# **AASHTOWare Project**

# Project Cost Estimate Creation User Guide

This guide provides the steps to properly create a project and cost estimate directly in AASHTOWare project. Additional information regarding the development of a project and cost estimate using the Project Enty Template or Estimator® can be found on our website. Please follow the steps and instructions below:

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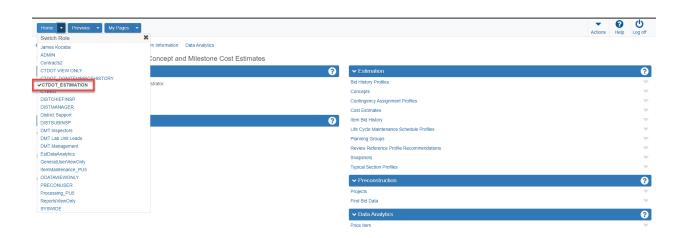
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# Log into AASHTOWare Project

- 1. Ensure that the proper url is selected: <a href="https://ctdot-pr-prod.infotechinc.com/Account/LogOn">https://ctdot-pr-prod.infotechinc.com/Account/LogOn</a>
- 2. Enter User name and password

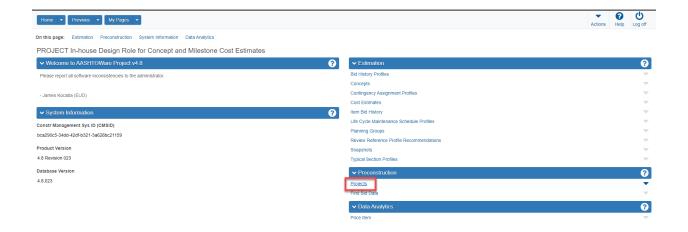


3. Select the role CT\_DOT Estimation

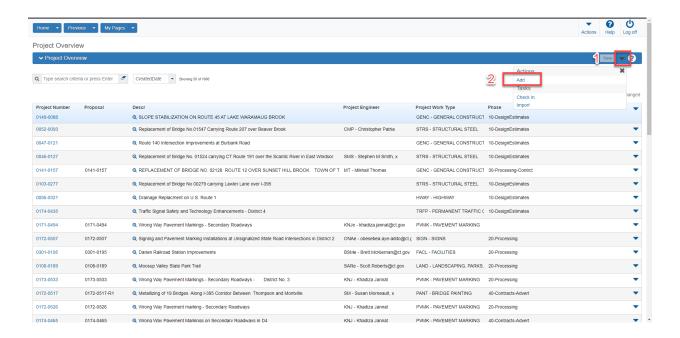


# Add New Project

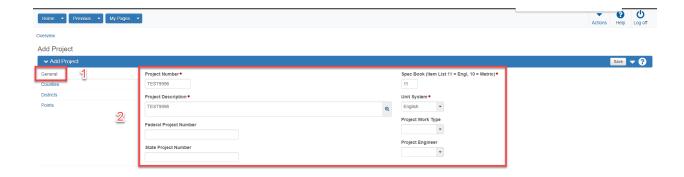
1. Select the Projects under the heading Preconstruction



- 2. Select the action arrow drop down arrow to the right of the Save button. (1)
- 3. Select "Add" from the Actions arrow drop down menu



- 4. Select General from the Add Project Screen (1)
- 5. Add data to all fields. Ensure that Spec Book 11 and English units are selected (2)
- 6. If a field is unknown it can be entered at a later date.



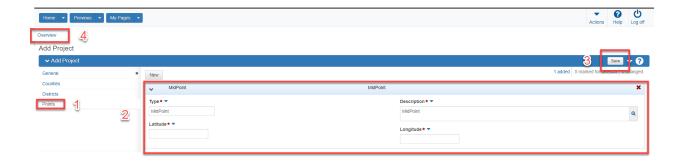
- 7. Select Counties (1)
- 8. Enter proper county, percent of work in county and select primary (2)
- 9. If another county is required select "New" and repeat the process. Ensure the proper county is selected a primary



- 10. Select District (1)
- 11. Enter proper District ID, description, and select primary (2)
- 12. If another District is required select "New" and repeat the process. Ensure the proper county is selected a primary

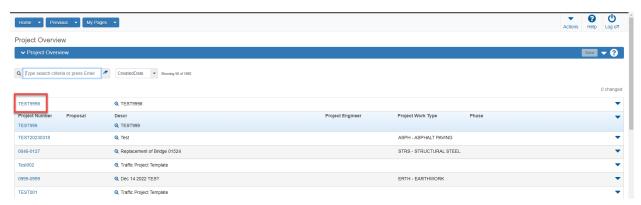


- 13. Select Points (1)
- 14. Ener "MidPoint" into the Type and Description fields (2)
- 15. Enter Latitude and Longitude for project MidPoint (2)
- 16. Select "Save" (3)
- 17. Select Overview

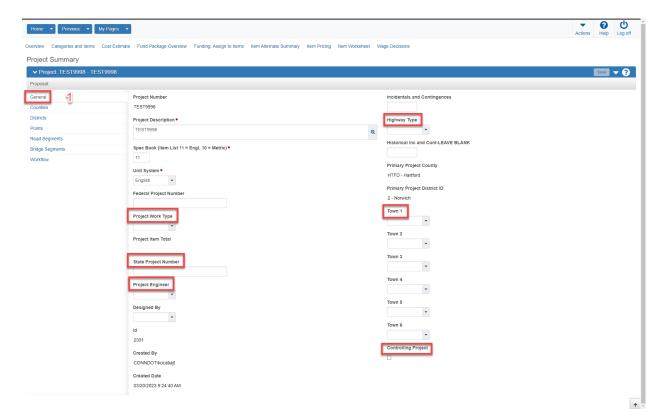


# **Update Project Summary Information**

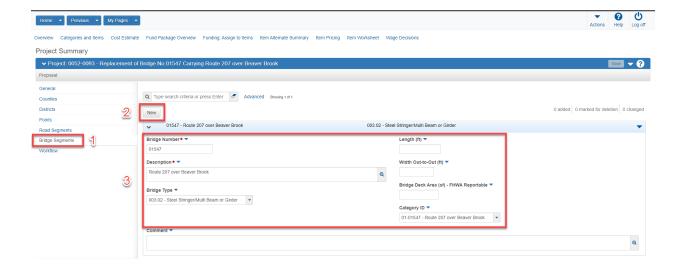
1. Select proper Project



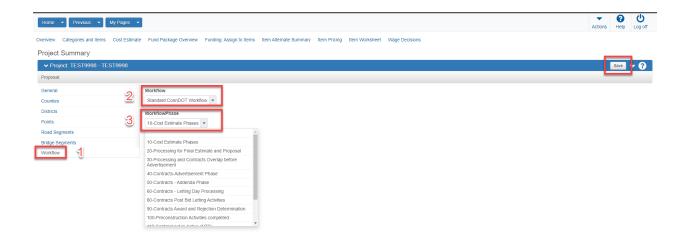
- 2. Select "General"
- 3. Enter project information. The red boxes indicate the required data to be provided on this screen. If multiple projects are integrated into one contract, please select which project is the controlling project.



- 4. Counties, Districts and Points have already been entered previously. However, it is good practice to ensure that each tab contains accurate project data
- 5. Road Segments entries are not required yet
- 6. Select Bridge Segments (1) This data must be entered for each structure reconstructed or rehabilitated
- 7. Select New (2)
- 8. Enter the required Bridge Segment data (3)
- 9. If an additional Bridge Segment is necessary, select new to enter another segment.

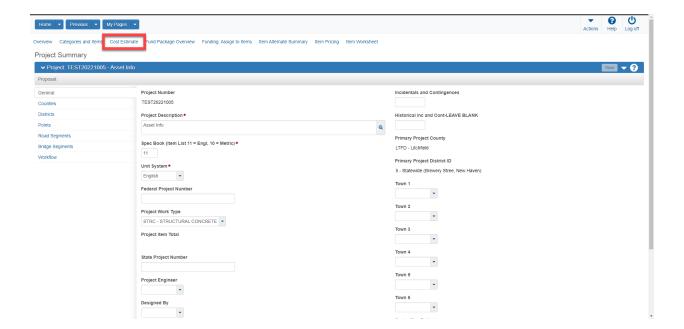


- 10. Select Workflow (1)
- 11. Select Standard ConnDOT Workflow (2)
- 12. Select 10-Cost Estimate Phase (3)
- 13. Click "Save" (4)

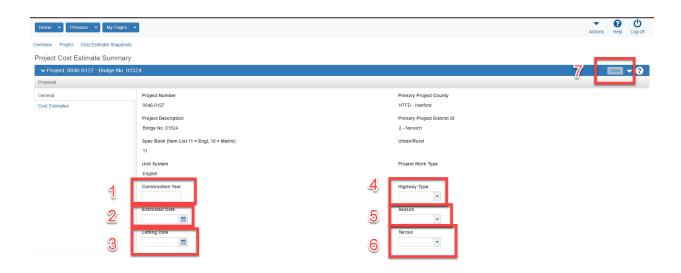


# Create Project Cost Estimate

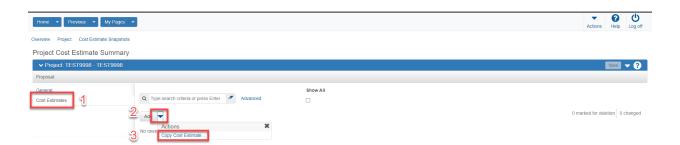
1. Select "Cost Estimate"



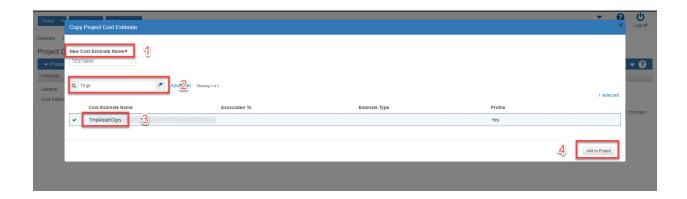
- 2. Enter all necessary cost estimate information
  - a. Construction Year (1)
  - b. Estimated Date (2)
  - c. Letting Date (3)
  - d. Highway Type (4)
  - e. Season (5)
  - f. Terrain (6)
- 3. Click "Save" (7)



- 4. Select "Cost Estimates" (1)
- 5. Select the drop down arow to the right of "Add" (2)
- 6. Select "Copy Cost Estimate"



- 7. Enter new estimate name. Estimate name should match the project name. (1)
- 8. Search for "tmpl" (2)
- 9. Select TmplAssetCtgry (3)
- 10. Select Add to Project (4)

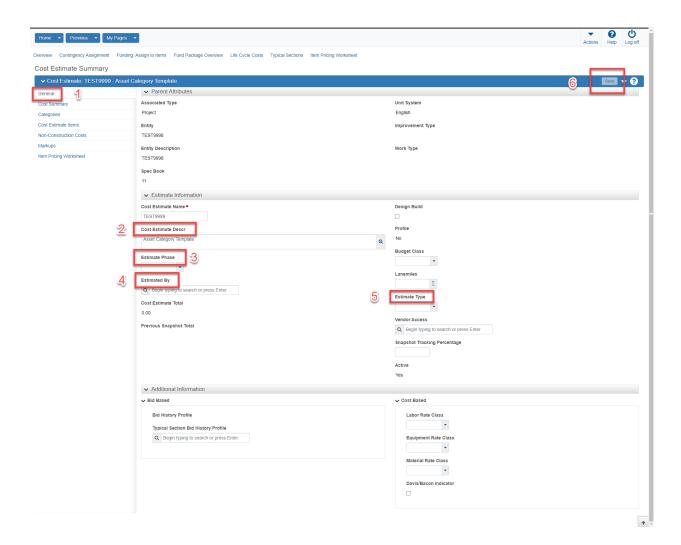


# Modify Project Cost Estimate Summary

1. Select newly created Cost Estimate



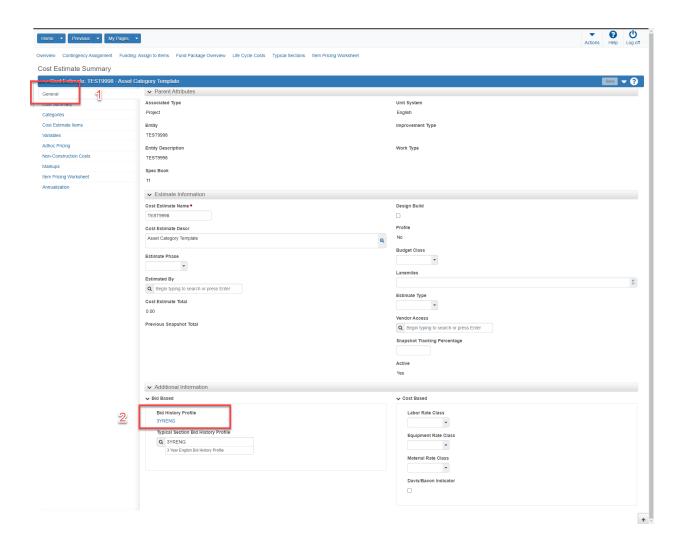
- 2. Select General Tab (1)
- 3. Enter a description. The description should match the project description (2)
- 4. Select Estimate Phase (3)
- 5. Enter user Estimated by (4)
- 6. Enter Estimate Type (5)
- 7. Select Save (6)



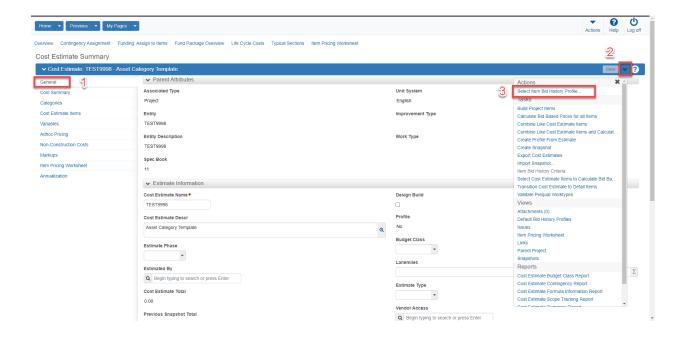
# Add Bid History Profile to Cost Estimate

If the 3YRENG bid history profile has not been automatically assigned to the cost estimate, please follow the steps below. Look for the automatically assigned default bid history profile here:

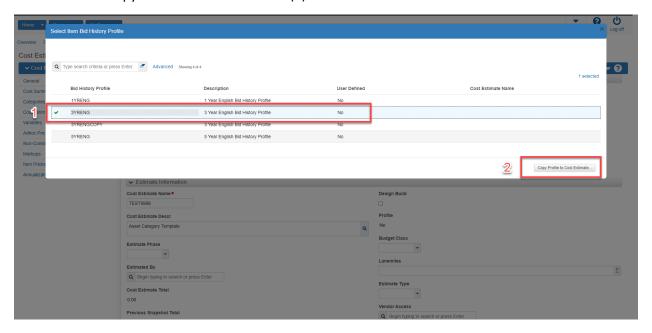
- 1. Select General tab (1)
- 2. Scroll down to additional information and determine if the default bid history profile 3YRENG has been automatically assigned (2)
- 3. If the bid history profile space is blank, please go to step five



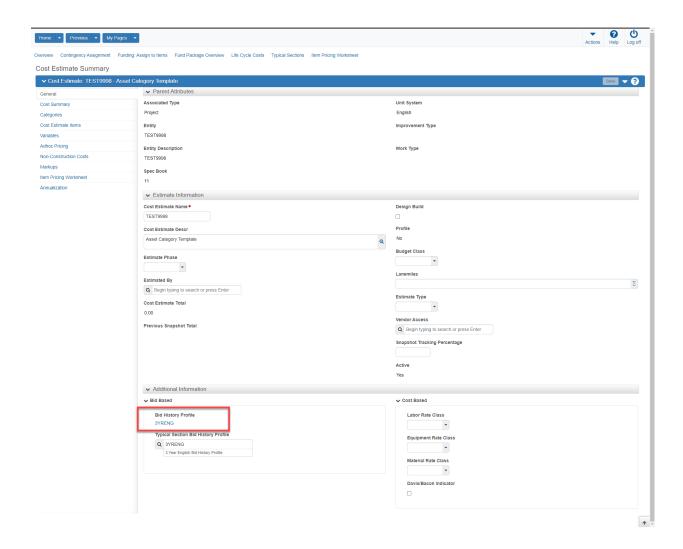
- 4. Select cost estimate general tab (1)
- 5. Select action arrow to the right of Save (2)
- 6. Select "Select Item Bid History Profile" (3)



- 7. Select 3YRENG Bid History Profile (1)
- 8. Select "Copy Profile to Cost Estimate" (2)



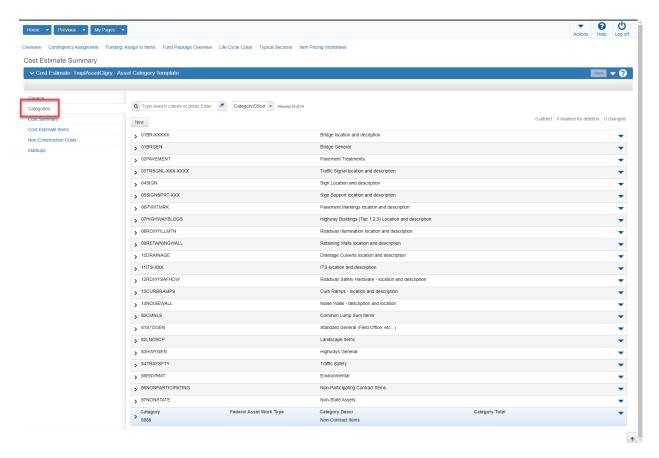
9. Proper bid history profile has been added to the cost estimate



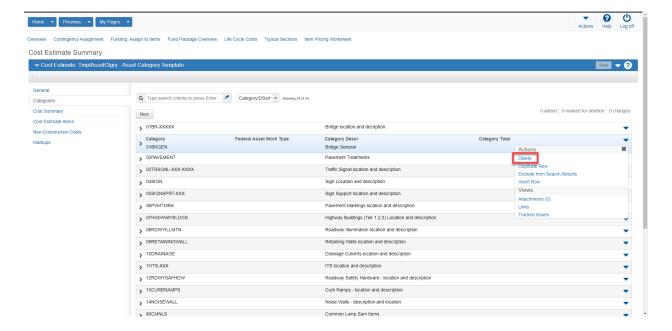
#### Modify Project Cost Estimate Categories

This step is very important and ensures that all items and associated costs are tracked according to their asset categories. Each individual item must be assigned an asset category. Designers must remove unnecessary asset categories from the cost estimate and modify any bridge or traffic signal asset naming conventions. For example, all items that are directly related to a bridge asset must be categorized as 01BR-01234, items directly related to guiderail assets must be categorized as 12RDYSAFHDW, items related to traffic signal assets must be categorized as 03TRSGNL-123-0456 etc. Furthermore, items that do not fit into one category or another can be assigned to either 01BRGEN, 80CMNLS, 81STDGEN, 83HWYGEN.

1. Select Category tab (1)

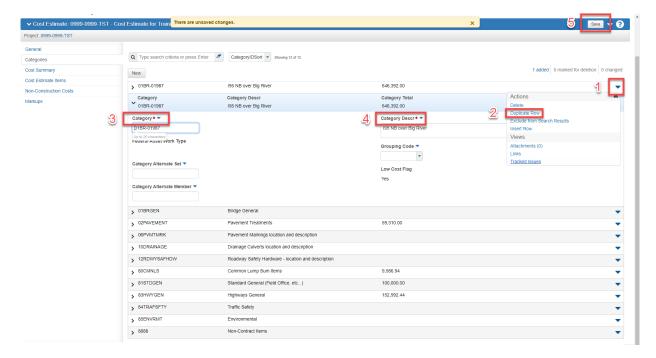


- 2. Remove all cost estimate categories that will not be assigned to the estimate
- 3. Select action arrow to the right of each category to be deleted



- 4. If a duplicate category is required, select action item drop down arrow (1)
- 5. Select Duplicate Row (2)

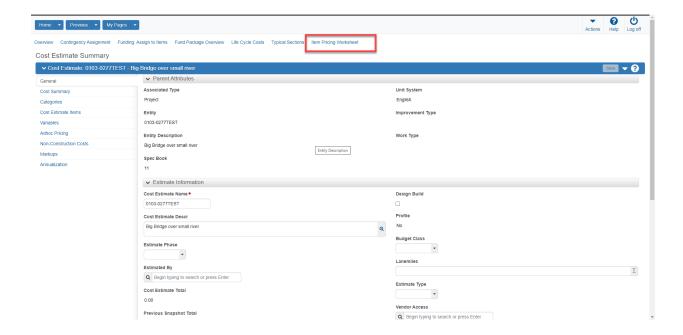
- 6. Enter new Category ID (3)
- 7. Enter new Category Description (4)
- 8. Click "Save" (5)



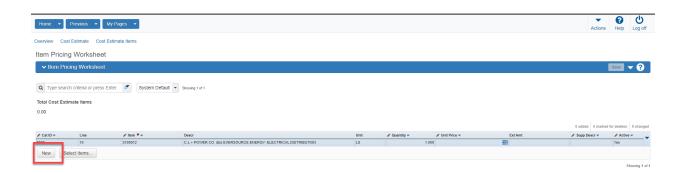
#### Add Individual Cost Estimate Items

After the cost estimate has been generated and proper asset categories added the user can begin to add cost estimate items.

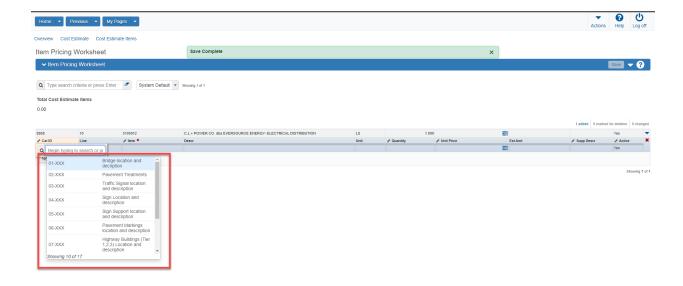
1. Select and navigate to Item Pricing Worksheet



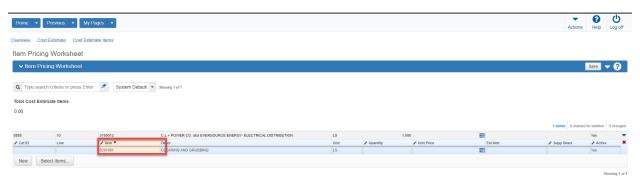
#### 2. Select "New"



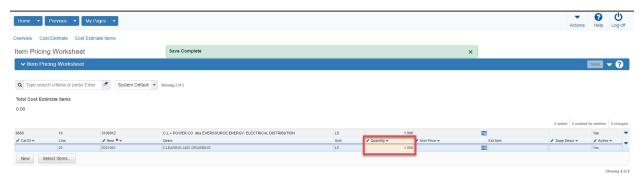
3. Select Category/Asset ID



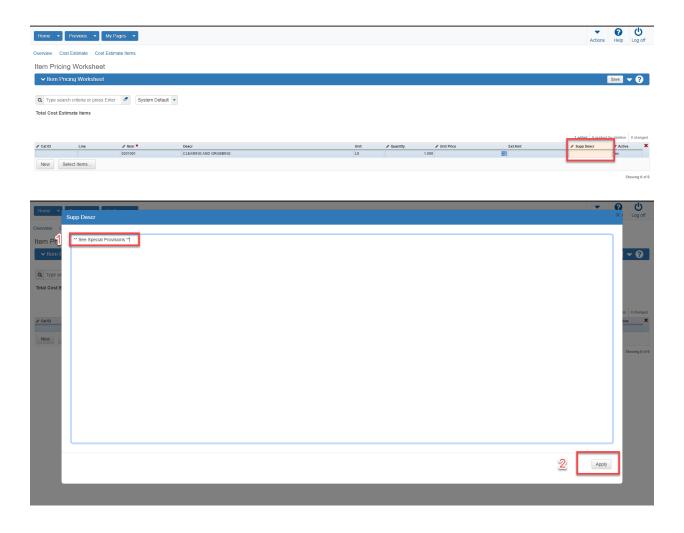
4. Enter proper Item number or search for item description



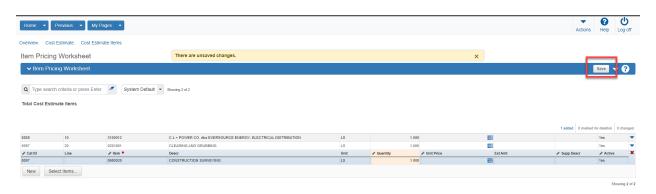
5. Enter quantity



- 6. Double click on "Supp Descr" if required
- 7. Enter "\*\* See Special Provisions \*\*" (1)
- 8. Select Apply (2)

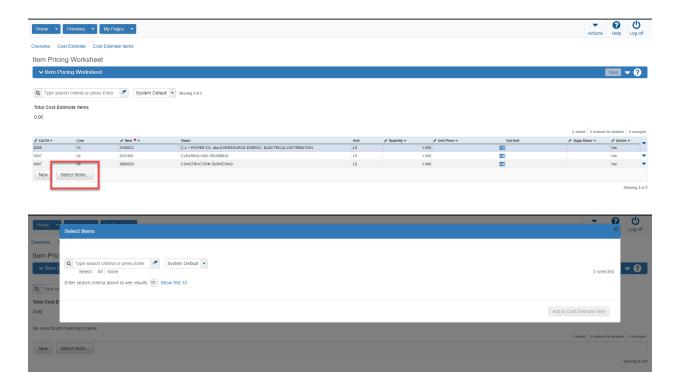


9. Select Save

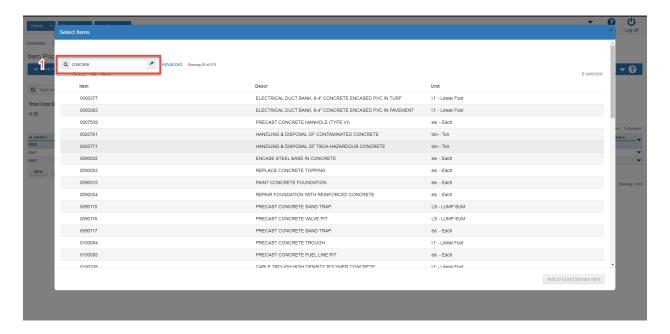


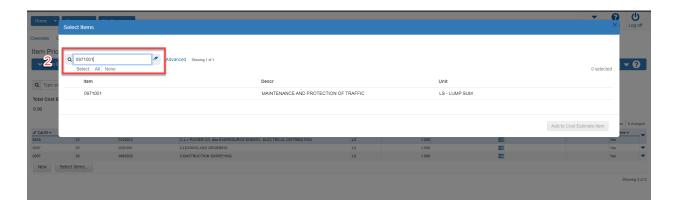
# Add Multiple Cost Estimate Items

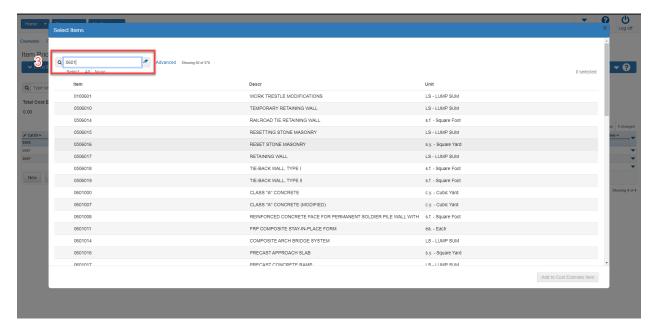
1. Scroll to the bottom of the estimate and Click "Select Items"



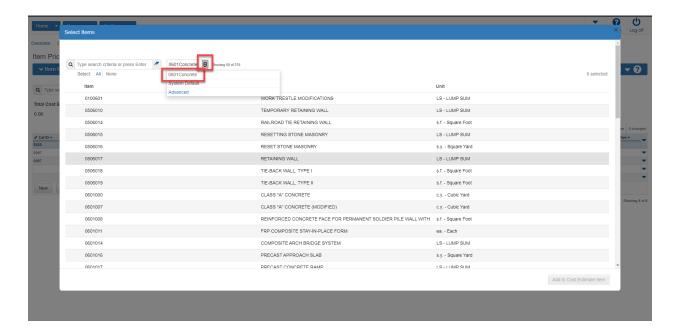
2. Search for item description (1), item number (2) or portion of an item number (3)



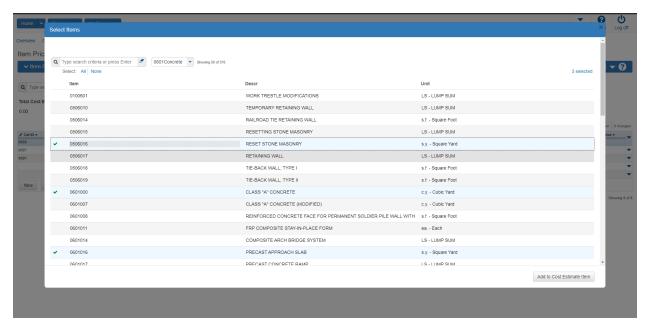




3. Users can also search for groups of items using filter functions



4. Select multiple items as needed

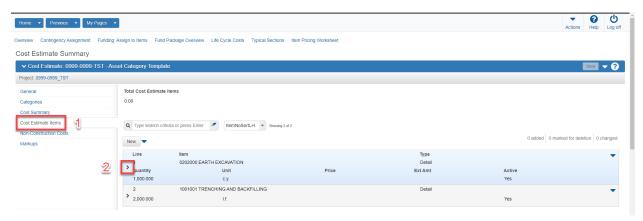


### Item Grouping by Design Unit Owner

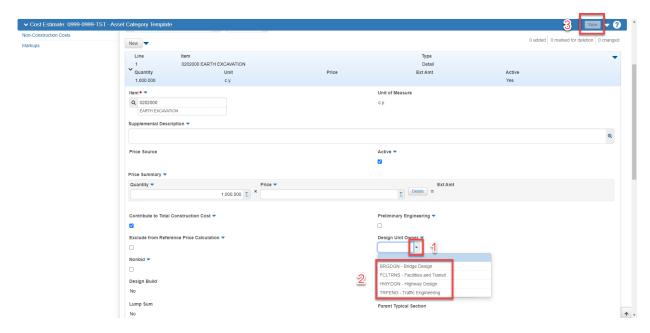
Cost estimates may contain items from separate design units. Estimation allows designers to classify estimate item ownership using the "Design Unit Owner" field in the Cost Estimate Items tab. After assignment, items can be filtered and identified by design unit ownership.

- 1. Navigate to Cost Estimate Summary screen
- 2. Select Cost Estimate Items (1)

#### 3. Select Item (2)

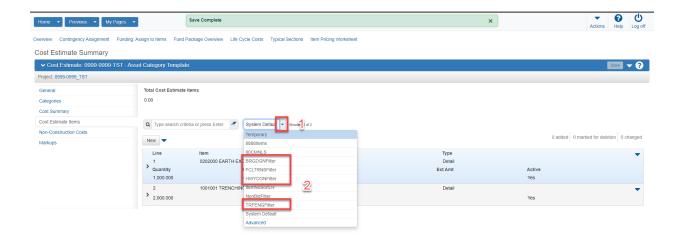


- 4. Select Design Unit Owner field dropdown arrow (1)
- 5. Select proper design unit owner (2)
- 6. Select Save (3)



Users can activate cost estimate "Design Unit Owner" item filters by following these simple procedures:

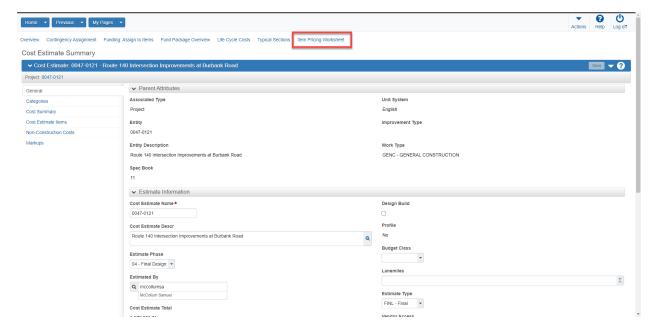
- 1. Select dropdown adjacent to search field (1)
- 2. Select proper "Design Unit Owner" (2)
- 3. System will display only items assigned to the filter selected.



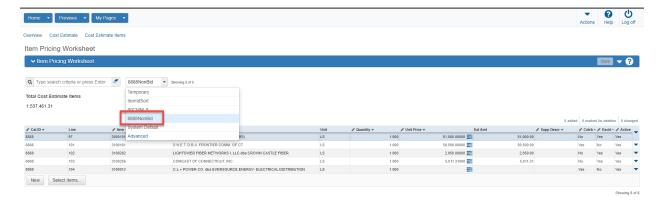
#### Non-Bid Items – Utilities, State Police and Work by State Forces

All non-bid items that are added to the estimate must not contribute to the total construction costs. Prior to building project items, the "Contribute to Total Construction Costs" checkbox must be unselected and the "Exclude from Reference Price Calculation" selected for all non-bid items.

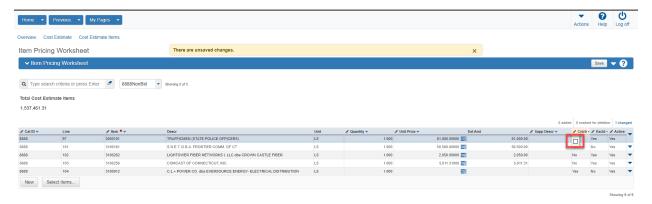
1. Navigate to the "Item Pricing Worksheet"



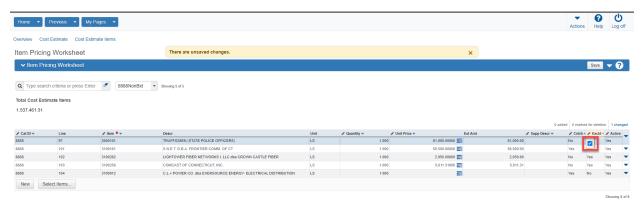
2. Filter Non-Bid Items



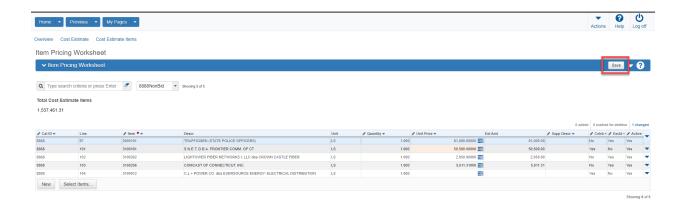
3. Double click "Cntrb" field and remove checkmark.



4. Double click "Excld" field and activate the checkbox field.



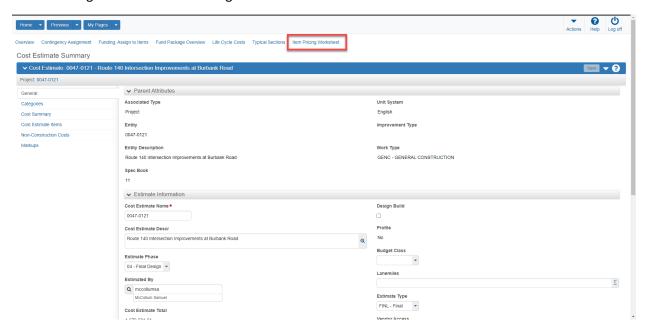
5. Select "Save"



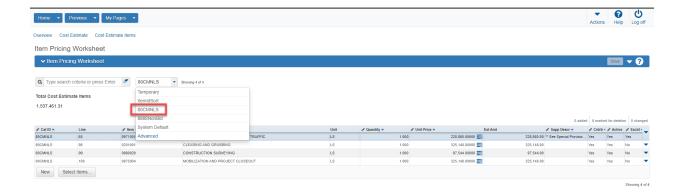
#### Common Lump Sum Items

All common lump sum items that are added to the estimate must contribute to the total construction costs. Prior to building project items, the "Contribute to Total Construction Costs" and "Exclude from Reference Price Calculation" checkbox must be activated.

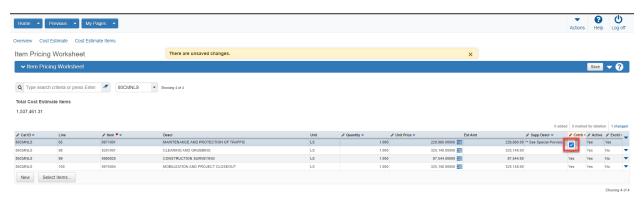
1. Navigate to the "Item Pricing Worksheet"



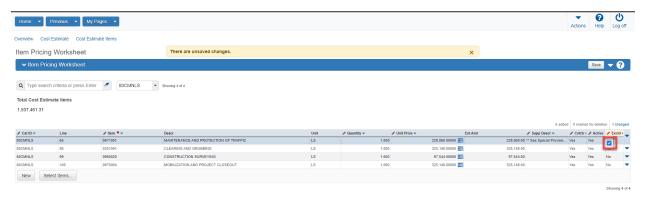
2. Filter Common Lump Sum Items



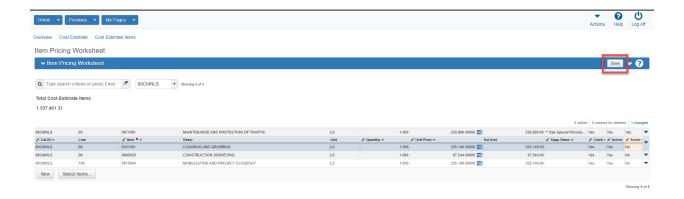
3. Double click "Cntrb" field and activate checkmark.



4. Double click "Excld" field and activate checkmark

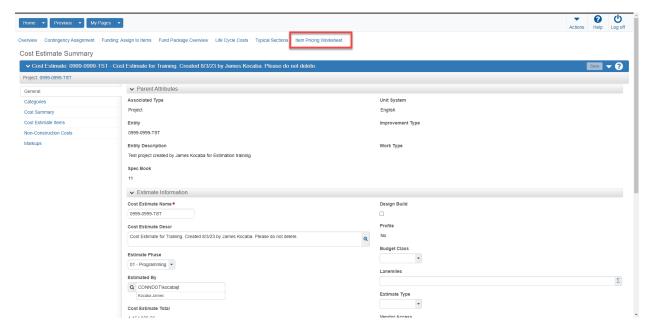


5. Select "Save"

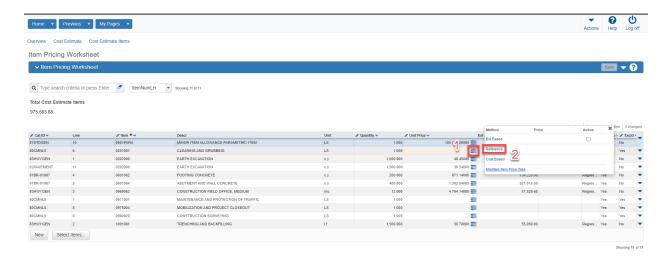


#### Add Common Lump Sum Item Reference Price

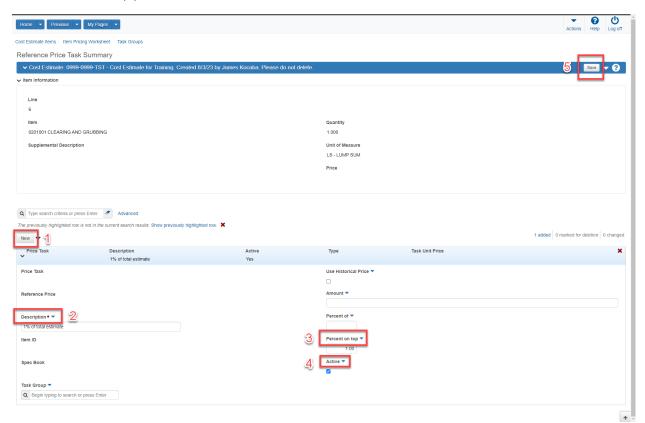
1. Navigate to the Item Pricing Worksheet



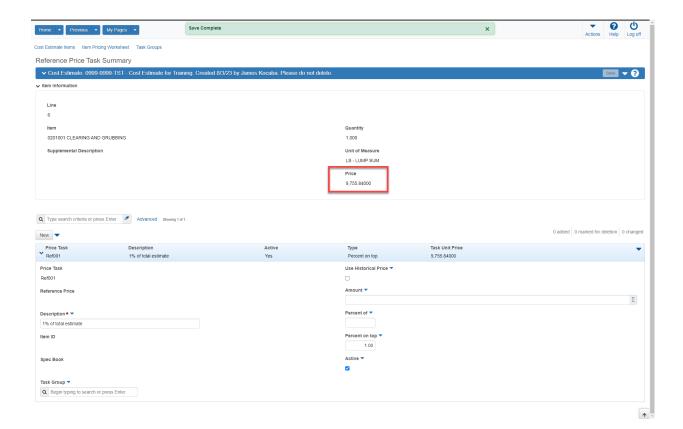
- 2. Select the three blue bar icon in the unit price field of the common lump sum item (1)
- 3. Select the "Reference Hyperlink" (2)



- 4. Select New (1)
- 5. Enter reference description. For example 1% of total estimate (2)
- 6. Enter percentage in the "Percent on top" field. Use of this field will exclude all other percentage based items from the calculation, such as M&PT, Mobilization and Construction Surveying (3)
- 7. Select the "Active" checkbox (4)
- 8. Click Save (5)



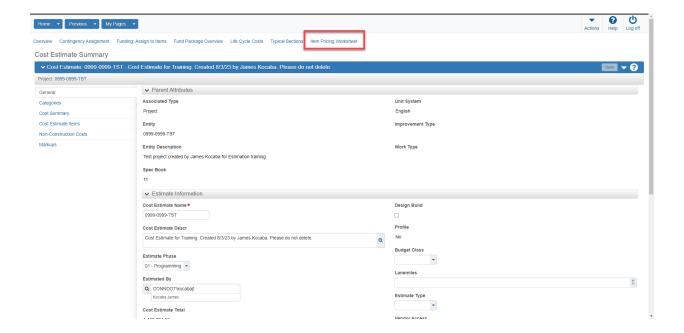
9. Price is calculated.



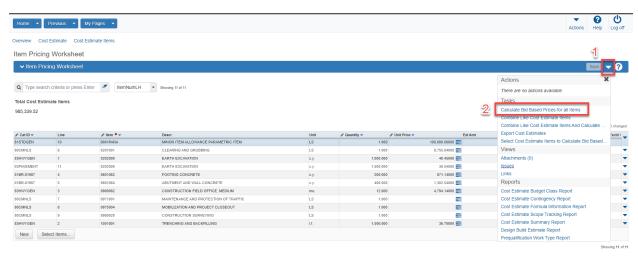
#### Calculate Bid Based Unit Prices for All Items

There are several methods to price items in Estimation. Items can be priced individually or the entire estimate can be priced all at once. It is recommended that all item prices be updated every six months or at every milestone cost estimate. AASHTOWare Project Estimation calculates all item pricing based upon current bid history values. When a letting is more than a year from when the estimate is prepared, an inflation adjustment should be included. Please see the Inflation topic for more details.

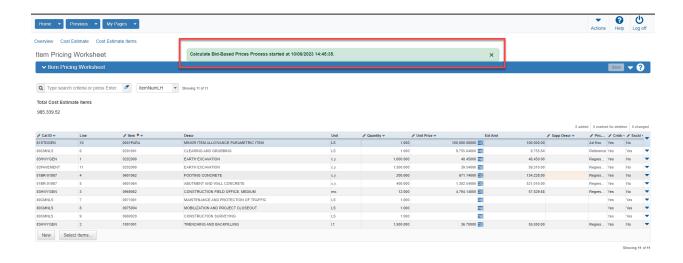
1. Navigate to the item pricing worksheet from the Cost Estimate summary page



- 2. Pricing all estimate items can be accomplished selecting the action arrow to the right of the save button (1)
- 3. Select "Calculate Bid Based Prices for all items" (2)



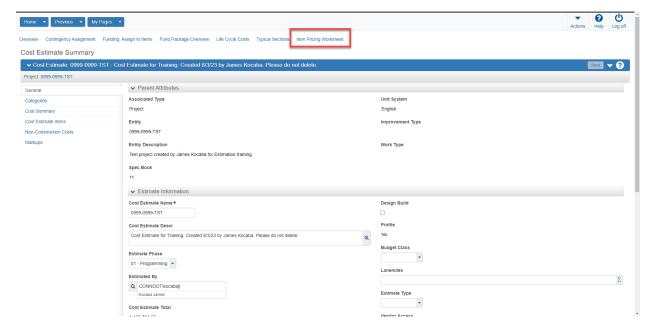
4. Calculate Bid-Based Prices operation will begin. Please be patient with this step in the process. Large estimates may require 10 to 15 minutes to complete item pricing calculations.



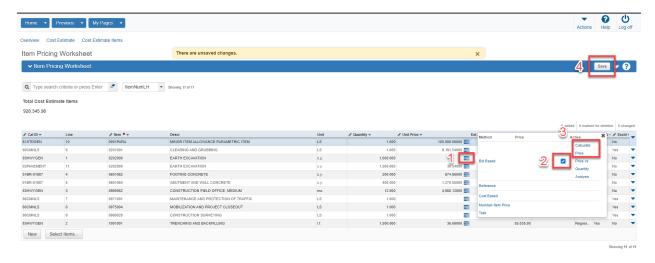
#### Calculate Bid Based Unit Prices for Individual Items

Single items added in between bi-annual or milestone estimate updates can be priced individually. Please follow the steps below for item pricing procedures.

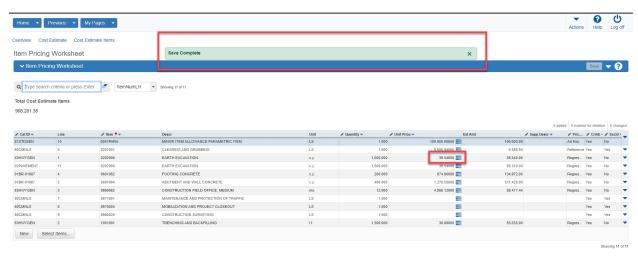
1. Navigate to the item pricing worksheet from the Cost Estimate summary page



- 2. Pricing individual estimate items can be accomplished selecting the three staked blue bars in the item unit price field (1)
- 3. Select the active checkmark box (2)
- 4. Select calculate price (3)
- 5. Select "Save"



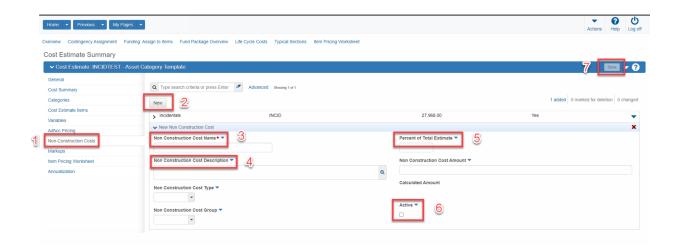
6. Save is complete and item price is established



#### Add Contingency Percentage

Contingency is an element of estimated cost included to account for uncertainty and risk. The designer is responsible for ensuring that the proper percentage is entered based upon cost estimate phase.

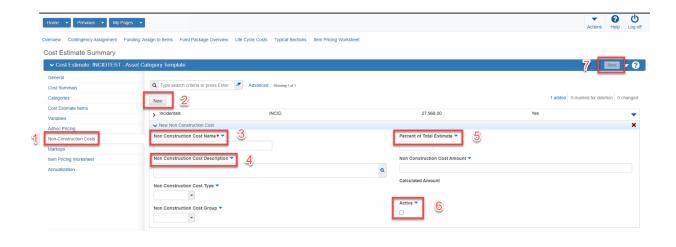
- 1. Select Non-Construction Costs (1)
- 2. Select New (2)
- 3. Enter "Contingency" for name (3)
- 4. Enter "Contingency" for description (4)
- 5. Enter Percentage (5)
- 6. Select "Active" (6)
- 7. Select "Save" (7)



#### Add Incidental Percentage

The Non-Construction Cost tab can be used to enter incidental cost values. The cost of Construction Engineering (CENG), which consists of the various activities required to administer the construction contract, including inspection, materials testing, construction phase design support and other functions. It includes state and consultant forces, when applicable. For state-awarded construction contracts, this "Incidental Cost" is estimated using a sliding scale percentage of the contract cost as shown in the Incidental Cost Percentage Chart. Please refer to the cost estimating guide for contract price ranges and the associated values.

- 1. Select Non-Construction Costs from the Cost Estimate Summary (1)
- 2. Select "New" (2)
- 3. Enter Non-Construction Cost Name (3)
- 4. Enter Non-Construction Cost Description (4)
- 5. Enter proper percentage (5)
- 6. Select the "Active" checkbox (6)
- 7. Click "Save" (7)



#### Add Inflation

A cost estimate with a letting date more than one year from when the estimate is prepared should include an inflation adjustment. Inflation values progressively decrease as contracts move from programming to semi-final design and are removed entirely at the final design phase. The Inflation Parametric Item (005PARA) can be used to enter direct future inflation values. The steps for calculating and entering inflation values are shown below.

Except for contracts with durations of three years or more, the inflation adjustment factor is computed by determining the number of years between the estimate date (when estimate is prepared) and scheduled bid opening and multiplying this number by the annual inflation factor. For contracts with durations of three years or longer, compute the number of years from the estimate date to the midpoint of construction. An annual inflation rate of 6.5 percent per year (simple, not compound) should be used for 2023 and subsequent years. Inflation costs decrease as the cost estimate phases advance toward semi-final design and eventually are eliminated at final design. Example computations and process for AWP cost estimate incorporation to follow:

#### Inflation Example 1 (construction duration less than 3 years)

Estimate date: January 15, 2023

Scheduled bid opening (letting) date: November 15, 2024

Duration of construction contract: 2 years (midpoint: April 2026)

Estimated cost: \$1,500,000

Inflation: 6.5 percent

Estimated future/inflated cost =  $$1,500,000 \times (1.83 \times 0.065) = $178,425$ 

#### Inflation Example 2 (construction duration more than 3 years)

Estimate date: January 15, 2023

Scheduled bid opening (letting) date: December 13, 2024

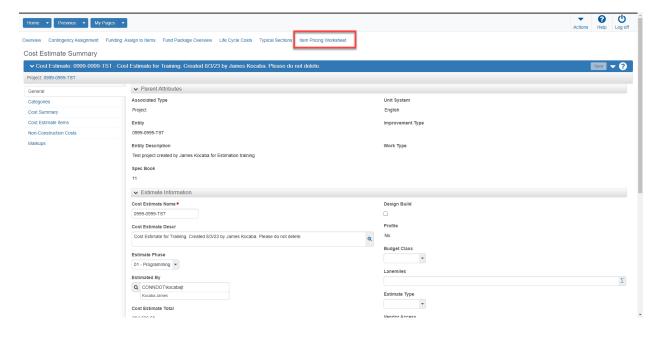
Duration of construction contract: 4 years (midpoint: April 2027)

Estimated cost: \$15,000,000

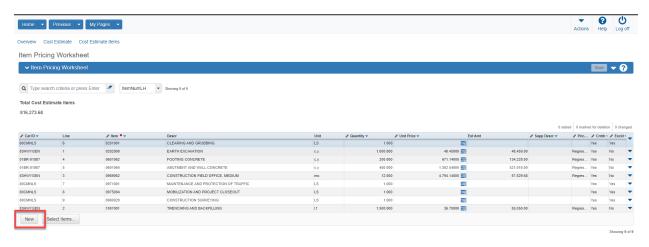
Inflation: 6.5 percent

Estimated future/inflated cost =  $$15,000,000 \times (4.25 \times 0.065) = $4,143,750$ See the following steps below:

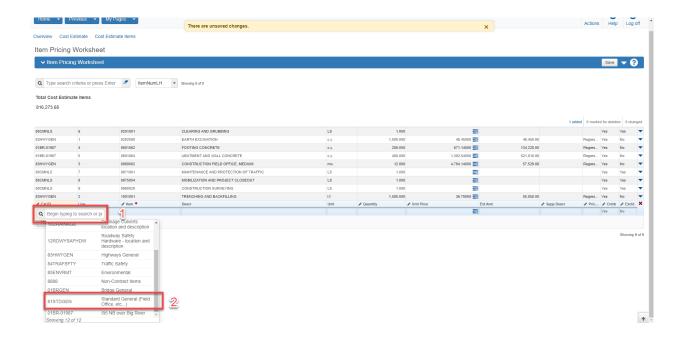
- 1. Navigate to the Cost Estimate Summary screen
- 2. Select Item Pricing work sheet



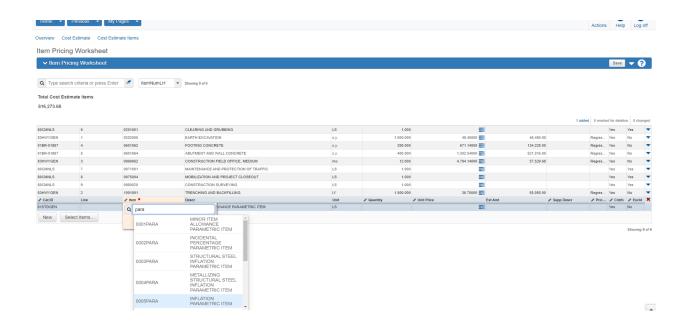
#### 3. Select New



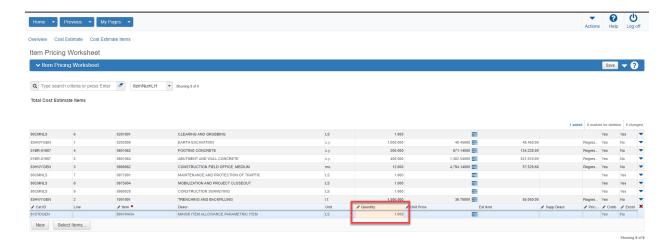
- 4. Double click in the Cat ID field (1)
- 5. Select Category 81STGEN (2)



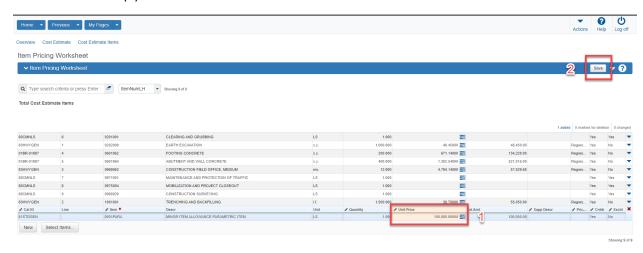
- 6. Double click the item field
- 7. Enter "PARA"
- 8. Select item 0005PARA



9. Enter a lump Sum quanity of 1.0



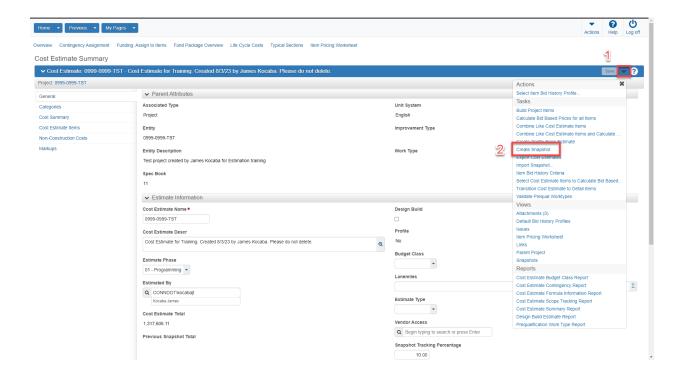
- 10. Enter the manually calculated lump sum unit price (1)
- 11. Click Save (2)



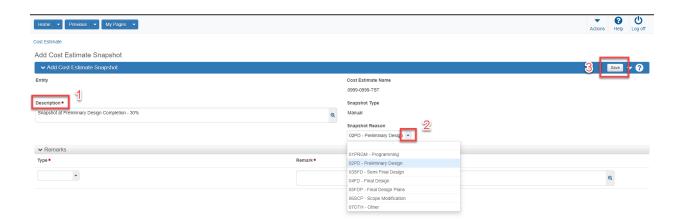
#### Cost Estimate Phase Transition

After a cost estimate has been completed and is ready to transition to the next project development milestone several actions must be completed. First, users must generate a cost estimate phase snapshot. A snapshot is required for PowerBi reporting and audit purposes as well as tracking scope creep. After a snapshot is created the cost estimate phase can be transitioned and saved.

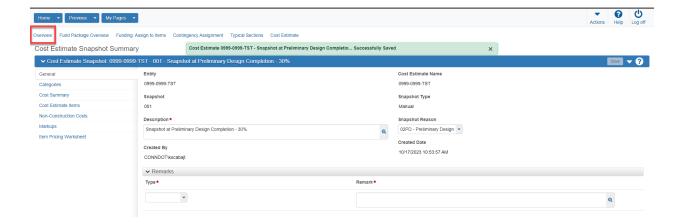
- 1. Navigate to the Cost Estimate Summary
- 2. Select the action arrow adjacent to the save button (1)
- 3. Select "Create Snapshot" (2)



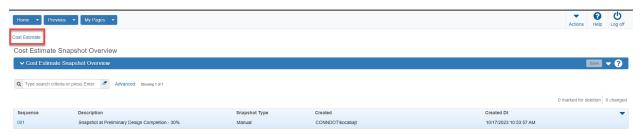
- 4. Enter a detailed description of the cost estimate phase (1)
- 5. Select the proper snapshot reason (2)
- 6. Select "Save" (3)



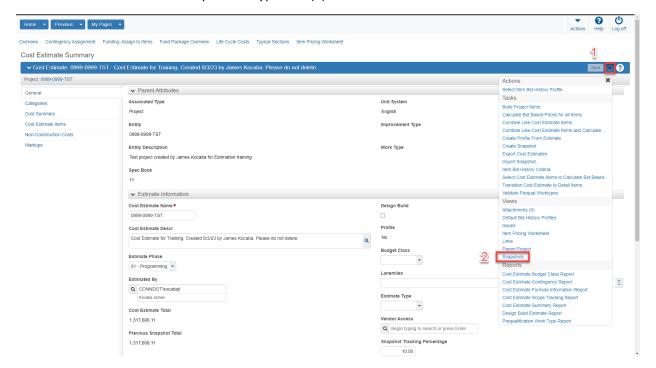
- 7. Snapshot has been successfully saved
- 8. Users can navigate back to snapshot overview



9. Navigate back to the current cost estimate



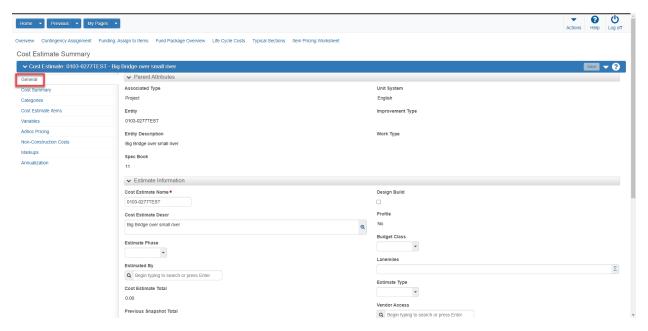
- 10. Quick link to cost estimate snapshots is located here:
  - a. Select action item arrow adjacent to the save button (1)
  - b. Select the "Snapshots" hyperlink (2)



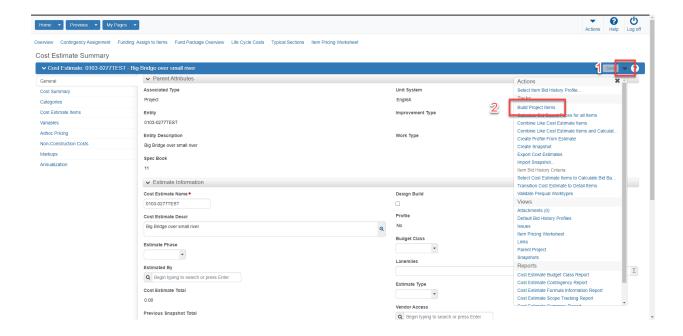
#### Build Project Items (Completed at FDP Only)

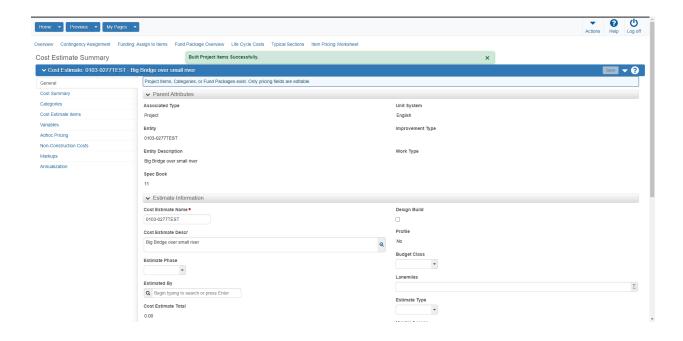
Initiate "Build Project Items" process at FDP after cost estimate has been finalized .

1. Navigate to the Cost Estimate General tab



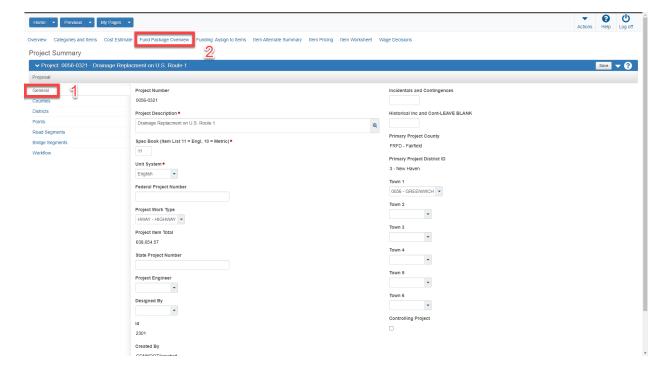
- 2. Select the action dropdown arrow to the right of the save button (1)
- 3. Select Build Project Items (2)





#### Update Project Fund Packages

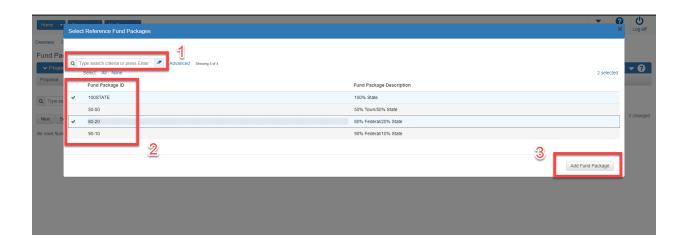
- 1. Navigate to the General Tab on the Project Summary Screen (1)
- 2. Select "Fund Package Overview" along the main navigation header (2)



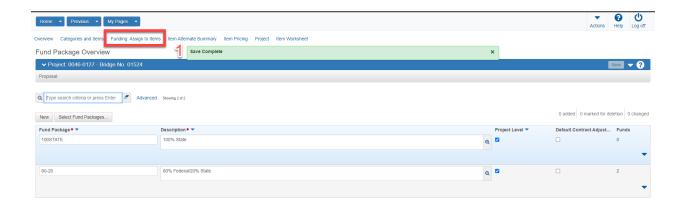
3. Click on "Select Fund Packages" button (1)



- 4. Type Fund Package ID into search bar or press enter for all fund packages (1)
- 5. Select individual fund packages for assignment to the project (2)
- 6. Select "Add Fund Package" (3)



7. Select "Funding Assign to Items" (1)



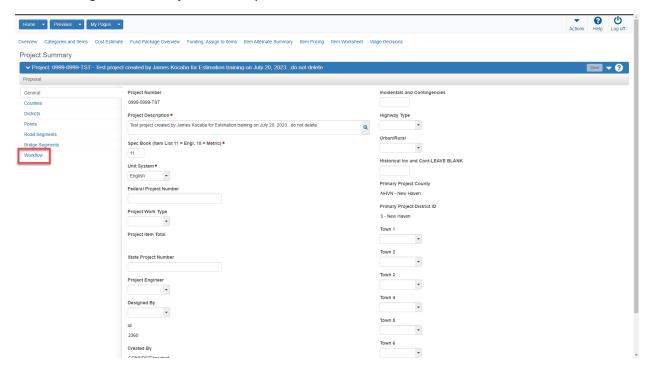
- 8. Assign funds be selecting all project items, asset categories or individual items (1).
- 9. Click "Save" (2)



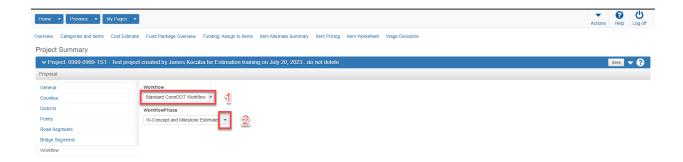
#### Change Project Workflow from 10 to 20

The final step in the cost estimate is process is to change the project workflow from 10 – Concept and Milestone Estimate to 20 – Processing for Final Estimate and Proposal. Once complete Contract Development will be automatically notified by email that the cost estimate is ready for final processing.

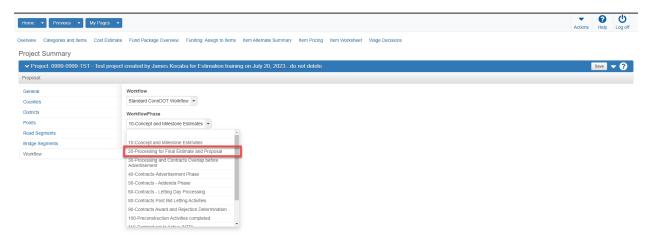
1. Navigate to the Project Summary screen and select workflow



- 2. Ensure that the Standard ConnDOT Workflow is selected (1)
- 3. Select the WorkflowPhase drop down arrow (2)



4. Select 20 – Processing for Final Estimate and Proposal. \*\*\*Important\*\*\* Please select only phase 20. If different phase is selected and saved, you cannot go back and Contract Development will not be notified.



5. Select Save

