance system	pavement rating	transportation asset management
parish	pavement report	transportation conference
PASER	PCI	transportation plan

### Secondary Terms

capital improvement plan	capital transportation program
capital improvement program	comprehensive plan

# Data Collection

Method 2: Survey of LTAP centers

Method 3: Web scraper

The image shows a screenshot of a web search interface and a browser window. The search interface on the left is titled "AM Web Search" and includes several filter sections: "Filters" with sub-sections for "States" (Michigan), "Desired Info" (General Asset Management?), and "Categories" (None). There are also checkboxes for search results and a "Show invalid" option. Below the filters is a "URL Search" field with a "Go" button. A list of search results is visible at the bottom, with the top result highlighted in green: <https://ltap.newapple.trans.mtu.edu/sites/ltap/files/>. The browser window on the right shows the URL <https://ltap.newapple.trans.mtu.edu/sites/ltap/files/> and displays the title "Asset Management Guide for Local Agencies in Michigan" with a "Michigan Transportation Asset Management Council" logo.

AM Web Search

**Filters**

**States**

Michigan

**Desired Info**

General Asset Management?

**Categories**

None

Show invalid

**URL Search**

Go

25 <https://ltap.newapple.trans.mtu.edu/sites/ltap/files/>

24 <https://rosap.nrl.bts.gov/view/dot/6>

23 <https://www.mountain-plains.org/re>

23 <https://www.ctt.mtu.edu/sites/defa>

23 <https://www.mdt.mt.gov/publicatio>

23 <https://www.contractscounsel.com/>

22 <https://www.dot.state.mn.us/resea>

22 <https://idot.illinois.gov/Assets/uploa>

20 <https://Fau.digital.flvc.org/islandora>

19 <https://www.asphaltindiana.org/doc>

19 <https://www.slideserve.com/allegra>

https://ltap.newapple.trans.mtu.edu/sites/ltap/files/ Go < > ✓

**Asset Management Guide for Local Agencies in Michigan**

sponsored by  
Michigan Transportation Asset Management Council

**Stats**

States Michigan : 72

category

# Documents Identified

- 12,000 documents identified
- Over 6,000 reviewed
- 223 Sources used in report: <https://tinyurl.com/ye644hh5>



	A	B	C	D	
1	<b>State of Practice Local Road Asset Management Project Report Resources</b>				
2	Filter count	223			
3					
4	Primary State	Resource Title	Author	URL	Y
5	Alabama	A Pavement Management System for County Roads in the State of Alabama	Wilson, Jeff; Anderson, Michael David	<a href="https://trid.trb.org/view/804985">https://trid.trb.org/view/804985</a>	2006
6	Alabama	Pavement Management Plan The City of Irondale	Sain Associates	<a href="https://cityofirondaleal.gov/pavement-management-plan/">https://cityofirondaleal.gov/pavement-management-plan/</a>	2017
7	Alabama	Code of Alabama 1975: Section 23-8-8: Deposits and use of funds: audit: annual plan	Alabama Legislature	<a href="http://alisondb.legislature.state.al.us/alison/CodeOfAlabama/1975/23-8-8.htm">http://alisondb.legislature.state.al.us/alison/CodeOfAlabama/1975/23-8-8.htm</a>	2019
8	Alabama	Asphalt Pavement Preservation	Vargas, Adriana; Walbeck, Travis	<a href="https://eng.auburn.edu/atap/files/2021-dec02-asphalt-pavement-preservation-brochure.pdf">https://eng.auburn.edu/atap/files/2021-dec02-asphalt-pavement-preservation-brochure.pdf</a>	2021
9	Arizona	Pavement Condition Report	Street Transportation Department, City of Phoenix	<a href="https://www.phoenix.gov/streetssite/Documents/PavementConditionReport_Final-201104.pdf">https://www.phoenix.gov/streetssite/Documents/PavementConditionReport_Final-201104.pdf</a>	2020
10	Arkansas	REQUEST FOR PROPOSAL for Pavement Distress Collection Services	Pulaski County Purchasing Department	<a href="https://pulaskicounty.net/wp-content/uploads/2015/06/RFP-17-010-Pavement-Distress-Collection-Services.pdf">https://pulaskicounty.net/wp-content/uploads/2015/06/RFP-17-010-Pavement-Distress-Collection-Services.pdf</a>	2017
11	Arkansas	CTTP: Technology Transfer: Pavement Management	University of Arkansas CTP	<a href="https://cttp.uark.edu/technology-transfer/pavement-management.php">https://cttp.uark.edu/technology-transfer/pavement-management.php</a>	2017



# Fourteen Data Collection Measures

Champion?

Incentives?

Other  
Assets?

Best  
Practices?

Lessons  
Learned?

TAM System?

Rating  
System?

Requirements?

Funding?

LTAP  
Involvement?

Tools?

Connections  
to Michigan?

Amount of  
Adoption?

What was  
their  
perspective?



# Scored the Data Collection Measures on:

Unified rating or TAM system

Have data

Mix of Fixes approach

Preventive maintenance

Have a written plan

Assess needs

Other road assets

Use ratings to determine fix

~~Evaluate ESL~~

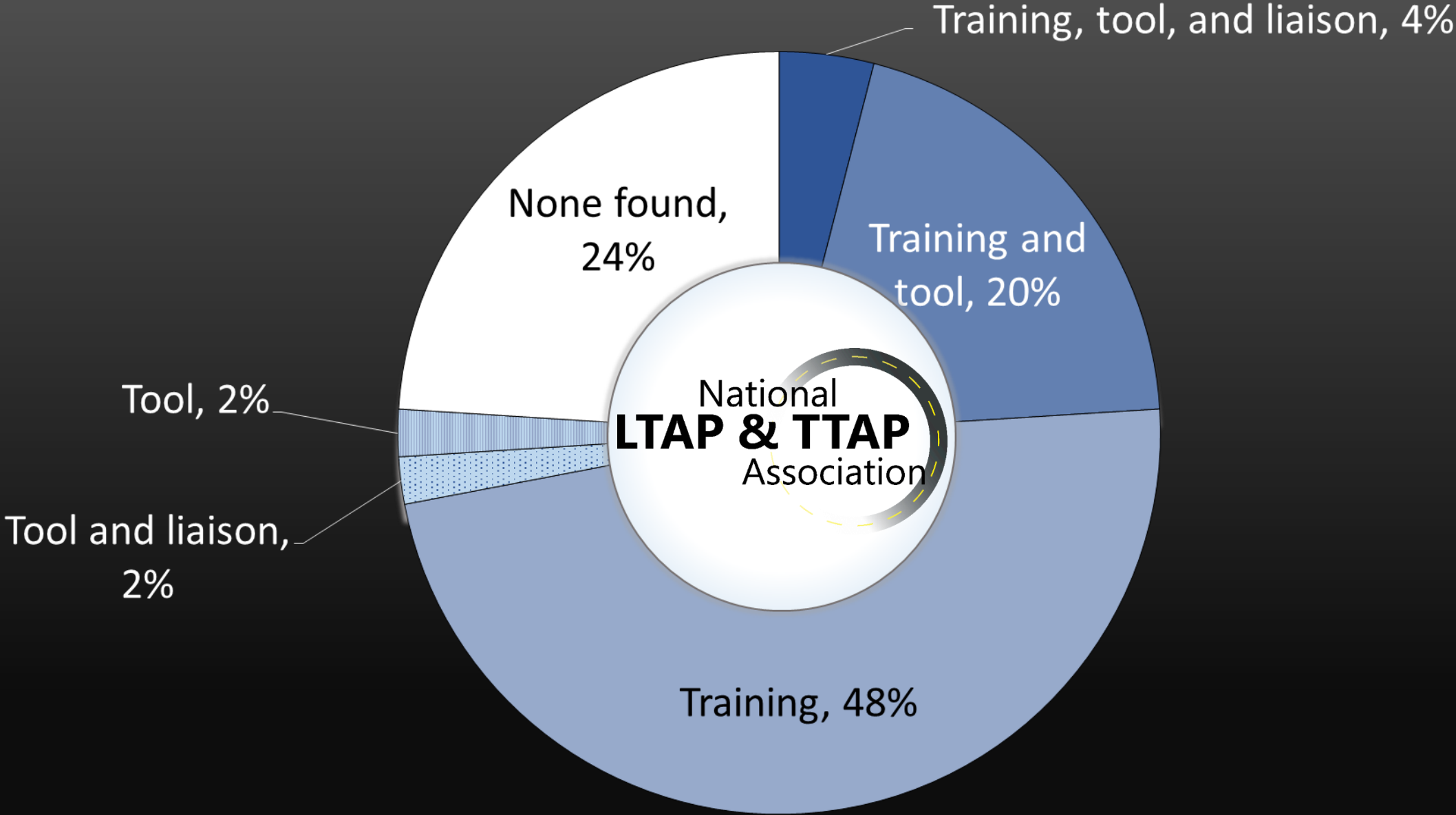
# Study Findings

## Statewide Champions

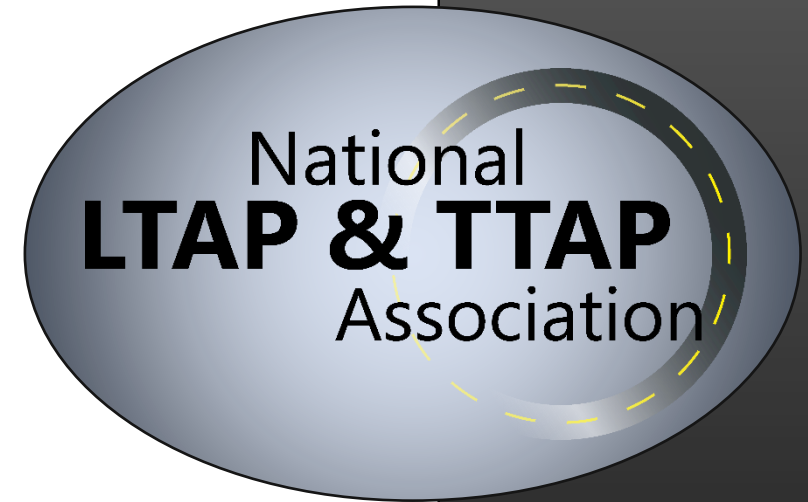
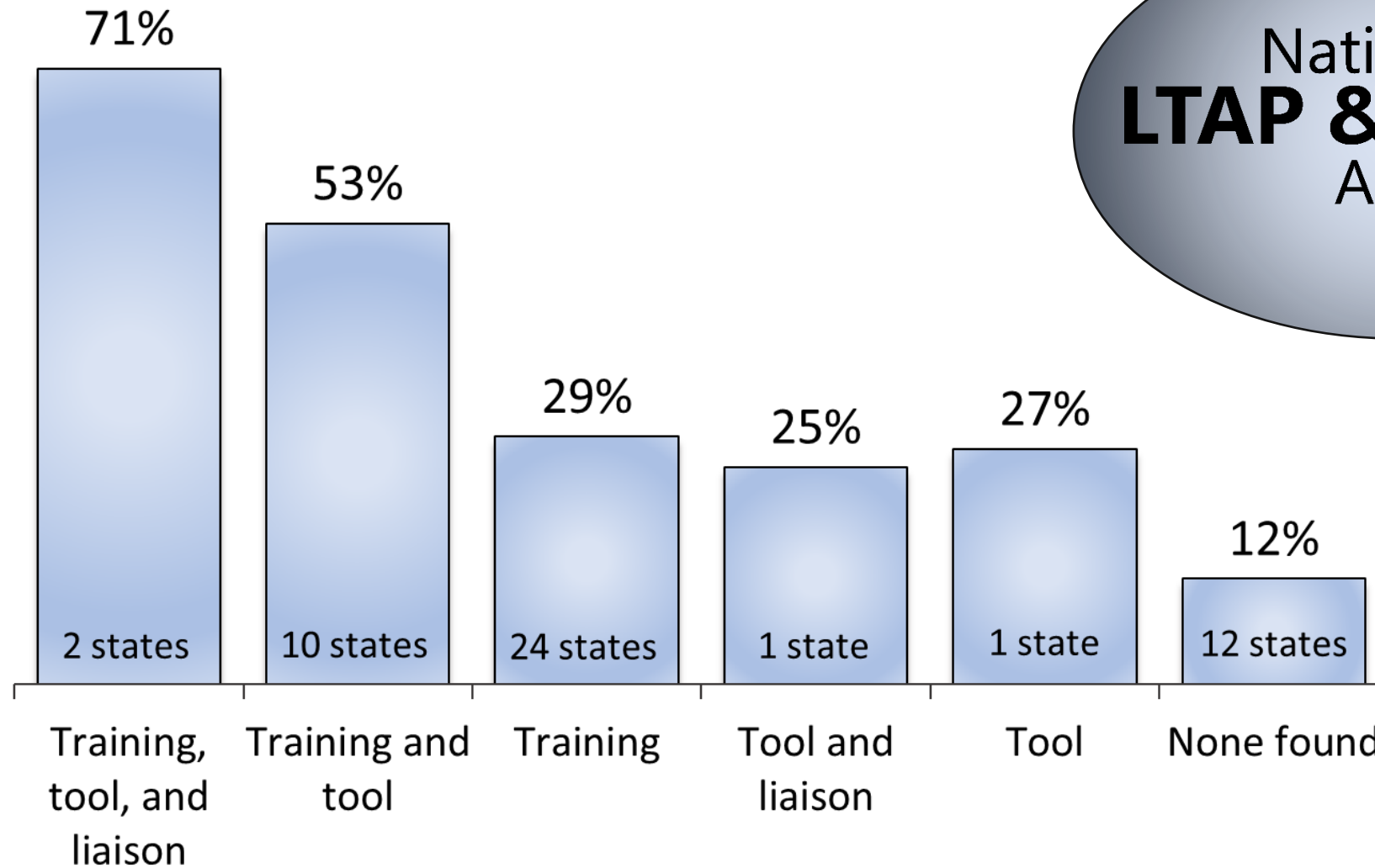
# Champions and Liaisons

- Statewide Champion – a program, board, or association who provides standardized asset management education, resources, and tools to agencies within the state
- Liaison – a council, board, or association working on behalf of legislative bodies

# LTAP Statewide Local Road AM Involvement



# Average Overall Local Road AM Score

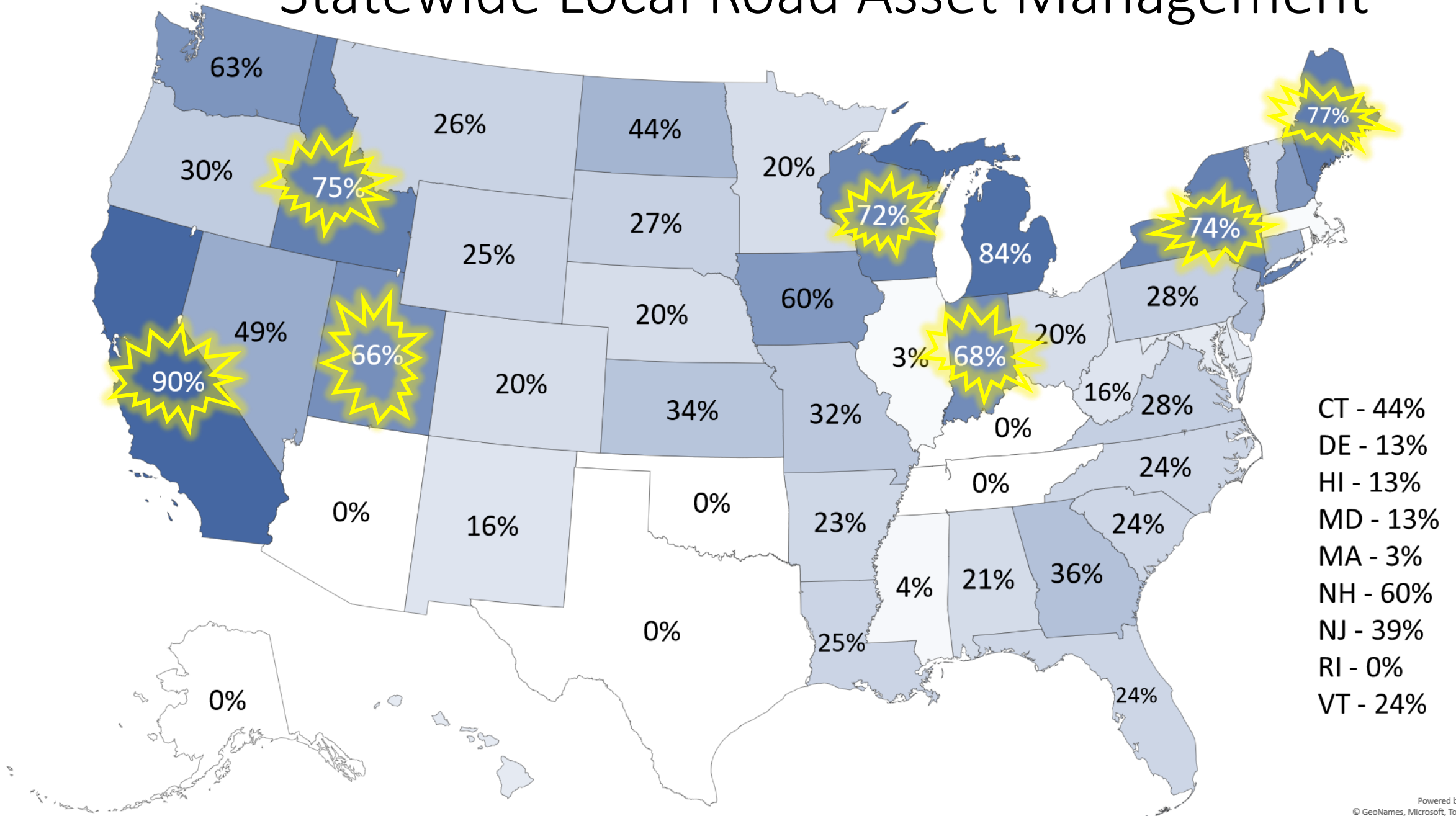


State LTAP local asset management involvement:

Study Findings

Peer States

# Statewide Local Road Asset Management



CT - 44%  
DE - 13%  
HI - 13%  
MD - 13%  
MA - 3%  
NH - 60%  
NJ - 39%  
RI - 0%  
VT - 24%

# Michigan Scoring

Unified rating system

Collects local road data\*

Mix of fixes trainings and tools

Preventative maintenance trainings and tools

Written asset management plan

Needs assessment\*

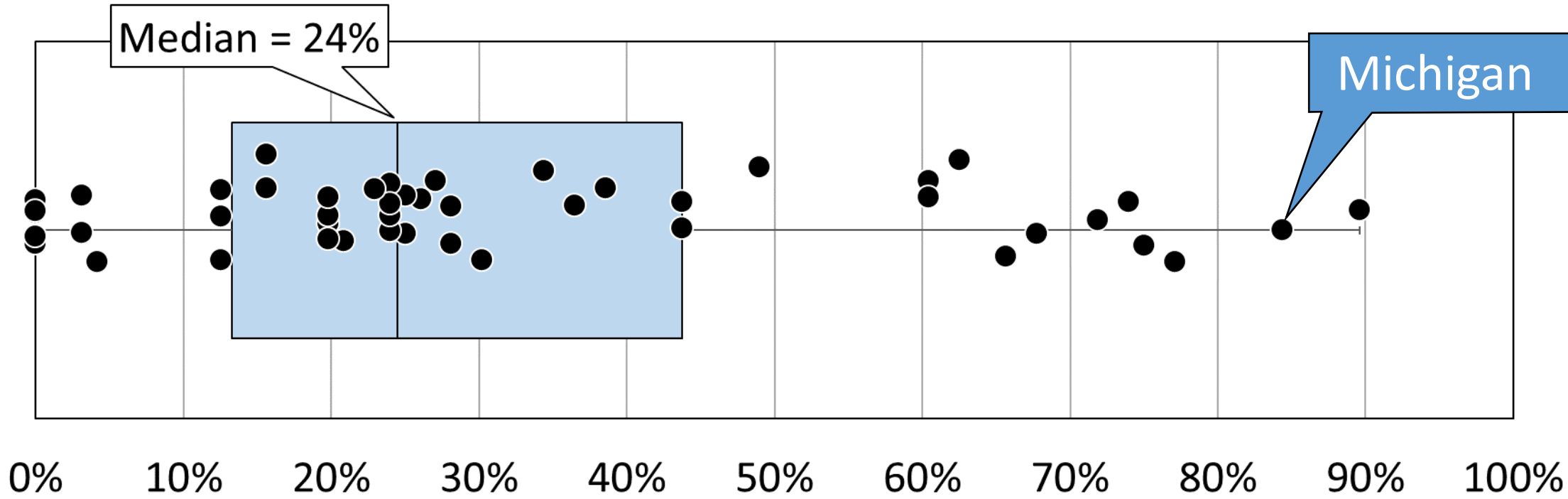
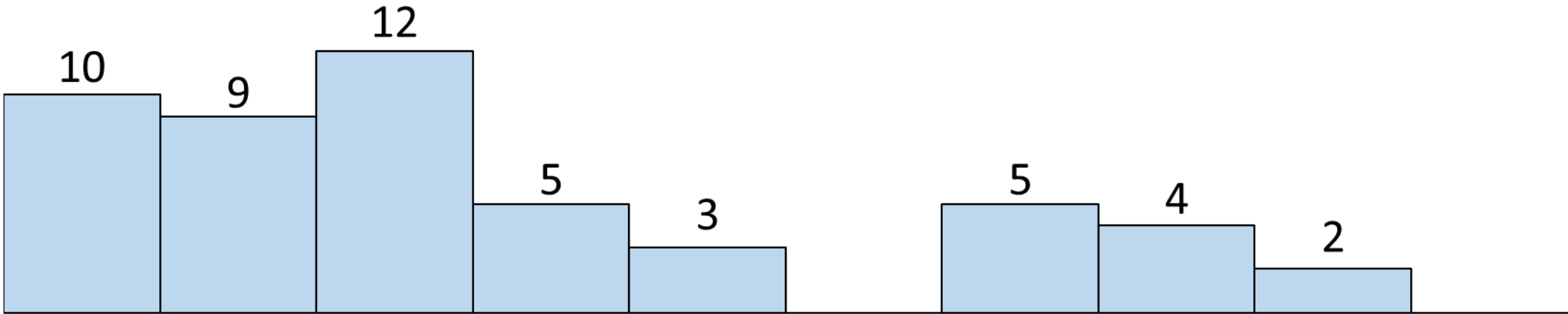
Other road assets\*

Use ratings to determine fix\*





# Overall Score



## Peer State: California

- 98% of local roads are in a pavement management system
- MPO's drive system with oversight committee
- Unilateral road data collection (with or without agency)
- Have dedicated funding for roads exceeding a specific PCI



# Peer State: Maine

- LTAP provides tools
- Initial data collection assistance
- RSMS
- Manual simplified PCI



# Peer State: Idaho

- Very Similar to TAMC
- Council is established by law
- Use software developed externally
- Encourage PASER



# Peer State: New York

- LTAP provides tools and training
- CAMP-RS uses interns
- Culverts and Signs can be collected
- Manual simplified PCI



# Peer State: Wisconsin

- Created PASER
- Mandatory data collection and reporting
- Data is not shared publicly





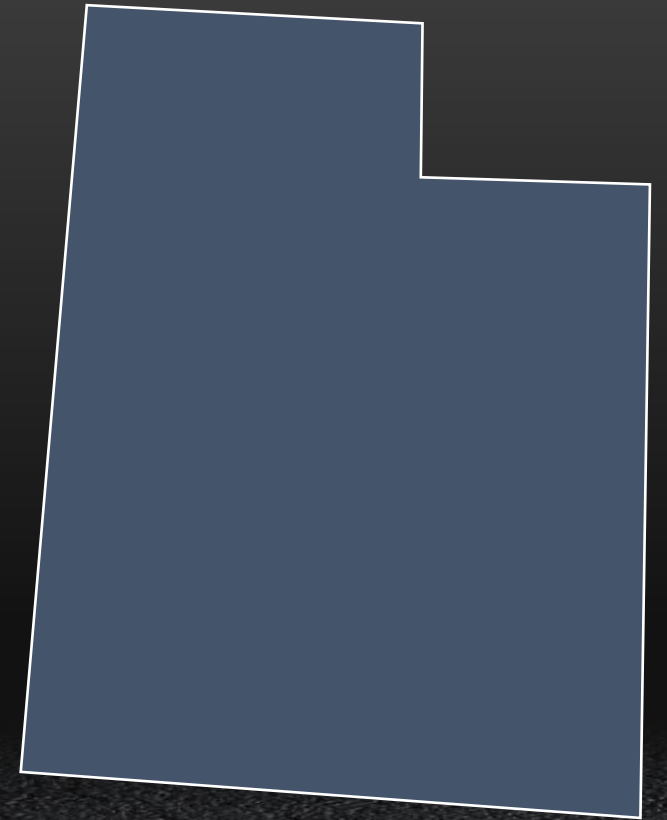
# Peer State: Indiana

- Learned from TAMC
- Has dedicated funding for communities with TAMP
- Local Level of Effort
- PASER is most prevalent
- Large cities use PCI



# Peer State: Utah

- LTAP created TAMS
- Interns collect data for LTAP
- RSL is recommended
- Visual inspection
- Can attach photos to segments





# Study Findings

Lessons Learned and Best Practices

# Lessons Learned

CO

- Clearly define need
- Need consistent Data Collection

GA

- Nominate or elect a TAM Champion for larger agencies
- Establish TAM Steering Committee
- Organize regular meetings and reporting requirements

ID

- Involve agency staff

NH

- Difficult to switch systems

# Minnesota 2050 Survey

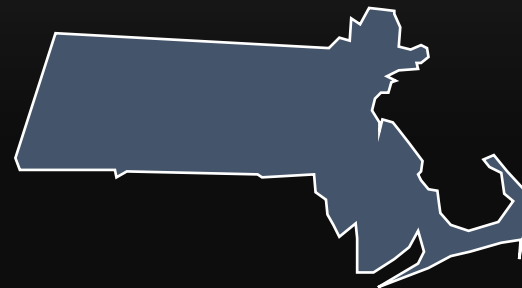
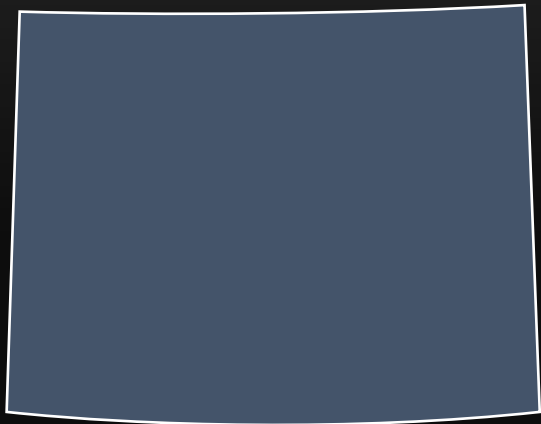
<http://www.buildamerica.gov/building-research/research-library/minn2050-state-infrastructure>

## Recommendations

- **Make resources available**, especially for smaller cities and smaller counties, to implement an asset management system.
- **Host conferences, training sessions, webinars**, or other forms of education to help those who want to begin or strengthen asset management practices in their jurisdictions.
- Consider **advocating for the use of a few select, easy-to-use asset management systems**, rather than many different systems, to promote consistency, collaboration, and capacity across jurisdictions.
- Facilitate the **building of relationships with neighboring jurisdictions** and consortiums to build regional capacity for using asset management practices and systems.
- Explore public policy solutions that could **make asset management a standard practice** for every jurisdiction.
- More research is needed to understand how to best **support Minnesota's cities, counties, and state agencies** in their use of asset management practices and systems.

# Other interesting findings

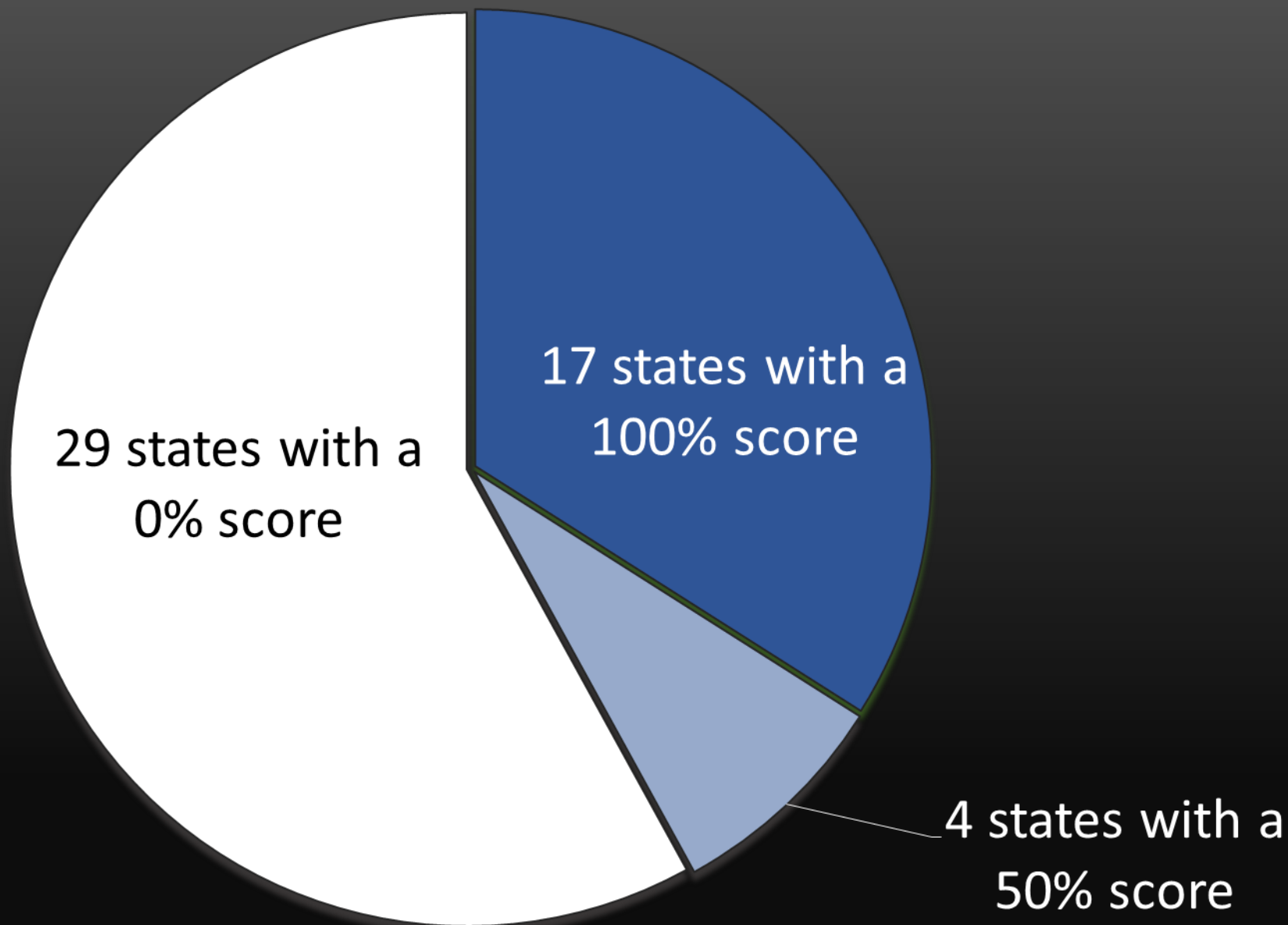
- Wyoming counties use DOT contract
- North Dakota needs assessments
- Massachusetts and Ohio are conducting surveys



# Study Findings

## Individual Scoring Measures

# Unified Rating or AM System Scoring Summary



# State Practices: Unified Systems

## Rating Systems

7 – Multiple

4 – PASER

3 – modified PCI

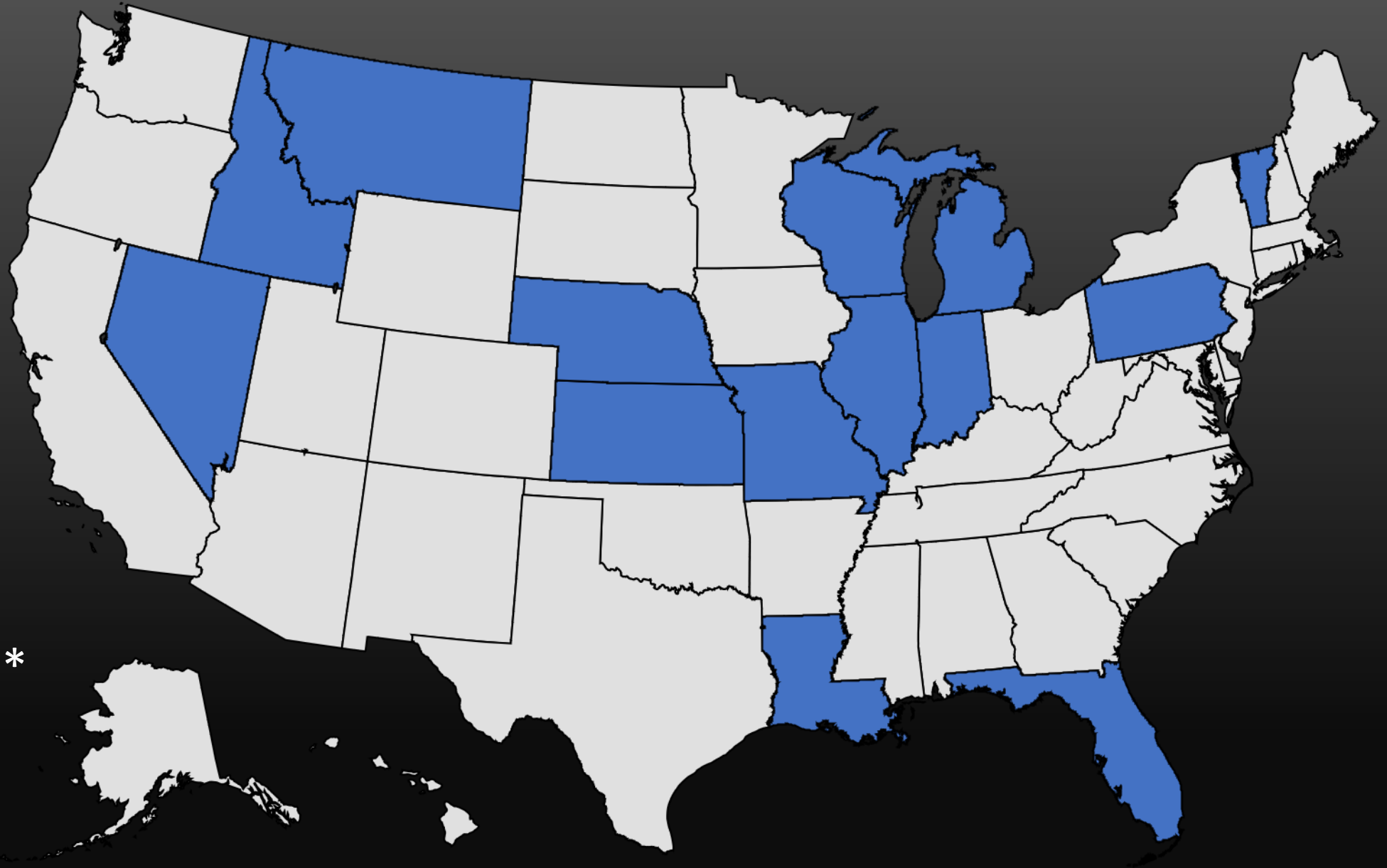
2 – PCI

1 – IRI

33 – None

# States that use PASER

- Florida\*
- Idaho
- Illinois\*
- Indiana
- Kansas
- Louisiana
- Michigan
- Missouri
- Montana
- Nebraska\*
- Nevada
- Pennsylvania\*
- Vermont\*
- Wisconsin





# State Practices: Unified Systems

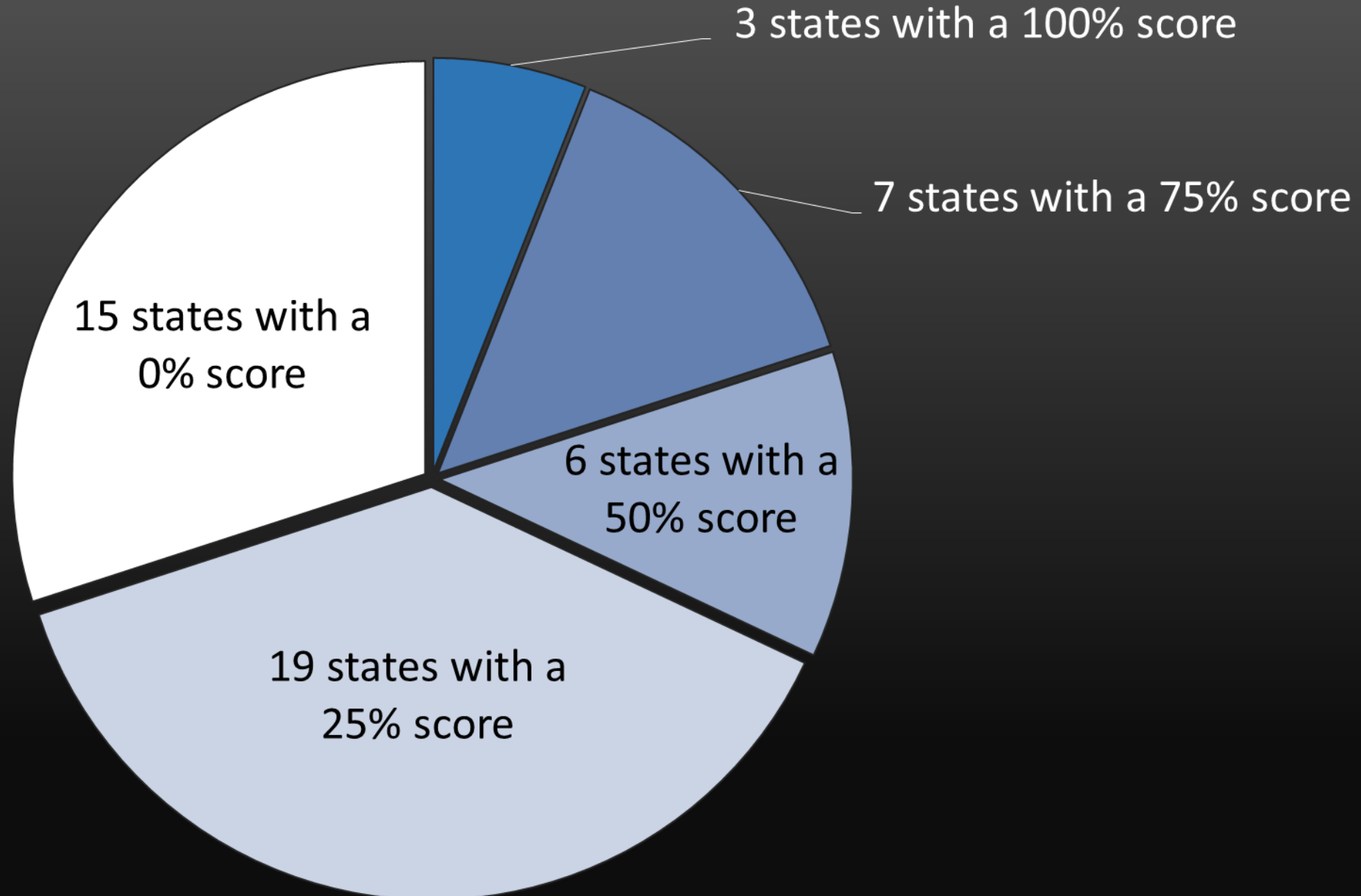
## AM Systems

- 9 – Created own system
- 3 – Purchased system

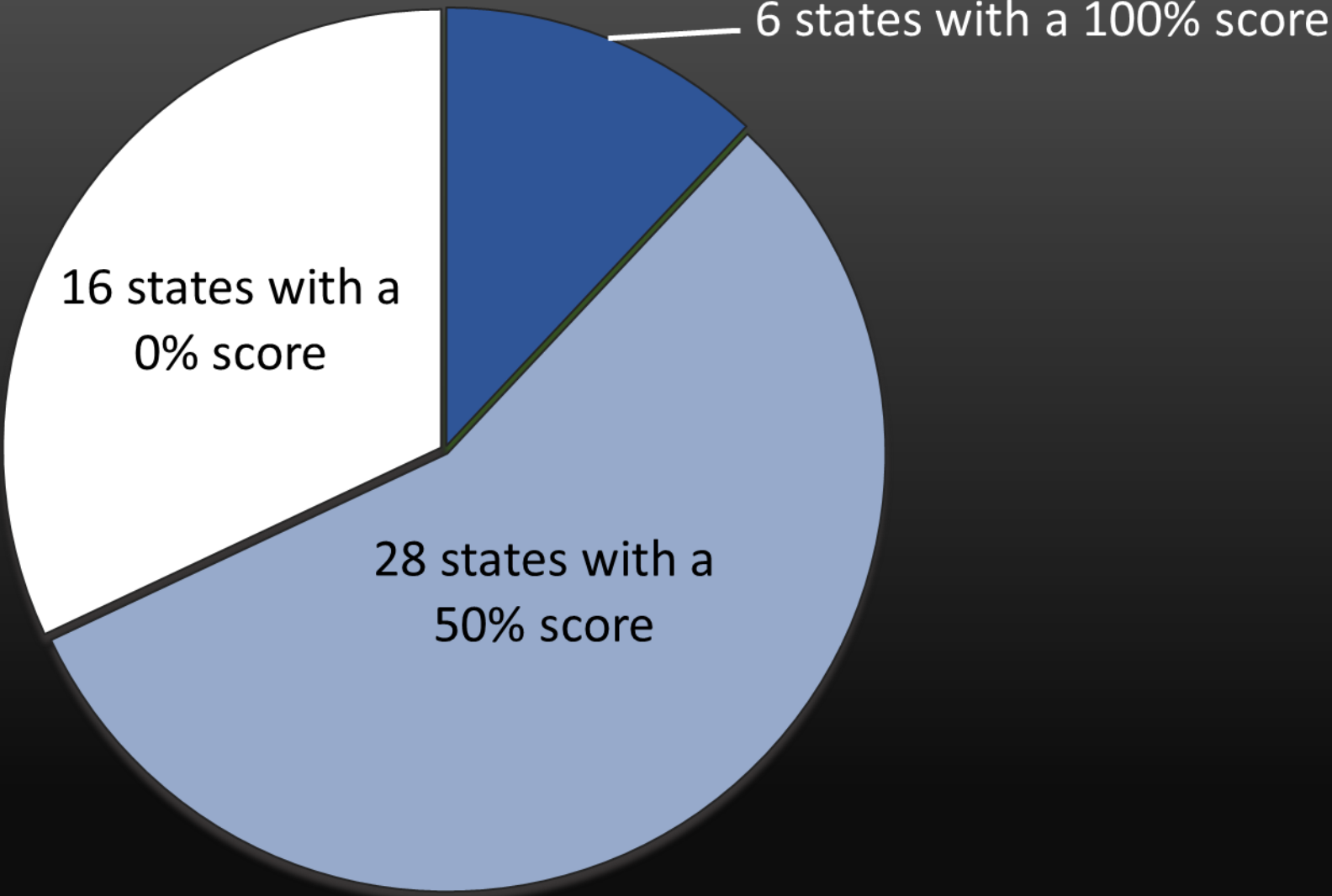
### Geographic Roadway Inventory Tool (GRIT)



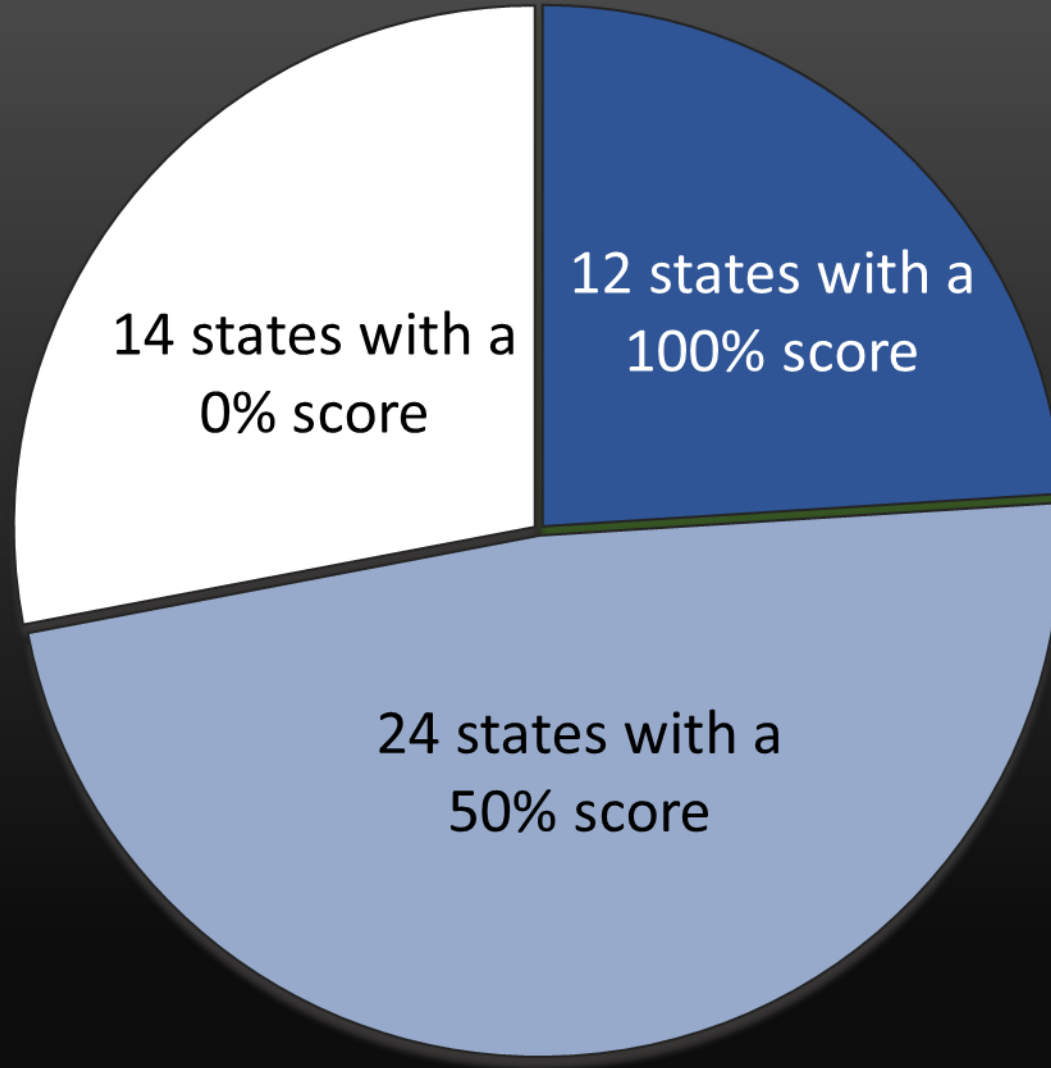
# Have Data Scoring Summary



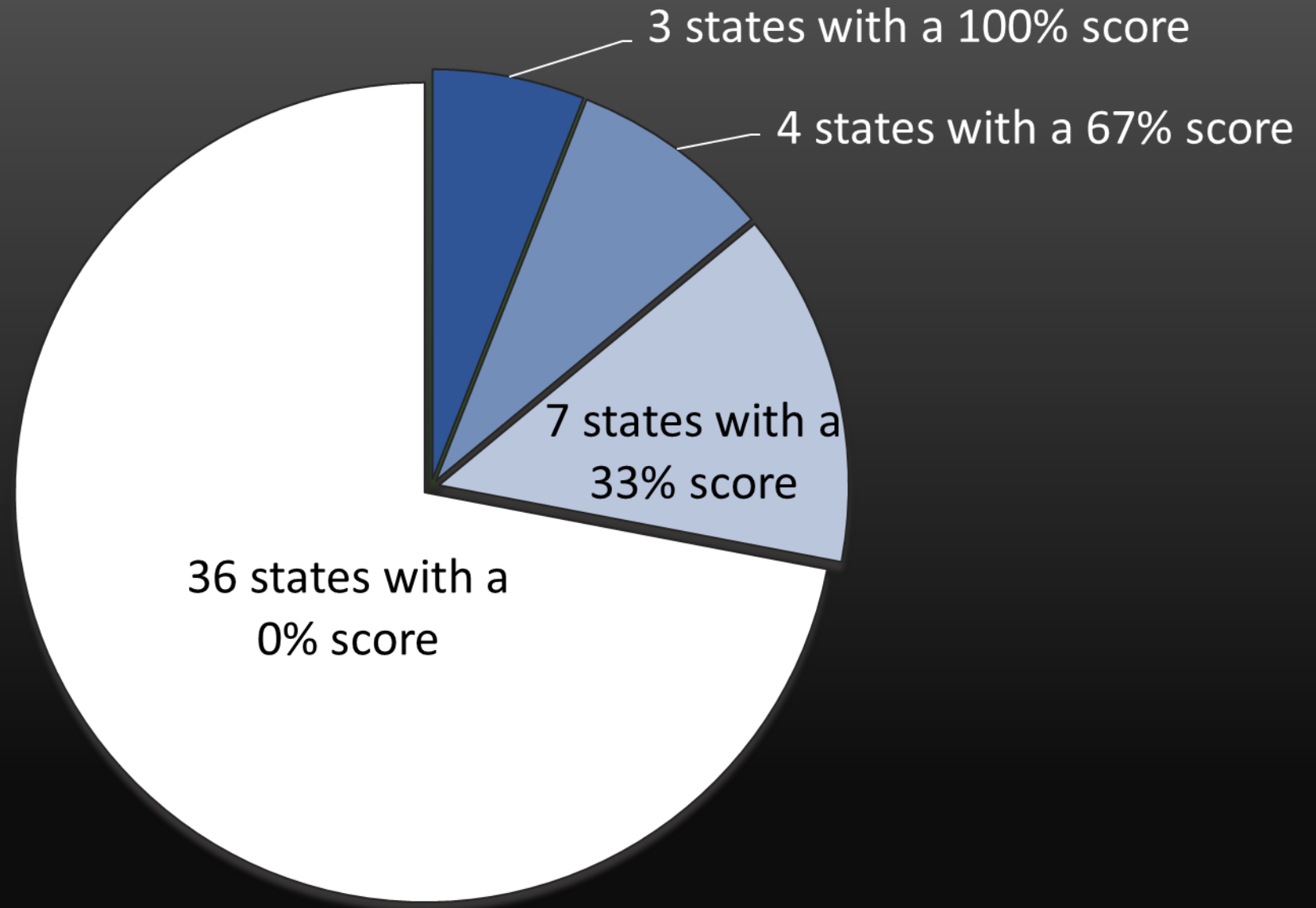
# Mix of Fixes Approach Scoring Summary



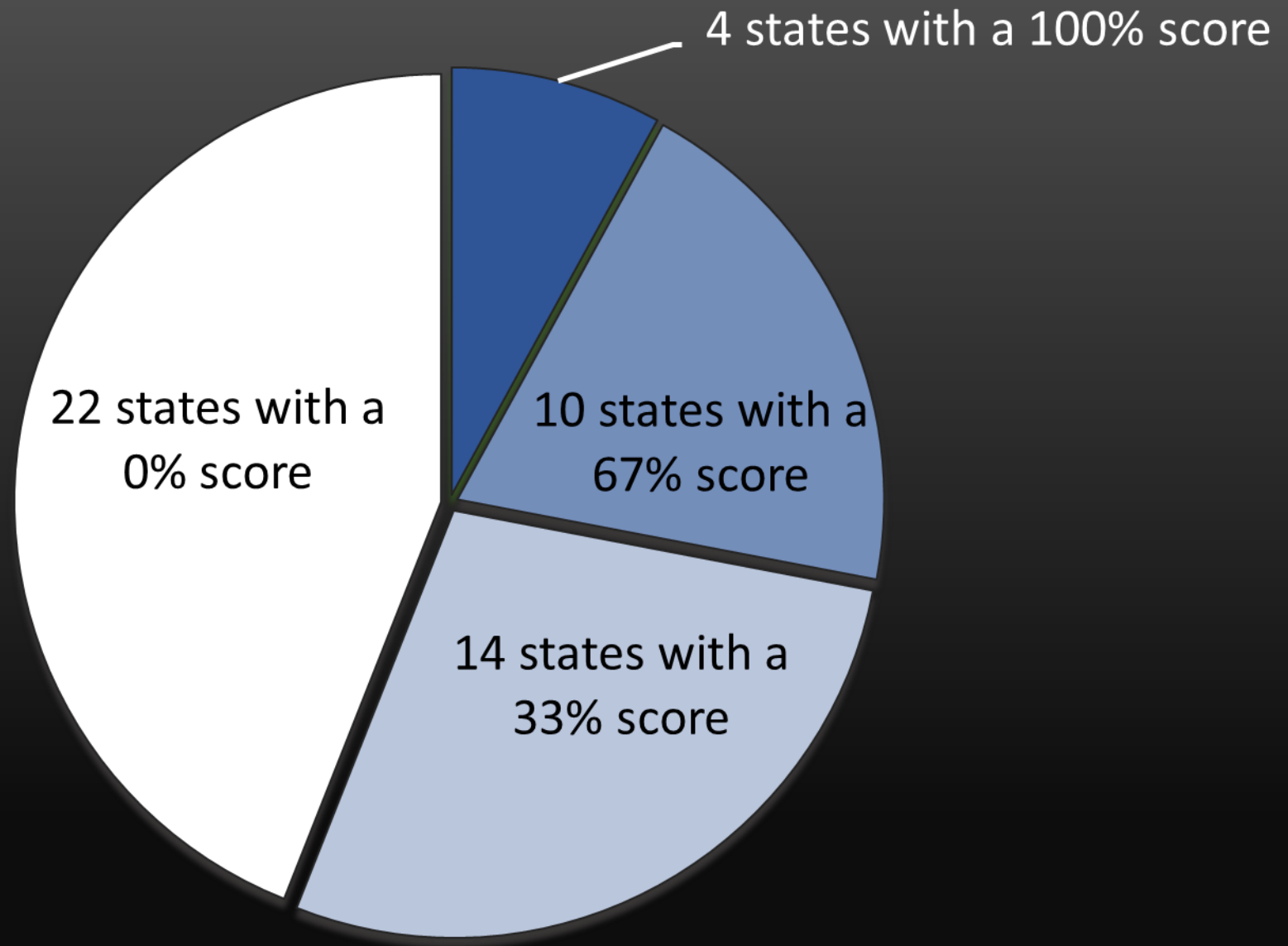
# Preventive Maintenance Scoring Summary



# Have a Written Plan Scoring Summary

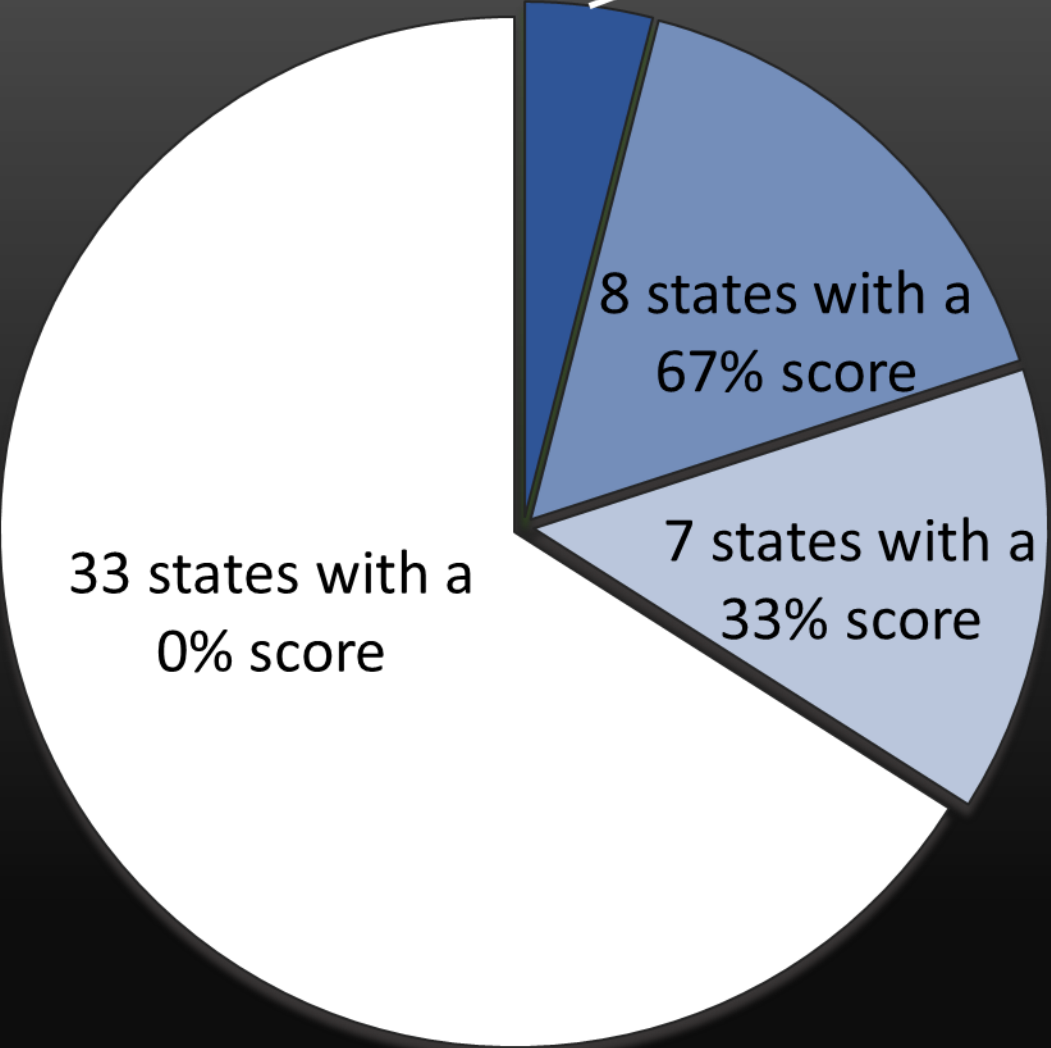


# Assess Needs Scoring Summary



# Other Assets Scoring Summary

2 states with a 100% score



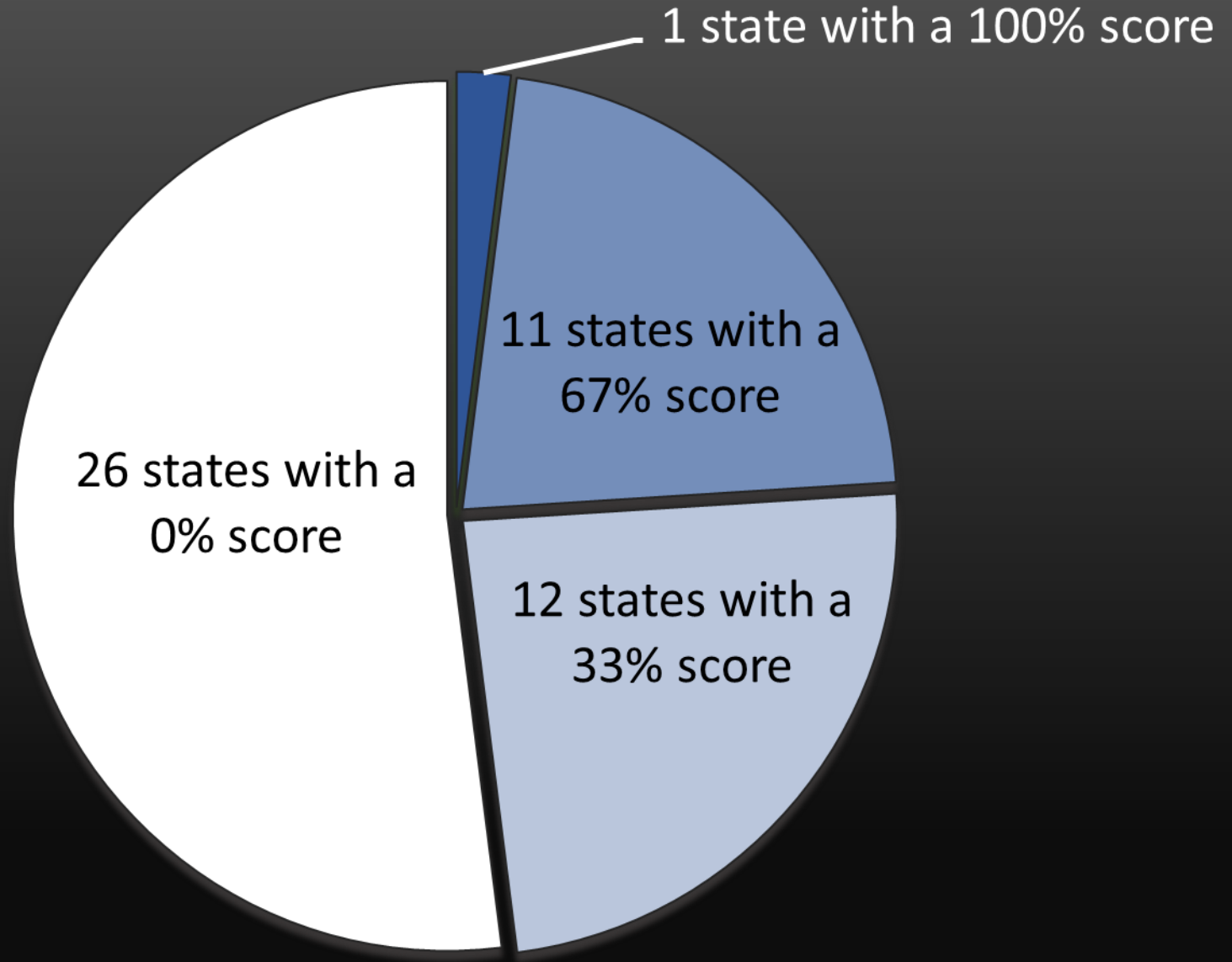
8 states with a 67% score

7 states with a 33% score

33 states with a 0% score

- Signs
- Culverts
- Signals
- Imagery
- Urban Features

# Use Ratings to Determine Fix Scoring Summary





# Final Thoughts

Keep improving TAM practices

Keep educating new staff

Keep moving foreword together!



# Final Report

[www.michigan.gov/mic/tamc](http://www.michigan.gov/mic/tamc)

TAMC News and Upcoming Events

[pjtorola@mtu.edu](mailto:pjtorola@mtu.edu)

