AASHTOWare™ BRIDGE MANAGEMENT

BrM 7.0 Transition Strategies

The Abridged Version

BrMUG 2024 | Long Beach, CA | September 17-18

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CONTACT

ZACHARY BOYLE
zac.boyle@mayvue.com
Text | Voicemail | (801) 450-9716

MAYVUE

BrM@mayvue.com
1-877-462-9883

Jira Service Desk

http://support.mayvue.com

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Presentation

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Presentations

2023 User Group Meeting

The 2023 User Group Meeting, hosted by the Idaho Transportation Department, was held in September 2023. All presentations are available by clicking the button below.

2023 Presentations

Past User Group Meetings

- 2022 User Group Meeting
- 2021 User Group Meeting
- 2020 User Group Meeting
- 2019 User Group Meeting
- 2018 User Group Meeting
- 2017 User Group Meeting
- 2016 User Group Meeting
- 2015 User Group Meeting
- 2014 User Group Meeting
- 2013 User Group Meeting

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Database Migration

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It’s time to move to the SNBI

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Pack Up

One Time Move

Settle In

Pack up

- ❑ Inventory any tables that are not standard BrM tables – these will need to be manually copied.
- ❑ Inventory any pages that are not standard BrM pages – these will need to be created in 7.
- ❑ Every active user has a unique email address. If your user does not have an email address, a fake one will be provided for you as your BrM7 login.
- ❑ Queries used in the following parts of BrM, since these will need to be recreated.
  - ❑ Bridge List
  - ❑ Qualifications
  - ❑ Dashboards
- ❑ Triggers and scheduled tasks, since these will need to be created in 7.
- ❑ Know where your multimedia is stored, you will need this information during migration.
- ❑ List out the following and determine if these will be needed in BrM7.
  - ❑ Custom reports and dashboards
  - ❑ Custom fields (userbrdg, userrway …)
- ❑ Prepare policies for the following modules.
  - ❑ Qualifications
  - ❑ Inspection Review
  - ❑ Critical Findings reporting
  - ❑ Equipment types
  - ❑ Inspection procedures

One Time Move

BrM is moving to a new database. The migration script will move your past inspections to the SNBI format and then transfer them across. If your data is in the UsrBrdg, UserRway, UserInsp tables, then they will move across to the new Bridge, Highway and BridgeInspection tables. If you have other custom tables and views, they will need to be moved manually.

- ☐ Upgrade your BrM6 database to BrM 6.7.1 by running the 6.7.1 upgrade script. Please pay attention to errors in the log if they occur.
- ☐ **Migrate to BrM 7.** Remember there is a setting at the top of the migration query to designate the agency acronym. (Example: if the MayDOT acronym is MY, this will turn userbrdg.[agency_field] to bridge.MY_[agency_field]. If this is not edited, all agency columns will be named USR_[agency_field].)
- ☐ Custom SNBI Migration. If any of the agency fields have data to populate now-core SNBI fields, this is the ideal time to move that data over to the new field. Mayvue can help with this but reach out early because your place in line may dictate when you can migrate.
- ☐ Data merge from SNBI Collector. If you used the Mayvue SNBI Collector to collect SNBI data, this is the time when you want to merge those values in. This sequence assumes the SNBI Collector values trump those in the custom migration.
- ☐ Verify Migration. Check that the migrated data looks correct.
- ☐ Data schema changes. If your agency has decided to remove agency-fields or would like to add new ones, this is the ideal time to make those changes.
- ☐ Configure single sign-on (optional).
- ☐ Set up multimedia directory.
    - Multimedia file path – where is the multimedia stored.
    - Reports directory (if they use a different path, otherwise uncheck the box)

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Settle In

- ❑ Users / roles / groups
- ❑ Certifications (optional)
- ❑ Inspection Types
- ❑ Inspection Page Setup
- ❑ Reports
- ❑ Inspection Review (optional)
- ❑ Inventory Review
- ❑ Inspection assignment (optional)
- ❑ Begin Inspections

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Users, Roles & Groups

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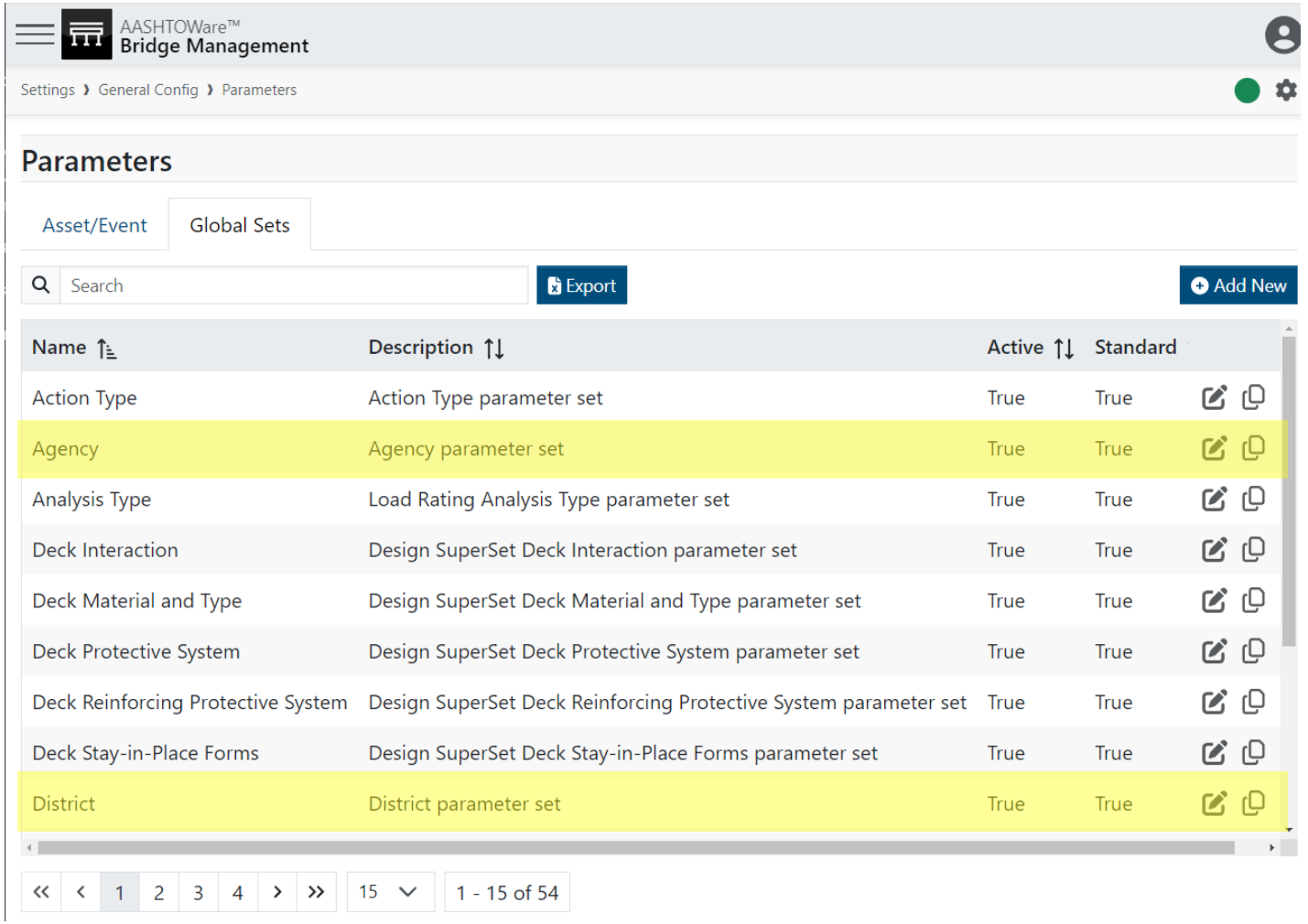
Parameters: Settings > General Configuration > Parameters, Global Sets tab.

- ❑ Configure / audit the Agency parameter set with the agencies that BrM users will be associated with. (Example: MayDOT, FHWA, Murata Consultants, Boyle Engineers, etc)
- ❑ Configure / audit the District parameter set with the districts that BrM users will be associated with. (Example: District 1, 2, 3 or Region 1, 2, 3 …).



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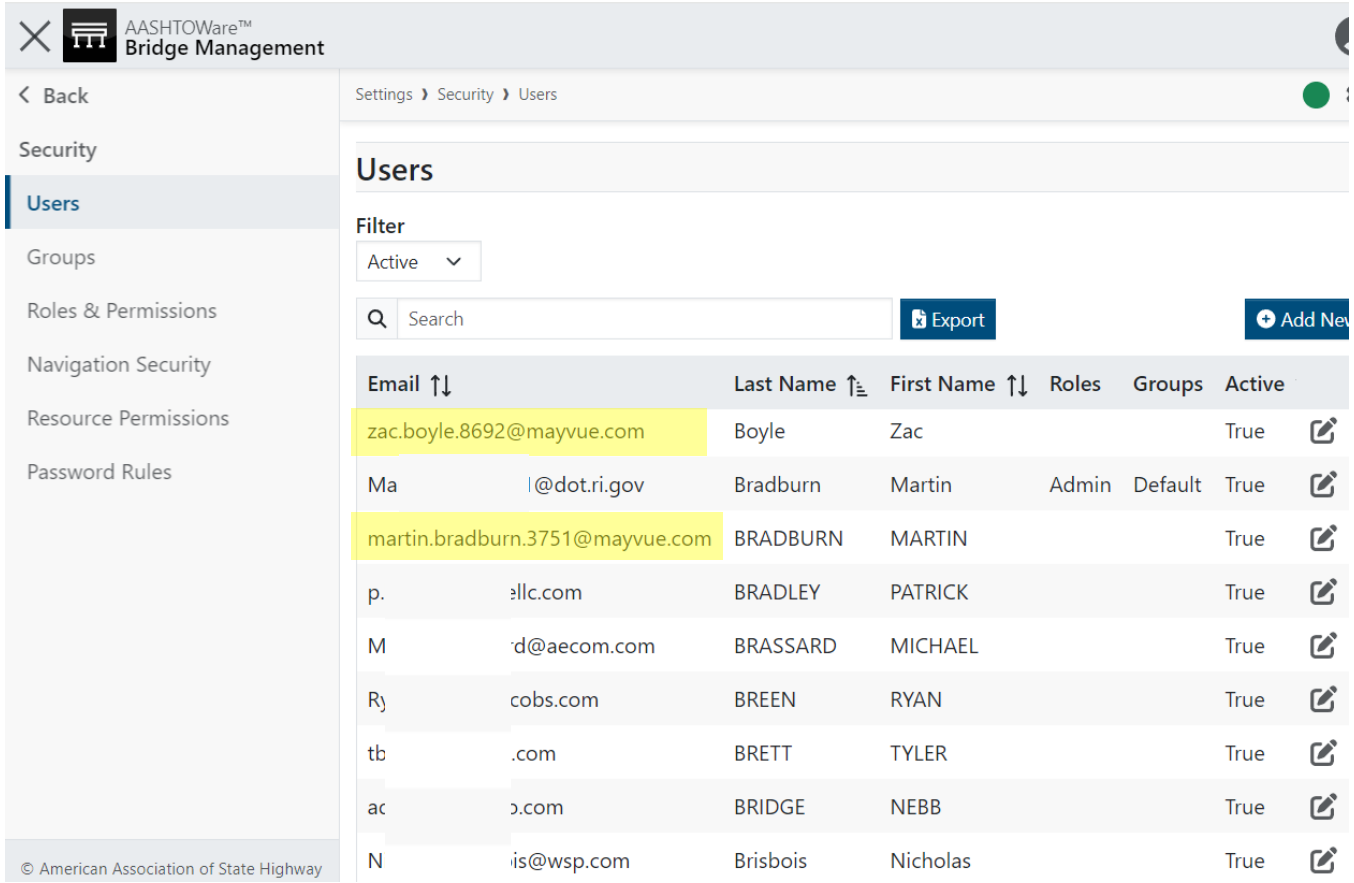
Users: *Settings > Security > Users*, change the filter list to all (active and inactive users) and then export the list of users to excel. For agencies with lots of users, it is easier to perform the next checks in excel format.

- ❑ Verify that the BrM administrator's account exists with the correct email. If that user does not exist, add that user to BrM. (Example: if I am Zac Boyle, my first task is to verify that zac.boyle@mayvue.com is an active user in the list and add that account if it doesn't exist.)
- ❑ Audit the list of users, verify that the agency users who need access have access to the system. Add users if any are missing.
- ❑ During migration to the new system, an email address was required in BrM6. If the user did not have one, the account was created using the template [user].####@mayvue.com to create a unique email address. These accounts should be marked inactive (Active = false) and a new user should be created with a valid email address.
- ❑ Audit the Active setting. Users who performed past inspections but are no longer inspecting should have their account deactivated for security.
- ❑ Mark the default account inactive for security. This login is common among all BrM sites in all DOT's. It is best practice to mark it inactive to prevent unauthorized login.



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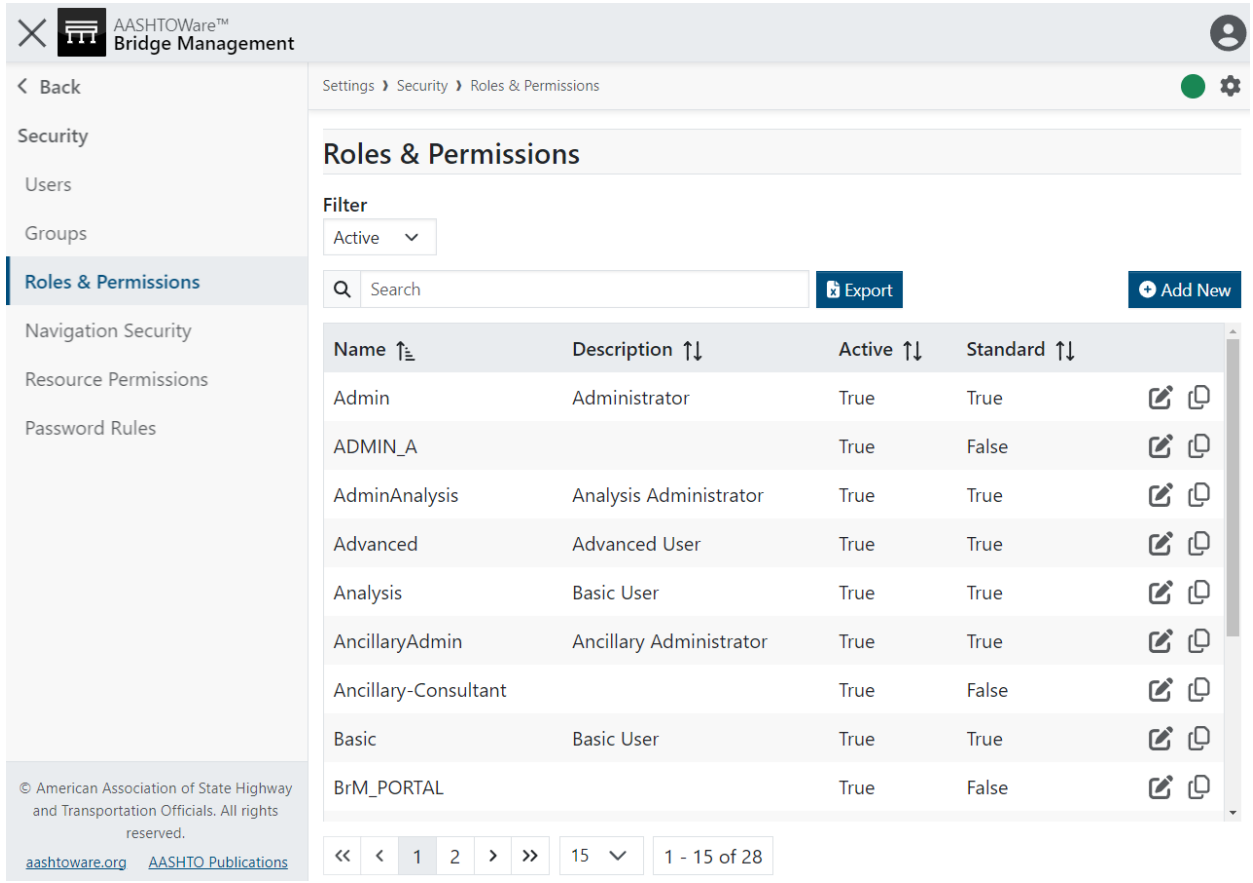
Roles: *Settings ❱ Security ❱ Roles & Permissions*, change the filter to all (active and inactive roles) and then export the list of roles to excel. For agencies with many roles, and legacy roles, they can be easier to review in excel. If your agency has only a few roles, they can be reviewed in the BrM UI.



- ☐ Verify that the roles migrated from BrM6 are the roles used by the Agency.
- ☐ Add/inactivate the roles as needed.
- ☐ Roles for different security levels. (Example: access to Scour Plan of Action, Load Ratings, Optimization, settings …)
- ☐ Roles for Inspection Assignment (optional). If you plan to use the Inspection Assignment module, you will probably want a role for the users who access that module.
- ☐ Roles for Inspection Review (optional). If you plan to use the Inspection Review module, roles to support your QC practices will be needed.
- ☐ Read only roles for FHWA reps (optional), which read-only access to inspections, critical findings and certifications.
- ☐ For each role, review the users, report access, the permissions & multimedia security.

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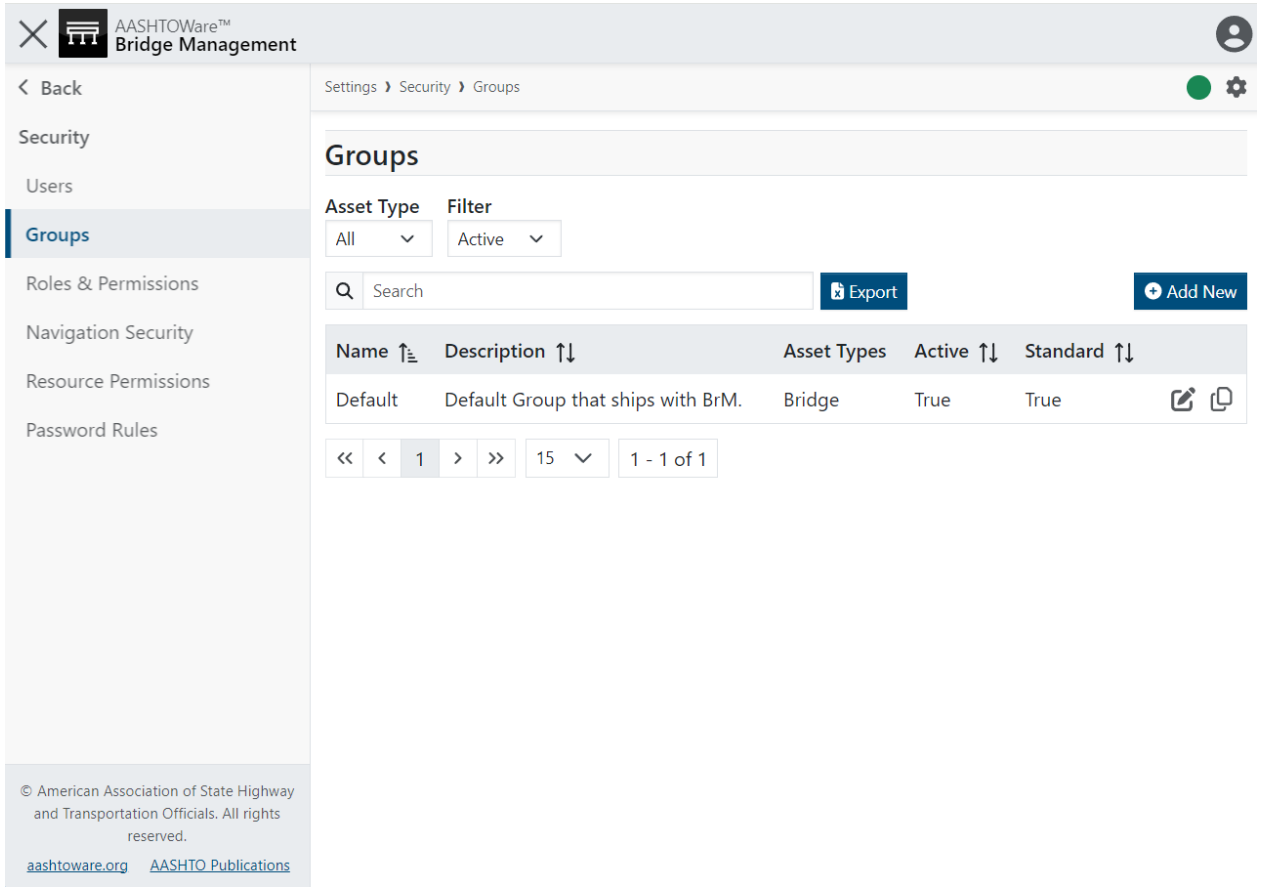
Groups: *Settings ❱ Security ❱ Groups*. There is also an excel export for groups, but your agency may not have quite so many groups.

- ❑ Verify the existing groups which migrated from BrM 6.
- ❑ Add / inactivate the groups as needed.
- ❑ Groups for access (Example: Groups for District 1, 2, 3 … etc. so those groups only have access to the structures in their responsibility.)
- ❑ Consider groups for inspection assignment (optional. Example: Groups for consultant inspection teams so they only have access to their assignments)
- ❑ Consider groups for inspection review (Examples: District 1 reviewers, central office reviewers …)



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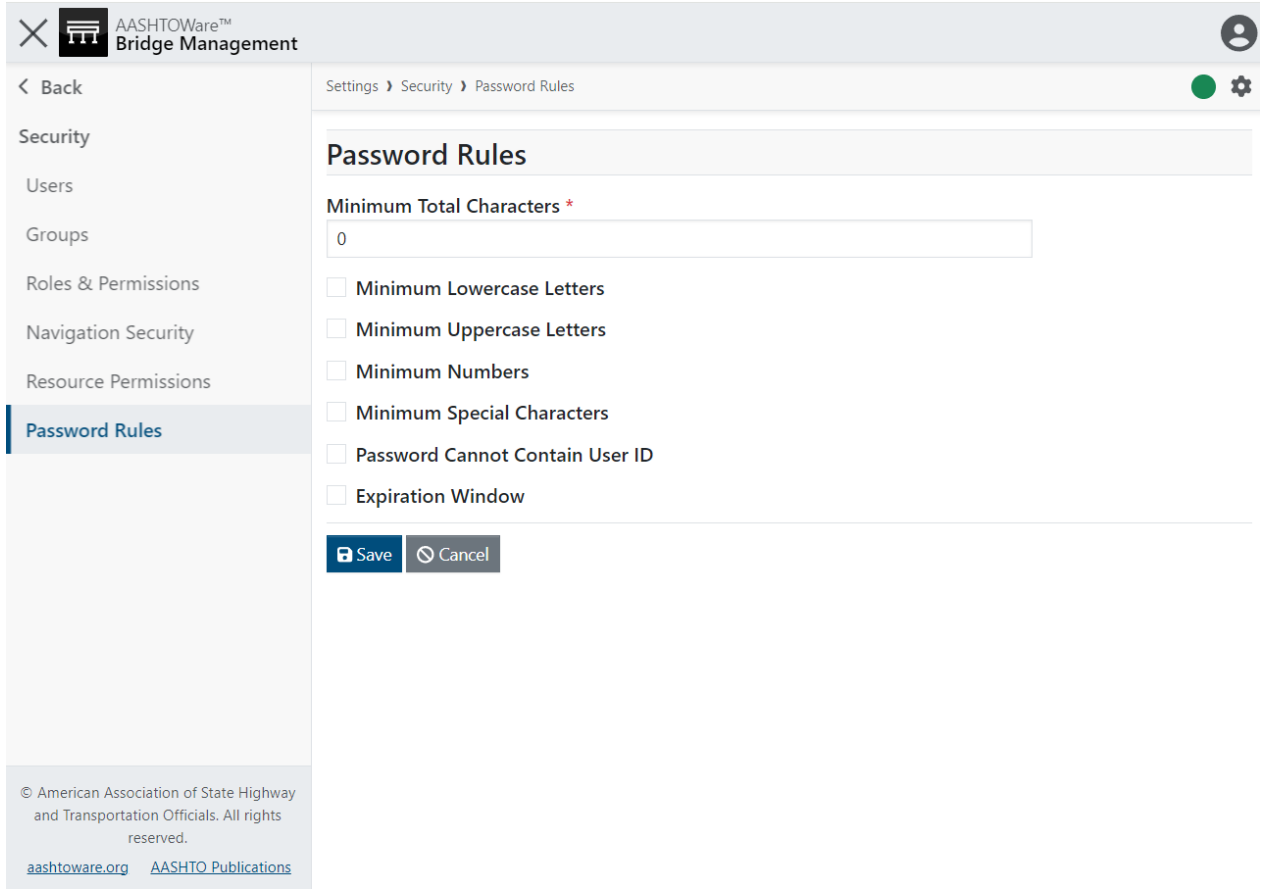
- **Users**: *Settings ❱ Security ❱ Users,* regenerate the excel spreadsheet of users to have an easier way to review the roles and groups at a glance.
- **Password Rules**: *Settings ❱ Security ❱ Password Rules*. If Single sign-on is not configured, establish the agency rules for how often passwords expire and what character types are required.
- Users may now log in and update their passwords and contact information.



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Certifications

Optional

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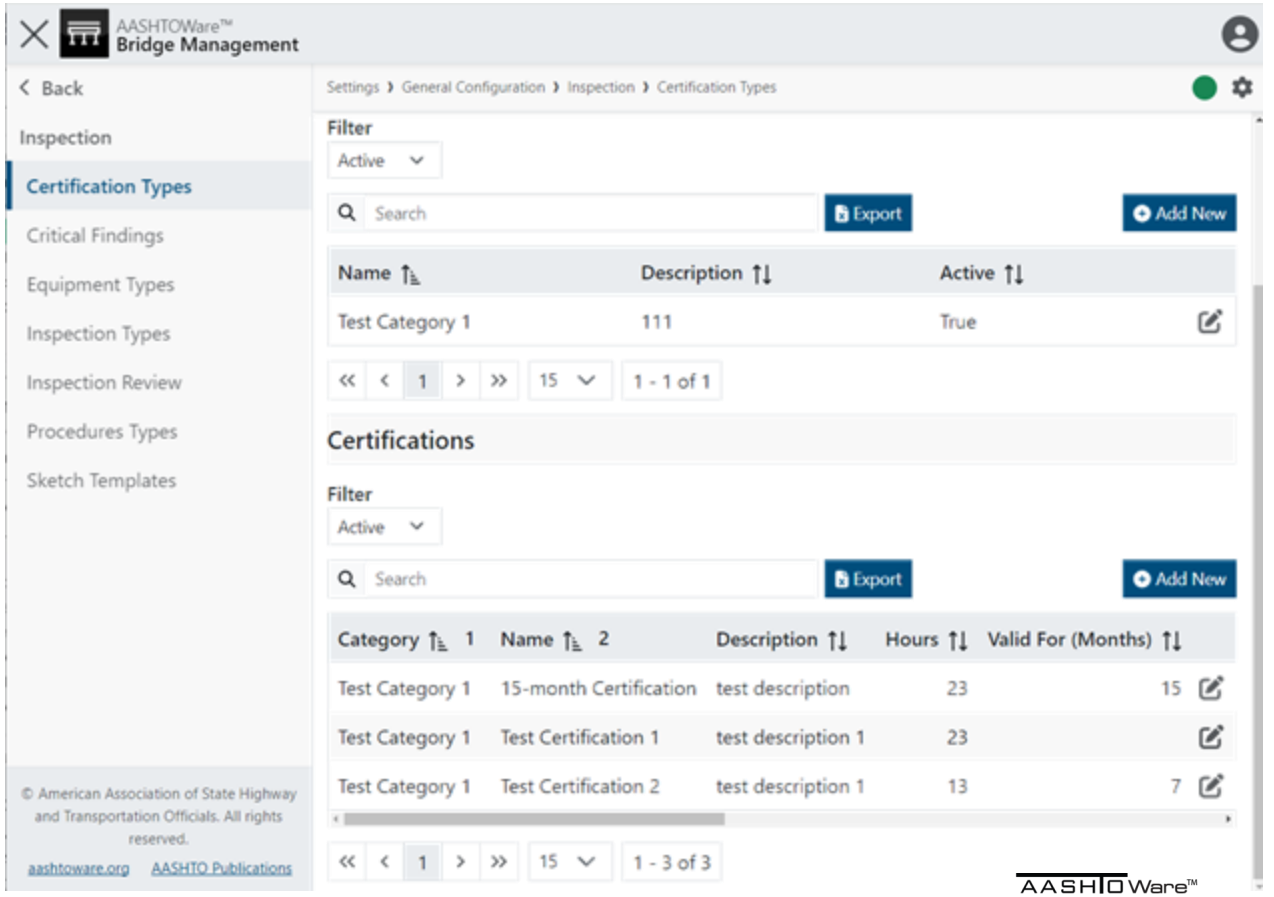
Settings ❱ General Configuration ❱ Inspection ❱ Certification Types. If your agency plans to use the certifications and/or qualifications modules, then this is the time to review and establish the certification settings.

- Modify Certification Types (Examples: Inspection training, NHI, Safety courses …)
- Modify Experience Types (Examples: Inspection, Complex Inspection, Tunnel Inspection, PE, EIT, etc.)
- Create/Modify Certifications. Consider that certifications can be set for users to enter for themselves on the user profile page, or they can be left for those with access to the security page to enter for them.
- Qualifications. In order to use the qualifications module to ensure that only qualified individuals start particular inspection types, the agency's logic needs to be added to the *Qualification.SQLStatement* field on the database. Queries from BrM6 will need to be updated for the BrM7 syntax.
- Users may now update their experience and upload their qualifications and upload certs, stamps and signatures
- Review the *Inspection Management ❱ Manage Certifications* page to grant temporary qualifications where needed and to see the user certifications that have been uploaded so far.



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Inspection Types

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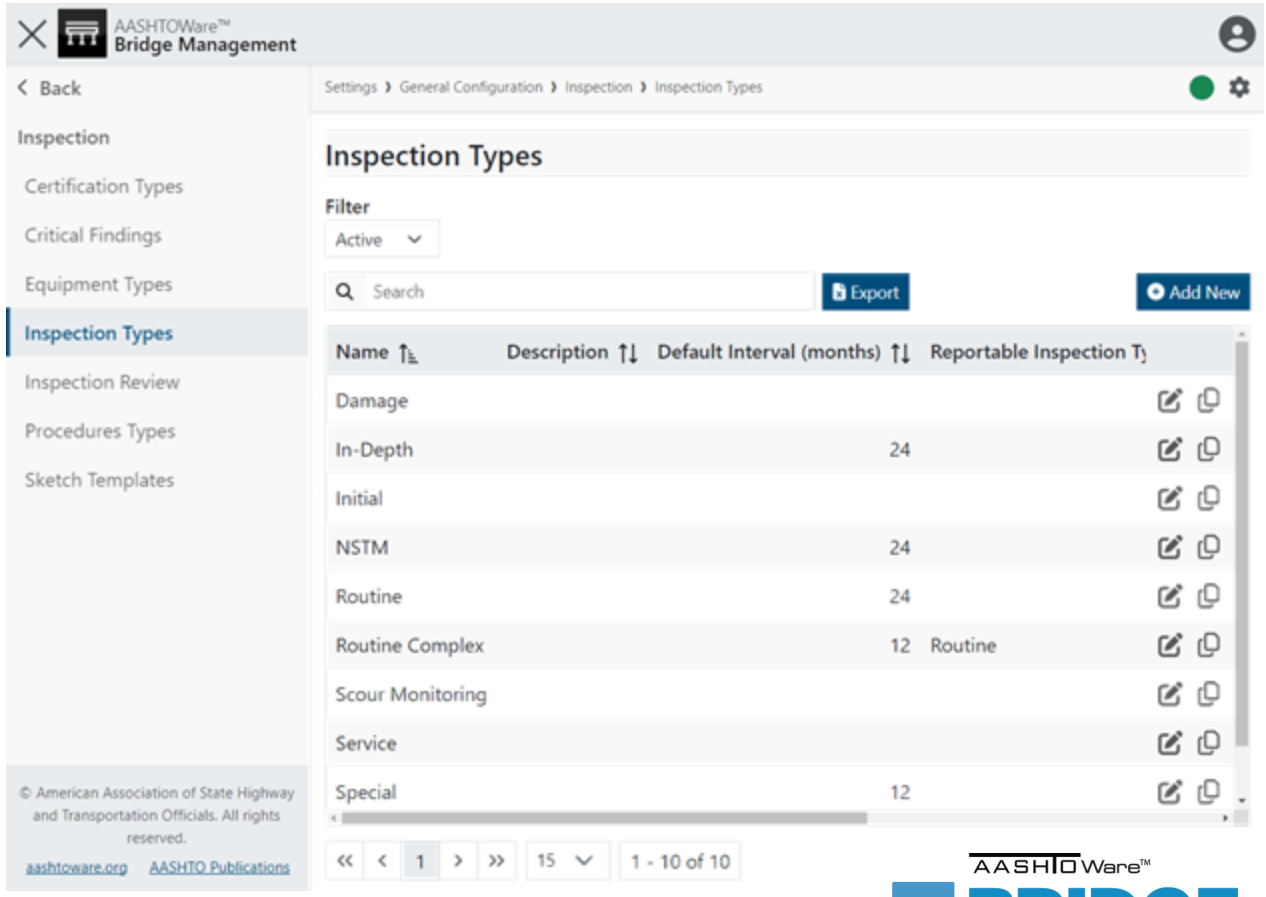
Settings ❱ General Configuration ❱ Inspection ❱ Inspection Type. Agencies can create their own inspection types which will roll up to the reportable types at the time of submittal to FHWA. At this stage, and before inspections begin, this is the most ideal time to adjust the types beyond the default.

- **Decision:** Are you going to use Inspection Assignment? Are you going to use the QC module? Will you need to create any inspection types to accommodate different assignment methods, qualifications or different review methods. (Example: separating Wader Underwater from SCUBA Underwater where SCUBA inspections require a dive qualification, or separating Complex Routine from Routine where ropes equipment is required)
- Create Types
- Assign structures to those created types.



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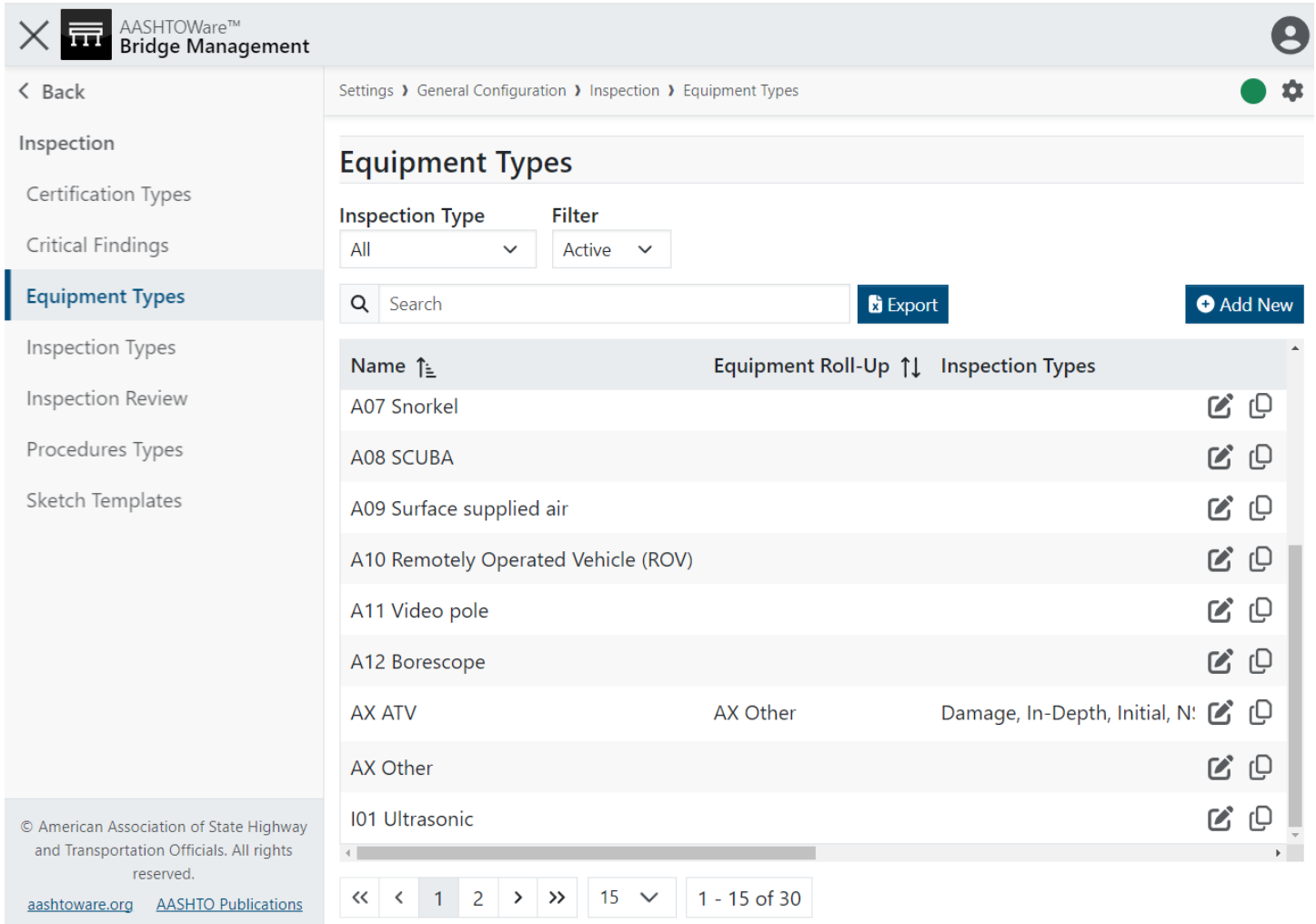

- Equipment Types (optional). *Settings ❱ General Configuration ❱ Inspection ❱ Equipment Types.* Create the equipment types that will help with inspection management. (Example: is snooper going to just be an equipment type required for certain inspections? Or will it be a separate inspection type that requires snooper-qualified inspectors?) Equipment needs will need to be assigned to the required inspection types. This can be done over the next inspection cycle or by database script from existing data.
- Procedures Types (optional). *Settings ❱ General Configuration ❱ Inspection ❱ Procedures Types*. An agency can input particular inspection instructions for each bridge and inspection type. They can be customized at the bridge level, but to begin with they can be made as agency templates. (Examples: NTSM procedures, Complex procedures, Underwater procedures, Posting – like 'Take photos of posting signs', Cross sections, etc.)

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Inspection Page Setup

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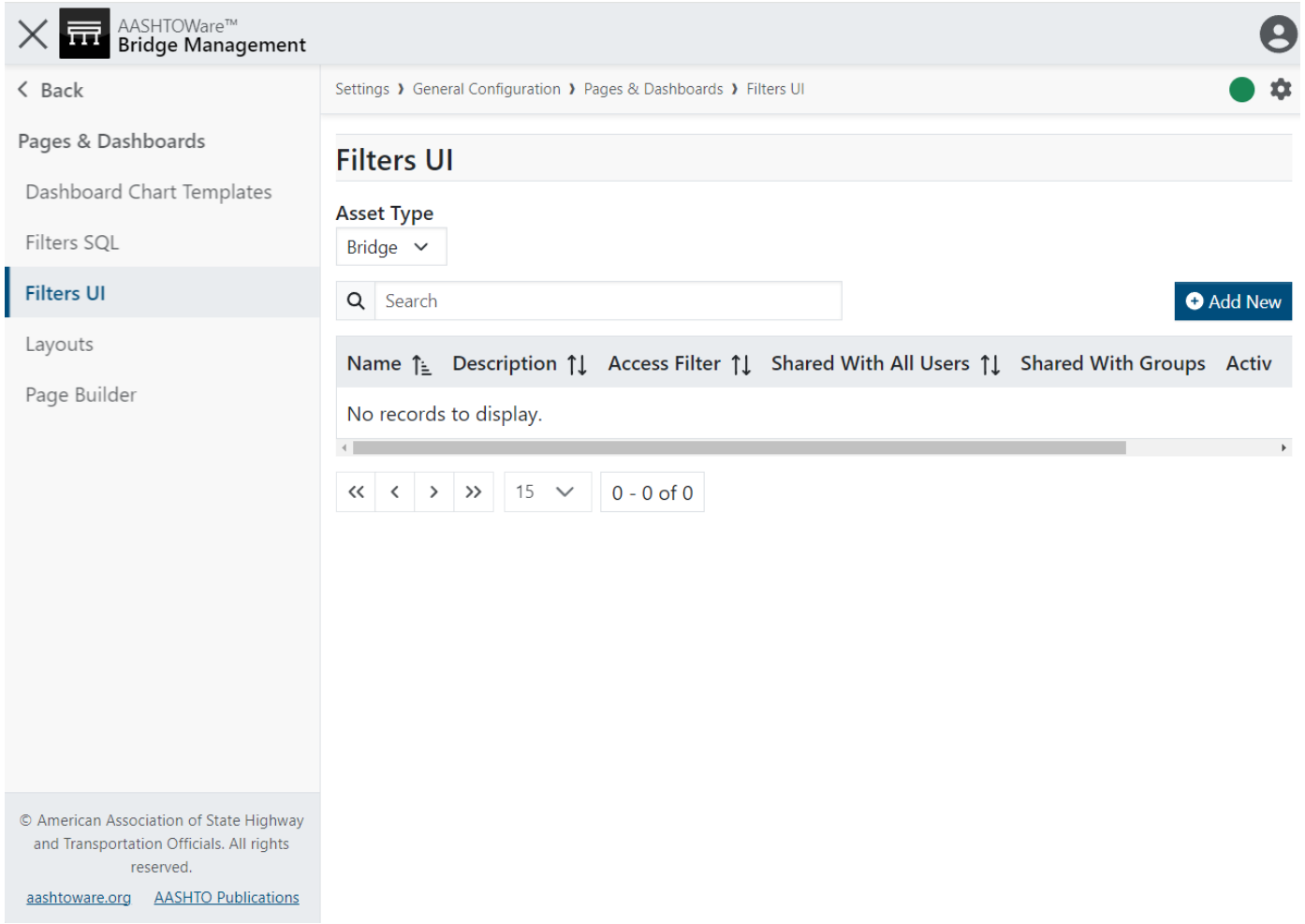

Now that the inspection types are established, we can move on to creating the other support settings around performing an inspection.

- **Filters**: *Settings ❱ General Configuration ❱ Pages & Dashboards ❱ Filters UI*. You will need to refactor the filters created in BrM6 to work in the BrM7 database, but the filters created and used by the agency in BrM6 should guide which ones are needed here. This includes bridge list filters and access filters.

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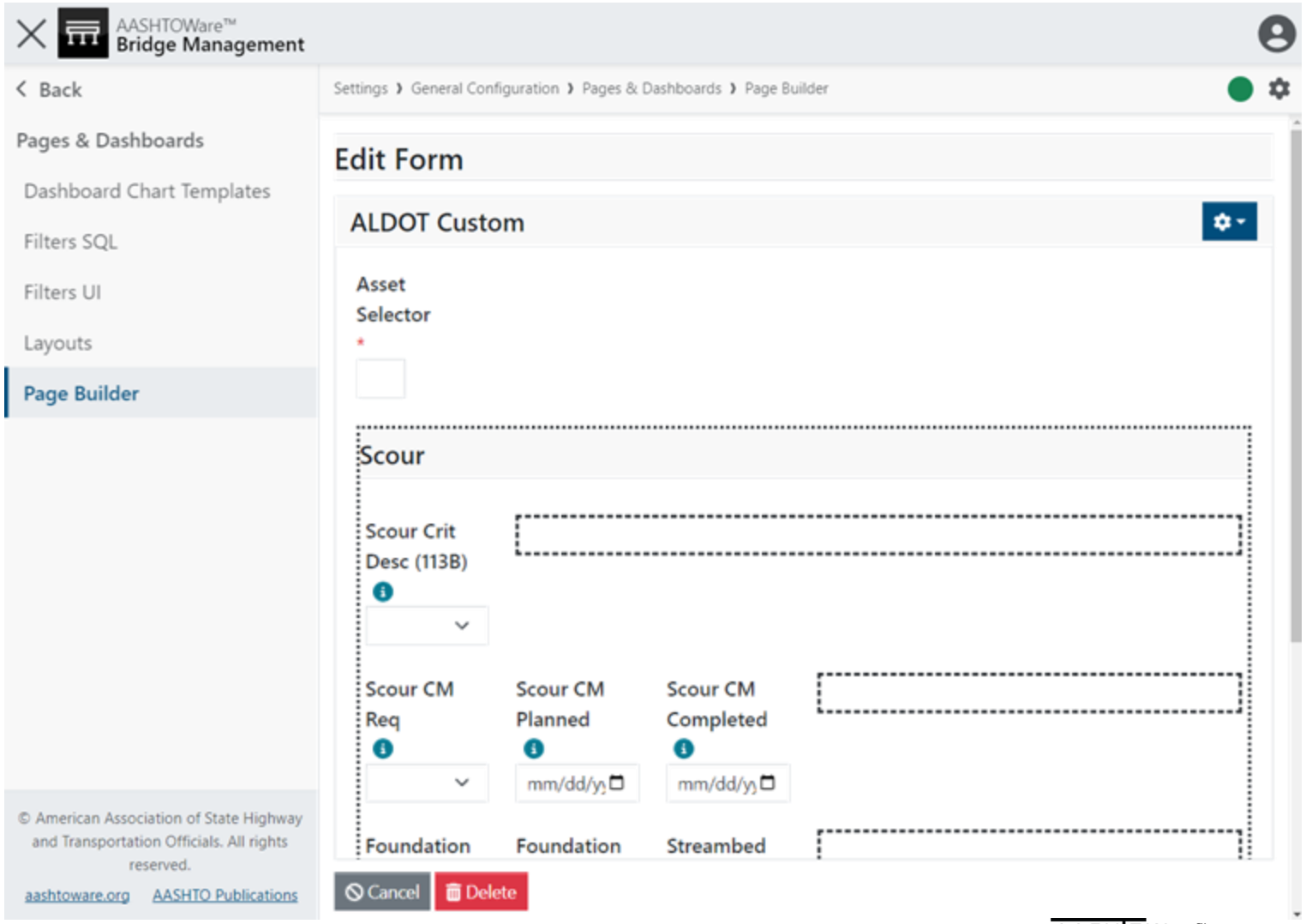
- **Pages**: *Settings ❱ General Configuration ❱ Pages & Dashboards ❱ Page Builder*. If your agency opts to copy a default page and modify it to add agency fields, or reorganize them to work in a different manner, this is the time to create those pages. Consider that you might want to create pages for a particular inspection type. (Example: Creating an NSTM inspection condition page that does not include Deck, Super, Sub or Culvert rating if that is agency policy.)
- **Page Order & Security:** *Settings ❱ Security ❱ Navigation Security.* This is the ideal time to change the order of pages and to control which items appear in certain inspection types or are accessible to certain roles. Security of default pages can be adjusted without having to create copies. (Examples: Inspection Management is only accessible to the Inspection Manager role, or the bridge number field is not editable to the inspector role)



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Reports

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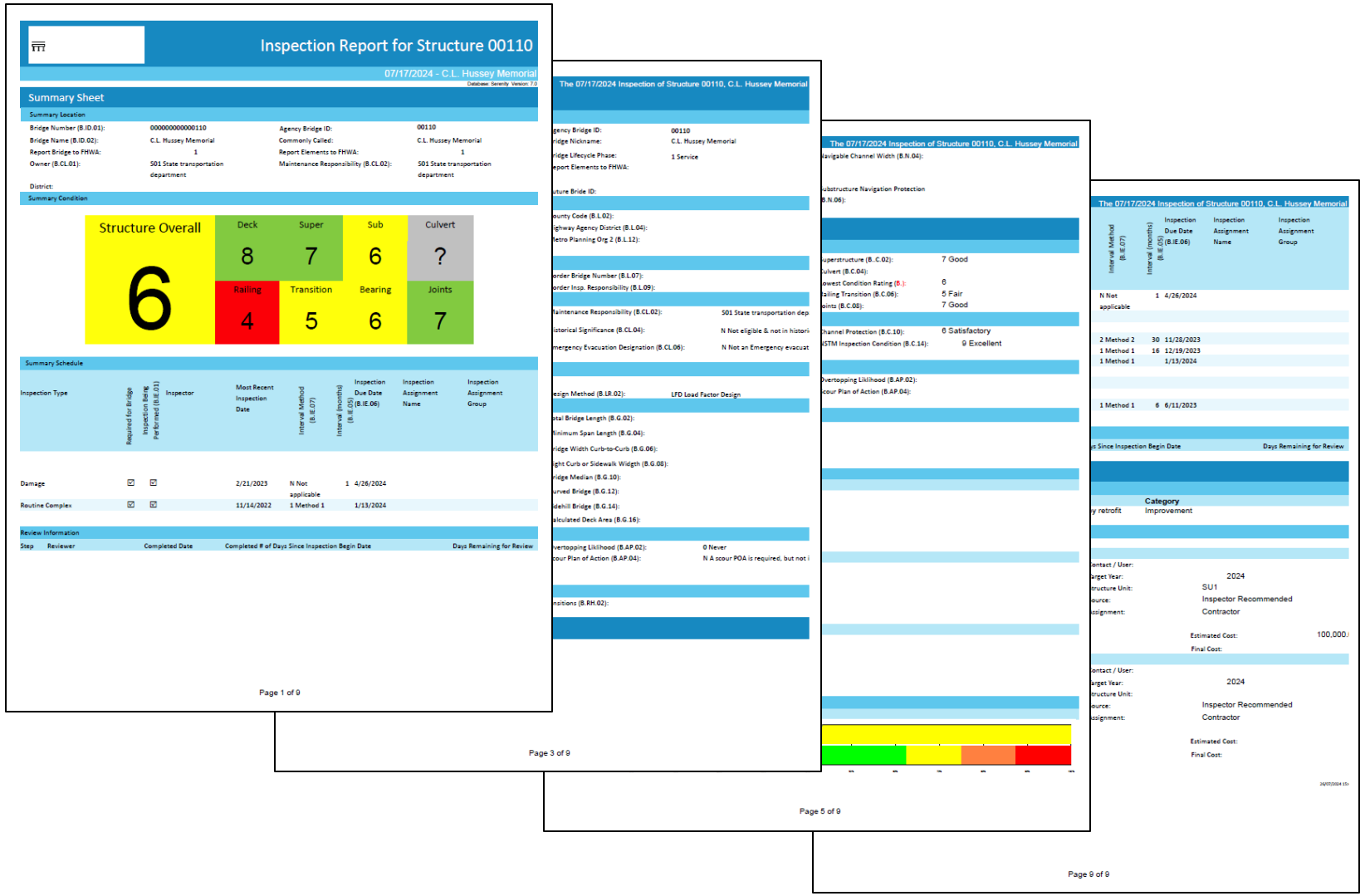
The most critical report to prepare for inspection is the **inspection report.** Consider the default inspection report that ships with BrM7 to decide if that meets your agency's needs. If not, evaluate what needs to be changed about it. Other reports and dashboards to support inspection, review and other DOT processes can be developed with time – they are less critical to beginning inspection.



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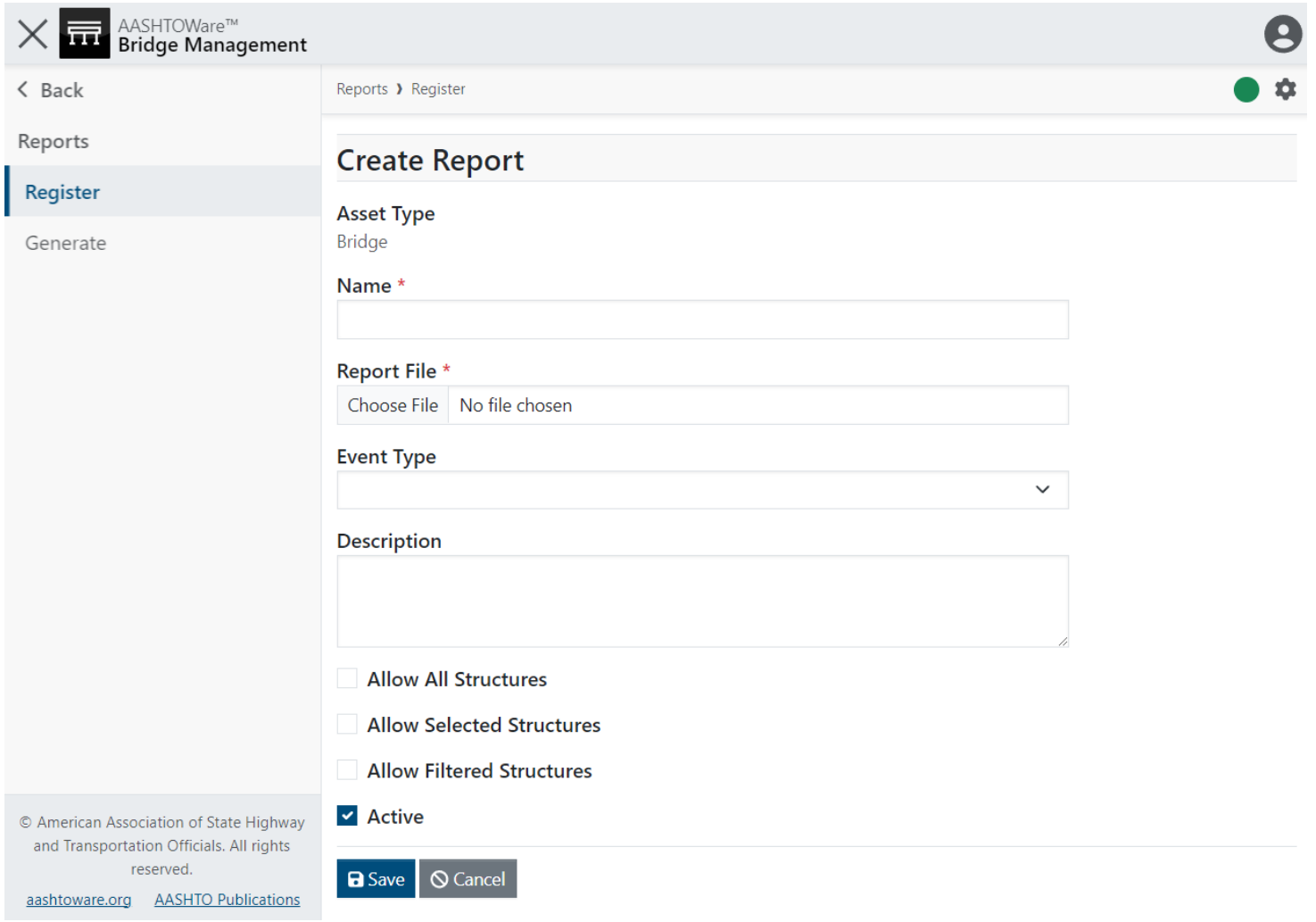
- **Decision:** Which items are best served as reports and which ones would be better suited as dashboards? (Example: Items that need to be emailed out with scheduled tasks or documented in pdfs probably make the most sense as reports. Queries just checking for current status, or looking for incorrect data, or quick exports to excel are probably best developed as dashboards.)
- Reports need to be rewritten to use the BrM7 database tables and columns. **No reports from BrM6 are likely to run without modification.** Also remember that upwards of 50% of the data in the default inspection report has wildly changed with the SNBI rules.
- Upload the reports. After a report is uploaded, access to the report will need to be given to the roles that can see it.
- Dashboards need to be rewritten to use the BrM7 database tables and columns. No dashboards from BrM6 will run in BrM7 without modification. Remember to adjust the security of the dashboard to control which roles can see it.



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Critical Finding Review

Optional

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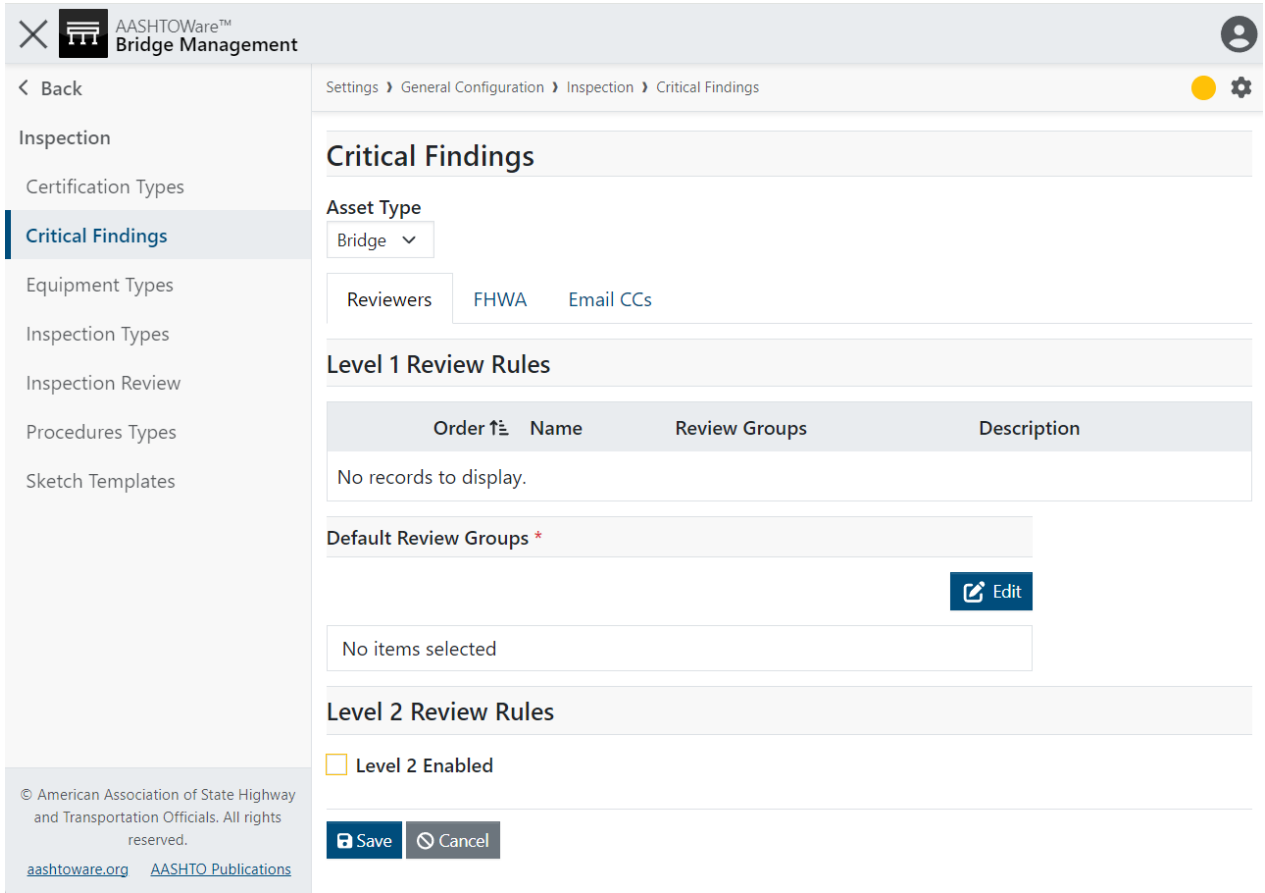
If your agency opts to use the Critical Finding module in BrM, this is now the time to establish the rules surrounding the review and notifications of reported critical findings.



- *Settings ❱ General Configuration ❱ Inspection ❱ Critical Findings*. Establish rules about which findings are reviewed by which groups. (Example: MayDOT has all critical findings from District 1 reviewed by the District 1 Inspection Manager's team, a group that includes the District 1 Inspection Manager and an alternate reviewer in case it is necessary. MayDOT also uses the optional Level 2 review and that review is performed by the central office review team.)
- Establish if BrM will notify your FHWA representative directly. (Example: some agencies prefer to write this email themselves. Others opt to have the critical findings report sent to the FHWA rep, senior leaders, and the media relations team automatically once the critical finding is confirmed to be a critical finding.)

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Inspection Review

Optional

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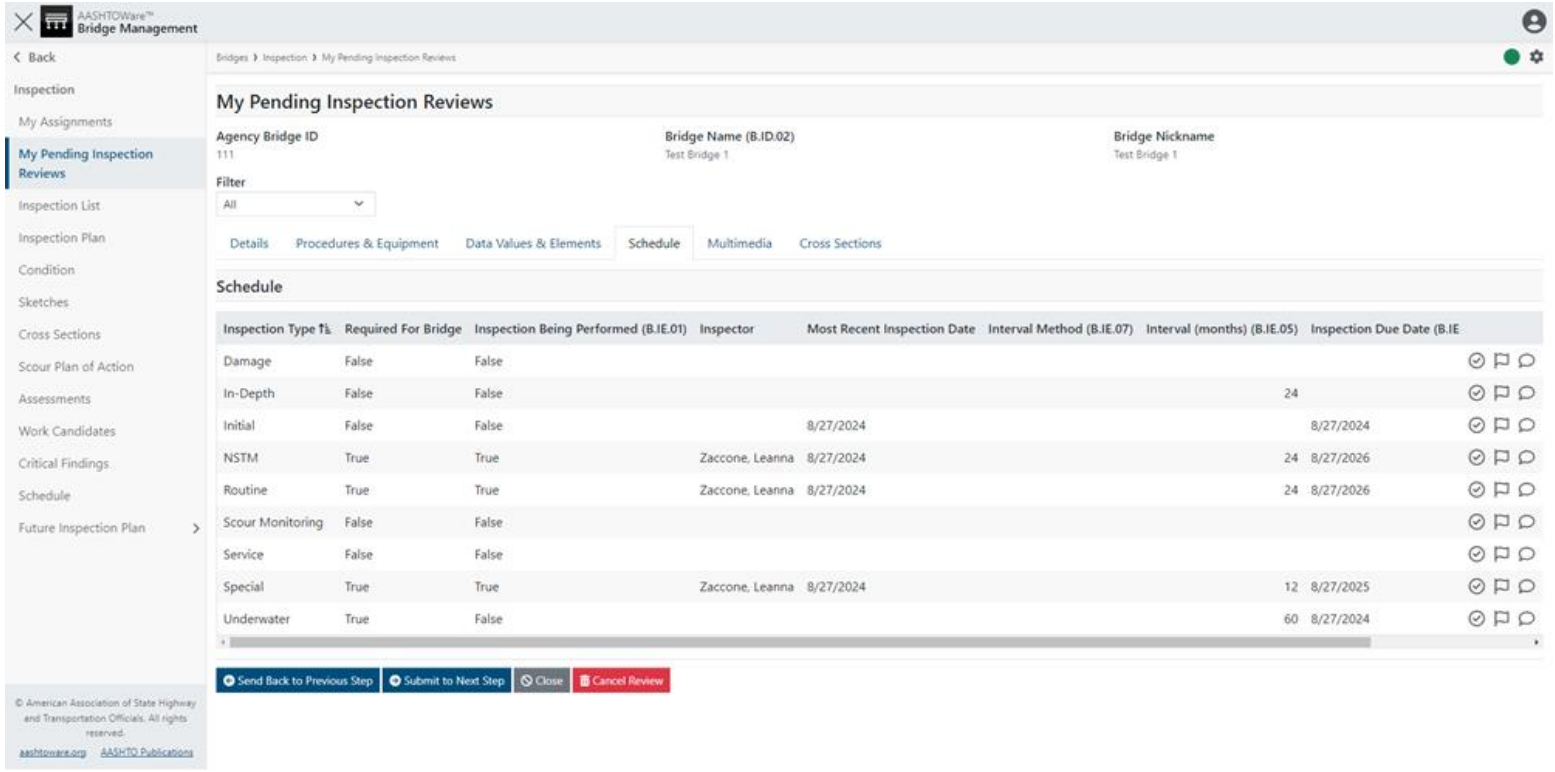
If your agency opts to use the electronic inspection review process, in some states called the QC process, then this is the time to set up this module. Roles, Groups, Inspection Types and agency data fields / pages may need to be revisited if things were missed before this step.



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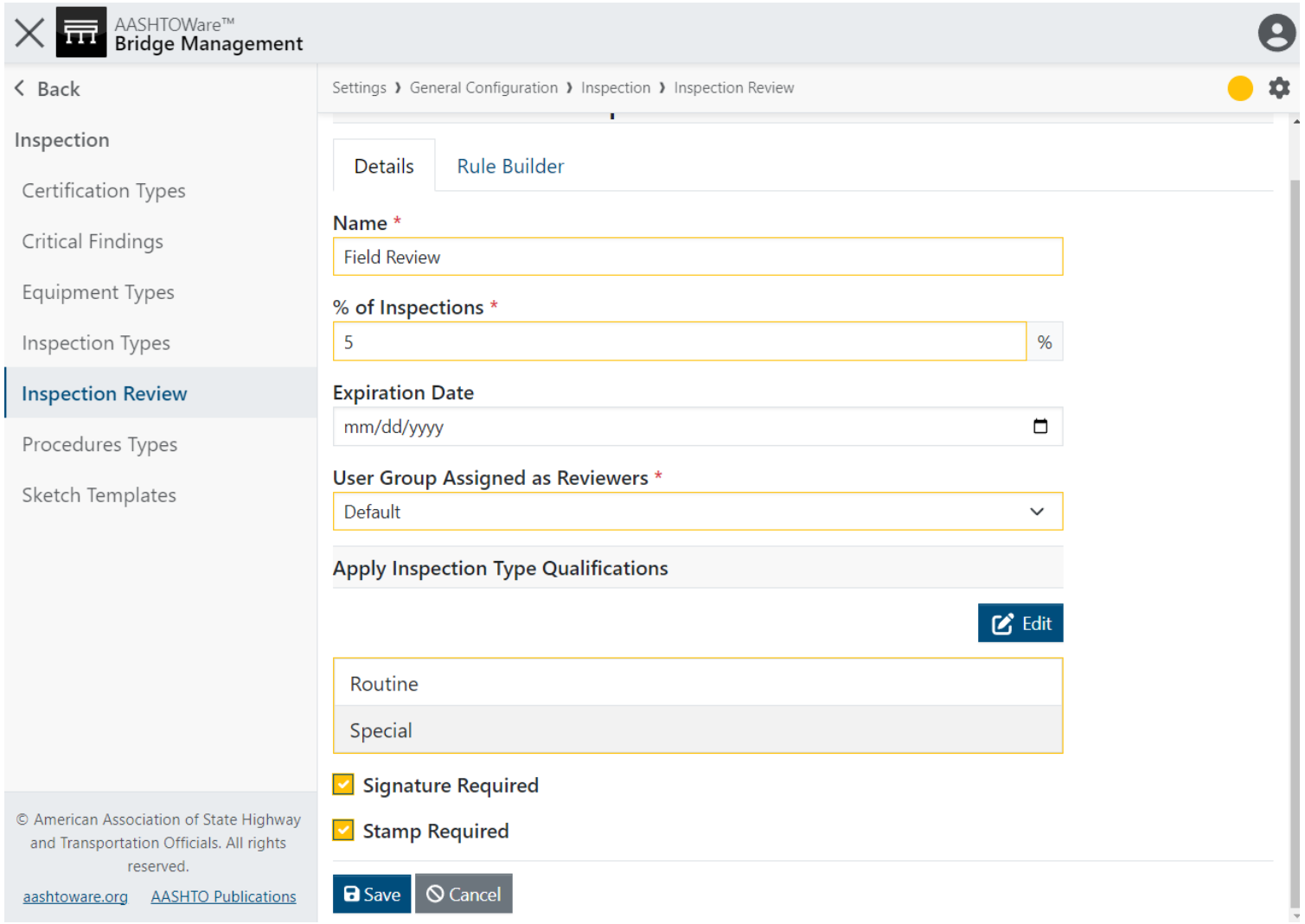

- *Settings ❱ General Configuration ❱ Inspection ❱ Inspection Review.* Establish which data values will be reviewed in every inspection review at the Bridge and Inspection level. (Example: Some agencies feel that everything must be reviewed in every inspection. Others feel that bridge ID and the structure's name are not in the inspector's purview to adjust and so should not be reviewed. Adding Bridge ID and Bridge Name based on that decision is what is needed here.)
- The same process for data values needs to be followed for highway features. If you have the Load Ratings Review customization, same goes for Load Rating Events.

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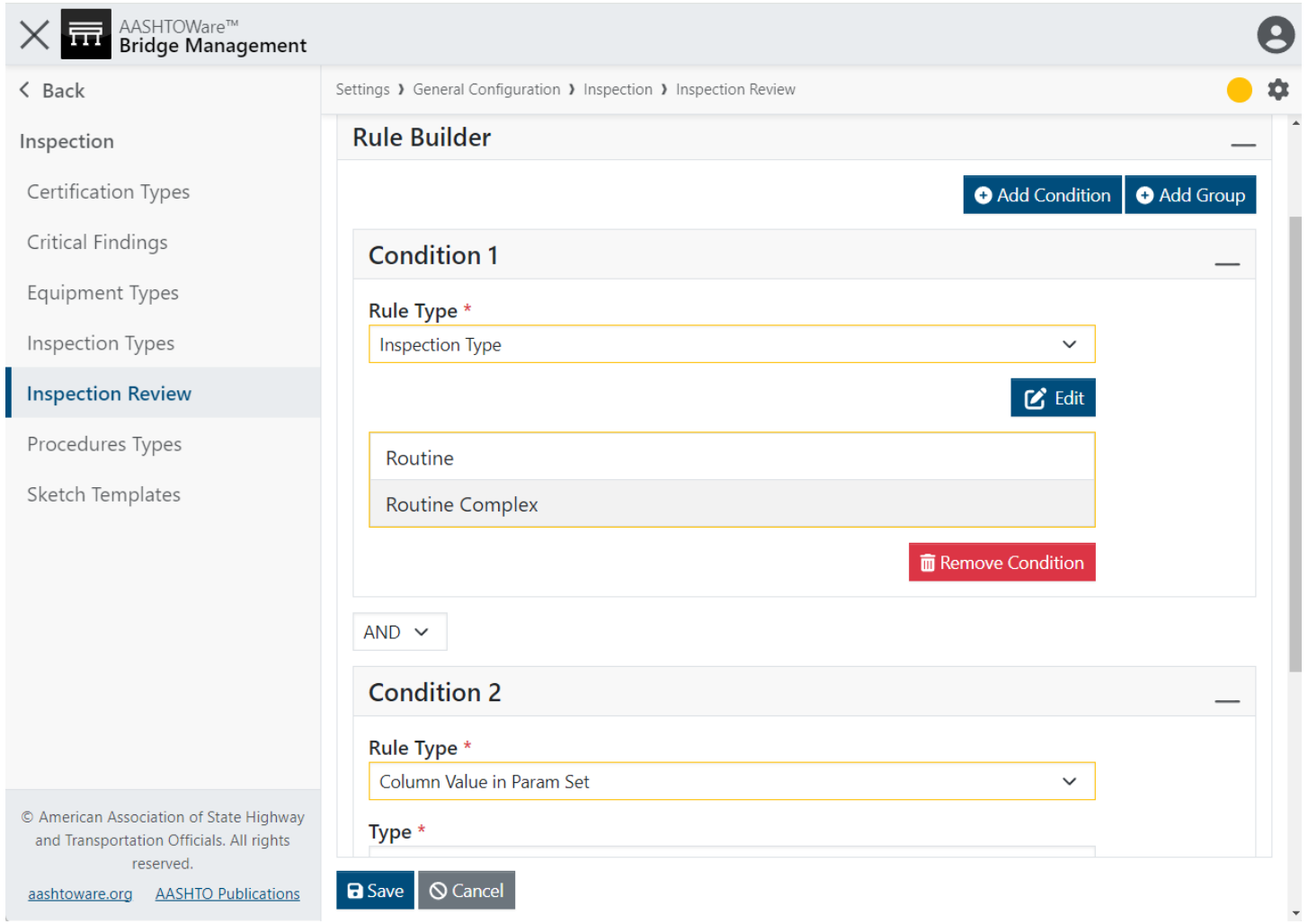
- Visit the Review Settings about locking the condition page and requiring Validation to be run before Review can begin.
- Establish the workflow steps for who will perform which steps of the review process for your agency. (Example: At MayDOT, consultants do the first level of QC of all their own inspections and the Central Office does a QA review of 10% of those. A rule is established for any inspections from Murata Consultants where the review is done on 100% of inspections and the review is done by the Murata Review Group. A second rule is established for 10% of inspections to be QA'd by the MayDOT Central Office Group.)



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Inventory Review

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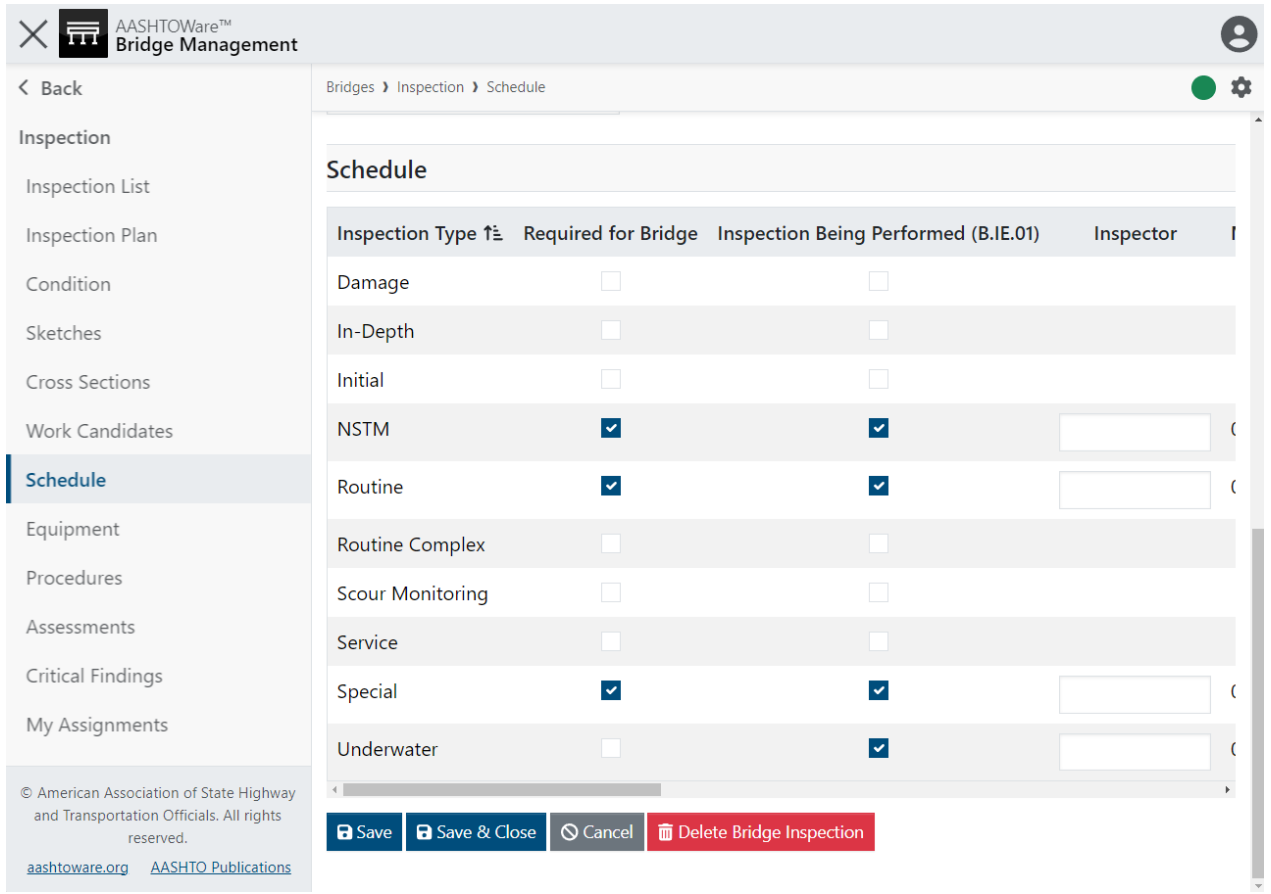
We are now ready to review the inventory of structures and assets that migrated. Consider what checks might be nice to have as part of a data quality dashboard. Some agencies may opt to skip this step and learn what needs to be done through the first inspection cycle, in which case this review might only be done for the structures being inspected this month.

- ☐ *Bridges ❱ Inspection ❱ Schedule.* Review and adjust the inspection types required for a structure if needed. (Example: if Underwater was used in BrM6, but Wader Underwater and SCUBA Underwater will now be used, this is the time to make the distinction.)
- ☐ Adjust inspection frequencies if needed. (Example: based on the new policy, this culvert with an general condition rating of 8 can now be inspected using frequency method 2, and as such can be skipped this inspection cycle.)



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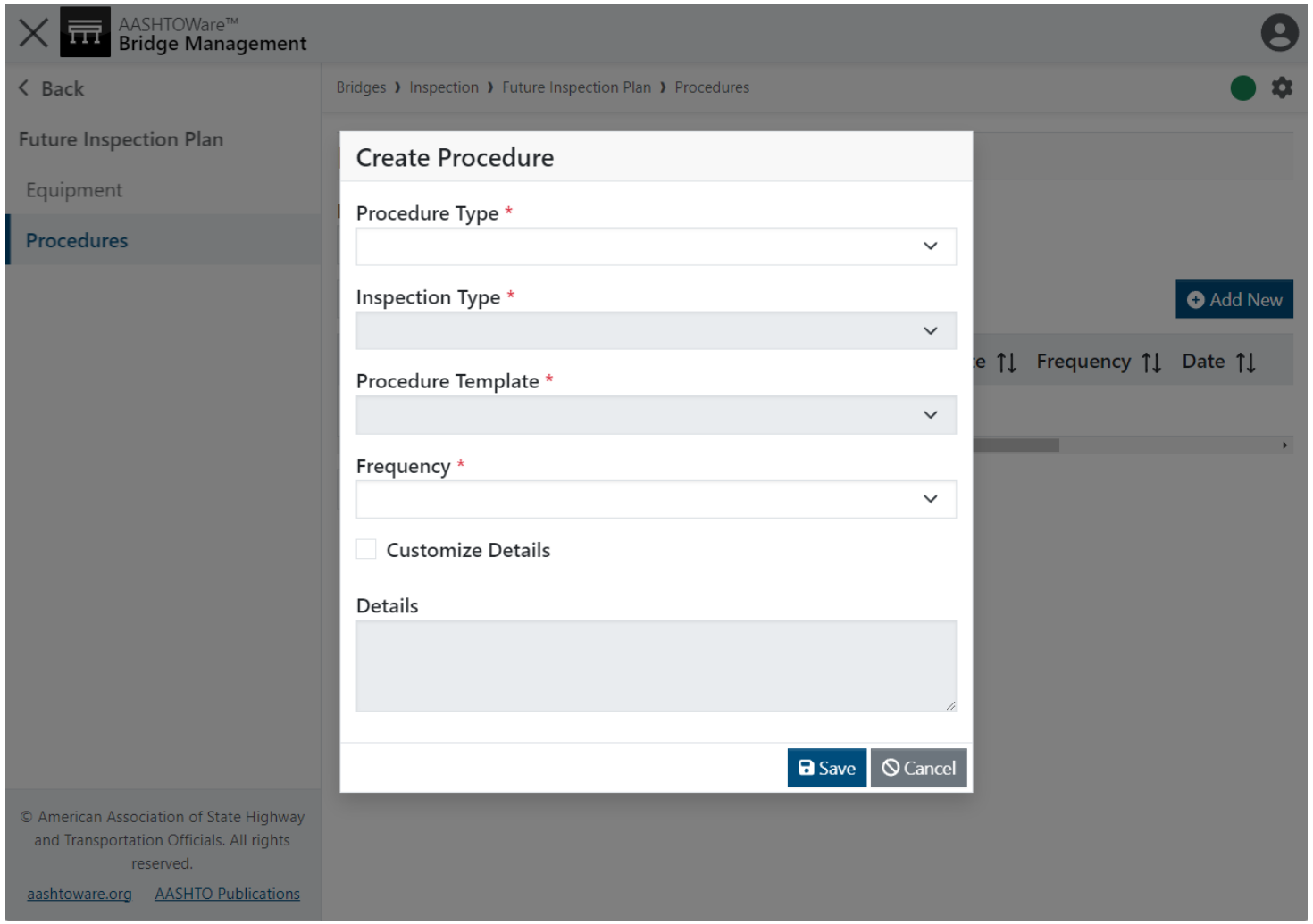
- *Bridges ❱ Inspection ❱ Future Inspection Plan ❱ Equipment.* Review and adjust the equipment needed for the inspection types. (Example: In the past, a UBIT was used for inspection of this structure. Is the UBIT needed on all inspections? Maybe it is not for the underwater inspection of this structure.
- *Bridges ❱ Inspection ❱ Future Inspection Plan ❱ Procedures.* Review and adjust the procedures as needed for the structures. (Example: because this structure is posted, a template procedure to take photos of both load posting signs is required. Due to damage noted last time, a custom one-off procedure is added asking for a photo of the north abutment east corner.)



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Inspection Assignment

Optional

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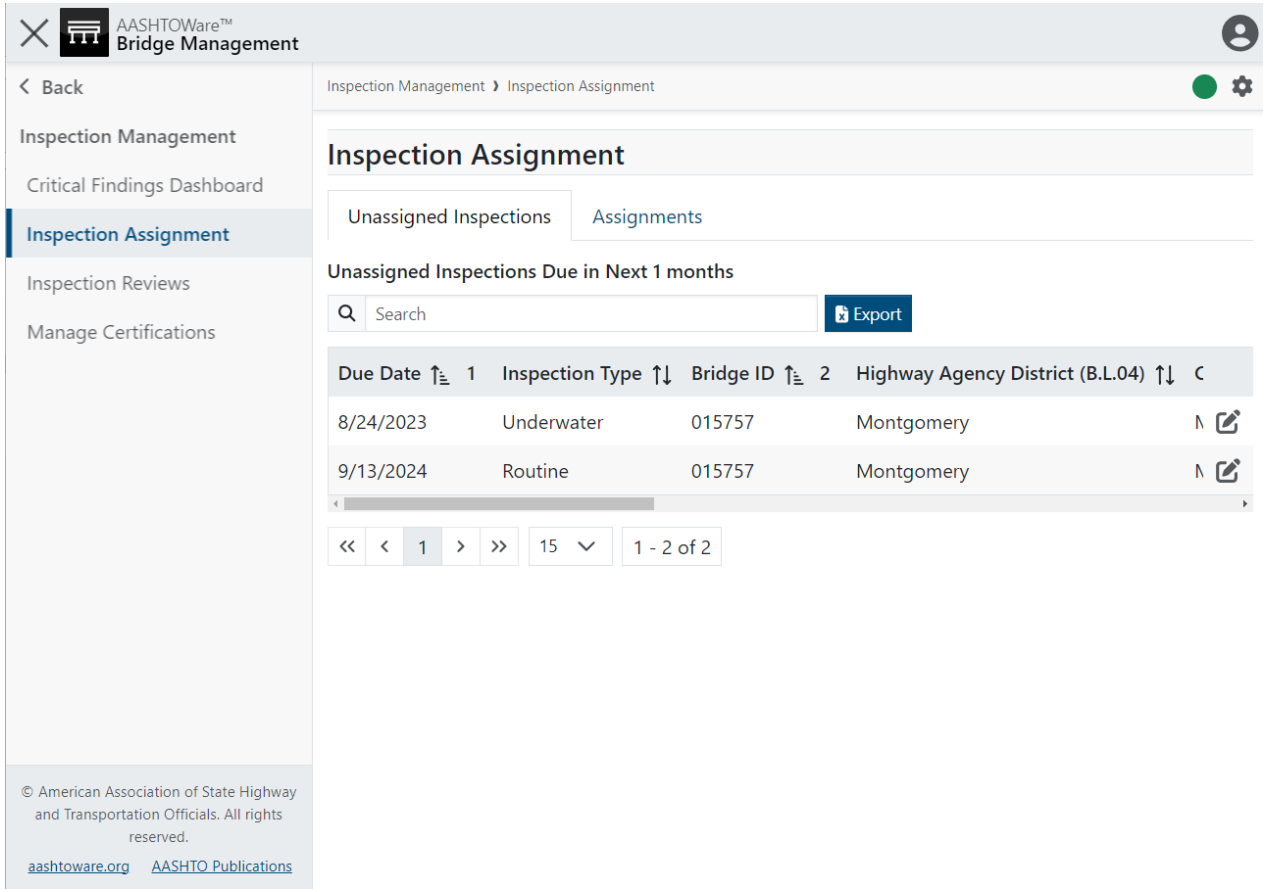
If your agency is going to use the inspection assignment module, now is the time to start creating inspection assignments.

- *Settings ❱ General Configuration ❱ Inspection ❱ Inspection Types*. Review which inspection types will be assigned through the Inspection Assignment Module. (Example: Due to their ad-hoc nature, Damage and Initial inspections will not be assigned. Show in Insp. Assign Module will be set to false. MayDOT has decided that scour monitoring will not be assigned in the module either. The others are set to true. When a user goes to *Bridges ❱ Inspection ❱ Inspection List*, only the ad-hoc inspection types will appear. The other types will be under *Bridges ❱ Inspection ❱ My Assignments* if it is assigned to my groups.)
- Settings ❱ *General Configuration ❱ Options.* Adjust the setting for Unassigned Inspection Upcoming Months to 1 month. This will limit the warnings of unperformed inspections to just the inspections due next month.
- *Inspection Management ❱ Inspection Assignment*. Create the inspection assignments for this upcoming month.
- Settings ❱ *General Configuration ❱ Options.* Adjust the setting for Unassigned Inspection Upcoming Months to 2 months. Then return to the inspection assignment page to create the inspection assignments for the second month and repeat the process until you arrive at the horizon your agency will consider a steady state. (Example: some agencies plan 3 months out. Others plan 12 months ahead. Leave the setting at the horizon your agency works with.)



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Begin Inspection

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Presentations

2023 User Group Meeting

The 2023 User Group Meeting, hosted by the Idaho Transportation Department, was held in September 2023. All presentations are available by clicking the button below.

2023 Presentations

Past User Group Meetings

- 2022 User Group Meeting
- 2021 User Group Meeting
- 2020 User Group Meeting
- 2019 User Group Meeting
- 2018 User Group Meeting
- 2017 User Group Meeting
- 2016 User Group Meeting
- 2015 User Group Meeting
- 2014 User Group Meeting
- 2013 User Group Meeting

AASHTO 555 12th St, NW, Suite 1000, Washington, DC 20004
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All presentations will be available at aashtowarebridge.com

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CONTACT

ZACHARY BOYLE
zac.boyle@mayvue.com
Text | Voicemail | (801) 450-9716

MAYVUE

BrM@mayvue.com
1-877-462-9883

Jira Service Desk

http://support.mayvue.com

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