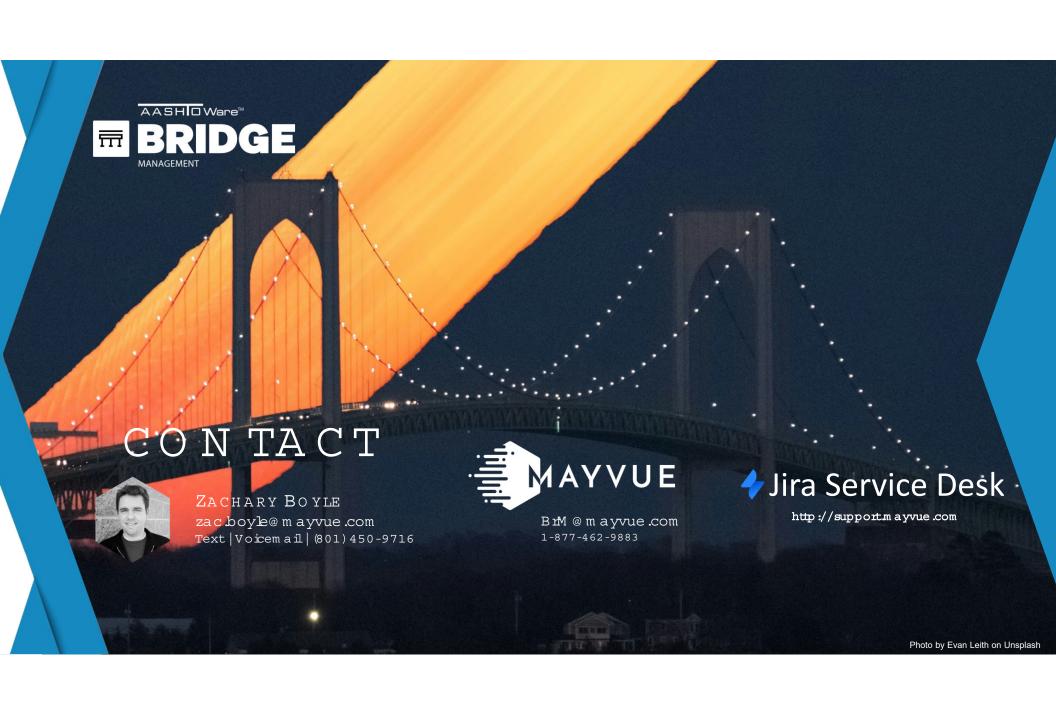


# BrM Inspection 201

The Un-Abridged Version



BrMUG 2025 | Providence, RI | September 17-18





# **Course Overview**



#### **Course Overview**

#### **TODAY**

#### **Before Break (Insp 101)**

- Login
- Roles & Groups
- Bridge List
- Inspection List
- Scheduling
- Inspection Plans
- Inventory
- Design
- Features

#### After Break (Insp 102)

- Condition & Elements
- Load Posting
- Multimedia
- Sketches
- Cross Sections

#### **TOMORROW**

#### **Before Break (Insp 201)**

- Work Candidates
- Certifications
- Inspection Assignment
- Validation
- Inspection Review
- Future Planning

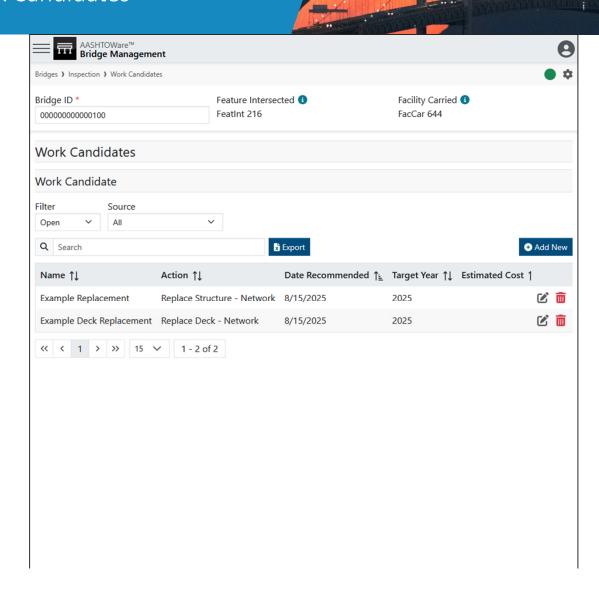
#### After Break (Insp 202)

- Submittal
- Critical Findings
- Reports
- Dashboards
- API Calls

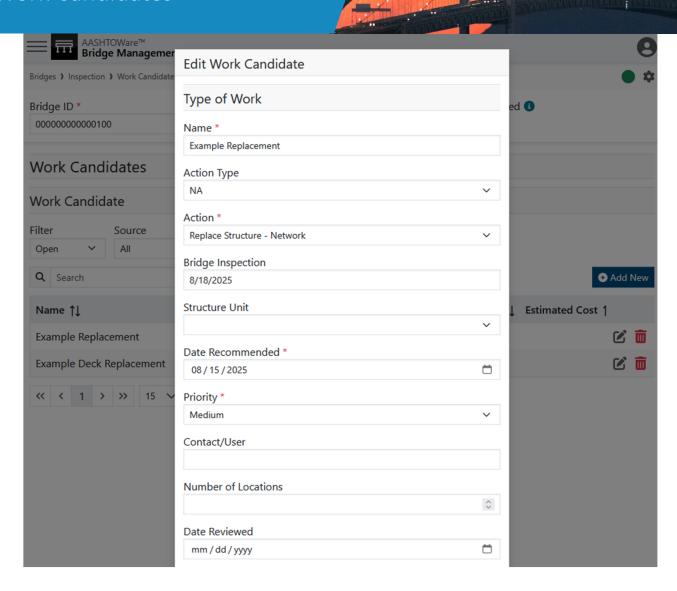




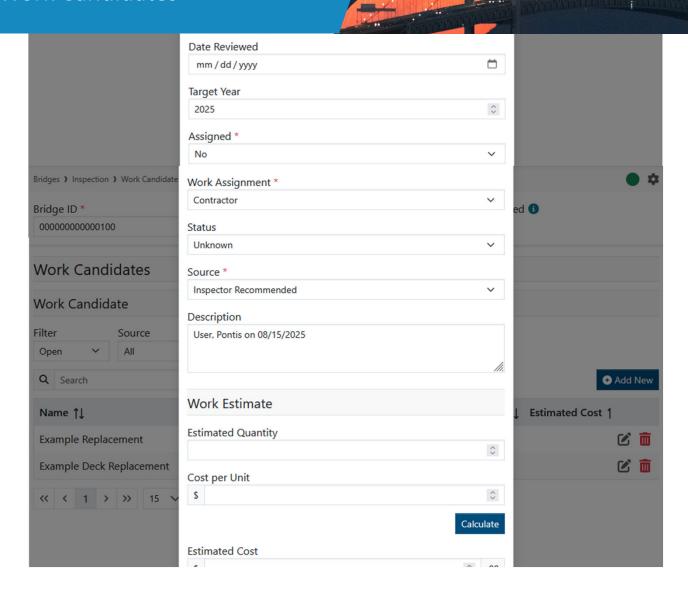














#### Work Candidates Work Candidate Description Source User, Pontis on 08/15/2025 Open Q Search Add New Work Estimate Name ↑↓ Estimated Cost 1 **Estimated Quantity** Example Replacement Example Deck Replacement Cost per Unit \$ << < 1 > >> 15 > Calculate **Estimated Cost** \$ **Completion Details** Final Cost Federal Funds Percentage ≎ % Date Completed mm / dd / yyyy







#### 3.2.2 Bridge Inspection Team Leader

23 CFR §650.309(b) defines the qualifications of a Bridge Inspection Team Leader. Bridge Management designates a Team Leader for each bridge inspection. A Bridge Inspection Team Leader must meet the NBIS qualifications. Several positions within Bridge Management are required to meet the qualifications of a Team Leader.

Bridge and Tunnel Inspection Program

3-7

#### UDOT Bridge Management Manual

October 2022

#### 3.2.2.1 Qualifications

- Registered professional engineer
- Completed the FHWA approved comprehensive bridge inspection training course
- Completed six months of bridge inspection experience

OR

- Completed five years of bridge inspection experience
- Completed the FHWA approved comprehensive bridge inspection training course

OR

- Completed a bachelor's degree in engineering from an Accreditation Board for Engineering and Technology (ABET) accredited establishment
- Completed the National Council of Examiners for Engineering and Surveying (NCEES) fundamentals of the engineering licensing examination
- Completed the FHWA approved comprehensive bridge inspection training course
- Completed two years of bridge inspection experience

OR

- Completed an associate's degree in engineering from an ABET accredited establishment
- Completed the FHWA approved comprehensive bridge inspection training course
- Completed four years of bridge inspection experience



#### 3.2.2 Bridge Inspection Team Leader

23 CFR §650.309(b) defines the qualifications of a Bridge Inspection Team Leader. Bridge Management designates a Team Leader for each bridge inspection. A Bridge Inspection Team Leader must meet the NBIS qualifications. Several positions within Bridge Management are required to meet the qualifications of a Team Leader.

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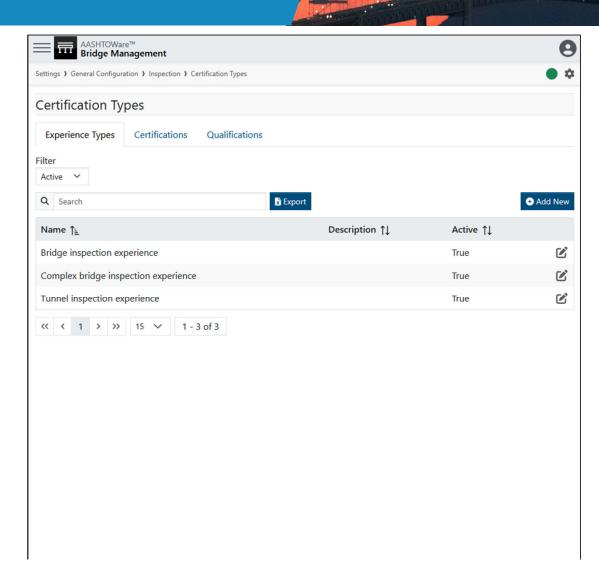
OR

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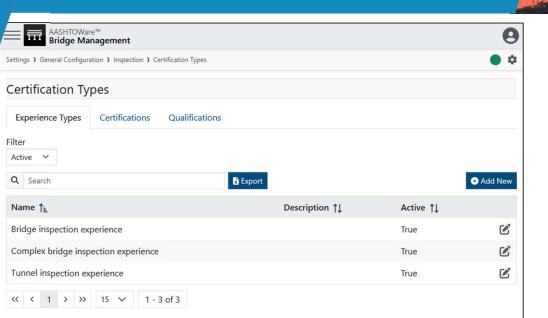
#### **Experience**

**Certifications** 





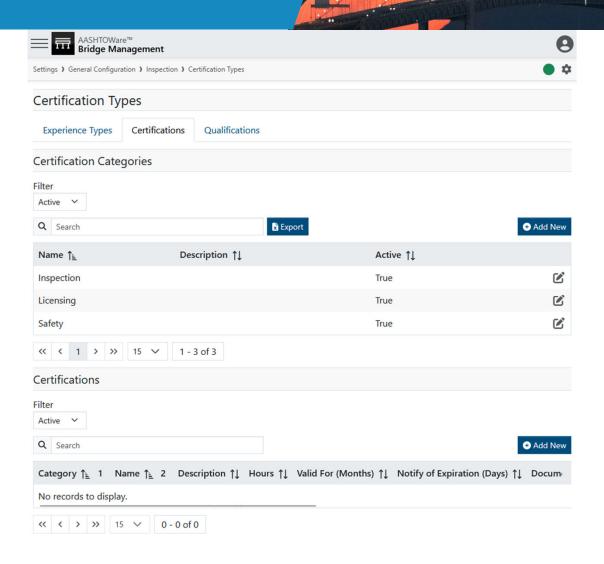




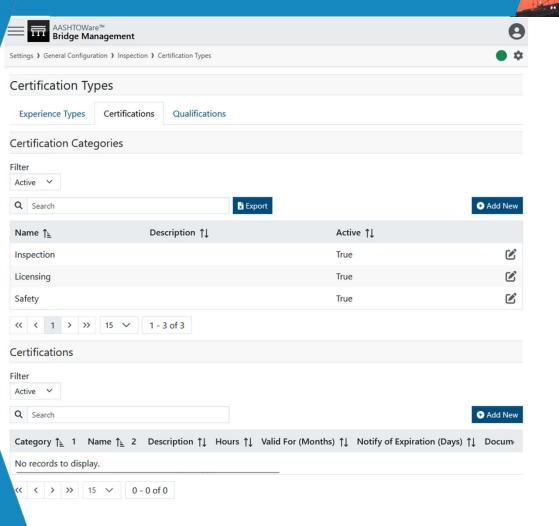
#### **SCDOT** experience types (2024):

- Bridge construction
- Bridge design
- Bridge inspection
- Bridge maintenance
- Complex bridge design
- Complex bridge inspection
- Electrical inspection
- Mechanical inspection
- Underwater bridge inspection





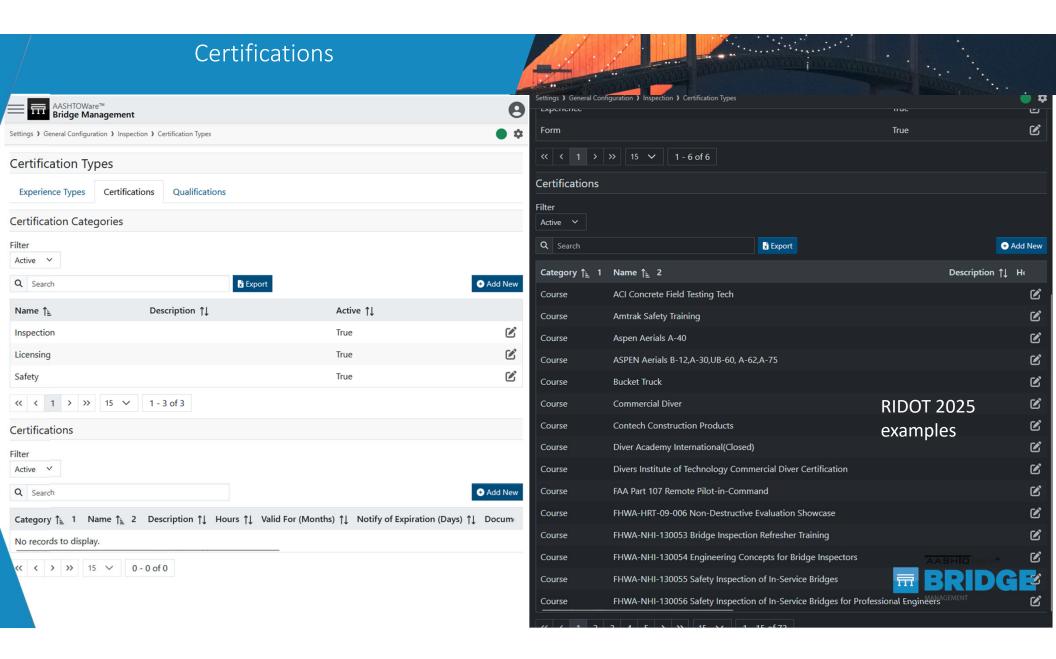




#### **RIDOT** certification types (2025):

- Course
- Educational Degree
- Engineering License
- Exam
- Form

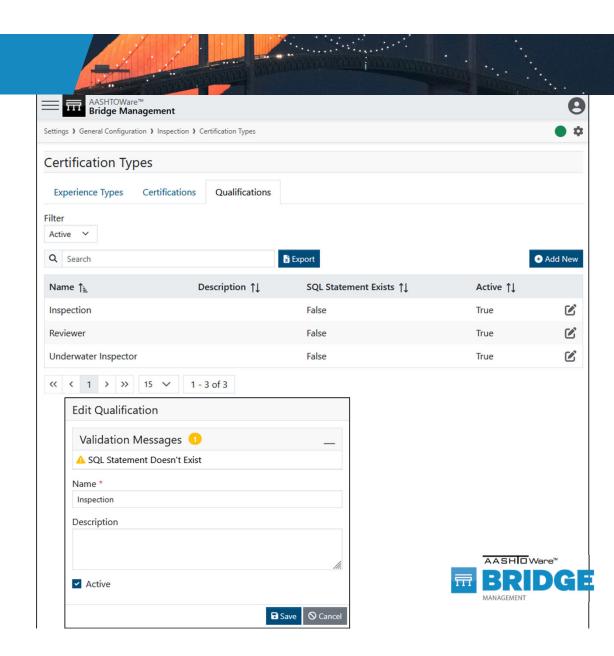




#### **Qualifications**

Can be used to control access to:

- Perform certain inspection types
- Perform inspection reviews



#### **EXAMPLE Qualification Logic (Ask Mayvue for more examples):**

```
WITH ThisU AS (

SELECT ID

FROM USERS

WHERE ID = @UserID
)

... (logic: sum of user relevant XP)

... (logic: date, if available of latest safety cert)

...

Select case when TotalXP >=60

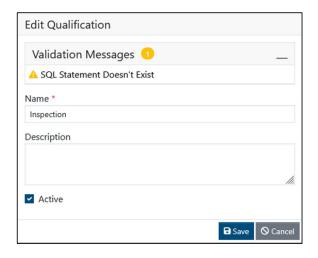
and SafetyCert = 1

and datediff(month,SYSDATETIME(),RefCertExp) >=0

then RefCertExp
else null
end as QualLogic

from ThisU u

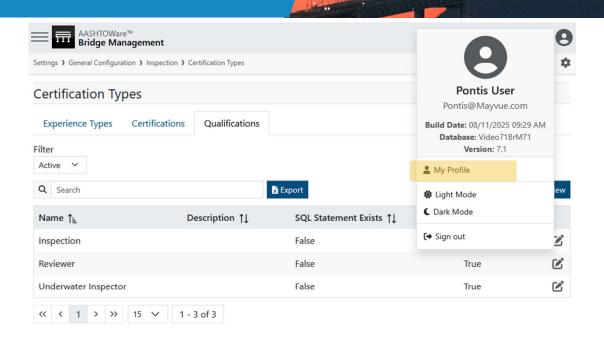
left join (safety cert WITH statement)
```



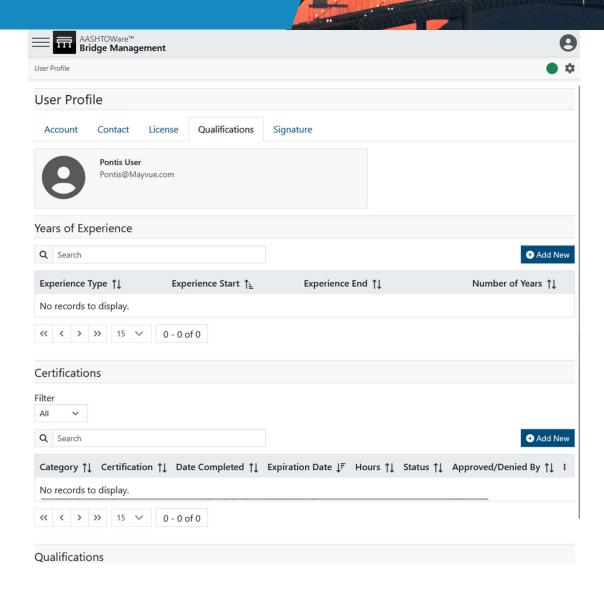


Return date it will expire or null if there is not an active qualification.

















- Assignment
- Reassignment
- Repeats

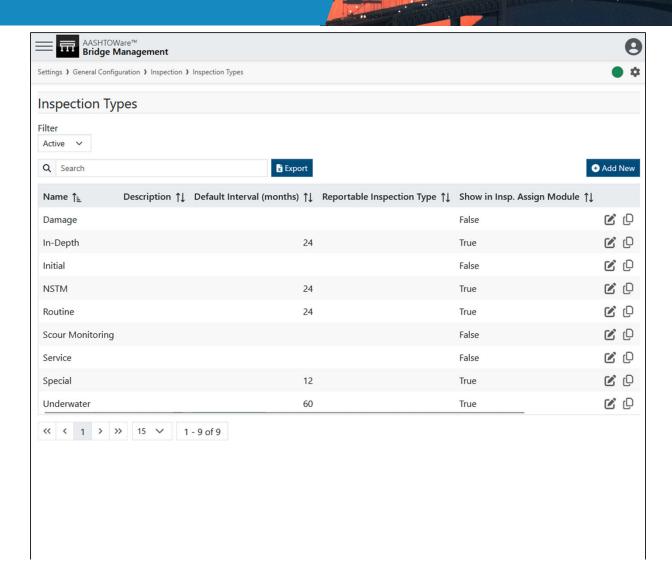
Inspection

- Start Inspection
- End Inspection

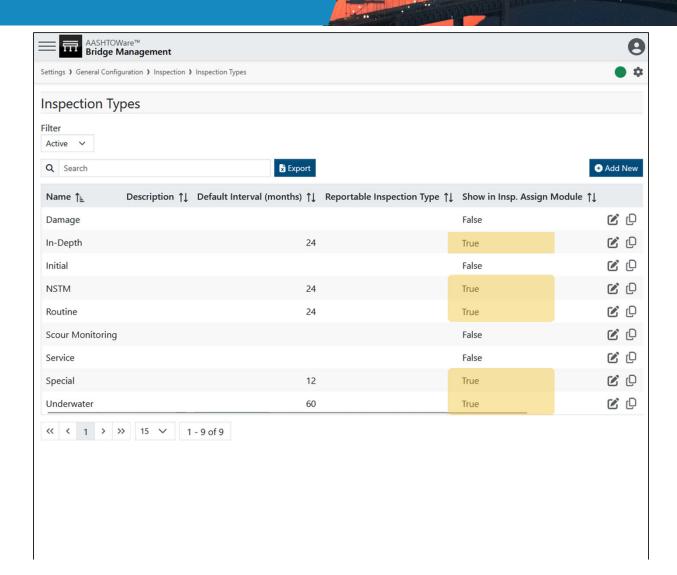
Review

- Validation
- Review

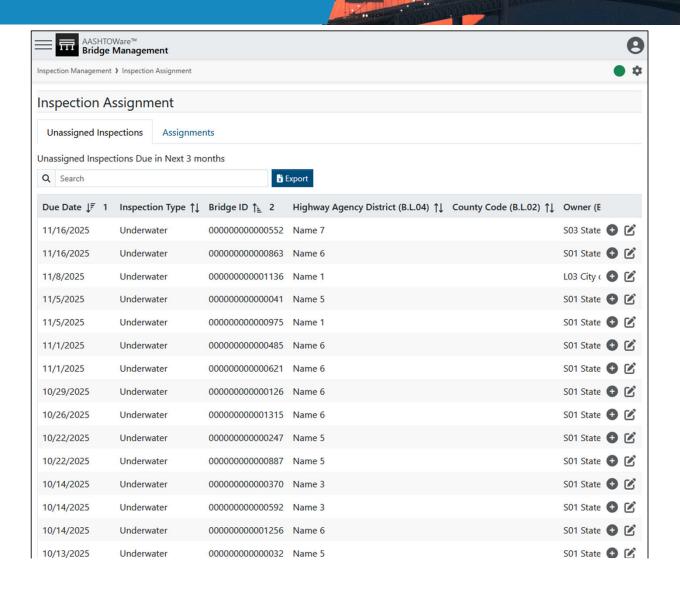




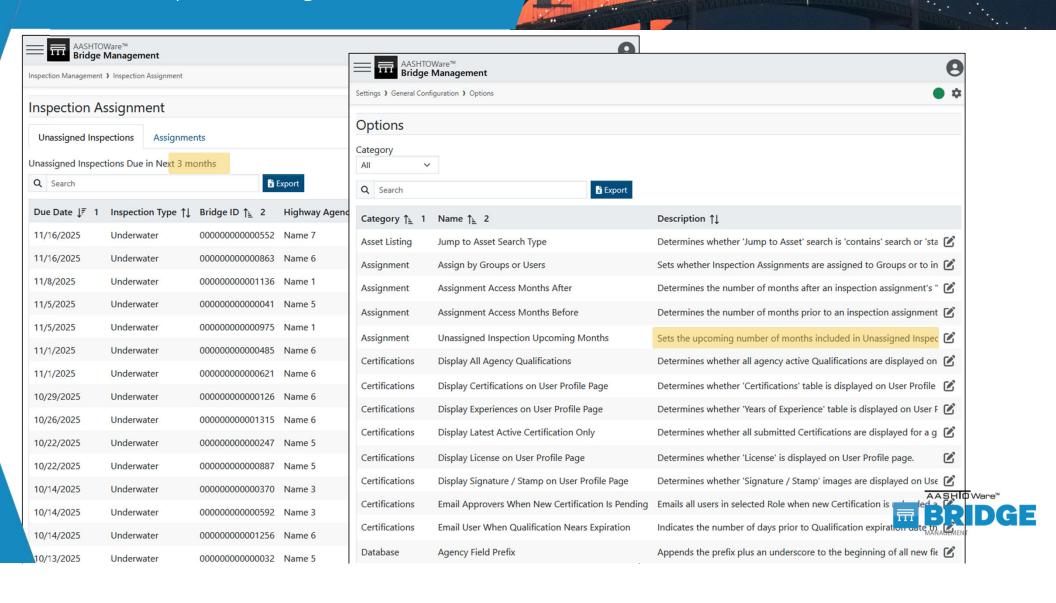


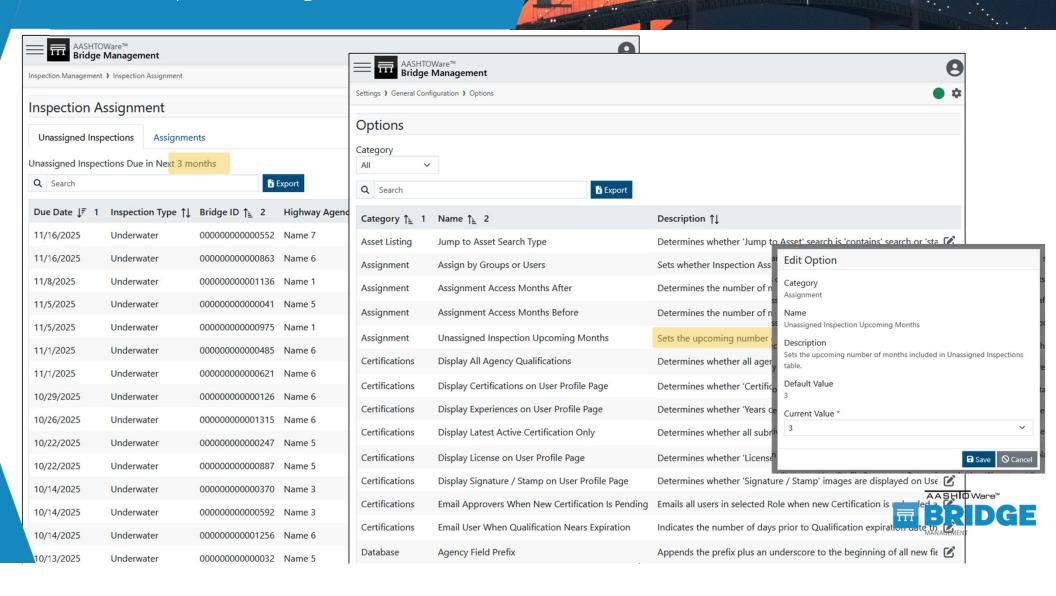


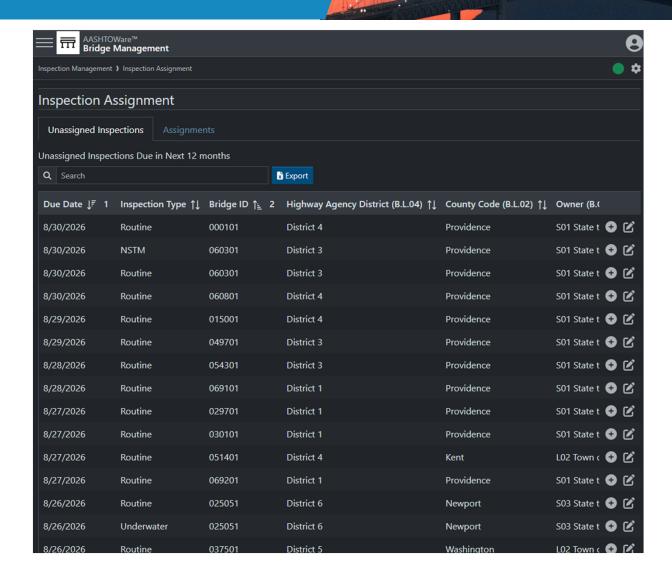




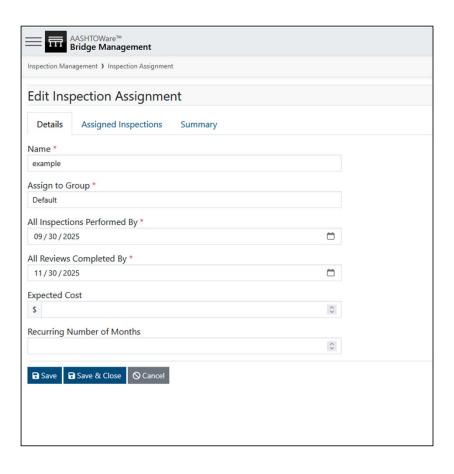




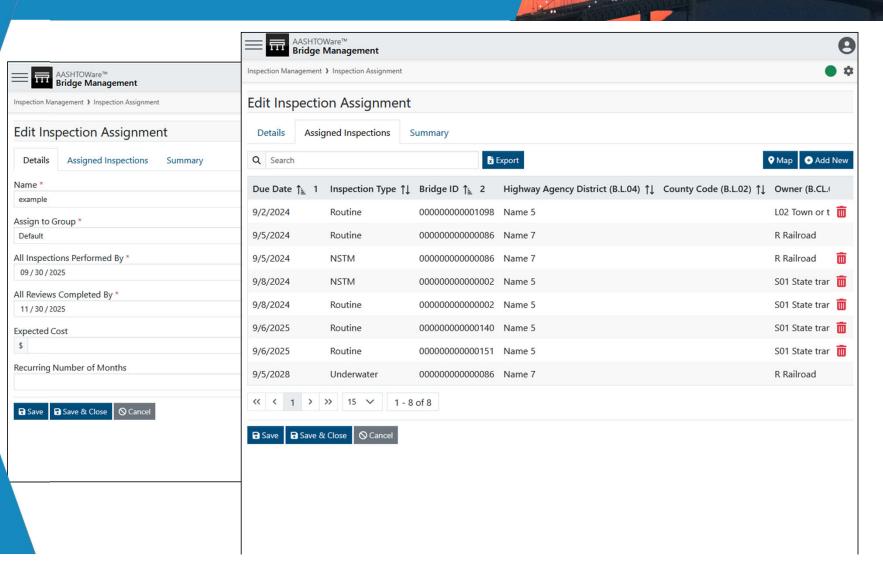




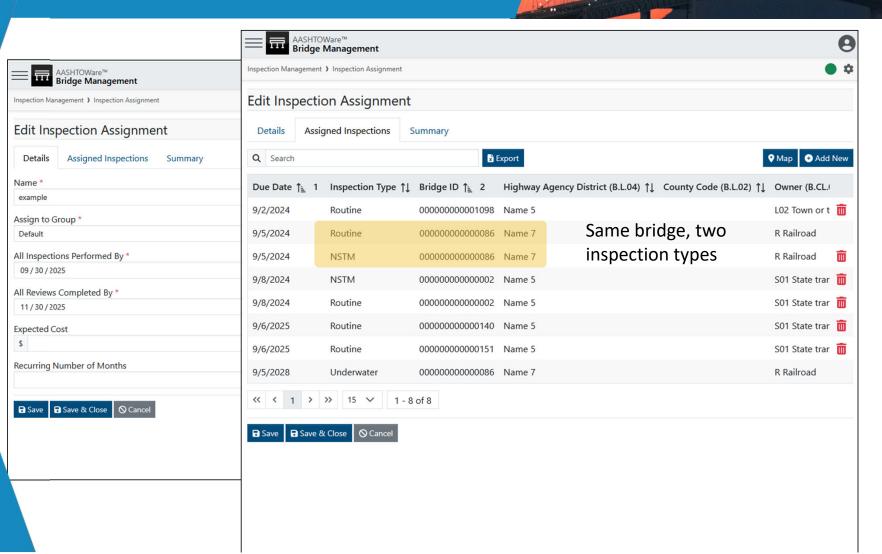




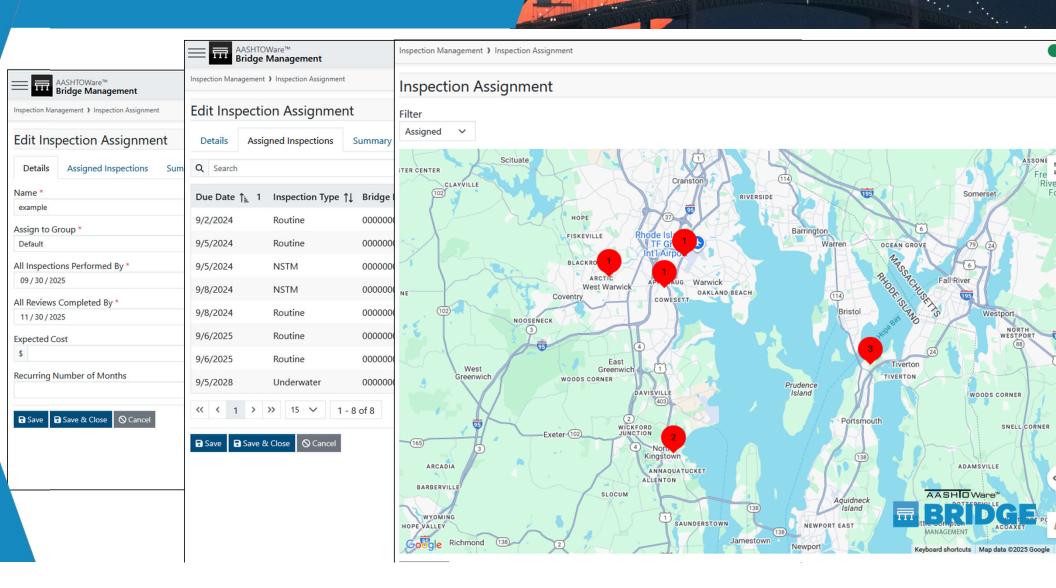


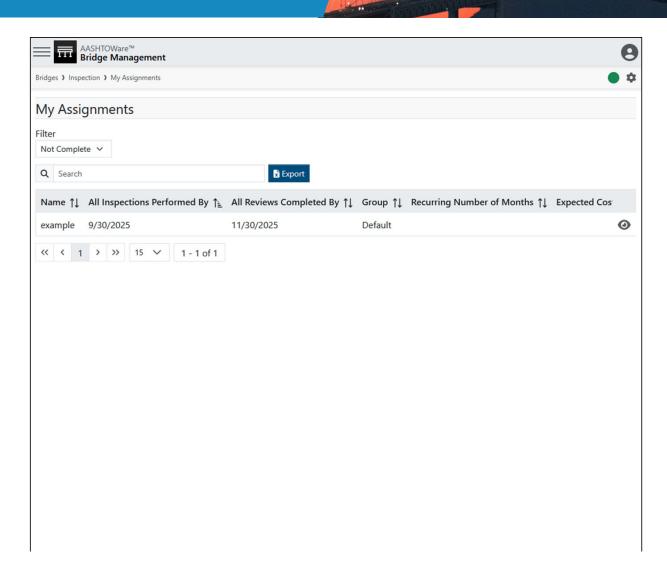




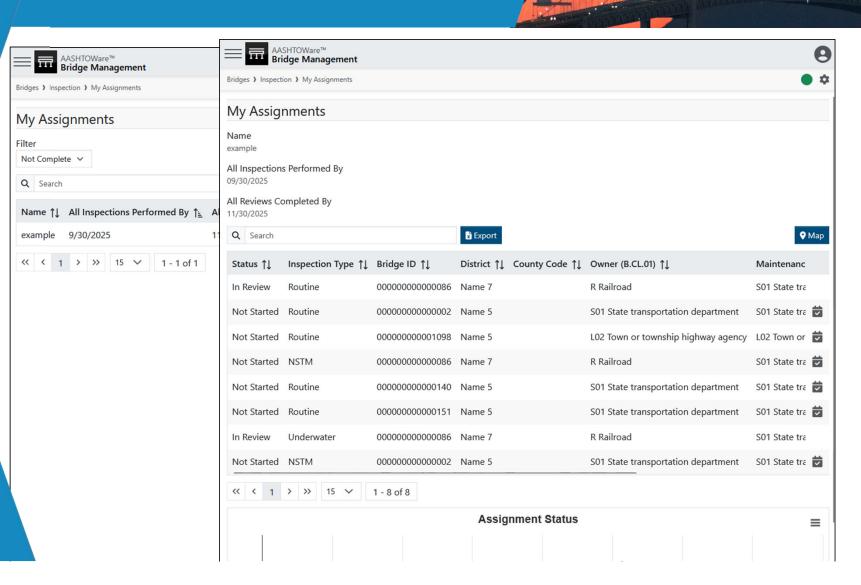




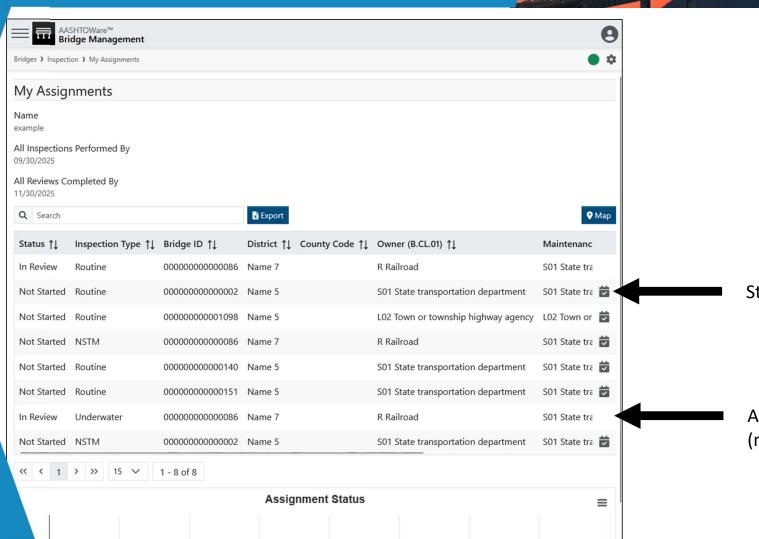








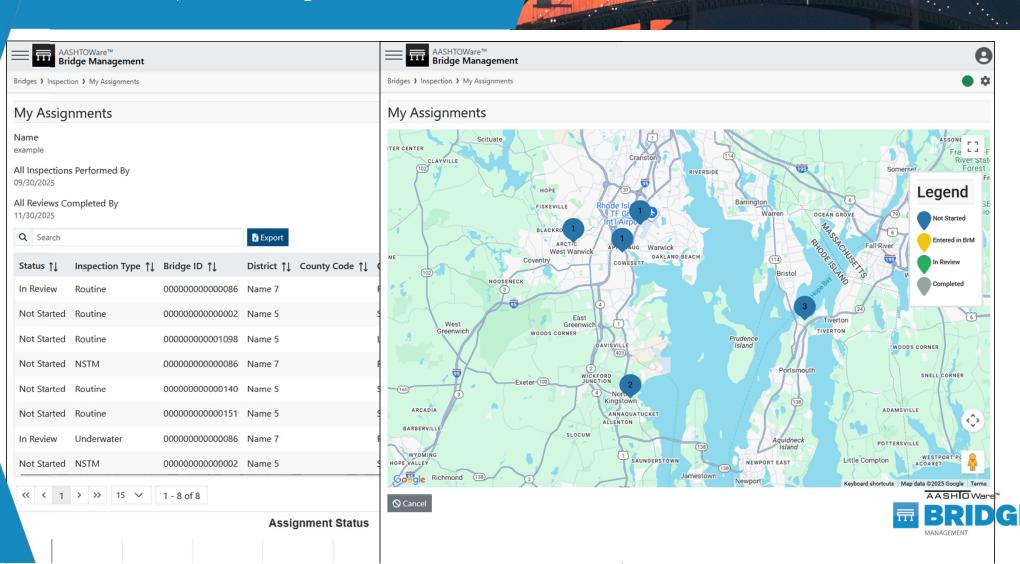




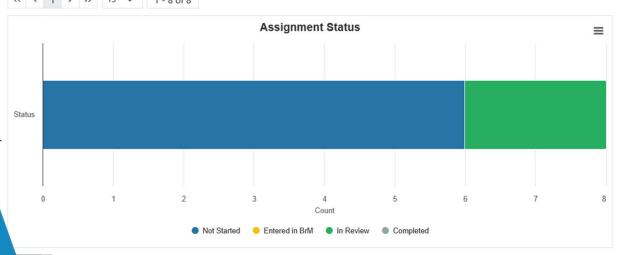
Start an inspection

Already started (maybe by someone else)



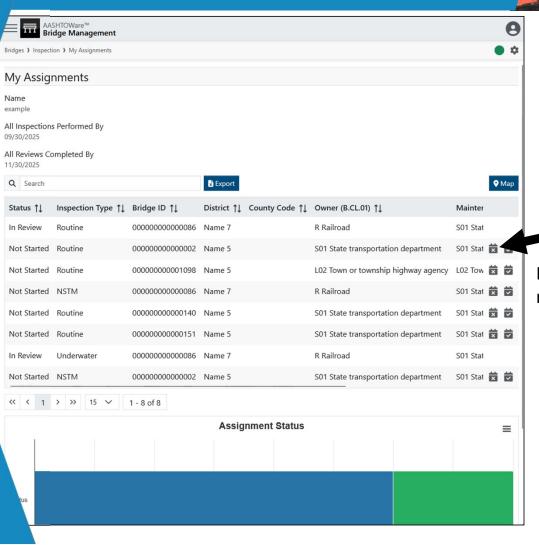


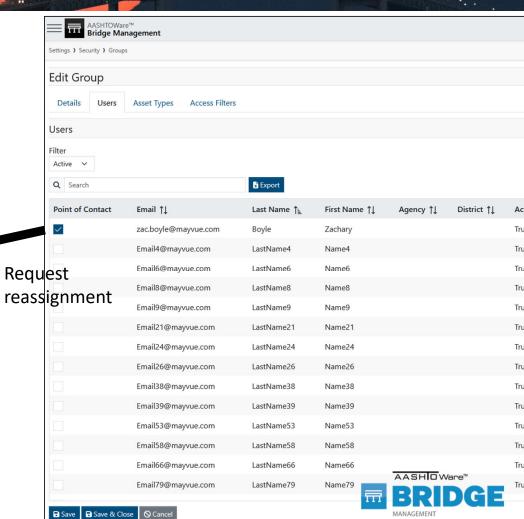
| Status ↑↓   | Inspection Type $\uparrow\downarrow$ | Bridge ID ↑↓     | District ↑↓ | County Code ↑↓ | Owner (B.CL.01) ↑↓                  | Maintenanc    |
|-------------|--------------------------------------|------------------|-------------|----------------|-------------------------------------|---------------|
| In Review   | Routine                              | 00000000000086   | Name 7      |                | R Railroad                          | S01 State tra |
| Not Started | Routine                              | 0000000000000002 | Name 5      |                | S01 State transportation department | S01 State tra |
| Not Started | Routine                              | 00000000001098   | Name 5      |                | L02 Town or township highway agency | L02 Town or   |
| Not Started | NSTM                                 | 00000000000086   | Name 7      |                | R Railroad                          | S01 State tra |
| Not Started | Routine                              | 00000000000140   | Name 5      |                | S01 State transportation department | S01 State tra |
| Not Started | Routine                              | 00000000000151   | Name 5      |                | S01 State transportation department | S01 State tra |
| In Review   | Underwater                           | 00000000000086   | Name 7      |                | R Railroad                          | S01 State tra |
| Not Started | NSTM                                 | 000000000000000  | Name 5      |                | S01 State transportation department | S01 State tra |

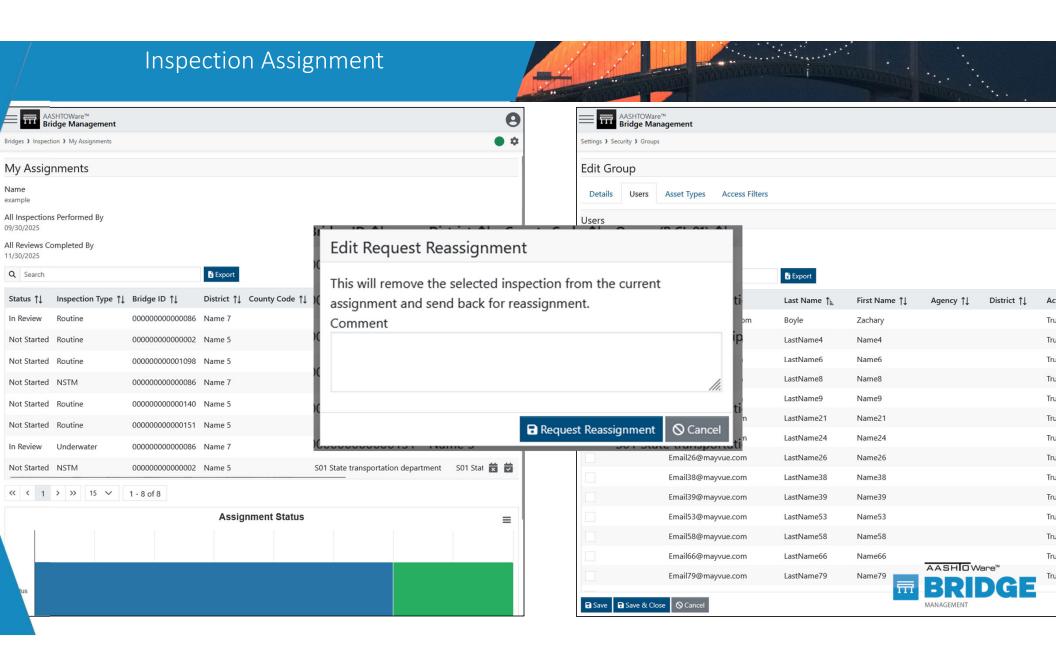




) Cancel











Assignment

- Assignment
- Reassignment
- Repeats

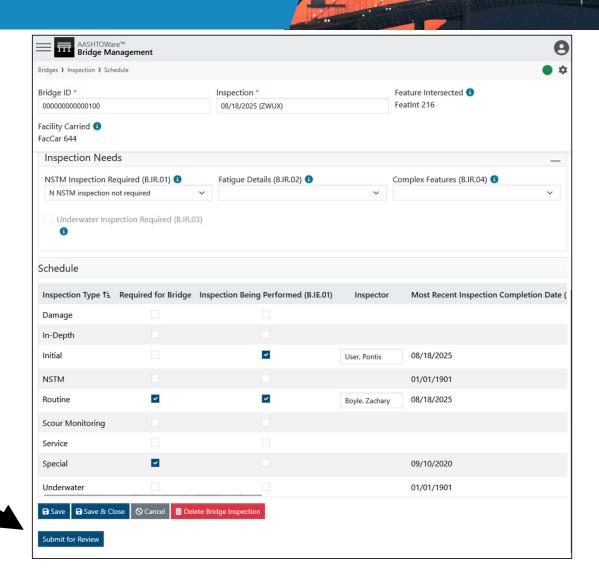
Inspection

- Start Inspection
- End Inspection

Review

- Validation
- Review











- Assignment
- Reassignment
- Repeats

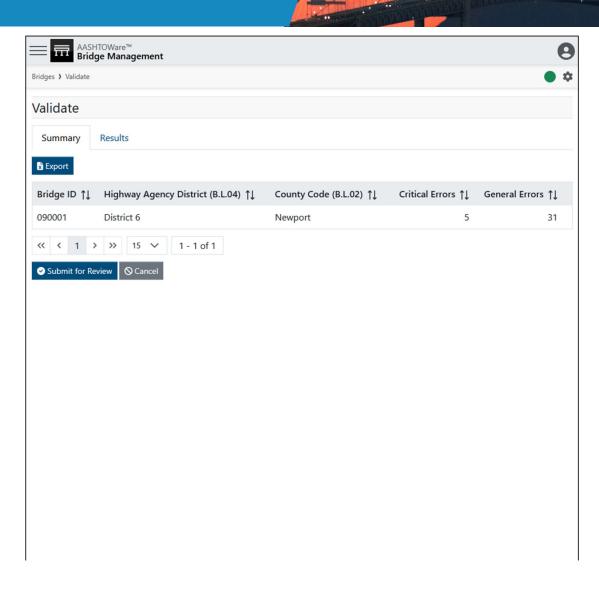
Inspection

- Start Inspection
- End Inspection

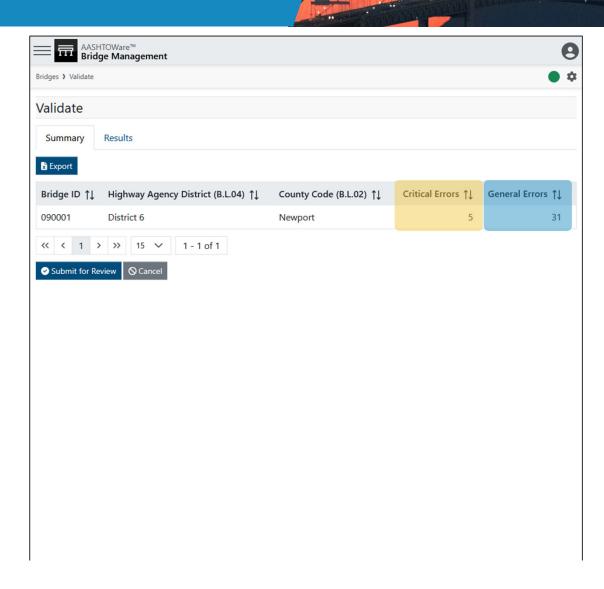
Review

- Validation
- Review

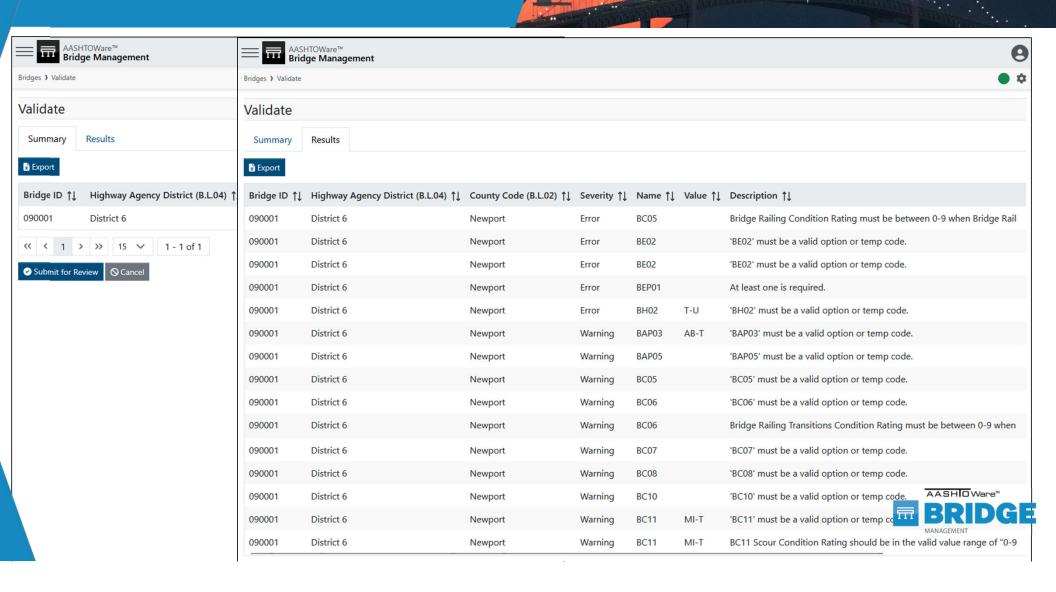


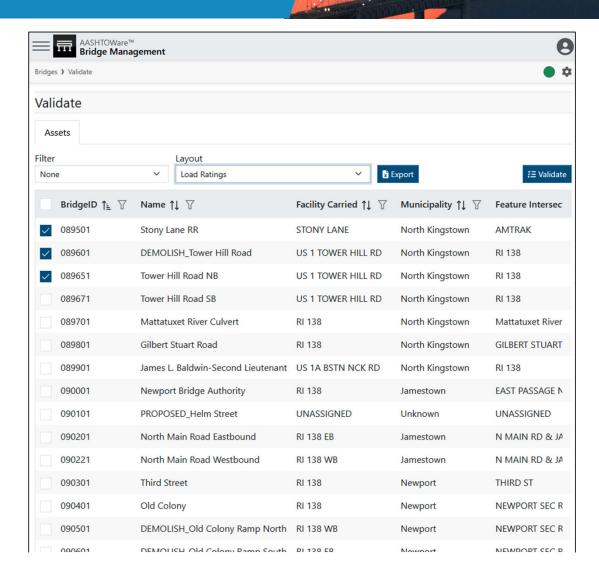




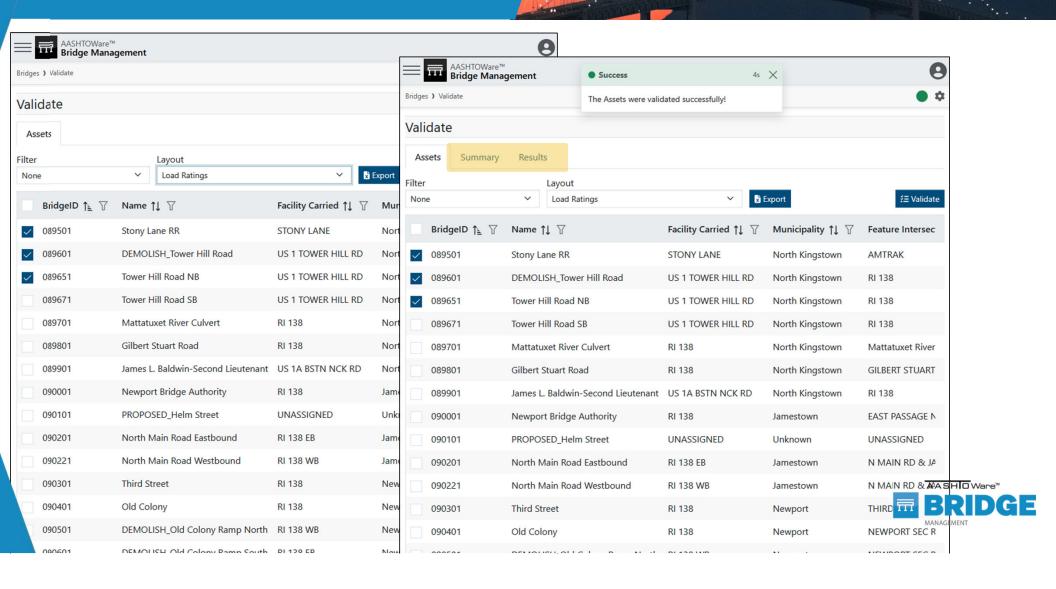


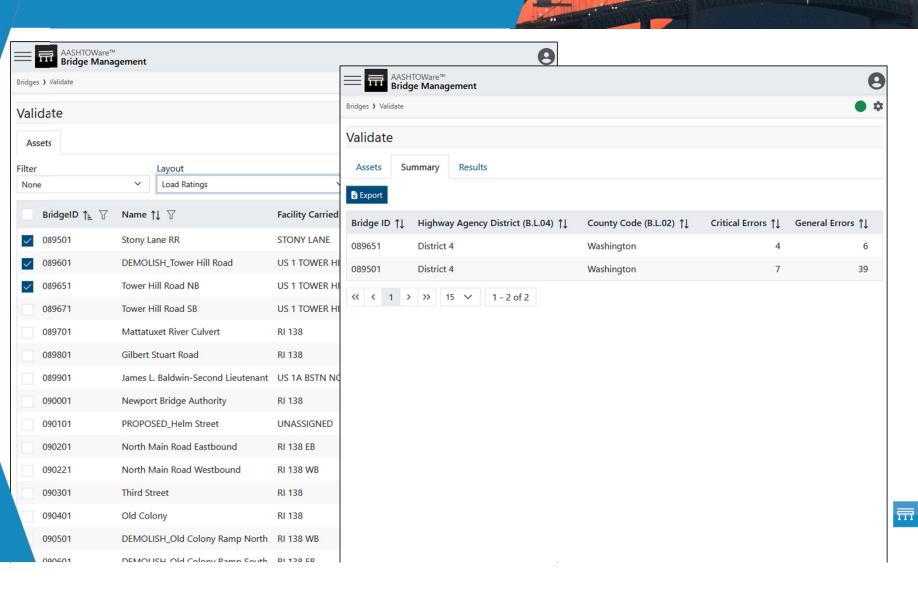




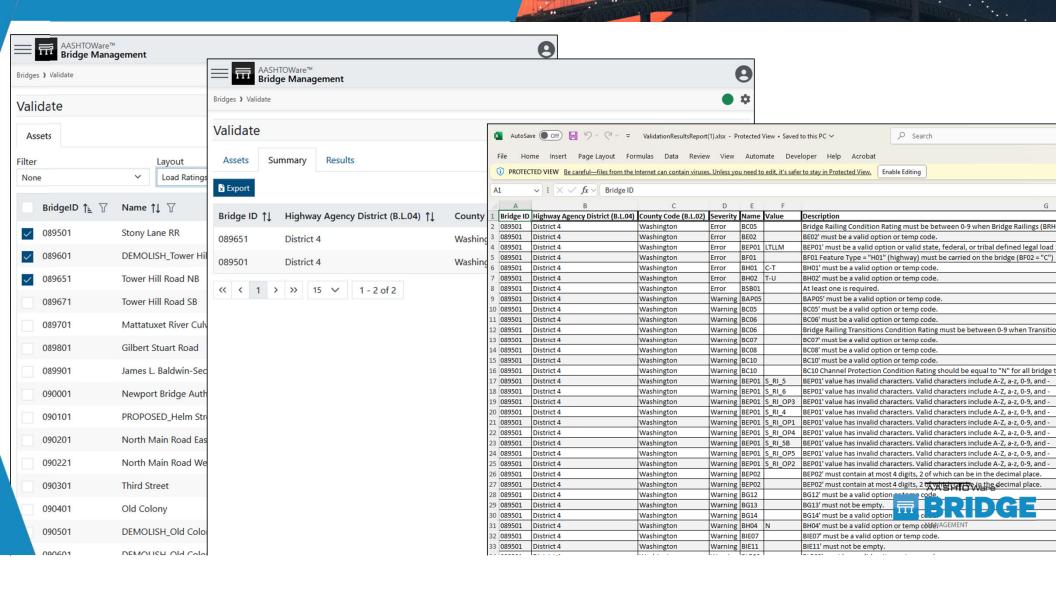








AASHID Ware™

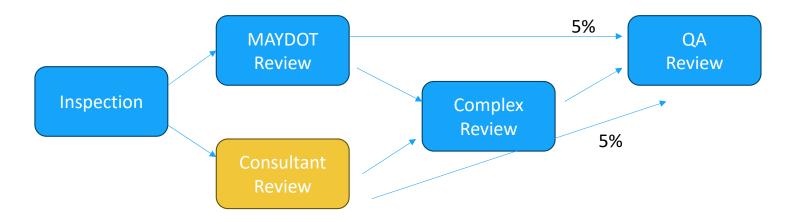




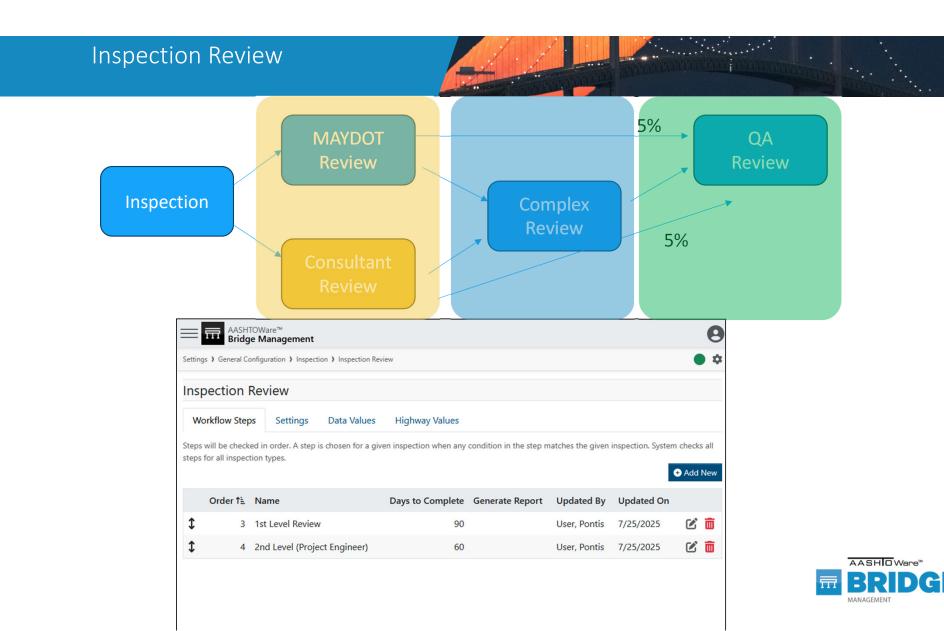


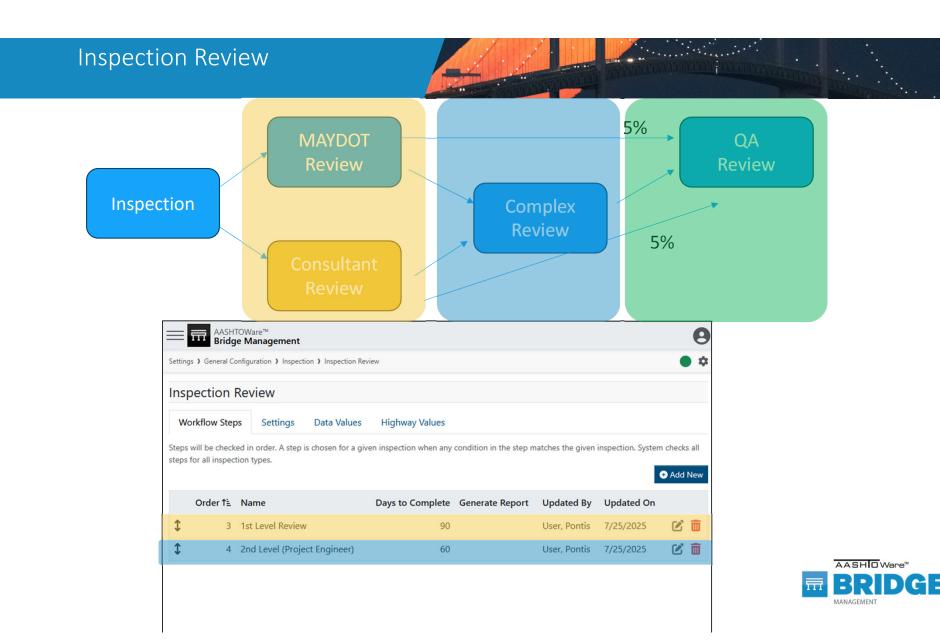
#### **Process**

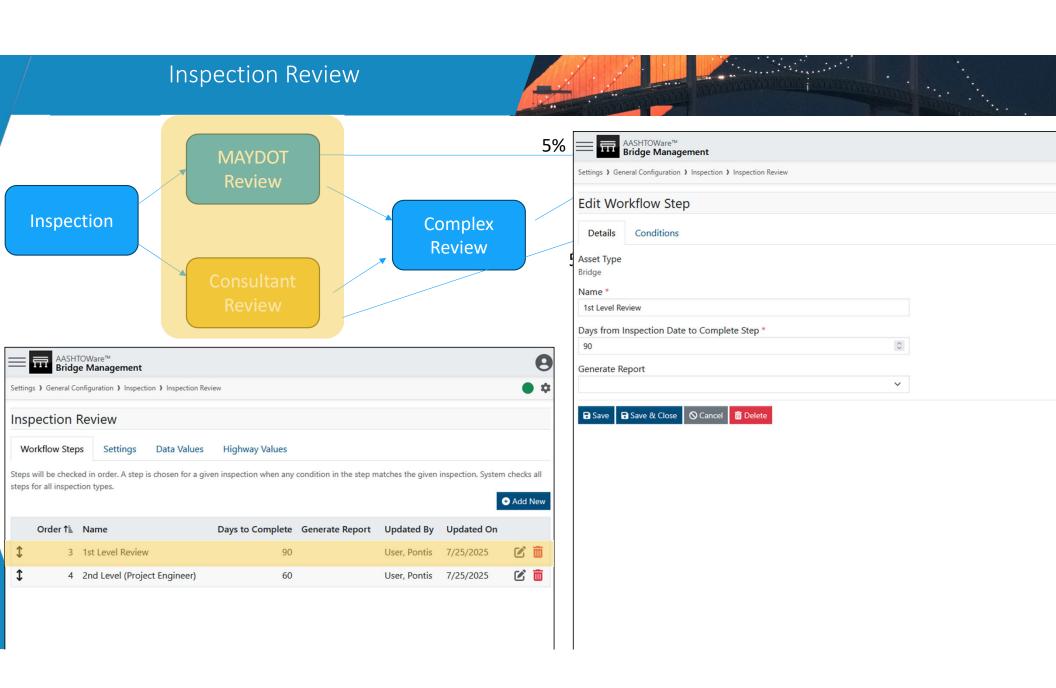
What is your process for inspection review. Who reviews which inspections? When is an inspection picked for review?

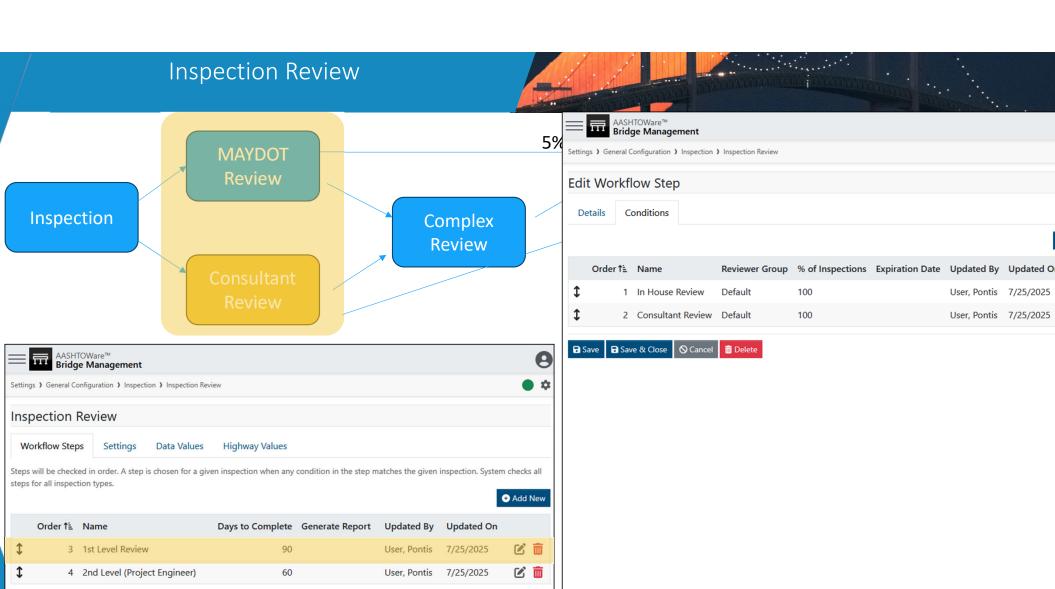


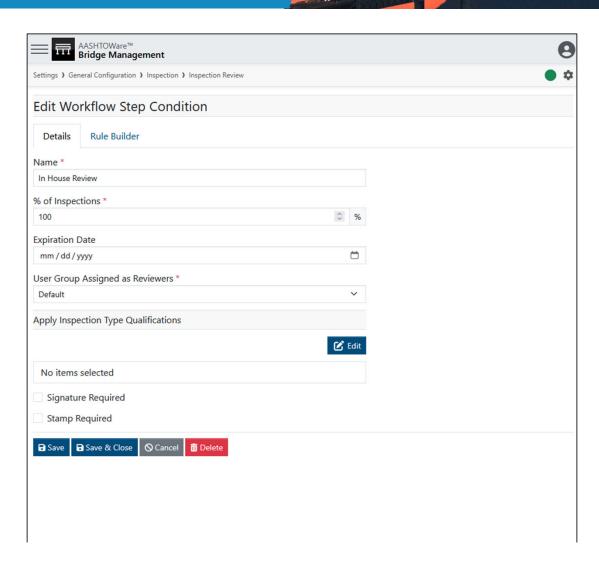




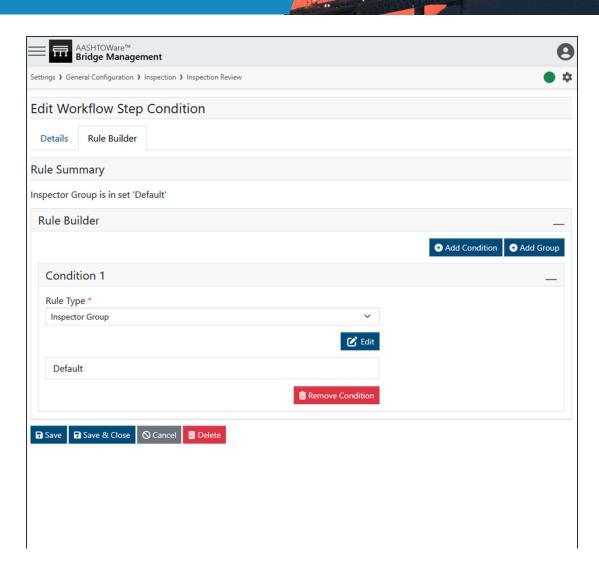














Admin > General Config > Inspection Review

|   | - |
|---|---|
|   |   |
| _ |   |

|          |                            |                  |                                  |                                       |                         | O Add NOW    |
|----------|----------------------------|------------------|----------------------------------|---------------------------------------|-------------------------|--------------|
| Order ‡≟ | Name                       | Days To Complete | Generate Report                  | Updated By                            | Updated On              |              |
| 1        | QC: Inspection             | 30               |                                  | Murdzia, Dan                          | 11/20/2024              | <b>+</b> 🗷 🛅 |
| 2        | QC: Load Rating            | 30               |                                  | Murdzia, Dan                          | 08/20/2024              | <b>+</b> 🗷 🛅 |
| 3        | QA: Data Update (BMO Only) | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 02/14/2024              | <b>+</b> 🗷 💼 |
| .4       | QA: In-Depth Timber        | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 08/13/2025              | <b>+</b> 🗷 🛅 |
| 5        | QA: In-Depth Timber UW     | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 08/13/2025              | <b>+</b> 🗷 🛅 |
| 6        | QA: Inspection Procedures  | 60               | South Carolina Inspection Report | SCDOT use case (                      | (2024):                 | <b>+</b> 🗷 🛅 |
| 7        | QA: Unscheduled            | 60               | South Carolina Inspection Report | <ul> <li>Inspection genera</li> </ul> | •                       | <b>+</b> 🗷 🛅 |
| 8        | QA: Initial UW             | 60               | South Carolina Inspection Report | Review of a load ra                   | •                       | <b>+</b> 🗷 🛅 |
| 9        | QA: Underwater             | 60               | South Carolina Inspection Report | <ul> <li>QA samples for ea</li> </ul> | ch inspection type      | <b>+</b> 🗷 🛅 |
| 10       | QA: Load Rating            | 60               |                                  | Murdzia, Dan                          | 06/25/2024              | <b>+</b> 🗷 🛅 |
| 11       | QA: Complex Bridge         | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 06/03/2024              | <b>+</b> 🗹 🛅 |
| 12       | QA: NSTM                   | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 06/03/2024              | <b>+</b> 🗷 🛅 |
| 13       | QA: Damage                 | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 06/03/2024              | <b>+</b> 🗷 🛅 |
| 14       | QA: Routine                | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 07/04/2024              | <b>+</b> 🗷 🛅 |
| 15       | QA: Special                | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 06/03/2024              | <b>+</b> 🗷 🛅 |
| 16       | QA: Movable Bridge         | 60               | South Carolina Inspection Report | Compton, Charles                      | 02/14/2024              | <b>+</b> 🗷 🛅 |
| 17       | QA: Initial                | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 06/03/2024              | <b>+</b> 🗷 🛅 |
| 18       | QA: Scour                  | 60               | South Carolina Inspection Report | Murdzia, Dan                          | No. of the other bloods | AASHIO Wage  |
| 19       | QA: In-Depth               | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 12/12/2023              | BRID S       |
| 20       | QA: Service                | 60               | South Carolina Inspection Report | Murdzia, Dan                          | 12/12/2023              | <b>+</b> 🗷 💼 |
| A :      |                            |                  |                                  |                                       |                         |              |

#### Step Conditions

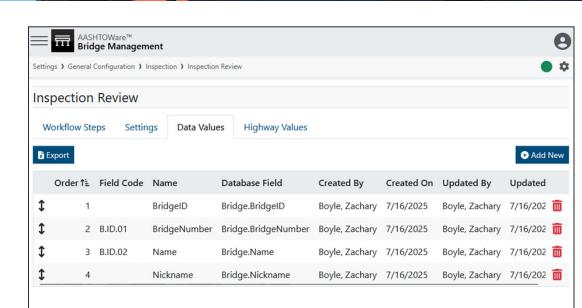
This Inspection Review Workflow Step is completed when at least one of the below conditions is met. Conditions are checked in order until a match is found.

| Order J≟ | Name             | Reviewer Group                 | % of Inspections Expiration Date | Updated By      | Updated On              |              |
|----------|------------------|--------------------------------|----------------------------------|-----------------|-------------------------|--------------|
| 1        | BMO Data Update  | Statewide Users                | 100                              | Murdzia, Dan    | 12/16/2023              | <b>+ 2 1</b> |
| 2        | HDSO Review      | HDSO                           | 100                              | Murdzia, Dan    | 02/07/2025              | <b>+</b> 🗷 💼 |
| 3        | District 1 (All) | District 1 DBIS                | 100                              | Murdzia, Dan    | 12/11/2023              | <b>+</b> 🗷 💼 |
| 4        | District 2 (All) | District 2 DBIS                | 100                              | Murdzia, Dan    | 12/11/2023              | <b>+</b> 🗷 🛅 |
| 5        | District 3 (All) | District 3 DBIS                | 100                              | Compto          | oo (2024).              | <b>+</b> 🗷 🛅 |
| 6        | District 4 (All) | District 4 DBIS                | 100                              | SCDOT use ca    | neral review step       | <b>+ 2 1</b> |
| 7        | District 5 (All) | District 5 DBIS                | 100                              |                 | pad rating if it exists | <b>+</b> 🗷 💼 |
| 8        | District 6 (All) | District 6 DBIS                | 100                              |                 | or each inspection type | <b>+</b> 🗷 🛅 |
| 9        | District 7 (All) | District 6 DBIS                | 100                              | Murdzia, Dan    | 12/11/2023              | <b>+</b> 🗷 🛅 |
| 10       | HDR (General)    | HDR Inspection QC Review       | 100                              | Murdzia, Dan    | 01/07/2025              | <b>+</b> 🗷 💼 |
| 11       | HDR (Complex)    | HDR Inspection QC Review       | 100                              | Murdzia, Dan    | 11/20/2024              | <b>+</b> 🗷 💼 |
| 12       | HDR (NSTM)       | HDR Inspection QC Review       | 100                              | Thomas, Jessica | 11/20/2024              | <b>+</b> 🗷 💼 |
| 13       | WSP (General)    | WSP Inspection QC Reviewers    | 100                              | Murdzia, Dan    | 11/20/2024              | <b>+</b> 🗷 🛅 |
| 14       | WSP (UW)         | WSP Inspection QC Reviewers    | 100                              | Murdzia, Dan    | 11/20/2024              | <b>+</b> 🗷 💼 |
| 15       | WSP (Complex)    | WSP Inspection QC Reviewers    | 100                              | Thomas, Jessica | 11/20/2024              | <b>+</b> 🗷 💼 |
| 16       | WSP (NSTM)       | WSP Inspection QC Reviewers    | 100                              | Thomas, Jessica | 11/20/2024              | <b>+</b> 🗷 💼 |
| 17       | CONSOR (General) | CONSOR Inspection QC Reviewers | 100                              | Murdzia, Dan    | 11/04/2024              | <u> </u>     |
| 18       | CONSOR (UW)      | CONSOR Inspection QC Reviewers | 100                              | Thomas, Jessica | 11/20/2024              | AASHIOWare™  |
| 19       | CONSOR (Complex) | CONSOR Inspection QC Reviewers | 100                              | Thomas, Jessica | 11/20/2024              | MANAGEMEN 1  |

Add New

#### **Data Values**

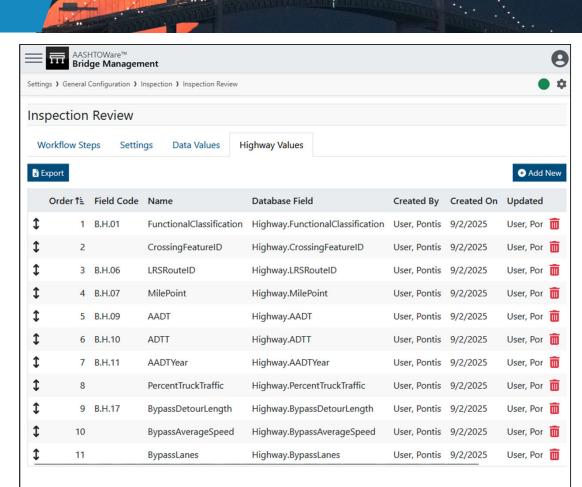
Which fields are reviewed in the QC module, and in which order.



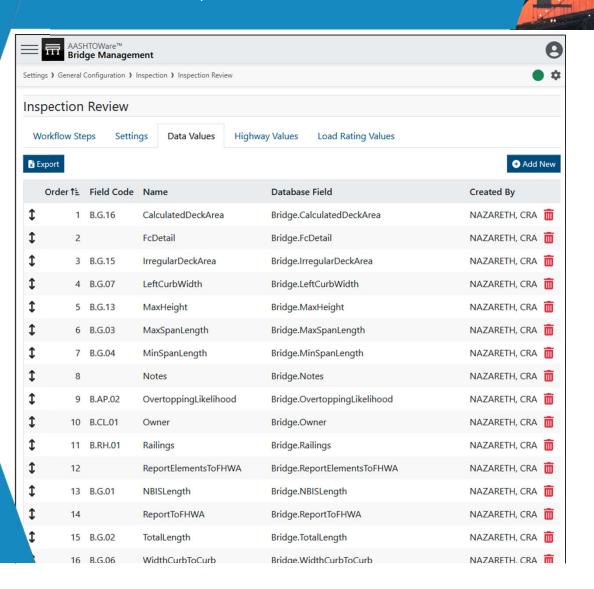


#### **Highway Values**

Which roadway fields are reviewed in the QC module, and in which order.



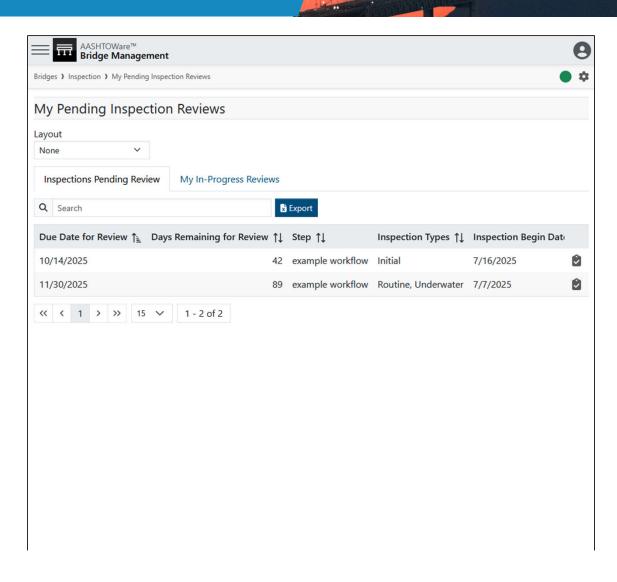




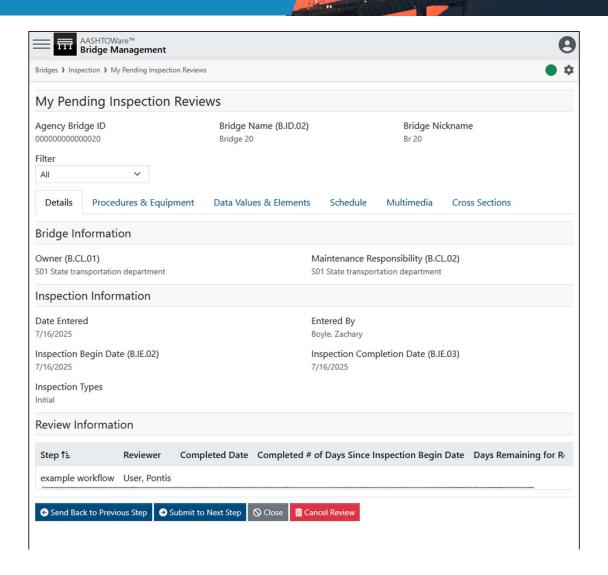
#### RIDOT use case (2025):

 Note the identification fields are not reviewed, the inspectors cannot change those fields. Structure name and number are not here.





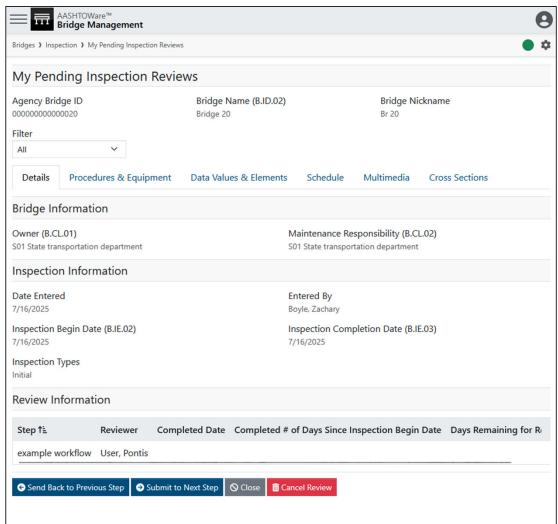




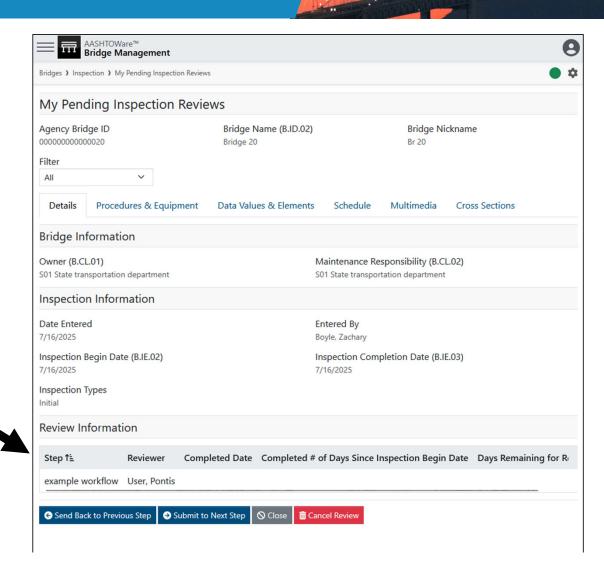




See just flagged or unreviewed steps







Steps this review will go through



inspection information

**Date Entered** 

7/16/2025

Inspection Begin Date (B.IE.02)

7/16/2025

Inspection Types

Initial

**Entered By** 

Boyle, Zachary

Inspection Completion Date (B.IE.03)

7/16/2025

#### **Review Information**

Step 1 Reviewer Completed Date Completed # of Days Since Inspection Begin Date Days Remaining for Re

example workflow User, Pontis

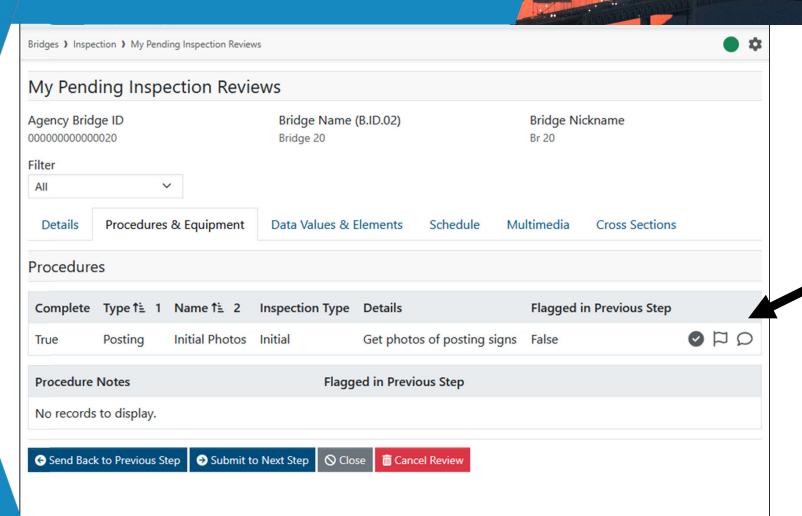
Send Back to Previous Step

Submit to Next Step



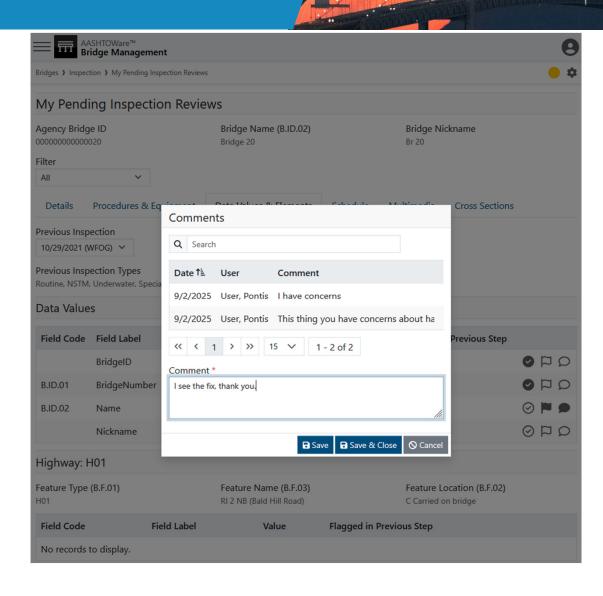






Approve Flag Comment

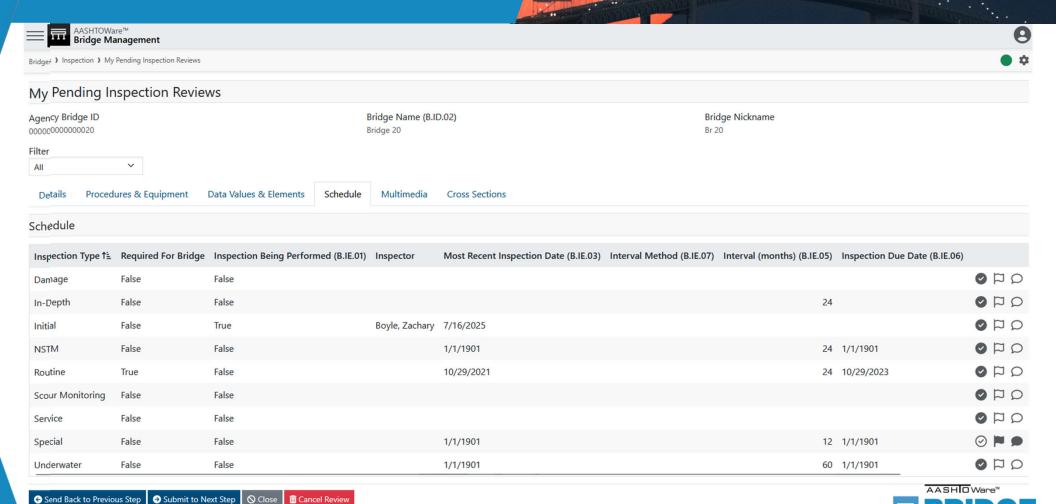






| High         | way: H02       |       |      |                |       |             |  |   |                |        |   |          |          |          |                     |              |
|--------------|----------------|-------|------|----------------|-------|-------------|--|---|----------------|--------|---|----------|----------|----------|---------------------|--------------|
| Featu<br>H02 | re Type (B.F.0 | 1)    |      |                |       |             | Feature Name (B.F.03)<br>the bridge underneath |   |                |        | Feature Location (B.F.02)<br>B Below bridge |          |          |          |                     |              |
| Field        | d Code         |       |      | Field          | Label |             |  | Value                                       | Flagged in     | Previo | us Step                                     |          |          |          |                     |              |
| No           | ecords to dis  | play. |      |                |       |             |  |   |                |        |   |          |          |          |                     |              |
| Elen         | nents          |       |      |                |       |             |  |   |                |        |   |          |          |          |                     |              |
|              | Inspected      | ID 11 | Name | Structure Unit | Туре  | Environment | Description                                    |   | Total Quantity | Units  | CS 1 Qty                                    | CS 2 Qty | CS 3 Qty | CS 4 Qty | Flagged in Previous |              |
| >            | False          | 1     | R    |                | E     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 5,121          | s      | 5,049                                       | 66       | 6        | 0        | False               | <b>⊙</b> ₽0  |
| >            | False          | 1     | Р    |                | E     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 634            | f      | 592   | 30       | 12       | 0        | False               | 0 7 0        |
| >            | False          | 2     | R    |                | Е     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 94             | f      | 82  | 10       | 2        | 0        | False               | 0 7 0        |
| >            | False          | 2     | R    |                | Е     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 10             | e      | 0   | 10       | 0        | 0        | False               |              |
| >            | False          | 2     | R    |                | Е     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 86             | f      | 69  | 11       | 6        | 0        | False               | <b>⊘ № ●</b> |
|              | False          | 3     | Р    |                | E     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 120            | f      | 120   | 0        | 0        | 0        | False               |              |
| >            | False          | 3     | E    |                | Е     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 34             | e      | 15  | 19       | 0        | 0        | False               |              |
| >            | False          | 3     | R    |                | Е     | М           | L  | Previous Insp. Value<br>Current Insp. Value | 1,120          | s      | 1,120                                       | 0        | 0        | 0        | False               | O 科别         |

### **Inspection Review**

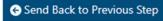


### Inspection Review

Details Procedures & Equipment Data Values & Elements Schedule Cross Sections Multimedia

#### Schedule

| Inspection Type ↑= | Required For Bridge | Inspection Being Performed (B.IE.01) | Inspector Most Recent Inspection Date (B.IE.03) | Interval Method (B.IE.07) Interval (m |
|--------------------|---------------------|--------------------------------------|---|---------------------------------------|
| Damage             | False               | False                                |   |                                       |
| In-Depth           | False               | False                                |   |                                       |
| Initial            | False               | True                                 | Bd MAYDOT 5                                     | 5% QA                                 |
| NSTM               | False               | False                                | Review  | Review                                |
| Routine            | True                | False Inspection                     | 10/29/2021 Complex                              |                                       |
| Scour Monitoring   | False               | False                                | Review  | 5%                                    |
| Service            | False               | False                                | Consultant                                      |                                       |
| Special            | False               | False                                | Review  |                                       |
| Underwater         | False               | False                                | 1/1/1901  |                                       |



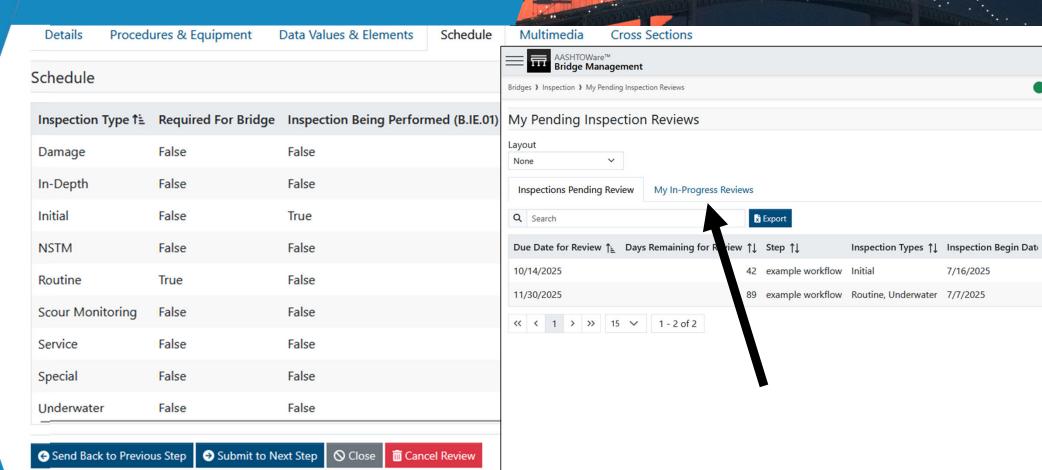














7/16/2025

### Inspection Review

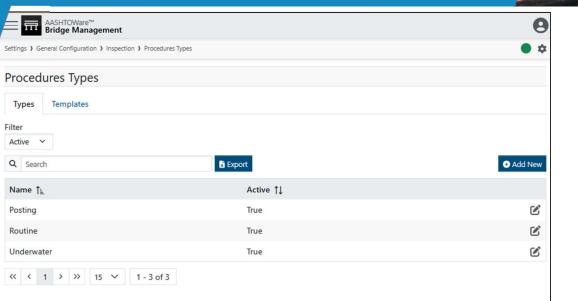
### **Use case examples for QC metadata:**

- Items flagged most often in the last quarter
- Reviewers who have performed most reviews
- Inspectors who have the most items flagged
- Reviews approved in under 30 seconds
- Percentage of reviews sent back from QA to QC









#### **SCDOT Examples:**

- FHWA (for particular asset ID's)
- In-Depth
- In-Depth Fatigue
- In-Depth Timber
- In-Depth Timber UW
- Initial UW
- Long-Span / Multi-Span
- NSTM
- Routine
- SCDOT Bridge Insp Guide Doc
- Special
- Underwater

**Review Inspection Plan in Inspection 101** 



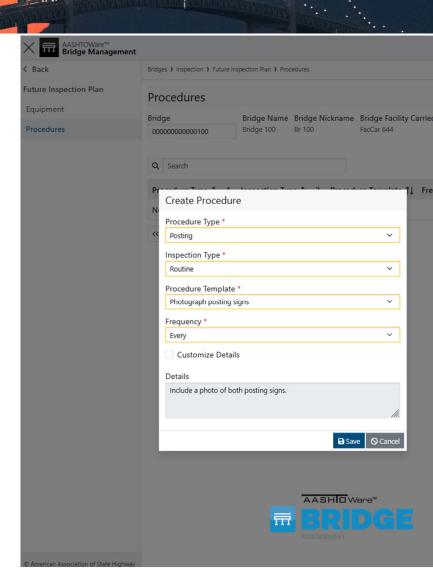
#### **Use Example 1:**

 See bridge specific inspection procedure included in the multimedia folder

#### Use Example 2:

- Inspect Pin & Hanger assembly with ultrasonic testing.
- Inspect truss bottom chord 1 at arms' length.
- Inspect truss bottom chord 2 at arm's length

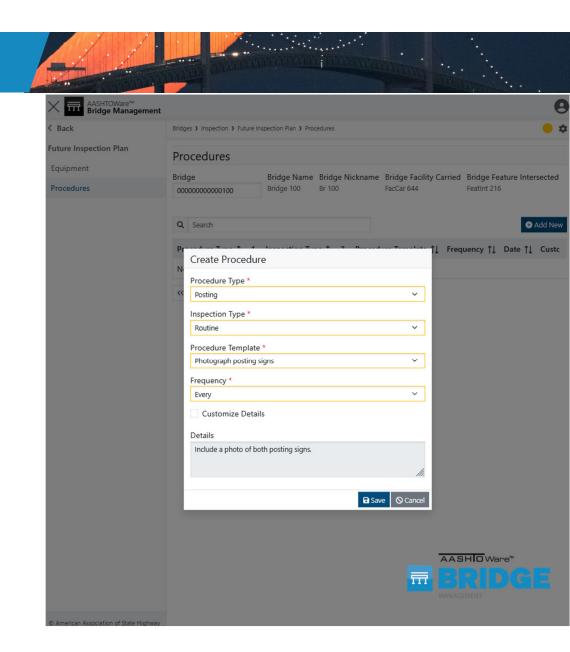
**Review Inspection Plan in Inspection 101** 

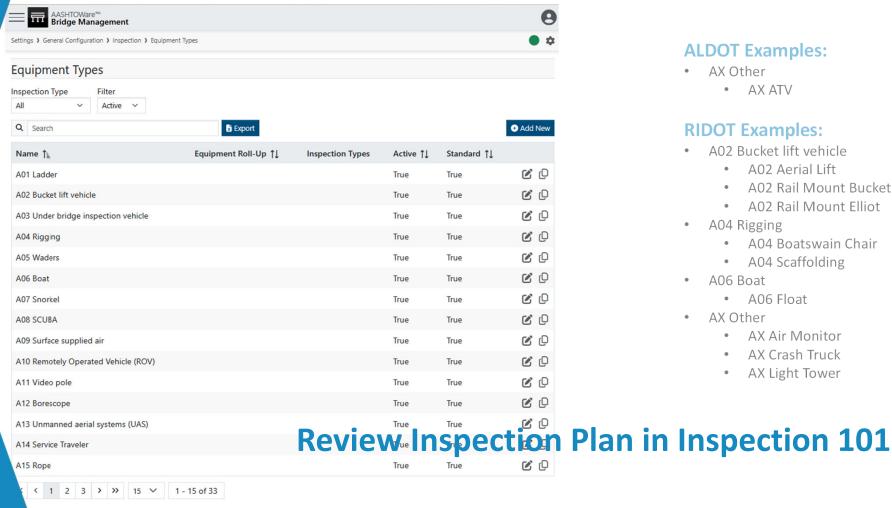


#### **Your Decision:**

Your agency needs to decide whether to add detailed inspection procedures to the procedures module. (Example: NSTM bridge-specific instructions)

Also decide on a pattern for reviewing the procedures. This could be after the last inspection, a month before a new inspection, or at another interval.





#### **ALDOT Examples:**

- AX Other
  - AX ATV

#### **RIDOT Examples:**

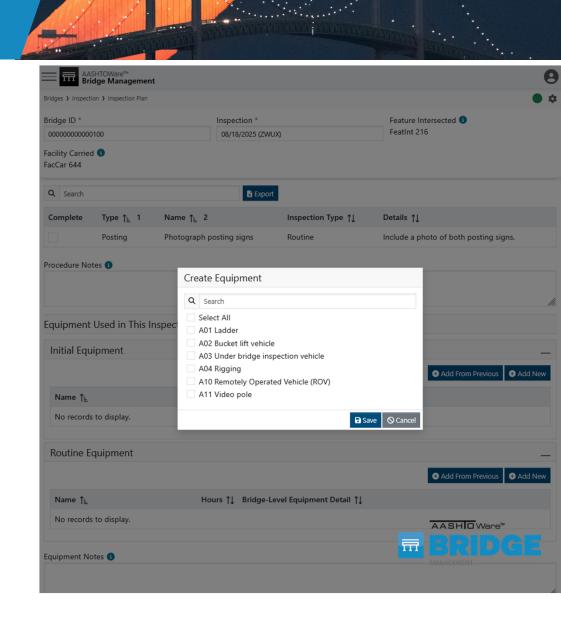
- A02 Bucket lift vehicle
  - A02 Aerial Lift
  - A02 Rail Mount Bucket Truck
  - A02 Rail Mount Elliot
- A04 Rigging
  - A04 Boatswain Chair
  - A04 Scaffolding
- A06 Boat
  - A06 Float
- AX Other
  - AX Air Monitor
  - AX Crash Truck
  - **AX Light Tower**



#### **Your Decision:**

Does your agency copy from the last inspection, or prompt for what equipment the inspectors should routinely expect to use?

And how often should that be reviewed and updated?





## **Course Overview**



### **Course Overview**

#### **TODAY**

#### **Before Break (Insp 101)**

- Login
- Roles & Groups
- Bridge List
- Inspection List
- Scheduling
- Inspection Plans
- Inventory
- Design
- Features

#### After Break (Insp 102)

- Condition & Elements
- Load Posting
- Multimedia
- Sketches
- Cross Sections

#### **TOMORROW**

#### **Before Break (Insp 201)**

- Work Candidates
- Certifications
- Inspection Assignment
- Validation
- Inspection Review
- Future Planning

#### After Break (Insp 202)

- Submittal
- Critical Findings
- Reports
- Dashboards
- API Calls



