Similar Projects Tool
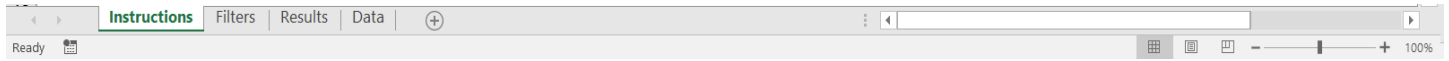
Instructions

This tool allows users to apply filters to recent years of historical data from awarded proposals. It automatically displays statistics for the filtered data. The tool allows the user to gather information specific to their project by filtering the data according to several criteria including improvement concept, region, letting month, and total bid cost. Detailed instructions for using the filters are listed below.

Sheets

- This Instructions Sheet contains guidance for using the Similar Projects Tool.
- The Filters Sheet contains the visual filters to quickly sift through the information in the Data Sheet.
- The Results Sheet contains calculations of the filtered data results.
- The Data Sheet contains the original table of data.

General Steps

1. If needed, review these instructions.
2. In the Filters Sheet, select criteria for a list of contracts with similar characteristics as your current project.
   a. Select broader characteristics first, and then dial down to more specific characteristic if you still have a large list of projects.
   b. The number filtered results are shown in the sample size cell.
3. In the Results Sheet, review the results.
   a. These results can be used to estimate Mobilization, the Traffic Control item, and allowance items.
   b. The average number of bidders can be noted for the estimate documentation.
4. The Data Sheet contains other characteristics to dial down a shorter list of projects.
   a. The Data Sheet is linked to the visual filters in the Filters Sheet. Filters applied at either location will update both.
   b. Project information is provided including the Proposal Description.
   c. Item class percentages are included in this sheet.

For more detailed instructions, double-click in this text box and scroll down.
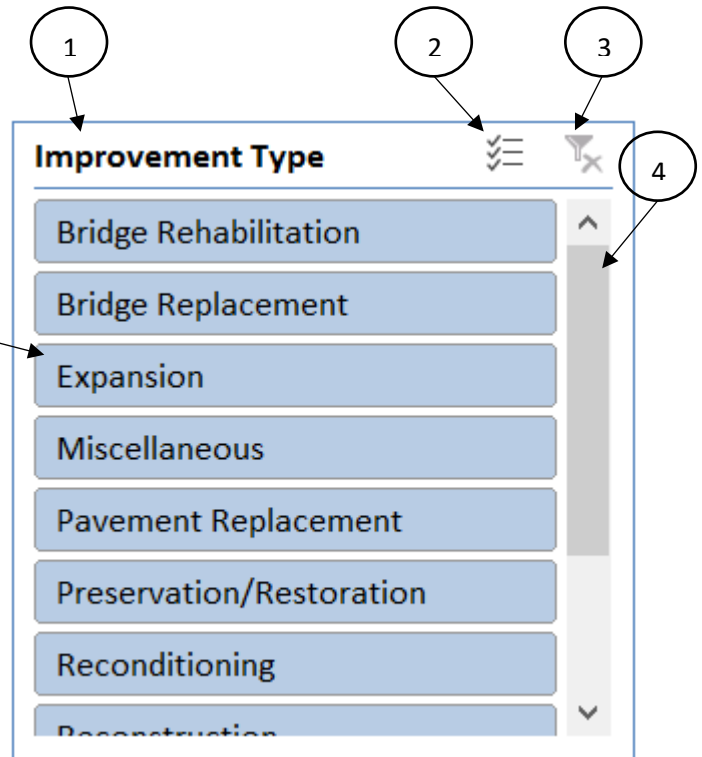
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Filters

Select broader characteristics first. The filters sheet can be printed.

Visual Filters

A sample visual filter is shown on the right.

1. Criteria that will be filtered
2. Allows the ability to select multiple criteria
3. Removes the filter placed for that criteria
4. Scroll to find appropriate criteria
5. Clickable Tab which filters results

Sample Size

A sample size of 30 or more is recommended for reliable calculations in the Results Sheet. If there are fewer than 30, you may want to review the individual results in the Data Sheet.

Clear Filters Button

The Clear Filters Button allows you to clear all filters in the Data Sheet including filters applied in the Filters Sheet.

Copy Proposal IDs for BidX Button

The Copy Proposal IDs for BidX Button allows you to copy the filtered proposal IDs into your clipboard. After pressing this button, you now can paste the proposal IDs in the Proposal Items Field of Bid Tab Analysis in Bid Express.

When using the Proposal Items Field in Bid Express, you must enter an item number or a portion of an item number in the Item Field. If the Item Field is left blank for a search in the Bid Tab Analysis Page of Bid Express, the search results will not work.

Improvement Concept

Improvement concept identifies the extent of improvement for the controlling project of the proposal. Improvement concepts are listed and defined in FDM 11-1 Attachment 10.1 and PMM 5-10-5 starting on page 7 (The PMM is for DOT employees only). Improvement types are more generic and include multiple improvement concepts.

Select filters for Improvement Type first, then Improvement Concept.

Work Ratings

Work ratings establish the type of contractor able to bid on the proposal using amount spent on individual bid items associated with the various work ratings. Work ratings are defined on the Estimating – Work Classification Page of the Estimating Website. Contract work types are more generic and include multiple work ratings.

Select filters for Contract Work Type first, then Work Rating.

Region and County

Select filters for Region first, then County.

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Project Size

Projects were divided based on the bid total. Each category has similar mobilization percentages based upon improvement concept. The smaller the project, the higher the mobilization percentage. Medium sized projects have the lowest mobilization costs. The larger the project, the higher the percentage.

Urban/Rural

Projects listed as unknown may be rural or urban projects. When filtering for urban or rural projects, unknown should be selected unless there are enough projects filtered for urban or rural only.

Route

You may select between routes similar to a particular project such as county highways, interstate highways, state highways, or specific routes.

Let Calendar Year

You may select only the projects in the most recent years if there are enough projects.

Results

The Results Sheet contains mobilization and traffic control results, average number of bidders, and item class percentage totals.

Using Percentage Results

The percentage values are based upon the total bid price, not only for known items. The following example shows how to use these percentage values:

For a project with $2 million of known items (i.e. not including Mobilization and Traffic Control). The similar projects tool was used to find the percentages in this example. Mobilization is estimated at 5% and Traffic Control is estimated at 1% of the total construction estimate.

$$Total = (known\ items) + (5\% \times Total) + (1\% \times Total)$$

Rearranging this equation, the following generic equation can be used to find the Total:

$$Total = \frac{(known\ items)}{(1 - \sum percentages)}$$

$$Total = \frac{\$2\ million}{1 - (0.05 + 0.01)} = \frac{\$2\ million}{0.94} = \$2,127,659.57$$

$$Mobilization = 5\% \times \$2,127,659.57 = \$106,382.98\ or\ \$110,000\ rounded$$

$$Traffic\ Control = 1\% \times \$2,127,659.57 = \$21,276.60\ or\ \$21,000\ rounded$$

This equation also may be used with any number of allowance items using Item Classification Total Percentages.

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Mobilization and Traffic Control Results

The mobilization and traffic control results tables contain the sample size, expected range, and typical middle value. Mobilization is estimated as a percentage of the total project. In small projects, you may want to ensure your estimate is not below the lowest bid price. The Traffic Control bid item may be estimated the same way, or use the dollar values provided in the table.

Sample Size: number of filtered results.

Typical Middle Value: Median; 50% of the filtered mobilization data is greater than this value, and 50% is less than this value.

Expected Range: 5th and 95th percentiles, or the remaining range of Mobilization percentages after 5% of the highest values and 5% of the lowest values have been removed.

Mobilization Results	
Sample Size:	1,540
Expected Range (lower limit):	3.3%
Typical Middle Value:	5.7%
Expected Range (upper limit):	9.2%

Traffic Control Project Results		
Sample Size:	1,540	
Expected Range (lower limit):	0.2%	$2,000
Typical Middle Value:	0.5%	$5,838
Expected Range (upper limit):	1.4%	$25,000

Average Number of Bidders

The average number of bidders based upon filtered results. Again, this value can be added to the estimate documentation.

Average Number of Bidders	3.5

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Item Classification Totals

Item class percentage totals for all item classes are provided. Each bid item has an item classification, and there are 26 item classes. Middle Value is selected by default, but the Lower Limit or Upper Limit can be selected if a project has more or less emphasis in an item class.

Contingency Items can be estimated for preliminary estimates. This includes erosion control, landscaping, traffic control, signals, etc. Contingency items are lump sum items in preliminary estimates when standard bid items have not been quantified.

Asphalt Unit Price Graph

Filtered projects that contain HMA pavement items are shown on the graph. For each proposal, all HMA pavement item quantities are added together and the average unit price as a data point in the graph and is provided in the Data Sheet.

Item Classification Totals

	Expected Range:	Lower Limit / Middle Value / Upper Limit	

Item Class	Middle Value	Item Class Code
SPVs (Default)	4.8%	AAA
Asphalt	6.7%	ASPH
Base Aggregate	4.2%	BASE
Bridge Painting	0.0%	BRPT
Concrete	0.4%	CONC
Curb & Gutter, Sidewalk	0.2%	CURB
Drainage Culverts Conduits	1.1%	DRNG
Electrical	0.0%	ELEC
Erosion Control	2.1%	EROC
Earthwork	4.6%	ERTH
Gates and Fences	0.0%	FENC
Beamguard	0.1%	GDRL
Intelligent Transportation Systems	0.0%	ITS
Landscaping	0.2%	LSCP
Lighting	0.0%	LTNG
Miscellaneous or Specialty Work	1.4%	MISC
Mobilization	5.7%	MOBL
Pavement Marking	1.4%	PVMK
Removal Asphalt Pavement	0.4%	RMVA
Removal Old Structures	0.0%	RMVB
Removal Concrete Pavement	0.0%	RMVC
Removals	0.2%	RMVL
Signs	0.4%	SIGN
Structures	0.6%	STRC
Survey	0.3%	SURV
Traffic Control Permanent	0.0%	TRFP
Traffic Control Temporary	1.6%	TRFT

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Data

The Data Sheet contains a table of columns for all the various criteria and percentages in this tool. The filters in this table may be used. The Data Sheet is linked to the visual filters in the Filters Sheet. Filters applied at either location will update both.

Additional columns include:

- Proposal Length
- Let Date
- Proposal ID
- Controlling Project ID
- Proposal Description
- Low Bidder
- Total Bid Amount
- Mobilization Bid Price

The list of filtered projects are listed in the Data Sheet. The plans and specials of the projects listed as a design reference, and this list can be copied to the estimate documentation.

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Detailed Filter Instructions

Clearing All Filters

1. All filters can be cleared by going to the Data tab in the Excel toolbar and selecting 'Clear'.

2. Additionally, if the spreadsheet is not saved when exiting, the filters applied during the session will be not be saved.
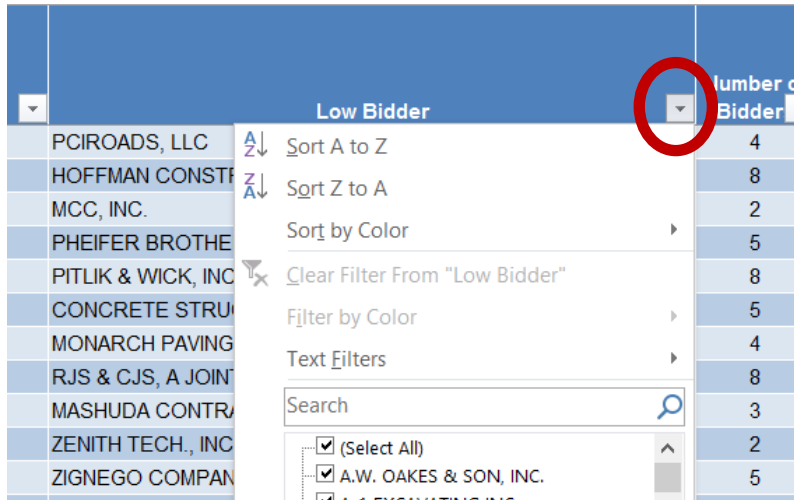
Filtering Text Columns

(These include Controlling Project ID, Proposal Description, Low Bidder, etc.)
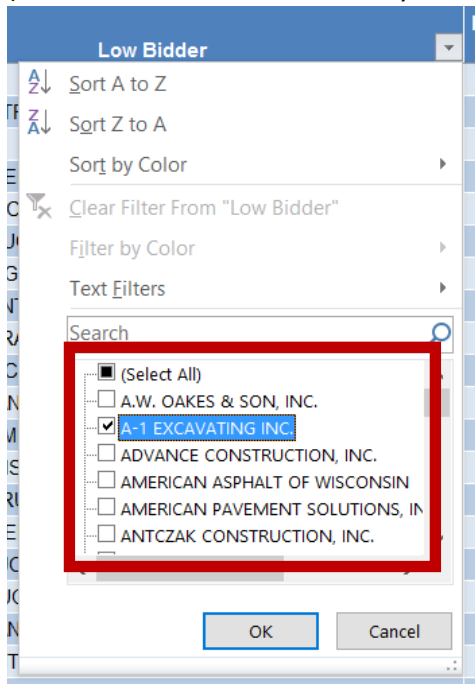
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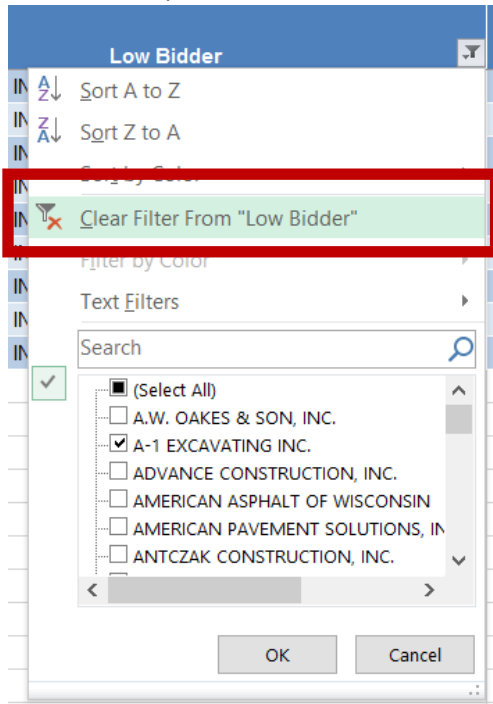1. Click the down arrow next to the heading of the column of interest.

2. Manually select the criteria of interest by checking the boxes, and press OK.
(Note: All boxes can be cleared by checking and unchecking the 'Select All' box.)

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3. To clear the filter, select the funnel icon next to the column heading and choose 'Clear Filter From "[column name]"', and press OK.

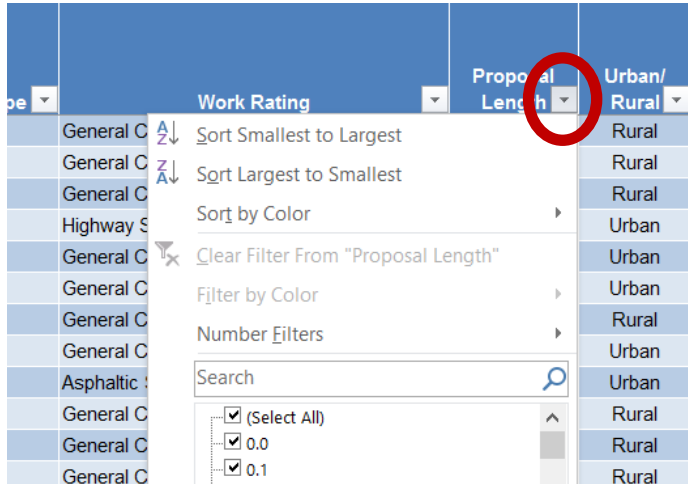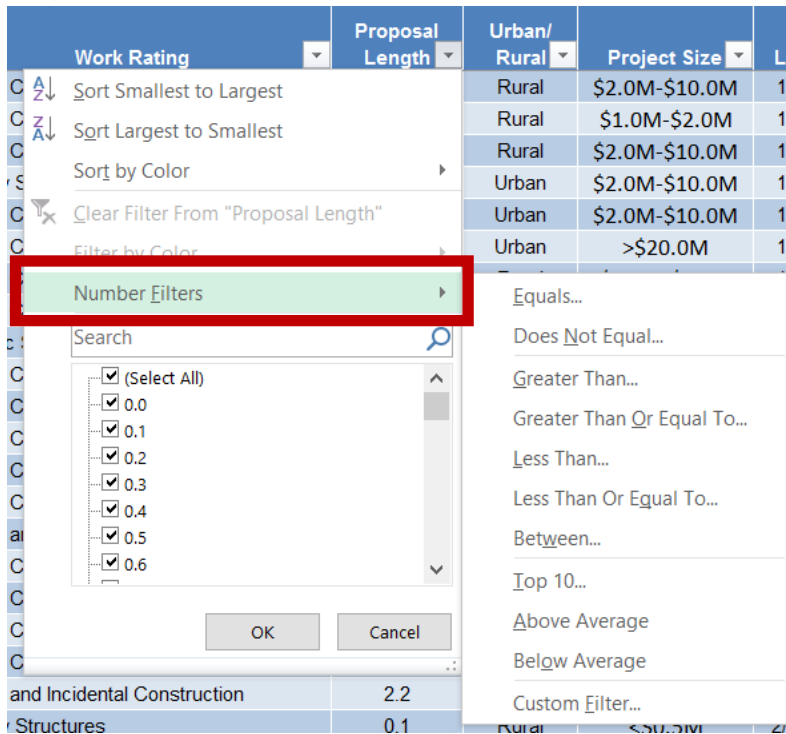# Similar Projects Tool

Filtering Number Columns
(These include Proposal Length, Let Date, Mobilization Bid Price, etc.)

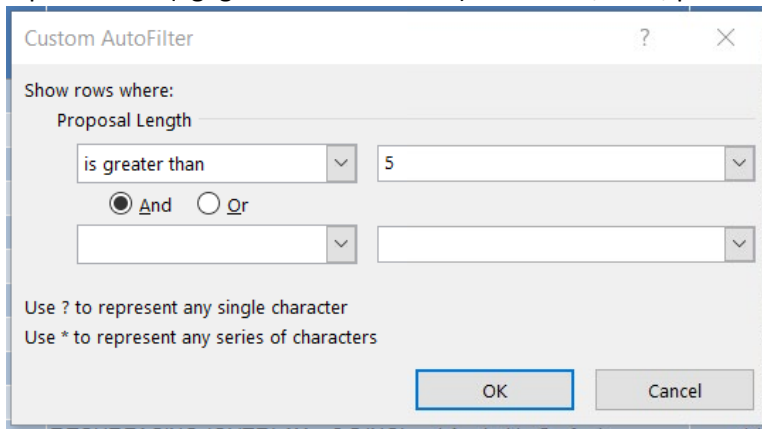1. Click the down arrow next to the heading of the column.

2. Select 'Number Filters' from the drop-down menu. Choose the filter (eg. Less Than, Greater Than, Between, etc.).
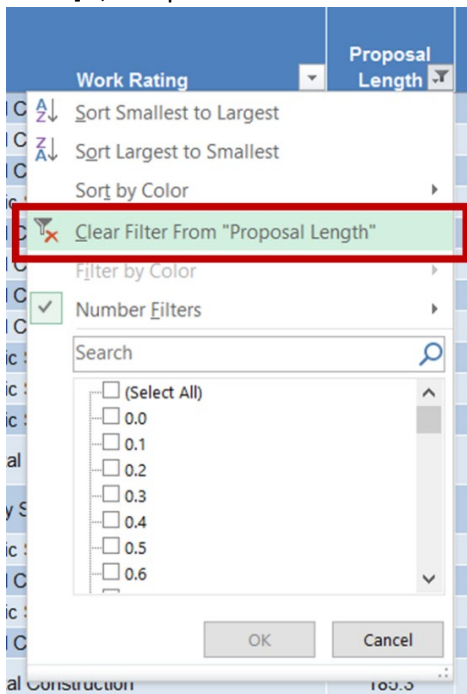
3. Input criteria (eg. greater than 5 miles). Press OK; then, press OK.

Custom AutoFilter   ?   ✕

Show rows where:

Proposal Length

| is greater than | ∨ | 5 | ∨ |

○ And   ○ Or

| | ∨ | | ∨ |

Use ? to represent any single character

Use * to represent any series of characters

OK   Cancel

4. To clear the filter, select the funnel icon next to the column heading and choose 'Clear Filter From "[column name]"', and press OK.

	Proposal
Work Rating ▼	**Length** ⧩

A↓ Sort Smallest to Largest

Z↓ Sort Largest to Smallest

Sort by Color ▶

Clear Filter From "Proposal Length"

Filter by Color ▶

✓ Number Filters ▶

Search 🔍

☐ (Select All)

☐ 0.0

☐ 0.1

☐ 0.2

☐ 0.3

☐ 0.4

☐ 0.5

☐ 0.6

OK   Cancel

al Construction   185.3

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Tips and Tricks

If your project contains an item class not commonly on your project, you can go straight to the Data Sheet and filter all projects with an item class percentage. Then, follow the rest of the recommended filtering steps. An example includes bridge painting items on a resurfacing contract. From the Results Sheet, the bridge painting item class is BRPT. After selecting Resurfacing Improvement Types, you may go to the Data Sheet and only include proposals with more than 0%, and you will get a list of resurfacing projects with bridge painting.

If you seek specific project types that have consistent proposal descriptions, you can go straight to the Data Sheet and filter the Proposal Description using find text, such as "wide" for region wide or "Zoo IC".