Bridge Management 2016 Administrative Overview

BrMUG Meeting

San Antonio, TX

FY2015 Licensees

County/City	State
Los Angeles Co	CA
City of Phoenix	AZ
Penn. Turnpike	PA
Richmond Transp	VA

41 State Departments of Transportation + Manitoba, FHWA, District of Columbia & Puerto Rico

Map Key	
	Non- Licensee
	Licensee

FY2016 Licensees

County/City	State
Los Angeles County	CA
City of Phoenix	AZ
Penn. Turnpike	PA
Richmond Trans Auth	VA
New York City DOT	NY
Ohio State University	OH

**41 State Departments of Transportation +
Manitoba, FHWA, District of Columbia
& Puerto Rico**

Map Key	
	Non- Licensee
	Licensee

Bridge Management Licensees (FY16)

License Type	Number of Licenses
BrM Site	48
BrM Local/Small Agency	3
BrM Educational	3

New Member Agencies Considering BrM
• Ohio Department of Transportation
• Washington State Department of Transportation

Outreach / Marketing

Opportunities to expand the Bridge Management user base.

- Numerous product presentations at meetings and conferences

- Extending invitations to DOT personnel to attend Task Force meetings in their home locales

- Culmination of the BrM 5.2 product with the release of 5.2.3

- Promoting the application to member agencies (individual contacts, agency by agency) who currently are not licensees
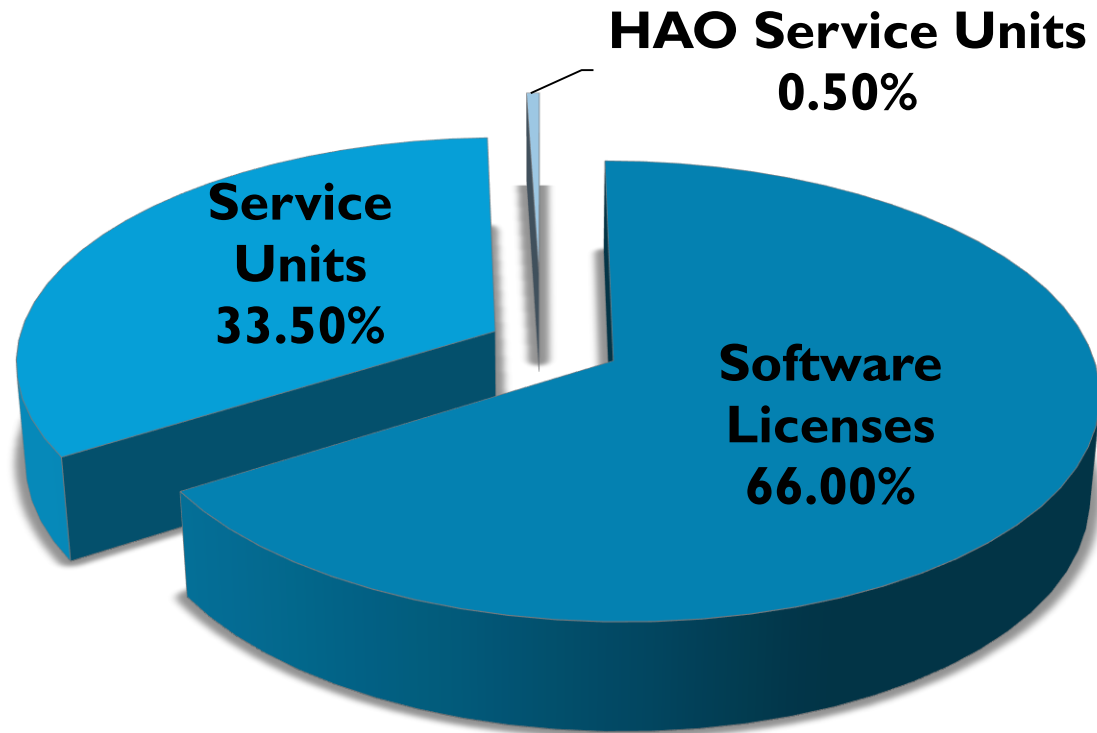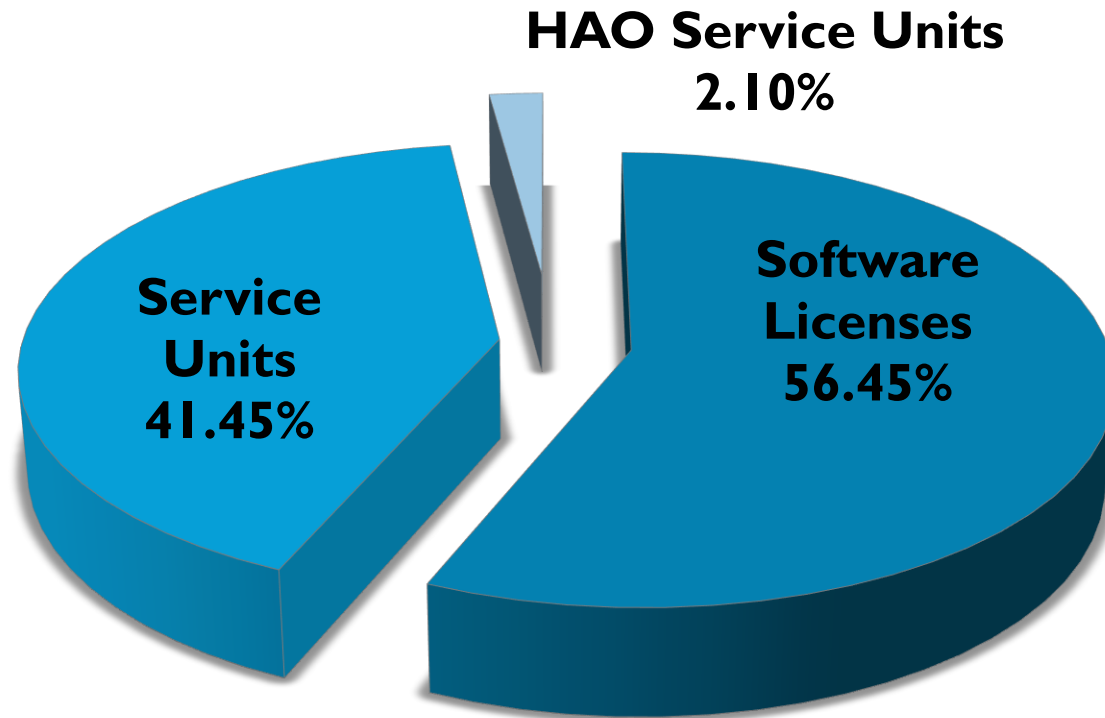
Outreach / Marketing

Our New Secret Weapon - AASHTOWare Marketing Manager, Arpine Baghdasarian

- Fresh Outlook and New Ideas!!
- Identifying and focusing on more than one contact within our user organizations (end user and various management levels)
- Improved communication – tailored for specific audiences
- Possibly of alternate communication channels
- AASHTOWare web site review and updates
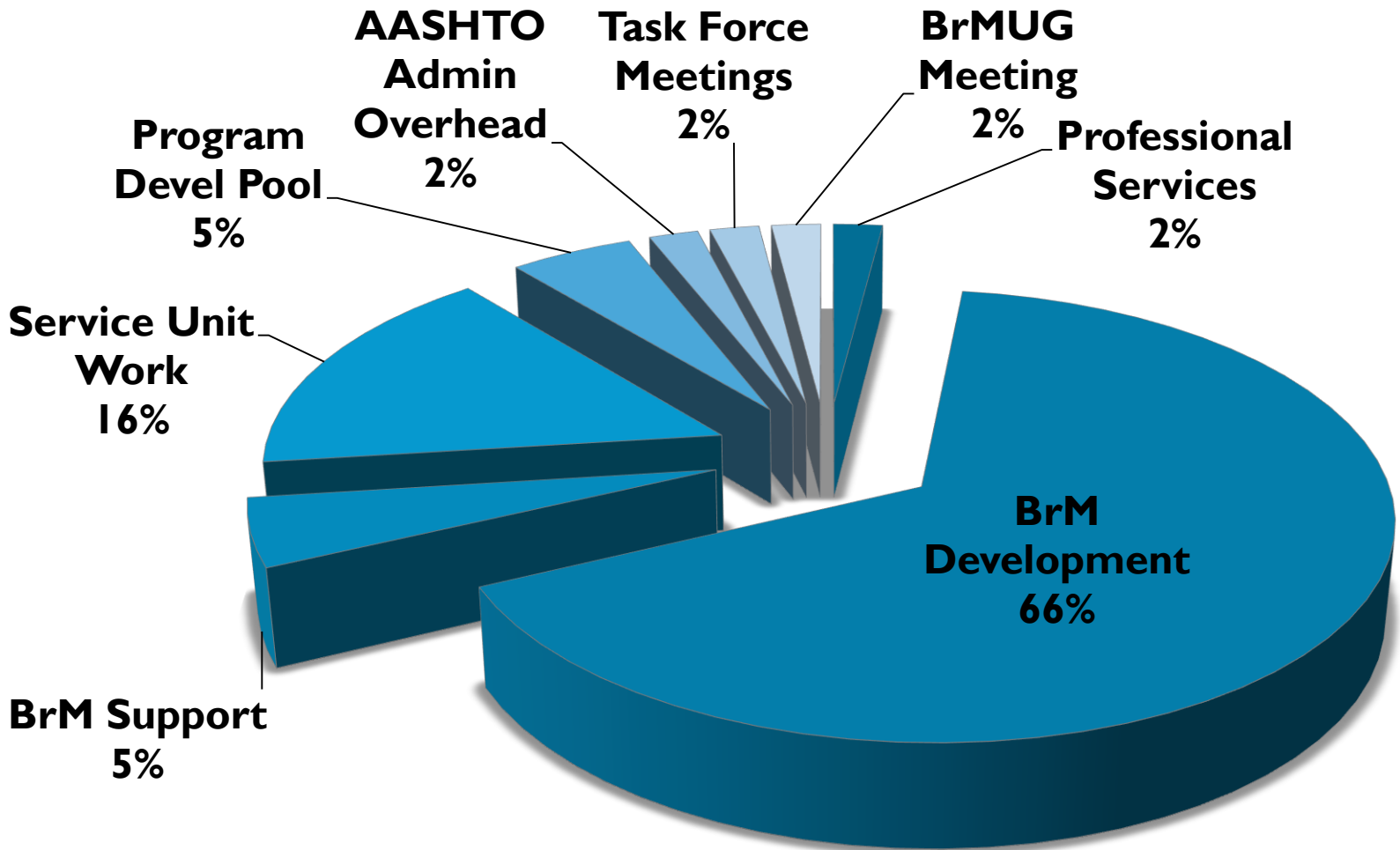- Ideas / suggestions from the BrDR Community
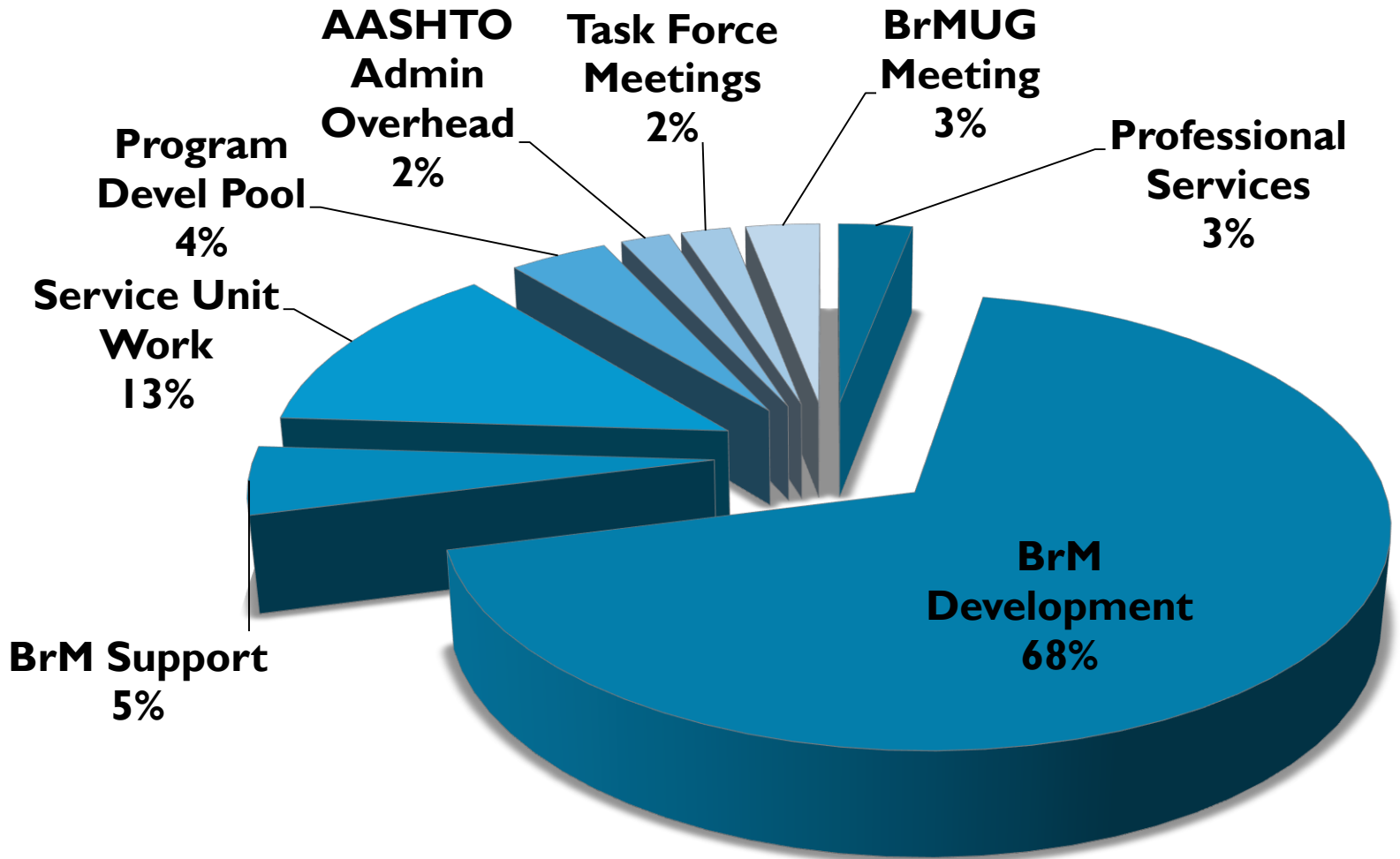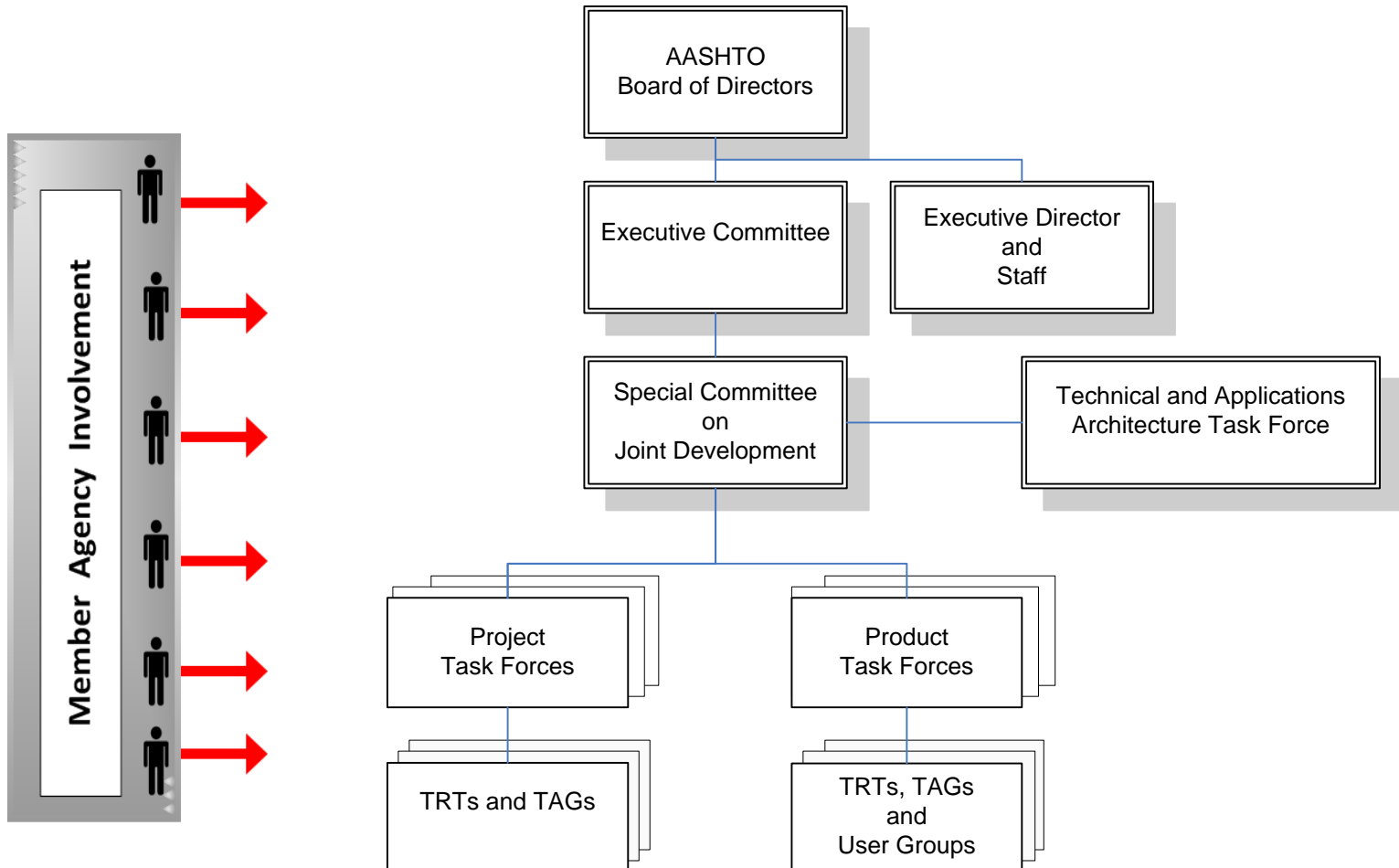
FY2015 Revenue

FY2016 Revenue

FY2015 Expenditures

- Program Devel Pool 5%
- AASHTO Admin Overhead 2%
- Task Force Meetings 2%
- BrMUG Meeting 2%
- Professional Services 2%
- Service Unit Work 16%
- BrM Support 5%
- BrM Development 66%

FY2016 Expenditures

- AASHTO Admin Overhead 2%
- Task Force Meetings 2%
- BrMUG Meeting 3%
- Professional Services 3%
- Program Devel Pool 4%
- Service Unit Work 13%
- BrM Support 5%
- BrM Development 68%

AASHTOWare Program Management

Member Agency Involvement

AASHTO
Board of Directors

Executive Committee

Executive Director
and
Staff

Special Committee
on
Joint Development

Technical and Applications
Architecture Task Force

Project
Task Forces

Product
Task Forces

TRTs and TAGs

TRTs, TAGs
and
User Groups

AASHTO Administrative Overhead

- AASHTO Administration & Overhead
  - Staff salaries, benefits, and overhead
  - Contracted Project Manager
  - Proportional share of SCOJD, T&AA and indirect costs
  - Legal Services
- Technical and Applications Architecture Task Force
  - Technical resource for SCOJD and product task forces
  - Develop and maintain software standards and perform QA Reviews

Why Use AASHTOWare?

- Incorporates "best practices"

- Users share solutions and costs

- License fees cover overall expenses ensure software products are kept current with technology and functional requirements

- Each product is self-supporting

- Non-profit operation

- Management and oversight by agency (DOT) personnel

- AASHTO staff project management/assistance

Task Force Member Appointment Process

- Conduct broad solicitation of interest to member community

- Candidate resumes reviewed by Task Force Chair, SCOJD Liaison, and AASHTO Project Manager

- Interviews conducted by same to find subject matter expertise needed to compliment the current Task Force membership

- Candidate recommendation and all resumes received submitted to SCOJD for approval

Members allowed to serve two, three-year terms. Special terms may be extended at the direction of the SCOJD

2016 Bridge Management
Customer Satisfaction Survey Results

## Conducted July 22 – September 7, 2016

Survey Participation

- Only Member Agency End User Designees were surveyed
  - ensure multiple / conflicting responses were not received from each agency
  - capture member agency software environment / configuration information
  - 43 Member Agencies responded (86%)
    - 29 Member Agencies responded in 2015
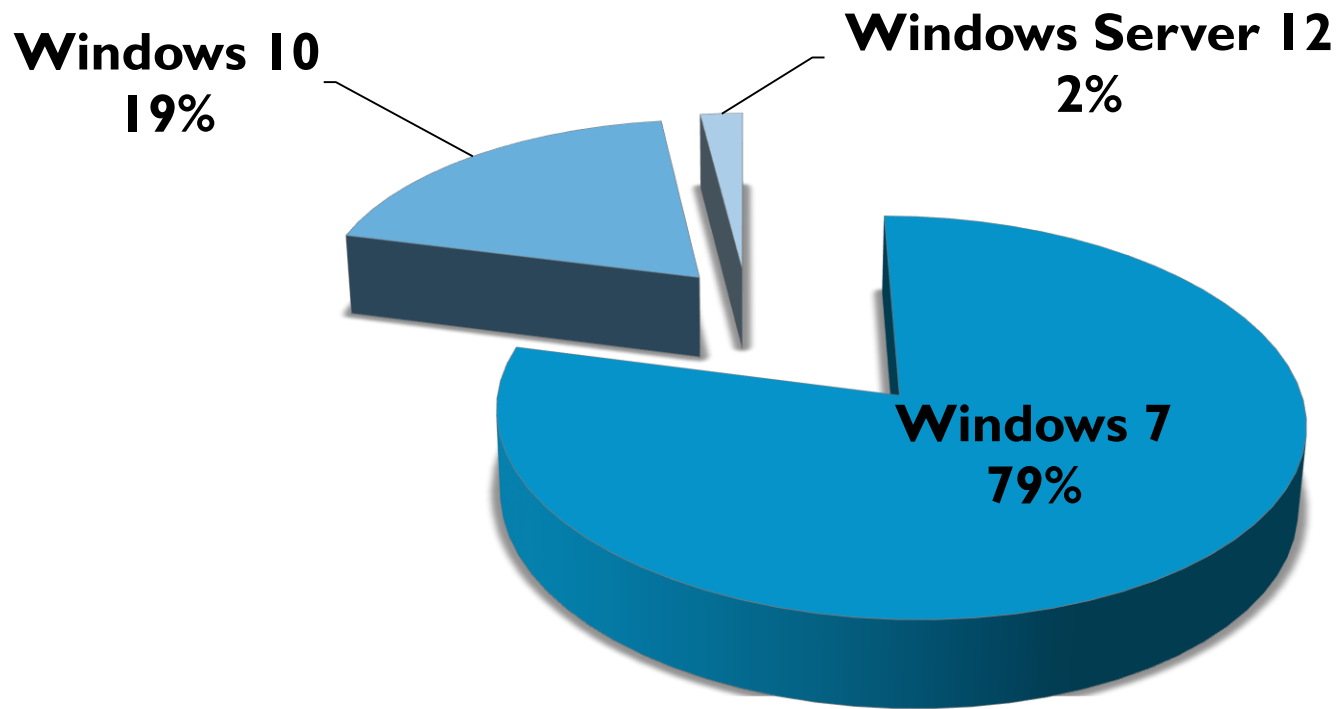   - 33 Member Agencies responded in 2014
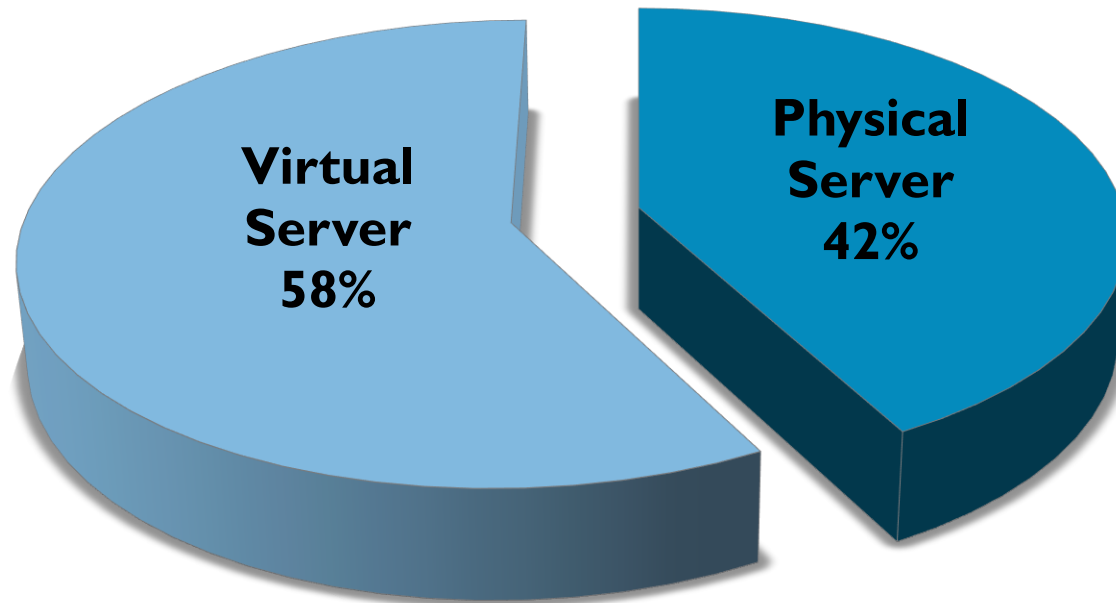
Software Version Used
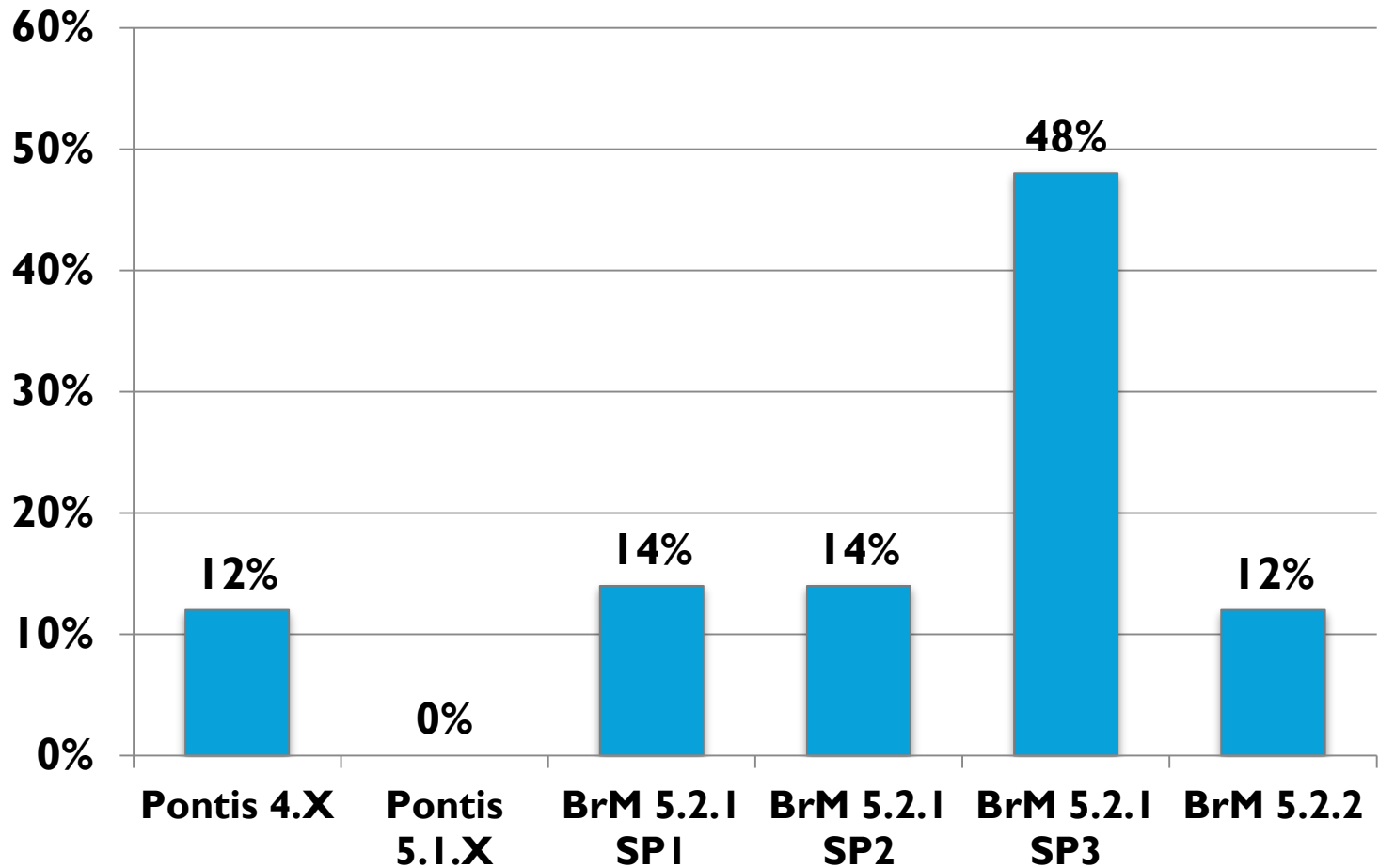
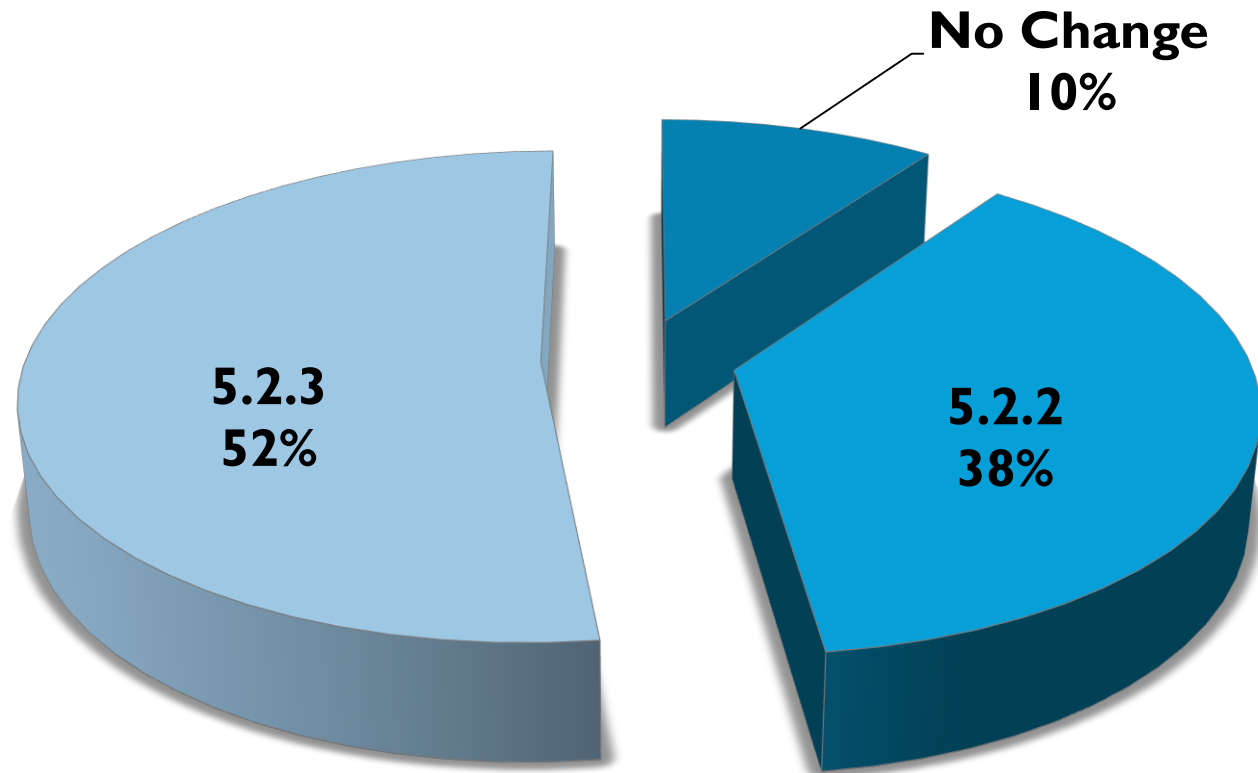# If you are using version 5.X, which platform are you using?

Both Enterp & Workstn 13%

Workstn 30%

Enterprise 57%
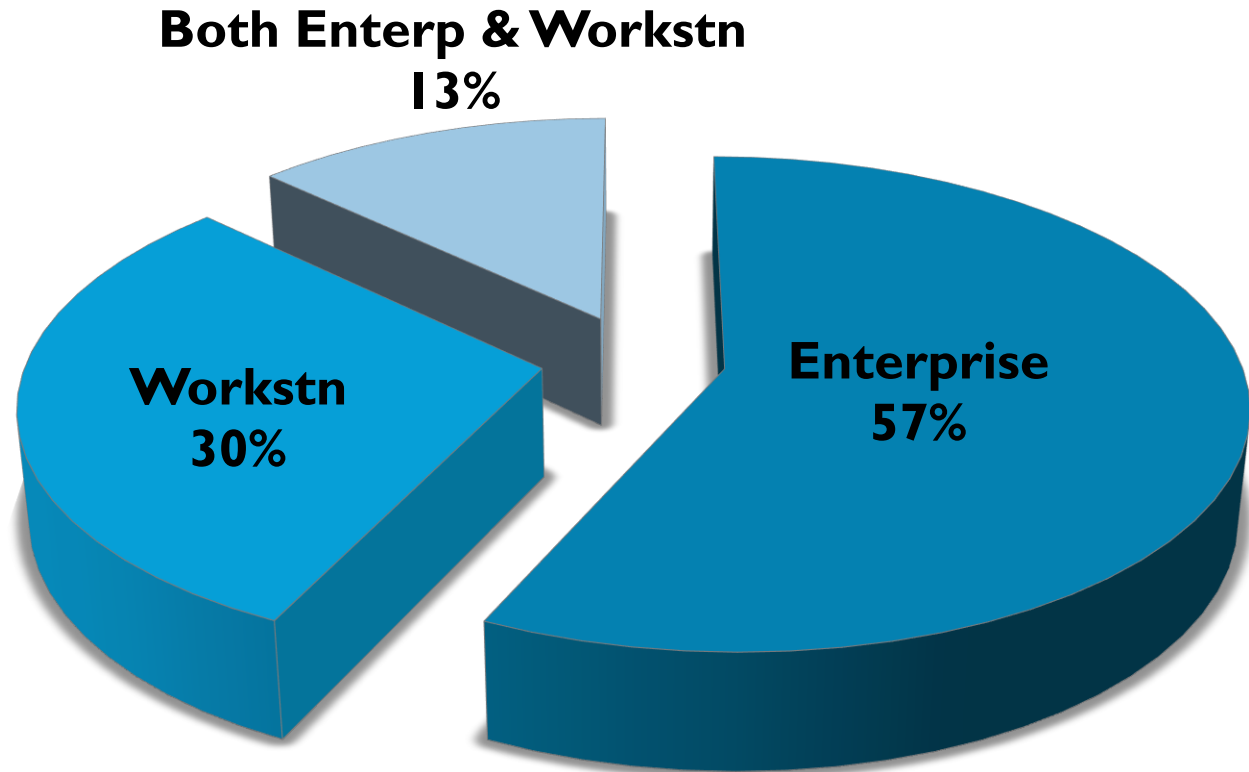
Workstation Operating System

Server Environment

Virtual Server 58%

Physical Server 42%

Which version to you plan to move to within the next year?

What do you need to move to a newer version of the software?

- Migrate existing data in the older table structure and add custom data
- Complete the input of bridge data
- Confirm the compatibility of all custom tabs, forms, etc.
- Upgrade other systems used with BrM
- Stable version and system compatibility
- Multimedia functioning correctly
- Input screens and reports
- Assess the effects of GUIDs

What do you need to move to a newer version of the software? (cont)

- Finish the testing of 5.2.2
- Current 5.2.2 implementation issues are addressed
- Complete the customization of reports
- Sufficient personnel time available to dedicate to the effort
- Assess the impacts of database upgrades
- Upgrade assistance
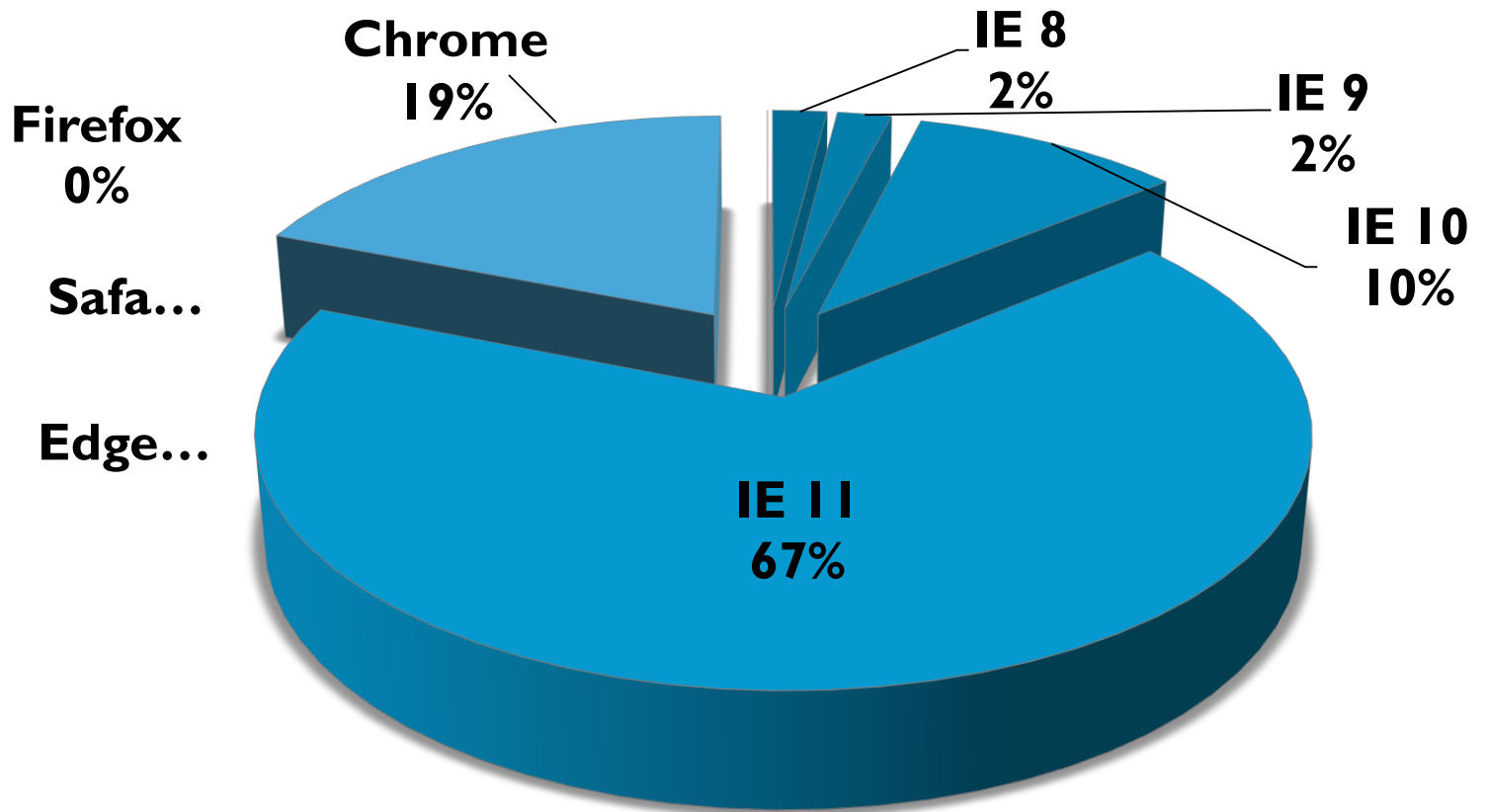- Support from IT
- The release of 5.2.3

What do you need to move to a newer version of the software? (cont)

- Web-Based Agency Inspection Reports work with GUIDs
- Complete BrM 5.2.3 Training
- Upgrade the Oracle 11g database

Web Browser Used

Planning to upgrade to a new web browser?

- No plans to upgrade (23)
- Would like to work with IE, Chrome & Safari (3)
- Edge (2)
- We use Chrome, primary browser is IE 11
- Our three main browsers are IE, Firefox & Chrome
- We use IE 10 for everything except BrM
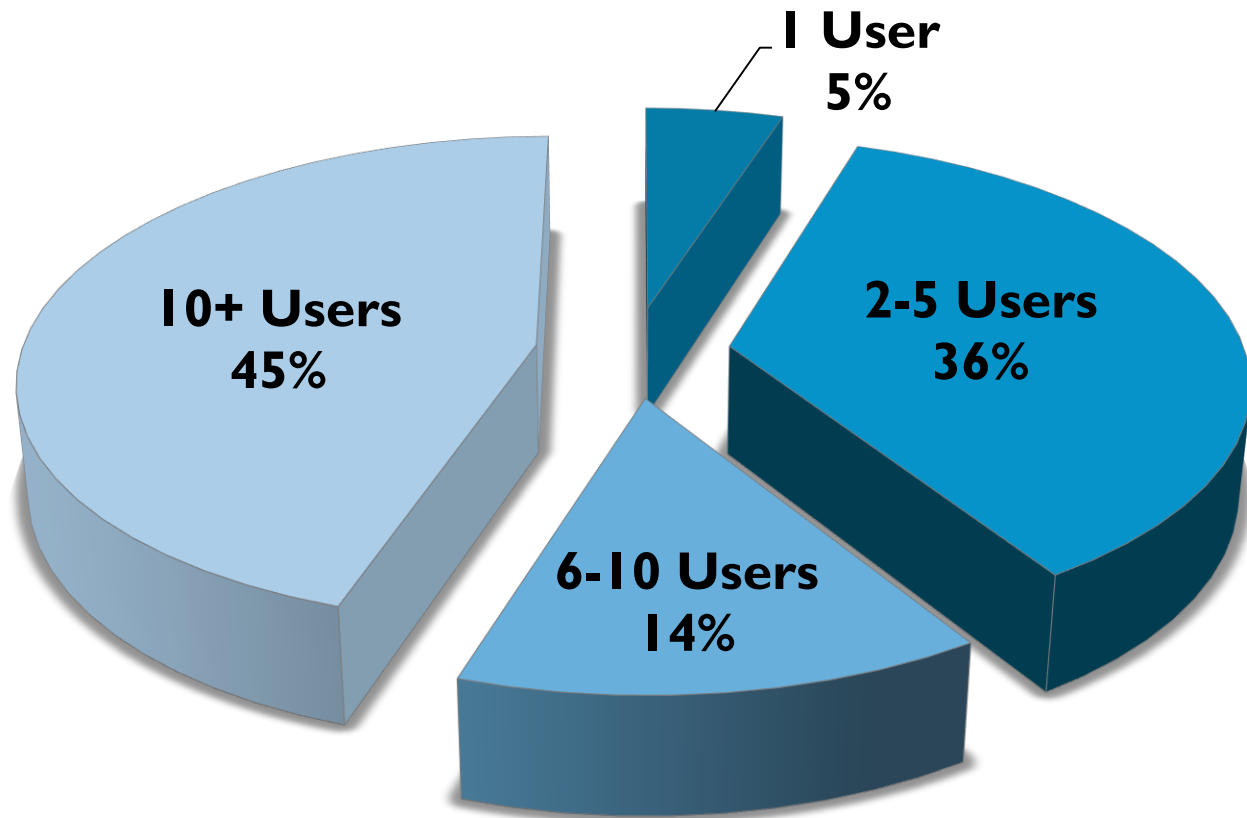- State IT department determines when to update versions of IE

Browser Upgrade Timeframe
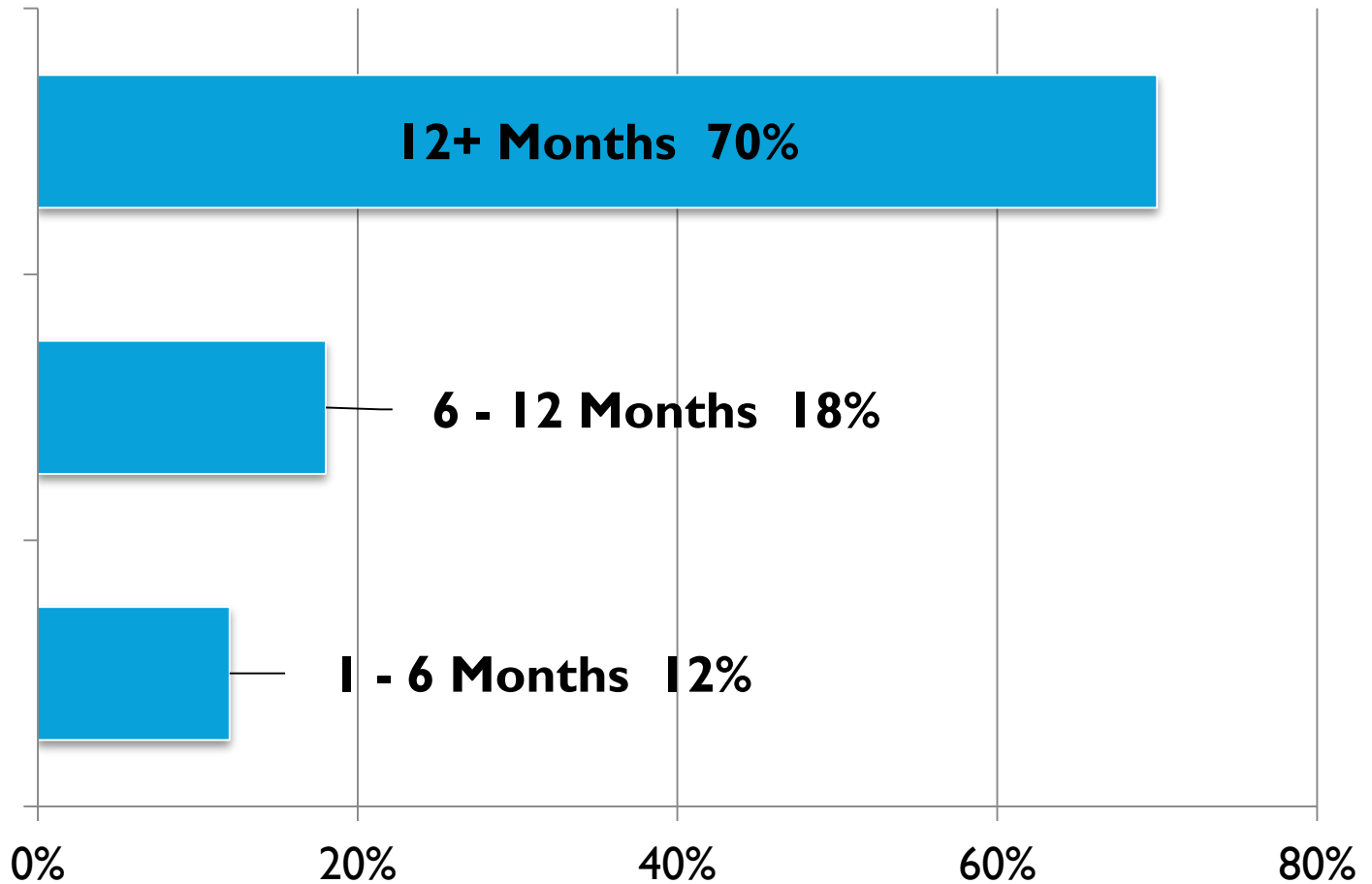
Element Data Collection
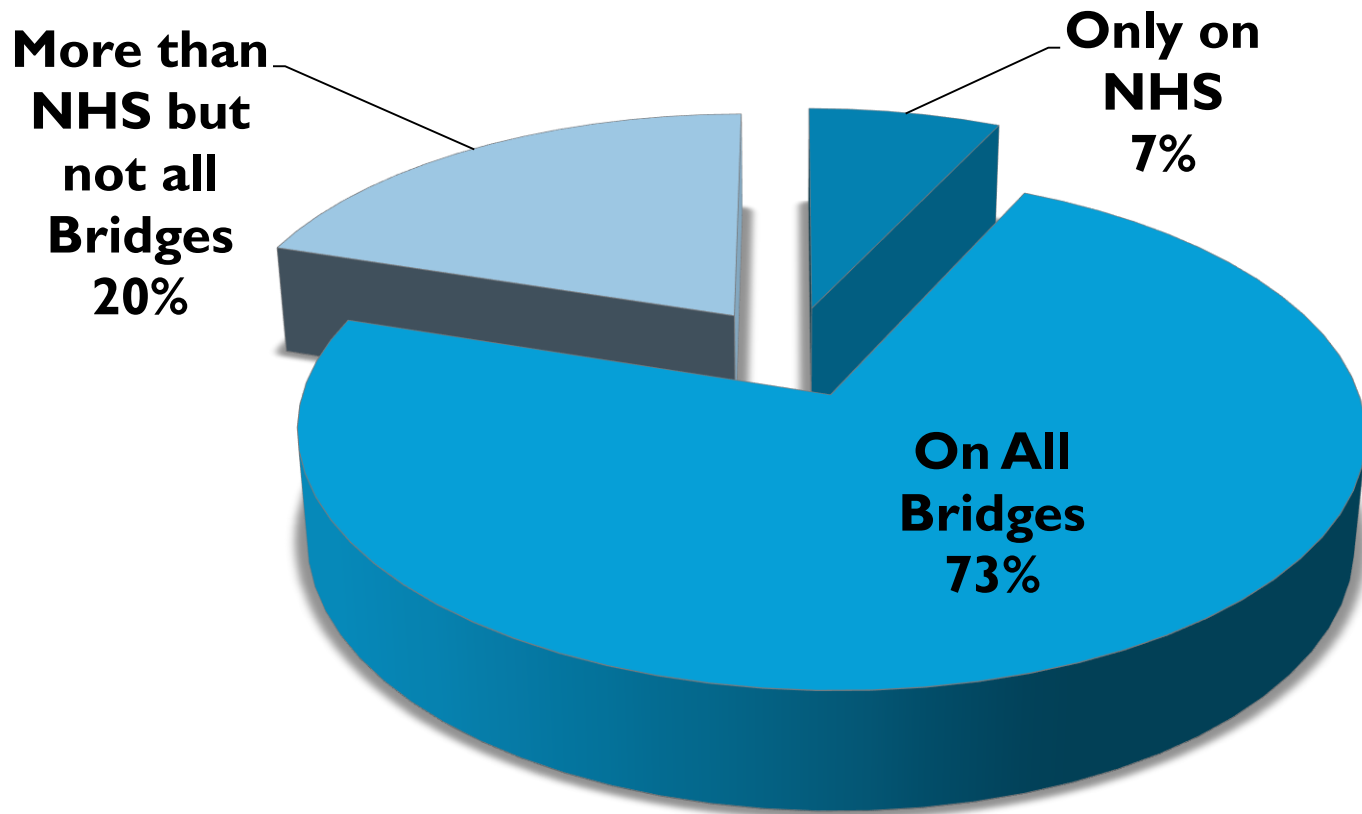
Number of BrM Users

Most Significant Bridge Management Challenge

- Data (8)
  - Importing element data and inventory software into BrM
  - Collecting all data on all bridges
  - Time and resources to perform data QC checks
  - Maintaining meaningful data to make quality decisions
  - Maintaining and improving the data architecture
  - Confidence the data will be maintained after it's entered
  - Xml files
- Software Updates (4)
  - Time for updating software and adapt

Most Significant Bridge Management Challenge (cont)

- Ease of Use (4)
  - Roles
  - Clean and intuitive table structure
  - Software is not user friendly
  - Documentation
- Data Model (3)
  - Understanding the data model
  - Setting up the models/criteria to use BrM for planning projects
- Speed (2)
  - Speed of the software
  - Speed and efficiency of entering inspection data

Most Significant Bridge Management Challenge (cont)

- Deterioration (2)
  - Setting up deterioration models
  - Establishing deterioration curves
- Reports (2)
  - Crystal Reports Development
  - Changes to all in-house queries/reports due to changes in bridge key fields
- Lack of DOT Personnel Resources (2)
- Meeting FHWA Deadlines (2)
  - Keeping up with mandates including tracking postings and stream bed profiles

# Most Significant Bridge Management Challenge (cont)

- Cycle Cost Analysis

- Network Analysis - Ability to complete a network analysis

- Integrating into existing planning process

- Multimedia Function - getting multimedia to work

- Tunnel Inventory

- Learning Curve - Learning to run groups of bridges

- Training - Training 300+ inspectors to ensure accuracy

- OSIM Methodology in Canada
  - Using BrM is a challenge
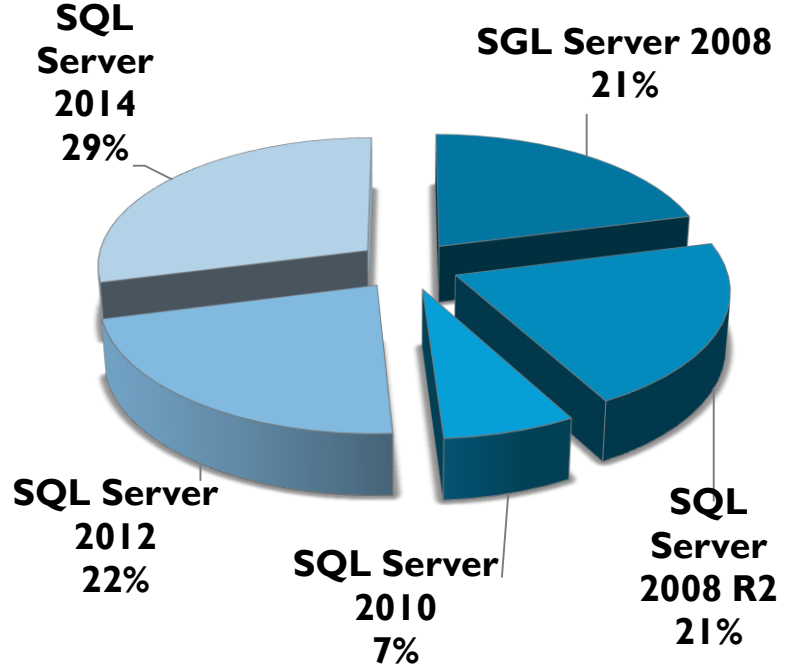
Most Significant Bridge Management Challenge (cont)

- Software Stability - Waiting for the software to be stable
- Funding

Database Used
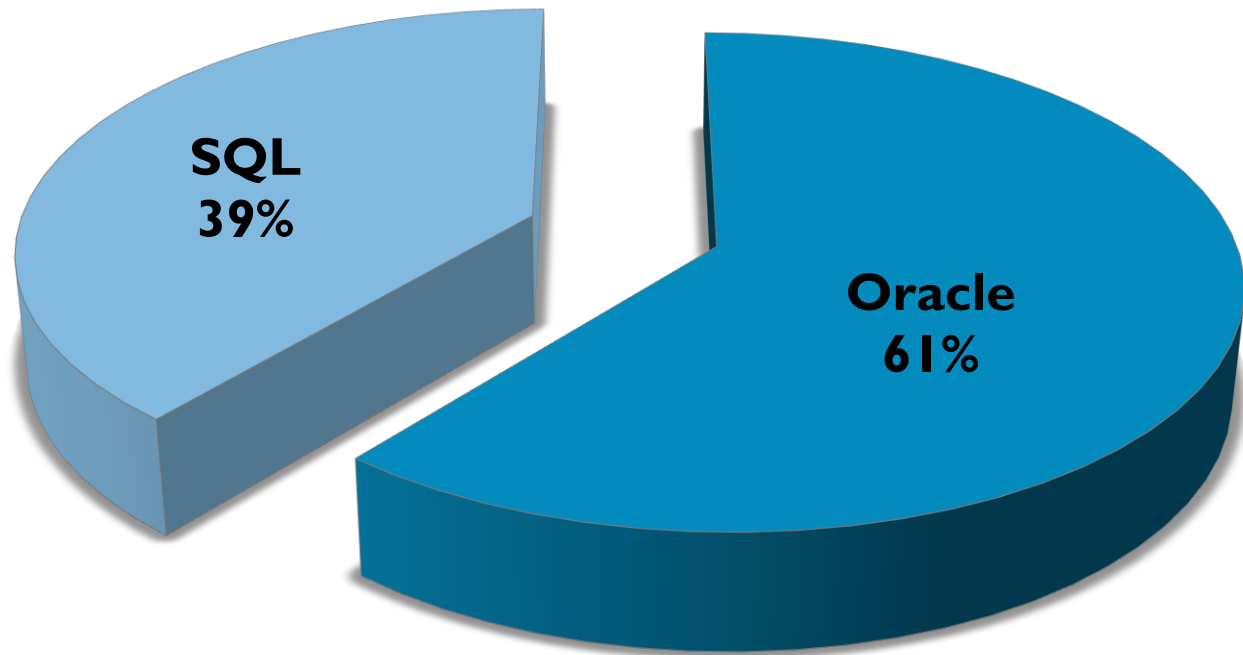
Database Version Used

Features Used

Multi-Media Image…

Project Planning 35%

Deterioration Modeling…
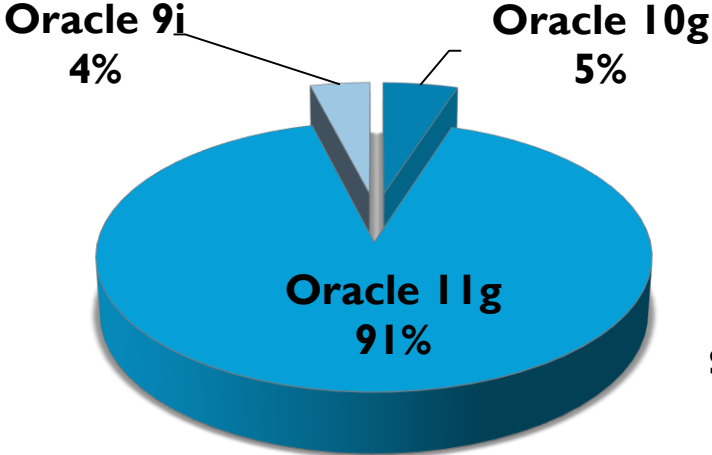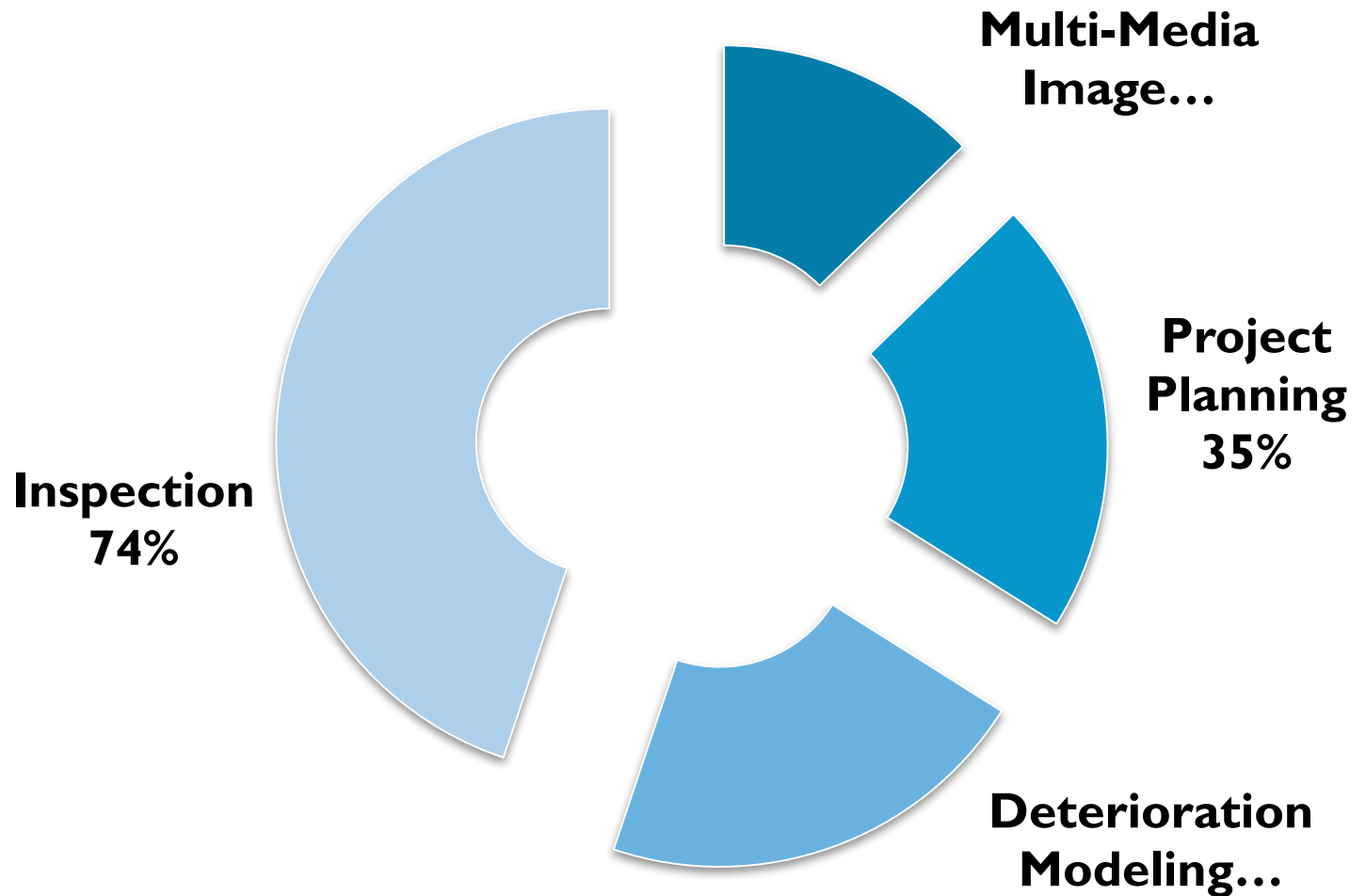
Inspection 74%

Interested in 3D Mobile Inspection?
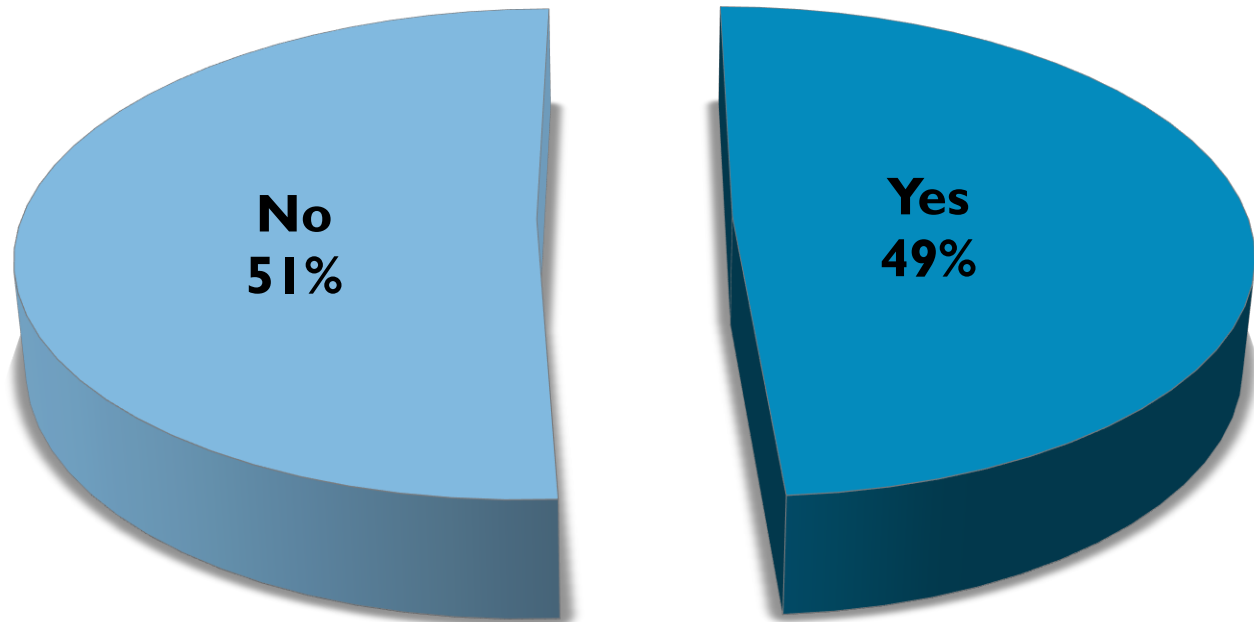
Level of Interest – Incorporating 3D Mobile Inspection into BrM
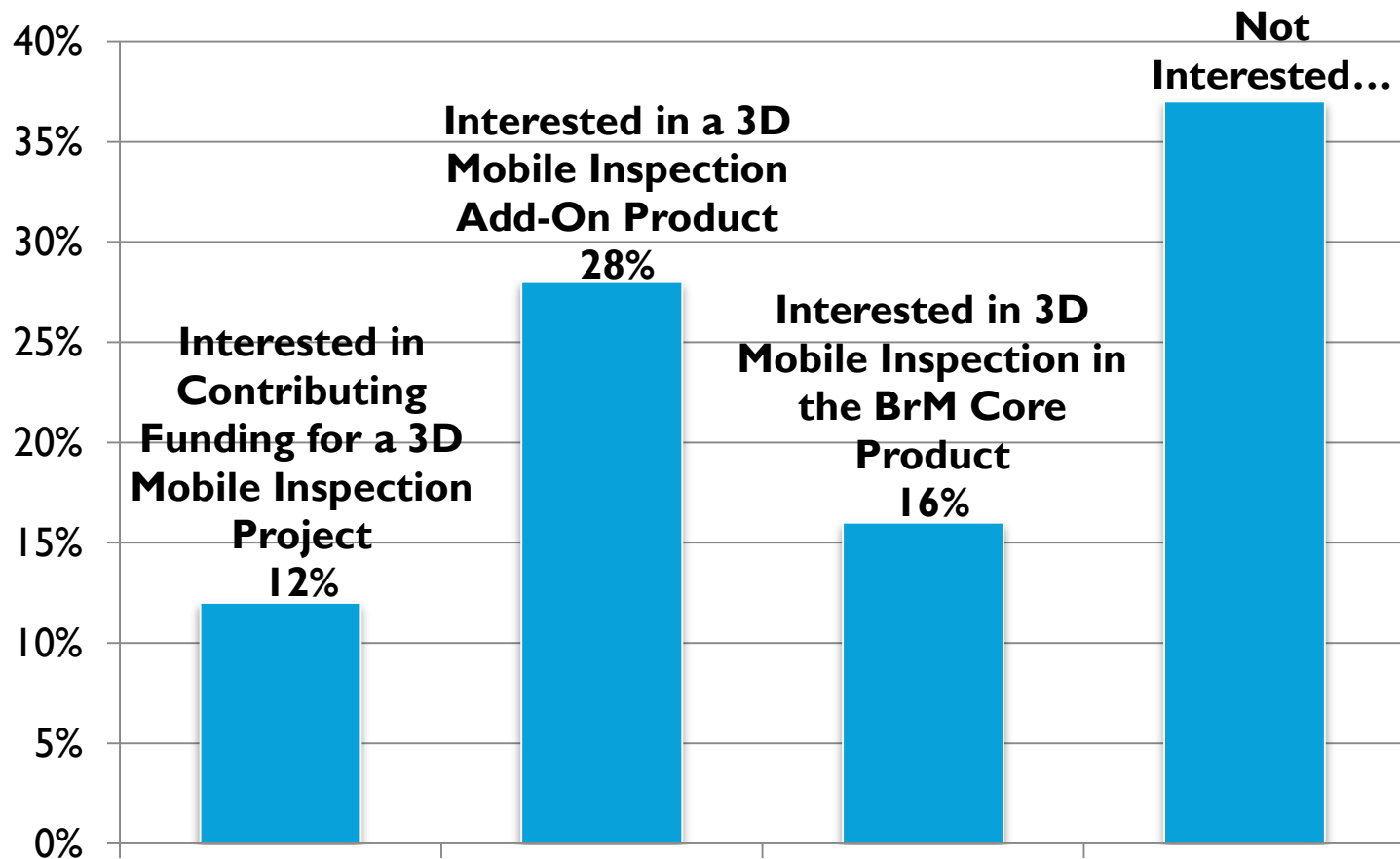
Are you using Third Party Software in addition to BrM for Inspection Data Collection?

No
46%

Yes
54%
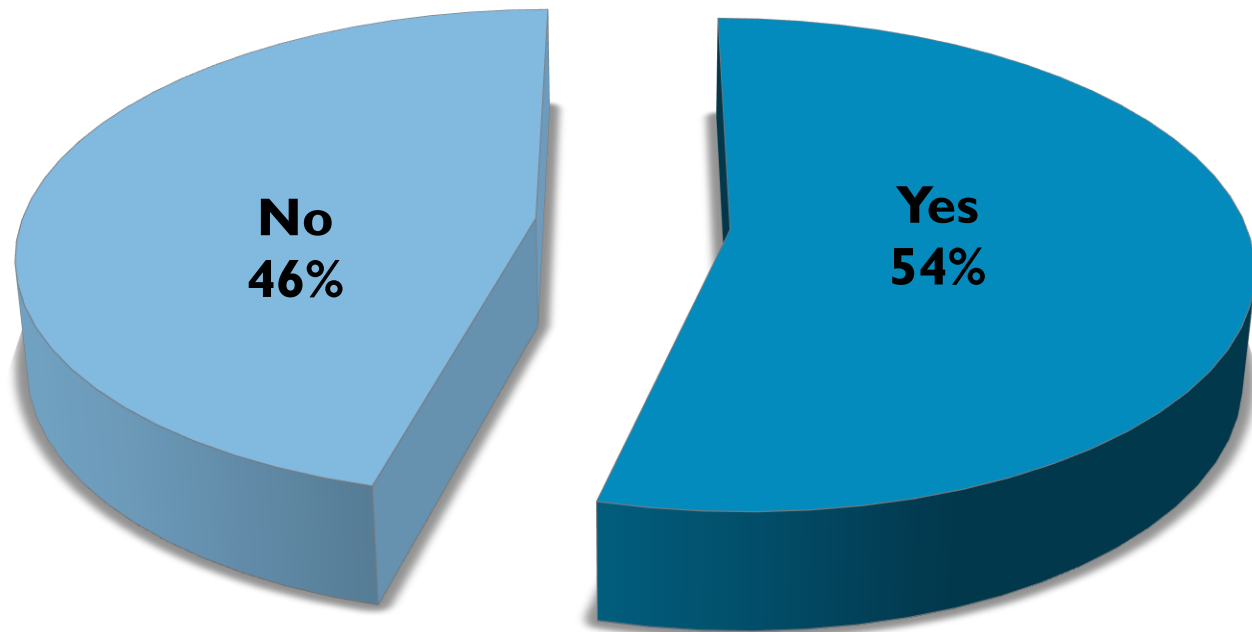
If Yes, What Software?

- In-house software (15)
- InspectTech (7)
- Agile Bridge Data Information Sys (1)

Ease of Installation
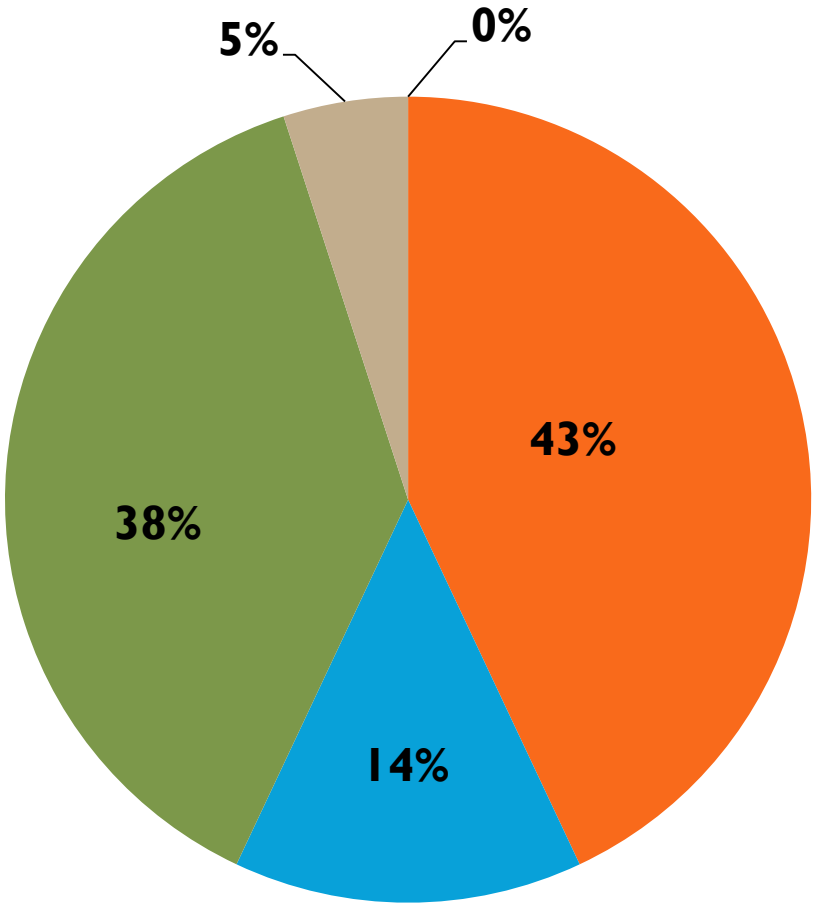
	2015
■ **Extremely Satisfied**	**11%**
■ **Moderately Satisfied**	**43%**
■ **Neither satisfied nor dissatisfied**	**31%**
■ **Moderately dissatisfied**	**15%**
■ **Extremely dissatisfied**	**0%**

Pie chart values: 0%, 43%, 14%, 38%, 5%

Software Operation (speed, ease of use, reliability)
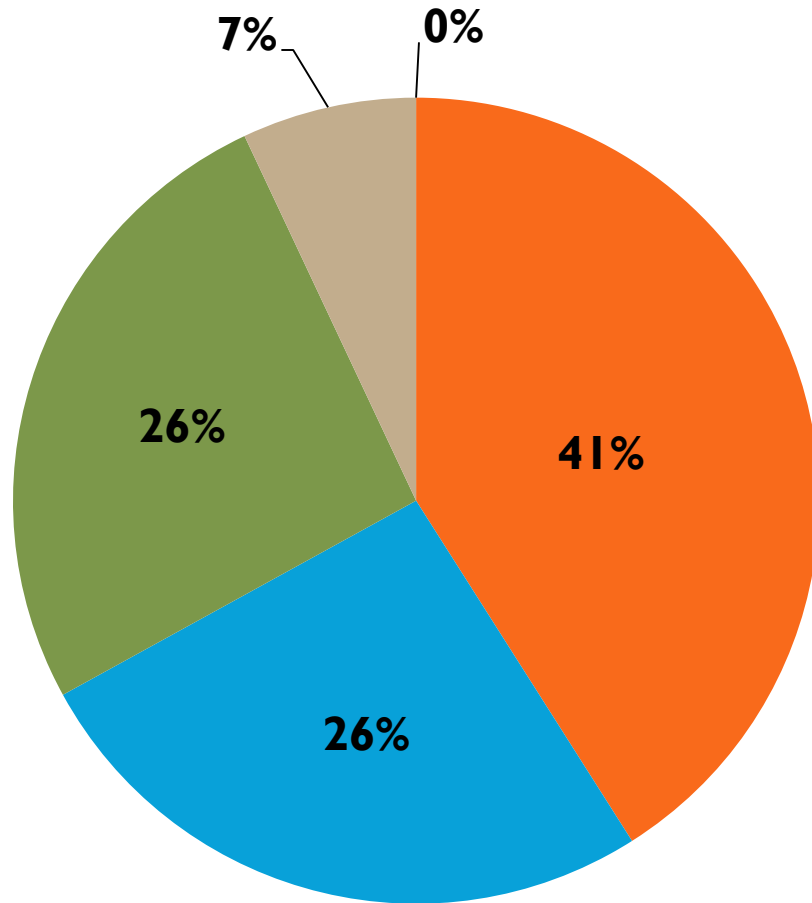
	2015
■ Extremely Satisfied	0%
■ Moderately Satisfied	37%
■ Neither satisfied nor dissatisfied	22%
■ Moderately dissatisfied	37%
■ Extremely dissatisfied	4%

Pie chart values: 0%, 41%, 26%, 26%, 7%

Inspection Features of BrM
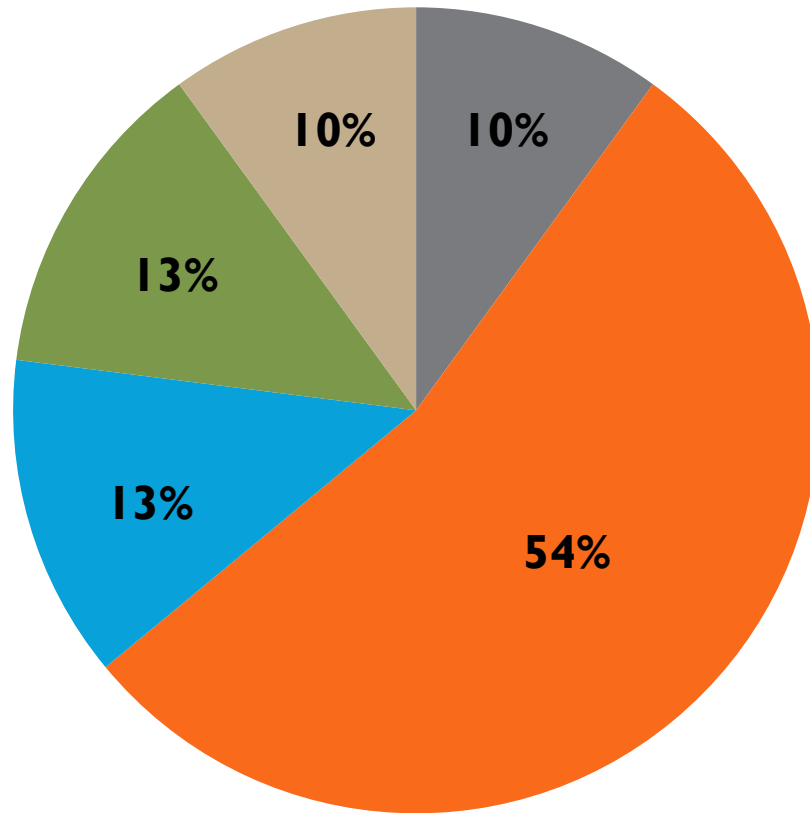
2015

- Extremely Satisfied — **4%**
- Moderately Satisfied — **54%**
- Neither satisfied nor dissatisfied — **34%**
- Moderately dissatisfied — **0%**
- Extremely dissatisfied — **8%**

Reports (delivery, quality and completeness)
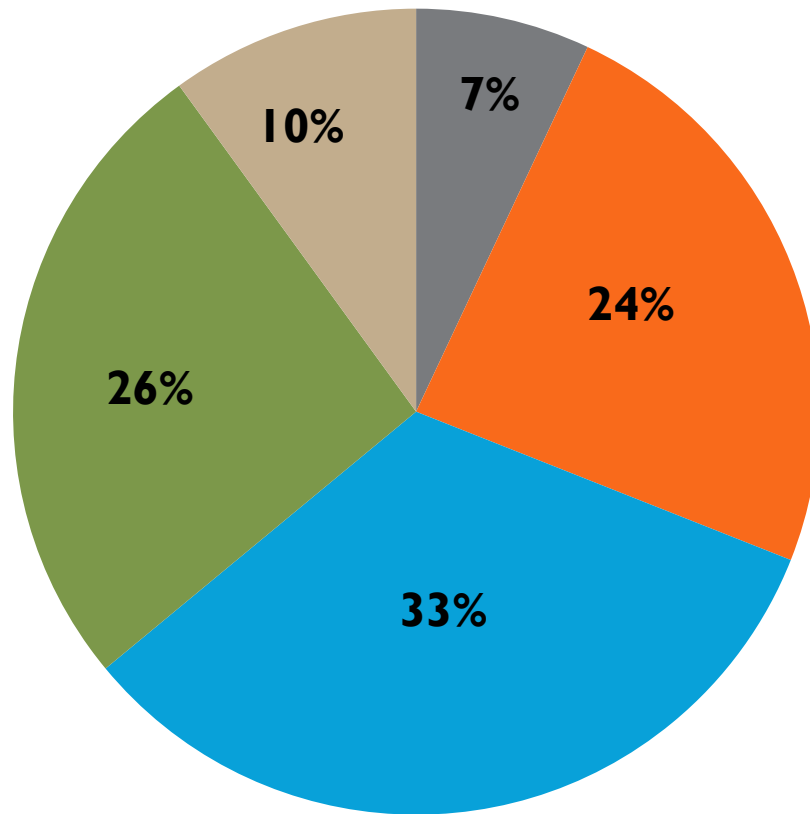
	2015
■ Extremely Satisfied	0%
■ Moderately Satisfied	27%
■ Neither satisfied nor dissatisfied	46%
■ Moderately dissatisfied	27%
■ Extremely dissatisfied	0%

Pie chart values: 7%, 24%, 33%, 26%, 10%

Enhancements to support features not currently used

- Enhanced Work candidate features that use unit pricing
- Easier reporting so agency can make custom reports
- Ability to import data from other software including agency-defined elements
- Ability to add additional condition ratings
- Modeling and project planning
- Still lacking pdi import in 5.2.2
- Improve ease of use in modeling scenarios and processing

Enhancements to support features not currently used

- Technical and help Manuals
- Documentation that provides a clear and accurate description of the enhancements – step by step setup and installation
- Training on cycle cost analysis and deterioration models
- Prioritization tools
- Multimedia – program should assign file names rather than require manual naming of files
- Ability to upload files directly to multimedia on a public facing BrM site

Enhancements to support features not currently used

- We are still unable to get 5.2.2 to run properly – running the analysis module crashes BrM

- Installation of the software is problematic and time consuming

- Problems with software crashing when entering inspection data

- Various fields in the project planning module are not being populated

- Allow more custom formulas for database changes

- Waiting on updates of other systems, not BrM

Use of Technical Support from Bentley - 66% of respondents

	Extremely satisfied	Moderately satisfied	Neither satisfied nor dissatisfied	Moderately dissatisfied	Extremely dissatisfied
a) quality of the support provided	21% / 14%	51% / 57%	14% / 19%	14% / 10%	0% / 0%
b) contractor communication and follow-up	24% / 24%	45% / 48%	17% / 19%	7% / 9%	7% / 0%
c) effectiveness of contractor telephone & e-mail support	24% / 14%	41% / 43%	21% / 24%	14% / 19%	0% / 0%
d) knowledge of the contractor help desk staff	28% / 14%	50% / 62%	18% / 10%	4% / 14%	0% / 0%
e) overall quality of contractor problem resolution	21% / 10%	55% / 57%	7% / 19%	17% / 14%	0% / 0%

Use of Development or Custom Technical Support - 42%

	Extremely satisfied	Moderately satisfied	Neither satisfied nor dissatisfied	Moderately dissatisfied	Extremely dissatisfied
a) quality of the support provided	**36%** 29%	**36%** 57%	**21%** 14%	**7%** 0%	**0%**
b) contractor communication and follow-up	**36%** 14%	**43%** 71%	**14%** 14%	**7%** 0%	**0%**
c) effectiveness of contractor telephone & e-mail support	**46%** 14%	**31%** 71%	**23%** 14%	**0%**	**0%**
d) knowledge of the contractor help desk staff	**43%** 57%	**36%** 43%	**21%** 0%	**0%**	**0%**
e) overall quality of contractor problem resolution	**36%** 29%	**36%** 57%	**7%** 14%	**21%** 0%	**0%**

Comments on Contractor Support

- Deliverables are not delivered on time. Timeliness is a problem (3)

- Bentley is developing an interface for our two systems; however, the project has been ongoing for two years.

- 5.2.2 installation issues (since November 2015) have not been resolved by Bentley

- Bentley's effort is concentrated more on moving ahead than on fixing existing problems. Fixes keep getting moved to the next version.

- The quality of the contractor seems to have declined since Bentley acquired InspectTech

Comments on Contractor Support   (cont)

- Not a fan of the JIRA ticketing system
- Developers do not recognize a problem exists unless they personally see the issue, regardless of how well the issue is documented
- Bentley has demonstrated a better ability to support migration activities (compared to past contractors)
- Contractor support from Bentley has been an instrumental part of BrM implementation

Third Party Software Integrated with BrM or using BrM Data
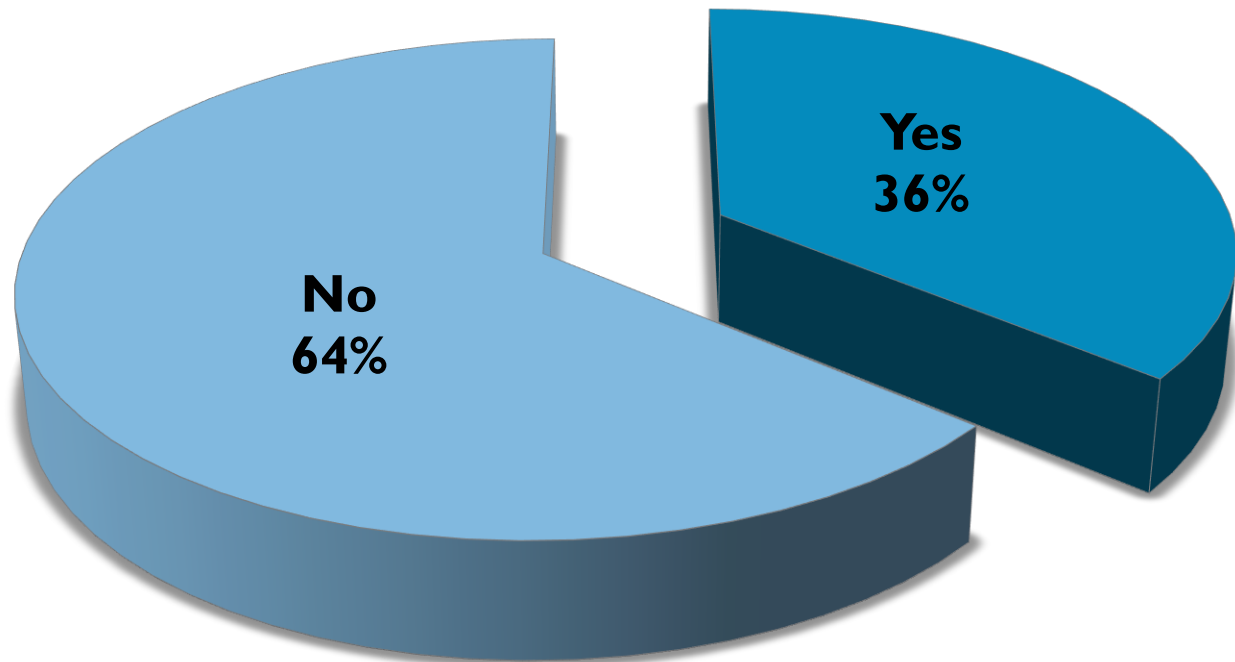
If Yes, What Software Tools

- Load Analysis / Routing Software (6)
  - Pulls information from BrM
- Project Management System (3)
- Maintenance Management System (3)
- GIS Software (3)
  - Information exported to display in ARCMAP
  - Google Earth
  - Google Maps
- Many department applications use the bridge database (3)
- Microsoft products (Excel, Access) (3)

If Yes, What Software Tools

- AASHTOWare Bridge Rating (2)
- Web Portal (2)
  - Displays information for both internal and external use
- In-house Inspection System (2)
- ProjectWise - Multimedia storage and retrieval
- Financial Management System
- Third Party Deterioration Modeling Software
- SQL Reports
- Crystal Enterprise Reports
- Oracle Forms & Business Intelligence
- JAVA / Toad

Agency / Task Force Contact
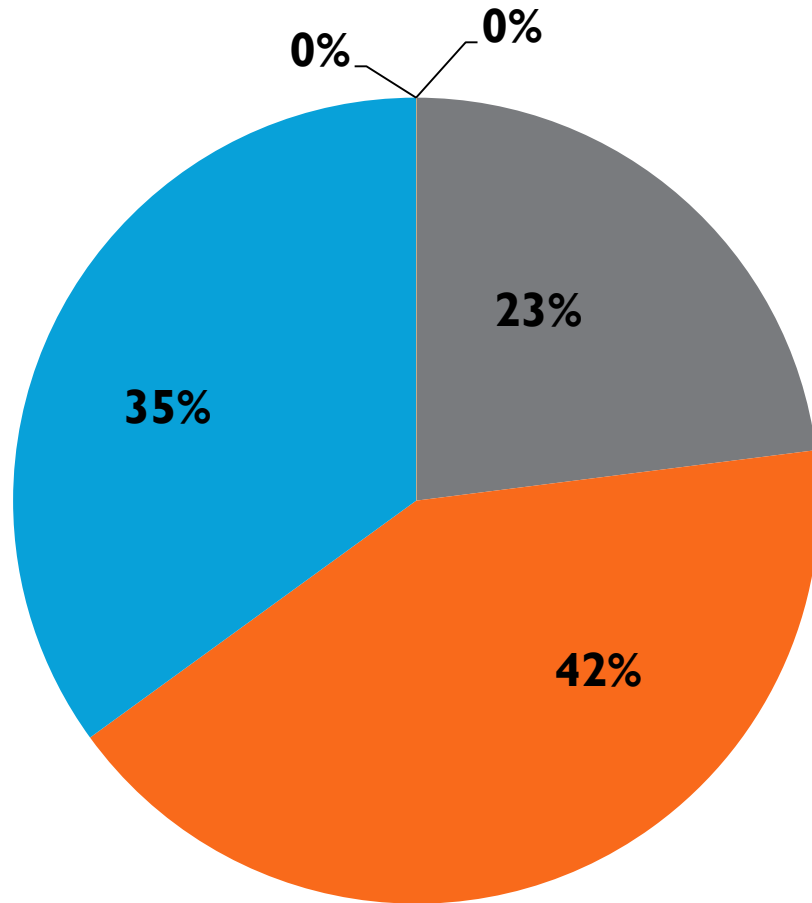
2015

- **Extremely Satisfied** — 28%
- **Moderately Satisfied** — 41%
- **Neither satisfied nor dissatisfied** — 28%
- **Moderately dissatisfied** — 3%
- **Extremely dissatisfied** — 0%

Pie chart values: 23%, 42%, 35%, 0%, 0%

Task Force Responsiveness
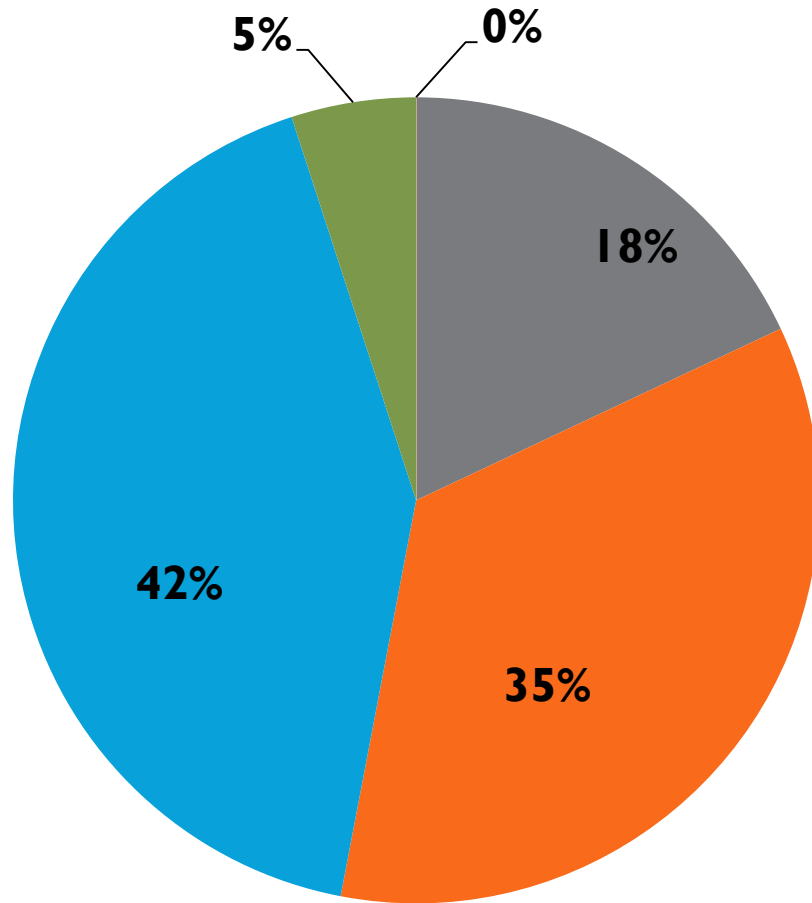
	2015
■ Extremely Satisfied	7%
■ Moderately Satisfied	52%
■ Neither satisfied nor dissatisfied	38%
■ Moderately dissatisfied	3%
■ Extremely dissatisfied	0%

Suggestions for Improvement Agency / Task Force

- We should work on the next generation of the product via formal web meetings – users could lead the meetings

- Periodic emails from the Task Force to end users

- Quarterly newsletters

- New releases of the software should be tested and installed each year prior to the user group meeting to allow the BrMUG to be productive

- Focus more on inspection / mobile inspection

Suggestions for Improvement Agency / Task Force

- Data integration between BrM 5.2.3 and InspectTech and other third party software

- Clarity of product capabilities, documentation, implementation, testing. We are going through a migration and have not seen a final product for final comments.

- The Task Force needs to stop pushing ahead and deferring all support and bug fixes to newer versions. States would prefer to have a stable, working version that can be implemented without service unit projects

User Group / Task Force Relationship
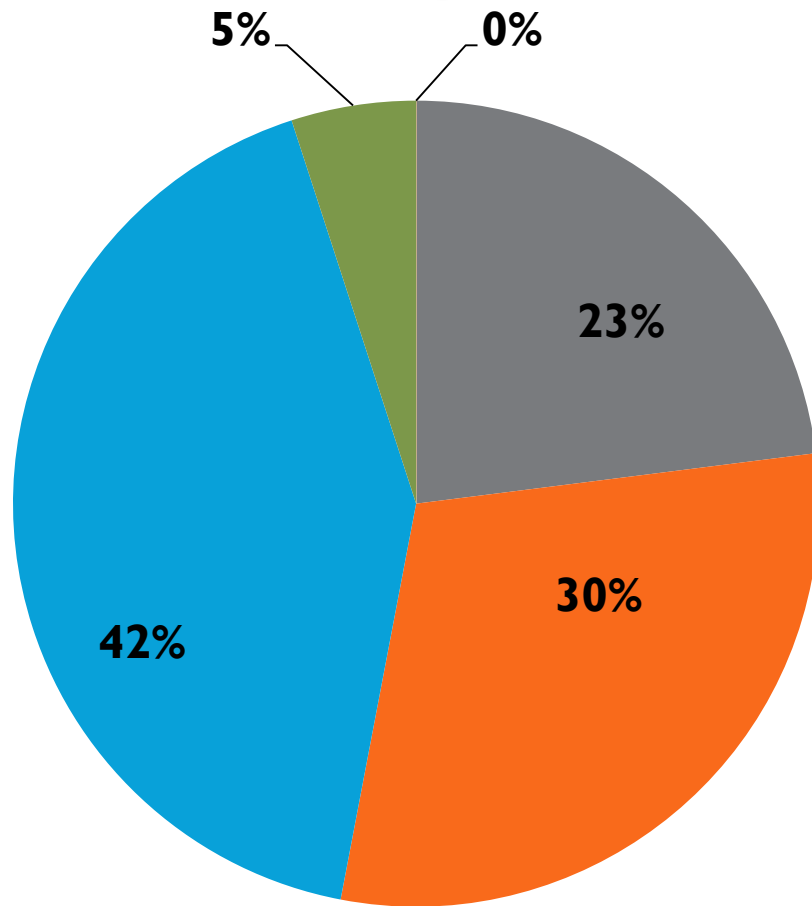
	2015
■ Extremely Satisfied	17%
■ Moderately Satisfied	52%
■ Neither satisfied nor dissatisfied	24%
■ Moderately dissatisfied	7%
■ Extremely dissatisfied	0%

Pie chart values: 5%, 0%, 23%, 30%, 42%

Suggestions for Improvement User Group / Task Force

- The relationship between these groups is fine; however, when the contractor does not deliver the product on schedule and bug-free, conflict arises

- Communicate with the users – let the users know what is going on

- Share decisions with the users – follow-up to let users know what decisions are made on the issues submitted

- The Task Force seems to disregard user input if it's contrary to their preconceived notions

Suggestions for Improvement
User Group / Task Force

- Address specific JIRA issues periodically

- Better Documentation

- Deterioration Modeling can be extended into DEFECT level in future versions

- More work should be done to have the software work and report for all 23 FHWA MAP-21 metrics

Specific Issues / Concerns

- The needs of the User Group should come before that of the Task Force

- The release of the software should contain a sample database that is complete with feasible actions, deterioration models, costs associated with the feasible actions, and use cases that show how to use the software with the expected results

- The multimedia function is not working for our agency. There are mapping issues that are a bug. Fixing these is not an enhancement

Specific Issues / Concerns

- Our bridge inspection team is frustrated by the program freezing up, crashing and erring out. Valuable time is wasted continually restarting the program and hoping data is saved before the program crashes again.

- Support for Windows 10 – we're getting pressure from our state IT department

- The Facebook group was a good idea

- The 5.2.3 release is very time critical for our successful implementation of BMS

Specific Issues / Concerns

- The User Group's need for a stable product has not fully been met. The direction is to put out additional versions without fully fixing all of the bugs in the current version.

- BrM seems to be a continual revolving updated project instead of a consistent, reliable product. We have had to make quite a few workarounds to make 5.2.1 SP3 work for our state, bug fixes have been deferred to 5.2.2 or 5.2.3. This has been a frustrating process.

Follow-up Actions

- AASHTOWare Bridge Task Force Meetings (September 22 and October 25 – 26, 2016)
  - Review the detailed results of the survey
  - Discuss opportunities for improvement
  - Assign action items to implement changes sooner than later
  - Incorporate changes into FY18 work plan as appropriate

Travel Expenses (AASHTO Reimbursement)

- One representative per **AASHTO Member** agency licensing the Super Site License

- **Receipts are REQUIRED for <u>all</u> reimbursable expenses regardless of the amount.**
  - Original receipt
  - Debit/credit card transaction record or statement of account is not acceptable

Travel Expenses (AASHTO Reimbursement)

- Meals during the conference (i.e., Breakfast and Lunch on Tuesday and Wednesday) are provided by the conference.

- Other meals reimbursed at actual cost with maximum reimbursement limited to an average not to exceed $45 total per day. **(receipts required)**

Travel Expenses
(AASHTO Reimbursement)

- Sign the travel expense form
- Scan the form and all receipts
- **Email** to Judy Tarwater
  jtarwater@aashto.org

David (Dave) Powelson

Powelson Family
69 Pittsfield Road
Loudon, NH 03307

Thank You

- Questions?
- Comments?