

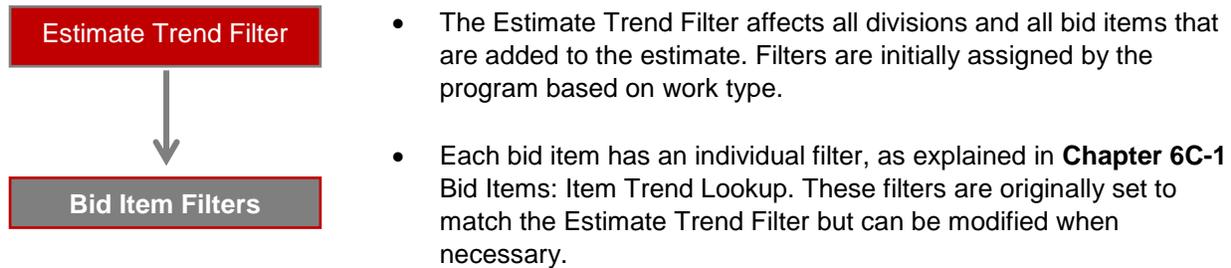
Estimate Trend Filter

iPDWeb Cost Estimating Manual
Chapter 5
Estimate Trend Filter
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Previous estimating tools were based on a broad average cost across all work types for bid items over a 2 year period. That broad method worked well for overall programming but could be noticeably off project to project. iPDWeb allows for bid item pricing to be developed based on similar projects through the use of the **EstimateTrend Filters**. EstimateTrend Filters identify parameters and characteristics from past projects that are similar to the current estimate. The bid items from these identified projects are then used to run a regression analysis to predict the pricing for items in the estimate. This allows for a more detailed analysis of the pricing for bid items. Trend filters can be set globally for bid items at the estimate level and further defined for each individual bid item with the Item Trend Lookup **Chapter 6C-1**.

The program will automatically apply default filters that in most cases will identify sufficient past projects to develop cost data and will not require the user to adjust the filters. However, changes can be made by the user in situations where more detailed pricing analysis is required.

Figure 1: Filter Workflow



 **NOTE:** Any changes to the Estimate Trend Filter will overwrite the all filters at the Bid Item level. It is highly recommended to not change the estimate trend filter after modifications have been made to individual bid item filters to avoid the potential loss of work.

[Estimate Trend Filter](#): EstimateTrend Filters identify parameters and characteristics from past projects that are similar to the current estimate.

[Adjusting Filters](#): When expanding the filters to increase the number of projects it is best to start with small adjustments and make small modifications until a desired number of projects are found.

[Identifying Items with Filter Adjustments](#): When an individual item has an adjustment to the trend filter the suggested unit price will show with a different color.

Estimate Trend Filter

The screenshot shows the main estimate page with the following details:

- Name: 2019 Annual Estimate
- Event: Annu. - Annual Estimate
- Office Type: Office Of Bridges & Structures
- Manual Version:
- Make Private:
- Group by Level One: Group by Level Two:
- Estimate Summary (Read-Only):

A red box highlights the 'Trend Filter' button in the top right corner.

The Estimate Trend Filter tab is located on the main estimate page. Setting the Trend Filter at the estimate level will apply the selected filters to all of the bid items in all of the divisions in the estimate.



NOTE: Individual bid item filters can later be modified to allow for more detailed cost analysis.

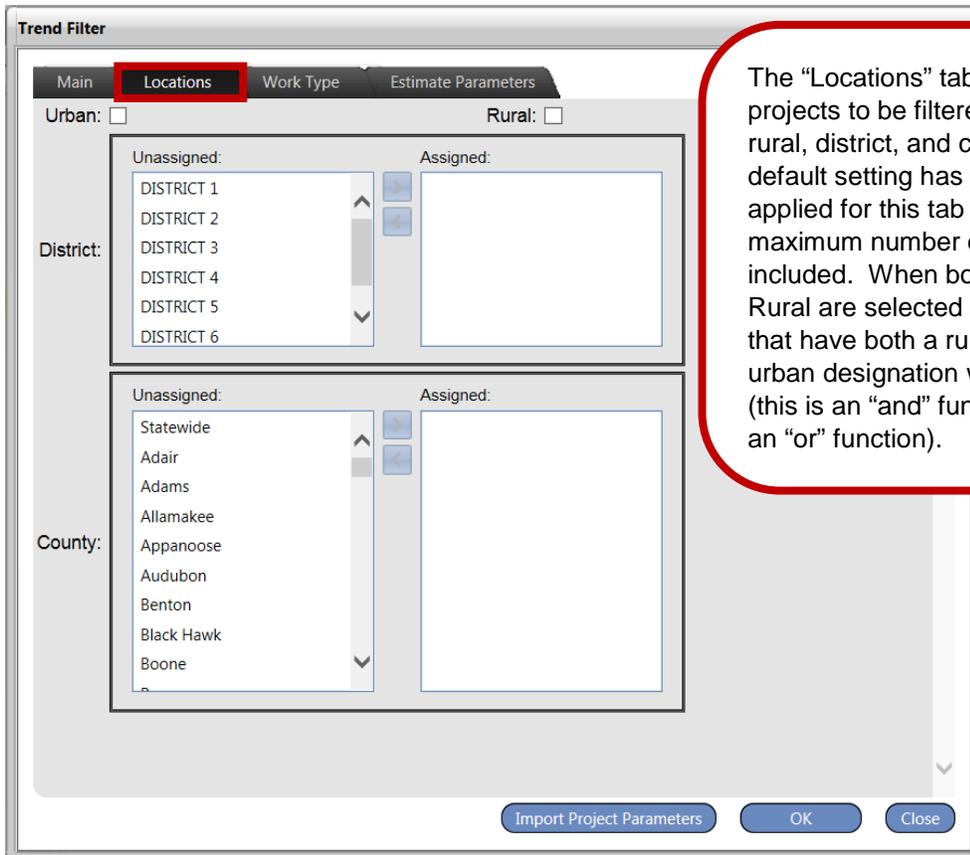
The screenshot shows the 'Trend Filter' dialog box with the following details:

- Item Trend Lookup Filter
- Begin Date: 3/17/2017
- End Date: 3/17/2019
- Min bidders per contract: []
- Max bidders per contract: []
- Min Item Price: []
- Max Item Price: []
- Min Item Quantity: []
- Max Item Quantity: []
- Project Delivered By: DOT
- Radio buttons: All bidders, Awarded bidders, Top three bidders
- Season of Letting:
 - Unassigned: FALL (SEP21-DEC20), SPRING (MAR21-JUN20), SUMMER (JUN21-SEP20), WINTER (DEC21-MAR20)
 - Assigned: []
- Buttons: Import Project Parameters, OK, Close

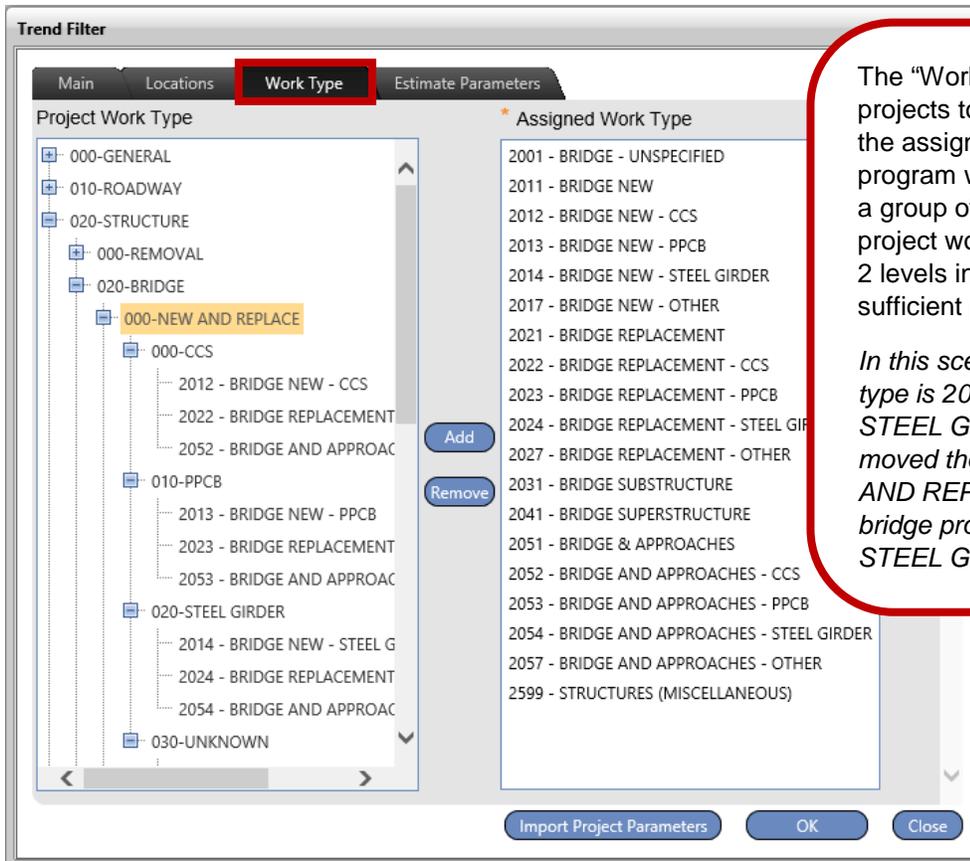
A red box highlights the 'Main' tab in the top left corner.

Once you select the trend filter, a popup will appear giving filter option tabs for Main, Locations, Work Type, and Estimate Parameters. Each tab will have default settings applied to allow for a broad selection of bid items to be analyzed. The "Main" tab allows for projects to be filtered by date, bidders, item price, quantity, delivered by, and season of letting. The default filters are set as shown in the graphic, but can be changed if needed.

★ BEST PRACTICE: Leave filters at default settings until after the first analysis of bid items to see the data set provided and in order to avoid the number of past projects used to calculate the unit price of the bid items to become too small to be considered useful.



The “Locations” tab allows for projects to be filtered by urban and rural, district, and county. The default setting has no filters applied for this tab to allow for maximum number of projects to be included. When both Urban and Rural are selected only projects that have both a rural and and urban designation will be returned (this is an “and” function and not an “or” function).



The “Work Type” tab allows for projects to be filtered based on the assigned work type. The program will automatically assign a group of items based off of the project work type and moves it up 2 levels in order to capture sufficient projects to be analyzed.

In this scenario the project work type is 2014–BRIDGE NEW–STEEL GIRDER. The program moved the work type to 000-NEW AND REPLACE which includes all bridge projects from CCS, PPCB, STEEL GIRDER, and UNKNOWN.

The “Estimate Parameters” tab is currently under development and **should not be used at this time**. This tab will allow for projects to be filtered by specific bridge and roadway parameters. These parameters are still being collected for projects. Selecting any data on this screen will result in the program returning 0 projects for the estimate filter.

The Import Project Parameters button will import all the project’s parameters from PSS. Clicking on this button will bring up a pop up screen warning that all existing filters will be overwritten. These new filters based on the project parameter may severely limit the number of projects that are returned.

Once all filters desired have been selected, *click on the OK button*. The program will now search out projects matching the chosen filters. A dialog box will appear noting how many projects were found, as shown below. **NOTE:** Clicking OK will cause previous filters in all divisions in the estimate to be reset to the current trend filter. This includes any filters that were previously changed for individual bid items.

If less than 10 projects are generated then it will be necessary to go back and expand the filters in order to include more projects.

★ **BEST PRACTICE:** It is recommended to have a minimum of 10 projects in order to have sufficient data to generate unit pricing.

Adjusting Filters

When expanding the filters to increase the number of projects it is best to start with small adjustments and make small modifications until a desired number of projects are found. When making these changes it is best to follow the workflow below.



Trend Filter

Main Locations Work Type Estimate Parameters

Item Trend Lookup Filter

* Begin Date: 3/17/2017 * End Date: 3/17/2019

Min bidders per contract:

Min Item Price:

Min Item Quantity:

Project Delivered By: DOT

All bidders

Unassigned

Season of Letting: FALL (SEP) SPRING (MAR21-JUN20) SUMMER (JUN21-SEP20) WINTER (DEC21-MAR20)

Import Project Parameters OK Close

To adjust the date, open the Trend Filter and go to the “Main” tab. When adjusting the data it is recommended to start by moving the “Begin Date” back by a year and *click on “OK”*. If an insufficient number of projects were identified, try moving the date back by another year. In most scenarios this will generate a sufficient grouping of projects. If it doesn’t, proceed to add additional Work Types.

Trend Filter

Main Locations **Work Type** Estimate Parameters

Project Work Type

- 000-GENERAL
- 010-ROADWAY
- 020-STRUCTURE**
- 000-REMOVAL
- 020-BRIDGE**
- 000-NEW AND REPLACE
- 000-CCS
- 010-PPCB
- 020-STEEL GIRDER
- 030-UNKNOWN

Assigned Work Type

- 2012 - BRIDGE NEW - CCS
- 2022 - BRIDGE REPLACEMENT - CCS
- 2052 - BRIDGE AND APPROACHES - CCS
- 2013 - BRIDGE NEW - PPCB
- 2023 - BRIDGE REPLACEMENT - PPCB
- 2053 - BRIDGE AND APPROACHES - PPCB
- 2014 - BRIDGE NEW - STEEL GIRDER
- 2024 - BRIDGE REPLACEMENT - STEEL GIRDER
- 2054 - BRIDGE AND APPROACHES - STEEL GIRDER
- 2001 - BRIDGE - UNSPECIFIED
- 2011 - BRIDGE NEW

Add

060-SIGNALS

070-LIGHTING

Import Project Parameters OK Close

As previously mentioned, the software will automatically assign the work type based on the type of project. In this example the category 000 – NEW AND REPLACE was assigned for a Steel Girder bridge. When expanding projects, simply start by adding in the work type one level above (020 BRIDGE) by *selecting the item and then clicking “Add”*. If insufficient projects are returned, move one level higher and add in 020 – Structure. In the extremely rare case that enough projects are not returned, then include local projects.

Trend Filter

Main | Locations | Work Type | Estimate Parameters

Item Trend Lookup Filter

* Begin Date: 3/17/2017 * End Date: 3/17/2019

Min bidders per contract: Max bidders per contract:

Min Item Price: Max Item Price:

Min Item Quantity: Max Item Quantity:

Project Delivered By: DOT City County DOT Other

Season of Letting: SUMMER (JUN21-SEP20)

To add local projects return the to "Main" tab. This delievery organization is found in the drop down menu labeled "Project Delivered By". By default the program assigns this to only DOT projects. The drop down menu allows for projects to also be filtered by City, County, and Other. In order to include all local projects simply *select the blank space above City*.

Identifying Items with Filter Adjustments

When an individual item has an adjustment to the trend filter the suggested unit price will show with a different color.

Item Number	Description	UOM	Quantity	Unit Price	Use Suggestion	Suggestion	Suggestion Range	Ext. Price	...	Docs
2102-2710070	EXCAVATION CL 10, RDWY+BORROW	CY	5,000.00	\$9.15	<input checked="" type="checkbox"/>	\$9.15	\$7.94 - \$10.53	\$45,750.00	[N] [A]	[D]
2505-6000121	HIGH TENSION CABLE G'RAIL END ANCHOR	EA	4,000	\$2,487.92	<input checked="" type="checkbox"/>	\$2,487.92	\$2,337.29 - \$2,648.26	\$9,951.68	[N] [A]	[D]

Chronology of Changes to iPDWeb Manual Section:

5A-1 Estimate Trend Filter

DATE 08-16-2019

New.

DATE Revised

Description