Michigan Transportation Asset Management Council

13th Annual Michigan Local Agency Transportation Asset Management Implementation Survey Report

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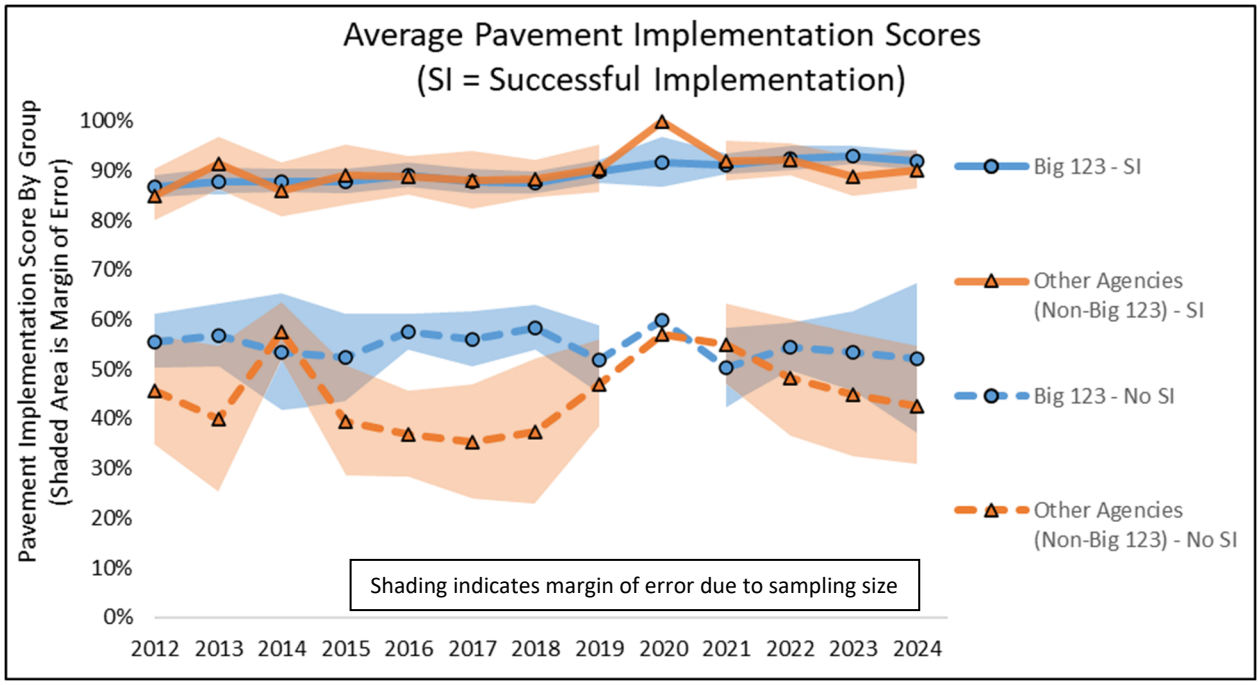
EXECUTIVE SUMMARY

Each year, the Michigan Transportation Asset Management Council (TAMC) conducts a survey to gauge the success of asset management implementation by Michigan's local road- and bridge-owning agencies. This survey measures implementation practices on pavements and bridges independently in the following categories: policy decisions, identification of candidate projects and treatments, effective data collection, and use of pavement management results. The TAMC has set a target score for the survey responses of 70% or higher for the respondent to be considered "successfully implementing" asset management principles. This target percentage sets a high bar for local agencies and indicates the across-the-board implementation of best management practices. It should be noted that, of the responding local agencies that did not achieve a 70% score (i.e., considered "successfully implementing") in 2024, all but one agency is engaging in asset management practices to some extent.

Participants receive the implementation survey while attending Pavement Surface Evaluation and Rating (PASER) Training sessions and the Inventory-Based Rating (IBR) System™ Training sessions, which local road-owning agencies are required to attend. In 2024, surveys were distributed at the four virtual PASER Training sessions and two virtual IBR Training sessions. Surveys are filtered so data reflects one set of responses per agency with the most knowledgeable person in the survey area (i.e., pavement, bridge) responding.

For the 2024 pavement portion of the survey, 102 surveys provided usable implementation information. These surveys indicate that 87% of responding local agencies were "successfully implementing" asset management principles on pavement assets (according to TAMC's target). The 87% successful implementation rate for all local agencies represents an increase of 6% from last year. The pavement portion exhibited a margin of error of 3.7%, which is lower than the historical average of 4.0%. In 2024, 70 of the "Big 123" agencies participated in the survey. The "Big 123" local agencies along with the Michigan Department of Transportation own over 92% of the public road system in Michigan and have the greatest influence on the transportation network.



Historically, the Big 123 agencies that are above the 70% threshold have had very stable and steady average scores while smaller local agencies have been more volatile based on sample size. The chart above compares the historical average of the scores above and below 70% successful implementation for the two agency types.

For the 2024 bridge portion of the survey, 25 surveys provided usable implementation information. These surveys suggested that 80% of responding local agencies were "successfully implementing" asset management principles. This is a 5% increase in the rate of successful implementation from 2023, which had a rate of 75%. The bridge portion exhibited a margin of error of 8.6%, which is lower than the historical average of 9.2%. There were two small agencies that participated in the bridge survey.

The results from the survey are proving to provide an insight into the challenges local road- and bridge-owning agencies face in managing their assets. It is recommended to keep the survey questions the same for 2025 so that results are comparable to historical data.

INTRODUCTION

Each year, the Michigan Transportation Asset Management Council (TAMC) conducts an annual survey—the "Local Agency Asset Management Survey"—of Michigan local road- and bridge-owning agencies' asset management implementation. The survey consists of 21 questions (Appendix F) that measure implementation of pavement and bridge asset management by Michigan local agencies. Survey questions query background information about the participant (1-3, 15, 20), solicit open-ended feedback for the TAMC (14, 21), assess the implementation of asset management on pavements (4-13), and gauge the use of asset management on bridges (16-19). The survey's design follows guidance from "Asset Management Implementation Survey Recommendation" (Colling & Kueber-Watkins, 2011), a report that recommends using key assessment factors based on the self-assessment chapter of AASHTO's Transportation Asset Management Guide (AASHTO, 2002). These factors are:

- Policy decisions
- Identification of candidate projects and treatments
- Effective data collection
- Use of pavement management results

The intent of the survey is to measure Michigan's local road- and bridge-owning agencies' implementation of asset management principles to provide a year-to-year comparison of results. Over the years, the survey has seen only one change: a new background question, added to the fourth annual survey, that determines whether the person filling out the survey feels qualified to answer the bridge implementation questions. Concerns over varying responses to bridge implementation questions in past years both raised questions over the validity of responses and prompted the addition of this background question. As a result, comparison or trend analyses of the bridge implementation responses between the fourth through thirteenth editions should be more comparable (see *Discussion of Bridge Implementation Results* section).

SURVEY DATA COLLECTION AND FILTERING

Participants completed the online survey after attending the four virtual TAMC-sponsored Pavement Surface Evaluation and Rating (PASER) Training sessions and two of the TAMC-sponsored IBR System™ Training sessions held in 2024. These training sessions provide access to an asset-management-aware population and, to a certain extent, a captive audience; thus, completion of the survey is included as part of the class. Attendees of these compulsory training sessions may vary in occupation, but they possess similar responsibilities for collecting and/or managing pavement condition data (i.e., PASER, Inventory-based Rating System™) for their respective local agencies. They also likely have knowledge of other asset-management-related activities beyond TAMC data collection within their agency. Thus, PASER Training sessions and IBR System™ Training sessions provide the best-known pool for accurately collecting survey data on asset management implementation among represented local agencies. While other options for soliciting survey responses exist, they would not be integrated with a compulsory training event, which ensures a good response rate.

The survey is intended to measure asset management implementation for local road- and bridge-owning agencies. This report does not include data from participants employed at consulting firms, state agencies, or other local agencies that do not own roads (e.g. townships). If the same local agency

provided more than one survey, selecting the duplicate surveys for removal relied on a set of criteria for the pavement questions and a separate set of criteria for the bridge questions. Applying separate filter criteria to the two pools—pavement and bridge—captured the responses of participants who would be the most knowledgeable in answering the pavement and bridge questions, respectively. Filter criteria are as follows:

Pavement Questions Filter

- 1st - Select the duplicate agency surveys that have the least number of unsure or blank answers to questions 4 through 13.
- 2nd - Select the duplicate agency surveys by the expertise level of the respondent. For example, results from a respondent with the title "County Engineer/Manager" would be used rather than an "Engineering Assistant" from the same agency. This relies on the assumption that the higher-ranking respondent has the best understanding of the use of asset management within their agency.
- 3rd - In cases where there is a tie in the previous criteria, the latest survey is used, assuming it reflects the most recent knowledge.

Bridge Questions Filter

- 1st - Remove the agency surveys if they answered "No" to question 20. Starting with the 2016 survey, question 20 asked if the respondent would consider themselves as a qualified person at their agency to answer the bridge questions. Question 15 then filtered out the local agencies with less than five bridges over twenty feet long.
- 2nd - Select the duplicate agency surveys that have the least number of unsure or blank answers to questions 15 through 20.
- 3rd - Select the duplicate agency surveys by the expertise level of the respondent.

RESULTS

Results of Pavement Filtering

Following data filtering, 102 complete surveys provided usable data for pavements. These surveys represent 50 county agencies and 52 city and village agencies (see Figure 1). The county representation (percentage of the pool) decreased by 6%, from 55% in 2023 to 49% in 2024, while the city and village representation (percentage of the pool) increased by 6%, from 45% in 2023 to 51% in 2024.

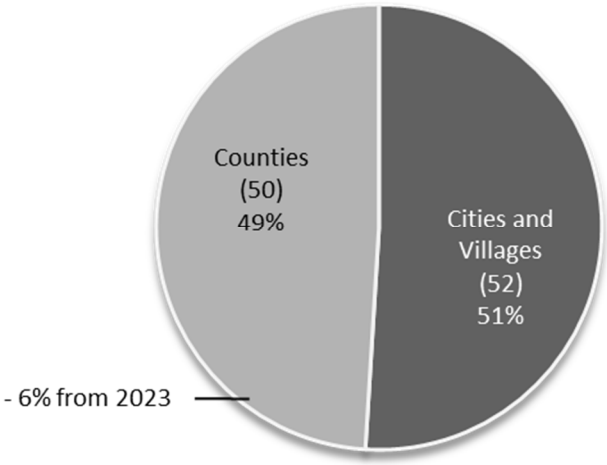


Figure 1: Percentage (and number) of local agencies participating in the 2024 pavement implementation survey data set

The 50 counties and 20 of the cities/villages present in the 2024 pavement response data pool—or 69% of the pavement survey pool—are part of "the Big 123" local road-owning agencies (Figure 2) which, along with the Michigan Department of Transportation, own over 92% of the public road system in Michigan. A full list of the participating Big 123 local agencies is included as Appendix C along with the historical participation rate by agency group. The use of asset management principles by the Big 123 agencies has the greatest impact on the transportation network since they manage the majority of public roads in the state. The high percentage of Big 123 agency respondents indicates that the survey is capturing its intended audience—the major local road-owning agencies in Michigan.

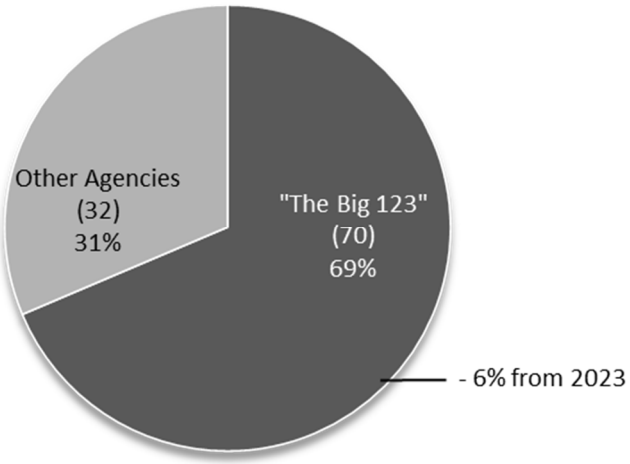


Figure 2: Percentage (and number) of local agencies representing the "Big 123" and "Other Agencies" in the 2024 pavement implementation survey data set. Big 123 representation in the 2024 bridge implementation survey data set was 92%.

Figure 3 charts the participation from counties and from cities and villages (Big 123 and non-Big 123) as well as the Big 123's participation rates for each of the thirteen years of the survey. Counties make up the largest number of the survey responses, which is why the Big 123 participation follows the county participation very closely.

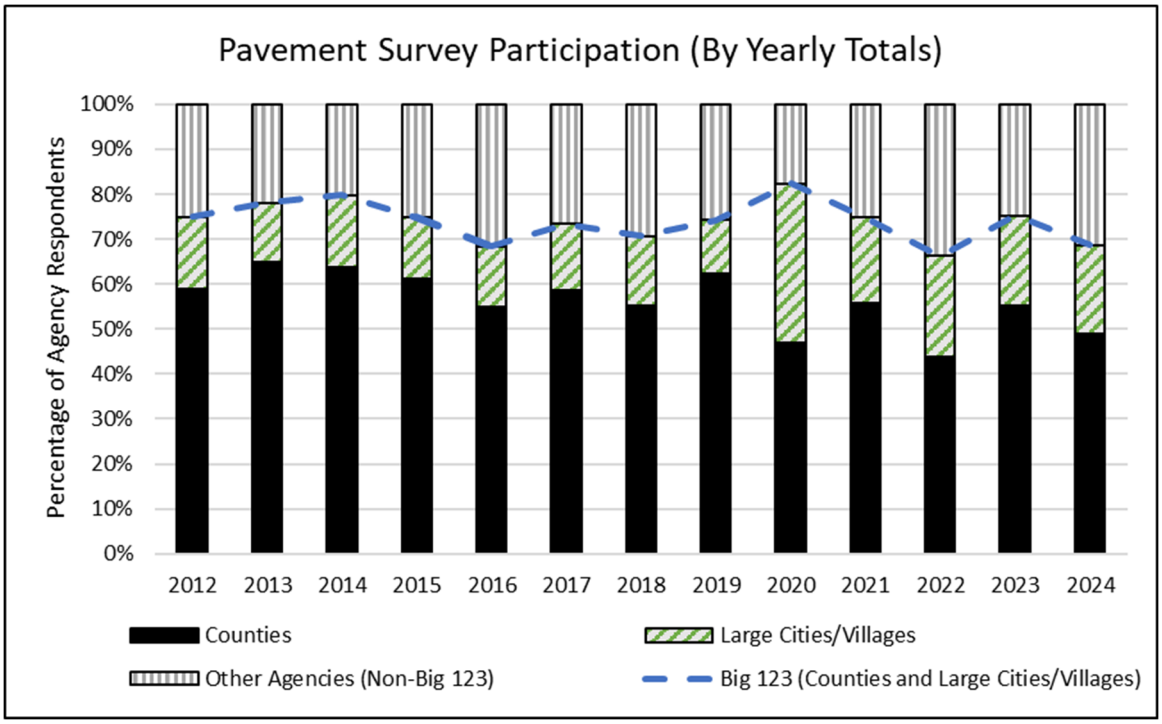


Figure 3: Historical pavement survey responses by agency type

Results of Bridge Filtering

There were 25 complete surveys that provided usable data after applying the bridge data filter. These surveys represent 22 county agencies and 3 city/village agencies. All but two of these local road-owning agencies—or 92% of the bridge survey pool—are part of the Big 123 agencies.

DISCUSSION OF RESULTS

Interpreting the Successful Implementation Results

Based on their survey responses, each responding agency received an overall agency implementation score. Evaluating implementation scores for local agencies as a whole provides a measure of the implementation of asset management principles in Michigan. To calculate each agency's implementation score, the multiple-choice answers from the survey received a designation as positive, negative, or neutral, with unanswered questions having a neutral assignment. By excluding neutral answers from the score calculation (see Equation 1), uncertainty on the part of the survey respondent does not adversely affect scores. Positive designation indicates steps toward asset management implementation, and negative designation responses indicate a lack of implementation.

Equation 1: Agency Implementation Score Calculation

$$\frac{\#Positive}{\#Total - (\#Unsure + \#Unanswered)} * 100$$

The TAMC determined that a 70% score is the minimum implementation score for an agency to be considered as "successfully implementing" asset management principles (see "Asset Management Implementation Survey Recommendation", Colling & Kueber-Watkins, 2011, for details).

Pavement and bridge questions earned separate implementation scores for each agency. Pavement implementation scores reveal that 87% of participating local agencies are successfully implementing asset management on pavement assets (Figure 4), which is a 6% increase from 2023.

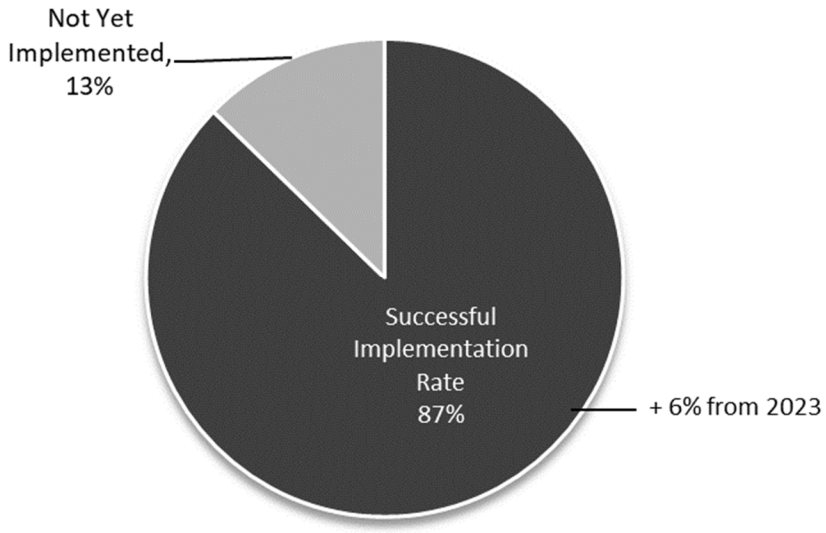


Figure 4: 2024 percentage of agencies surveyed that are implementing pavement asset management

Bridge implementation scores only include local agencies that reported owning more than five bridges (Appendix A-3). Of the 102 responding local agencies, 25 respondents indicated that they own more than five bridges and felt qualified to answer the bridge portion of the survey (the 2016 survey modified the question from "most qualified" to "qualified"). While 40 respondents felt qualified to complete the bridge questions in 2023, 25 respondents identified themselves as qualified in 2024—a decrease in the number of eligible surveys. Overall, the rate of local agencies owning five or more bridges that were "successfully implementing" asset management principles increased from 75% in 2023 to 80% in 2024 (Figure 5).

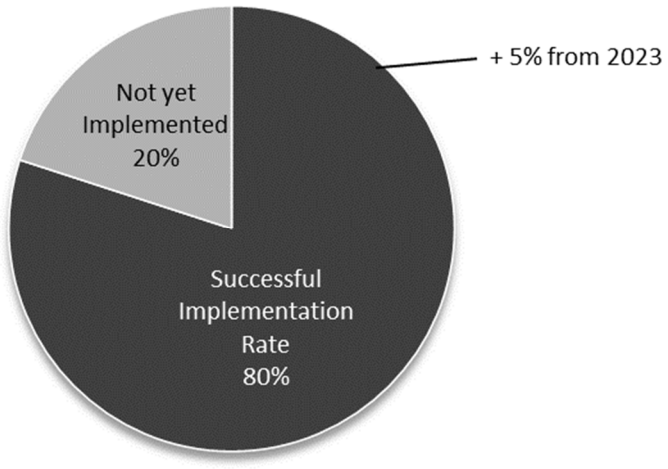


Figure 5: 2024 percentage of agencies surveyed that are implementing bridge asset management

Historical Implementation Score Margin of Error

Margin of error can be used to determine how much a sample size will differ from the total population in statistical analysis. Historically, from 2012 to 2023, the pavement implementation scores have had a margin of error in the range of 3.3% to 6.8%. This is using the sample size and standard deviation for each year along with a 95% confidence interval. The 2024 data set produced a margin of error of 3.7%, which is 0.3% lower than the historical average of 4.0%.

Performing this same analysis for the bridge implementation scores from 2012 to 2023 reveals a margin of error in the range of 7.5% to 18.1%. The 2024 data set produced a margin of error of 8.6%, which is 0.6% lower than the historical average of 9.2%.

Historical Analysis of Successful Implementation of Pavement Asset Management

Analyzing the historical rate of successfully implementing pavement asset management can enable identification of trends in the survey data. There was an increase in the percentage of "successfully implementing" local agencies in the second (2013) and third (2014) year of the survey; then, the percentage of "successfully implementing" local agencies underwent a steady decline in the fourth and fifth years of the survey (2015 and 2016). The sixth and seventh years (2017 and 2018) exhibited increases in successful implementation of 8% and 2%, respectively. Then, the eighth year (2019) showed a decrease in successful implementation of 5%, the ninth year (2020) showed an increase of 11%, the tenth year (2021) showed a decrease of 7%, the eleventh year (2022) showed an increase of 8%, the twelfth year (2023) showed a decrease of 8%, and the thirteen year (2024) showed an increase of 6%. Figure 6 shows the successful implementation results of the Big 123 agencies and the non-Big 123 agencies.

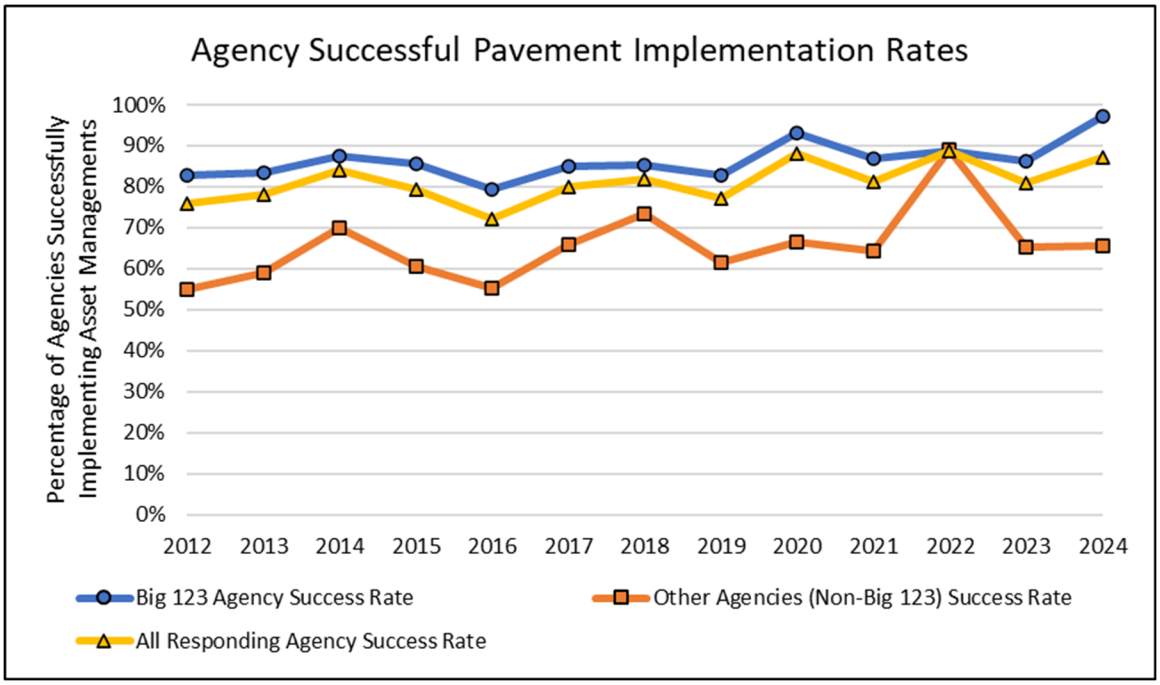


Figure 6: Historical agency successful pavement asset management implementation rates

Figure 7 shows the successful implementation rate of all responding local agencies broken apart by agency type, which includes county agencies, large cities (non-county Big 123 agencies), and small cities and villages (non-Big 123 agencies).

The county agency category's successful implementation rate has increased every year of the survey except for 2016, 2019, 2021, and 2023 where it exhibited decreases. All the 50 surveyed county agencies have passed the TAMC's target threshold to be considered "successfully implementing" in 2024. There were 8 fewer county respondents in 2024 compared to 2023 (50 vs. 58 respondents). The county agencies exhibited decreased volatility in their results from 2012 to 2024 when compared to the large cities agencies and the non-Big 123 agencies (Figure 7). In 2024, 60% (50 respondents) of the 83 county agencies in Michigan participated in the survey.

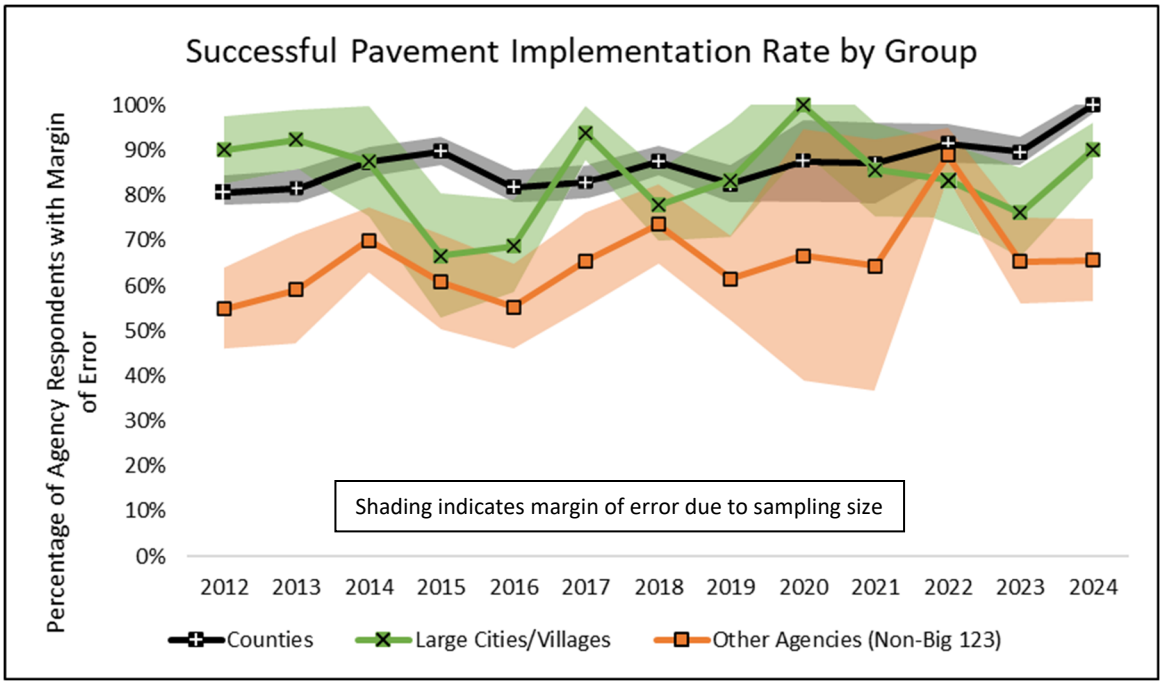


Figure 7: Historical pavement asset management implementation rates of all respondents broken down by agency type

Analyzing the data for large cities (non-county Big 123 agencies) in more detail revealed that large cities exhibited an increase in successful implementation from 2023 (76%) to 2024 (90%). The historical survey results for large cities show higher volatility over the past twelve years. This is due partially to the same large cities not participating every year. There was a decrease in the overall number of large-cities respondents from 2023 (21 respondents) to 2024 (20 respondents). Of these respondents, 13 large cities agencies participated in both 2023 and 2024. These 13 agencies included 8 that had a decrease, 4 that had an increase, and one that did not have a change in their implementation results from 2023 to 2024. In 2024, 50% (20 respondents) of the 40 large cities agencies participated in the survey.

The remaining category –small cities and villages (non-Big 123 agencies)– exhibited an increase in the rate of successful implementation from 2023 (65%) to 2024 (66%). This category had six more respondents in 2024 (32 respondents) than in 2022 (26 respondents). In 2024, 6% (32 respondents) of the 493 small cities and villages (non-Big 123 agencies) participated in the survey. This represents a very small sample size compared to the county and large cities categories and is contributing to some of the volatility of the survey results of these small cities and villages agencies.

Of the non-Big 123 local road-owning agencies, 11 local agencies did not pass the criteria for successful pavement asset management implementation; these 11 local agencies make up 85% of the total "unsuccessfully implementing" local agencies surveyed in 2024 and represent local agencies who appear to be starting out with pavement asset management. Local agency respondents that classify as "unsuccessfully implementing" are starting to use pavement asset management principles as indicated in some of the written responses received (see Appendix G). Lack of successful implementation of pavement asset management principles for these local agencies may appear, at first, to be negative because their inclusion into the survey brings the overall pavement asset management implementation rate down; however, the fact that these local agencies are present at PASER Training and are making the

first steps toward implementing pavement asset management principles should be taken as an extremely positive sign.

Figure 8 displays the average score of local agencies who were "successfully implementing" pavement asset management principles from 2012 to 2024. The average scores are divided into local agencies who are part of the Big 123 and local agencies who are not part of the Big 123, and these are separated by scores above and below the 70% threshold. The average score for "successfully implementing" local agencies (i.e., agencies with scores over the 70% threshold) has been very stable. In fact, the "successfully implementing" Big 123 agencies exhibited an increase from 2012 (87% average score) to 2024 (92% average score), and the "successfully implementing" local agencies that are not part of the Big 123 also exhibited an increase from 2012 (85% average score) to 2024 (90% average score) although with slightly more volatility.

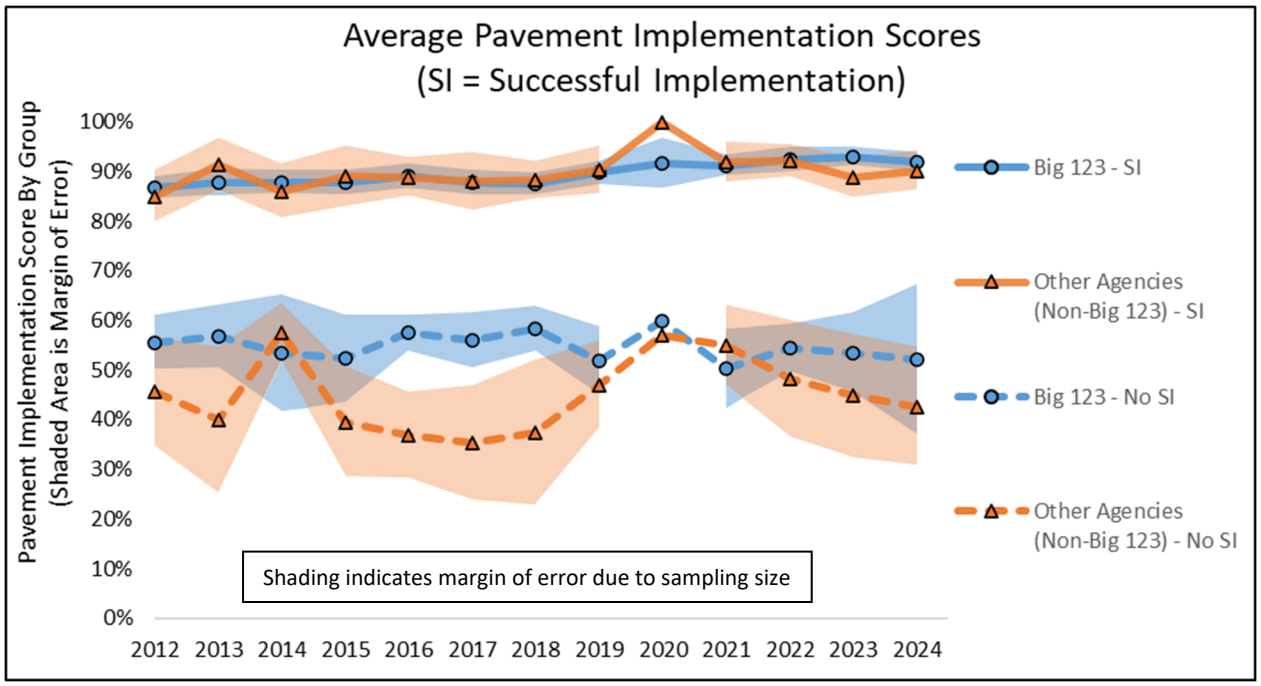


Figure 8: Average pavement asset management implementation scores grouped by successfulness and agency type (there were not enough samples to calculate the margin of error for all agency types in 2020)

Average scores for local agencies that were not "successfully implementing" (i.e., agencies with scores below the 70% threshold) displayed more volatility in the historical trends. The "unsuccessfully implementing" local agencies that are not part of the Big 123 exhibited a 3% decrease in their average score from 2012 (46%) to 2024 (43%) with volatility in between, which may partially be due to the same agencies not participating every year. The "unsuccessfully implementing" Big 123 agencies had many minor increases and decreases between each year of the time period being analyzed, but their average score decreased 4% from 2012 (56%) to 2024 (52%). There is also a decrease in the volatility for "unsuccessfully implementing" Big 123 agencies' average scores from one year to the next when compared to the average scores of the agencies that are not part of the Big 123. Appendix D shows the most recent agency score averaged per year and a count of how many local agencies are included in

each year. Appendix E shows the trends of the Big 123 poll responses broken down by each individual question.

Historical Analysis of Successful Implementation of Bridge Asset Management

The historical rate of successfully implementing bridge asset management for all responding agencies can be seen in Figure 9. The percentage of agencies successfully implementing bridge asset management increased every year except for decreases in 2014, 2015, 2020, and 2023. The responses grouped according to different agency categories yielded very volatile trends due to the small sample size, limited amount of bridge survey questions, and limited number of respondents that are non-county agencies. Nonetheless, most respondents with five or more bridges were county agencies (see Appendix C-2.1). Due to the modification of the qualifying question (question 20) in 2016, the results prior to 2015 are not closely comparable. Overall, all agencies show a steady increase in successful implementation of bridge asset management from 2015 to 2019. The 2020 successful implementation rate exhibited the largest decrease, mostly due to the very small respondent sample size in the bridge section of the survey. The 2022 successful implementation rate of 90% is the highest in the history of the bridge portion of the survey followed by a 15 percent decrease to 75% in 2023 and a 5 percent increase to 80% in 2024. Appendix D shows the most recent agency score averaged per year and a count of how many local agencies are included in each year. Appendix E shows the trends of the Big 123 poll responses broken down by each individual question.

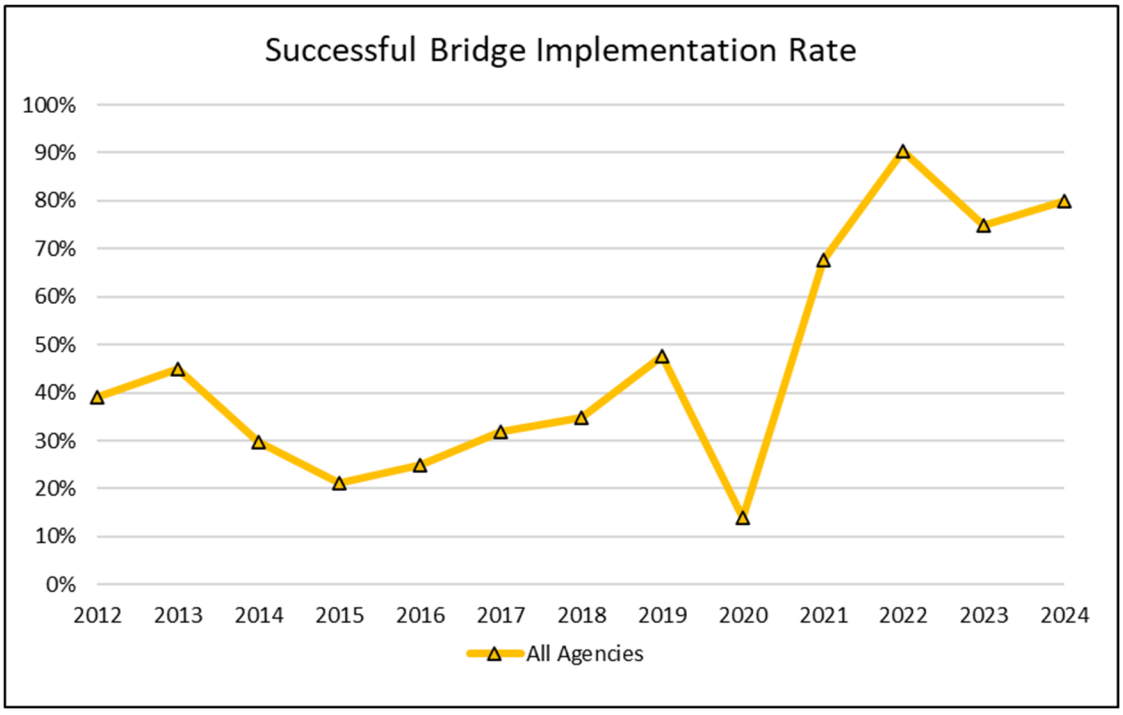


Figure 9: Historical bridge implementation survey results of all responding agencies

Analysis of Individual Pavement Asset Management Implementation Questions

Survey responses from 2024 indicate that 87% of all local agencies were considered to be "successfully implementing" pavement asset management principles based on the TAMC's criteria; this is a 6% increase from the 2023 survey results (see Figure 4). With the overall increase of pavement asset

management implementation scores, three out of the 10 pavement-related survey questions had an increase in the percentage of positive answers in 2024 as compared to 2023 (see Appendix A-1, which includes graphs showing responses to individual survey questions). Local agencies that have a written pavement asset management plan with a defined goal for pavement quality decreased by 3% from 2023 to 2024 (question 4). The percentage of local agencies that that have a method in place for ensuring that the quality of their asset management data is sufficient went from 68% in 2023 to 62% in 2024 (question 13).

Discussion of Bridge Asset Management Implementation Results

The "successfully implementing" local agencies owning five or more bridges increased from 75% in 2023 to 80% in 2024. Three of the four bridge-related survey questions had an increase in the percentage of positive responses. The question pertaining to having a written bridge asset management plan with defined goals for bridge quality increased from 72% in 2023 to 84% in 2024 (question 16). The remaining three bridge questions are in Appendix A-3. There were only two non-Big 123 agencies (small agencies) that participated in the bridge section of the survey.

Discussion of Written Responses

Written responses for the two open-ended feedback questions (questions 14 and 21) had central themes pertaining to funding and education, which is similar to previous years (see Appendix G). Responses indicated that successful implementation of asset management principles requires more funding. In addition to funding, respondents indicated a need for continued education on asset management principles.

RECOMMENDATIONS

The pavement portion of the implementation survey appears to be producing consistent and stable results for the thirteen consecutive year of the survey. The delivery of the survey at TAMC Training events is collecting responses from a large number of local agencies that are part of the Big 123 agencies. The results of this portion of the survey do not suggest a need for survey changes at this time.

The results from the bridge portion of the survey appear to be producing consistent data by using only the data from respondents who feel qualified to answer the bridge questions (question 21) when there is enough participation from local agencies. It is recommended to keep next year's bridge implementation survey the same as the 2024 survey so future survey data will be comparable. Further classification questions relating to the bridge portion of the survey may indicate a need for seeking another venue to deliver the bridge portion of the survey. Any increase in the number of survey questions is likely to reduce the number of complete surveys received.

REFERENCES

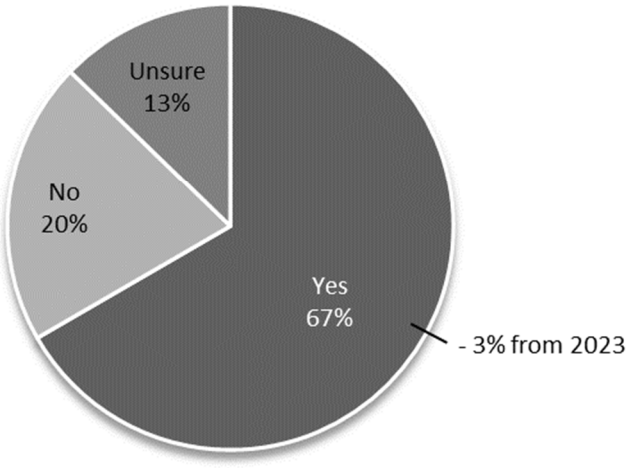
AASHTO. (2002). Transportation Asset Management Guide. Washington D.C.: American Association of State Highway and Transportation Officials.

Colling, T., & Kueber-Watkins, M. (2011). Asset Management Implementation Survey Recommendation. Houghton, Michigan.

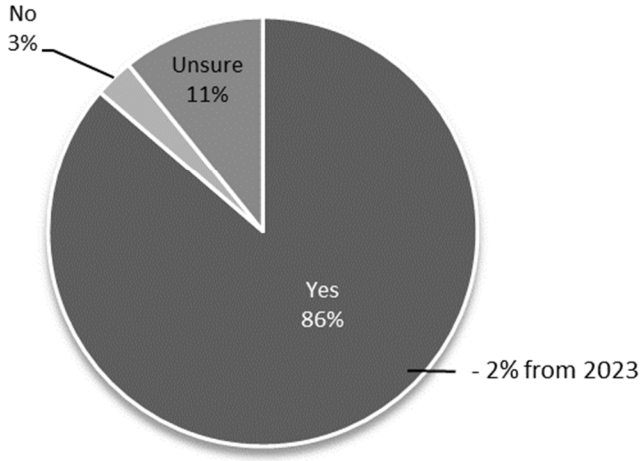
APPENDIX A – SURVEY QUESTION RESULTS

A-1 Pavement Answers (out of 102 responses)

Q4. Does your agency have a written pavement asset management plan with a defined goal for pavement quality?



Q5. Can your agency use its current rating and inventory data to show elected officials and the public the impact of increases or decreases in your agency's budgets on future pavement quality?



Responses

2023 vs. 2024

Q4

Yes:
70% vs. 67%

No:
16% vs. 20%

Unsure:
14% vs. 13%

Q5

Yes:
88% vs. 86%

No:
8% vs. 3%

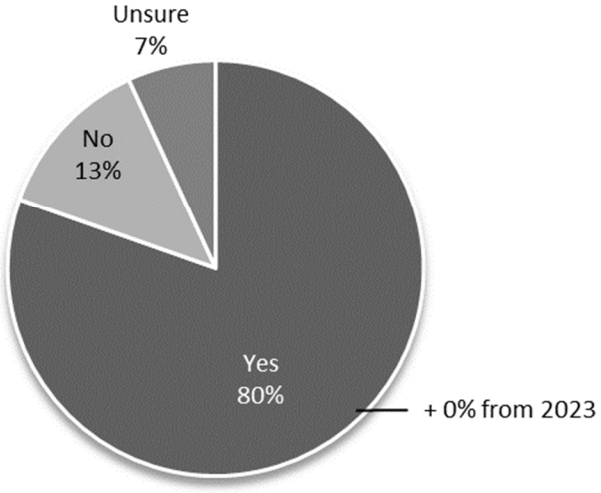
Unsure:
4% vs. 11%

Responses

2023 vs. 2024

Q6

Q6. Does your agency periodically assess the benefit (years of life gained) of pavement treatments such as overlays, chip seals, crack seals, etc. with respect to their cost?



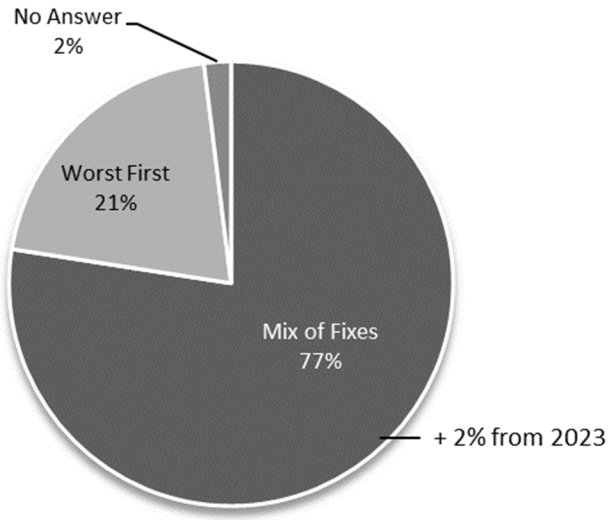
Yes:
80% vs. 80%

No:
11% vs. 13%

Unsure:
9% vs. 7%

Q7

Q7. Which method best describes how your agency selects pavement treatment projects?

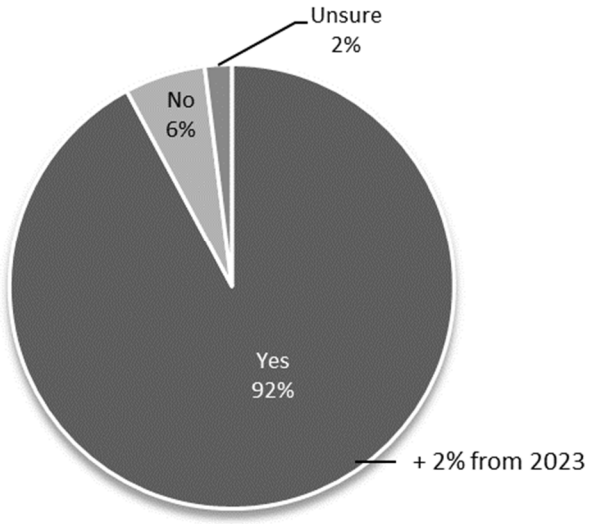


Mix of Fixes:
75% vs. 77%

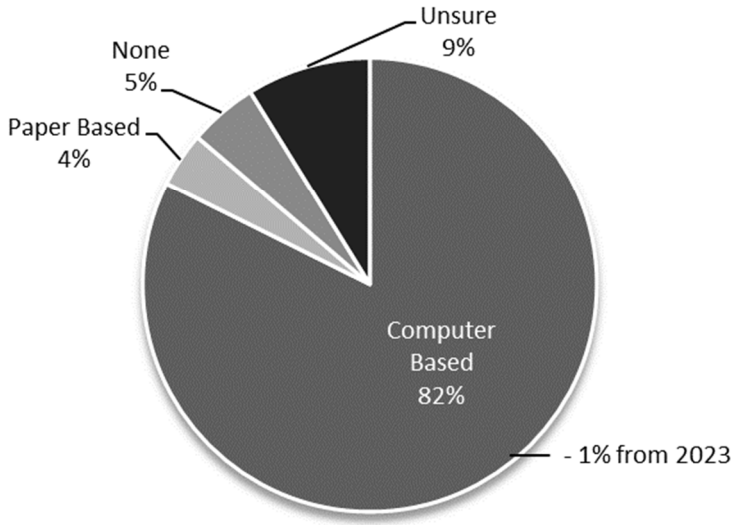
Worst First:
25% vs. 21%

No Answer:
0% vs. 2%

Q8. Does your agency consider PASER or other distress ratings when deciding on an appropriate fix for a specific section of road?



Q9. Does your agency use a computer based asset management system (such as Roadsoft, Micropaver) or a paper based asset management system (such as the National Center for Pavement Preservation's Quick Check, etc.) to guide decisions on your road network?



Responses

2023 vs. 2024

Q8

Yes:
90% vs. 92%

No:
6% vs. 6%

Unsure:
4% vs. 2%

Q9

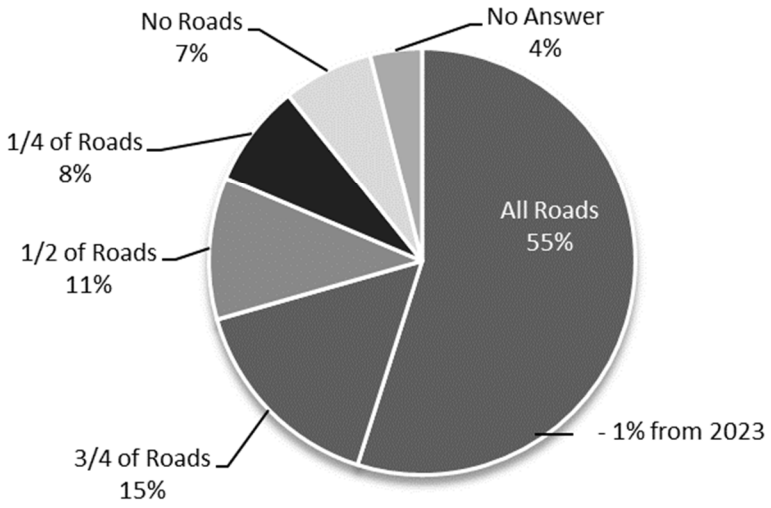
Computer Based:
83% vs. 82%

Paper Based:
7% vs. 4%

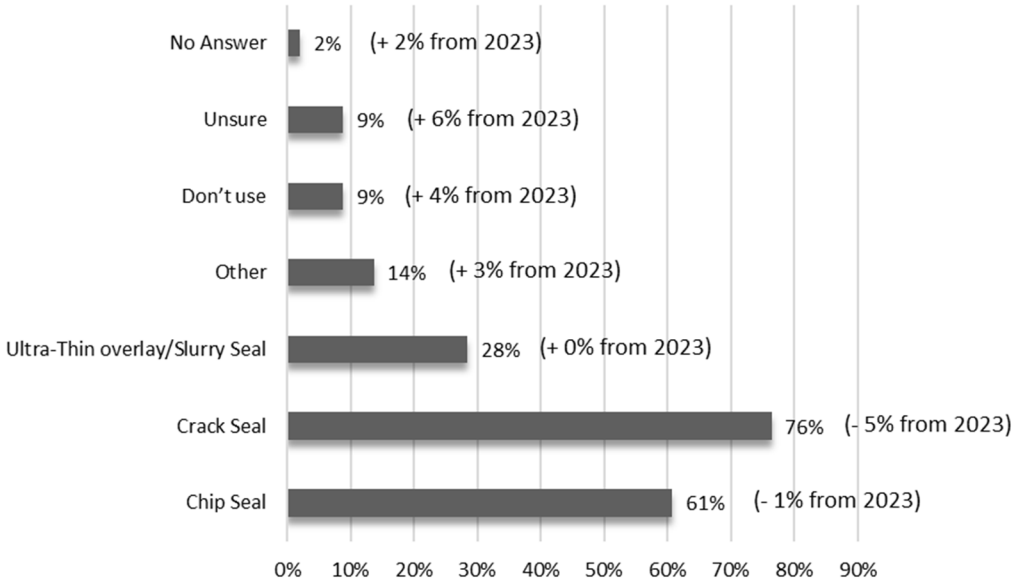
None:
8% vs. 5%

Unsure:
2% vs. 9%

Q10. On how much of your non-federal-aid, paved road network does your agency routinely (at least once every 3 years) collect distress rating data (PASER or other similar system) and inventory data (pavement type, number of lanes etc.)?



Q11. Which preventive maintenance treatments does your agency routinely use as part of their regular pavement management program? (select all that apply)



Responses

2023 vs. 2024

Q10

All roads:
56% vs. 55%

¾ of Roads:
8% vs. 15%

½ of Roads:
15% vs. 11%

¼ of Roads:
10% vs. 8%

No Roads:
11% vs. 7%

No Answer:
0% vs. 4%

Q11

No Answer:
0% vs. 2%

Unsure:
3% vs. 9%

Don't use:
5% vs. 9%

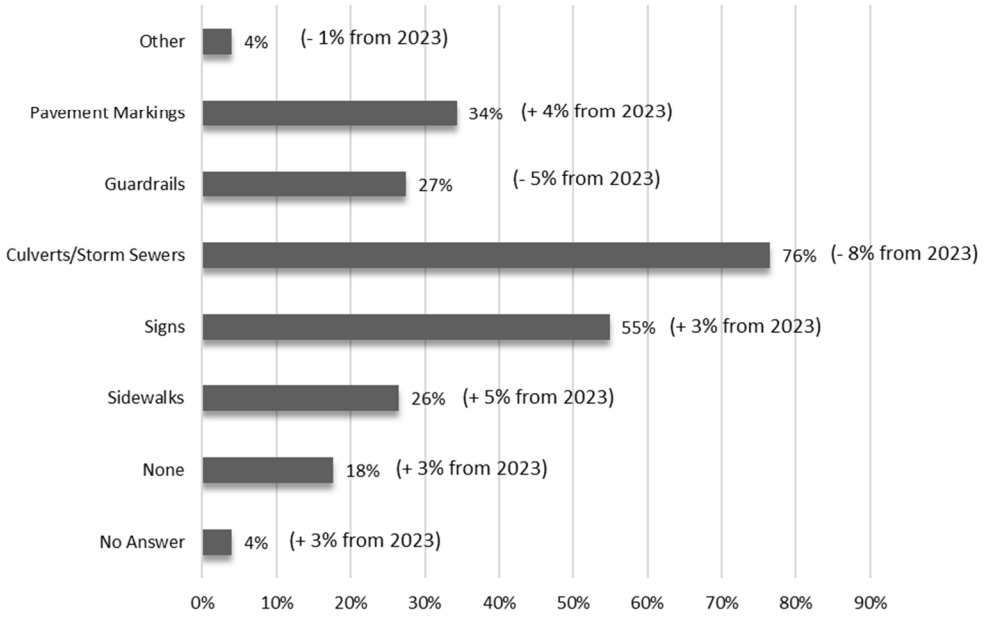
Other:
11% vs. 14%

Ultra-Thin overlay/Slurry Seal:
28% vs. 28%

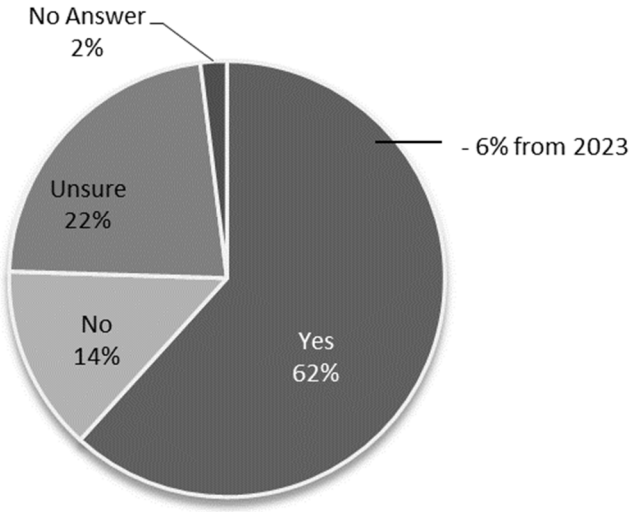
Crack Seal:
81% vs. 76%

Chip Seal:
62% vs. 61%

Q12. On what other roadside assets does your agency routinely collect inventory or rating data for asset management? (select all that apply)



Q13. Does your agency have a method in place for ensuring that the quality of your asset management data is sufficient for its intended use?



Responses

2023 vs. 2024

Q12

Other:
5% vs. 4%

Pavement Markings:
30% vs. 34%

Guardrails:
32% vs. 27%

Culverts/Storm Sewers:
84% vs. 76%

Signs:
52% vs. 55%

Sidewalks:
21% vs. 26%

None:
15% vs. 18%

No Answer:
1% vs. 4%

Q13

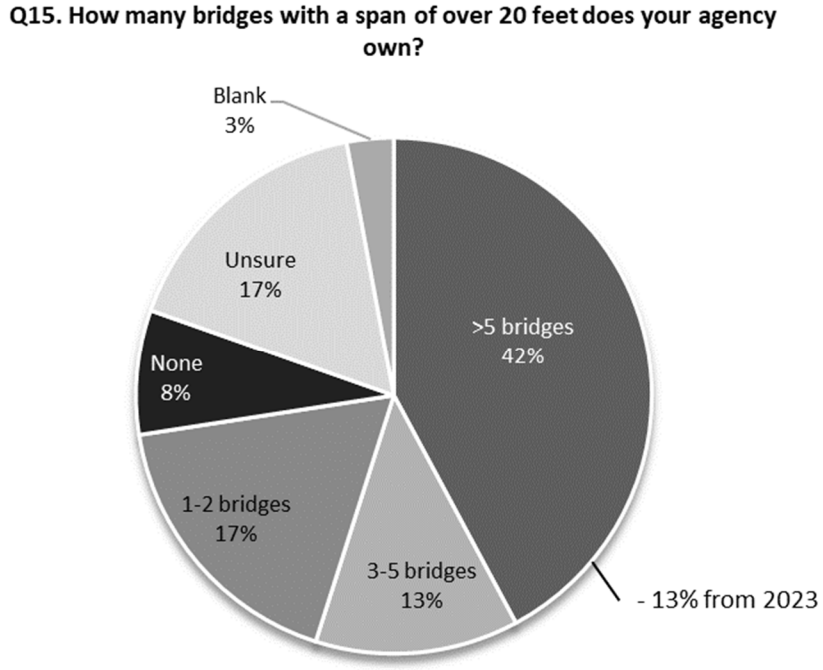
Yes:
68% vs. 62%

No:
17% vs. 14%

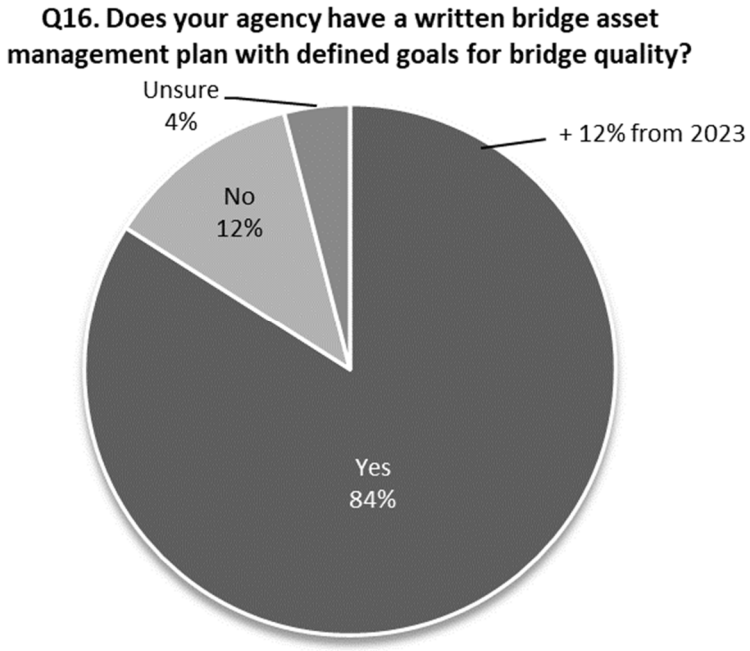
Unsure:
15% vs. 22%

No Answer:
0% vs. 2%

A-2 Local Agencies' Number of Bridges (out of 102 responses)



A-3 Bridge Answers (out of 25 responses)



Responses

2023 vs. 2024

Q15

>5:
55% vs. 42%

3-5:
12% vs. 13%

1-2:
11% vs. 17%

None:
9% vs. 8%

Unsure:
13% vs. 17%

Blank:
0% vs. 3%

Q16

Yes:
72% vs. 84%

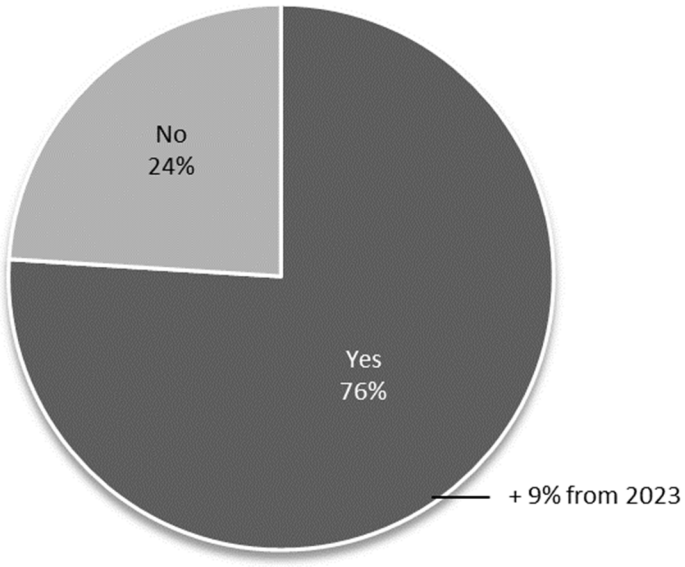
No:
20% vs. 12%

Unsure:
8% vs. 4%

Responses

2023 vs. 2024

Q17. Does your agency use preventive maintenance treatments such as painting, cleaning expansion joints, cleaning/lubricating bearings, etc., as part of their regular treatment program for bridges?



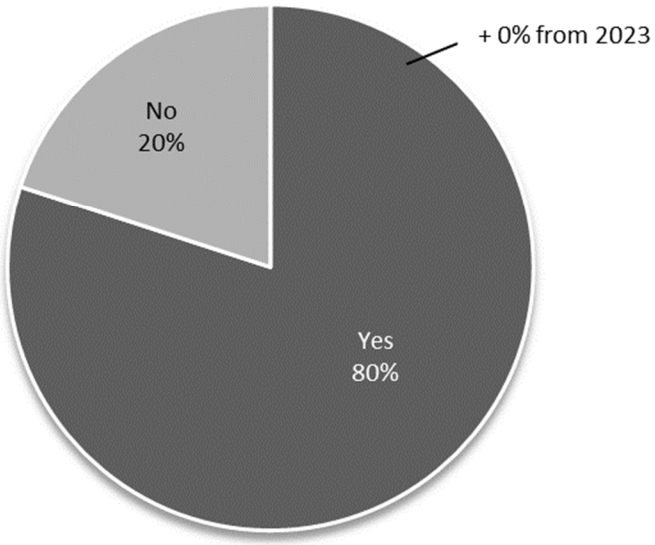
Q17

Yes:
67% vs. 76%

No:
30% vs. 24%

Unsure:
3% vs. 0%

Q18. Does your agency use a management system like Roadsoft to access NBI data and keep up-to-date bridge maintenance histories for the majority of its bridges over 20 feet?



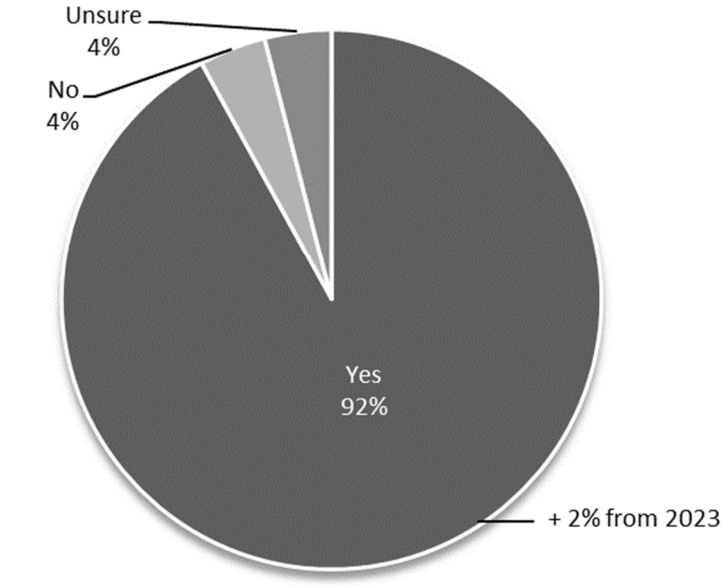
Q18

Yes:
80% vs. 80%

No:
17% vs. 20%

Unsure:
3% vs. 0%

Q19. Does your agency use bridge condition data to make decisions regarding bridge maintenance and rehabilitation?



Responses

2023 vs. 2024

Q19

Yes:
90% vs. 92%

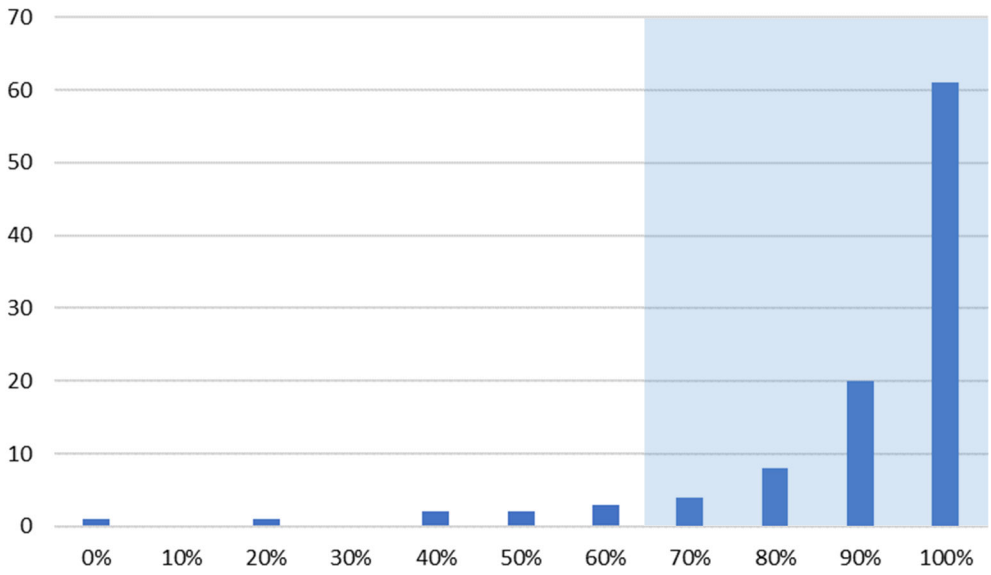
No:
10% vs. 4%

Unsure:
0% vs. 4%

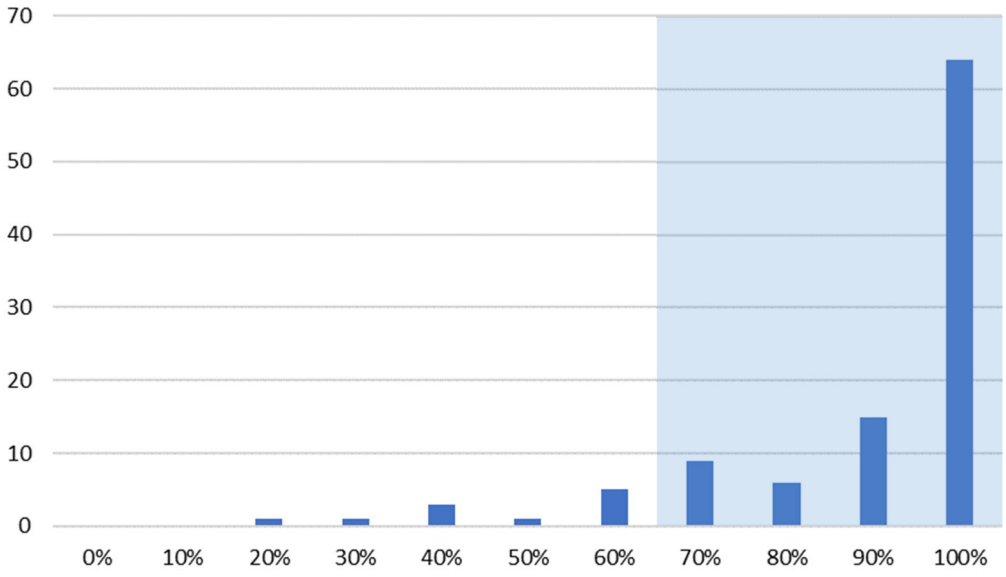
APPENDIX B – IMPLEMENTATION SCORE FREQUENCIES

B-1 Pavement Implementation Score Frequencies

2024	
Range	**Frequency**
0%	1
10%	0
20%	1
30%	0
40%	2
50%	2
60%	3
70%	4
80%	8
90%	20
100%	61

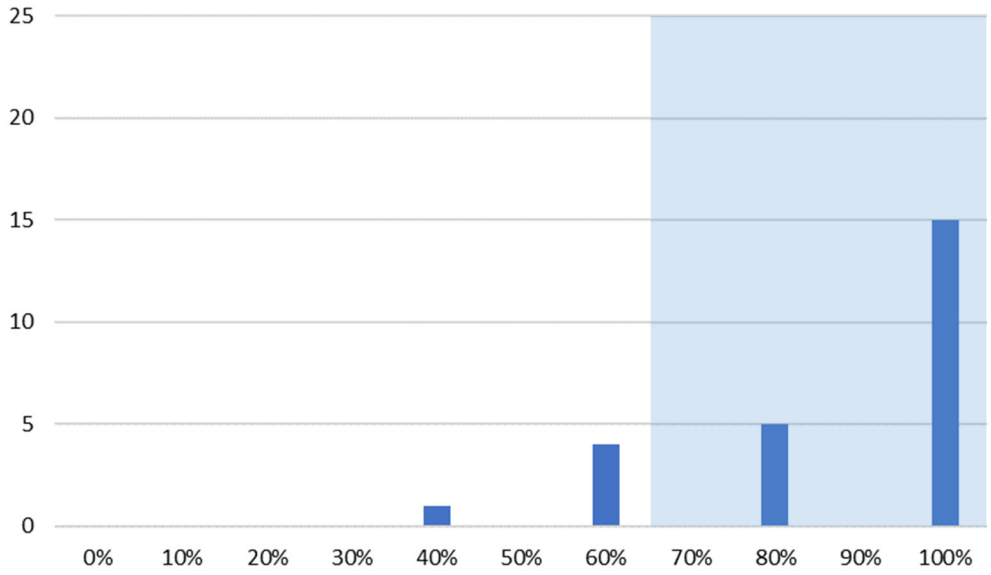


2023	
Range	**Frequency**
0%	0
10%	0
20%	1
30%	1
40%	3
50%	1
60%	5
70%	9
80%	6
90%	15
100%	64

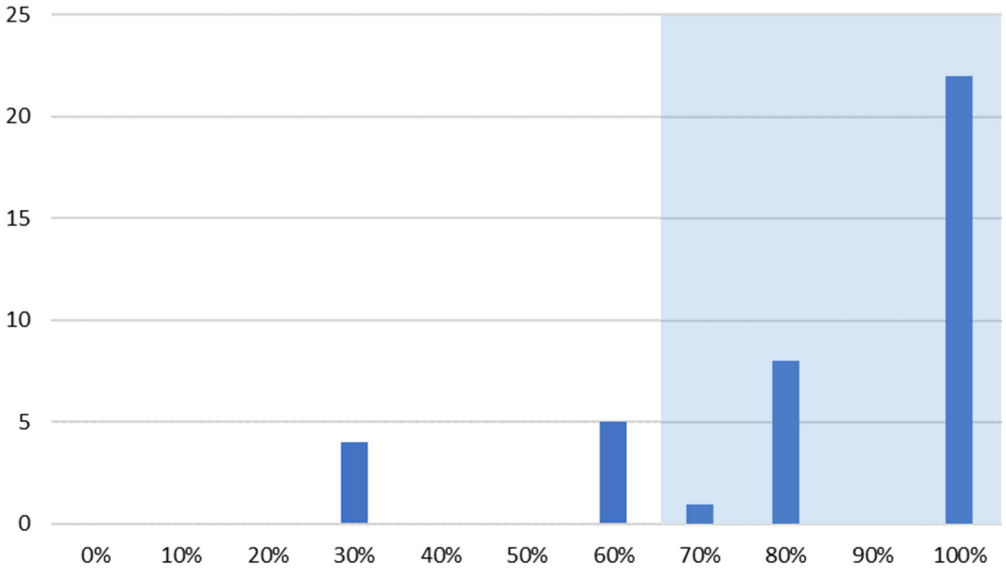


B-2 Bridge Implementation Score Frequencies

2024	
Range	**Frequency**
0%	0
10%	0
20%	0
30%	0
40%	1
50%	0
60%	4
70%	0
80%	5
90%	0
100%	15



2023	
Range	**Frequency**
0%	0
10%	0
20%	0
30%	4
40%	0
50%	0
60%	5
70%	1
80%	8
90%	0
100%	22



APPENDIX C – PARTICIPATING AGENCIES

C-1.1 Participating Michigan Counties (50 Counties of the "The Big 123")

Alcona County Road Commission	Jackson County Department of Transportation
Allegan County Road Commission	Kent County Road Commission
Antrim County Road Commission	Lake County Road Commission
Barry County Road Commission	Leelanau County Road Commission
Benzie County Road Commission	Manistee County Road Commission
Branch County Road Commission	Mason County Road Commission
Cass County Road Commission	Menominee County Road Commission
Charlevoix County Road Commission	Monroe County Road Commission
Chippewa County Road Commission	Muskegon County Road Commission
Clare County Road Commission	Newaygo County Road Commission
Delta County Road Commission	Oceana County Road Commission
Dickinson County Road Commission	Ogemaw County Road Commission
Eaton County Road Commission	Otsego County Road Commission
Emmet County Road Commission	Ottawa County Road Commission
Genesee County Road Commission	Road Commission for Oakland County
Gogebic County Road Commission	Road Commission of Kalamazoo County
Grand Traverse County Road Commission	Roscommon County Road Commission
Gratiot County Road Commission	Saginaw County Road Commission
Hillsdale County Road Commission	Sanilac County Road Commission
Houghton County Road Commission	Schoolcraft county road commission
Huron County Road Commission	St. Joseph County Road Commission
Ingham County Road Department	Tuscola County Road Commission
Ionia County Road Department	Washtenaw County Road Commission
Iosco County Road Commission	Wayne County Department of Public Services
Iron County Road Commission	Wexford County Road Commission

C-1.2 Participating "Top 40 Michigan Cities" (20 Cities of "The Big 123")

Ann Arbor	Livonia
Battle Creek	Madison Heights
Bay City	Midland
Dearborn	Novi
Detroit	Port Huron
Farmington Hills	Portage
Grand Rapids	Rochester Hills
Holland	St. Clair Shores
Jackson	Sterling Heights
Lansing	Warren

C-1.3 All Other Participating Michigan Agencies (32 of the 493 Small Agencies)

Adrian	Mt. Pleasant
Alma	Owosso
Chelsea	Rogers City
Coldwater	Sault Ste Marie
DeWitt	St. Joseph
Eaton Rapids	Sturgis
Escanaba	Traverse City
Fenton	Village of Fruitport
Flushing	Village of Gaines
Hillsdale	Village of Goodrich
Ithaca	Village of Lake Isabella
Lapeer	Village of Ortonville
Leslie	Village of Peck
Linden	Village of Stevensville
Ludington	Walker
Marquette	Watervliet

C-2.1 Participating Michigan Counties with more than 5 Bridges (22 Counties of "The Big 123")

Barry County Road Commission	Huron County Road Commission
Branch County Road Commission	Ionia County Road Department
Cass County Road Commission	Iosco County Road Commission
Charlevoix County Road Commission	Iron County Road Commission
Clare County Road Commission	Mason County Road Commission
Dickinson County Road Commission	Monroe County Road Commission
Emmet County Road Commission	Ogemaw County Road Commission
Genesee County Road Commission	Ottawa County Road Commission
Gogebic County Road Commission	Saginaw County Road Commission
Gratiot County Road Commission	Wayne County Department of Public Services
Hillsdale County Road Commission	Wexford County Road Commission

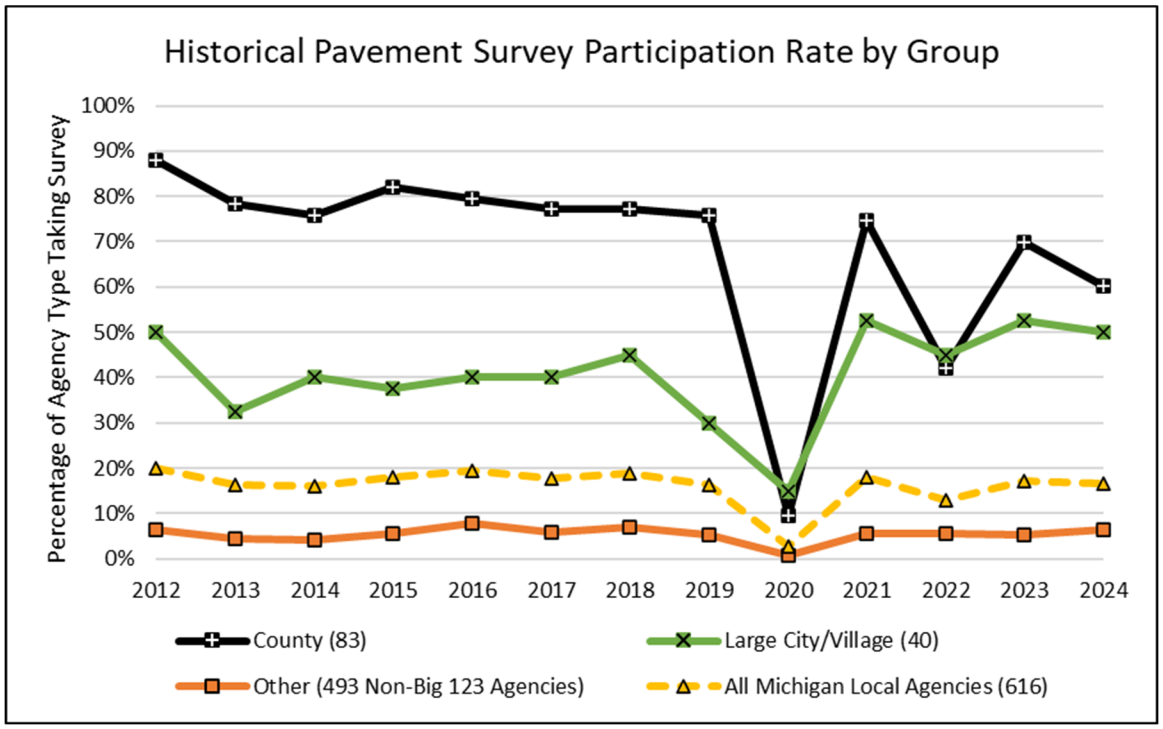
C-2.2 Participating "Top 40 Michigan Cities" with more than 5 Bridges (1 City of "The Big 123")

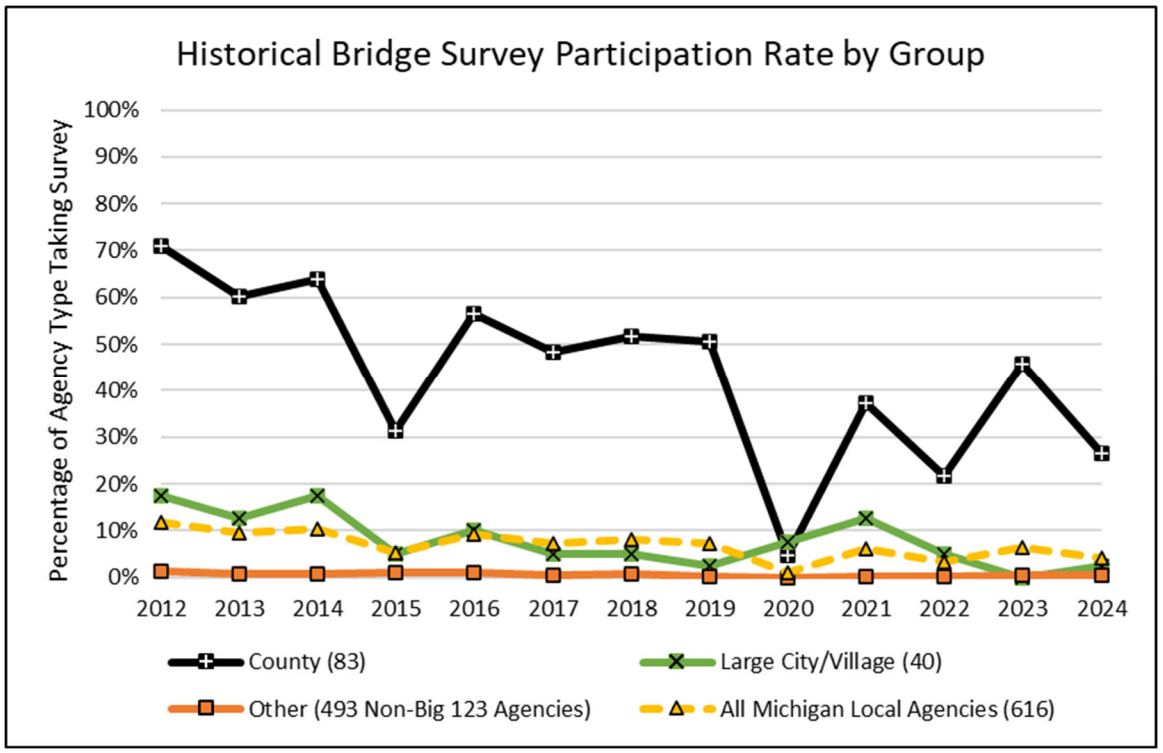
Grand Rapids

C-2.3 All Other Participating Michigan Agencies with more than 5 Bridges (2 of the 493 Small Agencies)

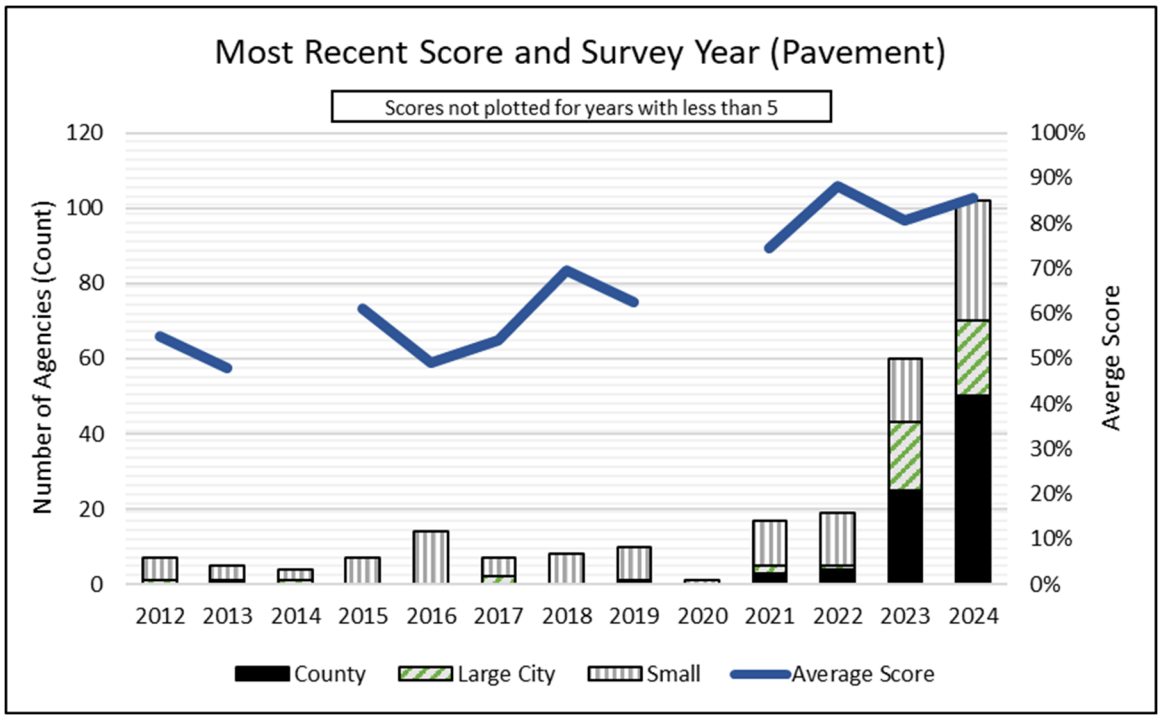
Sault Ste Marie	Walker

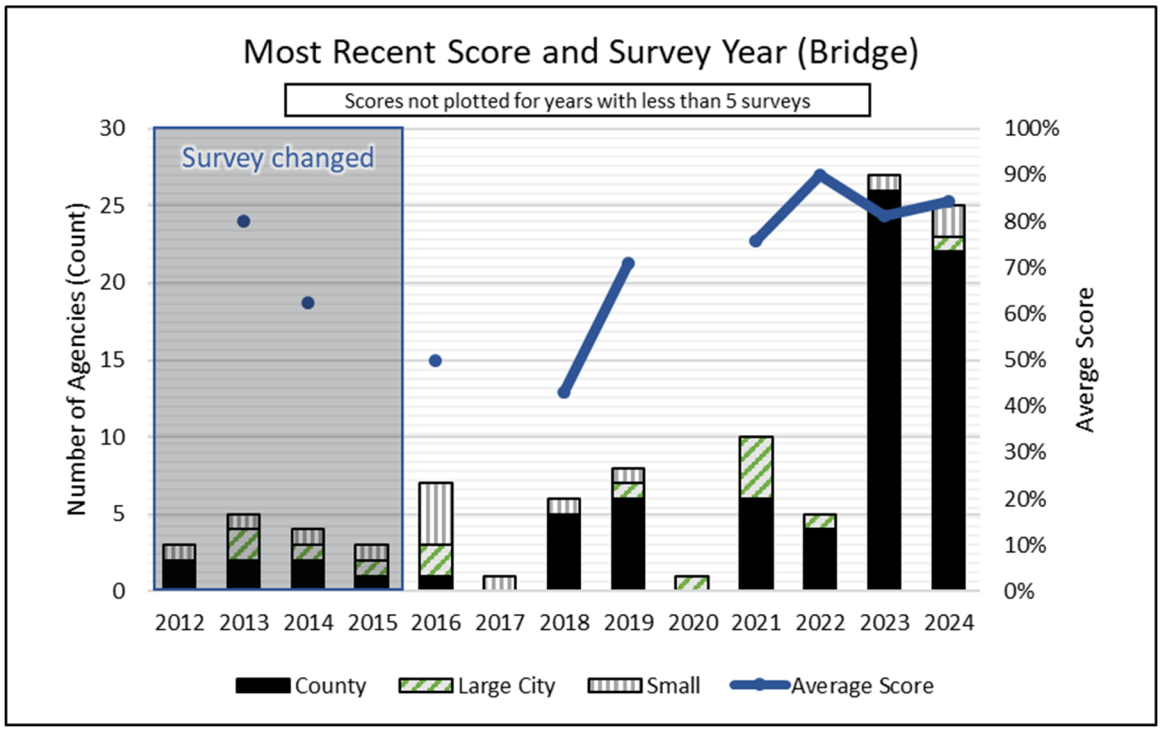
C-2.4 Historical Participation Rate by Group



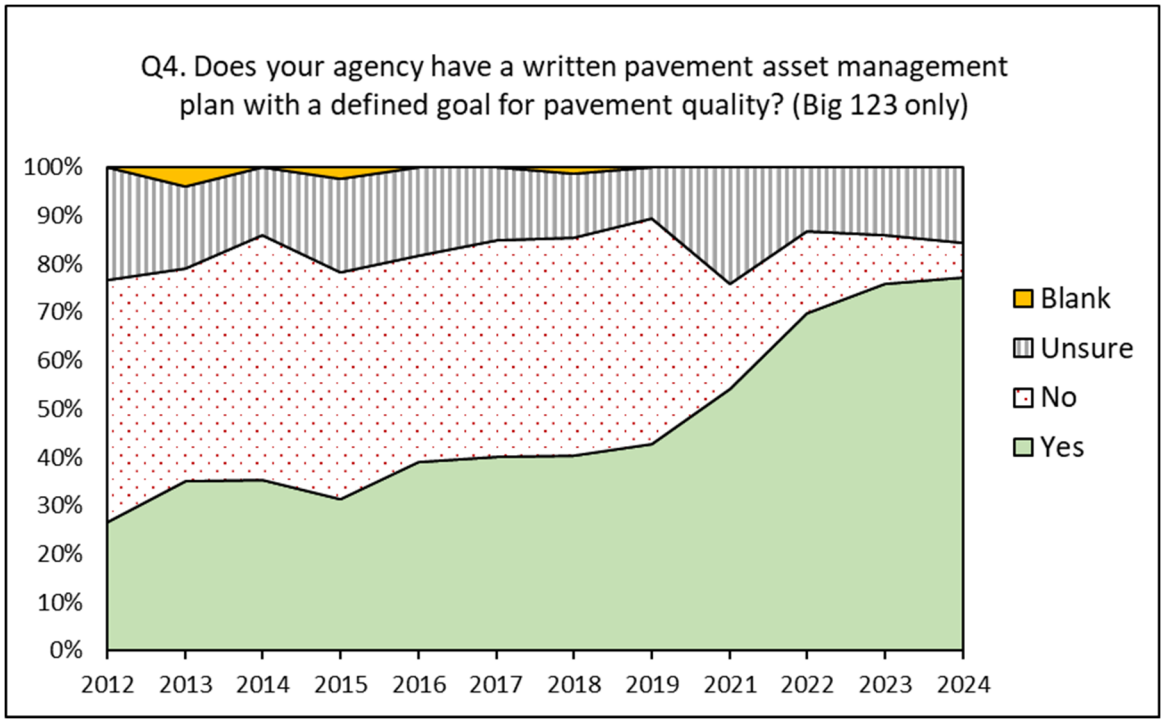


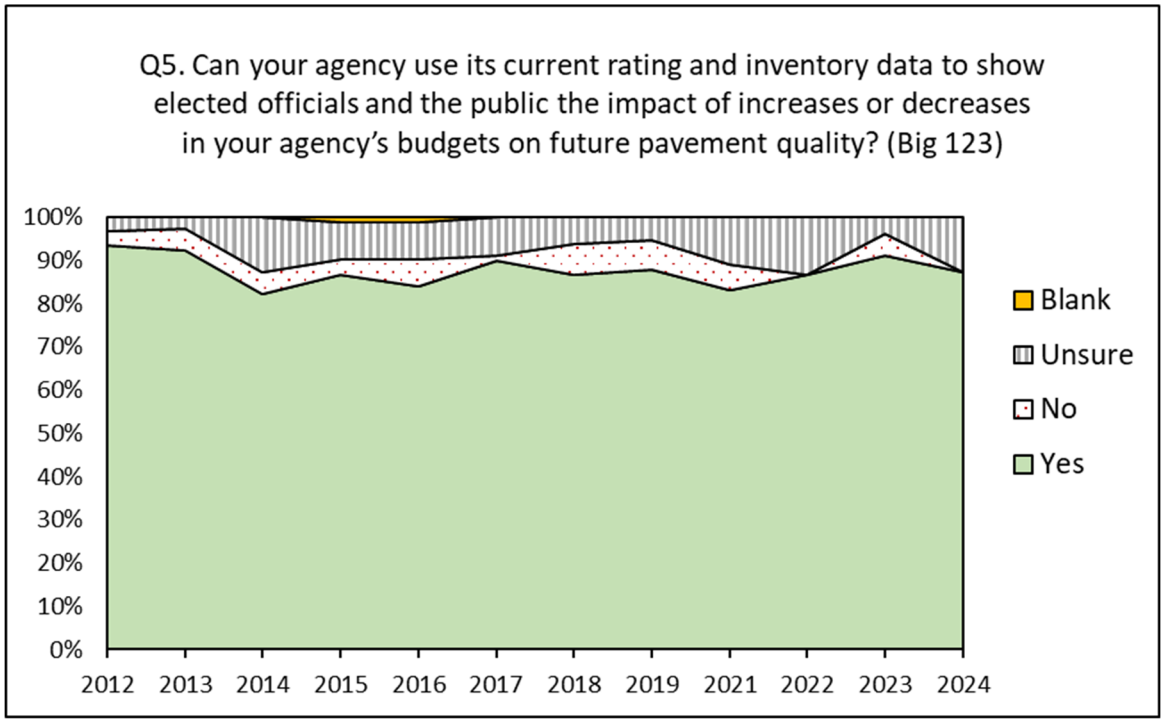
APPENDIX D – MOST RECENT AGENCY SCORE

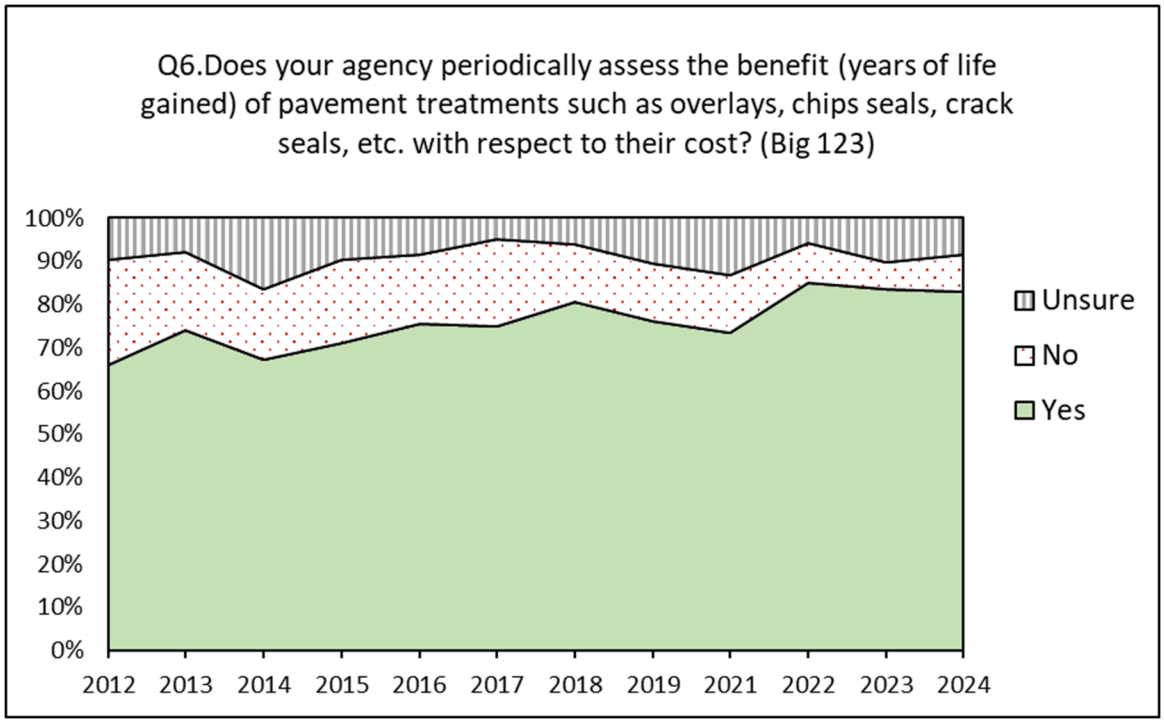


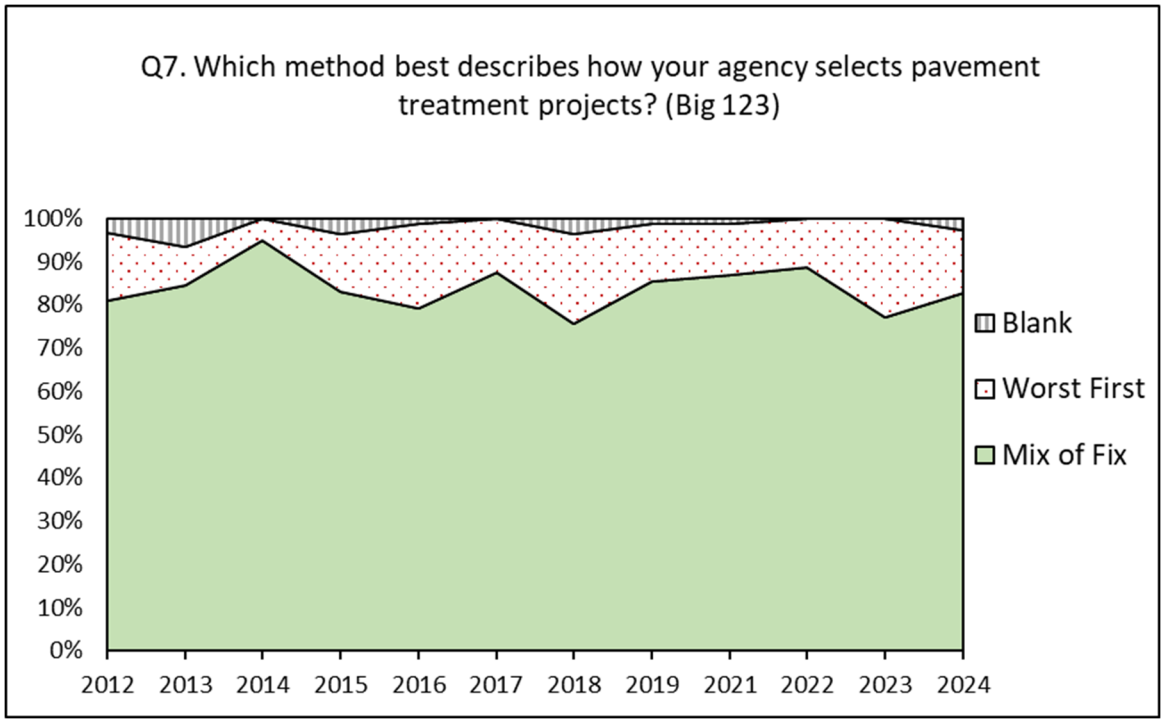


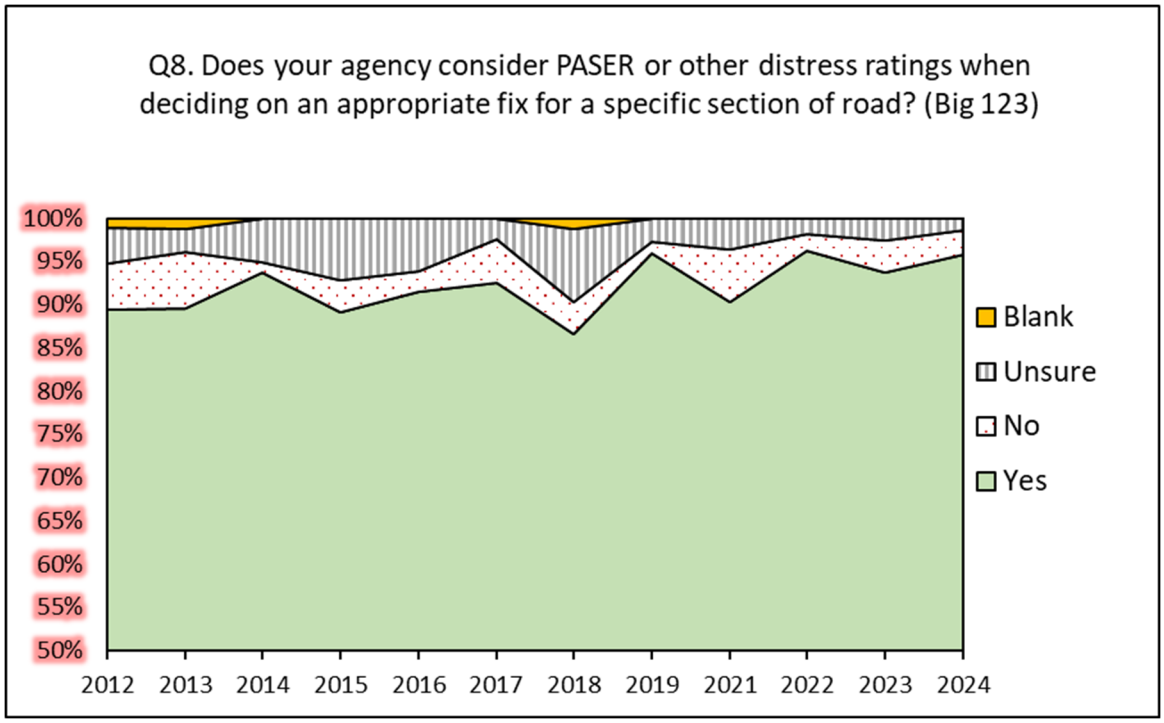
APPENDIX E – HISTORIC BIG 123 INDIVIDUAL QUESTION TRENDS

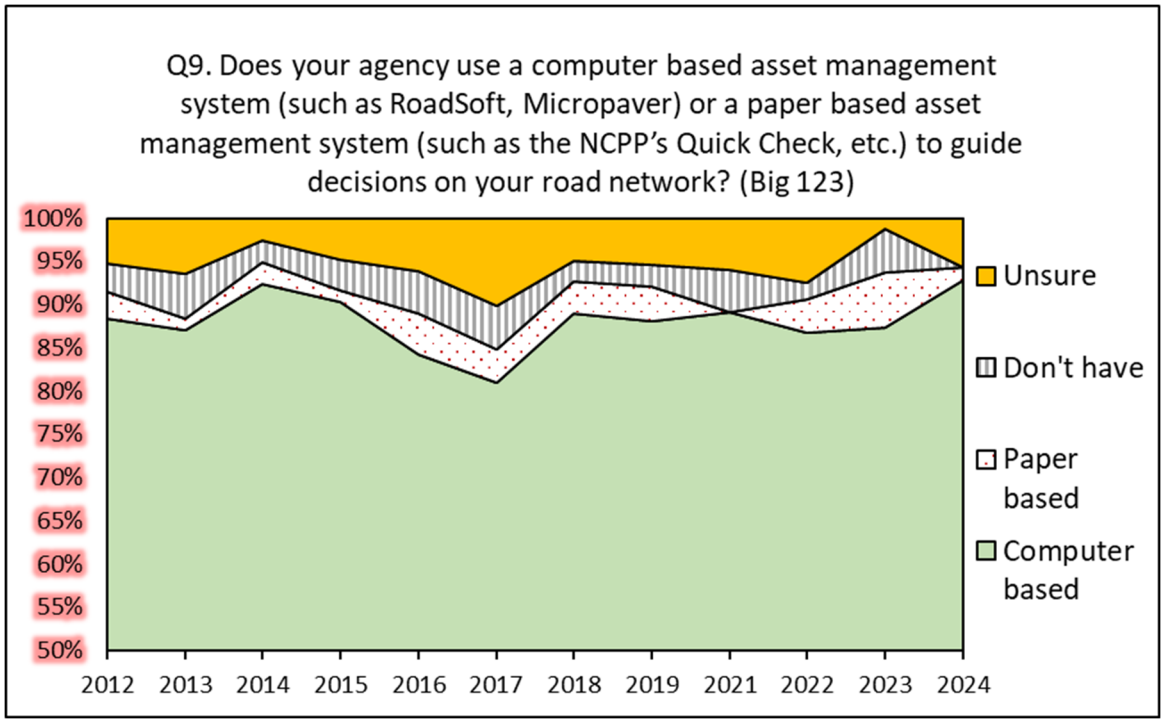


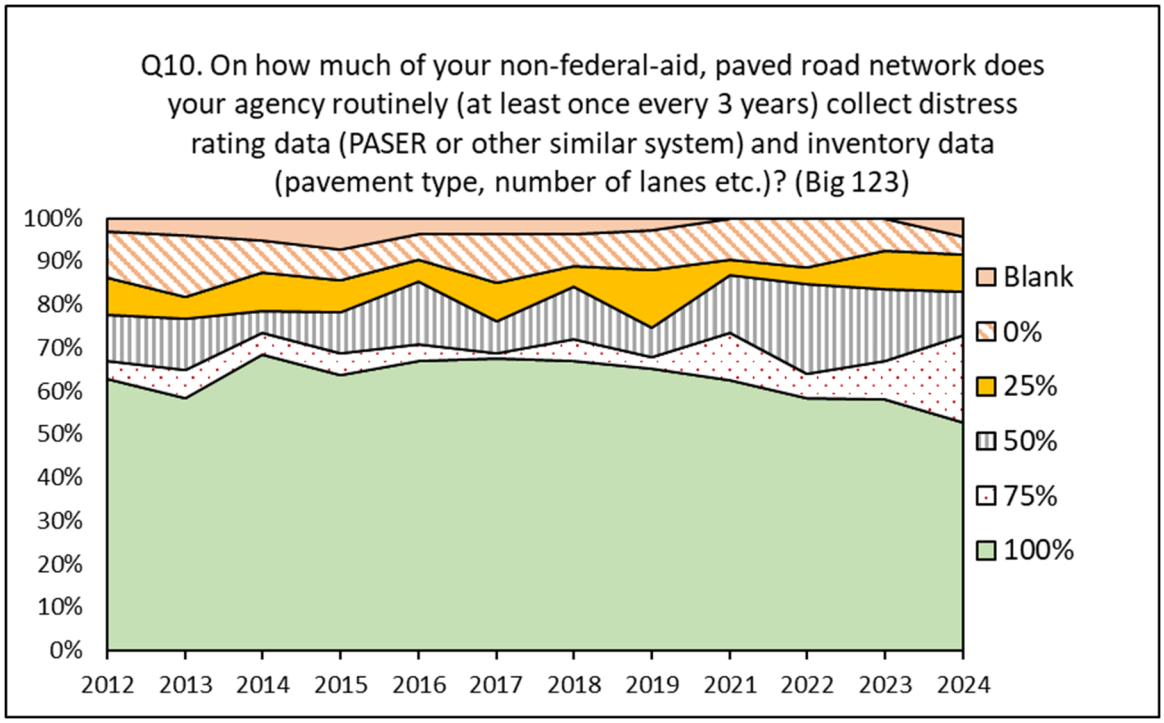


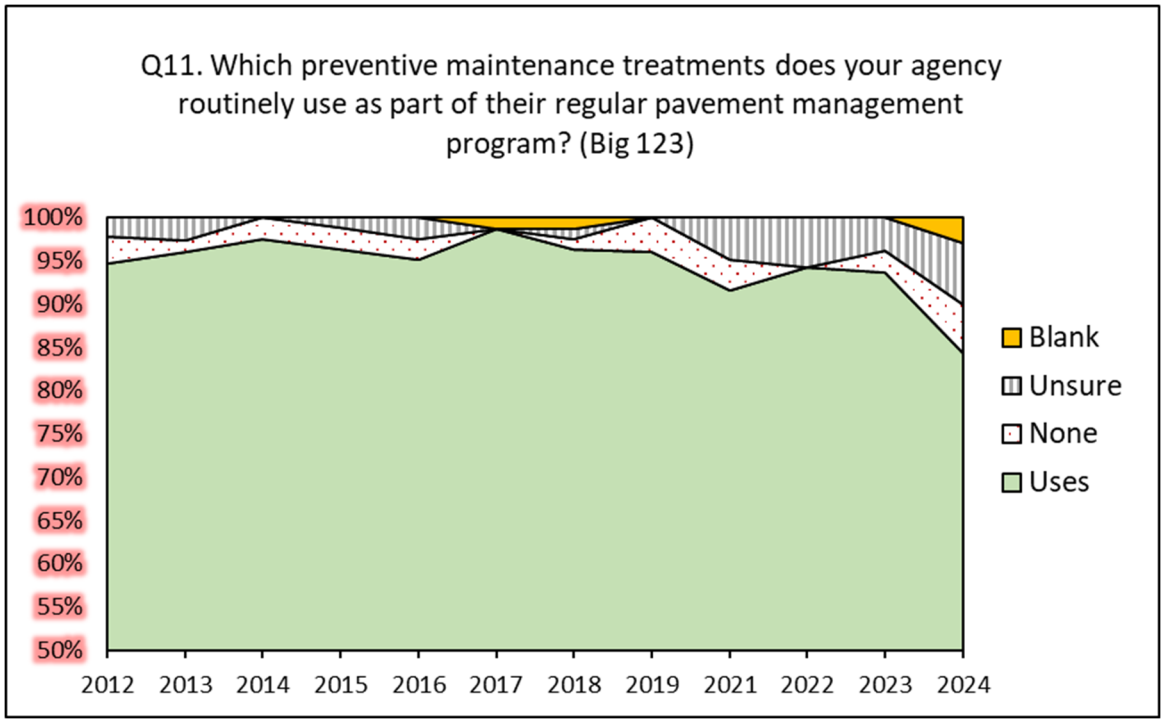

Q6.Does your agency periodically assess the benefit (years of life gained) of pavement treatments such as overlays, chips seals, crack seals, etc. with respect to their cost? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Unsure
No
Yes

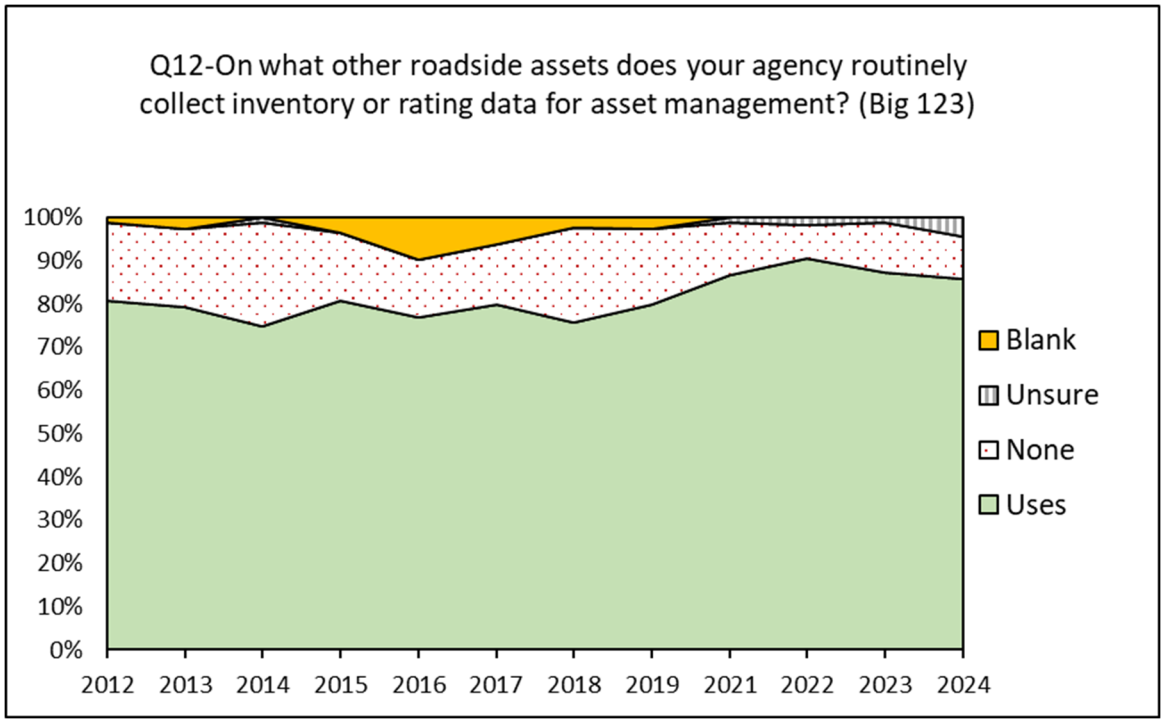

Q7. Which method best describes how your agency selects pavement treatment projects? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Worst First
Mix of Fix

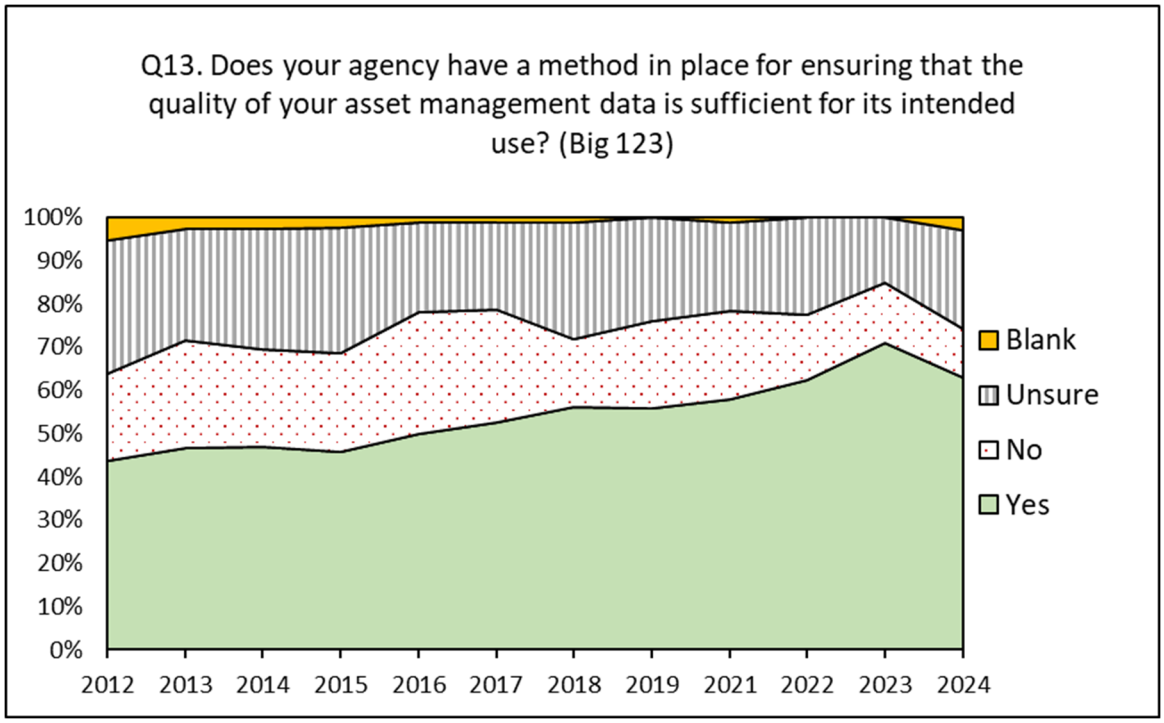

Q8. Does your agency consider PASER or other distress ratings when deciding on an appropriate fix for a specific section of road? (Big 123)
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
No
Yes

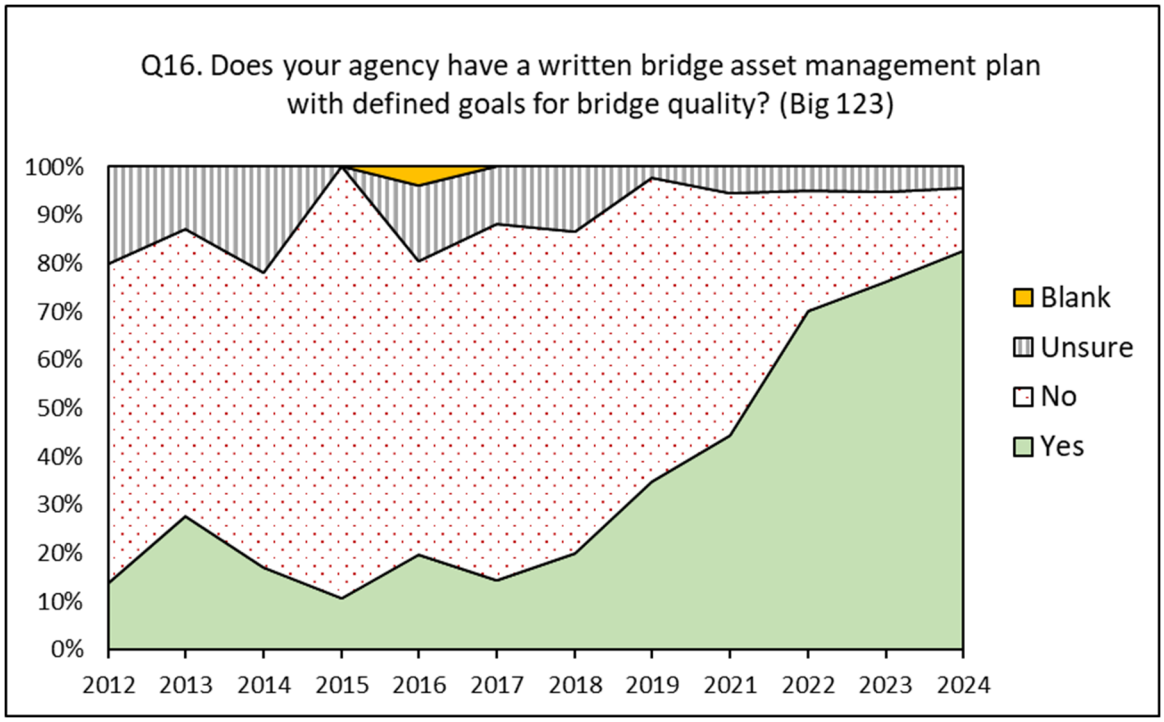

Q9. Does your agency use a computer based asset management system (such as RoadSoft, Micropaver) or a paper based asset management system (such as the NCPP's Quick Check, etc.) to guide decisions on your road network? (Big 123)
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Unsure
Don't have
Paper based
Computer based

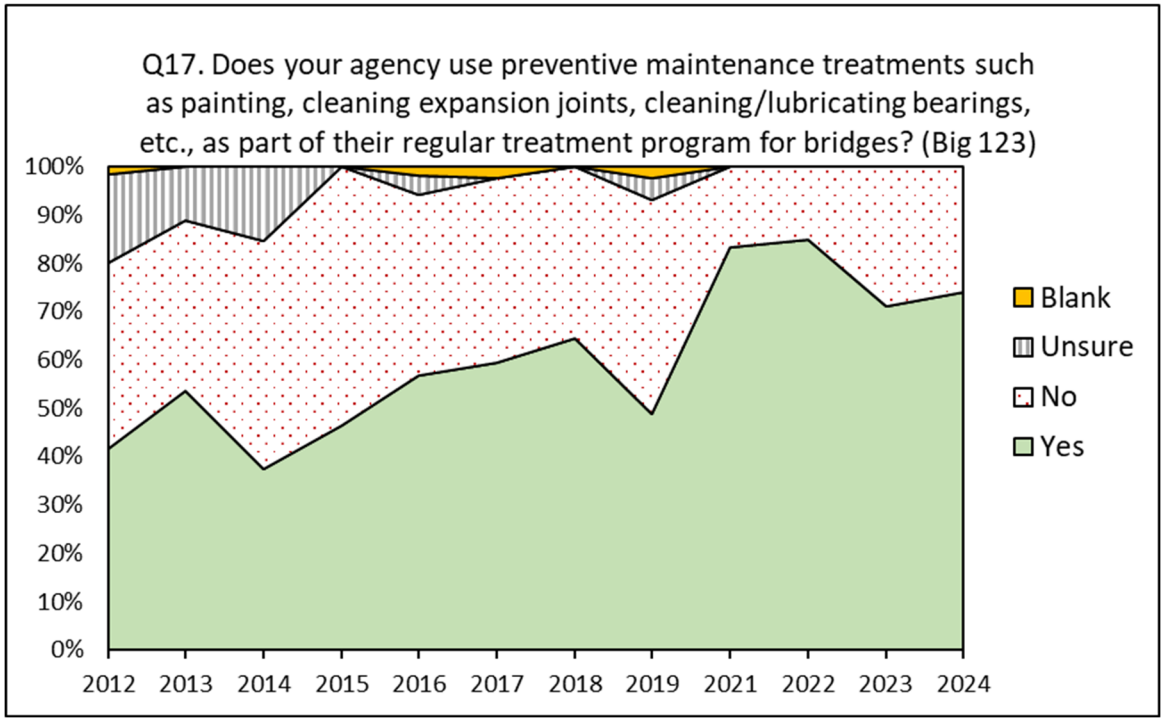

Q10. On how much of your non-federal-aid, paved road network does your agency routinely (at least once every 3 years) collect distress rating data (PASER or other similar system) and inventory data (pavement type, number of lanes etc.)? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
0%
25%
50%
75%
100%

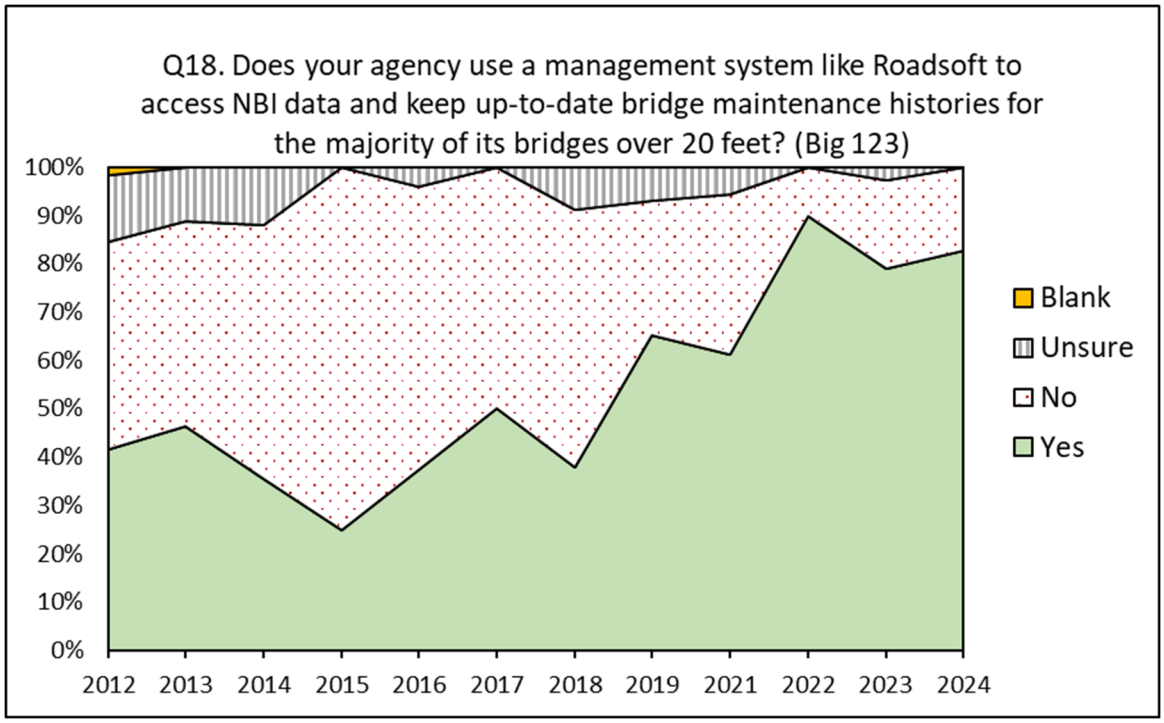

Q11. Which preventive maintenance treatments does your agency routinely use as part of their regular pavement management program? (Big 123)
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
None
Uses

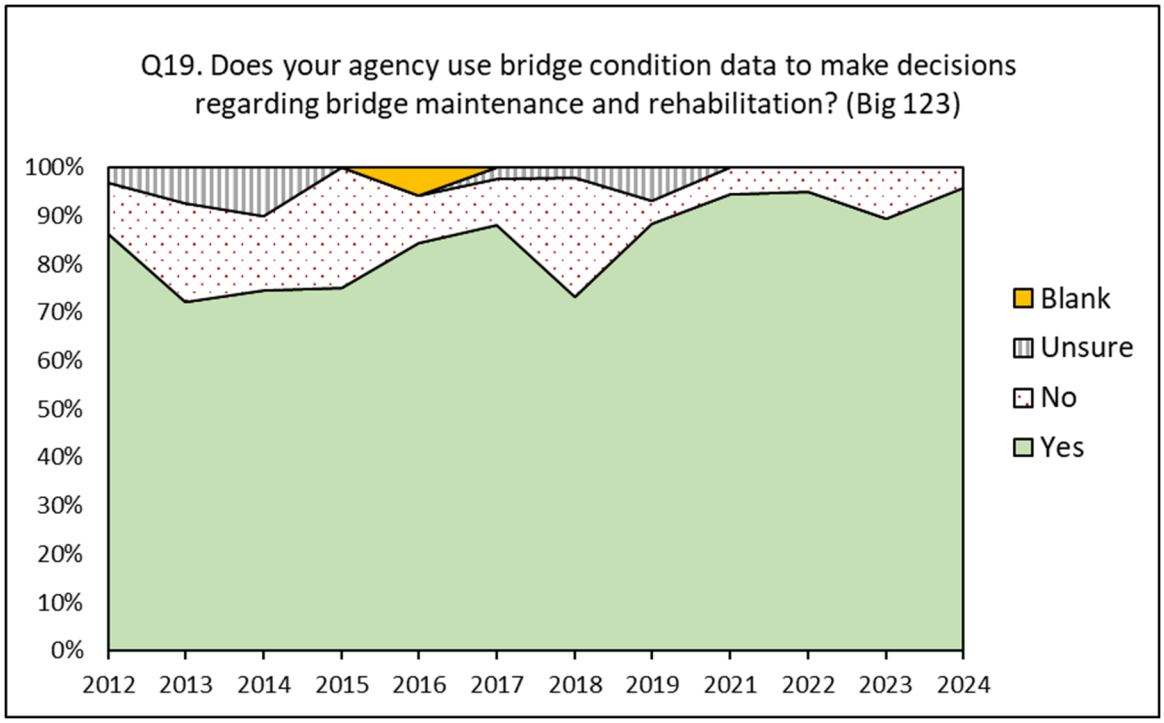

Q12-On what other roadside assets does your agency routinely collect inventory or rating data for asset management? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
None
Uses


Q13. Does your agency have a method in place for ensuring that the quality of your asset management data is sufficient for its intended use? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
No
Yes


Q16. Does your agency have a written bridge asset management plan with defined goals for bridge quality? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
No
Yes


Q17. Does your agency use preventive maintenance treatments such as painting, cleaning expansion joints, cleaning/lubricating bearings, etc., as part of their regular treatment program for bridges? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
No
Yes


Q18. Does your agency use a management system like Roadsoft to access NBI data and keep up-to-date bridge maintenance histories for the majority of its bridges over 20 feet? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
No
Yes


Q19. Does your agency use bridge condition data to make decisions regarding bridge maintenance and rehabilitation? (Big 123)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
2017
2018
2019
2021
2022
2023
2024
Blank
Unsure
No
Yes

APPENDIX F – SURVEY QUESTIONS

Local Agency Asset Management Survey Questions – 2024 PASER Training

The Michigan Transportation Asset Management Council (TAMC) is interested in determining how Michigan's local transportation agencies are progressing with implementation of asset management. This survey will assist TAMC with their future efforts to promote asset management.

Transportation Asset Management

1. Your name:_____
2. Your position or title: _____
3. Local agency name :_____
4. Does your agency have a written pavement asset management plan with a defined goal for pavement quality?
    a. Yes
    b. No
    c. Unsure
5. Can your agency use its current rating and inventory data to show elected officials and the public the impact of increases or decreases in your agency's budgets on future pavement quality?
    a. Yes
    b. No
    c. Unsure
6. Does your agency periodically assess the benefit (years of life gained) of pavement treatments such as overlays, chips seals, crack seals, etc. with respect to their cost?
    a. Yes
    b. No
    c. Unsure
7. Which method best describes how your agency selects pavement treatment projects?
    a. A "worst first" basis-- reconstructing and rehabilitating failed roads first, then doing preventive maintenance as budget allows
    b. A "mix of fixes" basis-- using preventive maintenance treatments to gain low cost pavement life for good pavements first, then reconstructing or rehabilitating as funding is available
8. Does your agency consider PASER or other distress ratings when deciding on an appropriate fix for a specific section of road?
    a. Yes
    b. No
    c. Unsure
9. Does your agency use a computer based asset management system (such as Roadsoft, Micropaver) or a paper based asset management system (such as the National Center for Pavement Preservation's Quick Check, etc.) to guide decisions on your road network?
    a. Computer based
    b. Paper based
    c. We don't have an asset management system
    d. Unsure

10. On how much of your non-federal-aid, paved road network does your agency routinely (at least once every 3 years) collect distress rating data (PASER or other similar system) and inventory data (pavement type, number of lanes etc.)?
    a. 100%
    b. 75%
    c. 50%
    d. 25%
    e. 0%

11. Which preventive maintenance treatments does your agency routinely use as part of their regular pavement management program? (select all that apply)
    a. Chip seal
    b. Slurry seal
    c. Crack seal
    d. Ultra-thin overlay
    e. Other:_____
    f. We don't routinely use any preventive maintenance treatments
    g. Unsure

12. On what other roadside assets does your agency routinely collect inventory or rating data for asset management? (select all that apply)
    a. None
    b. Signs
    c. Guardrails
    d. Pavement Markings
    e. Culverts
    f. Storm Sewers
    g. Sidewalks
    h. Other_____

13. Does your agency have a method in place for ensuring that the quality of your asset management data is sufficient for its intended use?
    a. Yes
    b. No
    c. Unsure

14. What is one thing that TAMC should do to advance transportation asset management in Michigan?

    _____

    _____

    _____

Bridge Survey Questions:

15. How many bridges with a span of over 20 feet does your agency own?
    a. None (skip questions 16 - 19)
    b. 1 - 2 bridges
    c. 3 - 5 bridges
    d. > 5 bridges
    e. Unsure

16. Does your agency have a written bridge asset management plan with defined goals for bridge quality?
    a. Yes
    b. No
    c. Unsure

17. Does your agency use preventive maintenance treatments such as painting, cleaning expansion joints, cleaning / lubricating bearings, etc., as part of their regular treatment program for bridges?
    a. Yes
    b. No
    c. Unsure

18. Does your agency use a management system like Roadsoft to access NBI data and keep up-to-date bridge maintenance histories for the majority of its bridges over 20 feet?
    a. Yes
    b. No
    c. Unsure

19. Does your agency use bridge condition data to make decisions regarding bridge maintenance and rehabilitation?
    a. Yes
    b. No
    c. Unsure

20. Would you consider yourself qualified to answer the Bridge Survey Questions portion of this survey for your agency?
    a. Yes
    b. No

General

21. Is there anything else you would like to tell us regarding asset management implementation?

_____

_____

_____

APPENDIX G – WRITTEN COMMENTS

G-1 Pavement Asset Management Survey Question 14

What is one thing that TAMC should do to advance transportation asset management in Michigan?
Allow for more customizable layers
Allow smart cars to interact with assets and understand where they are in space.
Already doing more than enough to advance transportation asset management.
Awareness
Best practices and implementing what works best.
Biggest key is promotion
continue these **course offerings**
Continue to advocate for **more funding for training** and resources to local road agencies.
continue to **educate**
Continue to provide **training.**
Continue **training and funding.**
Continue **training and grant funding** to get local agency partners to participate in the process more with the road agencies
continuing **education**
Create one guide to umbrella all surface types. So, we don't have to flip from one guide to another depending on surface type. In a way have the guides together in one binding.
Educate the people with the money.
Educate the road distress reasons to the decision makers.
Educating on the PASER / IBR systems is excellent!
Ensure resources are available to create consistent rating and pavement management systems are in plane throughout the [state] and roads of concern are addressed appropriately.
Entirely paperless with one central cloud
Get **more funding** for roads
Get the word out
Get the word out to smaller communities
Get us **more money**
Grant opportunities/Funding
Have continuous communications with communities
I would like to be able to create groups in Roadsoft that provide a composite PASER Score so we can evaluate projects not road segments only
Improve data collection methodologies
Invest more
Its good
Just taking this for the first time, I may have some ideas after the class.
Keep growing
Keep up the good work.
Keep working to make Roadsoft quicker to use.
Make MDOT send a rater with the TPO when they rate MDOT roads. The last few years MDOT declines having a person from their agency ride along when their roads are rated. Pushing their responsibility off onto the planning agency solely.
Make more people aware of the benefits of road ratings.
Make the website more accessible.

Mandatory for all Council Members to have **training** to understand the programs.
Maybe you already do, but PASER classes in the late winter early spring when we are lining up dates for ratings for the summer would be helpful.
Money
More funding
More Funding, New Research, and Checks/Balances/Follow-up
More public officials **training** to help commissioners, county, and municipality officials understand TAMC principals.
more training
more training
More training materials not just the rating but the fixes. And maybe this is something that is already done.
More training, awareness of the importance of AM
Newletters
Not sure. I have much stronger feelings about the amount of time and money that's wasted at the state..
Offer the service to create an asset management plan for small local units. We are 90% there but lack the time and resources to complete a plan.
paser
Pay for it.
presentations
Provide funding
Provide funding for collection of other assets besides roads
Provide funding for technology upgrades.
Provide funding for upgrades in technology.
Provide more frequent **courses to educate** people
Provide **more funding** to start up asset management plans with inventory collection
Provide more resources to assist in data collection
Provide specifications for what should be acceptable paving by contractor (rating of job performed)
Require reporting at a rate that requires dedicated people for rating. Currently looked at as fill in work, not the best for reliable ratings.
Road deterioration curve training for Politicians.
Share data with elected officials
standardize the input, don't let the agencies determine their own definitions.
Training
Work with MPOs and local communities

G-2 Pavement Asset Management Survey Question 21

Is there anything else you would like to tell us regarding asset management implementation?
AM is simply another useless state tool required of local government and does little to improve MY road system.
Base layer information and information gathering is a barrier to entry for many communities. Programs like this make it easier to understand condition assessments, making it easier.
I believe my agency uses a third party to manage the bridge assessments.
Just that I would welcome assistance to help write our asset management plan.
none. Thank you very much for the training
Provide digital study material like tests/quizzes
The visuals were great, but a portion of the training where we try to rate roads ourselves would be something to add. This exercise was implemented in the culvert training.
Very cumbersome, details get outdated very soon due to [unforeseen] things... like covid and inflation
We are currently implementing an asset management plan for streets and sidewalks
We are just at the beginning stages and this training is part of our education process
You all do a wonderful job and service to the great state of Michigan!