

Measuring and Reporting Michigan's Transit System Condition 2015

A report to the Michigan Department of Transportation from the School of Planning Design and Construction, Michigan State University

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Preamble

This report is the result of a cooperative and voluntary effort between the Michigan Department of Transportation (MDOT) and the Michigan transit industry, specifically the state's two transit associations, Michigan Association of Transit Systems (MASSTrans) and the Michigan Public Transit Association (MPTA). The goal of this effort has been to identify a list of measures – called AIMS (Action Intent of Measure) – that would exemplify the organizational performance of the Michigan industry as a whole; set a standard of performance for the industry and then monitor the industry's progress in meeting those standards over time. The effort does not measure the performance of individual agencies, but reflects the condition of the industry across all agencies. MDOT's goal for this effort is to improve performance of the transit industry by targeting technical assistance to improve results.

This report presents the condition of Michigan's statewide transit system according to 11 AIMS. These AIMS and the standards by which each is measured were selected by MDOT and the Michigan transit industry based on what was known about current practices within the industry in Michigan or elsewhere in the country. Condition assessment is based on data supplied by individual transit agencies and submitted to either MDOT through its Public Transportation Management System (PTMS) or to Michigan State University's (MSU) School of Planning Design and Construction in an annual survey of transit agencies.

PTMS is a system developed by MDOT to collect financial and capital asset information from each transit agency. Information is self-reported by the transit agencies in PTMS and was used to determine the status for AIMS 1, 2 and 4. PTMS financial information is audited, while the nonfinancial information, i.e. vehicles hours, miles, etc. is verified through a reconciliation process. We also consider PTMS an Asset Management System, which is incorporated into AIM 3. The second annual survey was conducted between June and August 2015. There was a 98.7% response rate for the survey. Survey results are self-reported by each agency with no independent confirmation by MSU or MDOT.

The survey has been refined and tested over the last three years to select the specific AIMS that would be used and to clarify question language to help ensure the information collected was as accurate and consistent as possible.

The **AIMS** were developed to accordance with the Michigan Transportation Plans four goals, which are:

1. **Stewardship**: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.
2. **Safety and Security**: Continue to improve transportation safety and ensure the security of the transportation system.
3. **System Improvement**: Modernize and enhance the transportation system to improve mobility and accessibility.
4. **Efficient and Effective Operations**: Improve the efficiency and effectiveness of the transportation system and transportation services and expand MDOT's coordination and collaboration with partners.

Below is a list of the 11 AIMS and information regarding the importance for each one.

AIM 1 – Preserve existing level of local transit. This AIM is directed towards the goal of Stewardship. Although MDOT and local transit agencies would like to see an increase in the existing level of service, due to funding restrictions we strive to, at a minimum, maintain the current level. Information for this AIM is collected through PTMS. While passengers, miles and hours do not provide a comprehensive measure of transit service levels, they are good indicators.

AIM 2 – Maintain the Condition of the Fleet. This AIM is also directed towards the goal of Stewardship. MDOT has had a long time goal of keeping less than 20% of the rural and specialized fleet past their useful life. Useful life is defined by FTA or based on the Altoona test. There is not a statewide goal for the urban systems. Each individual urban system decides how to invest their capital funds to achieve what they have determined to be an acceptable fleet condition. PTMS was used to gather the information for the rural and specialized systems. Each urban system provided information regarding their fleet.

AIM 3 – Utilize Asset Management. This AIM is directed towards the goal of System Improvement. Asset Management systems can range from very basic, such as a spreadsheet for listing asset inventories to very sophisticated computerized systems that maintain detailed asset information such as condition assessments, life cycle costs, replacement schedules and drives a full range of decisions by the agency. For this AIM we measured the level of maturity of the

system used at the agency. Since PTMS is a type of asset management system and is required to be used by all agencies, using PTMS is the minimum standard.

AIM 4 – Minimize Collision Rates. This AIM is directed towards the goal of Safety. To determine the status of this measure we use the information collected in PTMS. PTMS has the same definition of collision and accidents as the Federal Transit Administration's (FTA) National Transit Database (NTD).

AIM 5 – Participation in PASS Training. This AIM is directed towards the goal of Safety. We specifically focused on drivers' participation in Passenger Service and Safety (PASS) Training which ensures that drivers have current expertise in passenger assistance techniques and sensitivity skills appropriate for serving persons with disabilities and is a required training for each driver under the Americans with Disabilities (ADA) Act. All transit drivers must receive this training at least once over the course of their driving career. They may also participate in other trainings that the agency conducts in-house or is provided by an outside source. Examples of other training for drivers are MDOT and the two transit associations co-sponsored annual "Front-Line" training and an annual Bus Roadeo competition with several driver skills tests. The AIM originally targeted training for all transit staff, but since standards have not been identified we opted to use only driver training at this time. MDOT is in the process of developing statewide standards and also implementing individual agency training plans that will have required and best practice trainings identified. Once these standards and plans are developed this AIM will be broadened back to all transit staff.

AIM 6 – Implement Intelligent Transportation System (ITS)/Technology projects. This AIM is directed towards the goal of Efficient and Effective Operations. The focus is on whether or not an agency has sought funding and/or received funding for any type of IT project. Two examples of IT projects are using Automatic Vehicle Locators (AVL) on buses, or using Global Positioning Systems (GPS) on fleets. The focus is on funding because many agencies are dependent on competitive grants to implement ITS projects and may not have readily available revenues without these competitive programs.

AIM 7 – Service Assessment. This AIM could satisfy both System Improvements and Efficient and Effective Operations. Service assessments can vary significantly between urban fixed route systems and smaller or rural demand response systems. A large fixed route system may need to assess their route structure as well as the frequencies and hours of their routes every few years, with more frequent reviews of low volume or costly routes. This might involve a very formal, data intensive process with a formal public outreach effort. A rural demand response system might be able to rely on annual review of the calls that come in for rides that fall outside of the agency's service hours to make an informal assessment of the need to adjust their hours. For all agencies, a service assessment may not lead to any change in service if the needs identified are in addition to the services already being provided and there are no additional funds available for expansion.

AIM 8 – Assess Customer Satisfaction. This AIM could also satisfy both System Improvements and Efficient and Effective Operations depending on how the outcome of the assessment is used. For customer satisfaction we measured two things. One if the agency had a documented process

(such as an internal procedure) that guides employees of the agency in how they should receive and address customer comments, complaints or questions. And the other we measured the number of agencies that conduct a formal customer satisfaction survey at least once every three years. In order to help the agencies address this AIM, MDOT is again partnering with MSU to conduct a customer satisfaction survey at all public transit agencies once every three years. The agencies do have the option to opt out of the survey, but if they opt out they are encouraged to conduct their own survey at least every three years.

AIM 9 – Increased Coordination. This AIM is directed towards the goal of Efficient and Effective Operations. We measured transit agencies' local coordination efforts. These efforts may be "local" in nature, such as discussions with other transportation providers that operate within the agency's service area such as the local senior center, or "regional" in nature in that they focus on discussions with neighboring transit agencies to coordinate trips from one service area to the next. The need for local and regional coordination differs from agency to agency. The standard used to measure coordination activity was the frequency of formal coordination meetings -- quarterly, twice a year or annually.

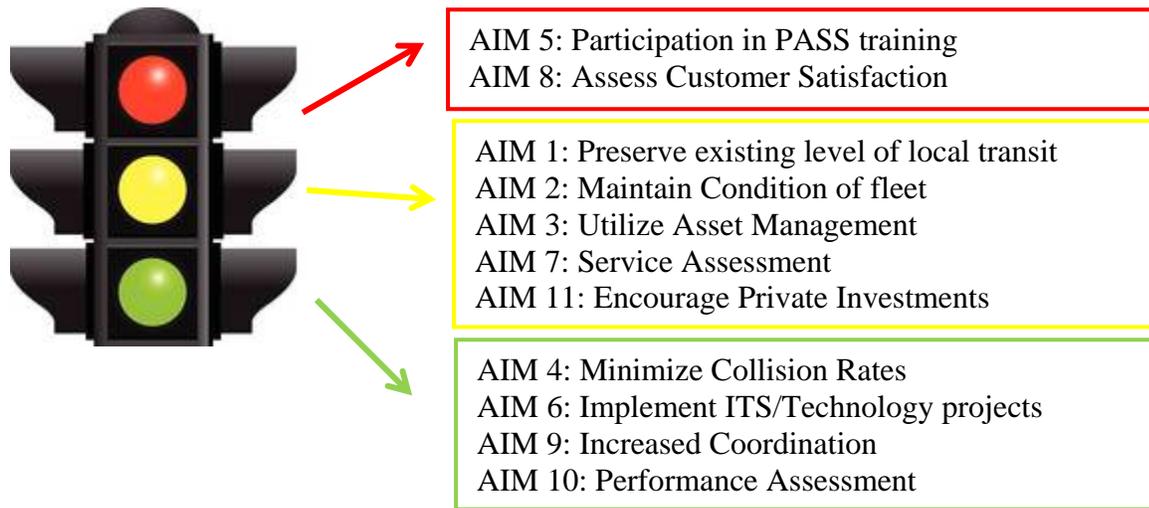
AIM 10 – Performance Assessment. This AIM is directed towards the goal of Efficient and Effective Operations. For performance metrics we asked if the agency has adopted performance measures and if they report on their progress, either internally and externally (such as a Dashboard or scorecard). The standard by which responses were reported were whether they did or did not have metrics and for those who did, the level of reporting. The highest level of performance was performance metrics that are published for general public consumption since this was viewed as complete transparency. Lesser performance levels were performance metrics that are only reported to the agency's board or are only discussed and used internally within the agency. It is important to note that the only information used to assess this AIM was the specific process each agency had developed in-house. Not taken into consideration is that all agencies report data to MDOT through PTMS that is used by MDOT to publish an agency by agency list of performance indicators and placed on MDOT's website.

AIM 11 – Encourage Private Investments. Since this AIM is directed towards raising additional funding revenues it could be used to help agencies achieve all four goals. Different types of private investments were defined, such as advertising, donations, and fully allocated contracted services.

Prior to the survey being published, MSU conducted a webinar to explain each AIM and allow transit agencies the opportunity to ask questions regarding each AIM. There was also a considerable amount of tutorials provided in the survey to help explain the intent for each question.

MDOT has stressed to all agencies that the information being provided is only available to MSU on a per agency basis. The only information available to MDOT and the public is the aggregated information for the state as a whole. This report is to be used as a statewide assessment of the transit industry in the State of Michigan. Individual agencies may use the results to compare their system to the statewide results, but this report is not an assessment of individual agencies.

Overall Assessment of AIMS



This chart provides a color-coded overview of the 11 AIMS.

The color coding represents in a scaled format an assessment of where the industry stands as a whole in comparison the best possible performance or the standard. The color-coding should be interpreted as follows:

RED: Statewide, Michigan's transit condition is significantly below the standard that was set for that AIM.

YELLOW: Michigan's transit condition is slightly below the standard selected for that AIM.

GREEN: State-wide, Michigan's transit condition meets or exceeds the standard established for that AIM.

It is important to reiterate that the standards set for each measure, and as such the color-coding was a mutual decision reached by MDOT and the transit industry and therefore are subjective. There are no pre-set national standard for any of these measures.

In response to this assessment, MDOT is working with the industry to improve performance for the two "red" AIMS. Specifically, MDOT is assisting transit agencies in performing a routine customer satisfaction survey. MDOT will also make PASS training available on a regular basis so all drivers will be in compliance with the regulations under ADA. MDOT is also working with the industry to develop statewide and agency specific training plans to help meet all required and best-practice training goals.

Background to the Survey and brief guide to interpreting detailed results

This report summarizes the results of the state-wide survey to transit agencies assessing "Michigan's Transit System Condition." conducted between June-August 2015, we had a 98.7% response rate for the survey. 56 Agencies filled out the Demand/Response survey and 18

Agencies filled out the Both-Fixed Route and Demand/Response survey. With only 2 Agencies filling out the Fixed Route survey, we have included it with the respondents that filled out the Both-Fixed Route and Demand/Response survey (list of Agencies in Appendix). The survey has been refined and tested over the last three years to reflect the state of Michigan's transit system condition comprehensively and accurately.

Results to questions asked on "service-type" offered are presented by service-type (Demand/Response or Fixed Route) regardless of the survey type filled out, while those questions on an Agency-wide basis are presented by the survey filled out (Demand/Response or Both-Fixed Route and Demand/Response), regardless of the service-type offered. So for the results by "service-type", there were a total of 94 responses, 74 for the Demand/Response service type and 20 for the Fixed Route service type.

Stewardship: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.

Aim 1: Preserve existing level of local transit, including specialized service.

Despite an increase in service hours, Michigan Transit agencies saw a 7% decrease in ridership.

The data regarding the number of passengers, miles, and hours was taken from the agencies' PTMS. Michigan Transit Agencies saw a change of 641,723 hours or an increase of 11.2%. The Transit Agencies saw a change of -439,301 miles, a decrease of -0.5% as well as seeing a change of -6,766,915 passengers, a decrease of -7.1%. Overall, Michigan Transit Agencies saw an increase in hours by roughly 10%. However, despite the increase in service hours, Michigan Transit Agencies saw a decrease in passengers by approximately 7.5% as well as a decrease in miles by approximately 1%.

	Passengers	Miles	Hours
Change from last year	-7.1% (-6,766,915)	-0.5% (-439,301)	11.2% (641,723)

Aim 2: Maintain condition of fleet

Rural and specialized fleets reported 33% of the fleet being past useful life while urban fleets reported 27.3% of the fleets being past useful life.

Data on vehicles past their useful life for Rural and Specialized Fleets was received from MDOT (PTMS); data on vehicles past their useful life for Urban Agencies was received from them directly. In all, 20 Urban Agencies reported on the percentage of their fleet past useful life. In 2015, Rural and Specialized fleets reported 33% of the fleet being past useful life while Urban Fleets reported 27.3% of the fleets being past useful life. Examining the Urban Fleets more closely, 35% (seven agencies) of the urban agencies reported needing to replace a few vehicles while 10% (2 agencies) of the urban agencies reported needing to replace many vehicles. Overall, 55% (11 agencies) of Urban Transit Agencies mentioned that they were meeting their standards completely.

	ALL 2015
Urban Agencies meeting standards completely	55% (11)
Urban Agencies need to replace few vehicles	35% (7)
Urban Agencies needing to replace many vehicles	10% (2)

Aim 3: Utilize asset management

Overall, Transit Agencies in Michigan are using Asset Management (AM) for reporting purposes, e.g. inventory and condition, but not for decision-making, e.g. investment decisions.

Agencies had a multiple choice question, describing on a scale, the type of asset management system they use. Since this question was asked by service type, there were 94 responses since some agencies responded to the question twice, once for their fixed route service and then for their demand/response service. The results show that 1% of responses (one response) indicated that the agency was using AM for all decisions while 13% of responses (12 responses) reported the agencies were using AM to prioritize investments. 35% of responses (33 responses) indicated the agencies used AM to know the condition of their inventory. 11% of responses (10 responses) reported the agencies were using AM for inventory purposes only, and 40% of responses (38 responses) reported the agencies were using only PTMS as their AM.

	ALL 2015
Agencies using AM for all decisions	1% (1)
Agencies using AM to prioritize investments	13% (12)
Agencies using AM to know the condition	35% (33)
Agencies using AM for inventory purposes	11% (10)
Agencies using only PTMS as their AM	40% (38)
Agencies using no AM	0% (0)

** Results are by Service-type offered, with a total of 94 responses*

Safety and Security: Continue to improve transportation safety and ensure the security of the transportation system.

Aim 4: Minimize the collision rate

Overall, Transit Agencies in Michigan have extremely low collision rates: About 10 collisions per million vehicle miles.

* To note here is that the report includes accidents regardless of fault as per national reporting requirements. Compared to national averages, Michigan transit agencies have indicators better than the national average (Traffic Safety Facts, US DOT).

Using the agencies' data on collisions collected from the PTMS, the agencies were categorized into: 1) maintaining zero or decreased collision rates, 2) maintaining greater than zero collision rates, or 3) increased collision rates. 99% of the agencies maintained zero or decreased fatalities over the previous year, with a total decrease in fatalities of 1. 90% of the agencies maintained zero or decreased injuries, with a total decrease of 67 injuries. 79% of the agencies maintained zero or decreased PDO<\$25k collisions, with a total decrease of 148 collisions, and 95% of the agencies maintain zero or decreased PDO>\$25k collisions, with a total decrease of 14 collisions. 1% of all agencies maintained greater than zero fatalities, while 3% of the agencies maintained greater than zero injuries. 3% of the agencies maintained a greater than zero PDO<\$25k collisions, while 1% of the agencies maintained greater than zero PDO>\$25k collisions. Finally, none of the agencies increased fatalities, however, 8% of the agencies increased injuries, an increase of 13 injuries over the last year. Also reporting increases, 18% of the agencies increased PDO<\$25k collisions, an increase of 140 collisions in 2015, and 4% of the agencies increased PDO>\$25k collisions with a total increase of three in 2015.

Maintained Zero or Decreased Collision Rates	All 2015
Fatalities	99% (-1)
Injuries	90% (-67)
PDO<\$25k	79% (-148)
PDO>\$25k	95% (-14)
Maintained >0 Collisions Rates	
Fatalities	1% (0)
Injuries	3% (0)
PDO<\$25k	3% (0)
PDO>\$25k	1% (0)
Increased Collisions Rates	
Fatalities	0% (+0)
Injuries	7% (+13)
PDO<\$25k	18% (+140)
PDO>\$25k	4% (+3)

Aim 5: Participation in ongoing training activities

* Disclaimer: the question was misinterpreted. Follow-up phone calls to selected agencies that had reported having drivers without PASS-training revealed a misinterpretation of this question.

Agencies reported on the percentage of their drivers that participated in training activities. Taking all agencies combined, an average of 56% of the drivers employed with all Agencies have undergone PASS training whereas an average of 68% of the drivers employed with all agencies have undergone other training in the last year. Finally, an average of 45% of the drivers employed with all Agencies have undergone ongoing training in the last year. During the reporting, there was still some misunderstanding on the wording of the question about PASS training. Consequently, the question will be revised next year. MDOT's goal is to have 100% of drivers participate in PASS training at least once.

	ALL 2015
Drivers that have participated in "PASS Training"	56%
Drivers that have participated in "Other Training"	68%
Drivers that are in "Ongoing Training"	45%

System Improvement: Modernize and enhance the transportation system to improve mobility and accessibility.

Aim 6: Implement ITS/Technology projects to improve efficiency, reliability, and customer satisfaction

Overall, just under half of the Michigan Transit Agencies have received funding for an ITS project or achieved implementation in the last year.

Agencies entered whether they have plans for ITS projects and if they have implemented those plans and taking all agencies combined, 47% (35 agencies) reported having received funding or achieved implementation in the last year. 24% (18 agencies) of agencies reported that have applied for funding last year or will apply next year, whereas 29% of agencies (22 agencies) reported not pursuing ITS projects.

	ALL 2015
Agencies that have received funding in the last year	47% (35)
Agencies that have applied for funding last year or will apply next year	24% (18)
Agencies not pursuing ITS project	29% (22)

** Results are by Agency-type (type of survey filled out), with a total of 75 responses (one agency did not answer this question)*

Aim 7: Examine and structure services to provide maximum mobility relative to changing demographics and trip generator locations

Overall, 60% of Michigan Transit Agencies have conducted a Service Assessment and implemented some changes in the last three years.

Agencies reported whether they have completed a documented service assessment in the previous year/s and implemented changes accordingly. Since this question was asked by service type, there were 94 responses since some agencies responded to the question twice, once for their fixed route service and then for their demand/response service. 10% of responses (nine responses) reported that the agencies had conducted a Service Assessment in the last year (three years for Demand/Response services) and implemented all changes. 46% of the responses (43 responses) indicated that the agencies had conducted a Service Assessment in the last year (three years for Demand/Response services) and implemented *some* changes, while 3% of the responses (3 responses) indicated the agencies had conducted a Service Assessment in the last three years and implemented changes. Lastly, 41% of the responses (39 responses) reported that the agencies had not conducted a Service Assessment in the last three years.

Agencies that have...	ALL 2015
...Conducted a SA last yr (3 yrs for DR) & implemented <u>all</u> changes	10% (9)
...Conducted a SA last yr (3 yrs for DR) & implemented <u>some</u> changes	46 % (43)
...Conducted a SA in the last three years & implemented changes	3% (3)
...Not conducted a SA in the last 3 yrs	41% (39)

** Results are by Service-type offered, with a total of 94 responses*

Aim 8ab: Encourage customer contact

Overall, 76% of Michigan Transit Agencies have some means of addressing customer input. A third of Michigan Transit Agencies have conducted a customer satisfaction survey in the last three years.

Agencies reported whether they have a documented process to receive and address customer input. 76% of agencies (56 agencies) reported that they have a documented process to address customer input while 24% (18 agencies) reported that they don't have a documented process to address customer input.

Agencies also reported whether they conduct a customer satisfaction survey at least once every three years. 32% of agencies (24 agencies) reported that they have conducted a survey in the last three years while 31% (23 agencies) reported that they plan to conduct a customer satisfaction survey next year. Finally, 37% of the agencies (27 agencies) reported that they have not conducted a survey in the last three years.

8a: Addressing Customer Input	ALL 2015
Agencies that have a documented process to address customer input	76% (56)
Agencies that do not have a documented way of addressing customer input	24% (18)
8b: Conducting a Customer Satisfaction Survey	
Agencies that have conducted a survey in the last 3 years	32% (24)
Agencies that plan to conduct a survey next year	31% (23)
Agencies that have not conducted a survey in the last 3 years	37% (27)

** Results are by Agency-type (type of survey filled out), with a total of 74 responses (two agencies did not answer this question).*

Aim 9: Increase coordination of transportation options

Overall, 90% of Michigan Transit Agencies have participated in meetings with providers to discuss coordination.

Agencies reported whether they participate in at least one meeting annually with other providers to discuss local coordination efforts that might include other forms of transportation across service areas and within service areas. Since this question was asked by service type, there were 92 responses since some agencies responded to the question twice, once for their fixed route service and then for their demand/response service. When reporting, 49% of the responses (45 responses) stated that the agencies had participated in quarterly meetings with multiple providers to discuss local/regional coordination in the last year whereas 26% of the responses (24 responses) reported that the agencies had participated in two meetings with multiple providers to discuss local/regional coordination in the last year. 16% of the responses (15 responses) indicated that the agencies had participated in one meeting with providers to discuss local/regional coordination in the last year, while 1% of the responses (one response) stated that the agency had participated in one meeting with another provider to discuss local/regional coordination. Lastly, 8% of the responses (seven responses) stated that the agencies had not participated in any meeting to discuss local/regional coordination in the last year.

Agencies that have...	ALL 2015
...Quarterly meetings with multiple providers in the last year	49% (45)
...2 meetings with multiple providers in the last year	26% (24)
...1 meeting with providers in the last year	16% (15)
...1 meeting with another provider in the last year	1% (1)
...no meetings last year	8% (7)

** Results are by Service-type offered, with a total of 92 responses*

Aim 10: Provide efficient and effective public transportation services through a range of agency determined performance measures.

Overall, 50% of Michigan Transit Agencies have performance measures that are published for complete transparency.

Agencies reported whether they have defined annual performance metrics (i.e. do you have a Dashboard and scorecard?). Since this question was asked by service type, there were 94 responses since some agencies responded to the question twice, once for their fixed route service and then for their demand/response service. 50% of the responses (47 responses) indicated that the agencies had performance metrics that are published for complete transparency, while 7% of the responses (seven responses) indicated that the agencies had performance metrics that are reported to the board. However, 14% of the responses (13 responses) indicated that the agencies have performance metrics that are discussed with staff only while 15% of the responses (14 responses) indicated that the agencies have performance metrics but are not reported anywhere. Lastly, 14% of the responses (13 responses) reported that the agencies did not have any defined performance metrics.

Agencies that have Performance Measures...	ALL 2015
...published for complete transparency	50% (47)
...that are reported to the Board	7% (7)
...that are discussed with staff only	14% (13)
...but are not reported anywhere	15% (14)
...agencies that do not have any defined performance measures	14% (13)

** Results are by Service-type offered, with a total of 94 responses*

Aim 11: Encourage/Seek Private Investment

Overall, just under half of Michigan Transit Agencies have private investments.

Agencies reported on the number and amount of private investments for the reporting period and taking all agencies combined, 9% of the agencies (seven agencies) reported that they have increased private investments, while 33% of the agencies (25 agencies) reported that they have sustained private investments and were actively seeking additional ones. 54% of the agencies (41 agencies) stated that they do not have any private investment and 4% (three agencies) reported that they have decreased private investments since the last year.

	ALL 2015
Agencies that have increased private investments	9% (7)
Agencies that have sustained private investments and actively seeking additional ones	33% (25)
Agencies that do not have any private investments	54% (41)
Agencies that have decreased private investments	4% (3)

** Results are by Agency-type (type of survey filled out), with a total of 76 responses*

Private investments include advertising, purchase of service agreements, and partnerships with communities or other services such as Park Service, Forest Service, tribe, and visitor's bureau.