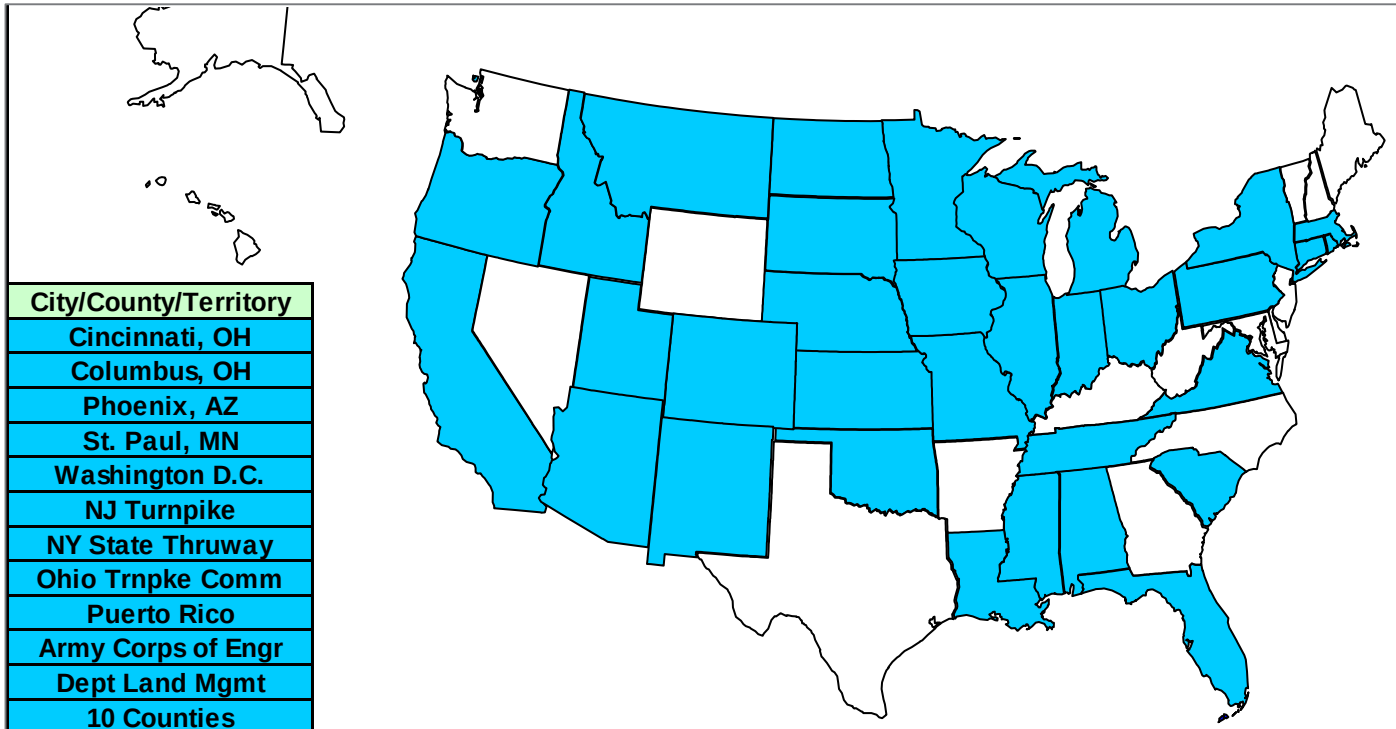
Bridge Design-Rating 2017 AASHTO Overview

RADBUG Meeting
Kansas City, KS

Judy Skeen Tarwater, P.E.

Bridge Rating Licensees (FY17)



City/County/Territory
Cincinnati, OH
Columbus, OH
Phoenix, AZ
St. Paul, MN
Washington D.C.
NJ Turnpike
NY State Thruway
Ohio Trnpke Comm
Puerto Rico
Army Corps of Engr
Dept Land Mgmt
10 Counties

Country
Manitoba, Canada

Universities = 9
Consultant Licenses = 536
Agency Licenses = 34

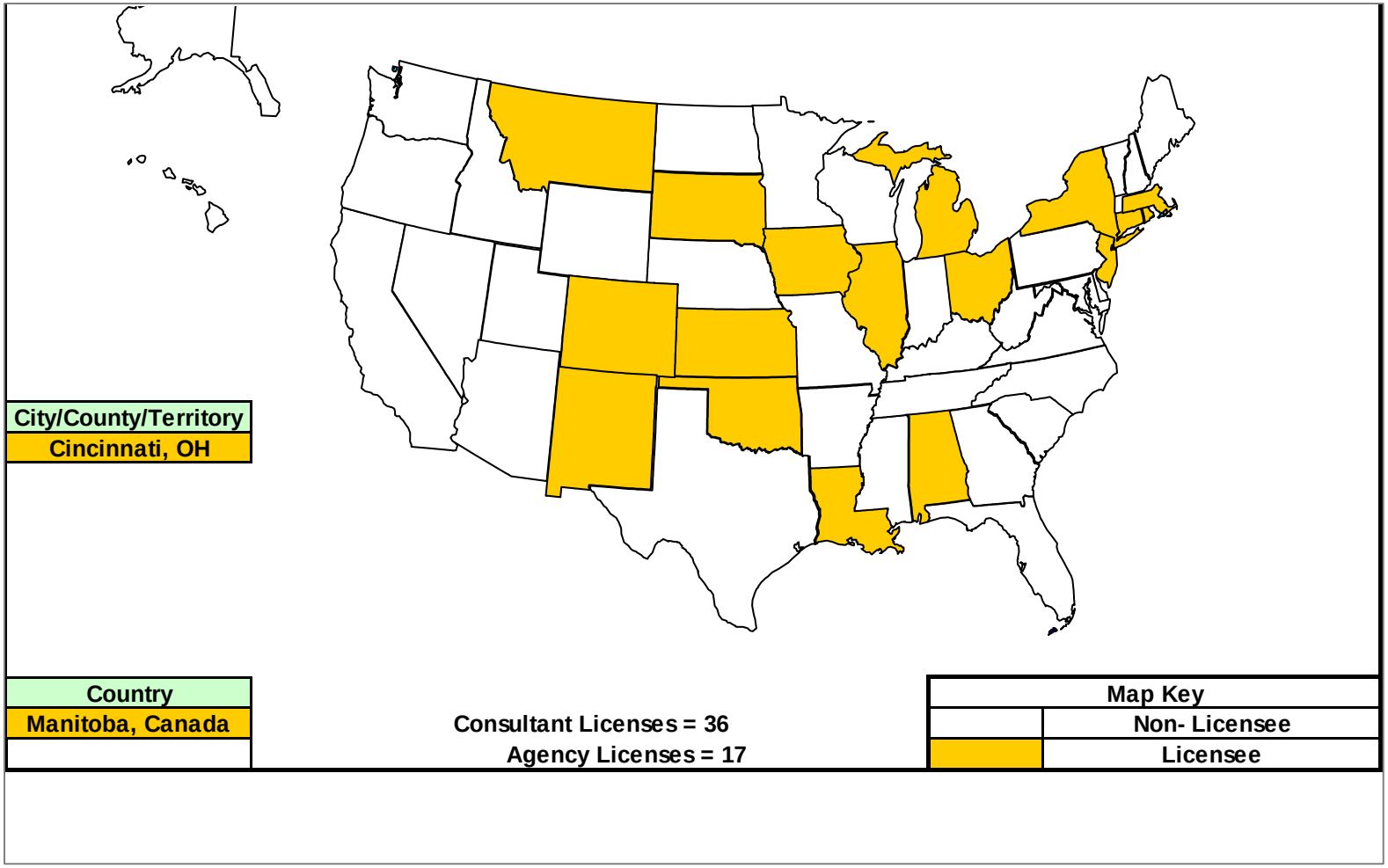
Map Key	
	Non- Licensee
	Licensee

Bridge Rating Licensees (FY17)

License Type	Number of Licenses
BrR Evaluation	18
BrR Development	5
BrR Educational	7

New Member Agencies Considering BrR
• Georgia Department of Transportation
• Texas Department of Transportation
• Kentucky Transportation Cabinet
• Washington Department of Transportation

Bridge Design Licensees (FY17)



Bridge Design Licensees (FY17)

License Type	Number of Licenses
BrD Evaluation	11
BrD Development	2
BrD Educational	7

New Member Agencies Considering BrD
• Georgia Department of Transportation
• Texas Department of Transportation
• Kentucky Transportation Cabinet
• Washington Department of Transportation

Outreach / Marketing

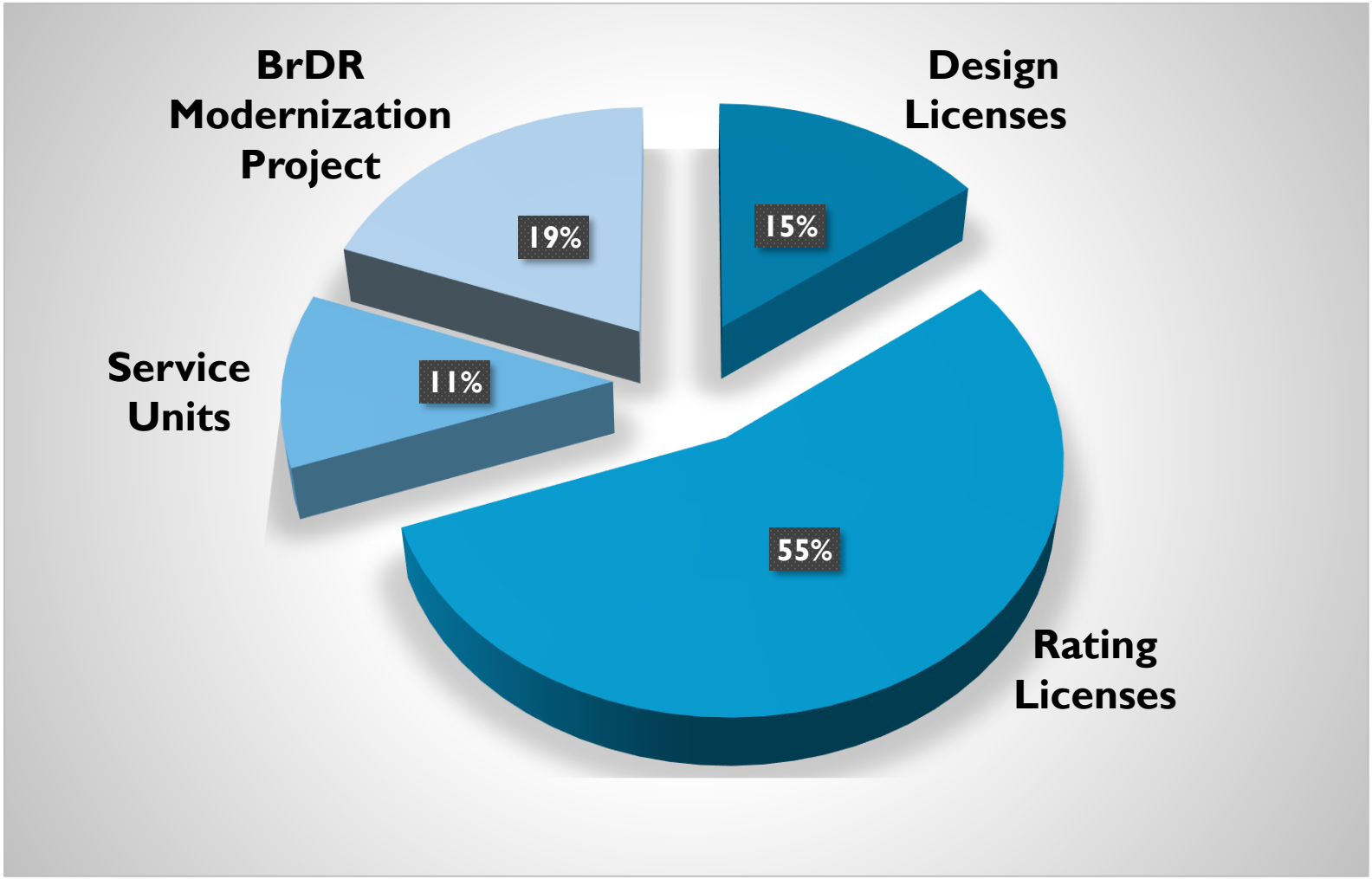
Opportunities to expand the Bridge Design and Bridge Rating user base.

- Incorporation of both products into NCHRP projects
- Product presentations at numerous meetings and conferences
- Invitations extended to DOT personnel to attend Task Force meetings in their home locales
- Identifying and focusing on more than one contact within the user organizations (end user and various management levels)
- Communication tailored for specific audiences

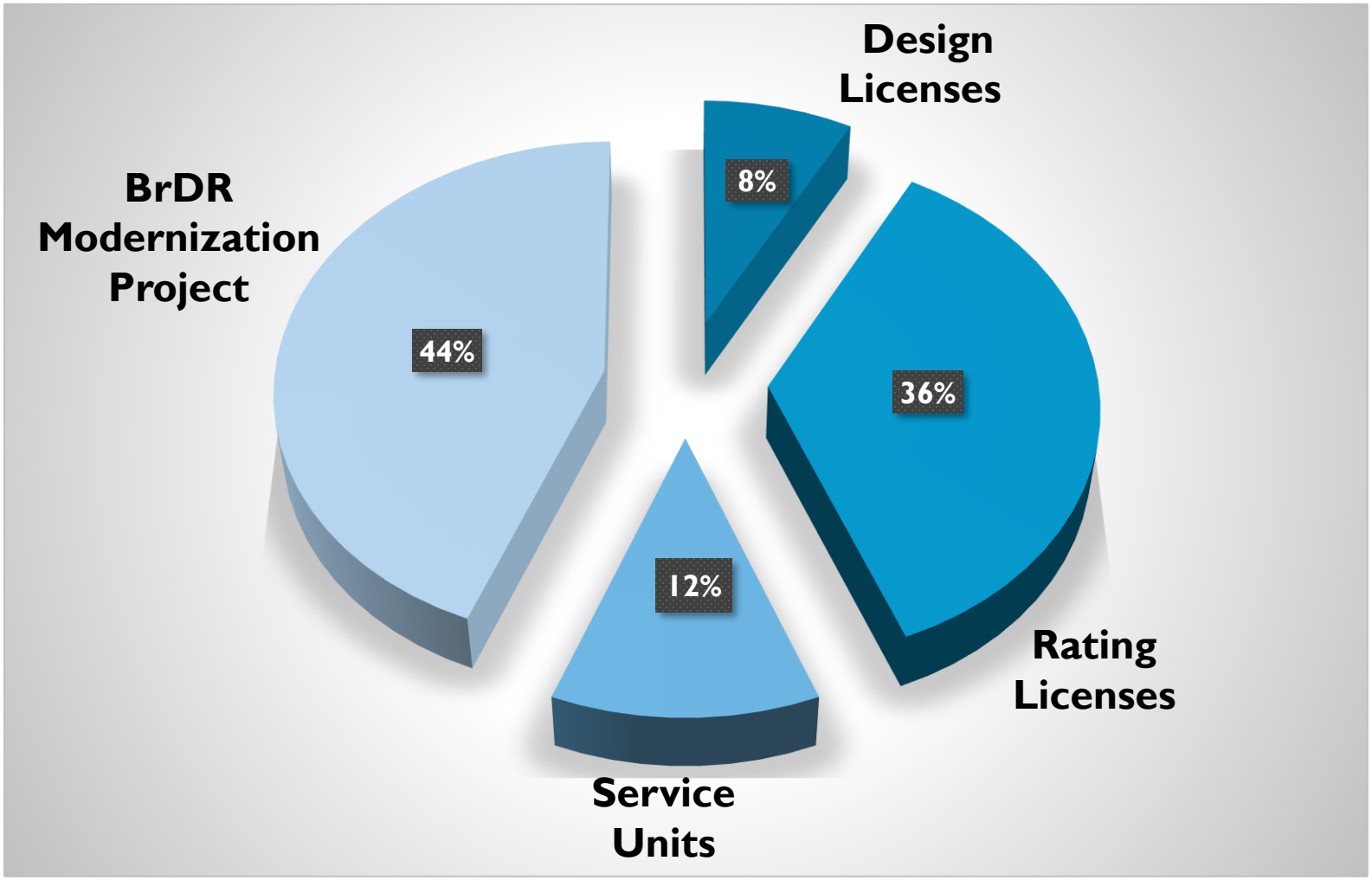
Outreach / Marketing

- Newsletters – hardcopy for conference distribution and online for wider consumption
- AASHTOWare web site under review for redesign and update
- Incorporation of Ideas / suggestions from the BrDR Community
- BrDR Modernization – faster program execution, easier to incorporate enhancements (new functionality), and opportunity to complete user requested enhancements in the 'queue'

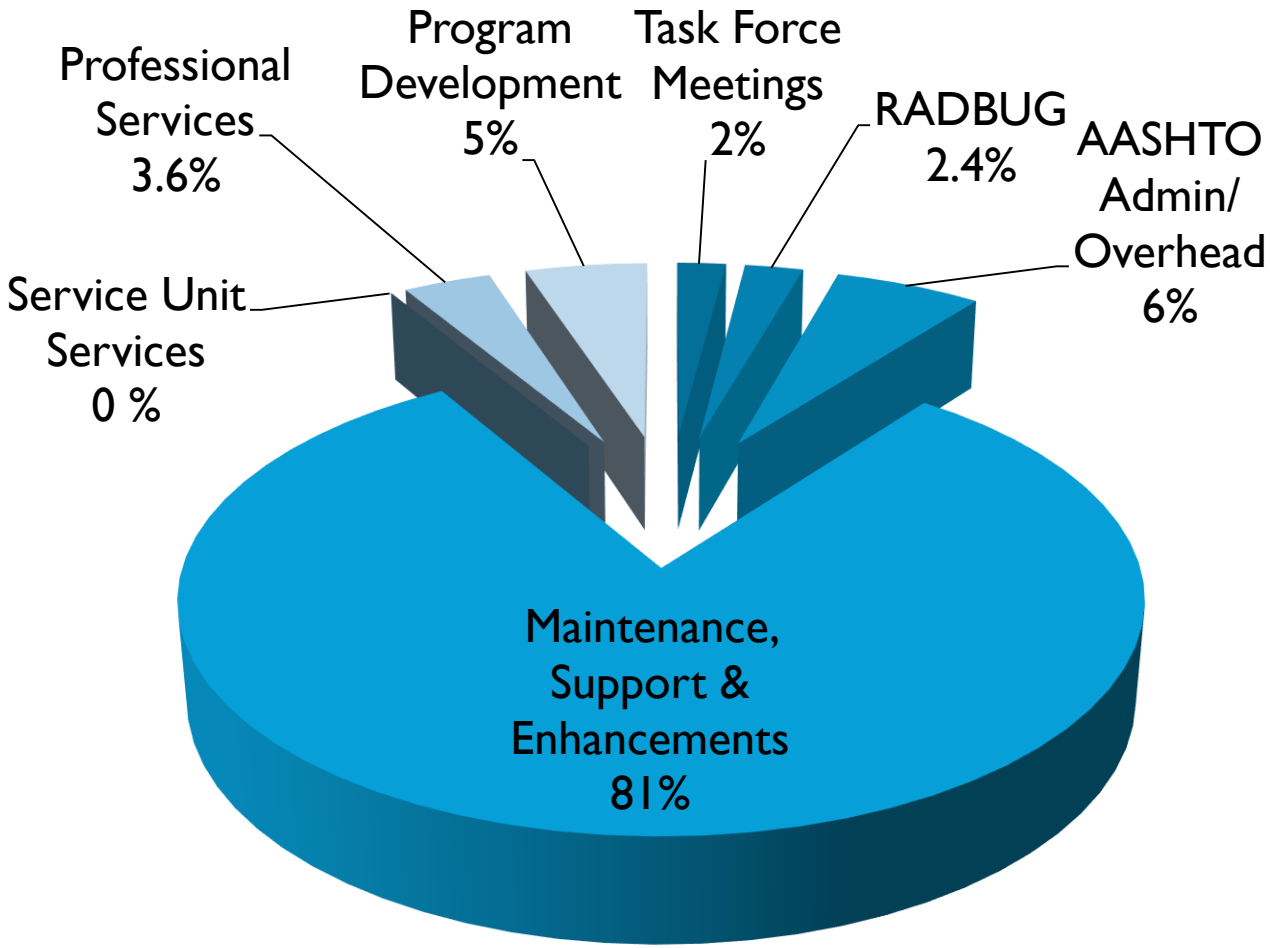
FY2016 Bridge Design-Rating Revenue



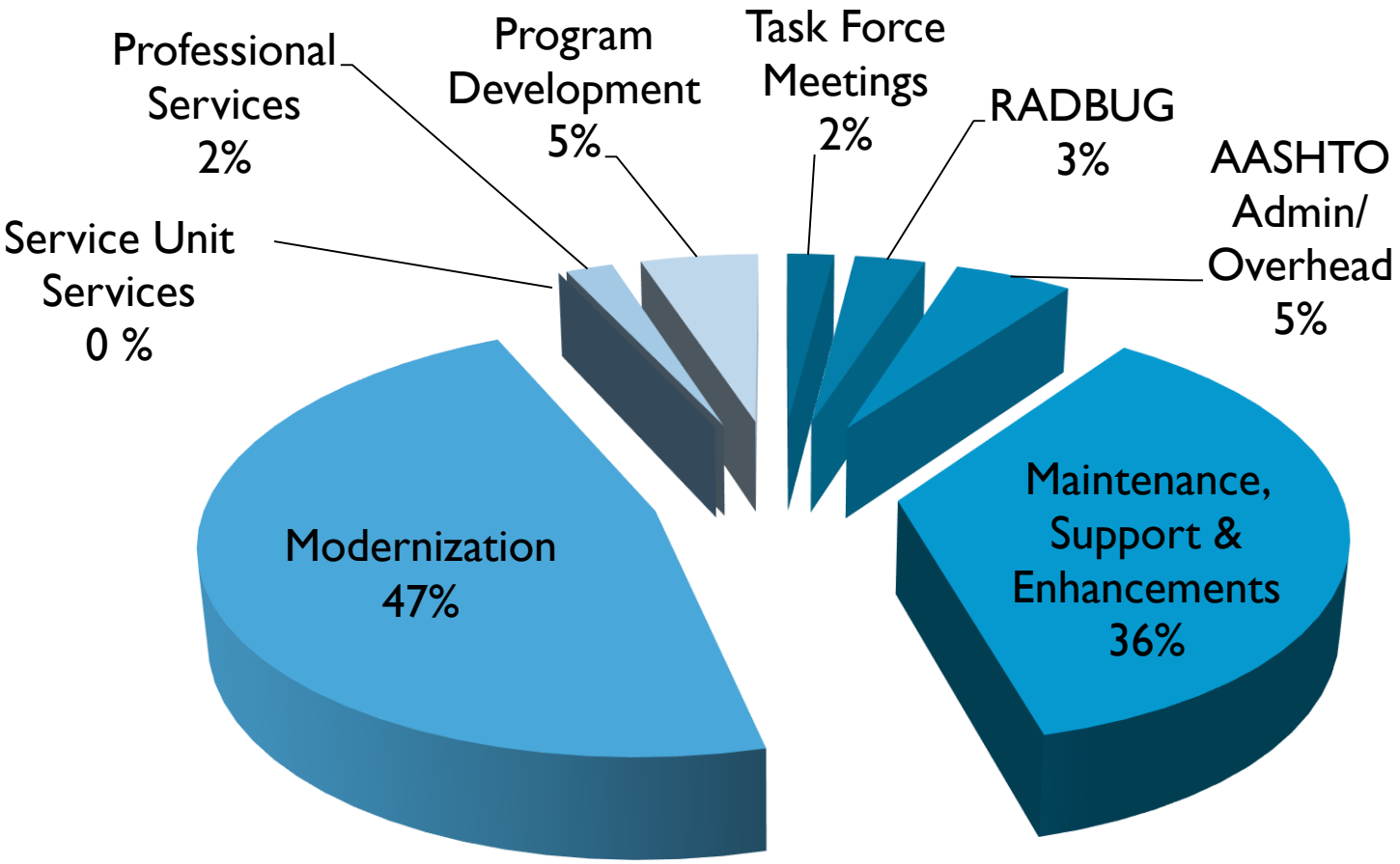
FY2017 Bridge Design-Rating Revenue



FY2016 Expenditures

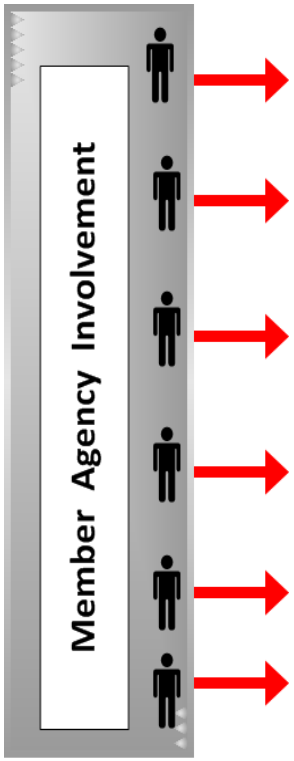


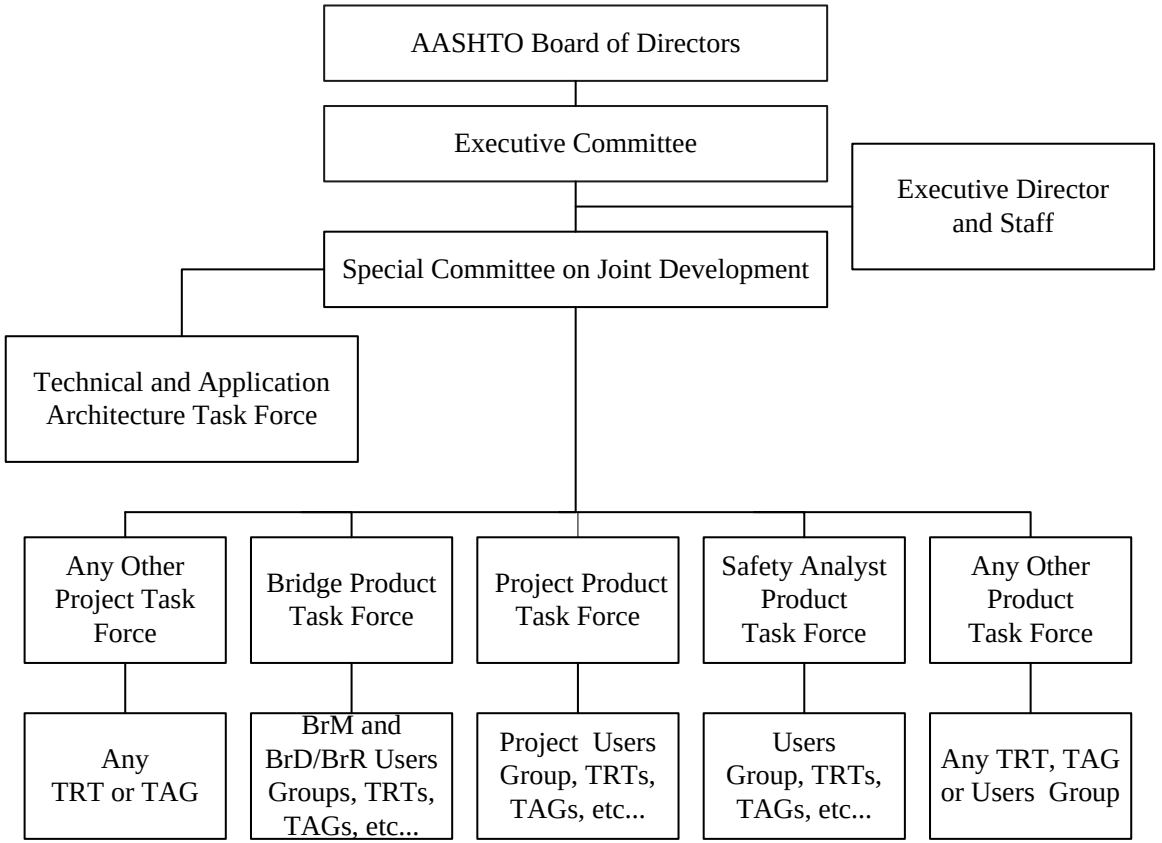
FY2017 Expenditures



AASHTOWare Program Management

Cooperative Computer Software Development





AASHTO Administrative Overhead

- AASHTO Administration & Overhead
  - Staff salaries, benefits, and overhead
  - Contracted Project Manager
  - Proportional share of SCOA, T&AA and indirect costs
  - Legal Services
- Technical and Applications Architecture Task Force
  - Technical resource for SCOA 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, AASHTO specifications 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, SCOA 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 SCOA for approval

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

AASHTOWare Service Units

AASHTOWare Software Renewal Process

AASHTOWare Bridge Design-Rating Modernization

- $14.8M Project
- A minimum of twenty (20) member agencies @ $740,000 each

Code / Architecture Modernization	Phases 1 and 2 (fiscal years 2017, 2018 and 2019)
Functionality Enhancements	Phase 3 (fiscal year 2020) – funded through license fee revenue collected over the four years of the project

Status

- $8,233,000 committed by 14 states (Two additional states, California and Minnesota, have come on board since the 2016 RADBUG)
- The future of the product depends on the modernization of the code
- Continued incorporation of functionality enhancements into the current product, supported by an outdated architecture and code base, will ensure product obsolescence in the near future

Project Funding Approach Revisited

- BrDR licensing fees, originally planned to be banked and used to support enhancements in Phase 3 of the project, will be used to supplement the funding short-fall for Phases 1 and 2
- Reduced funding available for post modernization enhancements

AASHTOWare Bridge Design-Rating Modernization

- Additional agencies who come to the table to participate in the project will chip away at the $6.6M project funding short-fall
- License fees for AASHTO member agencies will remain consistent over the four years of the modernization project
- License fees for contractors (Special Consultant Option) was increased from $4,100 in FY17 to $4,600 in FY18 and will increase to $5,000 in FY19.

2017 Bridge Design-Rating
Customer Satisfaction Survey Results

Conducted July 10 – August 4, 2017

Survey Participation

- Two survey instruments were published
  - AASHTO Member Agencies (State Agencies, Counties, Cities)
  - Consultants
- 54 responses (94 in 2015)
  - 25 member agencies - state (33 in 2015)
  - 2 member agencies – turnpike authorities
  - 27 consultants (55 in 2015)
    - **3 unlimited option**
    - **8 agency sponsored license (14 in 2015)**
    - **12 special consultant option license (38 in 2015)**
    - **3 single workstation license (2 in 2015)**
    - **1 standalone developer license (1 in 2015)**

Member Agencies Not Participating in the Survey

- City of Phoenix
- District Department of Transportation
- Idaho Department of Transportation
- Illinois Department of Transportation
- Louisiana Department of Transportation & Development
- Maricopa County Department of Transportation
- Minnesota Department of Transportation
- New Jersey Department of Transportation
- New York State Thruway Authority
- Oklahoma Department of Transportation
- Oregon Department of Transportation
- Puerto Rico Highway and Transportation Authority
- Rhode Island Department of Transportation
- South Carolina Department of Transportation
- Tennessee Department of Transportation
- U.S. Army Corps of Engineers

Software Used

	Bridge Design	Bridge Rating	Both
Member Agency	0 (0)	59% (59%)	41% (41%)
Consultant	0 (0)	81% (84%)	18% (16%)

	6.8	6.7	6.6	6.5	6.4	6.3	6.2
Member Agency	**74%** (N/A)	11% (18%)	7% (69%)	4% (10%)	0% (3%)	0% (0%)	4% (0%)
Consultant	**85%** (N/A)	7% (25%)	0% (60%)	4% (13%)	0% (2%)	0% (0%)	4% (0%)

Does the State DOT you work for require BrD or BrR?

	Yes	No
Consultant	93%	7%

(2015 Responses)

Software (why versions other than 6.8 are being used)

- Incompatibility with BrR and other software platforms using various versions of Oracle and SQL server.
- Resources are limited within our IT department. It takes time to upgrade to the latest version.
- Current version has not been loaded to my machine.
- Haven't had time to test and upgrade to current version.
- Still testing the 6.8 update.
- NYSDOT is using 6.7 and has not upgraded yet. All authority and local load ratings are submitted to NYSDOT.
- 6.2 runs so much faster than the newer versions. The users are able to get results faster rather than waiting for processing time to complete the analysis

Bridge Rating Usage

- Primary software for rating bridges (36)
- Primary for simple bridge ratings
- Also used to verify designs
- Use BRASS Culvert for culverts
- Use LARS for new bridges to support SuperLoad
- Secondary software for overload permit verification
- Use a spreadsheet for timber
- Do not use BrR for timber due to program limitations (inability to model per the plans)
- Secondary load rating software (3)
- BrR minimal usage (less than 5%)
- Used 50% for steel girder bridges

Bridge Rating Usage (cont)

- Primary for timber, pre-cast boxes/channels, box culverts, rigid frames, and trusses (2)
- Used primarily for curved girder and other complex bridge types
- BrR is required by the DOT, so we continue to use it; though the slow runtimes ensure we do it as a last-step as to not require multiple re-runs (2)
- Approximately 90% of the bridges I work on can be rated in BrR, while the remainder are of a type and/or geometry that requires custom calculations (3D FEM, spreadsheet calculations)

Bridge Design Usage

- Used very little (2)
- Used only 5% of the time (third behind two other commercially available software packages)
- Is an option for designers but is rarely used
- Primary software with 60% usage
- Primary software for designing bridges (2)
- 50% primary and 50% secondary
- Used for superstructure design
- Some designers design using LEAP and check their design with BrD
- BrD was to be used as primary software but was recently abandoned due to its slow runtime and general flaws with curved structures and variable deck widths.

Bridge Database

Integrated BrDR and BrM Database?

Yes	No
23%	77%

Number of Bridges in BrDR Database?

0 - 1999	2000 - 3999	4000 - 5999	6000 - 7999	8000 - 9999	10,000 - 11,999	12,000 - 13,999
9	6	3	2	1	0	2

Percentage of Bridges Modeled in BrDR?

0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100
2	3	4	1	3	2	0	2	4	4	1

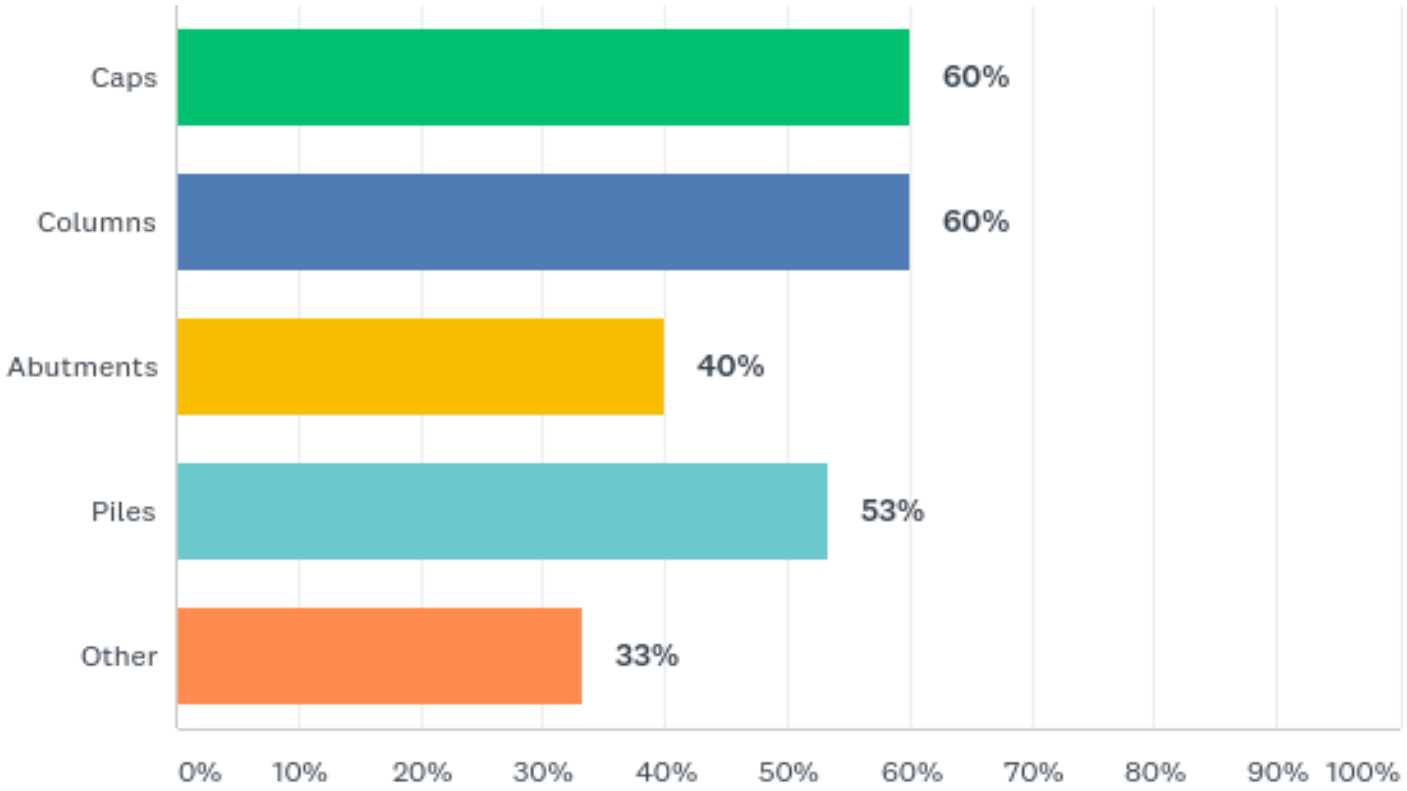
What Types of Bridges do you have Modeled in BrDR?

Reinforced concrete tee beams, slabs and I-beams	96%
Steel rolled beams, built-up plate I-girders, welded plate I-girders	96%
Pre-stressed concrete box, I, tee and U-beams	93%
Steel trusses	70%
Reinforced concrete box culverts	67%
Floor systems	67%
Reinforced concrete multi-cell box beams	59%
Timber beams and decks	48%
3-D analysis of steel and concrete multi-girder superstructures	37%
3-D analysis of curved steel multi-girder superstructures	37%
Post-tensioned multi-cell box beams	15%
Bridge piers	11%

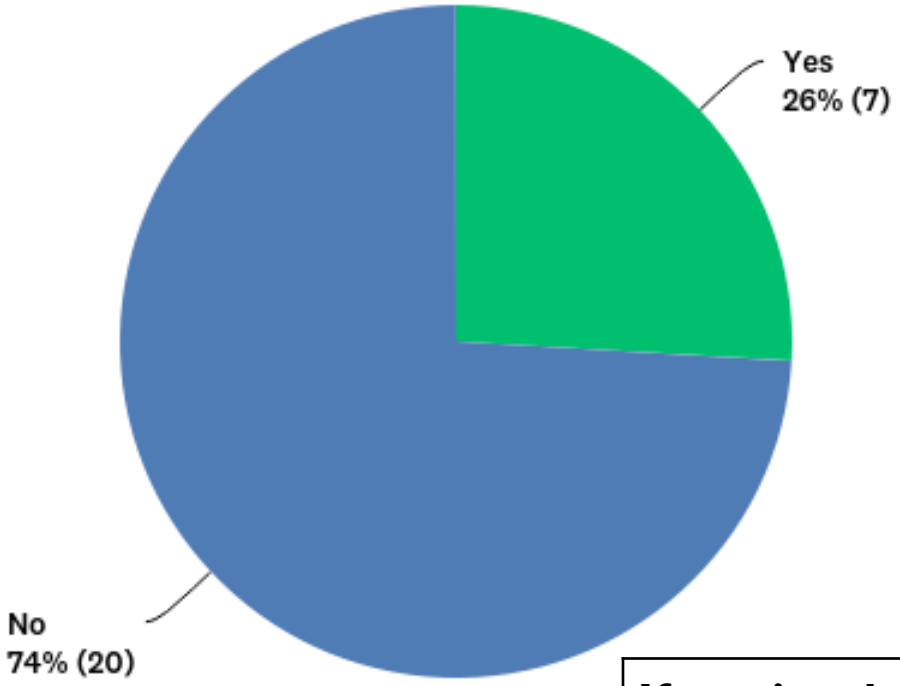
Bridge Rating

Do you Load Rate Substructures?

Routinely	As-needed	No
0	48%	52%



Does your agency capture and store spatial data for bridge designs and/or load ratings in BrDR?



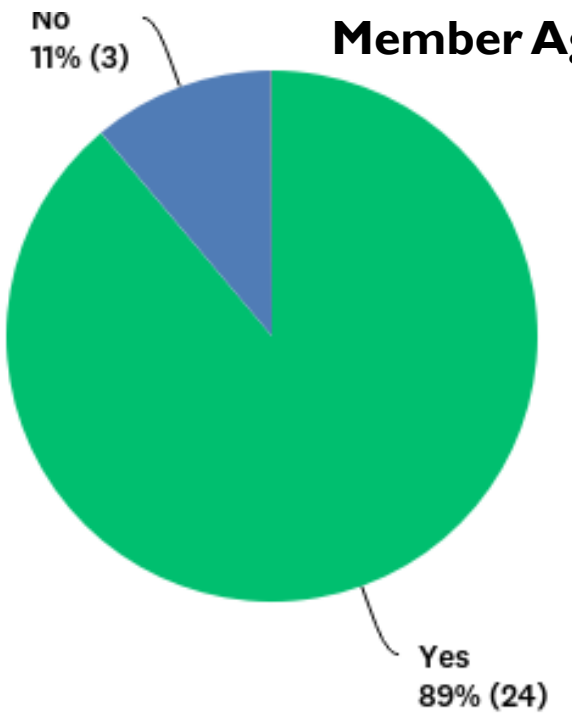
If yes, in what format?	
lat/lon	88%
state plane coordinates	0%
Other	12%

What Other Software do you use for Design or Rating?

Software Used	Members	Consultants
In House Software	48%	38%
ConSpan	44%	71%
STAAD	44%	46%
BRASS	41%	21%
CSI Bridge	41%	21%
MIDAS	41%	38%
MDX	37%	54%
RC Pier	33%	63%
LEAP Steel	30%	17%
LARS	26%	8%
Other **	26%	21%
ET Culvert	19%	8%
PS Beam	19%	8%
Simon	19%	0%
LARSA	15%	13%
LUSAS	15%	17%
PGSuper	7%	4%
Windash	7%	0%
ET Pier	4%	0%
CRSI Bridge	0%	13%

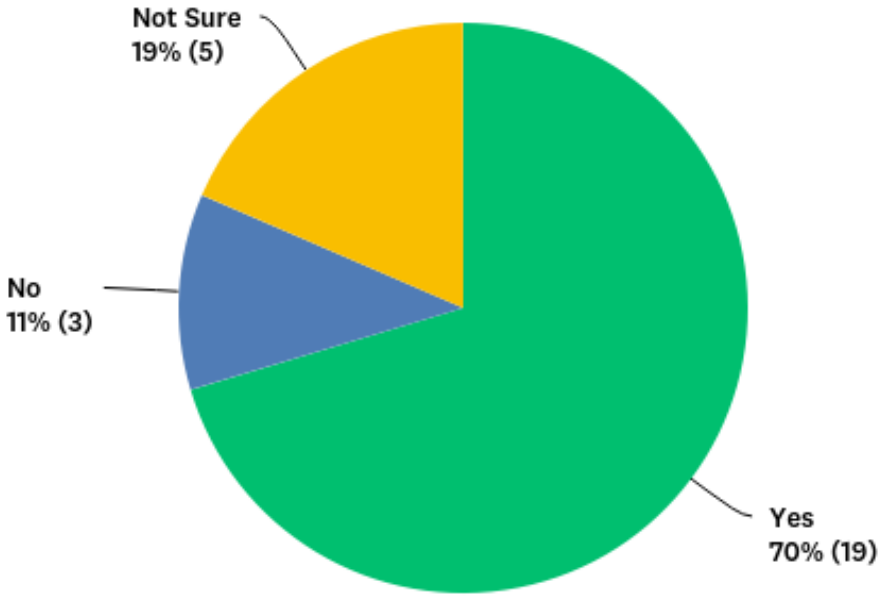
** Other Software
BARS
CANDE
ConBox
DESCUS
GT STRUDL
L-Pile
MathCADD
Merlin-DASH
RISA 3D
SAP2000
Visual Analysis

Are you the Designated End User for your Organization?

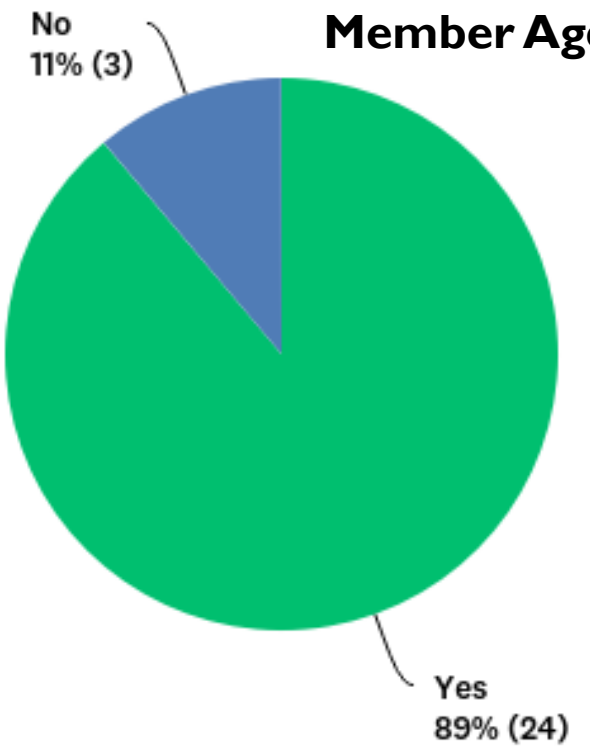


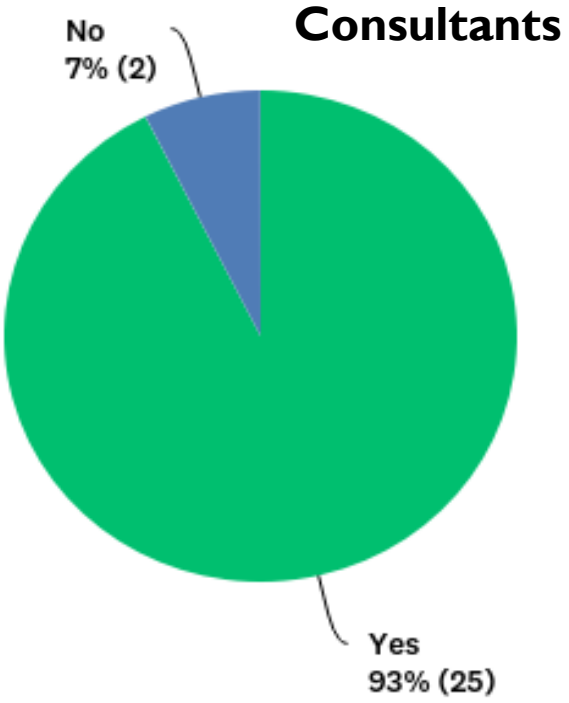
Member Agencies

Consultants

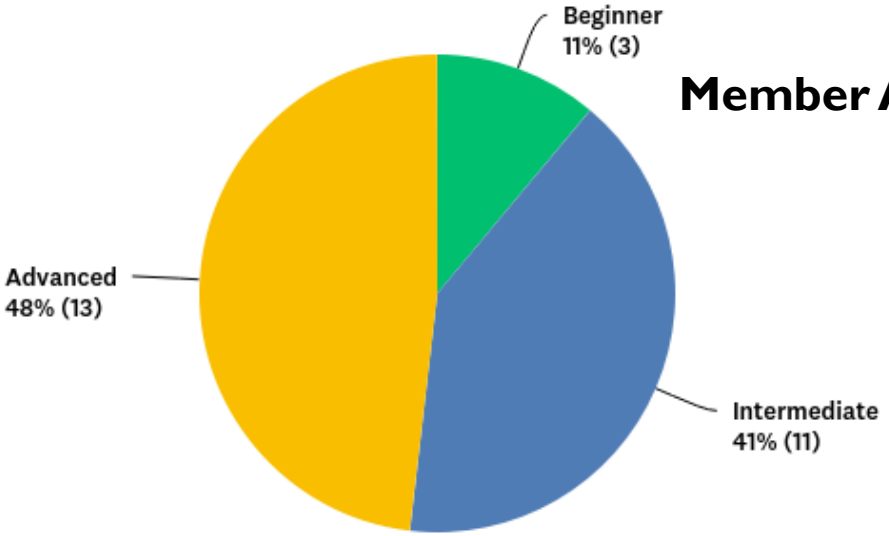


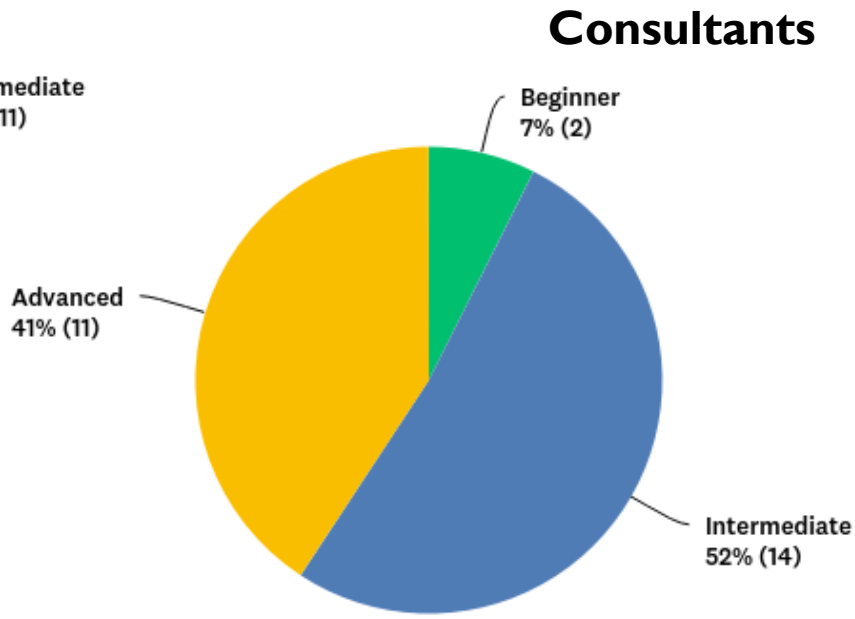
Are you an Active User of the Software?



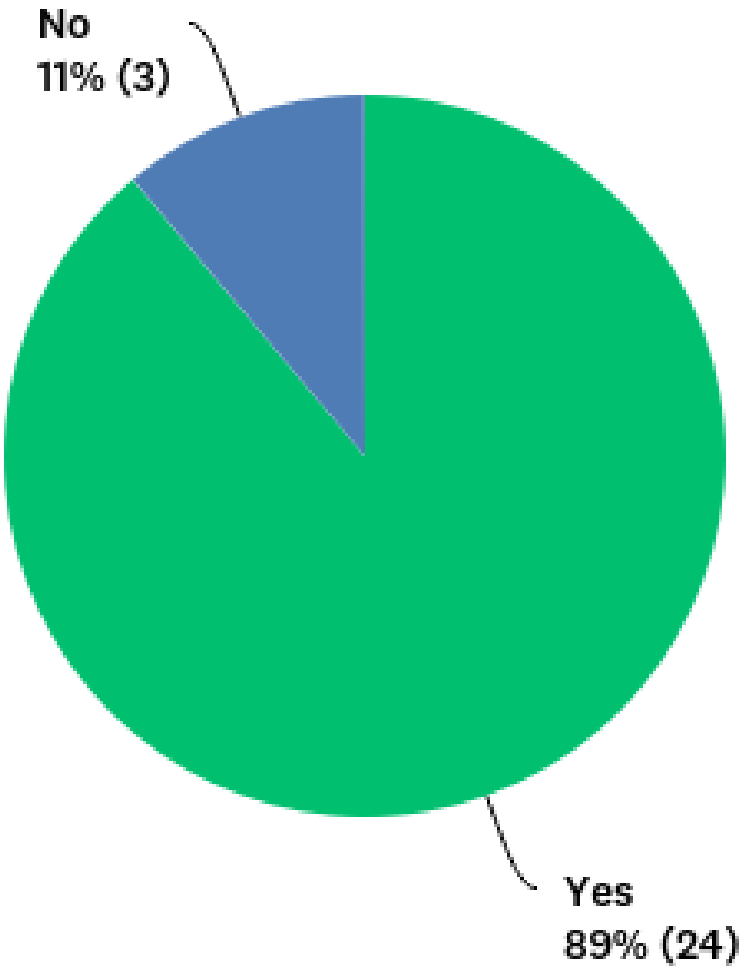


How would you describe your Level of Proficiency with the Software?

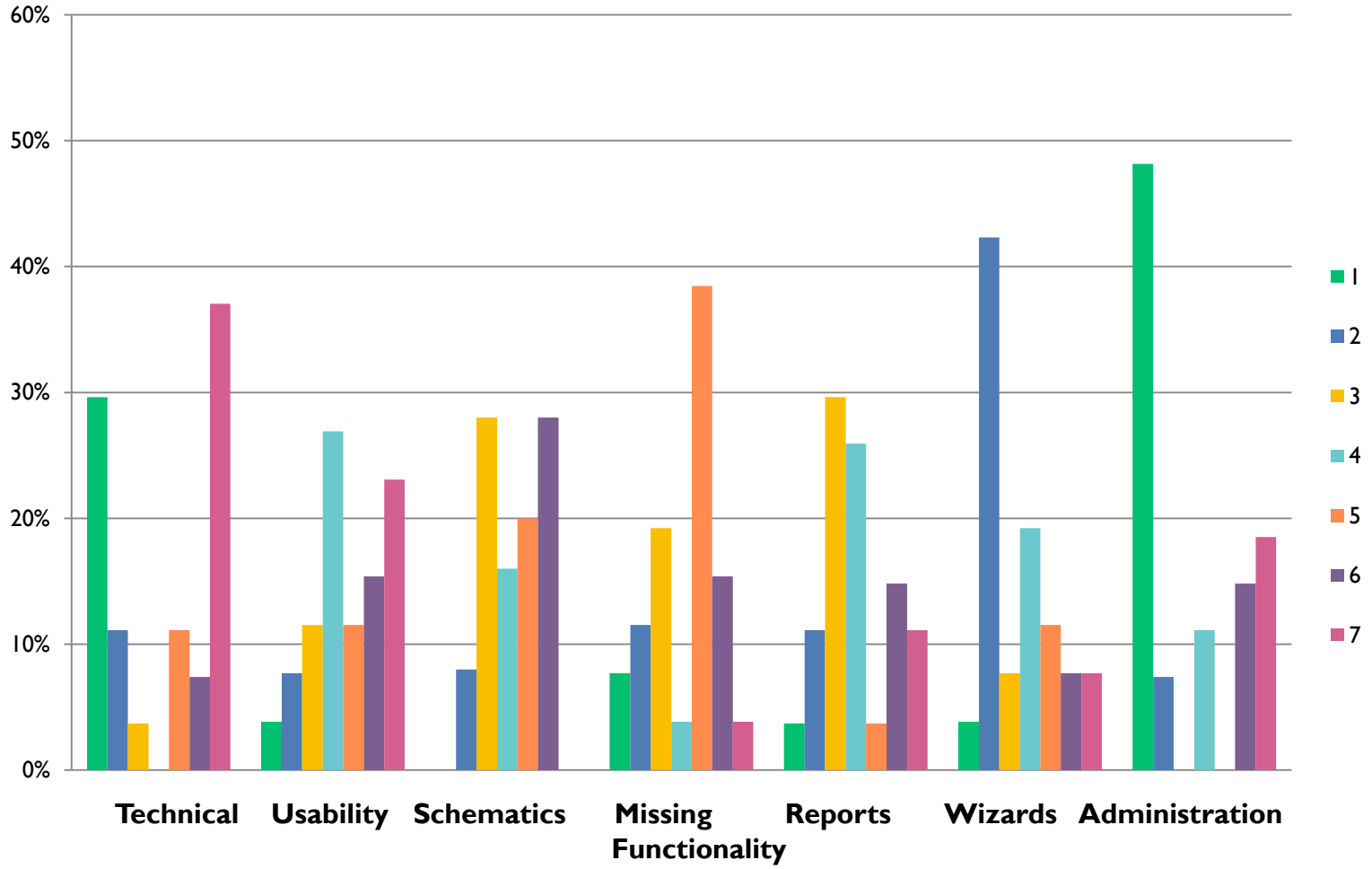




Consultants – Does the state you work for require you to use BrD or BrR?



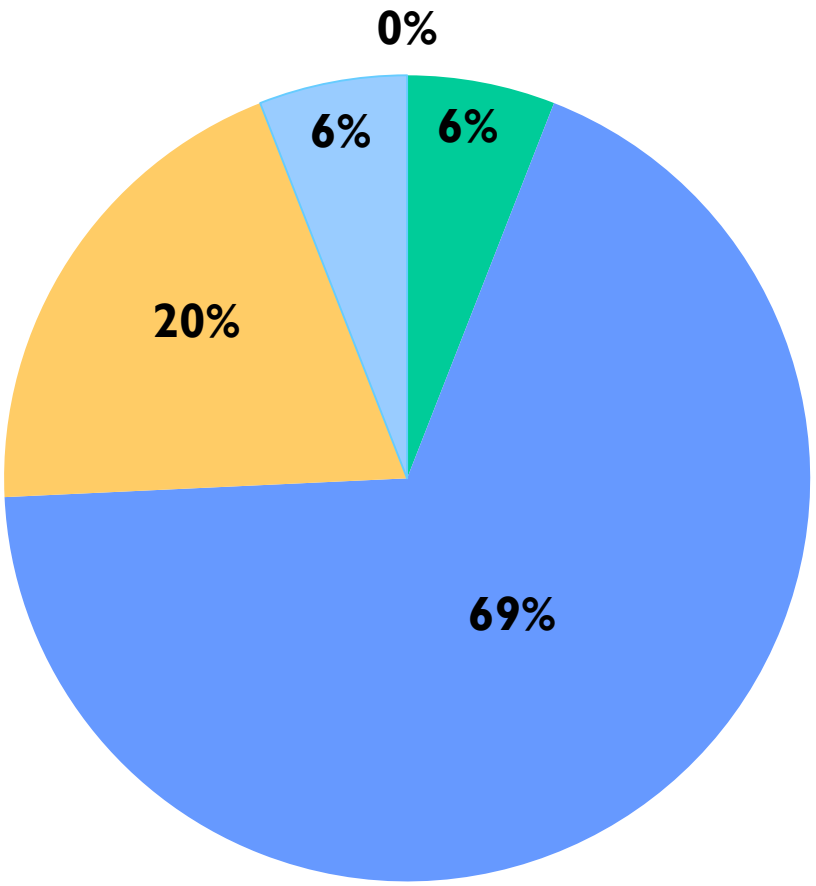
Agency Priorities by Category



Agency Priorities by Category

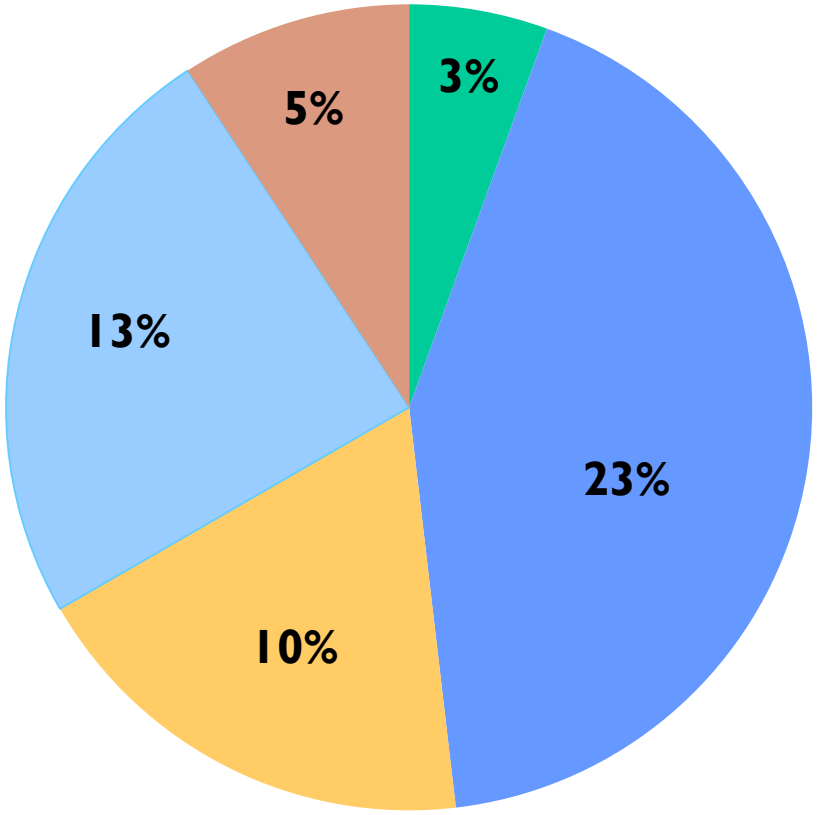
	1	2	3	4	5	6	7
Technical – Focus development efforts on adding new or improved analysis capabilities or improved analysis performance.	30%	11%	4%	0%	11%	7%	37%
Usability – Focus development efforts on making the user interface easier to use so as to decrease the learning curve for new users and improve productivity for all users.	4%	8%	12%	27%	12%	15%	23%
Schematics – Focus development efforts on adding more schematics to help users verify data entry.	0%	8%	28%	16%	20%	28%	0%
Missing Functionality - Focus development efforts on completing functionality that has been partially implemented or is important to the product such as adding new structure types.	8%	12%	19%	4%	38%	15%	4%
Reports - Focus development efforts on improving reporting of the data input by the users or generated by the analysis.	4%	11%	30%	26%	4%	15%	11%
Wizards - Focus development efforts on improving existing wizards or adding new wizards that guide the data-entry process.	4%	42%	8%	19%	12%	8%	8%
Administration - Focus development efforts on improving administrative capabilities.	48%	7%	0%	11%	0%	15%	19%

Operation (Ease of Use / Reliability)



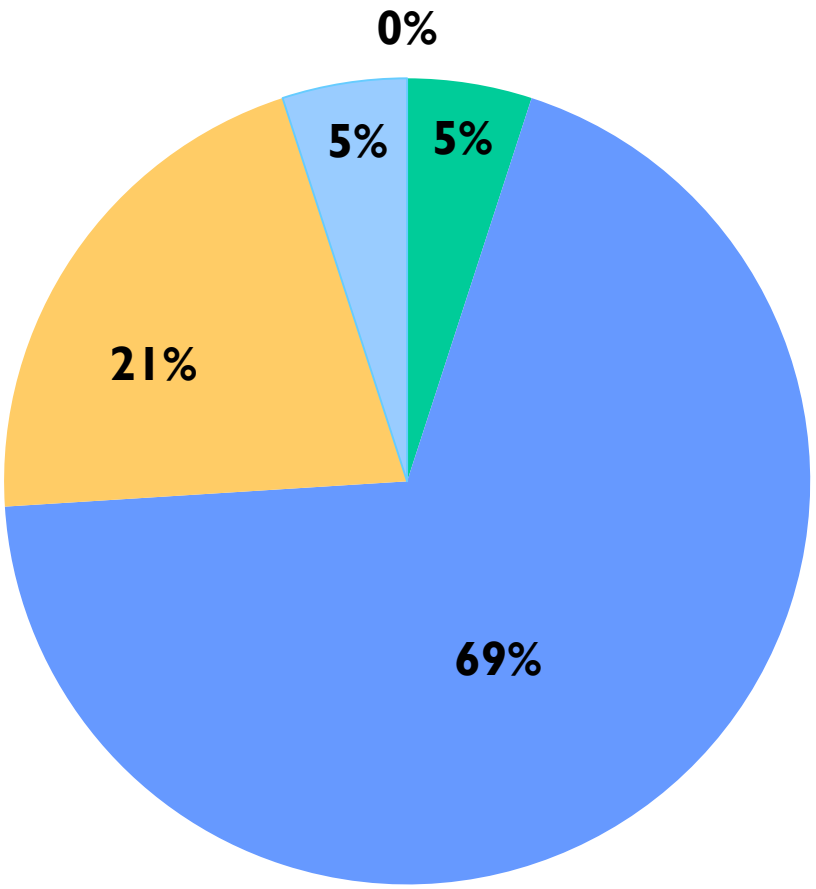
	2017	2015
Extremely Satisfied	6%	15%
Satisfied	69%	55%
Neither satisfied nor dissatisfied	20%	13%
Moderately dissatisfied	6%	16%
Extremely dissatisfied	0%	1%

Operation (Speed)



	2017	2015
Extremely Satisfied	3%	13%
Satisfied	23%	45%
Neither satisfied nor dissatisfied	10%	17%
Moderately dissatisfied	13%	15%
Extremely dissatisfied	5%	1%

Reports (Quality / Completeness)



	2017	2015
Extremely Satisfied	5%	8%
Satisfied	69%	48%
Neither satisfied nor dissatisfied	21%	14%
Moderately dissatisfied	5%	22%
Extremely dissatisfied	0%	8%

Additional Reports Requested

- Usability of the existing reports is a higher priority than the creation of new reports
- There is a MASSIVE need to compare the same charts/calculations for multiple points of interest at the same time; this is impossible in the current software. Users need the ability to combine results from multiple points of interests and export to Excel
- Graphic, exportable tabular format
- A standard report that includes graphics with annotated inputs to include program inputs would ease the QA/QC component of program administration
- Need the ability to print the entire BrR Tree
- Include more structure types in "Report Tools"
- Improve the "details output results" using Report Tools including DC1, DC2 and DW
- Shear and Moment at tenth points along each girder

Additional Reports Requested

- More uniformity in information provided, regardless of from which point (Bridge Explorer, Superstructure Definition, Member Alternative) the analysis is performed. Example: Control Mode & Control Location information when analysis is performed from Bridge Explorer should be similar to what is shown at the Member Alternative level
- Bridge Input Data-current BWS report list data that are not entered (or blank). As a result, user has to spend a lot of time to remove the "blank" data to be effective
- Culverts, trusses and all other superstructures, export spec check tables formatted tabular/xml formats.
- For complex bridges output files are not readable, they +2 GB large and won't open in normal software. Providing the output in a file type that would be easier to open would be preferred(.pdf or .txt files).
- Ability to easily find rating for any point along the beam instead of just the standard weakest link

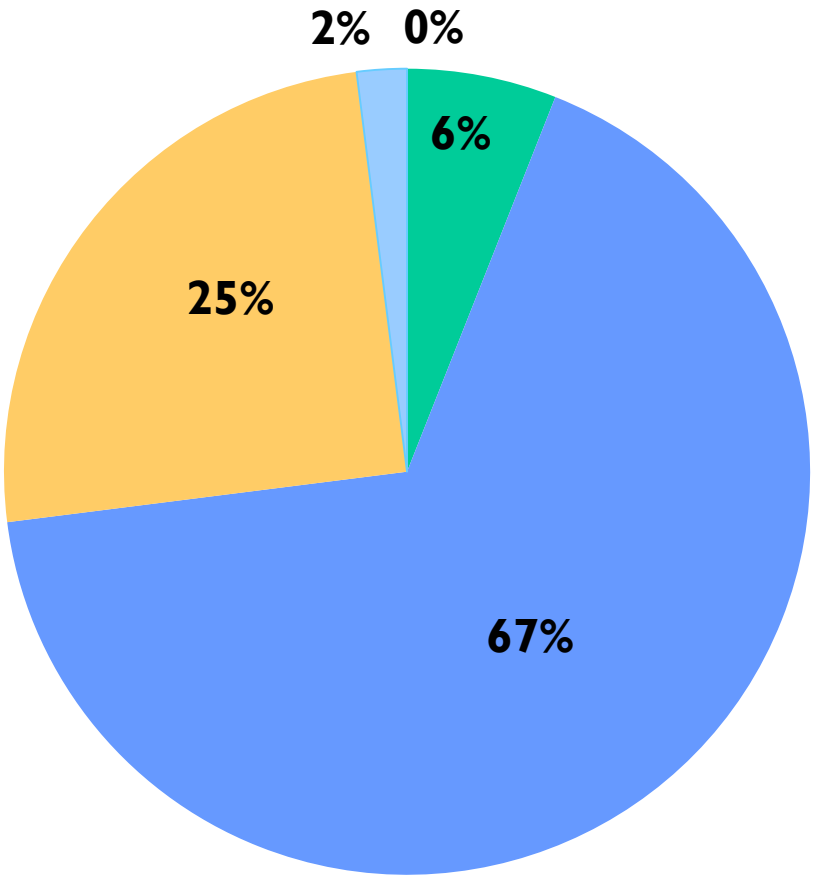
Additional Reports Requested

- Users need the ability to add custom report templates and generate reports with spatial data
- A one page load rating report that will satisfy FHWA requirements is needed.
- Rating summary report
- Design summary reports for different bridge types
- Better rating summaries, showing controlling members, limit states and locations, along with distribution/impact factors that are reported numerically instead of saying "as specified". Report control options selected/unselected.
- Some types of structures such as timber and culverts do not allow the option to see moment/shear diagrams.
- One table showing the section properties along that member, one table showing all the LL distribution factors

Additional Reports Requested

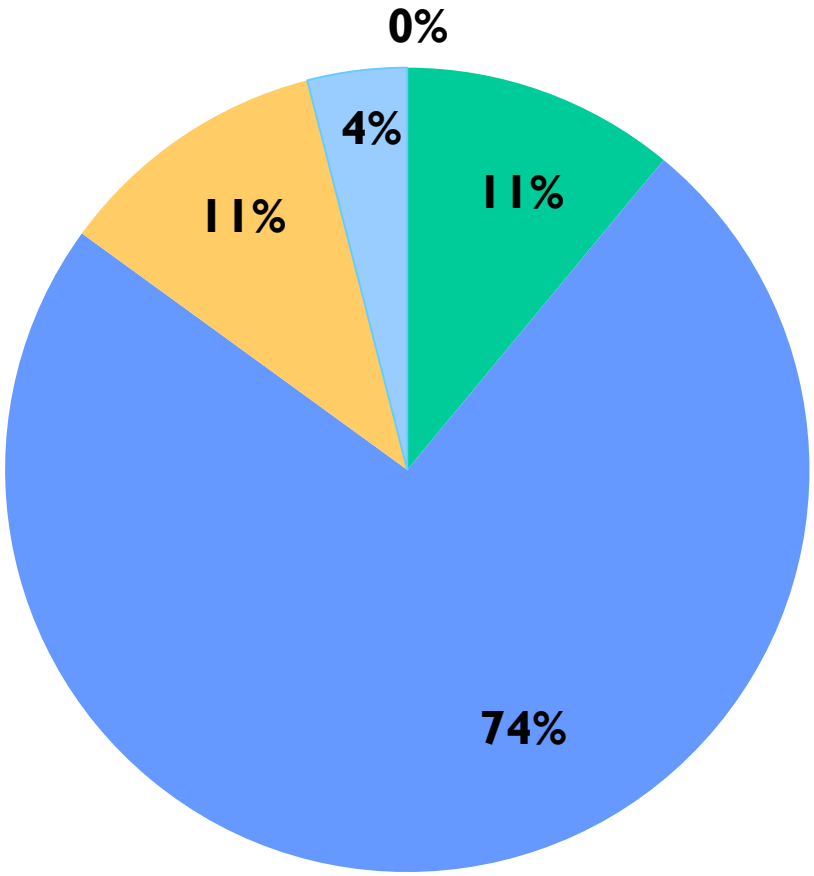
- BrR reports well in native, with the program running. BrR also provides extensive outputs, those megabye+ text files. What's missing is a legible put-it-in-the-files report that's more than just a summary.
- Create a report for printing, reading, and documenting. Show all inputs. Show schematics. Plot the results. Provide select tables of data. Identify the governing case and show the rating factor, its components, and how each component was developed. Provide data in page-length chunks. Use page breaks, and thoughtfully apply formatting. Standardize contents and order. Consistently do this for all bridge types.

Program Features/Capabilities



	2017	2015
Extremely Satisfied	6%	14%
Satisfied	67%	63%
Neither satisfied nor dissatisfied	25%	13%
Moderately dissatisfied	2%	8%
Extremely dissatisfied	0%	2%

Analysis Functions



	2017	2015
Extremely Satisfied	11%	25%
Satisfied	74%	54%
Neither satisfied nor dissatisfied	11%	12%
Moderately dissatisfied	4%	6%
Extremely dissatisfied	0%	3%

Software Use Comments

- Without a doubt the two biggest issues are speed of analysis and difficulty in using reports (inability to directly compare multiple points of interest)
- Fix all existing issues, and complete all partially functioning procedures before adding new functionality.
- Increase speed when using 3D FEM especially for curved girders.
- Improve the stability of the program.
- Software does not allow straight girders on curve alignment. This deficiency requires a large number of work arounds.
- Integral bents for many RC Tee beam is not allowed.
- Very good individual details in specifications output. Need the ability to write / report summaries more easily.
- The program crashes somewhat regularly. Additionally, its capabilities seem limited (substructures, bascule spans, etc.)

Software Use Comments

- Further documentation options (such as dead load deflection reports, +M and -M zones for fatigue) would be helpful in calculating screed elevations and tension zones of beams. The data is available, but it requires a lot of post-processing in Excel.
- Need the ability to generate a results file using the BWS Report File. There should be a simple way to generate a single file that details the specifics of the bridge, as well as the results shown in the tabular report.
- Need the ability to produce a standardized detailed output report on specific checks the program is doing without taking extra time to dig through the "View Spec Check" section to find the details. (it's not always obvious where certain numbers come from.)
- Second biggest issue is how long it takes to input bridges. Some of the inputs are not straight forward. It's difficult to determine what input is needed.

Software Use Comments

- Additional feedback should be provided when the program does not "like" the input entered is needed. It should also be easier to back out when bad input is used. Working around a fatal error is a real pain!
- Program is confusing for someone who does not use it regularly; too many options, tabs, and screens with useless & unneeded inputs; it has an excessively layered structure within a model; help screens are generally useless.
- The learning curve is initially steep as the interface works differently from other products, but after a short learning period it is easy to use (much easier than some other software products).
- Some states still require the use of ASD/LFD and those modules have errors that require the user to come up with workarounds, including the need for hand calculations.
- The copy to library option should be available on all material/property screens.

Software Use Comments

- AASHTOWare Rating Capabilities are needed for:
  - hinges for 3D FEM curved girder models. Include possibly moment releases at any location for all members and plate nodes at that location
  - Box girders of any kind. Line girder or 3D FEM Curved girder system.
  - legs of frames, only simplified model with springs currently, does not rate the legs of the frames for concurrent load forces, combined axial-bending, etc.
  - discontinuous diaphragms/crossframes. Getting error regarding not the same number of nodes per girder when running discontinuous crossframes.
  - give option for simply supported floorbeams. When run as floor line or floor system with multiple floorbeam spans, floorbeams are always assumed continuous. This is not always the case and is unconservative for simply supported floorbeams in positive moment.
  - arch bridges – steel tied arch, concrete arch – currently AASHTOWare does not handle these bridge types.

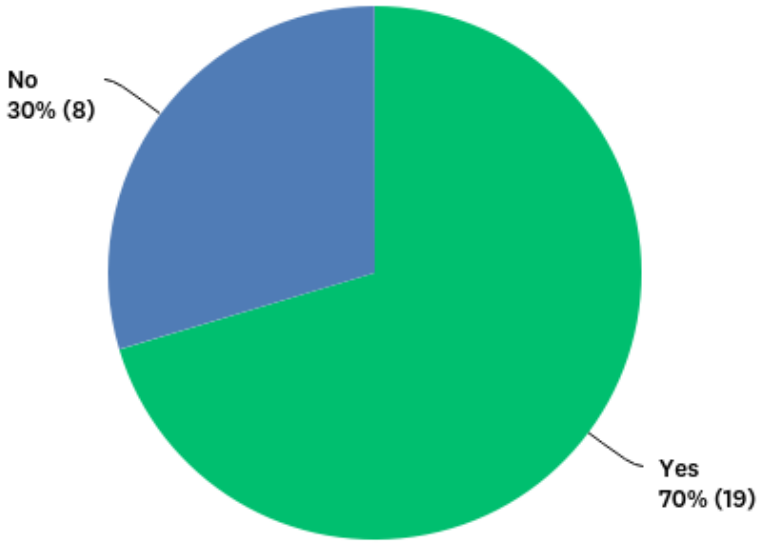
Software Use Comments

- The software generally runs well with a reasonable level of accuracy; however, getting output into a reasonable format that can be utilized by someone unfamiliar with the software for quality control purposes is time consuming. Instead of using the BWS report, I have decided that it is much easier for the person checking if I take a screen shot of every dialogue box that contains applicable information. A feature that does this automatically, or any feature that compiles the input and output into a meaningful format would be greatly appreciated.
- The modernization effort is encouraging.

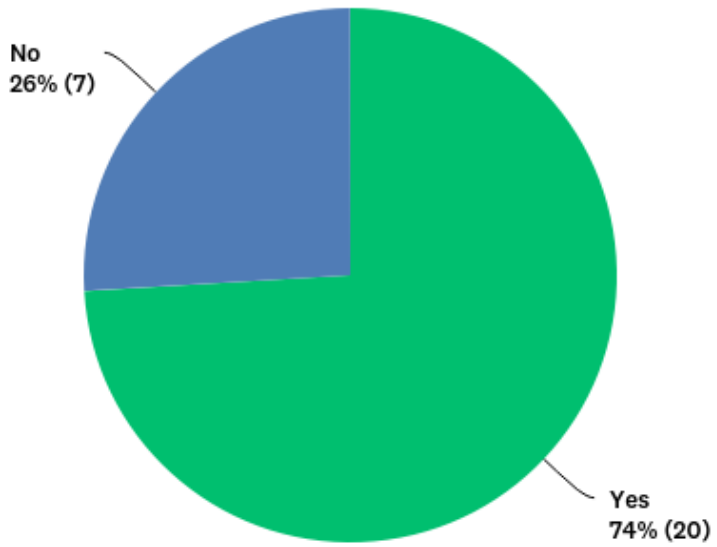
Online Tutorial Usage

Have you used the online tutorials available on the BrDR support site?

Member Agency



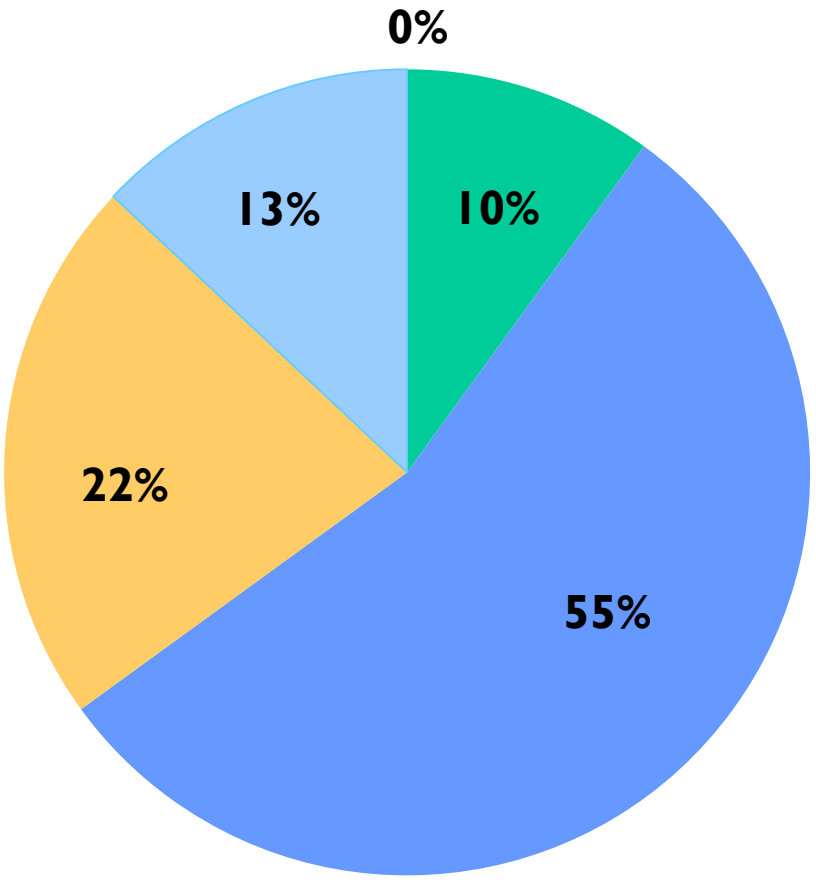
Consultant



2015: No=35% / Yes=65%

No=47% / Yes=53%

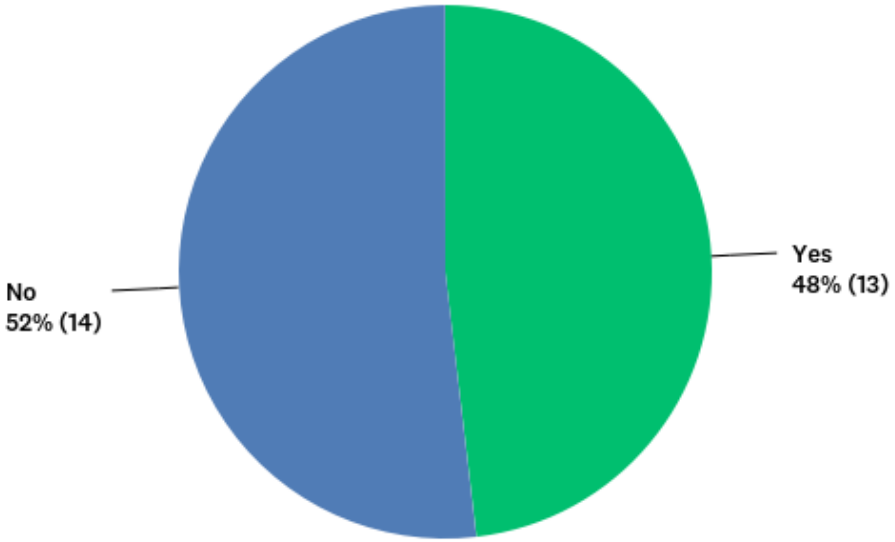
Online Tutorial Satisfaction

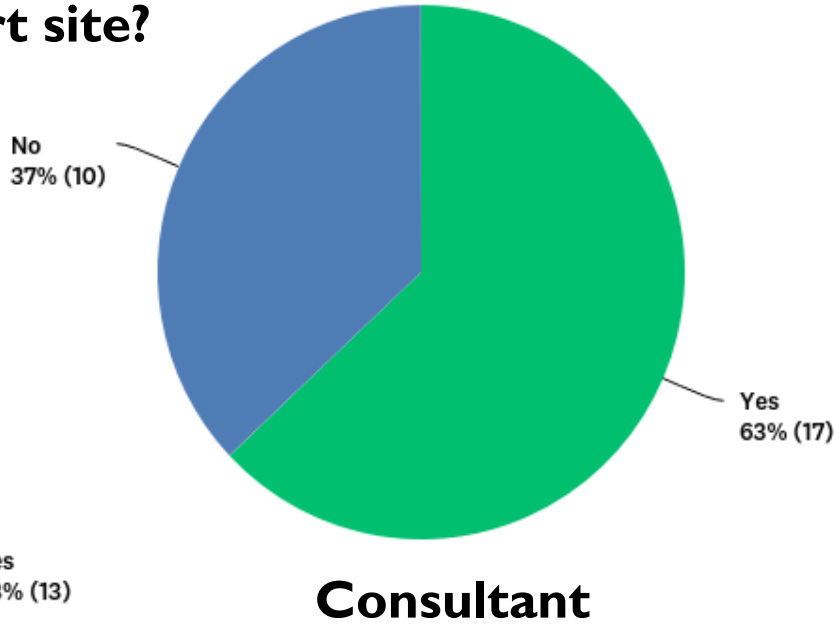


	2017	2015
Extremely Satisfied	10%	12%
Satisfied	55%	41%
Neither satisfied nor dissatisfied	22%	37%
Moderately dissatisfied	13%	8%
Extremely dissatisfied	0%	2%

FAQ Usage

Have you used the FAQs available available on the BrDR support site?

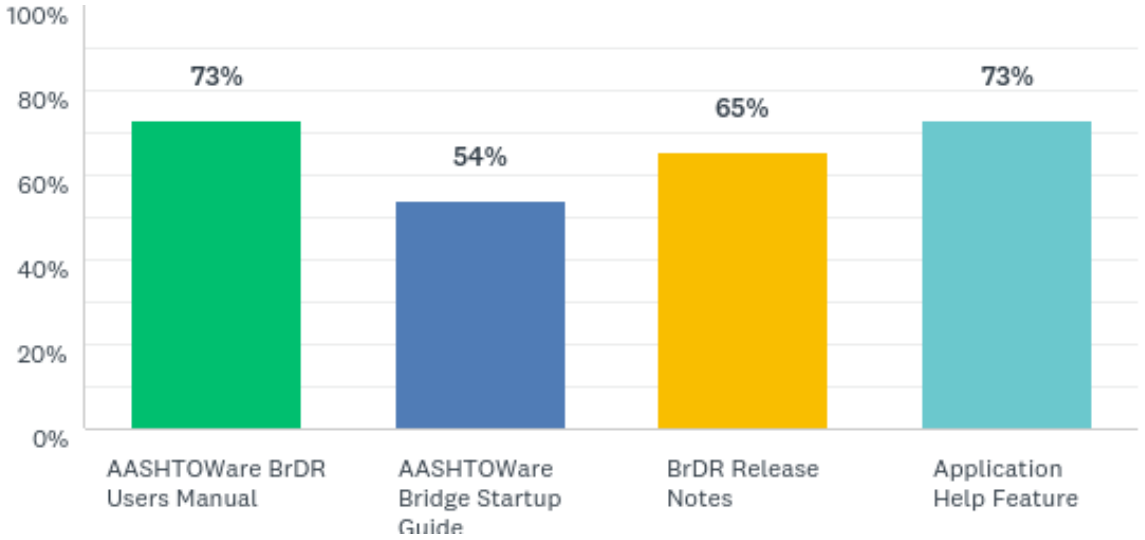




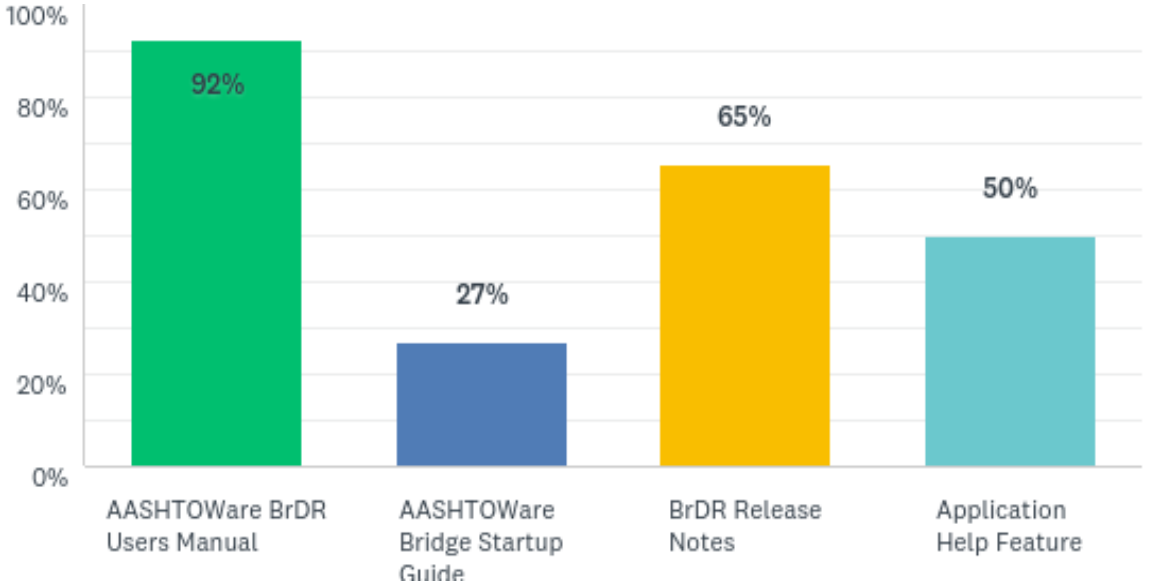
2015: No=63% / Yes=37%

No=44% / Yes=56%

Documentation Used

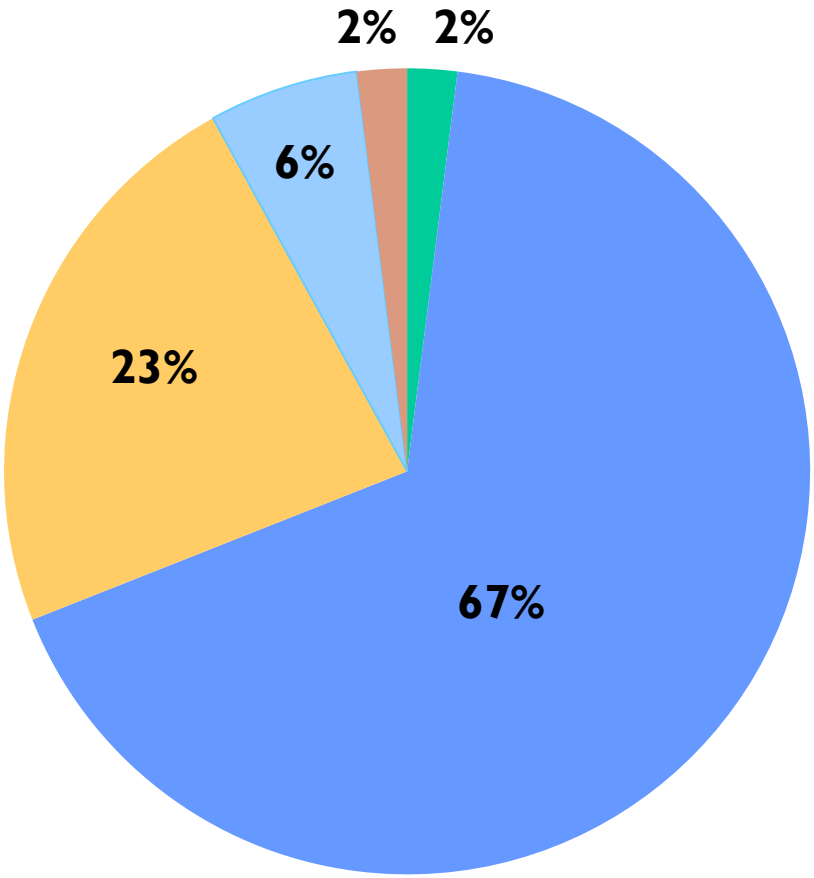


Member Agency



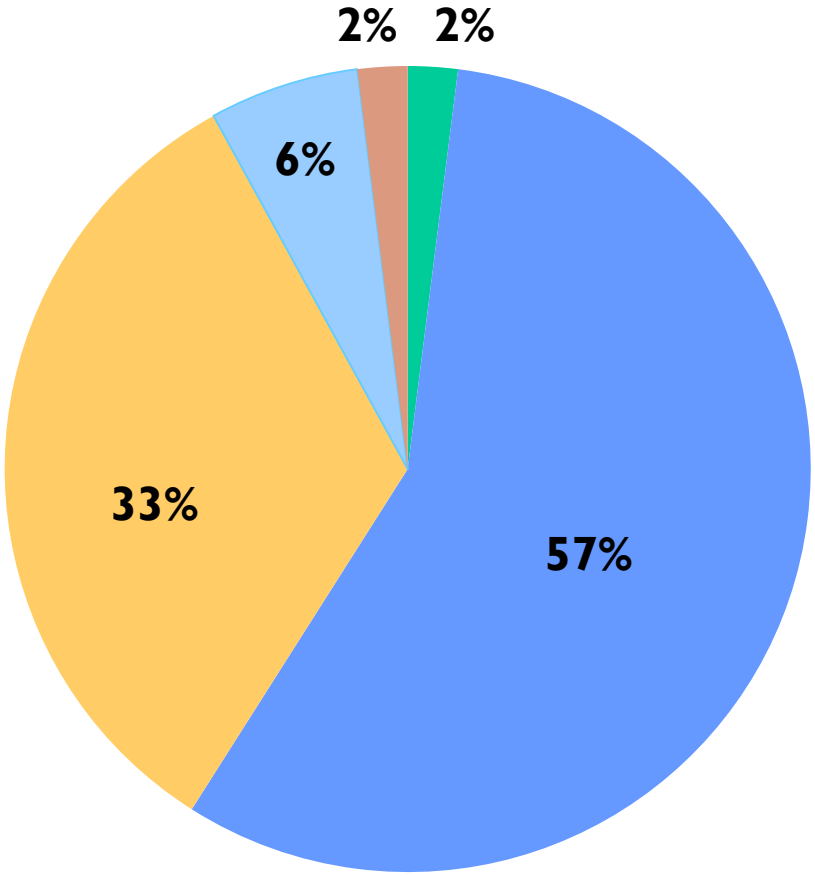
Consultant

Documentation Usability



	2017	2015
Extremely Satisfied	2%	11%
Satisfied	67%	50%
Neither satisfied nor dissatisfied	23%	28%
Moderately dissatisfied	6%	11%
Extremely dissatisfied	2%	0%

Documentation Completeness



	2017	2015
Extremely Satisfied	2%	9%
Satisfied	57%	49%
Neither satisfied nor dissatisfied	33%	26%
Moderately dissatisfied	6%	15%
Extremely dissatisfied	2%	1%

Documentation Comments

- In some instances, it would be beneficial to discuss the engineering concept a bit more in relation to how the tool/menu in BrR works. Sometimes the most appropriate approach for how to use a BrR feature is not always obvious.
- A comprehensive on-line help application is desperately needed for this software. Too often searches end with "No engine-related help" or provide elementary screen guidance.
- In general the documentation is useful; however, at times the documentation is not kept up to date with the software updates.
- Examples provided on the training page are outdated. Updated examples would be beneficial.

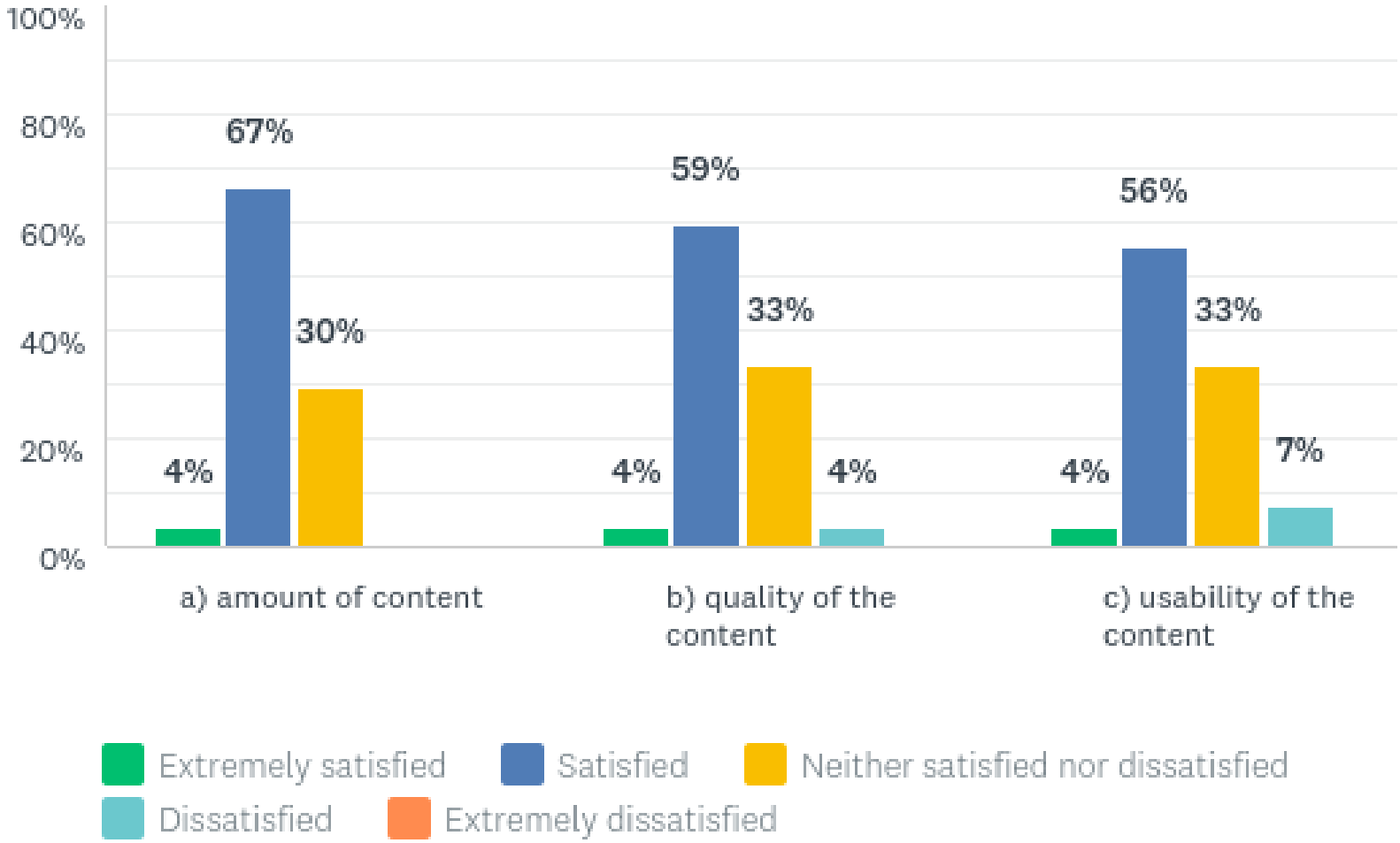
Documentation Comments

- Inputs need better explanation, more diagrams/pictures would be helpful.
- Most entries in the "F1" help are useful but some simply restate what is being asked for in the same terms, those are not at all helpful when trying to figure out what to enter in a cell.
- Tutorials and technical help is very helpful
- A flow chart to refer to when entering a bridge for rating would be helpful. Some of the data can be revised at any point (which is good), and some data, once entered, is impossible to change! There should be a warning for those cases.
- Documentation is generally good (2)

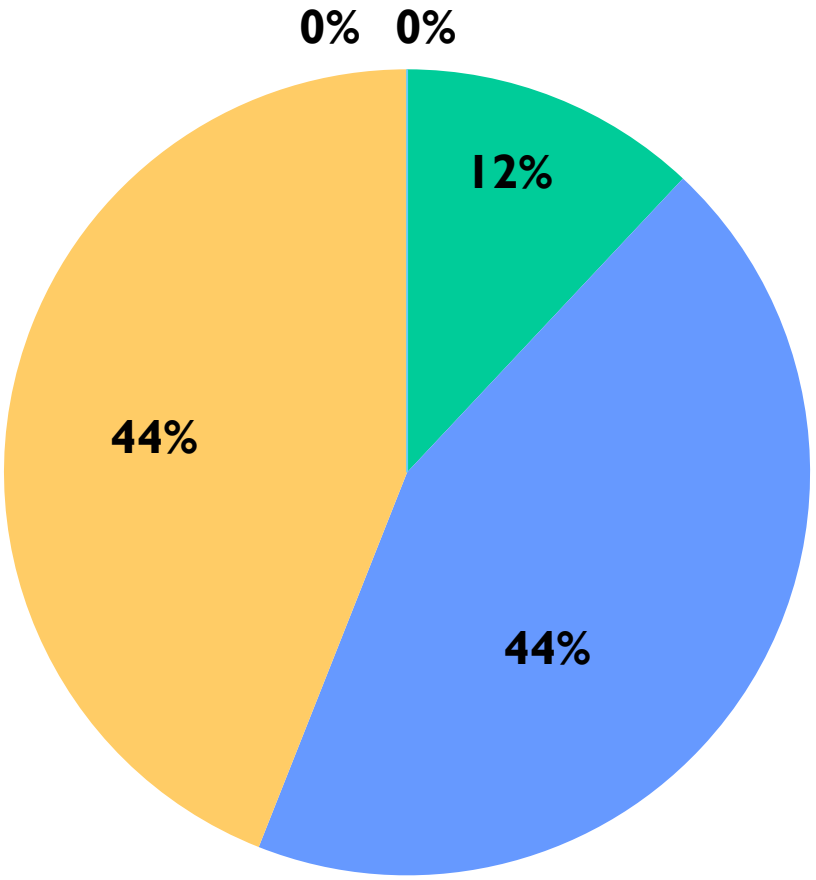
Documentation Comments

- The JIRA ticket system is very difficult to quickly determine if any open tickets (mostly "Bug" ones) relate to my bridge. Going through every ticket is certainly not an effective use of my time
- Context specific help can be very useful when determining input that may be unclear from the labels in the dialogue boxes. The help feature is also useful when determining how important some input are, since there are parameters that are not used.

Member Agency Satisfaction with BrDR Support Website

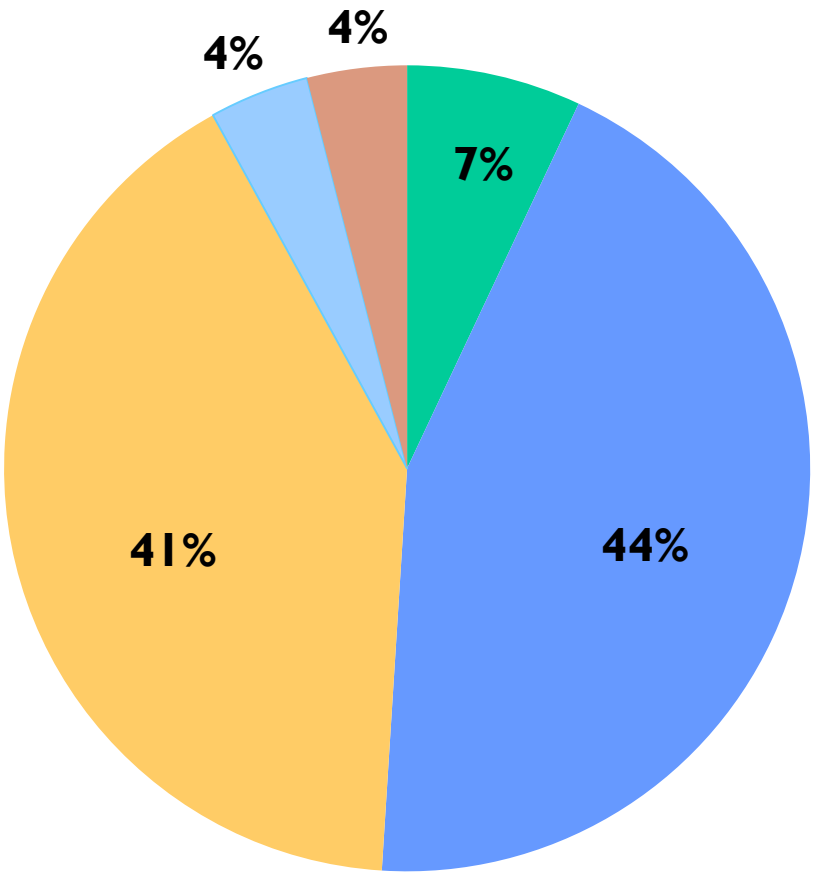


Member Agency contact with Bridge Task Force



	2017	2015
Extremely Satisfied	12%	28%
Satisfied	44%	20%
Neither satisfied nor dissatisfied	44%	49%
Moderately dissatisfied	0%	0%
Extremely dissatisfied	0%	3%

Responsiveness of Bridge Task Force

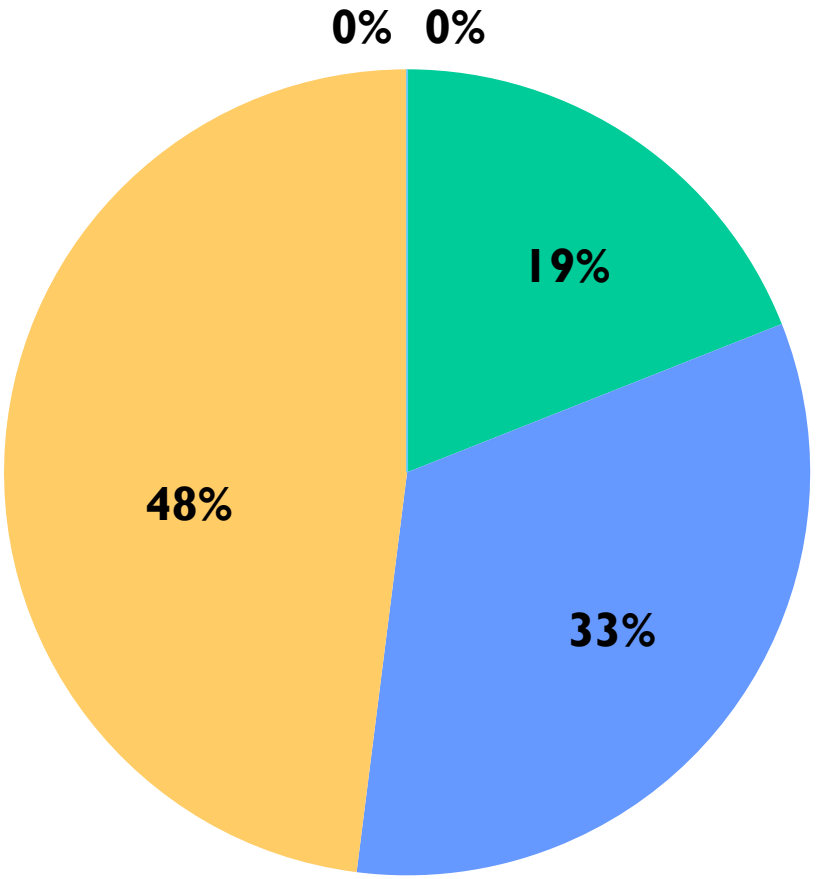


	2017	2015
Extremely Satisfied	7%	23%
Satisfied	44%	23%
Neither satisfied nor dissatisfied	41%	46%
Moderately dissatisfied	4%	3%
Extremely dissatisfied	4%	5%

Task Force Suggestions for Improvement

- Reach out to the users, not just the "Designated End User" who may or may not actually use the software.
- Task Force needs to inform the potential work plan of the software to its members and their approach of the solution in advance. Solution proposed by the developer or other agencies may affect the way an agency approaches its business.
- The software currently handles “standard” bridges. As the software has matured, it should be enhanced to handle bridges with outlier details.
- Consider phoning the users

Communication Between User Group and Bridge Task Force



	2017	2015
Extremely Satisfied	19%	10%
Satisfied	33%	39%
Neither satisfied nor dissatisfied	48%	49%
Moderately dissatisfied	0%	0%
Extremely dissatisfied	0%	2%

Task Force / User Group Improvement Suggestions

- Share Task Force quarterly meeting minutes or summary with the User Group.

Specific Issues / Concerns

- While the Task Force is to be commended for it's efforts to modernize the software for future use, there are changes that would be helpful in administering the NBI Program that if implemented would add great value in the ease of overall program delivery. Examples include adding functionality to perform the analysis of the FAST Act Emergency Vehicles as guided by FHWA, and fields in BrM to store the results of these analyses.
- Software enhancements are often handled in a piecemeal manner by the developers. An enhancement that is common to many bridge types will often be implemented to only one bridge type, forcing the agency funding the enhancement work to pay multiple times for the same item.

Specific Issues / Concerns

- Work with other software vendors to offer import/export of input files so that a bridge designed with Conspan, for example, can be exported to appraise in BrR.
- The way the software is licensed, if we decide not to license the software in the future, there is no way to use the data that we've collected, stored and used. We cannot even use out of date software to access the old data without paying the licensing fees.
- The licensing & renewal process seems very slow, with inadequate information provided upfront for users to know how long it will take.
- The software needs better integration with Excel so the data can be more usable, query able, searchable, sortable, etc.

Specific Issues / Concerns

- Other than the functionality of the report tools, I have been pleased with the software
- The reporting functions of the software need to be improved
- I look forward to a re-write and improvements. I still like the idea of using BrD and BrR as primary design and rating software, but the ability to not do variable width decks, clunky output, and slow runtimes make it difficult to justify using it for anything other than my required load ratings. We are giving up our BrD license this year for that reason (the dream is dead, for now at least).
- BrDR technical support needs more resources. It can take up to 2 weeks to get a response. (2)

Specific Issues / Concerns

- Try to eliminate the situations where data cannot be revised. I am not referring to structure type, but there are other entries that create much frustration, such as live load distribution. If you click the wrong button before all data is completely entered, the program will kick you out and cause you to lose any unsaved work, which can take a considerable amount of time to re-enter. Very frustrating!!
- Need the ability to see the actual code when there is an error running the program to better debug my own model.
- Need better help/references
- Better support for curved bridges

Specific Issues / Concerns

- My client has started requesting the results data files (i.e. "LRFRReport.XML", the my documents folder with the various results files, etc.) be saved and sent as part of the report. It is not obvious to the user how to open and look at this data without re-running the report, though it's clearly possible. The software needs to be easier to use in this area, and/or more clear. (i.e. there are tables to fill out from the data in LRFRReport.xml, and sometimes we are in a time crunch in which it might be helpful to generate this file and start analyzing it on a separate non-AASHTOWare machine while someone else works with the program. It's an .XML file so it should be easy enough, but without using the report tool when I open it, it is in a very non-reader friendly format)

Specific Issues / Concerns

- Since some states still require the use of ASD/LFD and some bridges that were designed using those codes do not pass using LRFR, it would be nice to have the ASD/LFD modules updated to fix bugs.

Questions / Comments?

AASHTO Expense Reimbursements

Concur – A majority of the AASHTO travel reimbursements will be handled via electronic input, submission, and approval.

- Judy Tarwater will conduct a brief Concur "how-to" session this afternoon at 4:30 for AASHTO member agency attendees.

Current Travel Reimbursement form on the RADBUG website

- For those AASHTO-reimbursable attendees who require travel reimbursements to go through their agency, the manual travel expense reimbursement process may be used. Sign reimbursement form, scan form and receipts, email submission to Judy Tarwater jtarwater@aashto.org