# iPDWeb Project Cost Estimating Iowa DOT Office of Bridges and Structures

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## Login

Consultants may use the link at <u>https://iadot.exevision.com/ipd/index.aspx?ln=app</u> to get to the iPDWeb cost estimating software. Alternatively, it can be accessed from the Designer/Consultant Resources webpage at <u>https://iowadot.gov/projectdev/consultant-designer-resources-home</u>.

DOT employees may access the software by logging into Office 365. Once logged in click on the "waffle" in the upper left-hand corner of the screen, click on "All" applications, and scroll down the list to click on "iPD Web App". You can also right-click on "iPD Web App" and select "Pin to home" so that it will show up in the home application list when logging into Office 365.

	Office 365	
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esri	ArcGIS Online	
	iPD Web App	
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# The "Ribbon"

The black ribbon at the top of the iPDWeb application has a Menu drop-down button at the center of the ribbon to access the various menu options. Additionally, the Help option on the right-hand side of the ribbon contains a help index file, information about the current version of iPDWeb, and some video tutorials.

<i>i</i> PDWeb		Me	nu			Welcome Michael Nop	
EX Direct							Help Index About
Estimating Dashboard							Tutorial
PINs and Projects							Build Note
Current Filters:	Edit Filter Clear	Filter	_	My Projects			
Search:			Search	PIN	Project	Project Description	-
PIN	Project	Project Description		14-67-141-020-00	BRFN-141-2(58)39-67	IA 141 over Skunk Creek 3.8 mi E o	Remove
02-52-080-010-00	IM-080-6(329)23913-52	In The City Of Coralville On I-380	Add	13-77-080-050-00	IM-080-3(183)12713-77	I-80/I-35/IA 141 (Rider Corner) In	Remove
03 73 000 010 00		Later of contraction of the	1.4	98-86-030-010-00	NHSX-030-6(220)3H-86	OTTER CREEK 0.7 MI W OF CO RD E66	Remove

A full listing of menu items under the drop-down Menu button is shown below. The menu items displayed to each user depends on the user's security settings. Most users doing estimates will not need to access the Menu as part of their estimating workflow.

🥯 Menu					
Cost Management	Cost Estimating	Maintenance	Reporting		
Cost Dashboard	Division Template	Organization	AdHoc Reports		
Cost Planning	Cost Estimating	Items	Fiscal Report		
Price Adjustment Cost Confidence		Master D Group Employees Manage Policies	Fiscal Chart		

# Estimating Dashboard Tab – Finding and Selecting a Project

The "Estimating Dashboard" tab has two sections to it. The left-hand side contains a list of all active projects in the system. New projects and project information are fed nightly into iPDWeb from the Iowa DOT's Project Scheduling System (PSS). As described below, users can create custom filters to limit the list of available projects in the left-hand side. Click "Add" on the far-right side of a record to add that project to the "My Projects" portion of the dashboard. "My Projects" is a list that is user specific to allow quick and easy access to saved projects.

To select a project for cost estimating, click a PIN number or Project number in either section. Doing so will open a "Cost Estimating" tab for that project. Entering a cost estimate on the "Cost Estimating" tab is discussed later in this document. In general, users should click the project number rather than the PIN number since the project number will be highlighted in orange on the "Cost Estimating" tab, making it easier to identify. By clicking different project numbers on the "Estimating Dashboard" tab users can open more than one "Cost Estimating" tab at a time.

stimating Dashboard							
PINs and Projects	_		_	_			_
Current Filters:	Edit Filter Clear	Filter		My Projects			
Search:			Search	PIN	Project	Project Description	
PIN	Project	Project Description		14-67-141-020-00	BRFN-141-2(58)39-67	IA 141 over Skunk Creek 3.8 mi E o	Remo
		VARIOUS LOCATIONS	A	<u>13-77-080-050-00</u>	IM-080-3(183)12713-77	I-80/I-35/IA 141 (Rider Corner) In	Remo
08-00-000-010-00	DE-RS07(1)3C-00	STATEWIDE(COUNTY	Add	<u>98-86-030-010-00</u>	NHSX-030-6(220)3H-86	OTTER CREEK 0.7 MI W OF CO RD E66	Remo
14-00-000-010-00	HR-HEPN(707)72-00	FHWA Climate Change Vulnerability	Add	98-86-030-010-00	NHSX-030-6(221)3H-86	TAMA BYPASS OVER SALT CREEK 0.9	Remo
<u>18-00-000-010-00</u>	HSIPX-000-T(1)3L-00	Various 2-Lane Routes Statewide	Add			MI	
12-00-000-010-00	IMN-000-S(501)00E-00	VARIOUS LOCATIONS IN DISTRICT 1	Add	<u>92-06-030-030-01</u>	NHSX-030-6(230)3H-06	US 218 Interchange	<u>Remo</u>
12-00-000-010-00	IMN-000-S(568)00E-00	VARIOUS LOCATIONS IN DISTRICT 1	Add	97-29-061-010-01	NHSX-061-2(71)3H-29	Flint Creek 0.6 mi N of Memorial P	Remo
12-00-000-010-00	IMN-000-S(569)00E-00	VARIOUS LOCATIONS IN DISTRICT 1	Add	16-75-075-020-00	NHSX-075-2(103)3H-75	Woodbury Co to S of W Grover St in	Remo
12-00-000-010-00	IMN-000-S(570)00E-00	VARIOUS LOCATIONS IN DISTRICT 1	Add				
12-00-000-010-00	IMN-000-S(571)00E-00	VARIOUS LOCATIONS IN DISTRICT 1	Add				
12-00-000-010-00	IMN-000-S(572)00E-00	VARIOUS LOCATIONS IN DISTRICT 1 (O	Add				
12-00-000-010-00	IMN-000-S(750)00E-00	VARIOUS LOCATIONS IN DISTRICT 1 (O	Add				
12-00-000-010-00	IMN-000-S(751)00E-00	Various Locations in District 1 (O	Add				
12-00-000-010-00	IMN-000-S(806)00E-00	Various Locations in District 1 (O	Add				
12-00-000-010-00	IMN-000-S(848)00E-00	Various Locations in District 1 (O	Add				
12-00-000-010-00	IMN-000-S(922)00E-00	Various Locations in District 1 (O	Add				
12-00-000-010-00	IMN-000-S(990)00E-00	Various Locations in District 1 (O	Add				
10-00-000-010-00	IMN-035-1(134)00E-27	FROM MISSOURI STATE LINE N. TO J14	Add				
10-00-000-010-00	IMN-035-1(138)220E-27	FROM J14 NORTH TO G76	Add				
10-00-000-010-00	IMNL035-2(306)730E-77	FROM 1-80 NETO MININESOTA STATE LI	Add				

There are three ways to find a project in iPDWeb.

- Users can scroll through the list of active projects on the left-hand side to find a project. Users
  may first want to click "Clear Filter" to obtain a complete list of all active projects. Projects can
  be sorted in ascending or descending order by clicking on one of the blue headings at the top of
  the list. (Note that PIN numbers are first sorted by the 3<sup>rd</sup> and 4<sup>th</sup> numbers in the PIN number
  sequence.)
- 2. The Search feature can be utilized to search for PIN numbers, project numbers, or project locations and descriptions. Users may want to "Clear Filter" before searching.
- 3. Users can create custom filters to limit the list of available projects. Creating a filter is described below. Click on "Current Filters" to see a summary of the active filter. (If nothing displays then there is no active filter.) Click "Clear Filter" to remove an active filter and display a complete list of all active projects.

#### Filters

Users can create and edit filters for the projects that display in the "Estimating Dashboard". Selecting "Edit Filter" from the dashboard will bring up the "My Filter" dialog.

To create a new filter:

- Click on the "Add" button.
- Enter a name for the new filter you want to create.
- Enter any desired filter parameters.
- Click the "Save & Close" button to save and apply the filter.

To edit an existing filter:

- Select the appropriate filter from the "Select Filter" drop-down. This should fill out the parameters for the selected filter.
- Edit any of the desired fields.
- Click the "Save & Close" button to save and apply the filter.

Select Filter: Intelligent Search * Name: My County Example Description: Various Counties of Inte Default Filter: Show Favorite Project Begin Letting Date:		Add Delete	DR 🗾
Filter Types:	Applied F	ilters:	
District	Benton		<b>^</b>
County	Des Mo	ines	
Route	Lee		
Office	Adair		
Segment Manager	Adams		
Assigned To	Allamak	ee	
Project Delivered By	Appano	ose	
Organization	Audubo	n	
Project Work Type	Black Ha	awk	•
now Filter	Clear All Sa	ve As Save & Close	Cance

Below is a brief description of the various options for filters:

- Users may select one of the saved filters to be the "Default Filter" by checking the box. Having a default filter can save time when accessing the iPDWeb application.
- A filter can be applied to the list of "My Projects" if the "Show Favorite Projects Only" box is checked. This could be desirable if you have an extensive list in "My Projects".
- The "Filter Logic" options (i.e. "AND" and "OR") apply when more than one "Filter Type" is set by the user.
- Users can filter for a range of letting dates.
- The "Applied Filters" selected by the user from the list box will appear at the top of the list for each of the "Filter Types". Multiple filters in the "Applied Filters" list can be selected using the "Ctrl" and "Shift" keys in combination with clicking the mouse.
- Clicking on "Show Filter" displays the filters applied for the selected filter. It is good practice to check this for newly created or modified filters to ensure the filter settings are as intended.
- Clicking "Save As" will create a copy of an existing filter. The name of the copy will begin with "Copy of" followed by the name of the filter copied.

# Cost Estimating tab – Tree Structure Levels

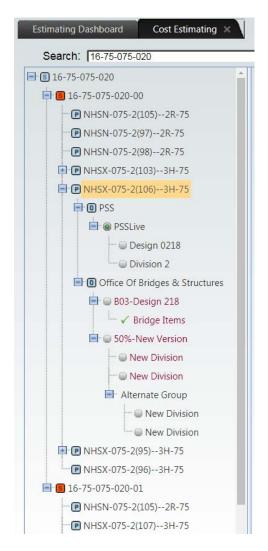
After you select a project from the "Estimating Dashboard" tab, the estimate will open in a "Cost Estimating" tab (see screen capture below). If you clicked the project number rather than the PIN number, the project number will be highlighted in orange on the "Cost Estimating" tab as shown below, making it easier to identify. By clicking different project numbers on the "Estimating Dashboard" tab users can open more than one "Cost Estimating" tab at a time.

If a project has any existing estimates or the bid items for that project are entered into PSS, you will see a + symbol to the left of the project number. Clicking the + symbol will expand the tree structure to reveal additional levels. Clicking the – symbol will contract the tree structure.

The tree structure contains the following levels.

- PIN Segment This is the highest level of the tree structure.
- PIN Section These are designated with by an orange square containing the letter "S".
- Project Number
- Office Each office can create this level using default naming conventions such as "Office of Bridges & Structures" or "Office of Design". Note that the level "PSS" is special. Projects that have bid items entered into PSS will have "PSS" at the office level.
- Event (or Estimate) Estimates are normally completed at designated event dates for each office. Examples of OBS events include B01, B03, Annual, and 50% Complete. Naming conventions at the event level include the event followed by a dash and a name entered by the user (e.g. "B03-New Version"). If "PSS" exists at the office level then "PSSLive" will exist underneath it at the event level.
- Division This is the level at which estimates are created. Users can rename a division from its default name "New Division". Users can create multiple division levels. If the "PSSLive" event level exists it should contain one or more division levels carried over from PSS. These division levels will contain the bid items and quantities that were entered into PSS.
- Alternate Group Alternate groups are designed to allow users the flexibility to add estimates for alternative options. An example could include an estimate for a CIP culvert versus a precast

culvert option. In this case, two division levels could be created under the alternate group level. The "Alternate Group" default name can be renamed by the user.



# Cost Estimating tab – Project Level

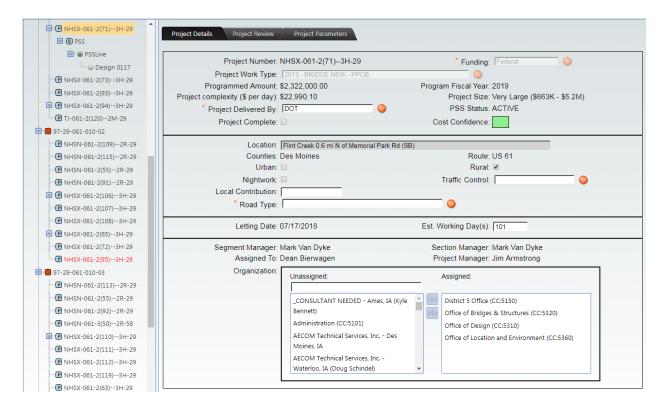
After you select a project from the "Estimating Dashboard" tab, the estimate will open in a "Cost Estimating" tab. If you clicked the project number rather than the PIN number, the project number will be highlighted in orange on the "Cost Estimating" tab as shown below, making it easier to identify.

If a project has any existing estimates or the bid items for that project are entered into PSS, you will see a + symbol to the left of the project number. Clicking the + symbol will expand the tree structure to reveal additional levels. Clicking the – symbol will contract the tree structure.

A project number in red text means the project has been deleted from PSS.

When a project number is selected from the estimate tree structure, three tabs that provide information about the project become available:

- Project Details This tab provides detailed information about the project, often referred to as the project header information and the Organization table, identifying who has access to the project. Note that a project must be assigned to "Office of Bridges& Structures (CC:5320)" for OBS estimators to have the necessary permissions to add an estimate.
- Project Review This tab provides a summary of the offices and office estimate totals that compose the project. An estimate needs to be marked "Selected" and "Complete" to show up on this tab.
- Project Parameters This tab contains the general scope of the project. The bridge parameters must be filled out before a B03 or B04 cost estimate can be finished. These parameters are important for future parametric project estimates.



# Cost Estimating tab – Office Level

Once the user is at the project level for which it is desired to create an OBS estimate, it will be necessary to create the office level folder "Office of Bridges & Structures" if it does not already exist. To create this folder right-click on the project number and select "Add Estimate". The dialog will ask which office folder you would like to create. Select the "Office of Bridges & Structures" from the drop-down. After selecting OK, a folder will be created for the "Office of Bridges & Structures". Underneath the office level folder will be the event level folder with the default name "50%-New Version". Underneath the event level folder with the default name "New Division".

If you go through the process of creating the office level folder "Office of Bridges & Structures", but it already exists the software will simply add another event level folder with the default name "50%-New Version".

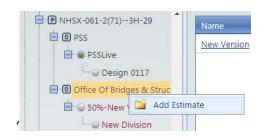
As stated previously, the "PSS" folder, if it exists, is an office level folder carried over from PSS. The "PSS" folder and all its contents are read-only.

Estimating Dashboard Search: 97-29-061-010	Add Estimat Refresh PSS Add to favo	te Live	Add Estimat		ect Of f Bridges OK	& Struc	tu 🔮 Cancel	
Estimating Dashboard Cost Estimating Search: (97-29-061-010	*	<b>o</b>		Sa	re 📄			
<ul> <li>NHSX-061-2(71)3H-29</li> <li>PSS</li> </ul>	Name New Version	Note New Version		Event	Selected	PSS Live	Complete	Complete Date
PSSLive     Design 0117     Office Of Bridges & Struc     S0%-New Version     New Division     NHSX-061-2(73)3H-29							-	

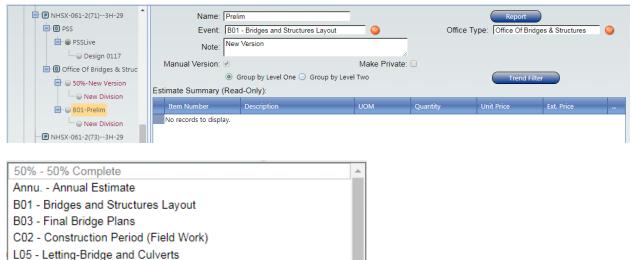
## Cost Estimating tab – Event Level

Estimates are normally completed at designated event dates for each office. Examples of OBS events include B01, B03, Annual, and 50% Complete. If "PSS" exists at the office level then "PSSLive" will exist underneath it at the event level.

By default, an event level folder with the default name "50%-New Version" is created when the office level folder "Office of Bridges & Structures" is created. Additional event level folders with the default name "50%-New Version" can be created by right-clicking on the office level folder and then clicking "Add Estimate" as shown below.



Naming conventions for the event level folder include the event followed by a dash and a default name or a name entered by the user (e.g. "50%-New Version" or "B01-Prelim"). Users can change the event by selecting the event in the tree structure and then clicking on the event drop-down in the panel on the right. The list of possible events depends on how the project was setup in PSS. The user can also change the name from "New Version".



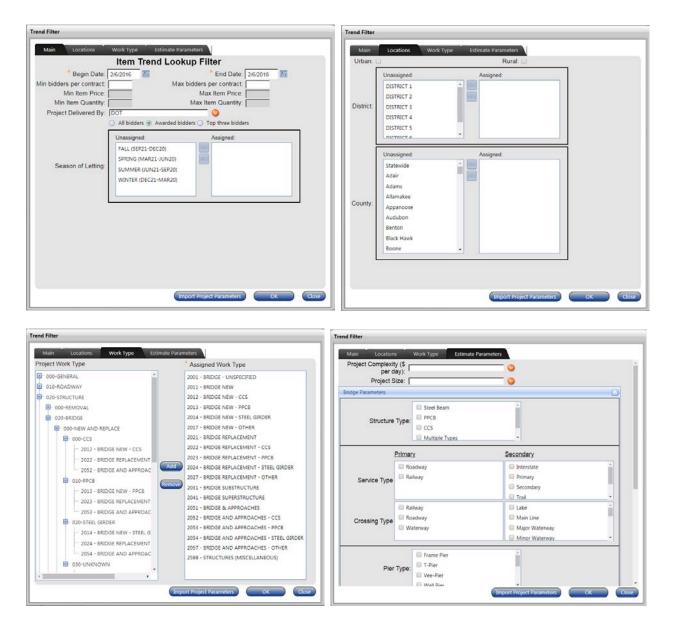
S04 - Soils Submittal to Bridge

## Trend Filter at the Event Level

At the event level folder in the right-hand pane is a "Trend Filter" button. Clicking this button opens the "Trend Filter" dialog which contains four tabs: "Main", "Locations", "Work Type", and "Estimate Parameters". On each of these tabs the user can select filters that will apply to the all the bid item cost data in the estimate. [Exception: The "Bridge Parameters" filters on the "Estimate Parameters" tab only apply to parametric bid items.] The filters are used to establish parameters and project characteristics that identify projects that are similar to the current estimate. As described later, this overarching trend filter can be superseded by using an individual trend filter for each bid item in the cost estimate.

Most estimates for structures only need to make use of two filters. The first filter is the default filter settings for the date range as given on the "Main" tab. The default "End Date" is the current date and the default "Begin Date" is two years earlier. The last two years of historical cost data should generally be sufficient for an estimate. Note that all cost data will be inflated to present day dollars. The second filter is project work type on the "Work Type" tab. The application automatically selects work types that are similar to the user's project work type. In this case, the project work type is "2013 – BRIDGE NEW – PPCB" so the application selected all the bridge work types shown in the figure below. In this case the user might choose to narrow down the filter to the following work types since these are more directly related to the project work type: "2013 – BRDIGE NEW – PPCB", "2023 – BRDIGE REPLACEMENT – PPCB", and "2053 – BRDIGE AND APPROACHES – PPCB". One benefit of doing this for PPCB bridges would be for a bid item like "2408-7800000 Structural Steel" which is typically a relatively small quantity for PPCB bridges. Narrowing the work type filter will eliminate steel girder bridges from the regression analysis for this bid item which is desirable since steel girder bridges typically have a large quantity of steel compared to PPCB bridges. Users do need to be careful about applying too many filters since the number of past projects used to calculate the suggested unit price for the various bid items can become too small to be considered useful. Generally, it is preferable to have at least 10 past projects contributing to a suggested unit price.

The "Estimate Parameters" tab was revamped in April 2017 so it will take 2 to 3 years for the "Bridge Parameters" filters on this tab to work effectively on the parametric bid items in iPDWeb.



# Cost Estimating tab – Division Level

The division level is where the estimates are put together for the structure. The default division level name in the tree structure is "New Division". If the design number is known, the user should change the division name to the design number (e.g. "Design 117").

Bid item based estimates will be covered first and then parametric based estimates. Parametric based estimates are sometime called early estimates.

## Bid Item Based Estimates

Bid item based estimates are generally performed near the end of the design when the bid items and quantities are known. These estimates tend to be the most accurate since the project is fully-defined and the historical price data used to make an estimate is up-to-date and easy to apply.

#### Adding Bid Items

There are three ways to add bid items to start creating an estimate.

- Estimates can be created from scratch by manually adding each bid item individually.
- New division estimates can be started using a template for a particular work type or design.
- Copying a division from "PSSLive" is the simplest way if you already have everything entered into PSS, or if you have another estimate division from a similar project, you could also copy an entire division from one project to another.

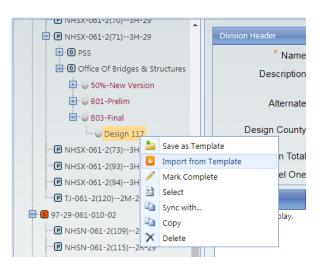
Adding bid items individually to a new estimate is one option. Bid items can be added by simply rightclicking in the lower half of the division level estimate screen and selecting "Add Item(s)". The "Item Load" dialog window will appear and the user can search for and add one or more items at a time to the estimate screen.

NHSX-061-2(62)3H-29     NHSX-061-2(68)3H-29	Division Header				
NHSX-061-2(69)3H-29	* Name: De	sign 117		Repor	
- NHSX-061-2(70)3H-29	Description: Net	w Division			
NHSX-061-2(71)3H-29					
PSS	Alternate:		Alternate Name:		_
Office Of Bridges & Structures     S0%-New Version	Design County:	<b>o</b>	Use Suggestion: 02/10/2	Update Suggested Price	
🖬 😡 B01-Prelim	Use Division Total: 🗹	Use Project Total: 🔲	Use Office Total:		
B03-Final	Group by Level One:	Group by Level Two:	Current Total: \$0.00	Previous Total:	
NHSX-061-2(73)3H-29	Item Number Desc	ription	UOM	Quantity	Unit Price
NHSX-061-2(93)3H-29	No records to display.				
- NHSX-061-2(94)3H-29		Add Item(s)			
TJ-061-2(120)2M-29		Add Item(s)			
97-29-061-010-02					

			Add Item(s)		
Select Item(s):	excava		<b>_</b>		
Item Number	Item Number	UOM	Description		
	2104-2710020	CY	EXCAVATION, CL 10, CHANNEL	<u>Add</u>	<b>A</b>
o records to displ	2104-2712020	CY	EXCAVATION, CL 12, CHANNEL	<u>Add</u>	
	2104-2713020	CY	EXCAVATION, CL 13, CHANNEL	Add	
	2213-2713300	CY	EXCAVATION, CL 13, WIDEN	Add	
	2402-2720000	CY	EXCAVATION, CL 20	Add	
	2402-2720100	CY	EXCAVATION, CL 20, RDWY PIPE CULV	Add	
	2402-2721000	CY	EXCAVATION, CL 21	Add	
	2402-2722000	CY	EXCAVATION, CL 22	Add	
	2402-2722100	CY	EXCAVATION, CL 22, RDWY PIPE CULV	Add	
	2402 2722000	~v	EVONUNTION OF 32	66.0	•
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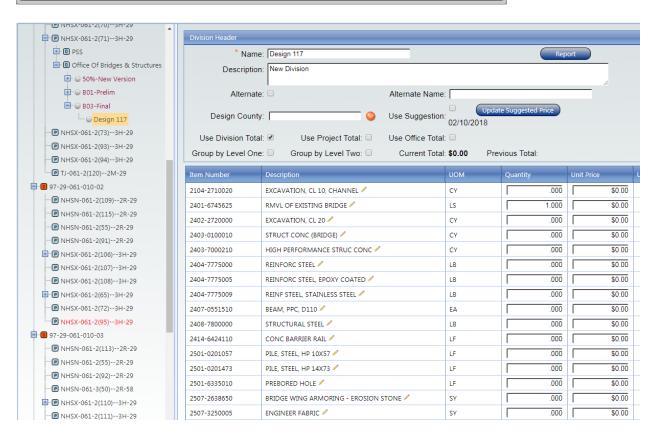
▶ NHSX-061-2(62)3H-29						
■ P NHSX-061-2(68)3H-29	Division Header					
NHSX-061-2(69)3H-29	* Name	e: Design 117			Report	
NHSX-061-2(70)3H-29	Description	n: New Division				
NHSX-061-2(71)3H-29						- //
PSS	Alternate	e: 🔲	Alternate Name:			
Office Of Bridges & Structures				Update S	uggested Price	
🗐 😡 50%-New Version	Design Count	y: I 🥥	Use Suggestion: 0	2/10/2018		
🖬 😡 B01-Prelim	Use Division Tota	ıl: 🗹 🛛 Use Project Total: 🗆	Use Office Total:	)		
🖃 😡 B03-Final	Group by Level One	e: Group by Level Two:	Current Total: \$	0.00 Previo	us Total:	
Design 117		1		1		
NHSX-061-2(73)3H-29	Item Number	Description		UOM	Quantity	Unit Price
	2402-2720000	EXCAVATION, CL 20 🖉		CY	.000	[
NHSX-061-2(94)3H-29						
TJ-061-2(120)2M-29						
97-29-061-010-02						

New division estimates can also be created using templates. Division templates can be found by rightclicking on a division and selecting "Import from Template". Templates are very handy because they have been setup to include common bid items for a particular type of design or project work type.

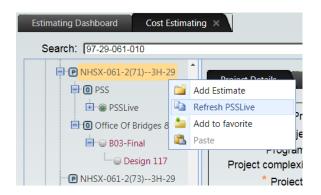


	Import from Template	
Select Template:		
item # L	Name 5310-BRIAN SMITH-50%-New Version-Division 1 5310-BRIAN SMITH-Emergency Slide Repair 5320-MICHAEL NOP-Bid Item CCS 5320-MICHAEL NOP-Bid Item MB 5320-MICHAEL NOP-Bid Item PPCB 5320-MICHAEL NOP-Bid Item PPCB 5320-MICHAEL NOP-Bid Item RCB Culvert 5320-MICHAEL NOP-Prelim Bridge Concept 5360-BRADLEY HOFER-50%-New Version-3" CIP at CONCEPT	

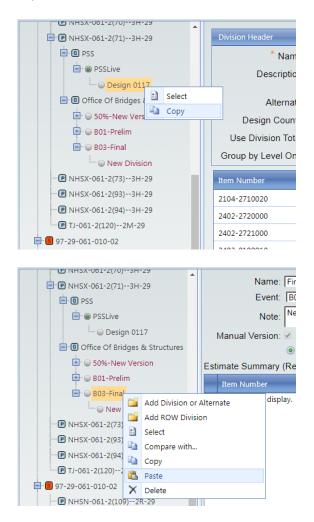
Import from Template						
Select Template: 5320-MICHAEL NOP-Bid Item PPCB						
Item #	UOM	Description				
2104-2710020	CY	EXCAVATION, CL 10, CHANNEL				
2401-6745625	LS	RMVL OF EXISTING BRIDGE				
2402-2720000	CY	EXCAVATION, CL 20				
2403-0100010	CY	STRUCT CONC (BRIDGE)				
2403-7000210	CY	HIGH PERFORMANCE STRUC CONC				
2404-7775000	LB	REINFORC STEEL				
2404-7775005	LB	REINFORC STEEL, EPOXY COATED				
2404-7775009	LB	REINF STEEL, STAINLESS STEEL				
2407-0551510	EA	BEAM, PPC, D110				
2408-7800000	LB	STRUCTURAL STEEL				
2414-6424110	LF	CONC BARRIER RAIL				
2501-0201057	LF	PILE, STEEL, HP 10X57				
2501-0201473	LF	PILE, STEEL, HP 14X73				



The third method is to copy all the bid items from another division or from PSS Live. Before copying from PSSLive it may be advisable to first force a refresh of the PSSLive data by right-clicking on the project number and selecting "Refresh PSSLive". Doing so will ensure all bid items and quantities in iPDWeb are current with those in PSS.

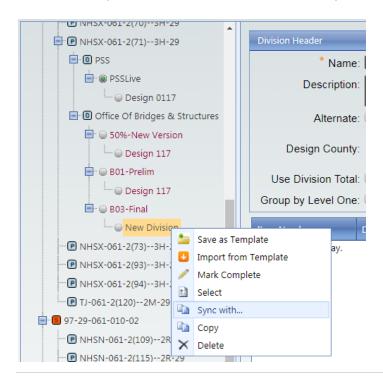


To copy, simply right-click on the PSSLive division and select "Copy". (Copying from PSSLive or another project work the same way.) Next right-click on the event level estimate you want to copy to and select "Paste". It will copy the entire division to your event level estimate. The division name will remain the same. Note that you can't select a division to paste to. If the trend filter for the project you are pasting to varies from the project you copied from, you will receive a warning message "Do you want to use the destination trend filter?". Selecting "Yes" will update the trend filter settings to match the estimate version you are pasting to. "No" will maintain the trend filter settings from where the division was copied.



P NHSX-061-2(71)3H-29	Division Header				
e O PSS	* Nar	ne: Design 0117		Rep	ort
- O PSSLive	Descripti	on: Design No. 0117;			
🝚 Design 0117					11
Office Of Bridges & Structures	Alterna	ate: 🗆	Alternate Name:		
📄 😡 50%-New Version	Design Cour	nty: 🛛 🧧	) Use Suggestion: 🗆	Update Suggested Price	
🝚 Design 117	Use Division To	tal: 🔲 Use Project Total: 🔲	Use Office Total:		
B01-Prelim	Group by Level O	ne: 🔲 Group by Level Two: 🗆	Current Total: \$0.00	Previous Total:	
B03-Final	Item Number	Description	UOM	Quantity	Unit Price
🕒 New Division	2104-2710020	EXCAVATION, CL 10, CHANNEL /	СҮ	1,420.000	\$0.0
📖 😡 Design 0117	2402-2720000	EXCAVATION, CL 20 /	CY	1.180.000	\$0.0
■ NHSX-061-2(73)3H-29	2402-2721000	EXCAVATION, CL 21 /	CY	733.000	\$0.0
- P NHSX-061-2(93)3H-29	2403-0100010	STRUCT CONC (BRIDGE)	СУ	1.274.800	\$0.
■ NHSX-061-2(94)3H-29	2403-0100010	REINFORC STEEL	LB	80.807.000	\$0.0
□ P TJ-061-2(120)2M-29	2404-7775005	REINFORC STEEL EPOXY COATED		131.918.000	50.0
97-29-061-010-02				4,375.000	\$0.0
NHSN-061-2(109)2R-29	2404-7775009	REINF STEEL, STAINLESS STEEL	LB		1 +
NHSN-061-2(115)2R-29	2407-0563070	BEAM, PPC, BTC70 /	EA	6.000	\$0.0
NHSN-061-2(55)2R-29	2407-0563080	BEAM, PPC, BTC80 🖊	EA	6.000	\$0.0
NHSN-061-2(91)2R-29	2407-0563115	BEAM, PPC, BTC115 🖉	EA	6.000	\$0.0
NHSX-061-2(106)3H-29 NHSX-061-2(107)3H-29	2408-7800000	STRUCTURAL STEEL 🖊	LB	8,866.000	\$0.0
NHSX-061-2(107)3H-29	2414-6425420	CONC BARRIER, PARAPET 🖉	LF	552.200	\$0.0
NHSX-061-2(108)3H-29	2414-6445100	STRUCTURAL STEEL PEDESTRIAN HA	AND RAIL / LF	287.800	\$0.0
NHSX-061-2(72)3H-29	2414-6625502	STRUCT STEEL RAIL, TRAFFIC 🖊	LF	520.000	\$0.0
NHSX-061-2(95)3H-29	2499-2300001	DECK DRAIN 🖉	LS	1.000	\$0.0
97-29-061-010-03	2501-0201057	PILE, STEEL, HP 10X57 🥒	LF	7,655.000	\$0.0
NHSN-061-2(113)2R-29	2501-6335010	PREBORED HOLE 🖊	LF	200.000	\$0.0
P NHSN-061-2(55)2R-29	2507-2638650	BRIDGE WING ARMORING - EROSIC	ON STONE 🖉 SY	24.000	\$0.0

The user can also copy all the bid items from PSSLive into a division level using the "Sync with..." option. Simply right-click on a division level and select "Sync with...". The "Sync Division" dialog will open. Select the division name for the PSSLive division you want to copy. Click the "Sync All" button to copy all the bid items and quantities from the PSSLive division to your division.



			Synchronize Divisi	on		
elect Division:	[		Sync Selected	Sync All Cance		
Add/Delete	Key	Name	Description			
	0001	Design 0117	Design No. 0117;			
Item Number				uantity	Unit Price	Select
No records to d						

	Synchronize Divi	sion		
ect Division: [	Design No. 0117; Sync Select	ed Sync All Cancel		
dd/Delete	Update		-	
item Number	Description	Quantity	Unit Price	Select
Item(s) to be	ADDED			
2104-2710020	EXCAVATION, CL 10, CHANNEL	1,420.00	\$0.00	
2533-4980005	MOBILIZATION	1.00	\$0.00	
2507-3250005	ENGINEER FABRIC	2,080.00	\$0.00	
2507-8029000	EROSION STONE	30.00	\$0.00	
2507-2638650	BRIDGE WING ARMORING - EROSION STONE	24.00	\$0.00	
2507-6800061	REVETMENT, CLASS E	2,300.00	\$0.00	
2402-2720000	EXCAVATION, CL 20	1,180.00	\$0.00	
2402-2721000	EXCAVATION, CL 21	733.00	\$0.00	
2407-0563070	BEAM, PPC, BTC70	6.00	\$0.00	
2501-0201057	PILE, STEEL, HP 10X57	7,655.00	\$0.00	
2414-6445100	STRUCTURAL STEEL PEDESTRIAN HAND RAIL	287.80	\$0.00	
2414-6425420	CONC BARRIER, PARAPET	552.20	\$0.00	
2414-6625502	STRUCT STEEL RAIL, TRAFFIC	520.00	\$0.00	
2499-2300001	DECK DRAIN	1.00	\$0.00	
2501-6335010	PREBORED HOLE	200.00	\$0.00	

## Assigning Price

Once the bid items have been added the user can enter the quantity for each bid item. In cases where the user copied data from PSSLive the quantities may already be there.

Users can enter prices simply by entering a price in the "Unit Price" field directly. This may be the best approach for some bid items, particularly 2599 bid items. However, for most bid items the user should take advantage of the historical price data and regression analysis provided within the iPDWeb software.

To assign suggested prices, the user should check the box for "Use Suggestion" in the upper section of the division level estimate screen. Once that box has been checked, checks will be applied to all the boxes for the various bid items in the "Use Suggestion" column in the lower section of the division level estimate screen. Next, click the button "Update Suggested Price" to let the software determine suggested unit prices for each bid item. The suggested unit prices are based on past projects which meet the trend filter settings at the event level (discussed earlier in this manual) and also contain the bid item being estimated. If a bid item has a suggested unit price of \$0.00 it means that price data for that bid item was not found among the filtered projects. The user should carefully consider the price for each bid item to ensure it makes sense.

NH5X-061-2(71)3H-29	Division Header										
🗐 🚯 PSS	Na	me: Design 117		6	Report						
PSSLive     Oesign 0117	Descript	son: New Division									
🖶 🚯 Office Of Bridges & Structures	Altern	ate: Alternate Nan	ve:		_						
🕒 ⊌ 50%-New Version	Design Cou	nty Use Suggestio	and Caroun	Suggested Price 02	10/2018						
🗊 🐷 801-Prelim	Use Division Te										
Er @ 803-Final				112010000000000000000000000000000000000	1257						
Design 117	Group by Level C	Ine: 🖾 Group by Level Two: 🖾 Current Tot	al. \$1,023,396.90	Previous Total: \$0	.00						
• • NH5X-061-2(73)3H-29	Item Number	Description	UOM	Quantity	Unit Price	Use Suggestion	Suggestion	Suggestion Range	East. Proce		Deer
■ NH5X-061-2(93)3H-29	2402-2720000	EXCAVATION, CL 20	CY	712.000	\$22.35		\$22.35	\$19.55 - \$25.54	\$15,913,20	NA	[D]
- RNH5X-061-2(94)5H+29	2403-0100010	STRUCT CONC (BRIDGE)	CY	473.000	\$534.58		\$534.38	5514.04 - 5555.95	\$252,856,34	NA	D
TJ-061-2(120)2M-29	2404-7775000	REINFORC STEEL	LB	12,729.000	\$0.90	8	\$0.90	\$0.86 - \$0.95	\$11,456.10	NA	D
97-29-061-010-02	2404-7775005	REINFORC STEEL EPOXY COATED	1.8	93,860,000	\$0.94	2	50.04	50.92 - 50.97	588,228,40	down and	D
- 🕑 NH5N-061-2(109)28-29							2110-2	\$23,100.00 -			-
NHSN-061-2(115)28-29	2407-0550000	BEAM POC.	EA	5.000	\$23,100.00	8	\$23,100.00	\$28,250.00	\$115,500.00	NA	D
■ NHSN-061+2(55)-+2R+29	2407-0562850	BEAM, PPC, BTIISO /	EA.	5.000	\$0.00	8	\$0.00		\$0.00	NA	0
NHSN-061-2(91)28-29     NHSN-061-2(106)3H-29     NHSX-061-2(106)3H-29	2407-0562890	BEAM, PPC, BT890	ŁA	5.000	\$16,000.00	8	\$16,000.00	\$16,000.00 - \$16,000.00	\$80,000.00	NA	D
NH5X-061-2(107)→3H-29	2408-7800000	STRUCTURAL STEEL	LB	5,635.000	\$3.00	8	\$3.00	\$2.85 - \$3.14	\$16.905.00	NA	D
RNH5X-061-2(108)3H-29	2414-6424110	CONC BARRIER RAIL	U.	422.000	\$63.57	8	\$63.57	\$58.59 - \$68.97	\$26,826,54	NA	D
🗑 🕐 NH5X-061-2(65)3H-29	2501-0201057	PILE, STEEL, HP 10X57	LF .	2,475.000	\$36.27		\$36.27	\$35.04 - \$37.55	\$89,768.25	NA	D
■ NH5X-061-2(72)3H-29	2501-0201473	PILE STEEL HP 14X73	LF -	4,725.000	\$45.03		\$45.83	\$40.88 - \$51.38	\$216,546.75	NA	D
MH5X-061-2(95)3H-29	2501-6335010	PREBORED HOLE	UF	330.000	\$47.40	8	\$47,40	\$43.41 - \$51.75	\$15,642.00	NA	D
97-29-061-010-03	2507-2638620	MACADAM STONE SLOPE PROTECTION	57	660 000	\$43.41		\$42.41	\$38.11 - \$49.45	\$28,650,60	1000	D
■ NH5N-061-2(113)2R-29	2507-2638660	BRIDGE WING ARMORING - MACADAM STONE	SY SY	15.400	\$113.99		\$113.99	\$90.65 - \$141.33	\$1,755.45	NA	0
NH5N-061-2(55)2R-29	4307-4038000	BUTTOR MILLIO WANTER A WALFTONE A	51	1 15.400	1 \$112.90	-	2111-33	330.02 - 3143.33	31,730,45	100	1955

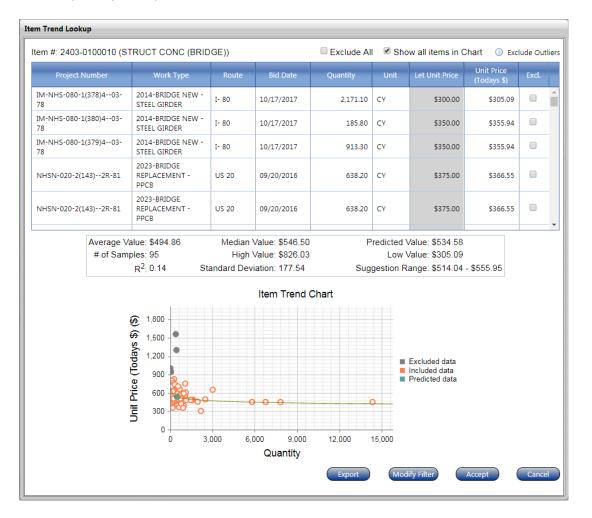
To find out more information about a suggested price for a particular bid item, right click on the row containing that bid item and select the option for "Item Trend Lookup" to open its dialog screen.

Item Number	Description		UOM	Quantity	Unit Price	Use Suggestion	Suggestion	Suggestion Range	Ext. Price	-	Docs
2402-2720000	EXCAVATION, CL 20 🖉		CY	712.000	\$22.35	8	\$22.35	\$19.55 - \$25.54	\$15,913.20	NA	D
2403-0100010	STRUCT CONC (BRIDGE)	(	~	473.000	\$534.58	8	\$534.58	\$514.04 - \$555.95	\$252,856.34	NA	
2404-7775000	REINFORC STEEL	Add Item(s)  Delete Item(s)		12,729.000	\$0.90	8	\$0.90	\$0.86 - \$0.95	\$11,456.10	NA	D
2404-7775005	REINFORC STEEL, EPOXY COATED 🖍	Copy Item(s)		93.860.000	\$0.94	8	\$0.94	\$0.92 - \$0.97	\$88,228.40	NA	D
2407-0550000	BEAM, PPC,	Item Trend Filter		5.000	\$23,100.00	8	\$23,100.00	\$23,100.00 - \$28,250.00	\$115,500.00	NA	D
2407-0562850	BEAM, PPC, BTB50 🖍	Item Trend Lookuş		5.000	\$0.00	8	\$0.00		\$0.00	NA	D
				E 800	Exc. 000.00			\$16,000.00 -			101

The "Item Trend Lookup" dialog screen displays the bid item information for each filtered project used in the regression analysis for determining the suggested unit price. Each orange and gray dot in the "Item Trend Chart" represents a project data point in the listing above the chart. Orange dots indicate data which is included in the regression analysis. Gray dots indicate data excluded from the regression analysis. By default, some data may be automatically excluded since they are flagged as outliers which are more than 2 standard deviations from the average price. If you scroll through the project listing you will see a check mark in the "Excl." column for any excluded data. Users can exclude or include project data by checking or unchecking the box in the listing or by double-clicking a data point in the graph. If the user excludes any data points other than the default outliers or includes any of the default outliers in the data then the font color of the suggested price in the "Suggestion" column of the lower section of the division level estimate screen will be changed to orange. In general, it is advisable to have at least 10 sample data points for a valid regression analysis. The green dot represents the predicted price.

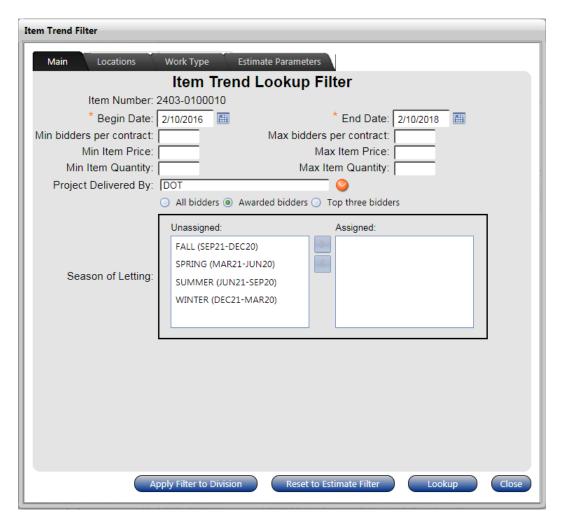
Most of the statistical data shown below will already be well understood by most users.

- R<sup>2</sup> measures the reduction in the variation around the cost (dependent variable) with respect to the quantity (independent variable). R<sup>2</sup> is a proxy for the goodness of fit in the regression model used to estimate a price for a given level of quantity. It is based on the sample used to estimate the regression model. If the regression equation predicted each observed value precisely, the R<sup>2</sup> value would be 1. If there is no correlation, the R<sup>2</sup> value would be 0.
- The "Suggestion Range" in the application is a 95 percent prediction interval for a new value of a quantity. (The prediction interval is not the same as a confidence interval around the mean.)



Users have the ability to change the filters for an individual bid item. To do so, the user can click on the "Modify Filter" button on the "Item Trend Lookup" screen or the user can right click on the row containing that bid item in the lower section of the division level estimate screen and select the option for "Item Trend Filter" to open its dialog screen directly.

If you change any of the filter settings for an individual bid item then the font color of the suggested price in the "Suggestion" column of the lower section of the division level estimate screen will be changed to red.



#### Mobilization

The bid item "2533-4980005 MOBILIZATION" is somewhat of a special case. Suggested values for this bid item are percentage-based. By default, the percentage used to calculate mobilization cost is based on a percent cost of the total division level cost. In other words, mobilization itself is included in the total division level cost. Users can also change from using a percent of the division level cost to a percent of the office level or project level cost by checking the appropriate box in the upper portion of the division level estimate screen. Finally, users can modify the percent used to estimate the cost by right-clicking in the row and selecting the "Modify Lumpsum Percent". Modifying the percent does result in a new unit price based on the percent entered. It also unchecks the "Use Suggestion" box for the mobilization bid item, but it does not change the suggested percent shown for that bid item.

Name	Design 117			Reg	port						
Description	New Division										
Alternate Design County		Alternate Name:	(alternation	ogested Price 02/12/2	018						
Use Division Total			Opdate so	gested Piller Contor	010						
Group by Level One				Previous Total: \$0.00							
Group by Level One	Group by Level	Two. 🗆 Gurrent Total. \$1,	023,396.90	Previous Total: 80.00							
tem Number	Description		UOM	Quantity	Unit Price	Use Suggestion	Suggestion	Suggestion Range	Ext. Price	-	De
402-2720000	EXCAVATION, CL 20 🗡		CY	712.000	\$22.35	8	\$22.35	\$19.55 - \$25.54	\$15,913.20	NA	
2403-0100010	STRUCT CONC (BRIDGE) 🗡		CY	473.000	\$534.58	8	\$534.58	\$514.04 - \$555.95	\$252,856.34	NA	
404-7775000	REINFORC STEEL 🗡		LB	12,729.000	\$0.90	8	\$0.90	\$0.86 - \$0.95	\$11,456.10	NA	[[
404-7775005	REINFORC STEEL EPOXY CO	DATED 💉	LB	93,860.000	\$0.94	8	\$0.94	\$0.92 - \$0.97	\$88,228.40	NA	1
407-0550000	BEAM, PPC,		EA	5.000	\$23,100.00		\$23,100.00	\$23,100.00 - \$28,250.00	\$115,500.00	NA	C
407-0562850	BEAM, PPC, BTB50 🖉		EA	6.000	\$0.00	8	\$0.00		\$0.00	NA	
2407-0562890	BEAM, PPC, BTB90 🗡		EA	6.000	\$16,000.00	8	\$16,000.00	\$16,000.00 - \$16,000.00	\$80,000.00	NA	
408-7800000	STRUCTURAL STEEL 🖊		LB	5,635.000	\$3.00	8	\$3.00	\$2.85 - \$3.14	\$16,905.00	NA	[
2414-6424110	CONC BARRIER RAIL		LF	422.000	\$63.57	8	\$63.57	\$58.59 - \$68.97	\$26,826.54	NA	
501-0201057	PILE, STEEL, HP 10X57 🖊		LF	2,475.000	\$36.27	8	\$36.27	\$35.04 - \$37.55	\$89,768.25	NA	1C
2501-0201473	PILE, STEEL, HP 14X73 /		LF	4,725.000	\$45.83	8	\$45.83	\$40.88 - \$51.38	\$216,546.75	NA	
2501-6335010	PREBORED HOLE	Modify Lumpsum Percent	LF	330.000	\$47.40	8	\$47.40	\$43.41 + \$51.75	\$15,642.00	NA	
2507-2638620	MACADAM STONE SLOPE	Add Item(s)	SY	660.000	\$43.41	2	\$43.41	\$38.11 - \$49.45	\$28,650.60	NA	
2507-2638660	BRIDGE WING ARMORING	X Delete Item(s)	sv	15.400	\$113.99	8	\$113.99	\$90.65 - \$143.33	\$1,755.45	NA	
2533-4980005	MOBILIZATION 2	Copy Item(s)	LS	1.000	\$63.348.27	8	6.19%	0.00% - 0.00%	\$63,348.27	NA	[[

Modify Lumpsum Percent
Enter Percent(%): 10 OK Cancel

#### Miscellaneous

When necessary, users can edit the bid item description by clicking on the pencil icon in the "Description" column located in the lower portion of the division level estimate screen. For example, the 2407-055000 bid item description below is for special PPC beams and would require the user to change the description to something like "BEAM, PPC, SBTB50". Users need to be careful about using the suggested price for bid items like this one since the historical cost data may not be representative. In this example, the price data for this bid item will likely be based on special beams of all different sizes.

		B I U A -
Item Number	Description	BEAM, PPC,
2402-2720000	EXCAVATION, CL 20 🧪	
2403-0100010	STRUCT CONC (BRIDGE) 🖉	
2404-7775000	REINFORC STEEL 🖊	
2404-7775005	REINFORC STEEL, EPOXY COATED 🖊	
2407-0550000	BEAM, PPC,	
2407-0562850	BEAM, PPC, BTB50 🥓	

BEAM, PPC,		

In each bid item row on the far right-hand side of the lower portion of the division level estimate screen are a few icons in the "…" and "Docs" column. Clicking the "N" icon allows the user to type in and store any notes they might want to add to justify a particular price. Clicking the "A" icon reveals any notes the program makes with respect to a bid item. Clicking the "D" icon allows the user to attach any documents they may want to add to justify a particular price. For parametric estimates, to be discussed later, the user may want to attach the concept letter.

	Docs
NA	D

## Parametric Based Estimates

Parametric based estimates are sometimes called early estimates. Essentially these estimates are made without the benefit of having a full set of quantities available. In some cases, only a rough approximation of the structure's dimensions is available.

### Parametric Bid Items

For early estimates of bridge cost, it is common to use a cost per square foot of bridge deck area (out-toout and end-to-end) based on historical costs. Early estimates for reinforced concrete box culverts are based on costs per cubic yard of structural concrete. The amount of culvert concrete is based on the estimated size and length of culvert. The thickness of the slab, floor, and walls is estimated using standard designs which are tied to the anticipated height of earth fill. Additional costs for bridges and culverts usually need to be added for staging, removal, revetment, aesthetics, mobilization, etc.

Parametric estimates in iPD are handled much like bid item based estimates. As with traditional bid items the user can add parametric bid items simply by right-clicking in the lower half of the division level estimate screen and selecting "Add Item(s)". The "Item Load" dialog window will appear and the user can search for and add a parametric bid item to the estimate screen. Searching for parametric bid items is done by searching for "para".

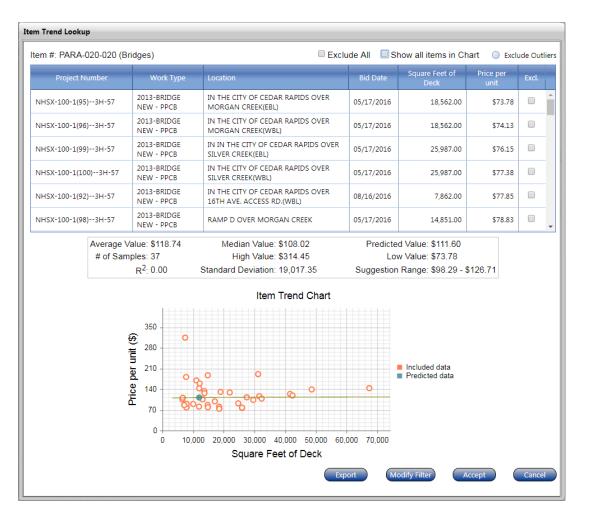
P NHSN-061-2(75)2R-29	Division Header					
NHSX-061-2(62)3H-29		Design 117			Report	
NHSX-061-2(68)3H-29	Description:	New Division				
NHSX-061-2(69)3H-29						11
NHSX-061-2(70)3H-29	Alternate:		Alternate Name:			
NHSX-061-2(71)3H-29	Design County:		Use Suggestion: 📃	Update Suggested	d Price	
Dess	Use Division Total:	🗹 Use Project Total: 🗆	Use Office Total:			
🗐 📵 Office Of Bridges & Sti	Group by Level One:	Group by Level Two:	Current Total: \$0.00	Previous Total	t:	
🗐 😡 50%-New Version						
B01-Prelim	Item Number	Description		UOM	Quantity	Un
Design 117	No records to display.					
B03-Final						
NHSX-061-2(73)3H-29		Add Item(s)				
NHSX-061-2(93)3H-29						

Select Item(s): [para           Item Number         UOM         Description           No records to disp         PARA-010-000         Parametric         ROADWAY REMOVALS         Add           PARA-010-010         Parametric         Earthwork         Add           PARA-010-020         Parametric         Surfacing         Add	•
Item Number         PARA-010-000         Parametric         ROADWAY REMOVALS         Add           No records to displ         pARA-010-010         Parametric         Earthwork         Add	<b>^</b>
PARA-010-000         Parametric         ROADWAY REMOVALS         Add           No records to displ         PARA-010-010         Parametric         Earthwork         Add	<b>^</b>
PARA-010-010 Parametric Earthwork Add	
PARA-010-020 Parametric Surfacing Add	
Add	
PARA-010-040 Parametric Barrier Add	
PARA-010-050 Parametric Drainage Add	
PARA-010-060 Parametric Fencing Add	
PARA-010-070 Parametric Noise Wall Add	
PARA-010-080 Parametric Pavement Markings Add	
PARA-020-020 Parametric Bridges Add	*

For example, if the user selects "PARA-020-020 Bridges", enters the "Square Feet of Deck", checks the "Use Suggestion" box and clicks the button to "Update Suggested Price" then the program will use regression analysis to determine the "Unit Price". To find out more information about the suggested price for the parametric bid item, right click on the row containing that bid item and select the option for "Item Trend Lookup" to open its dialog screen. Additionally, the user may want to review the filter settings to ensure they are drawing cost data from the most appropriate work types.

^ Na	me. Design 117		Repor							
Descript	on: New Division									
Altern	ate: C Alternate Nat	ne:								
Design Cou	nty: 🚺 🥥 Use Suggesti	on: 🖉 👘 Update Suggester	d Price							
Use Division To	ital. 🖻 Use Project Total. 🗐 Use Office To	tal:								
Group by Level O	ne: 🔲 Group by Level Two: 🗍 Current To	tal. \$1,339,140.00 Previ	ious Total. \$0.00							
Group by Level O	ne: Group by Level Two: Current To Description	tal. \$1,339,140.00 Previ	ous Total: \$0.00	Unit Price	Use Suggestion	Suggestion	Suggestion Range	Ext. Price	-	De

Item Number	Description		
PARA-020-020	Bridges 🦯	Expand Item	
		Add Item(s)	
		X Delete Item(s)	
		Copy Item(s)	
		🗈 Item Trend Filter	
		🔍 Item Trend Lookup	



In order to see what lies behind the parametric bid items, it is generally best to select "Master D Group" from the list of "Menu" items which can be accessed from the ribbon. For example, for the "PARA-020-020 Bridges" item the user can select "STRUCTURES" and then "BRIDGES" from the tree on the "Master D Group" tab. The "PARA-020-020 Bridges" item is listed in the right-hand pane under the "BRIDGES" tree level. "BRIDGES" is a tier 2 level within the Master D Group hierarchy. Every bid item is categorized under a branch of the Master D Group. If the user continues to drill down into the "SUPERSTRUCTURE", SUBSTRUCTURE", and "BLENDED" tree levels, they will eventually reach the tier 6 level where the typical bid items are listed. All the bid items under "BRIDGES" that are contained in the list of filtered projects selected by the user for the parametric bid item will be used in determining the parametric cost.

🥯 Menu					
Cost Management	Cost Estimating	Maintenance	Reporting		
Cost Dashboard	Division Template	Organization	AdHoc Reports		
Cost Planning	Cost Estimating	Items	Fiscal Report		
Price Adjustment		Master D Group	Fiscal Chart		
		Employees			
		Manage Policies			

🖣 🗓 GENERAL	Name: BRIDGES			
ROADWAY	Item Number	Description	Unit	Estimating Factor
I I STRUCTURES	PARA-020-020	Bridges	Parametric	Square Feet of Deck
STRUCTURE REMOVALS				Square reet of Deck
E 2 EARTHWORK	PCT-020-020	BRIDGES (020-020)	% of Project	
I SUPERSTRUCTURE				
3 SUBSTRUCTURE				
BLENDED				
BOX CULVERT				
BOX CULVERT      RETAINING WALLS				
RETAINING WALLS				
RETAINING WALLS     Induction				
RETAINING WALLS     LANDSCAPING     ENOSION CONTROL				
RETAINING WALLS     I LANDSCAPING     EROSION CONTROL     SIGNS				

Item Number         Description         Unit         Estimating Factor           2 Structures         2407-0550000         9 EAM, PPC,         EA	] GENERAL	Name: PRETENSIONE	D PREST	RESSED		
2 BARDCTURE REMOVALS       2407-0550001       BEAM, PPC, ERECT       EA         2 BARDGES       2407-0551130       BEAM, PPC, A30       EA         3 SUPERSTRUCTURE       2407-0551134       BEAM, PPC, A30       EA         4 STRUCTURAL       2407-0551134       BEAM, PPC, A34       EA         5 CONCRETE BEAM       2407-0551138       BEAM, PPC, A38       EA         2407-0551142       BEAM, PPC, A42       EA         6 BOX BEAM       2407-0551146       BEAM, PPC, A45       EA         2407-0551145       BEAM, PPC, A50       EA         2407-0551155       BEAM, PPC, A55       EA         2407-0551155       BEAM, PPC, B34       EA         6 STRUCTURAL STEEL       2407-0551234       BEAM, PPC, B34       EA         1 STRUCTURAL STEEL       2407-0551242       BEAM, PPC, B34       EA         1 STRUCTURAL STEEL       2407-0551242       BEAM, PPC, B34       EA         1 STRUCTURAL STEEL       2407-0551242       BEAM, PPC, B46       EA		Item Number		Description		Estimating Factor
2 BRIDGES       2407-0551130       9 EAM, PPC, A30       EA         2 BRIDGES       2407-0551134       9 EAM, PPC, A34       EA         3 STRUCTURAL       2407-0551134       9 EAM, PPC, A34       EA         4 STRUCTURAL       2407-0551138       9 EAM, PPC, A38       EA         5 CONCRETE BEAM       2407-0551142       9 EAM, PPC, A42       EA         6 BULB TEE PRETENSIONED PRESTRESSED       2407-0551146       9 EAM, PPC, A45       EA         2 407-0551140       9 EAM, PPC, A50       EA         2 407-0551150       9 EAM, PPC, A55       EA         2 407-0551150       9 EAM, PPC, B34       EA         2 407-0551234       9 EAM, PPC, B34       EA         2 407-0551242       9 EAM, PPC, B42       EA         9 Structural streel       2407-055124E       9 EAM, PPC, B46       EA	2 STRUCTURE REMOVALS					
2407-0551134       2407-0551134       2407-0551134       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551138       2407-0551142       2407-0551142       2407-0551142       2407-0551146       2407-0551146       2407-0551146       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551150       2407-0551123       2407-0551123       2407-0551123       2407-0551123       2407-0551123       2407-0551123       2407-0551123       2407-0551124 <td< td=""><td>EARTHWORK</td><td></td><td><b>S</b></td><td>BEAM, PPC, ERECT</td><td>EA</td><td></td></td<>	EARTHWORK		<b>S</b>	BEAM, PPC, ERECT	EA	
Image: Constructure of the structure of the structu	2 BRIDGES	2407-0551130	Sector 1	BEAM, PPC, A30	EA	
Image: Concrete Beam         Image: Co		2407-0551134		BEAM, PPC, A34	EA	
Image: Construction of the prestressed         Image: Constend of the prestressed         Image: Cons		2407-0551138		BEAM, PPC, A38	EA	
Image: Construction of the state stat	and and an	2407-0551142		BEAM, PPC, A42	EA	
BOX BEAM         [2407-0551150         BEAM, PPC, ASO         EA           IS STRUCTURAL STEEL         [2407-0551155         BEAM, PPC, ASS         EA           IS STRUCTURAL STEEL         [2407-0551155         BEAM, PPC, ASS         EA           IS STRUCTURAL STEEL         [2407-0551234         BEAM, PPC, B34         EA           IS STEEL TRUSS         [2407-0551238         BEAM, PPC, B38         EA           IS BEAM RPAIR         [2407-0551242         BEAM, PPC, B24         EA           IS BEAM RPAIR         [2407-0551242         BEAM, PPC, B42         EA           IS BRIDGE CLEANING         [2407-0551246         BEAM, PPC, B46         EA		2407-0551146		BEAM, PPC, A46	EA	
Image: Structural steel         Image: Za07-0551156         BEAM, PPC, A55         EA           Image: Structural steel         Image: Za07-0551156         BEAM, PPC, A55         EA           Image: Structural steel         Image: Za07-05511234         BEAM, PPC, B34         EA           Image: Structural steel         Image: Za07-0551234         BEAM, PPC, B34         EA           Image: Structural steel         Image: Za07-0551238         BEAM, PPC, B38         EA           Image: Structural steel         Image: Za07-0551242         BEAM, PPC, B42         EA           Image: Structural steel         Image: Za07-0551242         BEAM, PPC, B42         EA           Image: Structural steel         Image: Za07-0551246         BEAM, PPC, B46         EA		2407-0551150	_ 0	BEAM, PPC, A50	EA	
Image: Status         Image: Za07-0551234         Image: Beam, PPC, B34         EA           Image: Status         Za07-0551238         Image: Beam, PPC, B38         EA           Image: Status         Za07-0551238         Image: Beam, PPC, B38         EA           Image: Status         Za07-0551242         Image: Beam, PPC, B42         EA           Image: Status         Za07-0551246         Image: Beam, PPC, B46         EA		2407-0551155	_ 0	BEAM, PPC, A55	EA	
Image: Street truss         Image: Z407-0551238         Image: Beam, PPC, B38         EA           Image: Street truss         Image: Z407-0551242         Image: Beam, PPC, B42         Image: EA           Image: Street truss         Image: Z407-0551242         Image: Beam, PPC, B42         Image: EA           Image: Street truss         Image: Z407-0551246         Image: Beam, PPC, B46         Image: EA		2407-0551234	- 0	BEAM, PPC, B34	EA	
Image: Section of the sectio		2407-0551238	- 0	BEAM, PPC, B38	EA	
BRIDGE CLEANING 2407-0551246 S BEAM, PPC, B46 EA	BEAM REPAIR	2407-0551242	- 0	BEAM, PPC, B42	EA	
	BRIDGE CLEANING	2407-0551246	— <u> </u>	BEAM, PPC, B46	EA	
	BRIDGE PAINTING	2407-0551250	— ă	BEAM, PPC, B50	EA	

As stated previously, users may need to add other costs to the base parametric cost, in order to have a better estimate of the total bridge cost. Some items such as bridge removal, revetment, and mobilization can be taken care of by adding the appropriate bid item. Other items such as staging and aesthetics will likely require the use of 2599 bid items. Some items such as dewatering and shoring could be handled by percent based bid items (see next section).

Item Number	Description	UOM	Quantity	Unit Price
2401-6745625	RMVL OF EXISTING BRIDGE 🖊	LS	1.000	\$0.00
2507-6800061	REVETMENT, CLASS E 🖊	TON	2,000.000	\$44.23
2533-4980005	MOBILIZATION 🗡	LS	1.000	\$113,181.16
2599-9999010	STAGING 🖊	LS	1.000	\$200,000.00
2599-9999010	AESTHETICS 🖊	LS	1.000	\$50,000.00
PARA-020-020	Bridges 🥓	Parametric (Square Feet of Deck)	12,000.000	\$111.60

#### Percent Based Bid Items

Percent based bid items are intended to be used to enter a high level conceptual item that eventually breaks down to actual bid items throughout the life of a project. Percent based bid items are based on the "Master D Group" hierarchy as described earlier in this document. These items begin with the prefix "PCT-" and can be searched for like any other bid item. Percent based bid items can be expanded by right-clicking on the percent based bid item and selecting "Expand Item". The use of PCT items for parametric estimates in the Office of Bridges and Structures will likely be limited to secondary items such as dewatering and shoring.

#### *Composite Bid Items*

A composite bid item is a set of bid items that are grouped together for estimating purposes. The grouped items typically form a larger component of a project. The bid items within a composite item are pre-assigned typical quantities based on past experience which is why these items can be useful for parametric estimates. The iPDWeb application will look up prices for the individual bid item quantities and assign a price to each one. These individual prices are then combined into an overall price for the composite item. Composite bid items begin with the prefix "COMP-" and can be searched for like any other bid item. Composite bid items can be expanded into the individual bid items by right-clicking on the composite item and selecting "Expand Item". The user can then adjust the quantities for the individual items if desired. The Office of Bridges and Structures does not currently make use of composite bid items. The Office of Design has a number of composite bid items.

			Add Item(s)		
Select Item(s):	comp		<b>&gt;</b>		
tem Number	Item Number	UOM	Description		
o records to displ	COMP-1612	EA	Composite - 68.24' Median Two Lane Crossover (194,476.41)	<u>Add</u>	<b>^</b>
	COMP-1613	EA	Composite - 36' Median Dual Crossover (172, 535.79)	Add	
	COMP-1650	EA	Composite - High Tension Cable for Median Piers (10,093.64)	Add	
	COMP-1651	EA	Composite - Paved Shoulders Two Lane Wide Shoulders (14,768.12)	Add	
	COMP-1652	EA	Composite - Paved Shoulders Two Lane (10,504.29)	Add	
	COMP-1654	EA	Composite - Paved Shoulders Interstate (10,504.29)	Add	
	COMP-1655	EA	Composite - Class 10 Blister Two Lane Wide Shoulders	Add	-
					OK Canc

## Contingency and Inflation

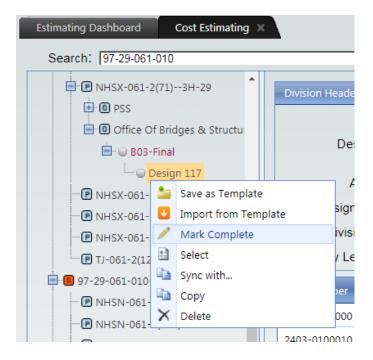
Estimates in iPDWeb are to be done in present day dollars and shall not be inflated. Estimates in iPDWeb shall not include any contingency or risk. Inflation and contingency/risk are going to be managed at the program level.

Currently the Iowa DOT is operating both in the Project Scheduling System (PSS) and in iPDWeb. The actual program is still being managed using PSS. Because of this the following approach is recommended:

- Estimate construction cost in iPDWeb (present day dollars). Account for all anticipated costs with one or more of the following: bid items, parametric items, and percent based bid items.
- Enter the cost developed from iPDWeb into PSS. Choose the programmed fiscal year for the project in PSS. PSS will automatically apply a 4.5% inflation rate per year. Enter contingency into PSS per our rubric in the Bridge Design Manual.

## Finishing an Estimate

When your estimate is all finished, each division to be included in the total should be marked complete. To do this, right-click on the appropriate division in the estimate tree structure and select "Mark Complete". Marking a division complete indicates that no more items will be added or any modifications to prices will be made. You should see a red checkmark next to the division after a division is marked complete.



Next, the estimate divisions need to be selected by right clicking on the division and picking "Select". Selecting a division indicates that this particular division will be included in the total project cost. The red checkmark next to the division will turn green once the division is selected.

Estimating Dashboard	(	Cost Estimating 🛛			
Search: 97-29-061-010					
Division H					
Office Of     B03-F		ges & Structu		D	
		n 117			
P NHSX-061-2	*	Save as Template		Desia	
P NHSX-061-2	/	Mark Incomplete		Desig	
NHSX-061-2		Select		e Divi	
P TJ-061-2(12)		Sync with		p by L	
97-29-061-010-		Сору			
- P NHSN-061-2	$\times$	Delete		umber	
			2402-	272000	

Once all divisions of interest are marked complete and selected, then the estimate version should be checked complete. This is done by selecting the appropriate office from the estimate tree structure, finding the correct version and clicking in the checkbox to complete the version. If the estimate version is for a B03 or B04 event, the user is required to first fill out the "Bridge Parameters" at the project level in the tree structure.

Estimating Das	hboard Cost Estimating X							
Search:	97-29-061-010		<u> </u>	Save				
	HSX-061-2(71)3H-29	Name	Note	Event	Selected	PSS Live	Complete	Complete Date
	Office Of Bridges & Structures ■ 003-Final ■ ✓ Design 117 HSX-061-2(73)3H-29 Estimate Required project paramenter defore complet Roadway parameter is request. Bridge parameter is request. Bridge parameter is request. OK	ting this estim required for D	nate. 04 and	803				02/13/2018

To add the "Bridge Parameters" at the project level in the tree structure, click on the "Project Parameters" tab, expand the "Bridge Parameters" header and right-click under the header to select the "Add" option from the menu to open the "Bridge Parameter" screen. The user is required to fill out the items with the orange asterisks, but in general should fill out all applicable fields. Once the project is let, the bridge parameters will be used for future parametric estimates (bridge cost per square foot of deck area). The software uses Bridge Length multiplied by Bridge Width to calculate deck area, so it may be necessary to adjust the dimensions for some bridges (e.g. variable width bridges). Typically, the width should be adjusted.

If two or more bridges have the same project number, the user should only enter bridge parameters for one bridge. The bridge width as needed to account for the area of both bridges. This is necessary since the cost data for bridges with one project number cannot be separated.

Estimating Dashboard Cost Estimating Search: (97-29-061-010	× 0	Save		
NHSX-061-2(71)3H-29     D PSS     Office Of Bridges & Structu	Project Details Project Review	Project Parameters No Roadway:		
🖨 😡 B03-Final └─ 🗸 Design 117	Bridge Parameters Bridge Name		Bridge Width (ft)	Bridge Length (ft)
<ul> <li>NHSX-061-2(73)3H-29</li> <li>NHSX-061-2(93)3H-29</li> <li>NHSX-061-2(94)3H-29</li> <li>TJ-061-2(120)2M-29</li> <li>TJ-061-2(120)2M-29</li> <li>TJ-061-010-02</li> </ul>	No records to display.	Add Delete	1002000034	
NHSN-061-2(109)2R-29     NHSN-061-2(115)2R-29     NHSN-061-2(115)2R-29     NHSN-061-2(55)2R-29	Roadway Parameters			~

Bridge Detail		
	Bridge Para	meter
Complete all applicable fields		
* Bridge Name * Bridge Length (ft) Deck Area (sqft):	278.00 * Bri 12,001.26 S Bridge length measured along centerline from face deck. If necessary modify bridge width for irregula	dge Width (ft): 43.17 structure Type: PPCB to face of paving notch. Bridge width is out-to-out of r bridges (e.g. variable width) so that calculated deck
Service Type Crossing Type		 
Spans: Tallest Pier Height (ft):	20.00	asure to top of drilled shaft when footings are absent.
Pier Type: Pier Foundations Type:		
Skew (deg):	10.00	
Project Staging: ABC		Flared:
		Close

After marking an estimate complete, a report will run to check for duplicate items. If no duplicate items are found, the report will be blank. If duplicate items are found, it will look similar to the report below. The program will allow you to continue, but you should go back and correct these duplicates.

mating Dashb	oard Cost Estimating 🗶	Duplicate Items	×				
🕼 🕼 🯹 🚺 of 1 📡 🕅 Export to the selected format 🔻 Export							
Version Duplicate Items B03-Final in Project NHSX-061-2(71)3H-29							
	Comparing Nam	BU3-Filla	i in Project Ni	HSX-001-2(71)-			
	Comparing Item				Duplicate Iter		Unit Drive
ltem Number Design 117	Comparing Item	Quantity				n Quantity	Unit Price
Design 117			Unit Price		Duplicate Iter		Unit Price \$35.59
Design 117	Item Description	Quantity	Unit Price \$36.27	Item Number	Duplicate Iter	Quantity	

After divisions have been marked complete and selected, and the estimate version has been marked complete, the estimate version can be selected. This is done by right-clicking on the event level estimate version from the estimate tree structure and clicking "Select". You should see the radio button turn green. Only one estimate version can be marked select for each office. Selecting an estimate version indicates that this particular version will be used for the current estimate and be used for the total

project costs. As the project progresses through the design life-cycle, different versions of the cost estimate will be selected for each office.

Estimating Dashboard	Cost	Estimating X	
Search: 97-29-061-010	)		
■ P NHSX-061-2(71)	3H	-29	Na
🖭 🛈 PSS			Ev
🖻 🔟 Office Of Bri	dges	& Structures	N
🖻 😡 B03-Fina	- 		
🔤 🗸 Des	- 25	Add Division or A	
P NHSX-061-2(73)		Add ROW Division	n
NHSX-061-2(93)	2	Select	m
		Compare with	er
P NHSX-061-2(94)		Сору	
P TJ-061-2(120):	×	Delete	L
97-29-061-010-02			00

When these steps have been completed the screens should look similar to the following.

earch: 97-29-061-010		<u> </u>	(	Save	)			
NHSX-061-2(71)3H-29	Name	Note		Event	Selected	PSS Live	Complete	Complet
O PSS     Office Of Bridges & Structures	Final	New Version		B03	4			02/13
■ @ B03-Final								
earch: (97-29-061-010		)	Save					
earch: 97-29-061-010	Project Details Proj	ect Review Project Parameters	Save					
earch: [97-29-061-010	Project Details Proj Office Type	ject Review Project Parameters	Sove	Completed Date	сол	npleted By		Estimat
earch: [97-29-061-010 P (P) NHSX-061-2(71)3H-29 P (D) PSS D (Office Of Bridges & Structures D (B) Structures				Completed Date 02/13/2018		npleted By hael.nop@iow	adot.	Estimat \$1,407,
earch: [97-29-061-010 P (P) NHSX-061-2(71)3H-29 P (D) PSS D) Office Of Bridges & Structures	Office Type		Event			All the second second	adot.	122853324

## Estimating Playground

Each office has an area within iPDWeb to allow users to create hypothetical cost estimates and cost estimate scenarios without needing an actual PIN and project number.

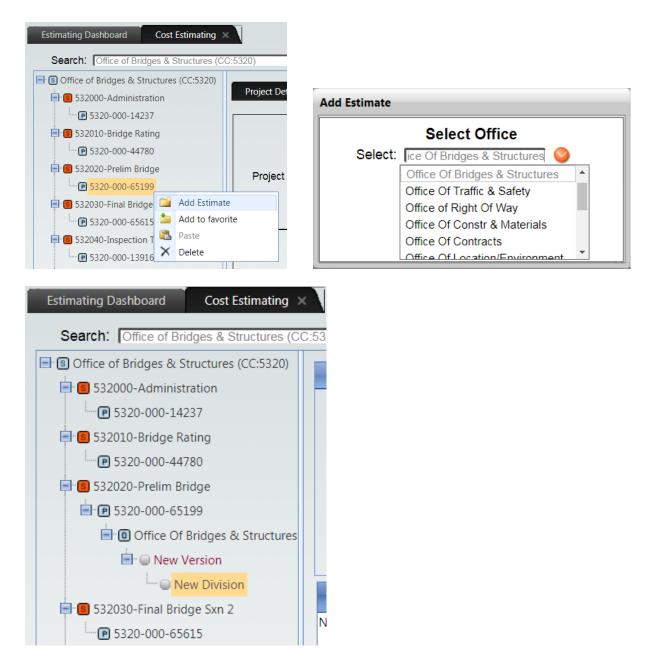
The area can be accessed by clicking on the "Menu" button in the ribbon and selecting the "Cost Estimating" option. In the "Search" box on the "Cost Estimating" tab type in "office" and scroll to find and select "Office of Bridges & Structures" in the list. [Alternatively, the user can search "NEW PIN" on the "Estimating Dashboard" tab and select "532000-Administration".] The left pane will then display a

tree structure with the "Office of Bridges & Structures" at the top which (represents the PIN Segment level). This is followed by the cost centers for each section in the office (represents the PIN Section levels). The level below that represents the Project Number level. To create the office level simply right-click on a project number to add the "Office of Bridges & Structures" folder to the tree.

Cost Management	Cost Estimating	Maintenance	Reporting
Cost Dashboard	Division Template	Organization	AdHoc Reports
Cost Planning	Cost Estimating	Items	Fiscal Report
Price Adjustment	-	Master D Group	Fiscal Chart
		Employees	
		Manage Policies	

 Segment	Description	Projects
Office of Bridges & Structures (CC:5320)	Office Of Bridges & Structures	5320-000-13916, 5320-000-14237, 5320-000-44780, 5320-000-47814, 53 000-55568, 5320-000-65199, 5320-000-65615, 5320-000-90626, 5320-00 91752
Office of Constr & Materials (CC:5191)	Office Of Constr & Materials	
Office of Contracts (CC:5180)	Office Of Contracts	
Office of Design (CC:5310)	Office Of Design	5310-000-16546, 5310-000-23653, 5310-000-33263, 5310-000-54473, 53 000-92861, 5310-000-93528, 5310-000-99069, 5310-001-37749, 5310-00 PROJECT1, 5310-002-PROJECT2, 5310-003-16535
Office of Location/Environment	Office Of Location/Environment	

<ul> <li>Office of Bridges &amp; Structures (CC5320)</li> <li>S32000-Administration</li> <li>S32000-Administration</li> <li>S32010-Bridge Rating</li> <li>S32010-Bridge Rating</li> <li>S320-000-44780</li> <li>S320-000-4780</li> <li>S320-000-47180</li> <li>S320-000-65199</li> <li>S320-300-Final Bridge Sxn 2</li> </ul>	Description: Route: County: District Segment Manager: Project Manager: Materials Engineer:	Statewide						
5320-000-65615	Risk Based Cost %. Project Number	Description	PSS Estimate	Five Yr Estimate	Risk Cost	IPD Estimate	Project Total	Exclude on CCI
5320-000-13916	5320-000-13916	Project for 532040-Inspection Teams	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	- 20
5320-000-91752	5320-000-14237	Project for NEW PIN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	98
532050-Final Bridge Sxn 1	5320-000-44780	Project for 532010-Bridge Rating	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	8
532060-Methods	5320-000-47814	Project for 532050-Final Bridge Sxn 1	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	8
5320-000-90626	5320-000-55568	Project for 532070-Consultant Coord	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	- 21
E 5320-000-55568	5320-000-65199	Project for 532020-Prelim Bridge	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	2
	5320-000-65615	Project for 532050-Final Bridge Sxn 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	×
	5320-000-90626	Project for OF-BR-001-01-00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	8



This playground area is to be maintained by our office. We can create additional "projects" in this area as needed. Anyone using this area should delete old estimates that are no longer needed.

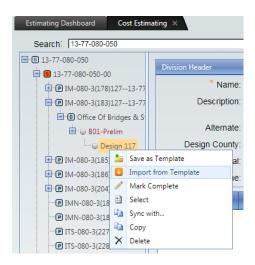
# Appendix A – Cost Estimates for Preliminary Bridge Design

While nearly all DOT cost estimates rely on historical prices, the breakdown of costs at various points in the life of a project are handled differently based on the level of project detail. Preliminary Bridge Design estimates bridge and culvert costs at the Concept and B1 event dates, which are relatively early in the life of a project. The type, size, and location of the bridge or culvert structure is known at both dates, while other items such as excavation and revetment become more refined at the B1 event date. Both cost estimates generally consist of fewer, more broadly defined cost items than cost estimates made when final design is complete and all quantities have been computed. This appendix addresses Concept and B1 event date cost estimates performed by or for Preliminary Bridge Design in the Office of Bridges and Structures.

## Bridge Concept and B1 Cost Estimates

For many years Concept and B1 event date cost estimates of the bridge structure itself have been determined using a cost per square foot of bridge deck area (out-to-out and end-to-end) based on historical cost data. This estimating method has proven to be effective for typical bridges. The iPD software continues this practice by suggesting a cost per square foot of bridge deck area for the parametric bridge bid item "PARA-020-020 Bridges" based on the bridge deck area entered by the user and a regression analysis of the historical cost data. [Parametric estimates are addressed in "Parametric Based Estimates" on page 21 of this document.] The additional cost items not accounted for in the parametric bridge bid item are captured with other bid items (e.g. 2599 bid items).

Preliminary Bridge uses predefined templates "5320-MICHAEL NOP-Prelim Bridge Concept" and "5320-MICHAEL NOP-Prelim Bridge B1" as aids to establish bridge Concept and B1 cost estimates. The templates contain two separate lists of bid items that might be applicable to common bridge types for those event dates. The templates may be applied to a cost estimate as shown below. Unneeded template bid items may be deleted and additional bid items may added as necessary to capture the project cost. Office policy for assigning costs to bridge Concept and B1 estimates are found in Bridge Design Manual Article 3.8.



#### Bid Items in 5320-MICHAEL NOP-Prelim Bridge Concept

tem #	UOM	Description
2401-6745625	LS	RMVL OF EXISTING BRIDGE
2501-5775000	SF	PILE, STEEL SHEET
2599-9999010	LS	STAGING
2599-9999010	LS	COFFERDAM
2599-9999010	LS	AESTHETICS
2599-9999010	LS	UNQUANTIFIED
2599-9999020	TON	REVETMENT
PARA-020-020	Parametric	Bridges
PCT-000-000	% of Project	MOBILIZATION

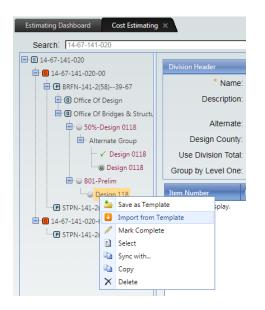
#### Bid Items in 5320-MICHAEL NOP-Prelim Bridge B1

Import from Template Select Template: 5320-MICHAEL NOP-Prelim Bridge B1					
Item #	UOM	Description			
2104-2710020	CY	EXCAVATION, CL 10, CHANNEL			
2401-6745625	LS	RMVL OF EXISTING BRIDGE			
2501-5775000	SF	PILE, STEEL SHEET			
2507-3250005	SY	ENGINEER FABRIC			
2507-6800061	TON	REVETMENT, CLASS E			
2507-8029000	TON	EROSION STONE			
2599-9999010	LS	STAGING			
2599-9999010	LS	COFFERDAM			
2599-9999010	LS	AESTHETICS			
PARA-020-020	Parametric	Bridges			
PCT-000-000	% of Project	MOBILIZATION			
		OK			

## Culvert Concept and B1 Cost Estimates

Early cost estimates of reinforced concrete box (RCB) culverts are based on historical cost data. The iPD software does not have a parametric bid item methodology in place to provide suggested prices for culvert structures. Culvert items are generally accounted for using various bid items (e.g. 2599 bid items) to capture the costs of different elements.

Preliminary Bridge uses predefined templates "5320-MICHAEL NOP-Prelim Culvert Concept" and "5320-MICHAEL NOP-Prelim Culvert B1" as aids to establish culvert Concept and B1 cost estimates. The templates contain two separate lists of bid items that might be applicable to RCB culvert projects for those event dates. The templates may be applied to a cost estimate as shown below. Unneeded template bid items may be deleted and additional bid items may added as necessary to capture the project cost. Office policy for assigning costs to culvert Concept and B1 estimates are found in Bridge Design Manual Article 4.5.11.



#### Bid Items in 5320-MICHAEL NOP-Prelim Culvert Concept

Import from Template Select Template: 5320-MICHAEL NOP-Prelim Culvert Cor					
Item #	UOM	Description			
2402-2720000	CY	EXCAVATION, CL 20			
2403-0100020	CY	STRUCT CONC (RCB CULV)			
2404-7775000	LB	REINFORC STEEL			
2501-5775000	SF	PILE, STEEL SHEET			
2599-9999010	LS	CULVERT REMOVAL			
2599-9999010	LS	STAGING			
2599-9999010	LS	UNQUANTIFIED			
2599-9999020	TON	REVETMENT			
PCT-000-000	% of Project	MOBILIZATION (000-000)			
		ОК Салсе			

## Bid Items in 5320-MICHAEL NOP-Prelim Culvert B1

port Division Templ	port Division Template				
		Import from Template			
Select Temp	late: 5320-MICHA	EL NOP-Prelim Culvert B1 📀			
Item #	UOM	Description			
2104-2710020	СҮ	EXCAVATION, CL 10, CHANNEL			
2402-2720000	CY	EXCAVATION, CL 20			
2403-0100020	CY	STRUCT CONC (RCB CULV)			
2404-7775000	LB	REINFORC STEEL			
2501-5775000	SF	PILE, STEEL SHEET			
2507-3250005	SY	ENGINEER FABRIC			
2507-6800061	TON	REVETMENT, CLASS E			
2599-9999010	LS	CULVERT REMOVAL			
2599-9999010	LS	STAGING			
PCT-000-000	% of Project	MOBILIZATION (000-000)			
		OK Cancel			
		Concernation of the second sec			

# Appendix B – Cost Estimates for Final Bridge Design - FAQ

While nearly all DOT cost estimates rely on historical prices, the breakdown of costs at various points in the life of a project are handled differently based on the level of project detail. Final Bridge Design typically estimates bridge and culvert costs at the 50% Plans, B3 and B4 event dates, which are relatively close to the project letting date. Final Bridge Design uses bid item based estimates since the bid items and quantities are often well-established at these event dates. Final Bridge Design estimates tend to be the most accurate since the project is fully-defined and the historical price data used to make an estimate is up-to-date and easy to apply.

This appendix is intended to provide direction, primarily for consultants, with respect to Final Bridge Design Estimates. The FAQ format is used to address common issues and will be expanded as issues come up.

#### FAQ

1.) Question: Our firm is handling all road design and all bridge design for a project. May we place all the bid items under one office level (e.g. Office of Bridges and Structures), particularly, if we create separate division levels for Design and Bridge and assign the appropriate bid items to each division level under the one office level?

Answer: Separate office levels shall be used. Roadway bid items shall be placed under the Office of Design. Bridge bid items shall be placed under the Office of Bridges and Structures. The appropriate event date for each office shall be used.

2.) Question: What direction can OBS provide with respect to the use of trend filters at the event level and for individual bid items?

Answer: In general, the default trend filter settings at the event level should be used for all bid items. As mentioned on Page 9 under heading "Trend Filter at the Event Level", it may be advisable to narrow the work type filter at the event level. In most cases it should not be necessary to set a unique filter for any individual bid items.

3.) Question: When should alternate groups be used?

Answer: Alternate groups are discussed briefly on page 5 under heading "Cost Estimating tab – Tree Structure Levels". Alternate groups can be used to compare costs for different contractor bidding options. Common examples might include a CIP box culvert versus precast box culvert alternate or deck overlay alternates involving the use of Class O PCC versus Class HPC-O PCC. For culverts, base the estimate on the CIP box culvert option. In general, for overlay alternates and other estimates with alternates, base the estimate on the more inexpensive option since it is likely to be the low bid. The cost estimate in iPD should reflect the cost of only one alternate.

4.) Question: How should we handle mobilization?

Answer: Mobilization should typically be based on a regression analysis of historical data within the iPD software. Bridge design estimates and road design estimates will assign mobilization independently. When entering mobilization as a percent based item, be sure to base it on the "Use Office Total" option as shown below.

Division Header	
* Name: 0219 79-Poweshiek	Report
Description: Design No. 0219;Bridge	
Alternate:	Alternate Name:
Design County: Poweshiek 📀	Use Suggestion: 🗹 Update Suggested Price 07/25/2018
Use Division Total: Use Project Total:	Use Office Total: 🗹
Group by Level One: Group by Level Two:	Current Total: \$237,409.19 Previous Total:

5.) Question: I have entered bid items in the Project Scheduling System (PSS), but the bid items do not appear under the project number in the PSSLive folder in the iPD application; what can I do to make them appear? [Alternatively -- I have entered bid items in PSS, but the PSSLive folder does not appear under the project number in the iPD application; what can I do to make the folder and bid items appear?]

Answer: Similar to the discussion on page 13 of this document it is advisable to force a refresh of the PSSLive data by right-clicking on the project number and selecting "Refresh PSSLive". Doing so should bring in the bid items and quantities from PSS as well as the PSSLive folder if it is missing. If you do not see the folder or bid items right away you might first try exiting and reentering the iPD software. If that doesn't work you may need to wait a few hours or even until the next day before iPD is updated since there is a delay in service between PSS and iPD for some updates. Finally, if the bid items or folder do not appear you can contact the consultant coordination section for assistance.