AASHTOWare Bridge Update

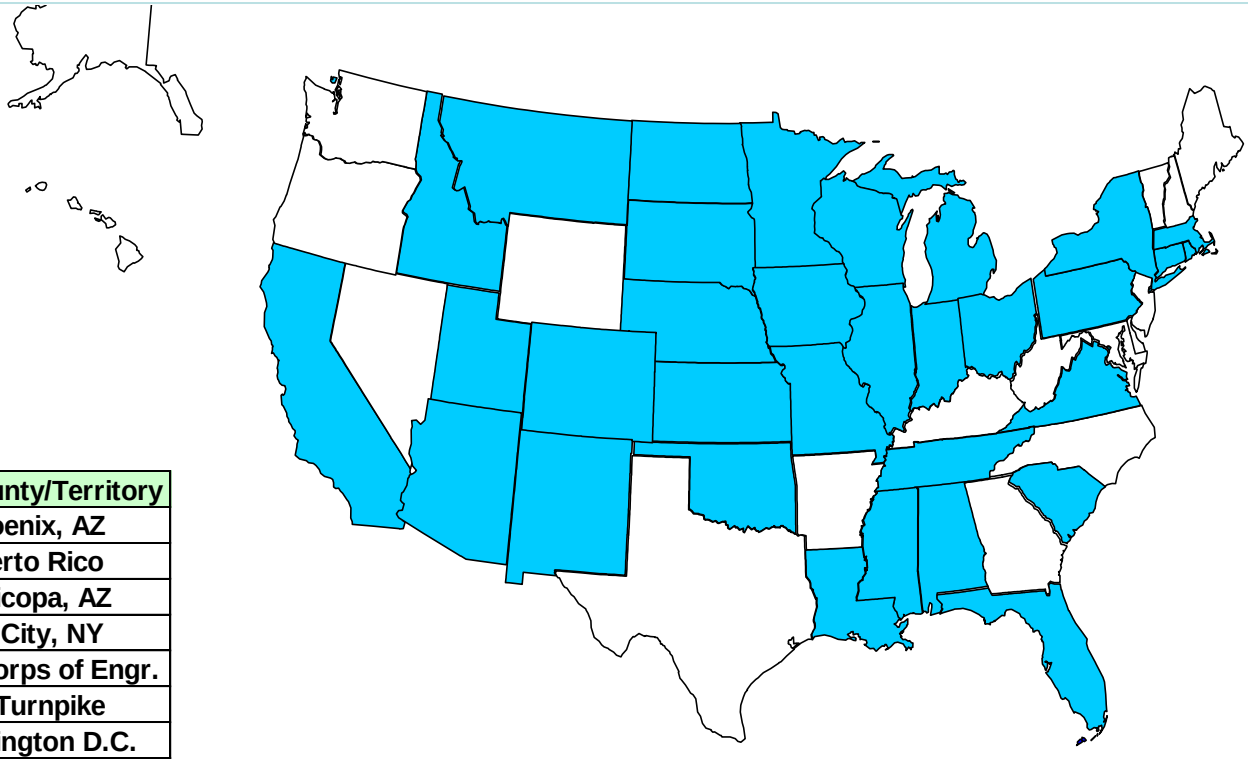
Todd Thompson, Chair
Chicago, Illinois

Agenda

- Bridge Rating and Design Update
- Task Force Members
- Beta Testing TAG Members

AASHTOWare Bridge Rating

Current Participation (FY 2016 ending June 30)



City/County/Territory
Phoenix, AZ
Puerto Rico
Maricopa, AZ
NY City, NY
Army Corps of Engr.
NJ Turnpike
Washington D.C.

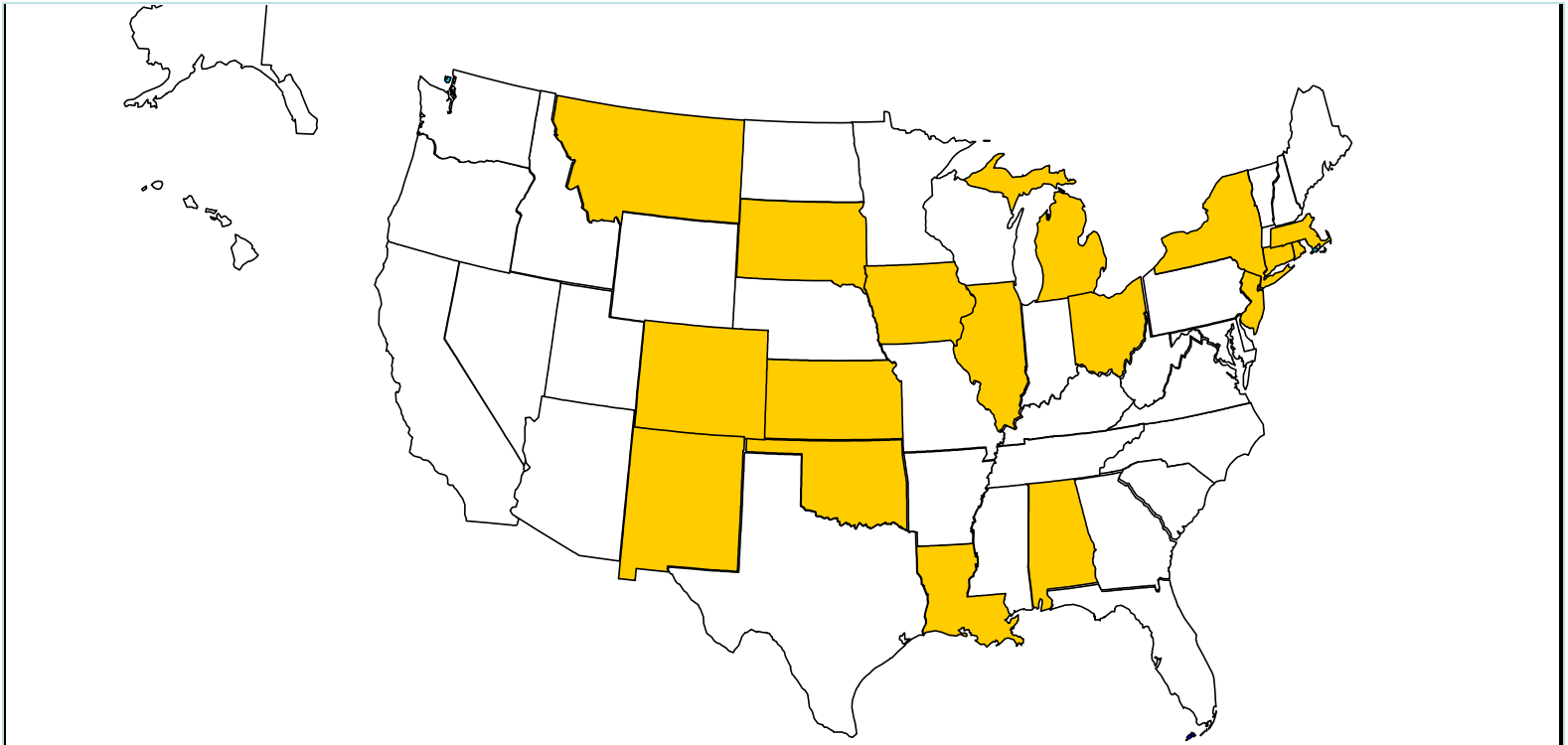
Country
Manitoba, Canada

Consultant Licenses = 553
Agency Licenses = 40

Map Key	
	Non- Licensee
	Licensee

AASHTOWare Bridge Design

Current Participation (FY 2016 ending June 30)



Country
Manitoba, Canada

Consultant Licenses = 36
Agency Licenses = 18

Map Key	
	Non- Licensee
	Licensee

Releases since last year

- 6.7.1 – March 2016
  - Multi-cell Concrete Box Enhancements
  - Substantially funded by CALTRANS

Releases since last year

- 6.8 – July 2016
  - PS Design Tool Phase 1
  - Rating Tool
  - Regression Comparison Tool
  - Numerous Maintenance Issues
  - User voted enhancements

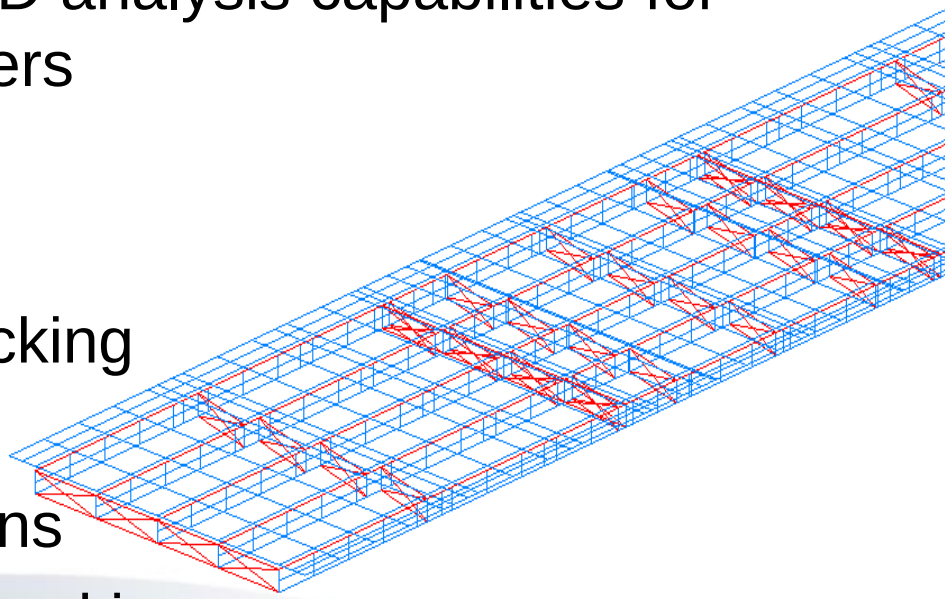
Enhancements for 6.8 – July 2016

Curved Girder Part 3 – Diaphragm and Lateral Bracing Rating

- Enhances the existing 3D analysis capabilities for straight and curved girders

- Cross Frame Definitions
- Cross Frame Spec Checking

- Lateral Bracing Definitions
- Lateral Bracing Spec Checking



Enhancements for 6.8 – July 2016

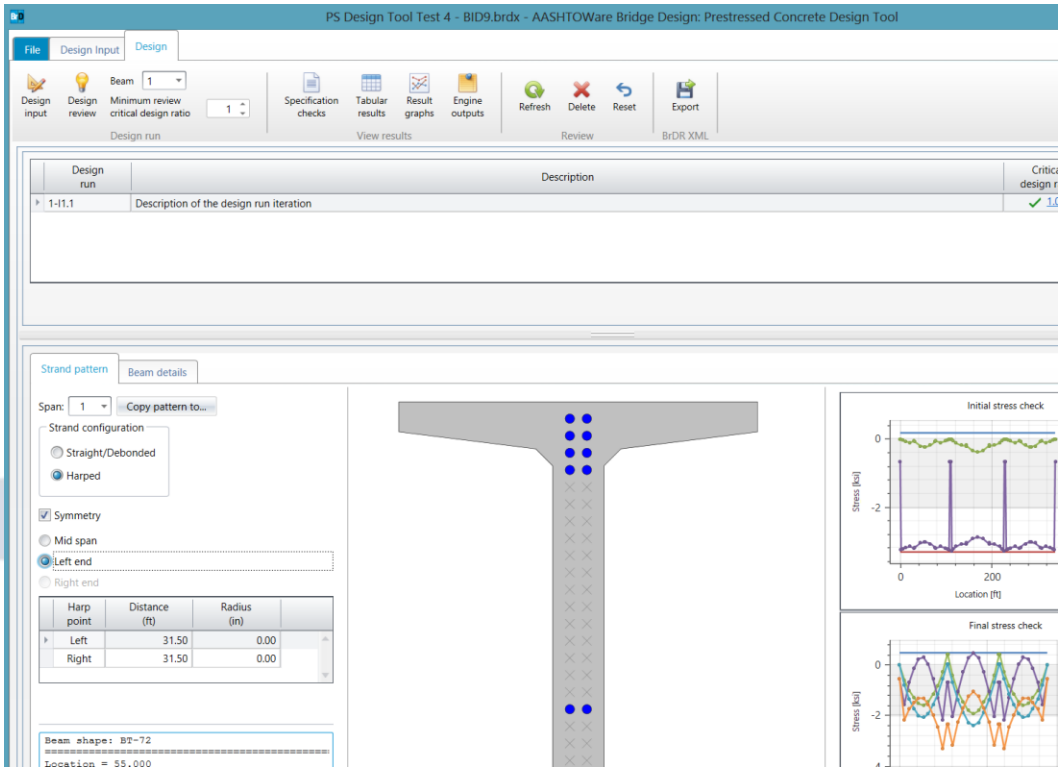
- Nonstandard Gage analysis for Floor Systems

- Refinements to the strain-compatibility computation of PS beam flexural capacity

Enhancements for 6.8 – July 2016

Prestressed Concrete Beam **Design Tool** – Phase 1

- I beams
- Box beams
- Tee beams
- Debonded or harped strands
- Simple span
- Continuous spans



Enhancements for 6.8 – July 2016

Prestressed Concrete Beam **Design Tool** – Phase 1

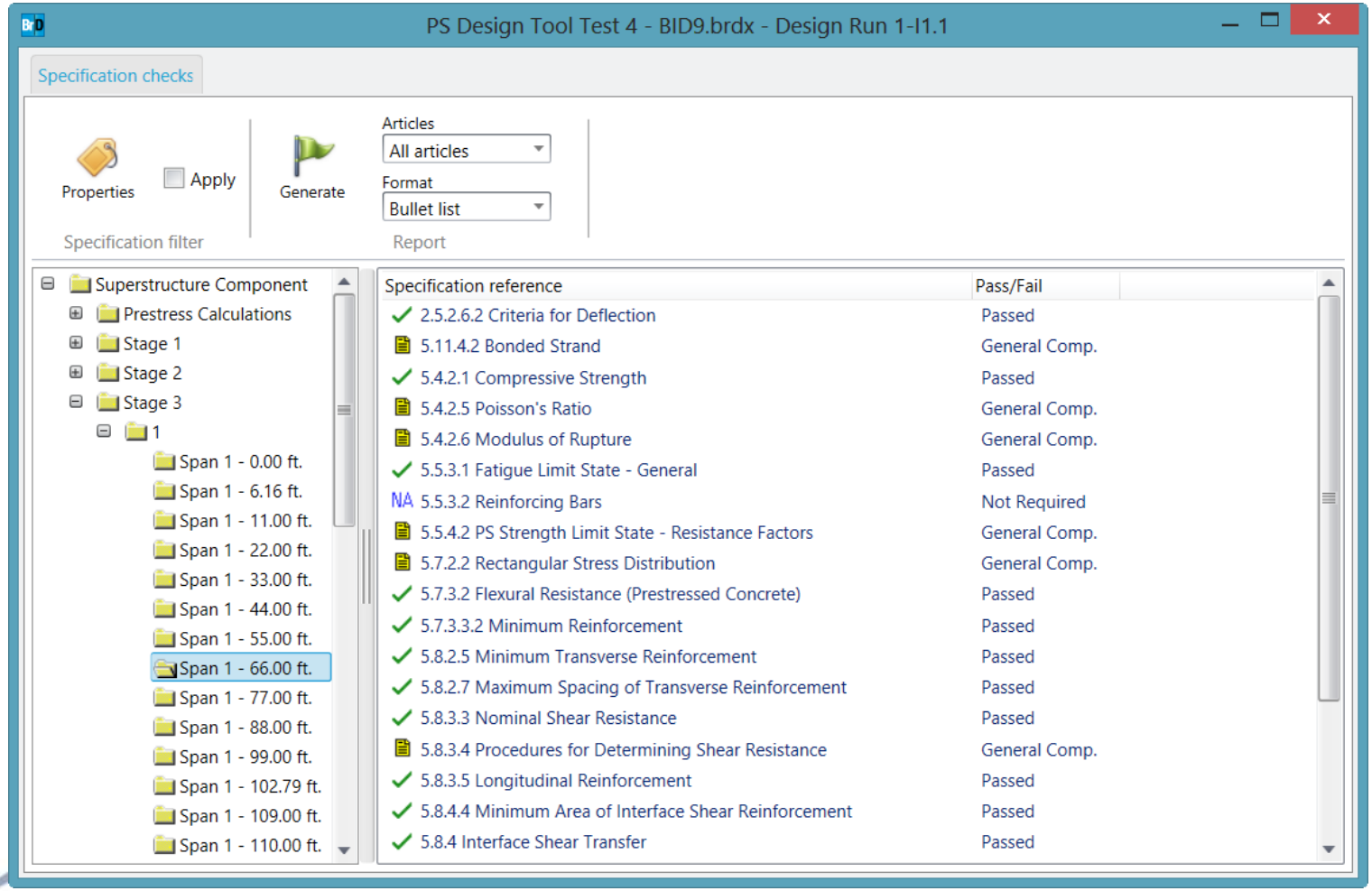
- Enter basic geometry
- Enter load descriptions
- Enter design parameters
- Initiate a design run

- Phase 1 - girder line
- Phase 2 - full description of bridge

Enhancements for 6.8 – July 2016

Prestressed Concrete Beam **Design Tool** – Phase 1

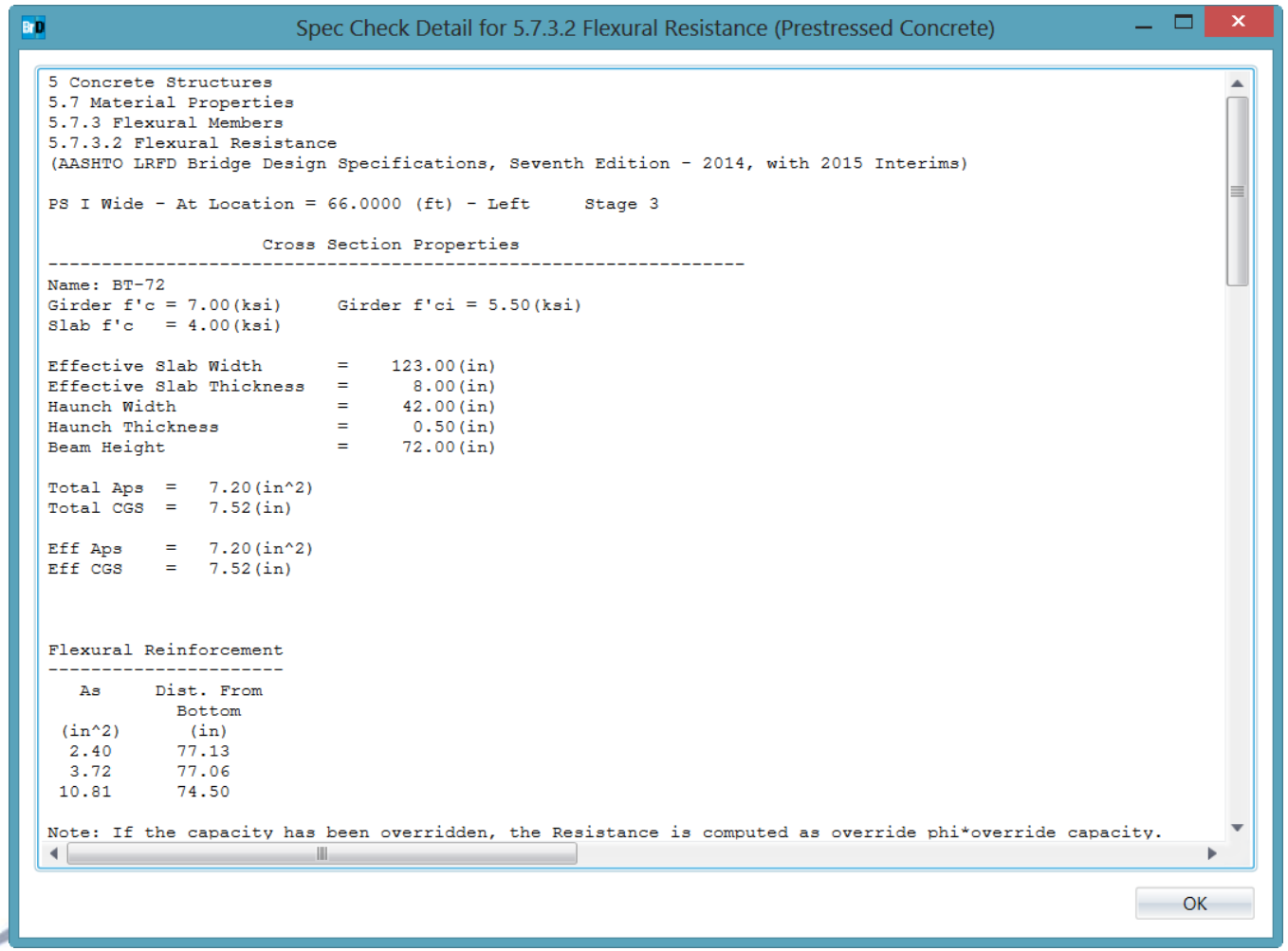
Specification Checking Details



Enhancements for 6.8 – July 2016

Prestressed Concrete Beam **Design Tool** – Phase 1

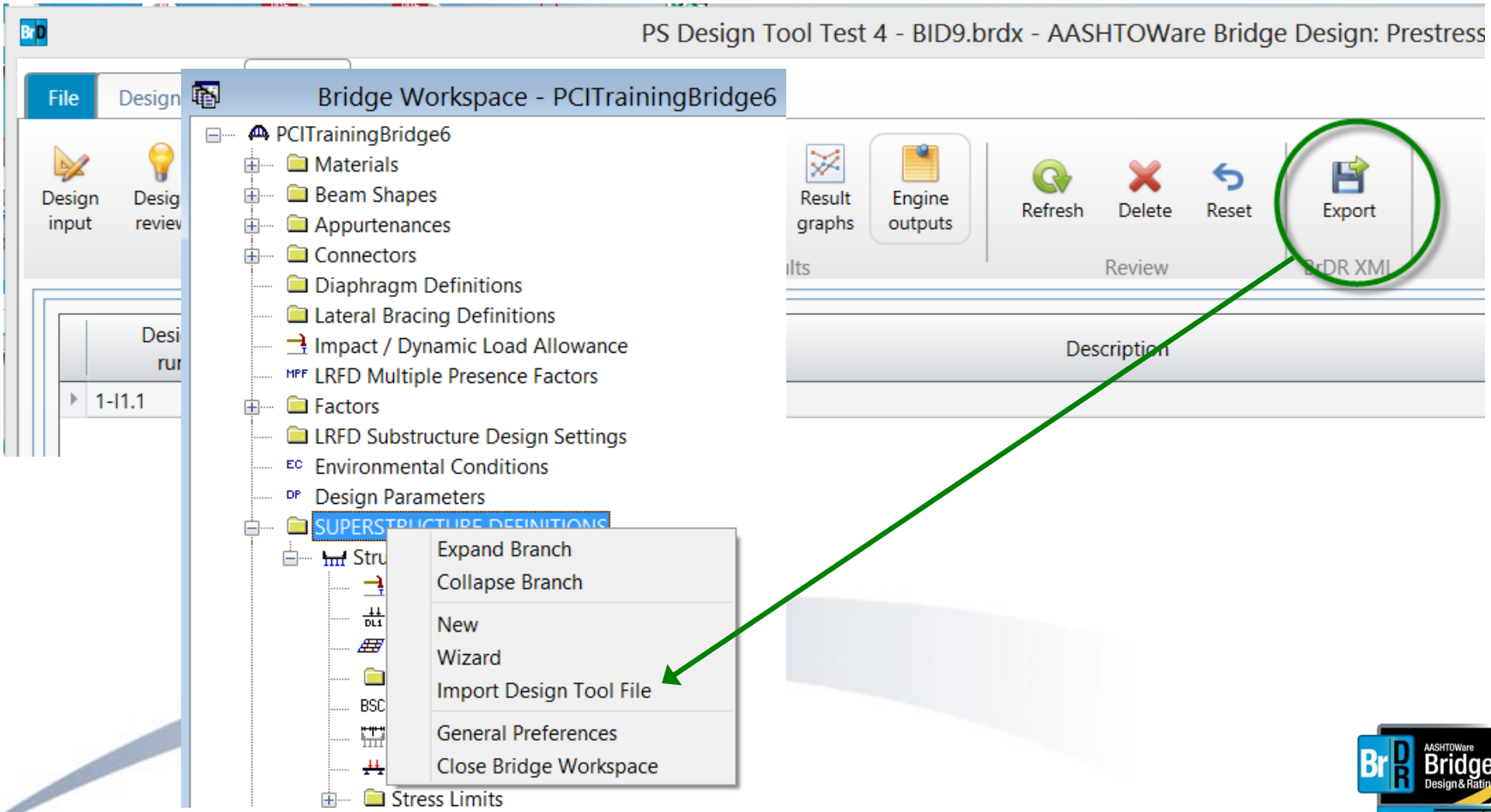
Specification Checking Details



Enhancements for 6.8 – July 2016

Prestressed Concrete Beam **Design Tool** – Phase 1

Export the design to BrD



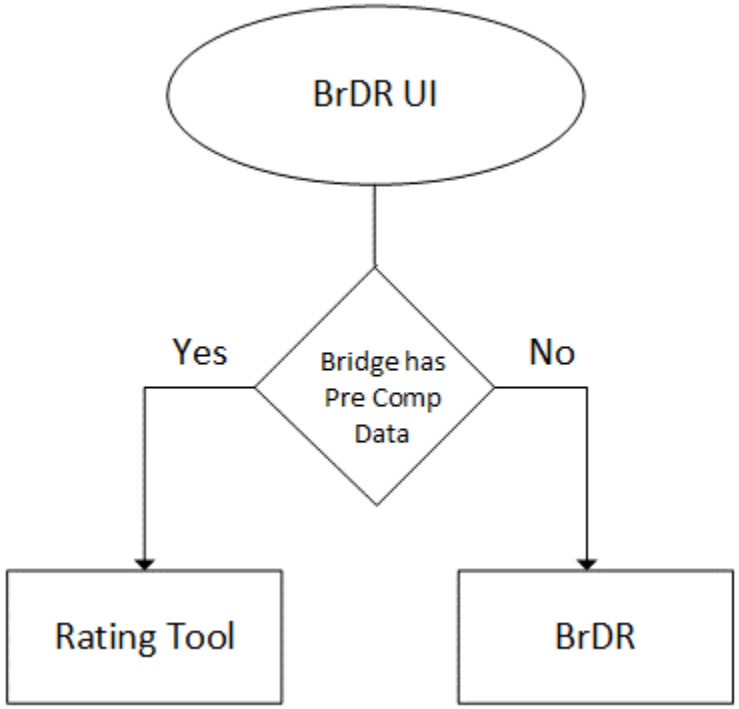
Enhancements for 6.8 – July 2016

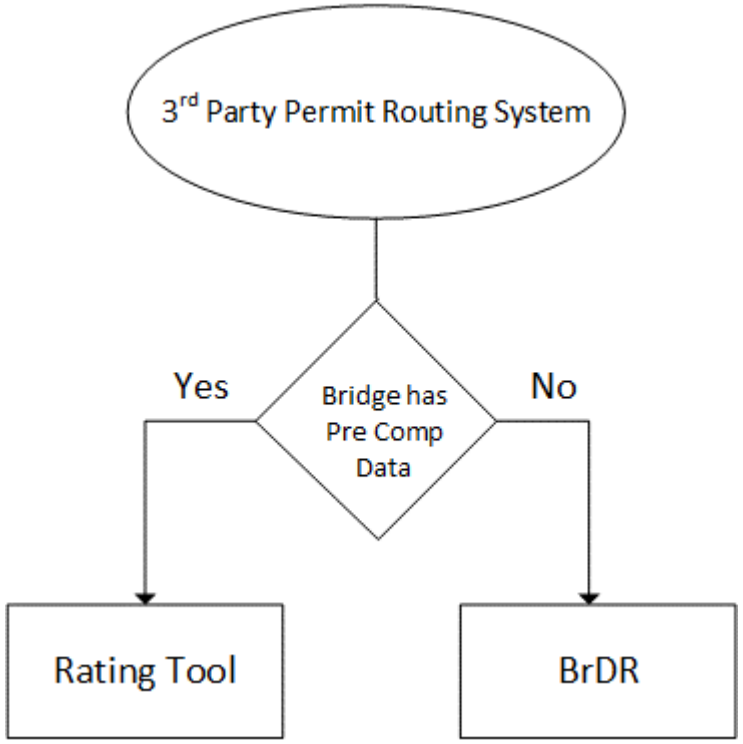
Rating Tool – Phase 1

- New tool for computing rating factors very quickly by using precomputed analysis data
- Tool can be used by permitting systems or within BrR to compute ratings for a list of bridges and/or vehicles
- LFR capability
- Steel and concrete multi-girder straight superstructures
- LRFR, floor systems and trusses in subsequent phases

Enhancements for 6.8 – July 2016

Rating Tool – Phase 1





Enhancements for 6.8 – Sept 2016

Regression Comparison Tool

- New tool to assist with regression testing of BrDR

Regression testing *is a form of testing that verifies that the work performed to add new features and capabilities did not break or inappropriately alter the existing code causing incorrect results or behavior.*

- A large part of the testing is regression testing

- Based on NCHRP Report 485 – Bridge Software – Validation Guidelines and Examples

Enhancements for 6.8 – Sept 2016

Regression Comparison Tool

- Improve the efficiency of regression testing
- Can be used for :
  - ✓ Comparison of two versions of BrDR (Regression Testing)
  - ✓ Comparison of two editions of the specification
  - ✓ Comparison of two analysis engines within BrDR
- Includes features that help find differences and identify the cause of those differences
- Will greatly help our Beta Testers or anybody wanting to confirm the new version of software before migrating to next version

Beta Testing TAG

- Review GUI/Screen Mockups
- Review new or revised flow charts of design/analysis tasks
- Test the application before each release with their agencies data
- Some attend a week testing session at the Contractors Office

AASHTOWare Bridge Task Force

Chair	Todd Thompson	South Dakota
Vice Chair	Eric Christie	Alabama
Member – BrM	Bruce Novakovich	Oregon
Member – BrM	Thomas Martin	Minnesota
Member – BrM	Mark Faulhaber	Kentucky
Member – BrM	Beckie Curtis	Michigan
FHWA Liaison – BrM	Derek Constable	FHWA
Member – BrR	Joshua Dietsche	Wisconsin
Member – BrD	Jeff Olsen	Montana
Member – BrD	Dean Teal	Kansas
Member – BrR	Amjad Waheed	Ohio
FHWA Liaison – BrDR	Tom Saad	FHWA

Thank you