AASHTOWare BrDR 7.5.0

Feature Tutorial

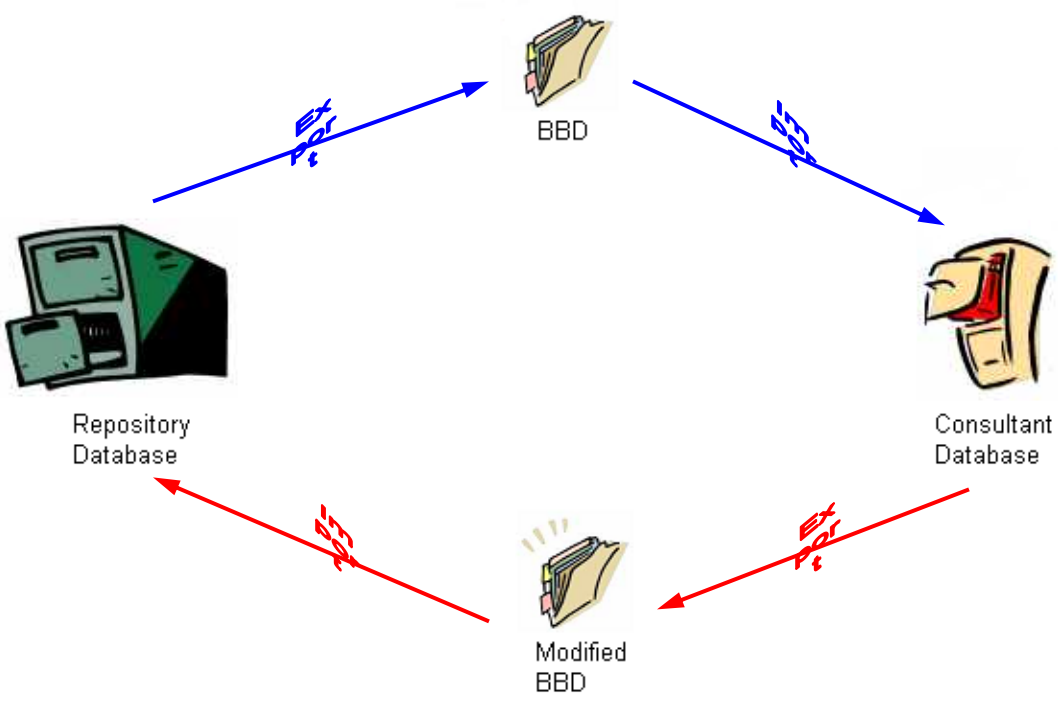
Bridge Exchange Feature Example

Bridge Exchange Feature Example

Topics Covered

- Overview of Bridge Exchange feature.
- Export a bridge from the repository database.
- Import the bridge to the consultant database.
- Export the bridge from the consultant database.
- Import the bridge back to the repository database.

Overview of Bridge Exchange feature



The **Bridge Exchange** feature provides the capability of exchanging bridges between repository and consultant databases while maintaining a history of events and analysis results. A repository database is the database where an agency maintains bridge descriptions. The agency can export a bridge using the **Bridge Exchange** feature and gives the resulting bridge (XML) file to a consultant. Exporting a bridge using the **Bridge Exchange** feature causes the bridge to be checked out of the repository database. The bridge description cannot be changed in the repository database while the bridge is checked out. The consultant can then import the XML file into their database, called the consultant database, using the **Bridge Exchange** feature and modify the bridge description. Bridge descriptions that are imported into consultant databases using the **Bridge Exchange** feature have security on them to prevent consultants from modifying existing data in the bridge description. Consultants can only add new components, such as member alternatives, superstructure definitions, or materials, to the bridge description.

After the consultant has modified the bridge description, they can export the bridge using the **Bridge Exchange** feature and send the resulting XML file back to the agency. The agency can then import the XML file back into the repository database using the **Bridge Exchange** feature and review the new data added by the consultant. If the new components pass the quality assurance review by the agency, the agency can then check out the bridge from the repository database, mark the new superstructure definitions and/or member alternatives as **Existing** so they will be used for future ratings instead of the original descriptions and then check the bridge back into the repository database.

The **Bridge Exchange** feature has the following additional restrictions.

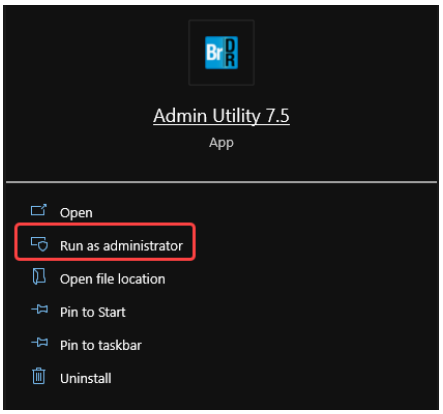
- Only one bridge can be exported or imported at a time.
- The repository database must have **checkin/checkout** enabled.
- Only the XML files exported from a repository database can be imported back into the same database. For example, if bridge **A** was exported from repository database **1**, this bridge cannot be imported into repository database **2**. It can only be imported back into database **1**.
- Timestamps are checked when importing back into the repository database to prevent importing a bridge with a timestamp earlier than the timestamp when the bridge was originally exported from the repository database.
- Access Privileges are provided to permit or restrict users from using the Bridge Exchange feature.
- The **Import/Export** feature of BrDR still operates as detailed in **Import/Export BrDR Data**. Using the **Import** or **Export** functions will import or export bridge descriptions without the security features available in the **Bridge Exchange** feature.

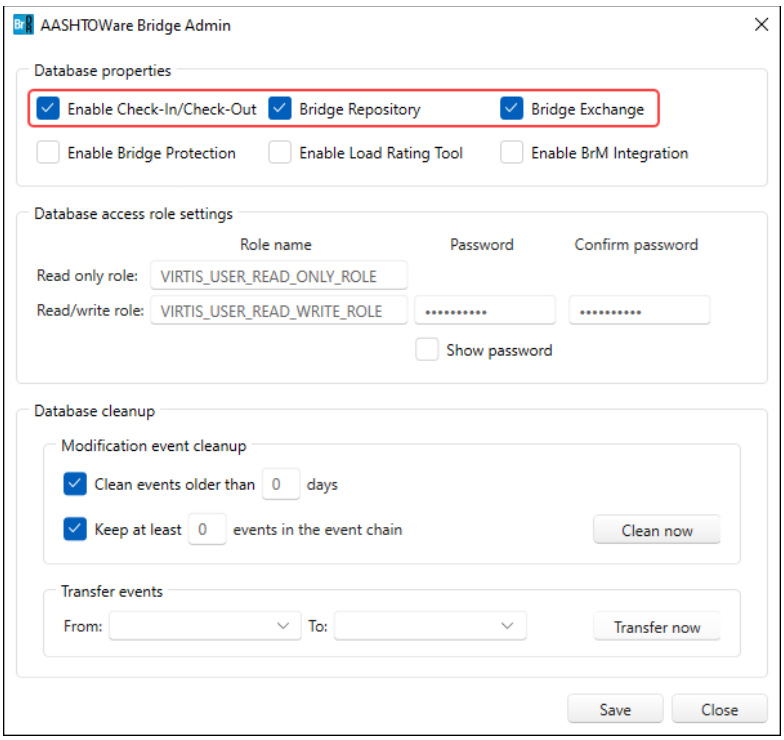
Export a bridge from the repository database.

In this example, **TrainingBridge3** will be exported from the repository database and imported into the consultant database. A new member alternative will be created for adding section loss data. Then, this bridge will be exported from the consultant database and imported back into the repository database.

Before exporting **TrainingBridge3** from **BrDR**, the repository database needs to be checked for the required properties for the Bridge Exchange feature. To do that, start **Admin Utility** as the owner of the database and make sure the database has **Check-In/Check-Out** and **Bridge Repository** enabled. Close **Admin Utility** after the properties are confirmed as shown below.

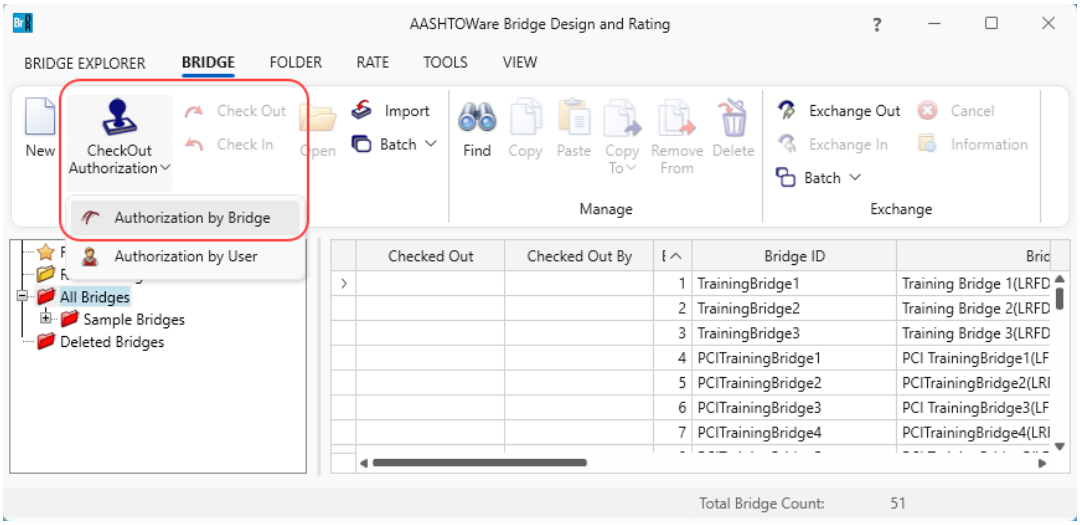
(Note: When Bridge Repository is enabled, Bridge Exchange is automatically enabled)



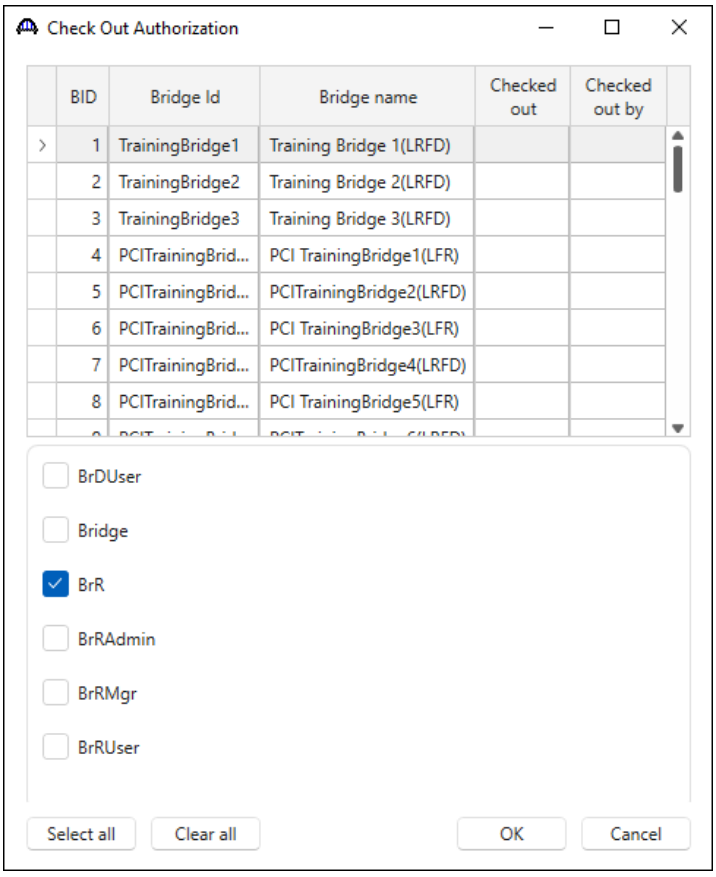


Click **Save** to save the selections in this window and click **Close** to close the application.

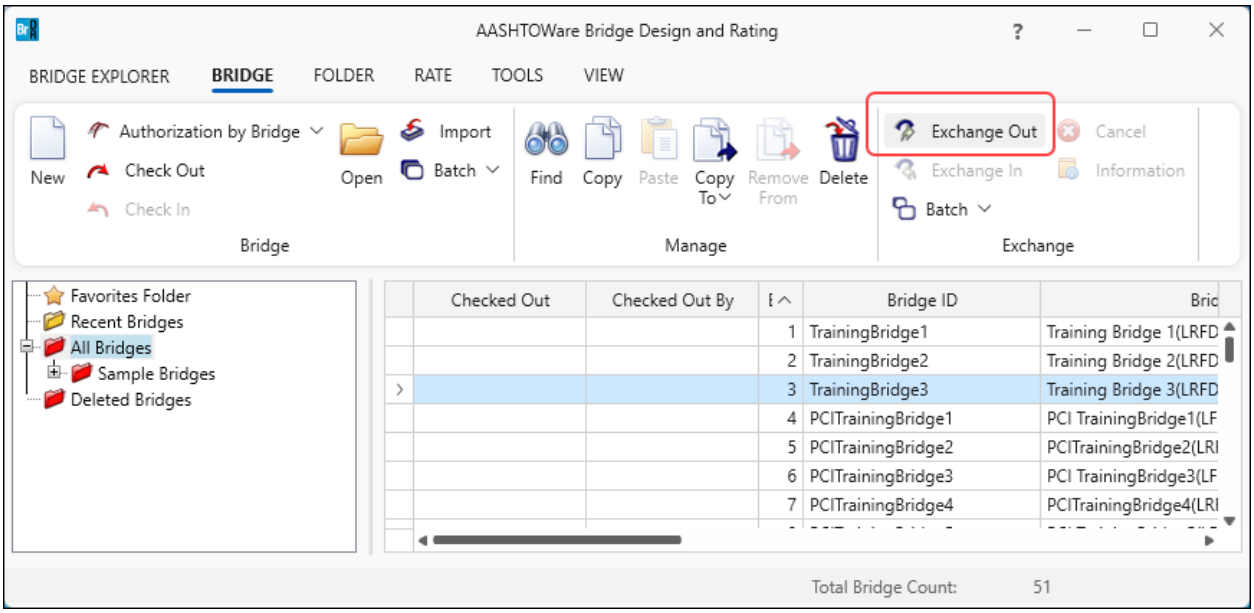
Start **BrDR** and log into the repository database as **brr**. **brr** belongs to a user group that has read, write, create, and delete access privileges of **Bridge Exchange** feature. Read, write, and create access privileges are needed to perform a Bridge Exchange export or import. Delete access privilege is needed to cancel a Bridge Exchange export. Select all the bridges in the **Bridge Explorer** and from the drop down menu of the **CheckOut Authorization** in the **Bridge** ribbon, click on **Authorization by Bridge** option as shown below.



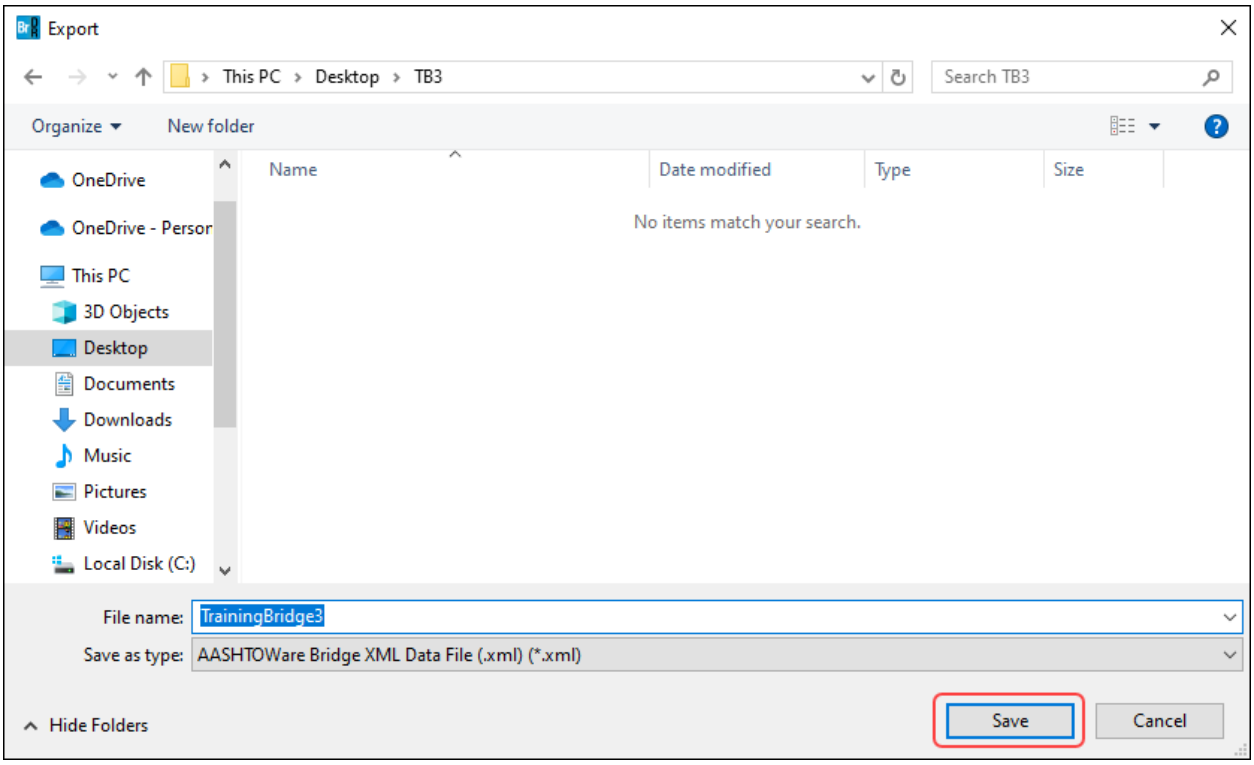
Check **BrR** and click **OK**.



Select **TrainingBridge3** in the **Bridge Explorer** for export. Click the **Exchange Out** button from the **Exchange** group of the ribbon to open the **Export** window as shown below.

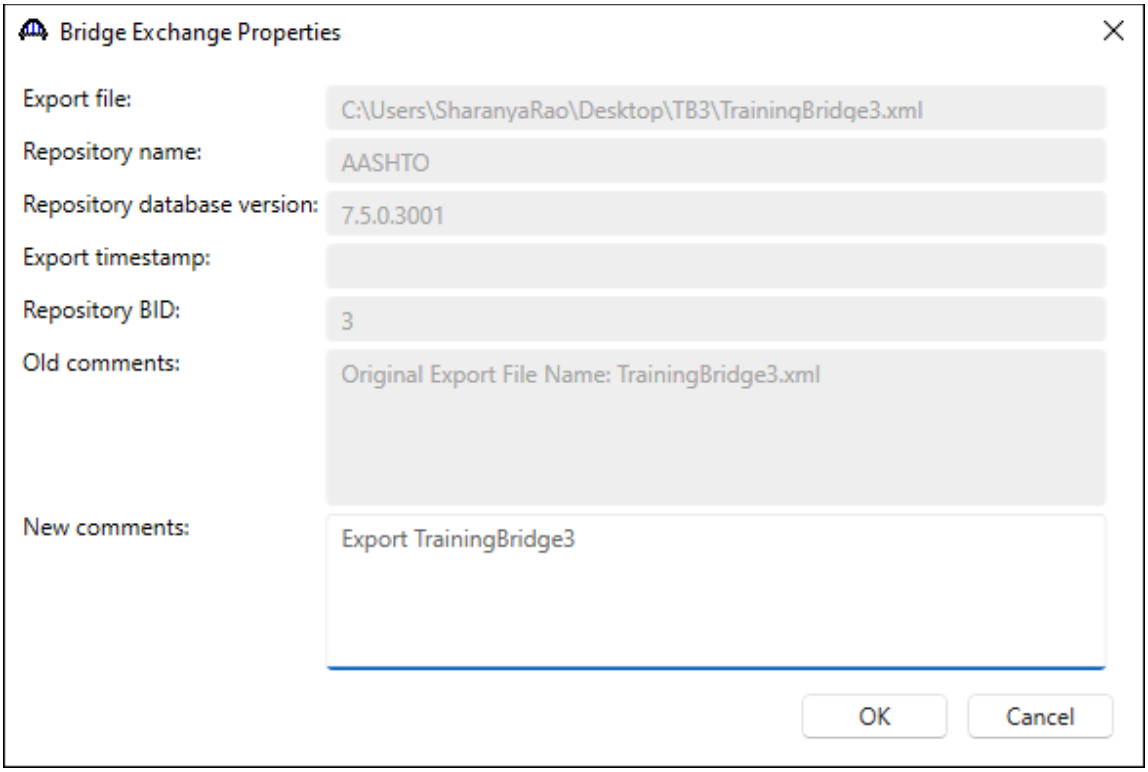


Enter **TrainingBridge3** as the **File name** of this xml file.



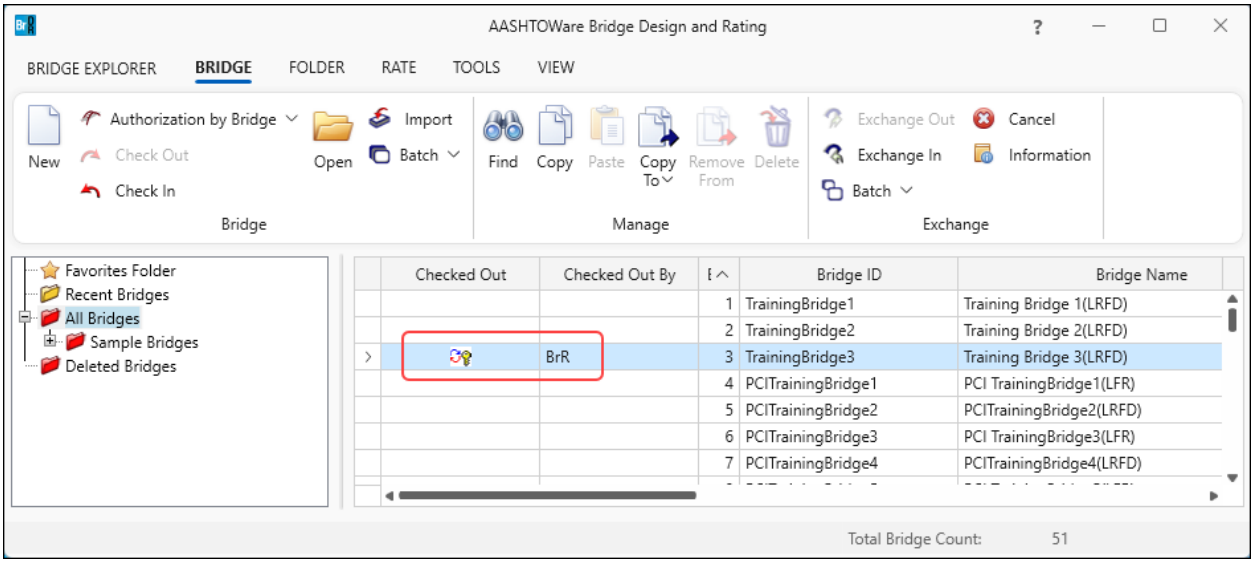
Click the **Save** button to open the **Bridge Exchange Properties** window with the information about the export as shown below.

Enter **Export TrainingBridge3** as the **New Comments**.



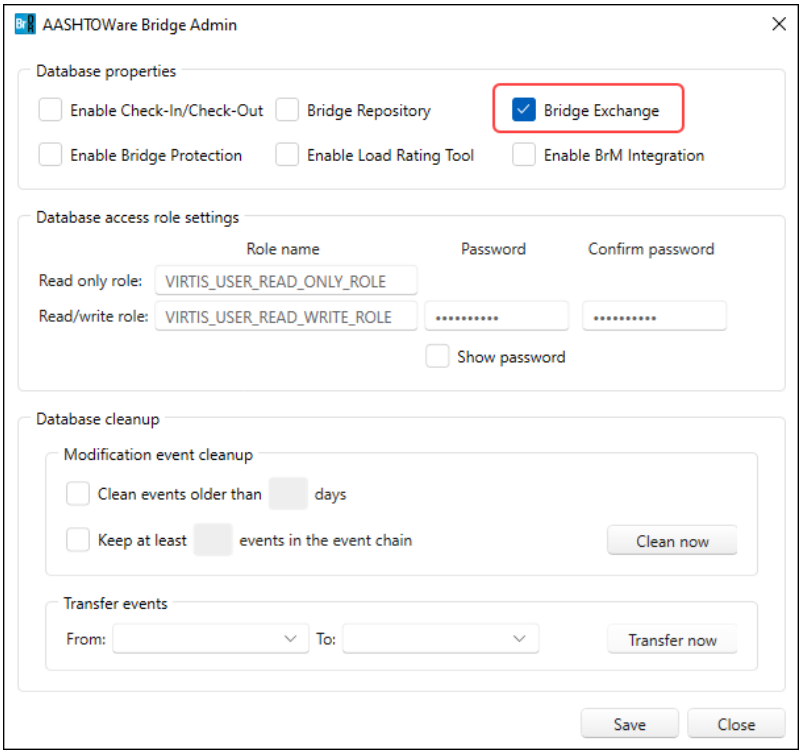
Click **OK** to complete the export.

The **Bridge Explorer** will be updated to reflect **TrainingBridge3** has been exported for exchange by **BrR**.

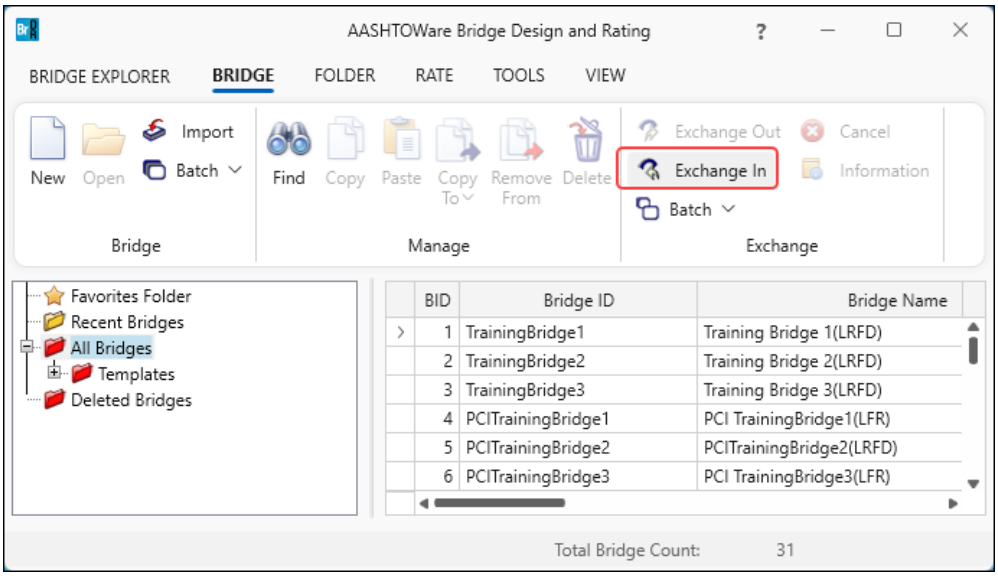


Import the bridge to the consultant database

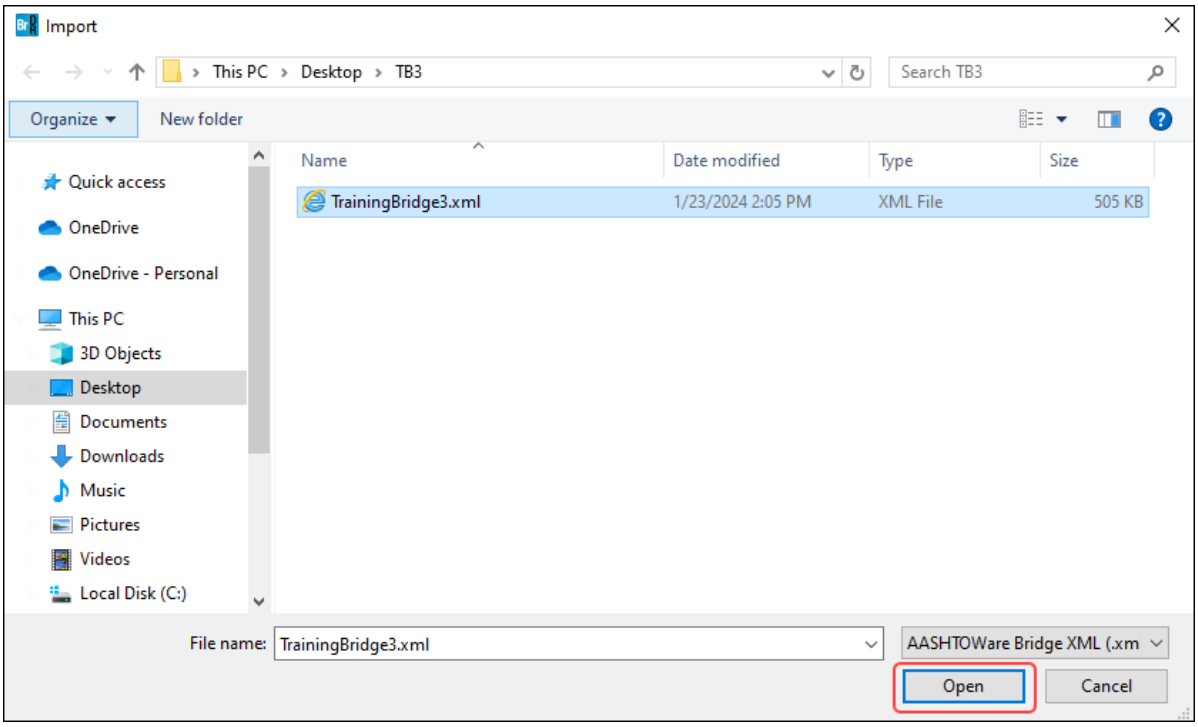
Before importing **TrainingBridge3** to **BrDR** consultant database, the consultant database needs to be checked for the required properties for the Bridge Exchange feature. To do that, start **Admin Utility** as the owner of the consultant database and make sure the database has **Bridge Exchange** enabled. Close the **Admin Utility** after the properties are confirmed as shown below.



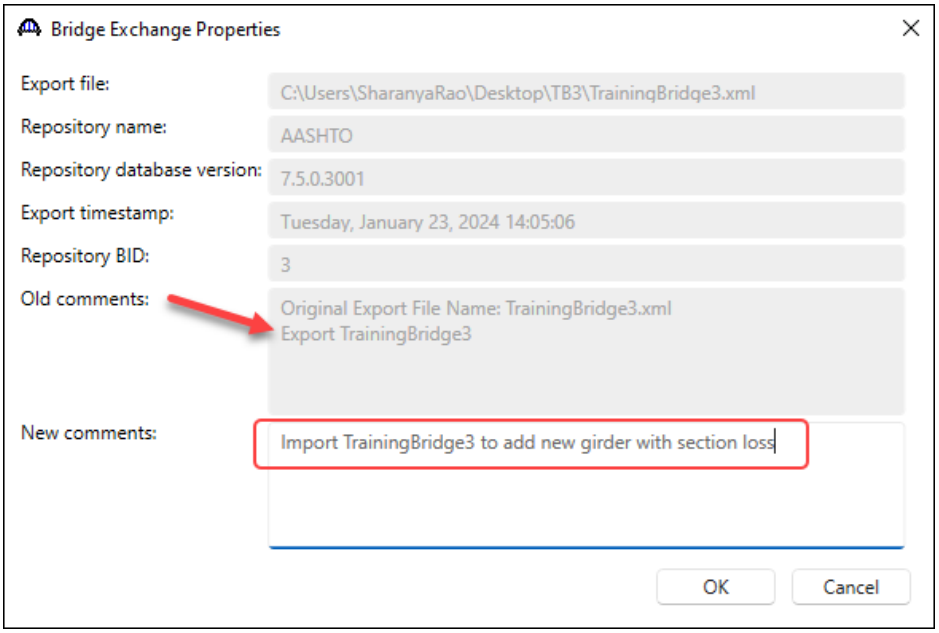
Start **BrDR** and log into the consultant database. Click on the **Exchange In** button from the **Exchange** group of the **BRIDGE** ribbon .



An **Import** file window will open. Select the **TrainingBridge3.xml** exported in the previous step from the repository database, as the file to import.

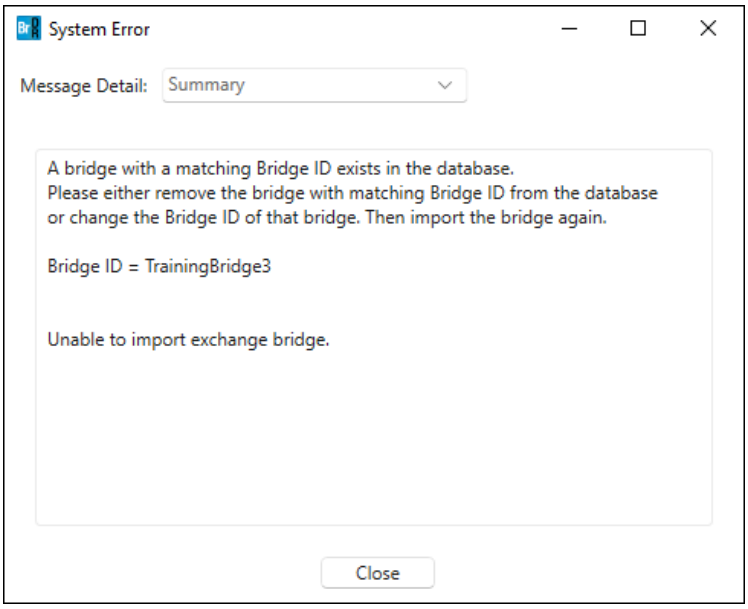


Click **Open** and the **Bridge Exchange Properties** window will open with the information of the import. All exchange comments are displayed in **Old Comments**. Enter **Import TrainingBridge3 to add new girder with section loss** as the **New comments**.

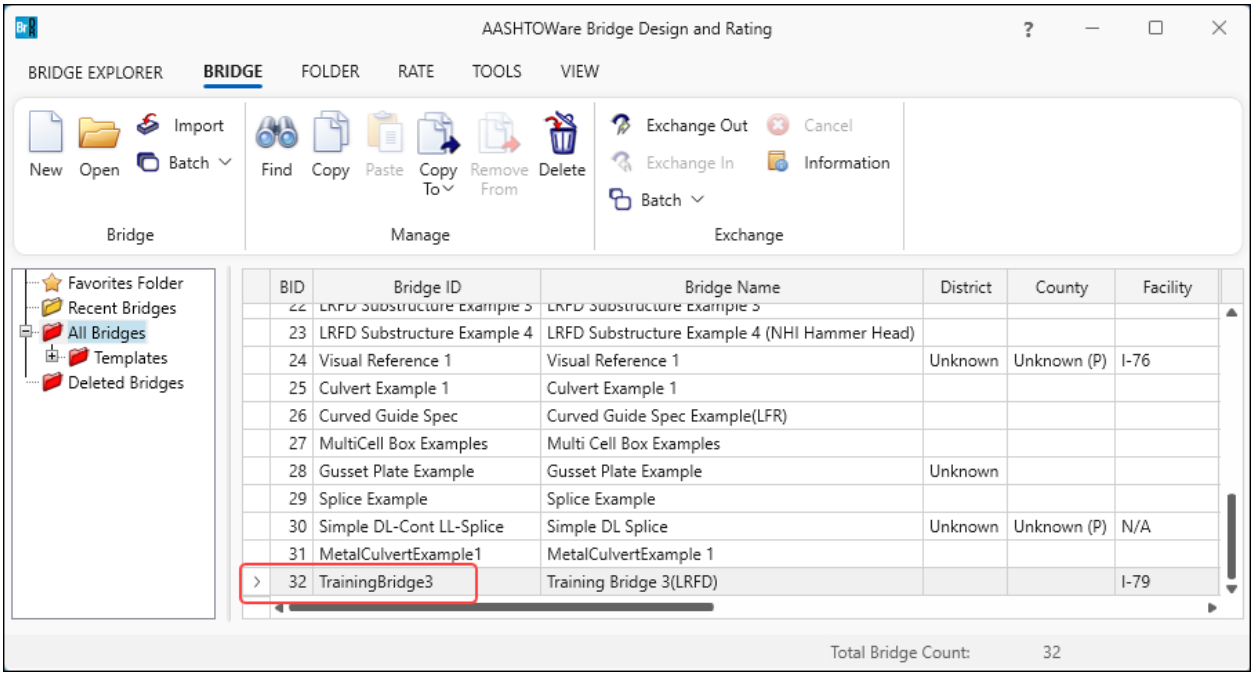


Click **OK** to complete the import.

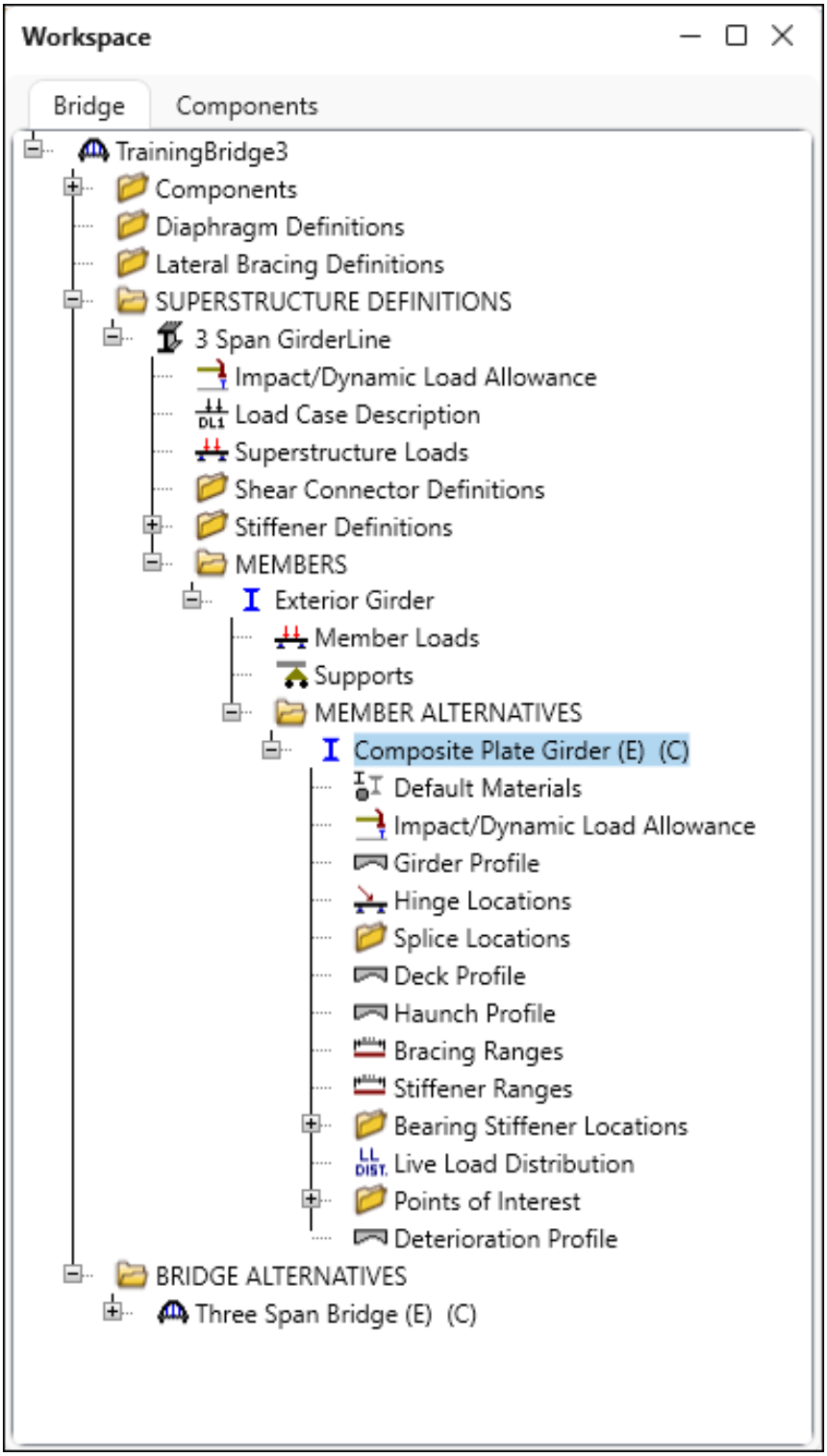
Note: If a bridge with the matching Bridge ID exists in the database, the following error message will appear. To import without error, make sure to delete/rename the bridge with same Bridge ID and then continue the process.



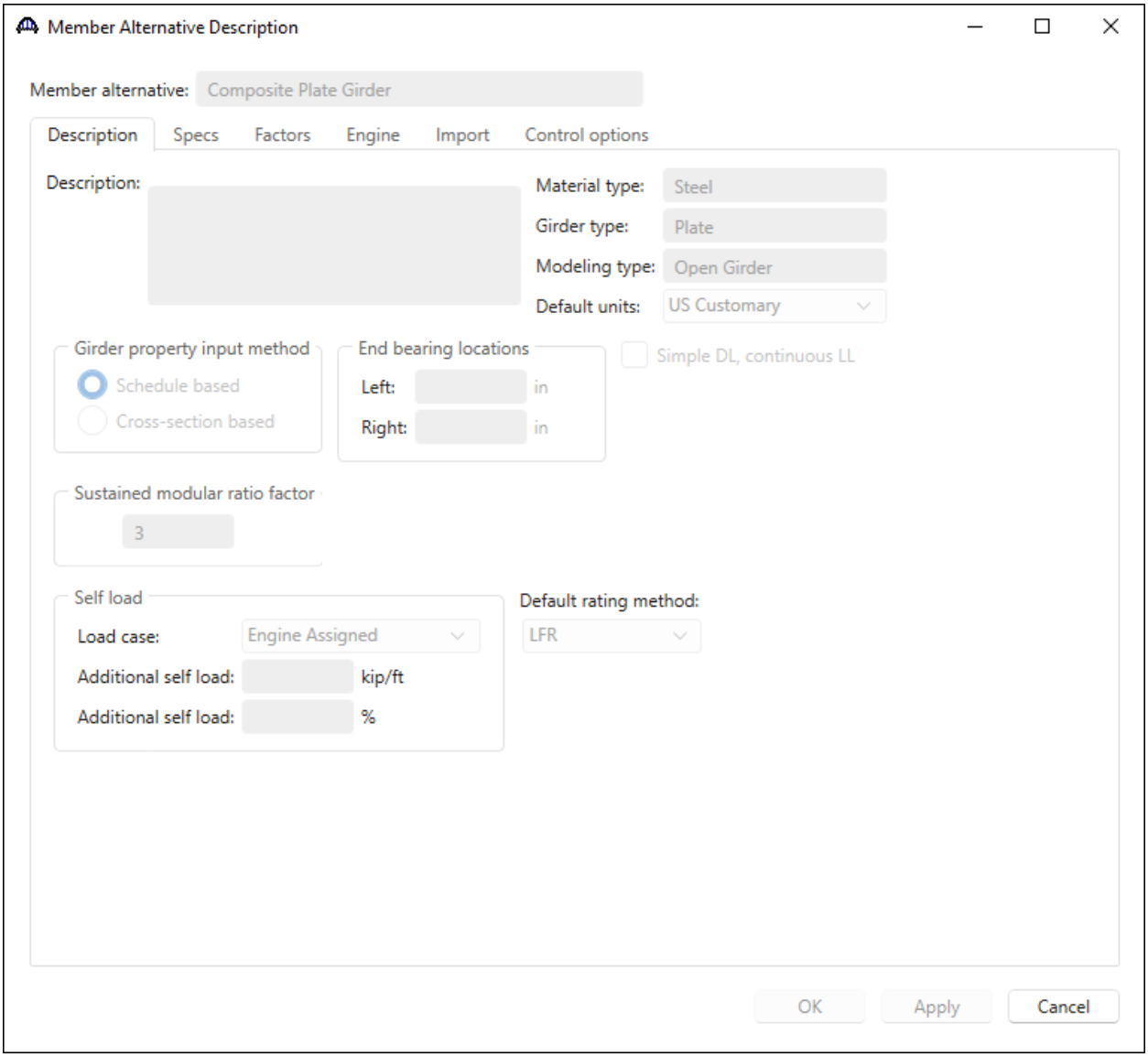
The Bridge Explorer will be updated with **TrainingBridge3** as shown below.



Double click **TrainingBridge3** to open the **Bridge Workspace**.

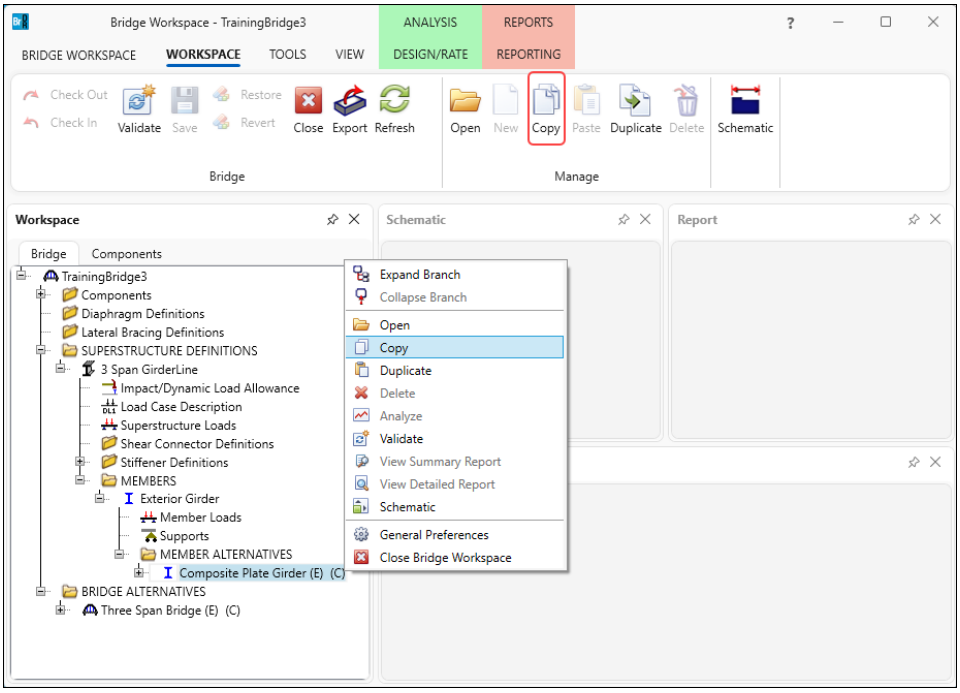


Double click on **Composite Plate Girder** folder to open the **Member Alternative Description** window. Since the bridge is imported into the consultant database using the **Bridge Exchange feature**, the window is read-only.

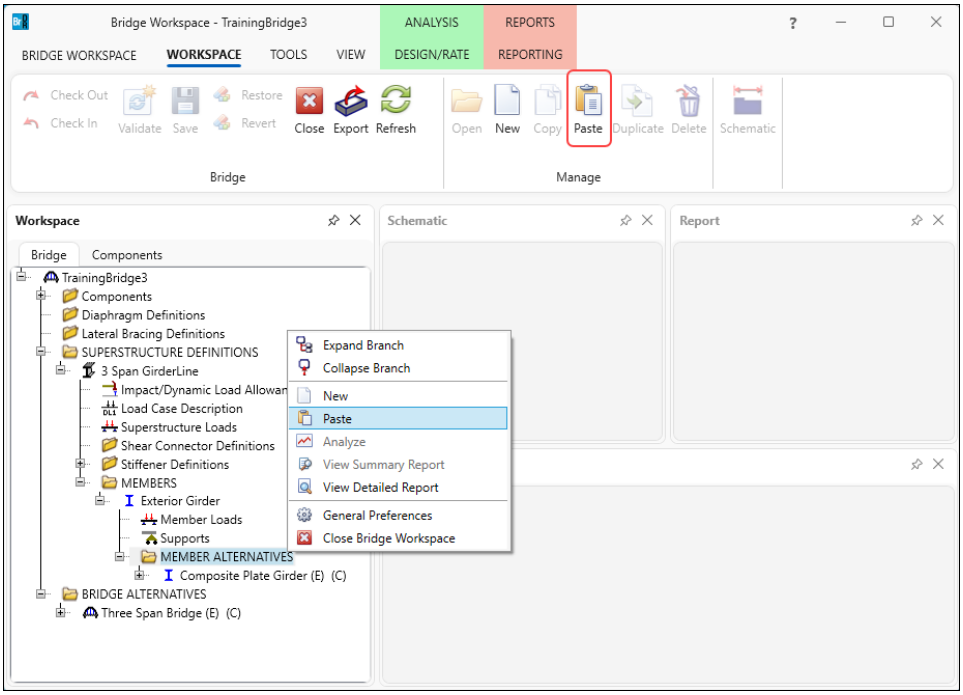


Make a copy of the **Composite Plate Girder** member alternative by following these steps.

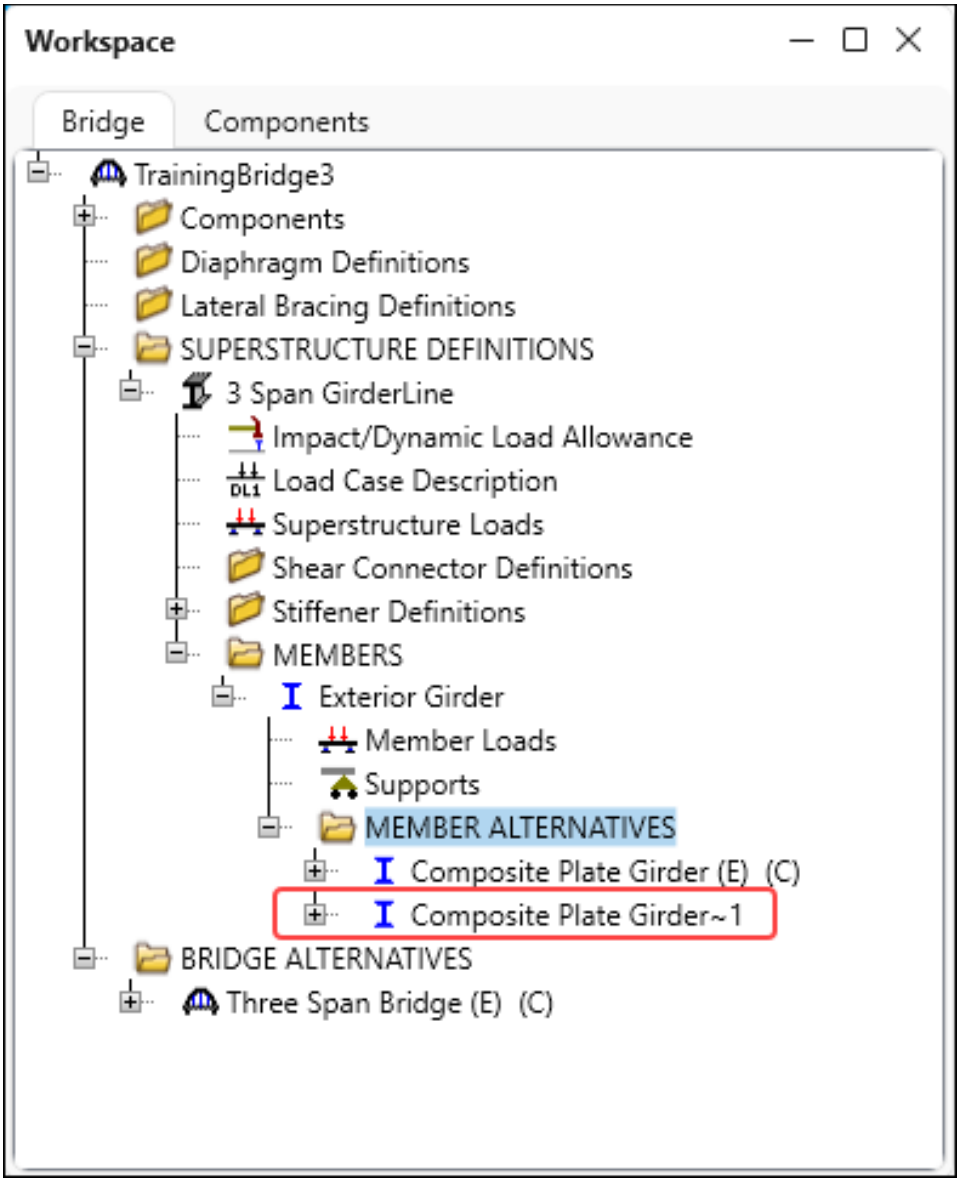
1. Select **Composite Plate Gider** and click on the **Copy** button from the **Manage** group of the **WORKSPACE** ribbon (or right click and select **Copy**).



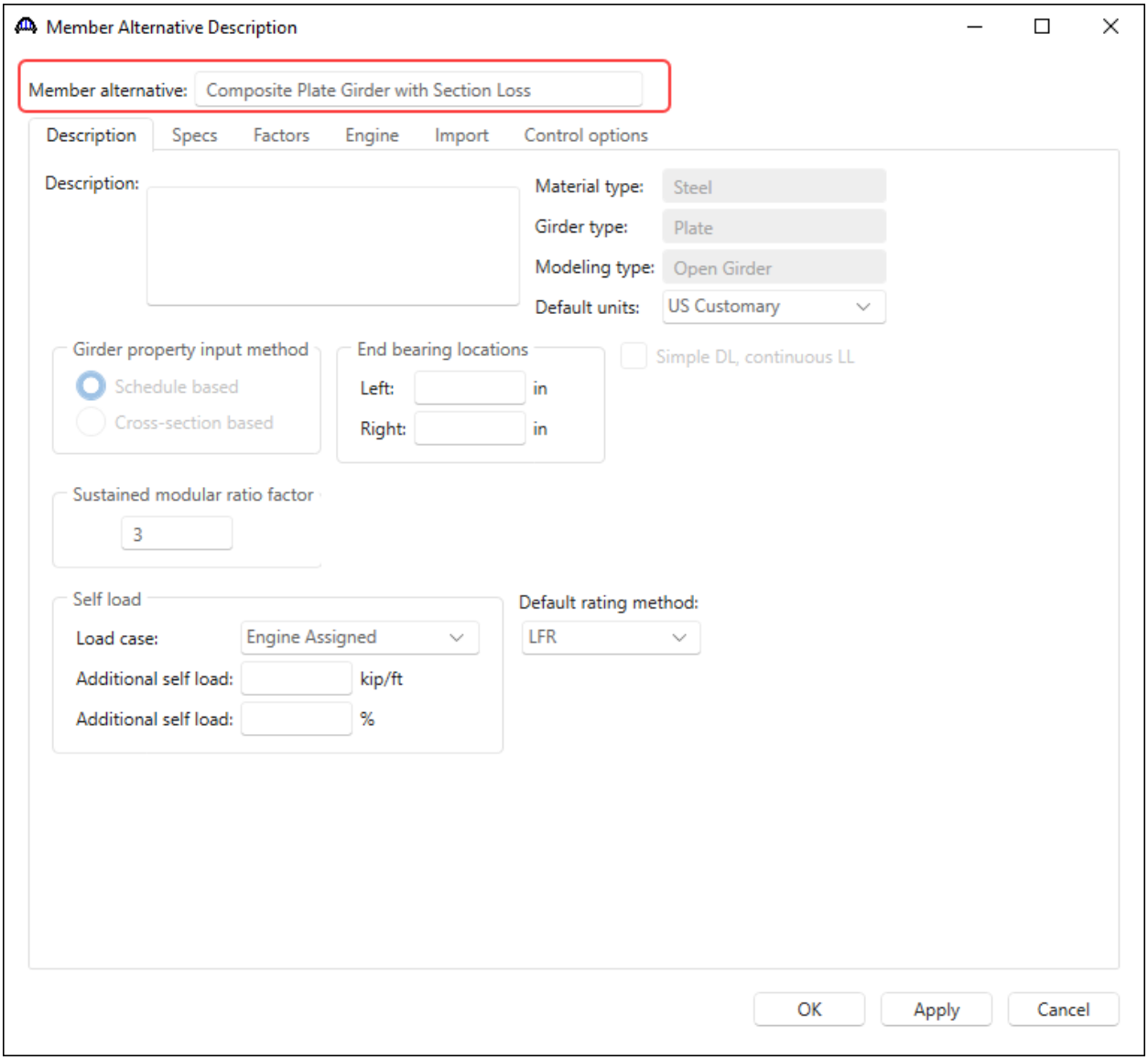
2. Select **MEMBER ALTERNATIVES** and click on the **Paste** button from the **Manage** group of the **WORKSPACE** ribbon (or right click and select **Paste**).



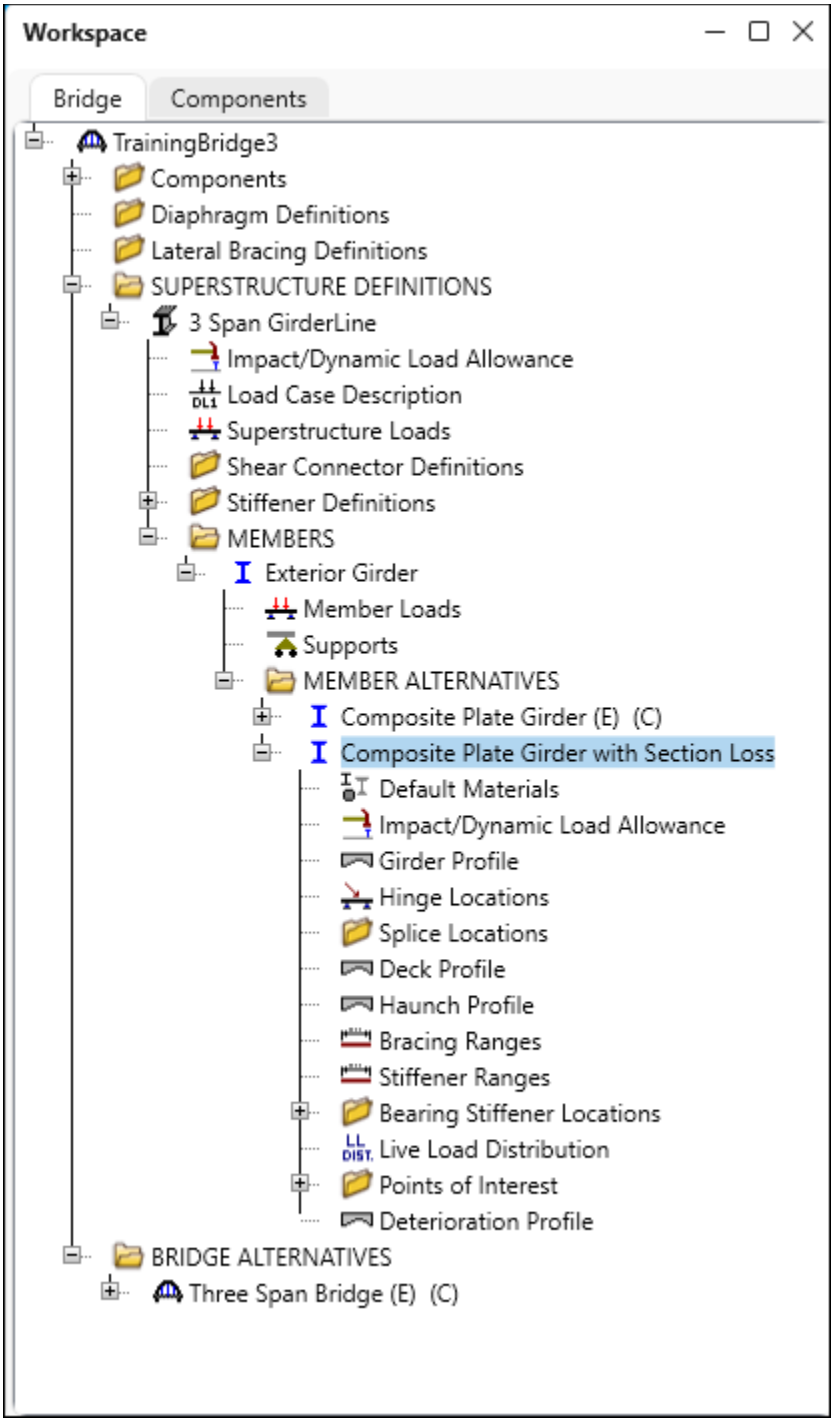
The **Bridge Workspace** tree will be updated with the new copy. Enter the deterioration in this copy.



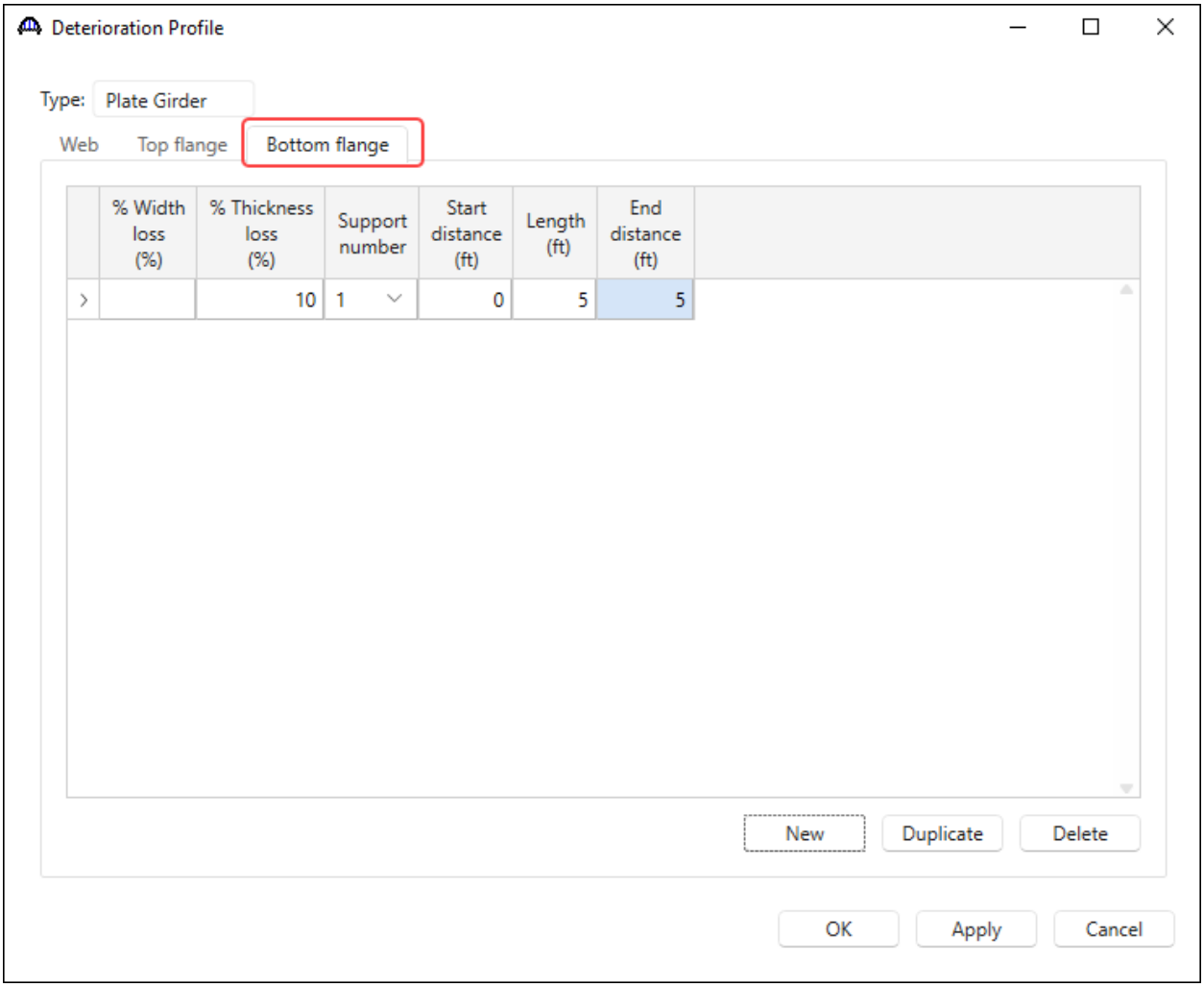
Double click on **Composite Plate Girder~1** to open the **Member Alternative Description** window. Since this member alternative is added after the bridge is imported into the consultant database, the data can be modified. Change the name of the member alternative to **Composite Plate Girder with Section Loss**. Click **OK** to close the window.



The resulting **Bridge Workspace** is shown below.

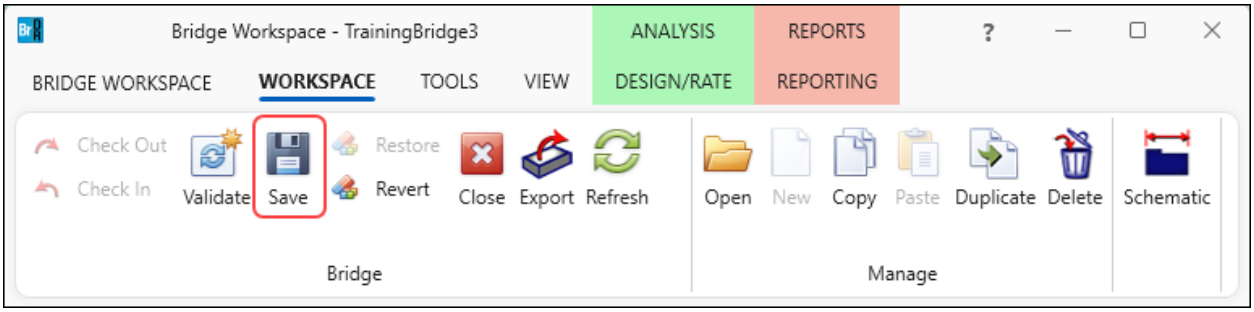


Define deterioration for the bottom flange by double clicking on **Deterioration Profile** node in the tree. Enter the following data on the **Bottom Flange** tab.



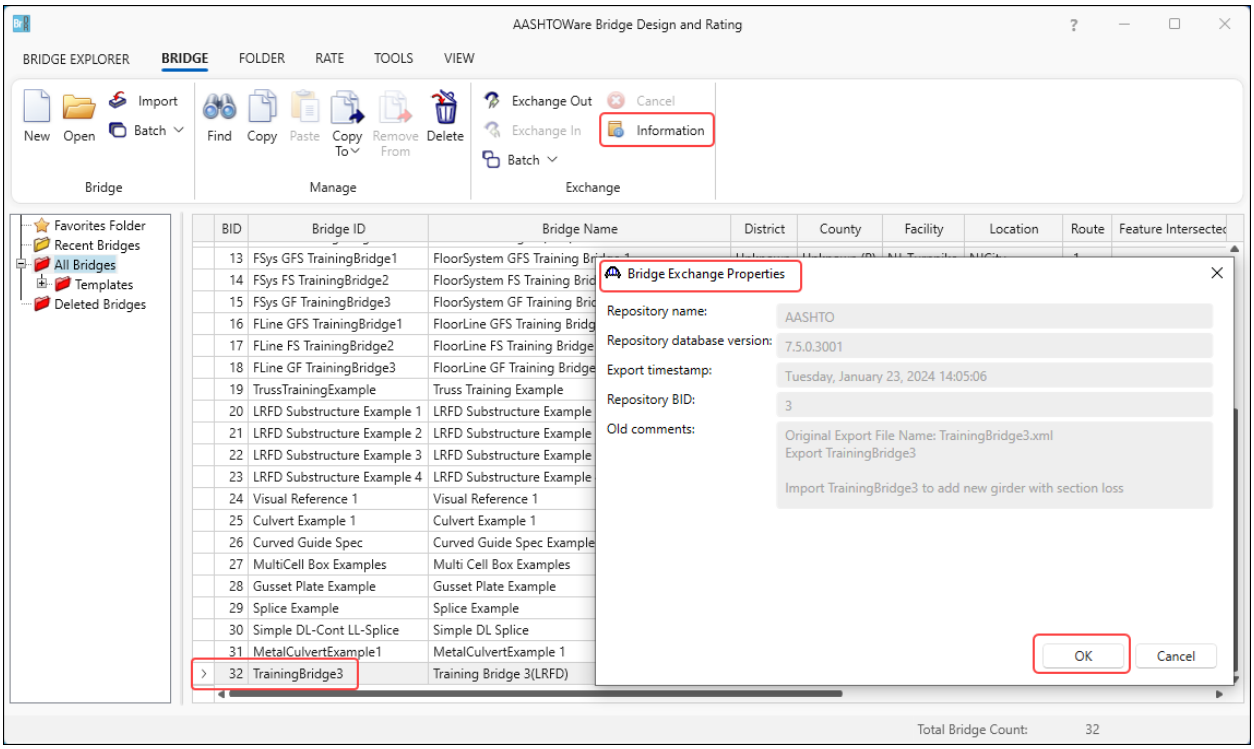
Click **OK** to apply the data and close the window.

Save the changes made to this bridge in the consultant database by clicking on the **Save** button from the **Bridge** group of the **WORKSPACE** ribbon.



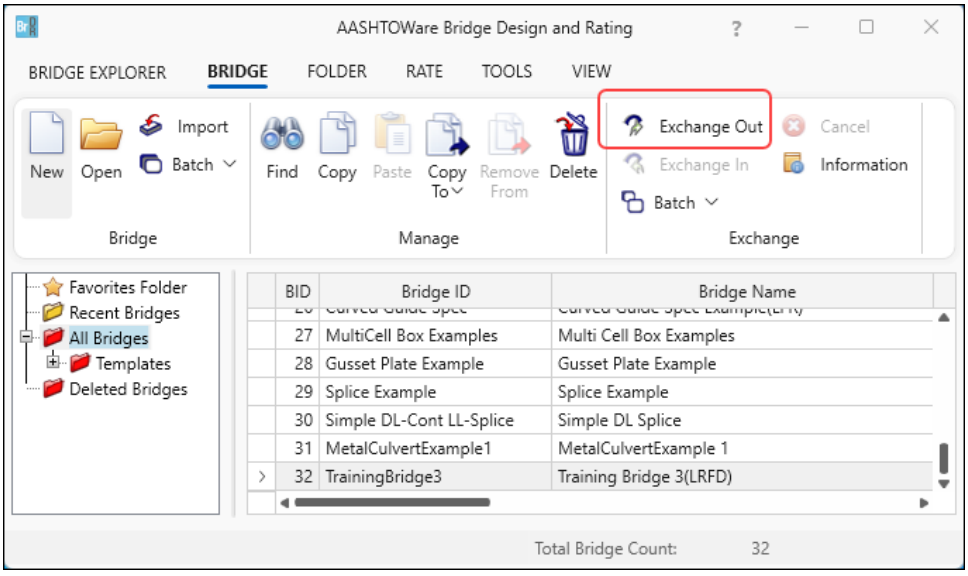
Export the bridge from the consultant database

With the **TrainingBridge3** selected in the **Bridge Explorer**, click on the **Information** button to review the **Bridge Exchange Properties**.

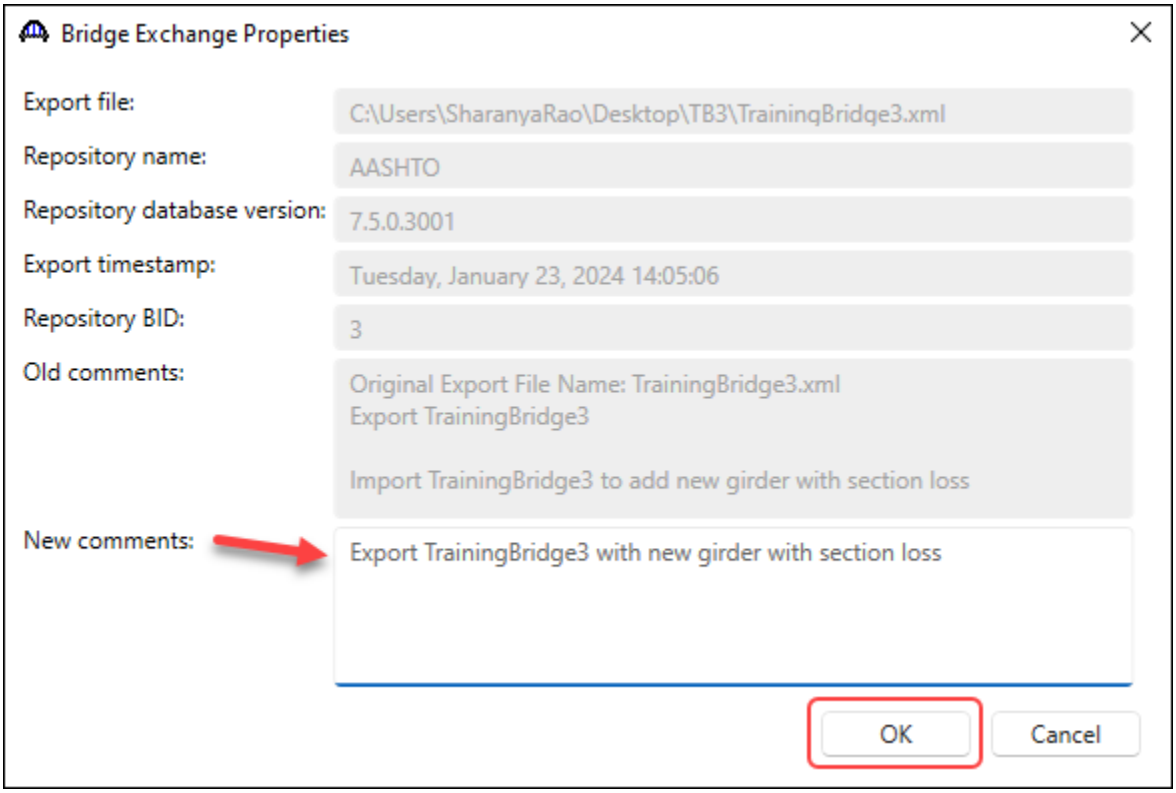


Click **OK** to close the window.

With **TrainingBridge3** selected, click on the **Exchange Out** button from the **Exchange** group of the **BRIDGE** ribbon.

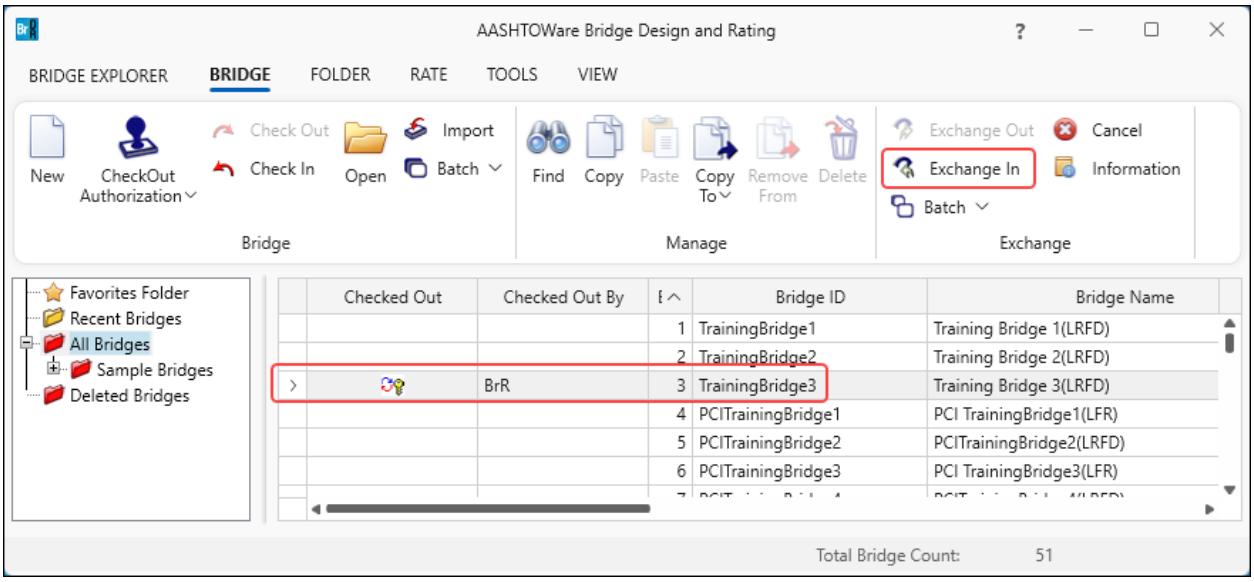


An **Export** file window will open. Enter **TrainingBridge3** as the name of the XML file. Click **Save** and the **Bridge Exchange Properties** window will open for **New comments**. Enter **Export TrainingBridge3 with new girder with section loss**. Click **OK** to complete the export.

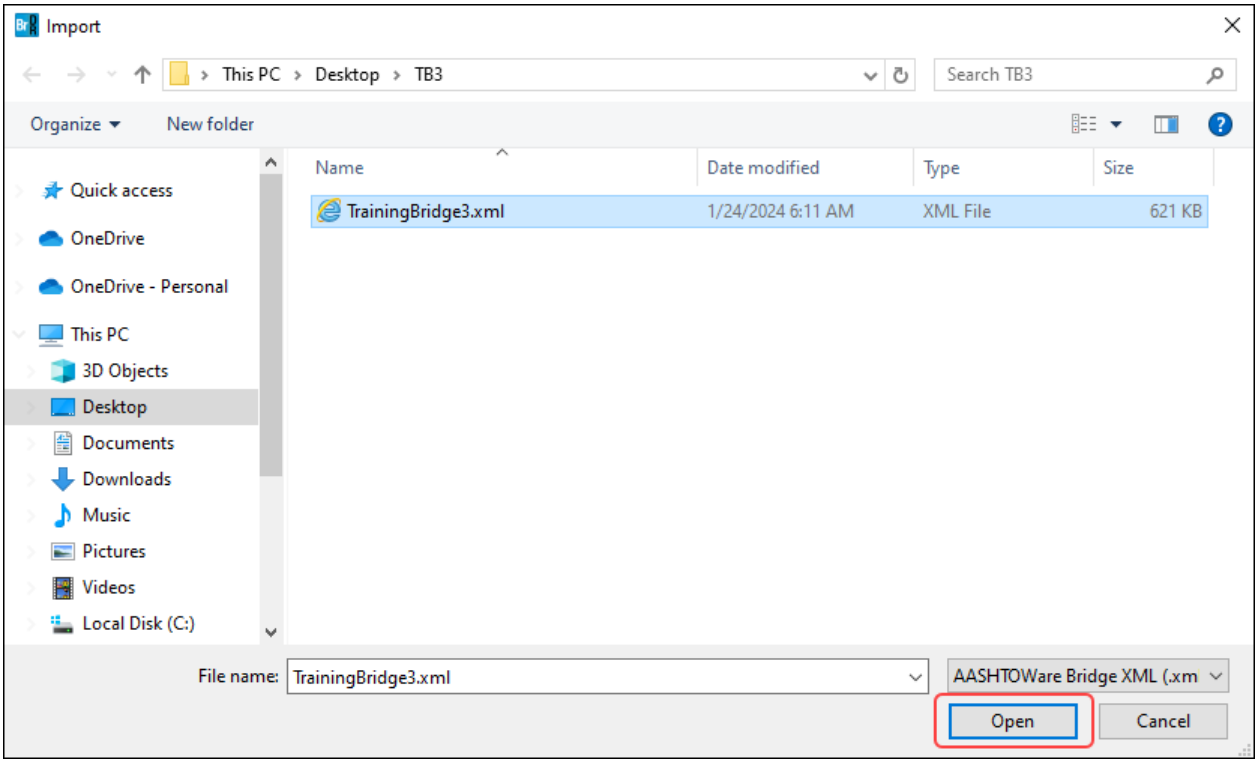


Import the bridge back to the repository database

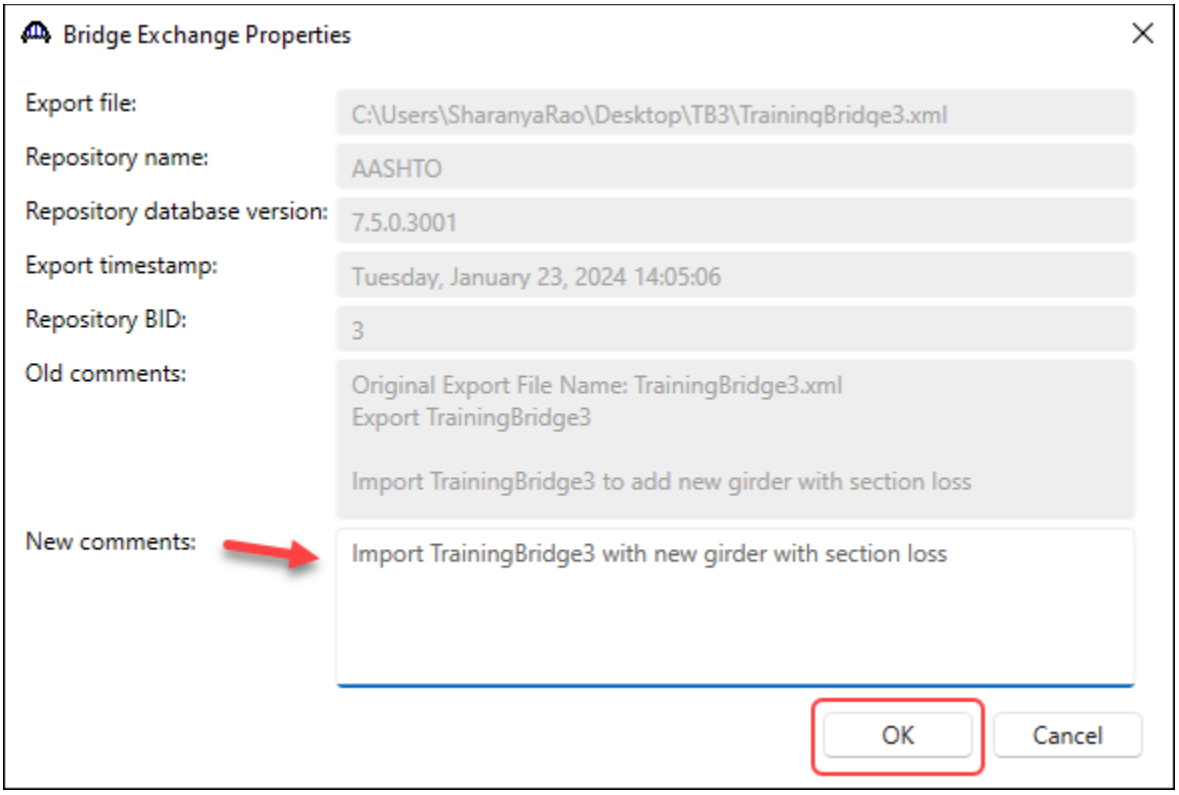
Start **BrDR** and log into the repository database. With **TrainingBridge3** selected in the **Bridge Explorer**, click on the **Exchange In** button from the **Exchange** group of the **BRIDGE** ribbon.



An **Import** file window will open. Select **TrainingBridge3.xml** as the file to import. Click **Open** and the **Bridge Exchange Properties** window will open with the information of the import.



Enter **Import TrainingBridge3 with new girder with section loss** as the **New comments**.



Click **OK** to complete the import.

The **Bridge Explorer** will be updated to reflect **TrainingBridge3** has been imported back into the repository database.