



Excel Power Query for Skyward Data Mining

Power Query is a data transformation tool built into Microsoft Excel and Microsoft Power BI. It allows users to connect directly to a data source and then extract, transform, and load data into a spreadsheet, table, pivot chart, or data model. Excel's Power Query allows district users to create reusable spreadsheets that can be refreshed with an updated data file. Although this process takes time to setup, once the initial setup is complete, data files can easily be refreshed.

Skyward Data Mining Report

The following is an example of a summary data mining report from Skyward referencing expense accounts only. This same process can be applied to other accounts as well.

▼ Report Parameters Edit Report Parameters

Notes:

Consolidate Funds: No	Report Access for Other Users: Read-only
Budget Status: All accounts	Additional Printing Prompts: None
Print Details: Yes	Date Created: 11/24/2020
Detail Spacing: Single	Created By: [REDACTED]
Print Totals: No	FFBMRE ID: 11391
Suppress Zero Amounts: No	
Accounts Excluded: None	

Do not use breaks. This report will produce no totals. Excel will handle the analysis.

▼ Breaks Edit Breaks

Sequence: R - Regular account sequence

No break has been defined.

▼ Account Ranges Edit Account Ranges

Ranges:	Groups/Category	Low	High
Level 1			ZZ
Level 2			ZZ
			ZZZZ
			ZZZZZZZZ

Limited to expense accounts.

Account Status: Both Active and Inactive

Operating Statement (O/S)

Expense

Low Account: 0000 * 0000 0000 0000 00000 00000 00000

High Account: 9999 * 9999 9999 ZZZZ ZZZZZ ZZZZZ ZZZZZ

Include Filters

No Include filters defined

Exclude Filters

No Exclude filters defined



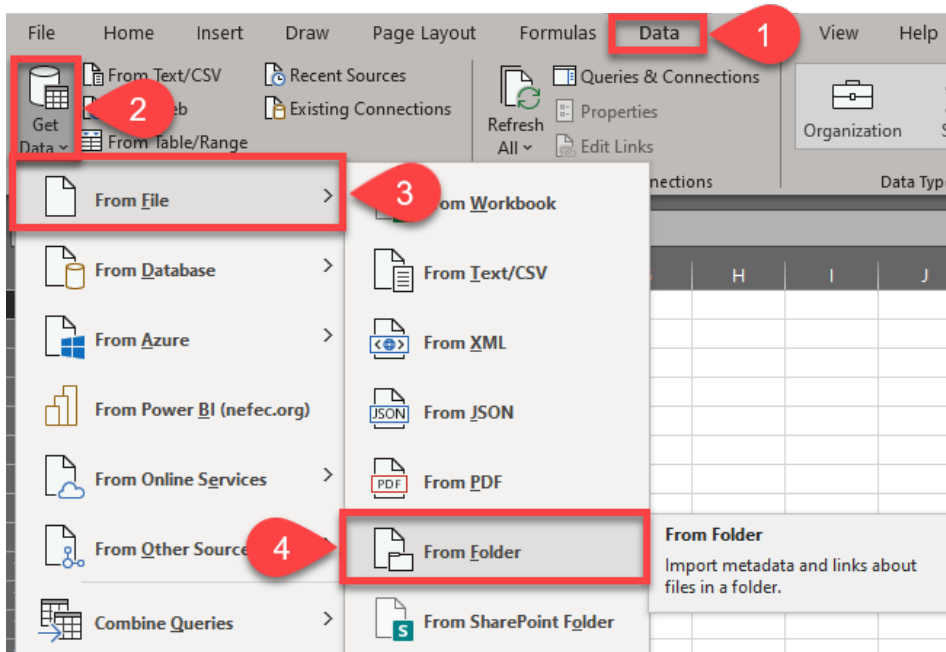
Field Selection Edit Field Selection			
Description	Heading	Heading2	Column
Account Number		FundTFunc Obj Fac Proj Subpr Prog	1
Fund		Fund	2
Fund		Fund	3
Function		Func	4
Function		Func	5
EXPENSE Object			
EXPENSE Object			
Facility			
Facility			
Project			
Project			
Subproject		Subpr	12
Subproject		Subpr	13
Program		Prog	14
Program		Prog	15
Original Budget		Original Budget	16
Revised Budget		Revised Budget	17
Fiscal Year Credits		FY Credits	18
Fiscal Year Debits		FY Debits	19
Fiscal Year Activity		FY Activity	20
Fiscal Year Unencumbered Bal	Unencumbered	Balance - FY Act	21
Fiscal Year Unexpended Bal	Unexpended	Balance - FY Act	22
Encumbered Amount	Encumbered	Amount	23
Available Funds		Available Funds	24

Repeating account dimensions
follow this pattern:
OBJECT Number
OBJECT Description

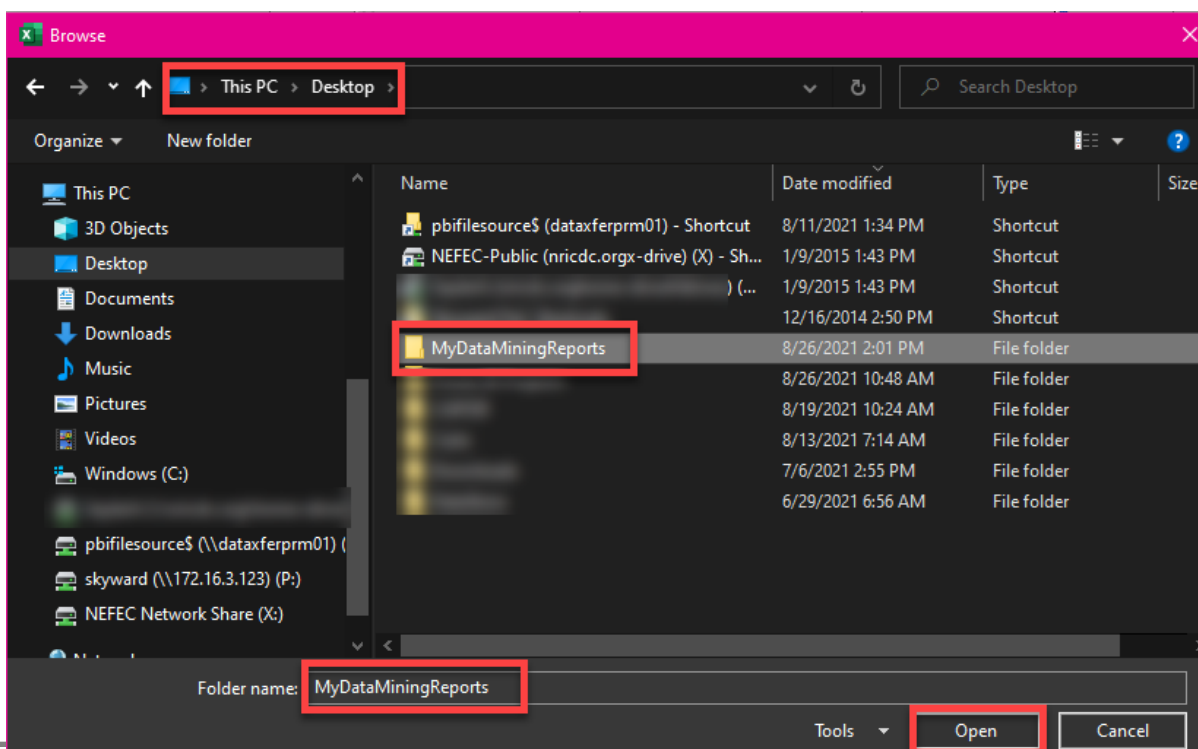
Once the data mining report is configured, run the report as an Excel file. Save the file to the local machine.

Power Query

Create a desktop folder and move the Excel file into that folder. Next, open Excel, (1) click on the **Data** tab and select (2) **Get Data** > (3) **From File** > (4) **From Folder**. Replace the report in this folder each time the data mining report is run to keep the data visuals in Excel up-to-date.



From within the browse window, select the folder containing the data mining file.

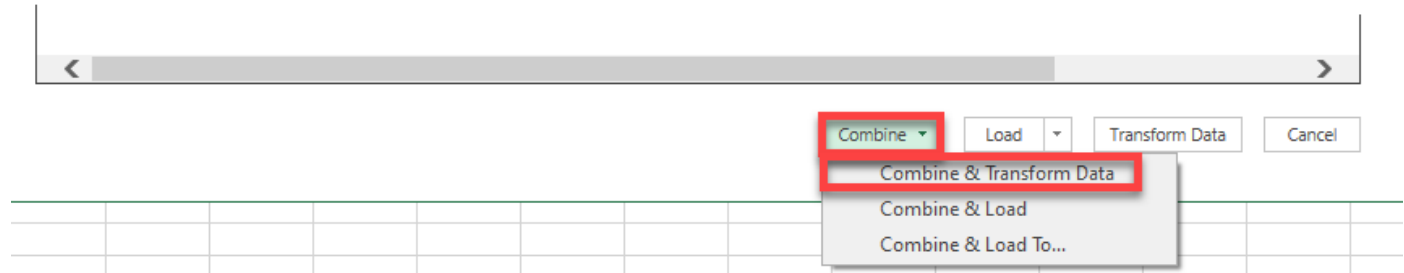




Click **Combine & Transform Data** to launch the Power Query Editor.

\\nricdc.org\home-drive\HDrives\SaylerA\Desktop\MyDataMiningReports

Content	Name	Extension	Date accessed	Date modified	Date created	Attributes	
Binary	SKR203654E50508E911490.csv	.csv	8/26/2021 2:01:47 PM	8/26/2021 1:48:05 PM	8/26/2021 2:01:47 PM	Record	\\nricdc.org\ho



Click **OK** to continue.



Combine Files

Specify the settings for each file. [Learn more](#)

Sample File:

First file

File Origin

1252: Western European (Windows)

Delimiter

Comma

Data Type Detection

Based on first 200 rows

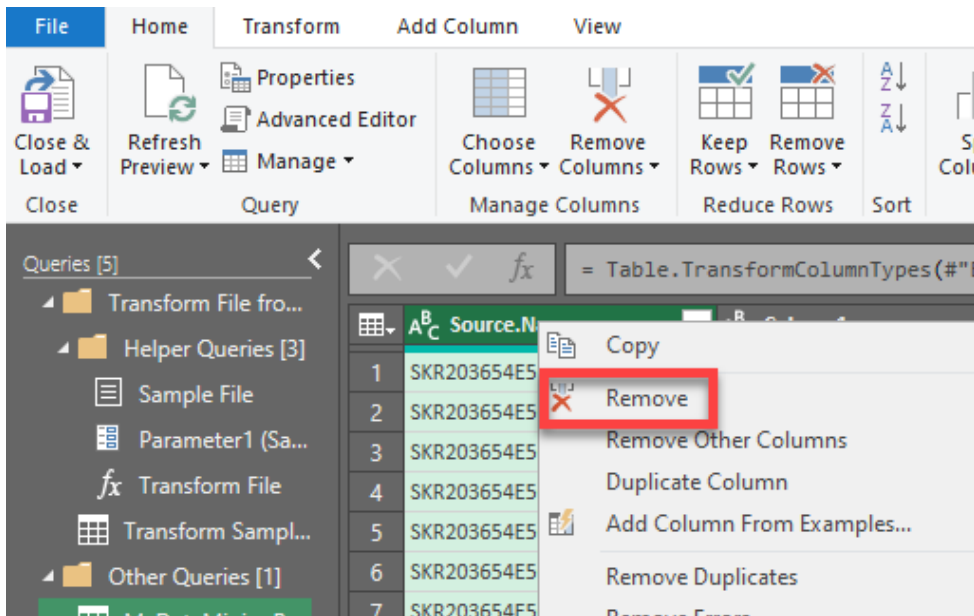
Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8
Account Number	Fund	Fund Desc	Func	Func Desc	Obj	Obj Desc	Fac
1000E5100 1120 9010 99990 00000 00000	1000	GENERAL FUND	5100	BASIC (FEFP K-12)	1120	DIRECTORS	9010
1000E5100 1200 0042 92020 00000 00000	1000	GENERAL FUND	5100	BASIC (FEFP K-12)	1200	CLASSROOM TEACHERS	0042
1000E5100 1200 0042 92070 F2020 00000	1000	GENERAL FUND	5100	BASIC (FEFP K-12)	1200	CLASSROOM TEACHERS	0042

☐ Skip files with errors

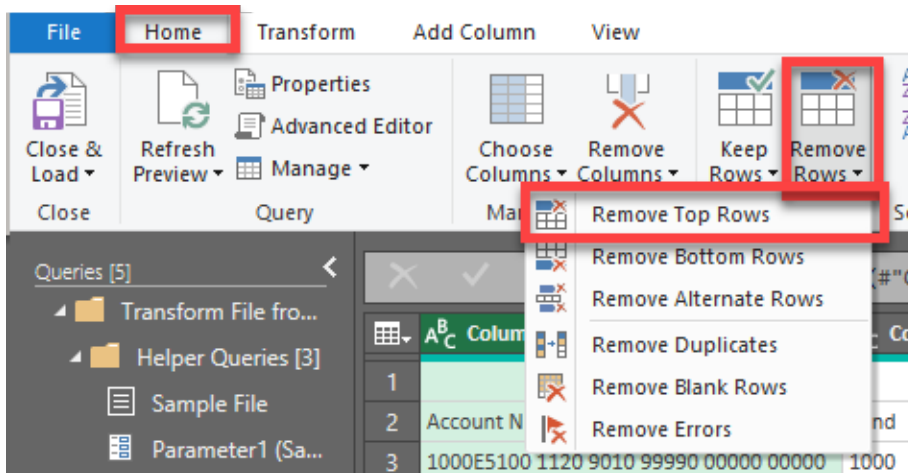
OK

Cancel

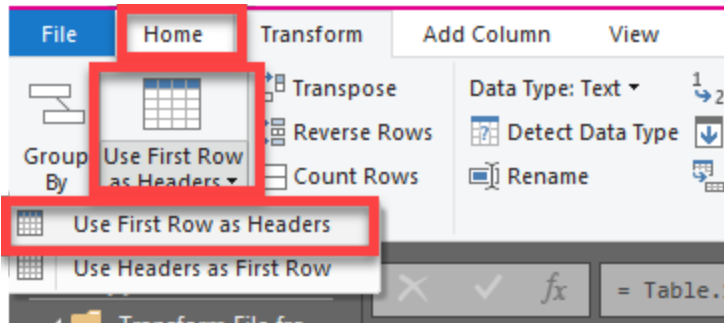
In the **Applied** Steps box on the right of the screen, click the “x” next to “Change Type”. Next, right click on the column labeled “Source.Name” and select **Remove**.



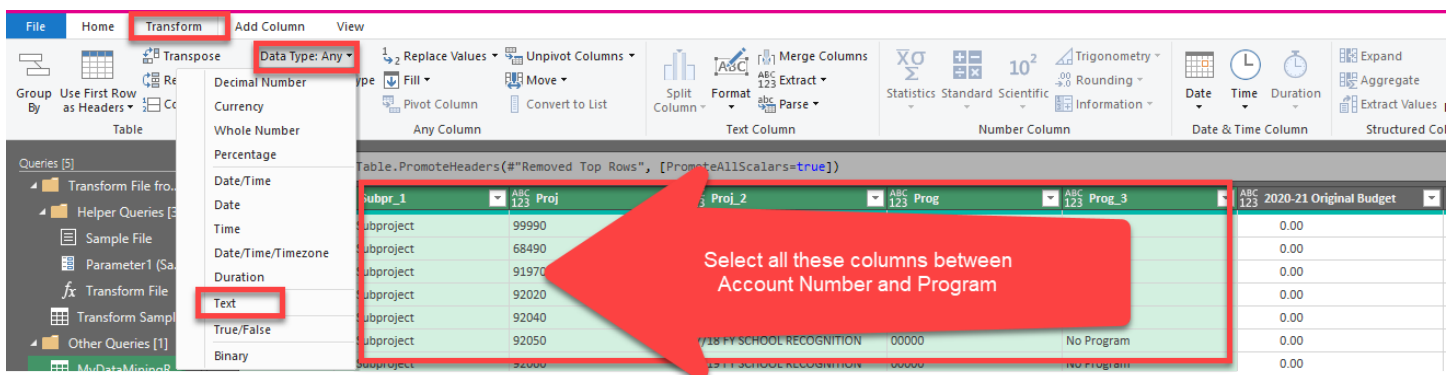
From the **Home** tab, select **Remove Rows > Remove Top Rows** and enter “1” to remove the top row.



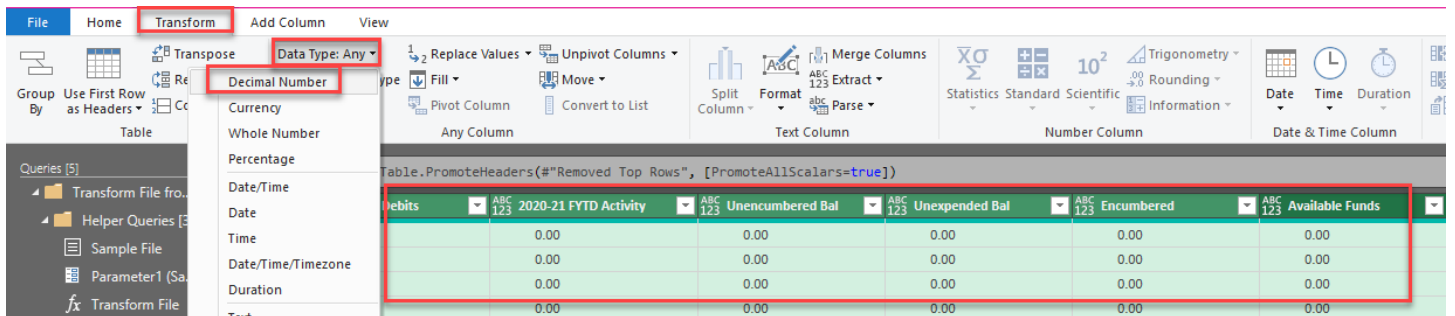
On the **Home** tab, click **Use First Row as Headers**.



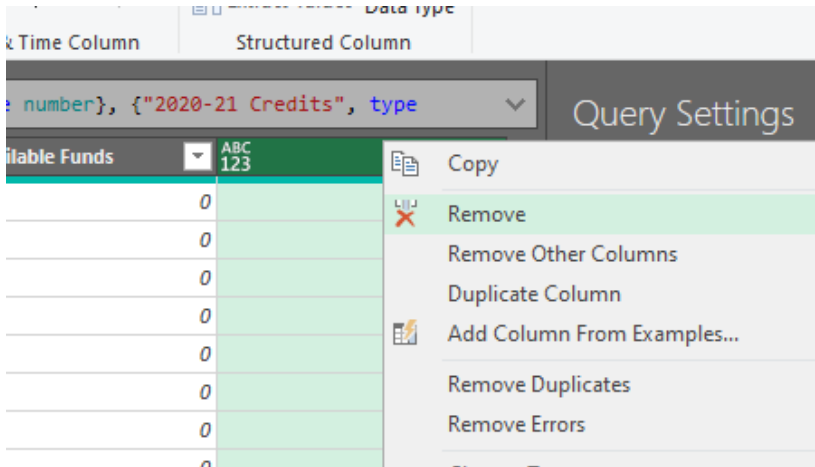
Click on the column heading “Account Number.” Please press Shift and click on the program description column to select all the columns between the two. Next, click **Transform > Data Type > Text**.



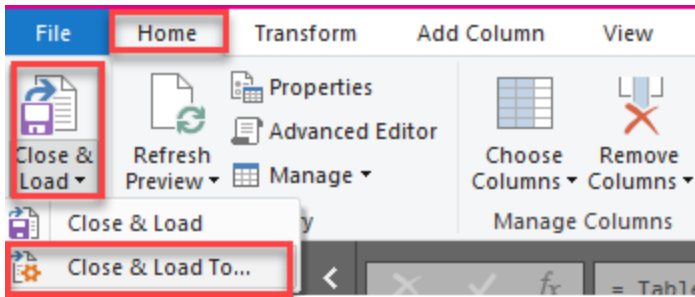
Select all columns from “Original budget” to “Available funds”. Next, click **Transform > Data Type > Decimal Number**.



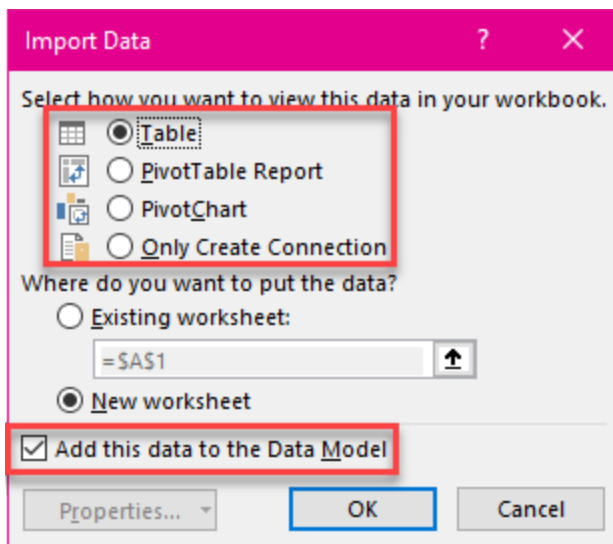
If there are any remaining blank columns, select those columns, right click and choose **Remove**.



Label columns as desired. Click **Home > Close & Load (arrow down) > Close & Load To....**

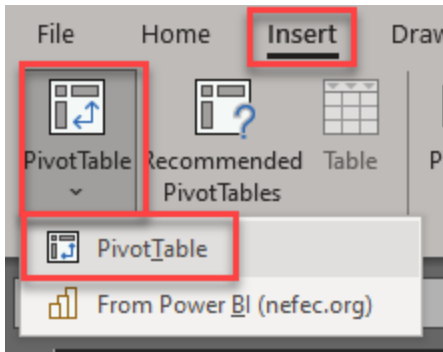


Excel provides several options for importing the data, please select **Table** and check the “Add this to the Data Model” box.

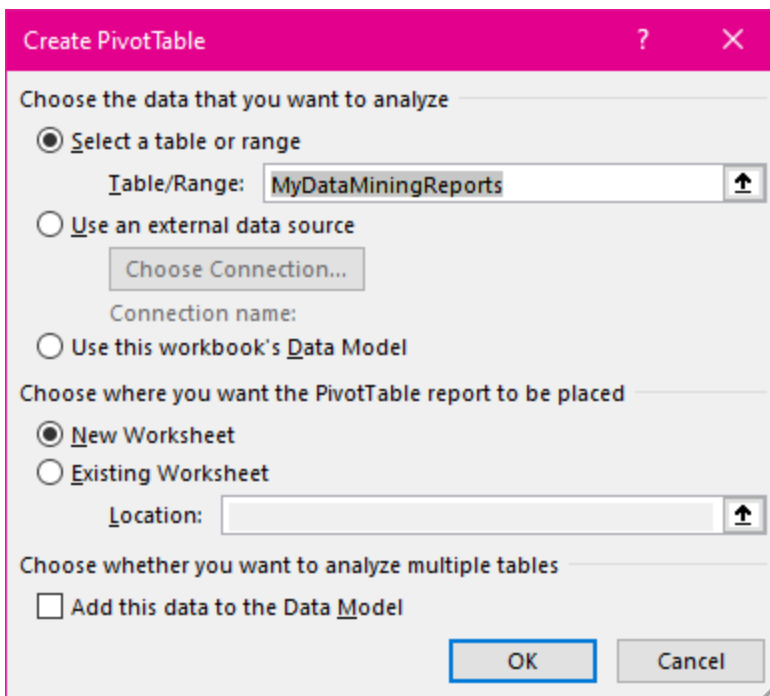


Pivot Table

Select **Insert > PivotTable > PivotTable**.



Click **OK** for the default options.





Drag and drop fields into the appropriate boxes to design the pivot table. The “Filters” box is especially helpful to create an interactive pivot table.

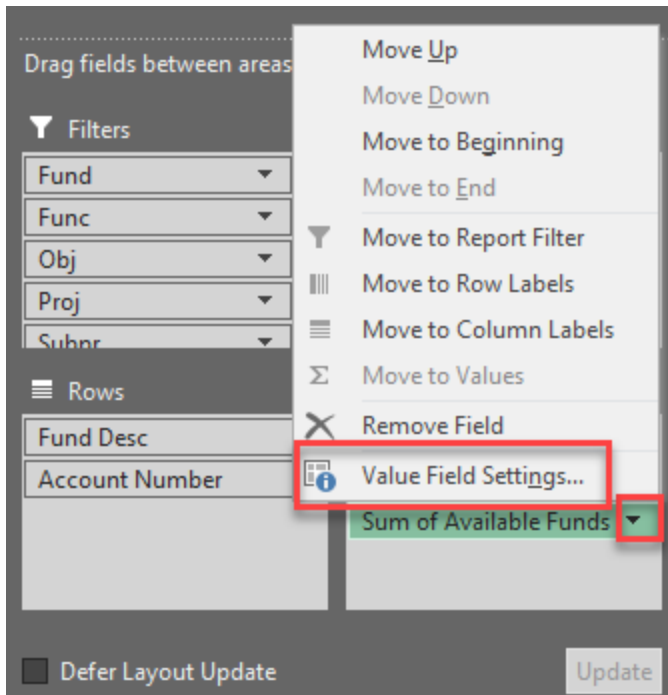
Drag and drop fields into "Filters", "Rows", "Columns", and "Values" as needed to create pivot table.

Row Labels	Sum of 2020-21 Original Budget	Sum of 2020-21 FYTD Activity	Sum of Available Funds
GENERAL FUND	3650635.19	2823346.9	1020508.76
1000E5300 1200 0011 92090 00000 00000	0	0	0
1000E5300 1200 0011 99790 F2020 00000	0	0	0
1000E5300 1200 0011 99790 F2021 00000	0	0	0
1000E5300 1200 0012 90160 00000 00000	100000	119803.28	-19803.28
1000E5300 1200 0012 90170 00000 00000	0	625	-625
1000E5300 1200 0012 92090 00000 00000	0	1597.76	-1597.76
1000E5300 1200 0012 97770 00000 00000	856050	836603.18	19446.82
1000E5300 1200 0012 98100 00000 00000	0	0	0
1000E5300 1200 0012 98200 00000 00000	0	0	0
1000E5300 1200 0012 98300 00000 00000	0	0	0
1000E5300 1200 0012 99790 F2020 00000	0	0	0
1000E5300 1200 0012 99790 F2021 00000	0	0	0
1000E5300 1200 0012 99990 00000 00000	30835	5565	25270
1000E5300 1200 0043 90170 00000 00000	0	4400	-4400
1000E5300 1200 0043 92020 00000 00000	0	0	0
1000E5300 1200 0043 92050 00000 00000	0	0	0
1000E5300 1200 0043 92090 00000 00000	1684	190.82	1493.18
1000E5300 1200 0043 97770 00000 00000	366794	353873.28	12920.72
1000E5300 1200 0043 99790 F2020 00000	0	0	0
1000E5300 1200 0043 99790 F2021 00000	0	0	0
1000E5300 1200 0043 99990 00000 00000	0	0	0
1000E5300 1200 0051 90170 00000 00000	0	1700	-1700
1000E5300 1200 0051 92090 00000 00000	0	0	0
1000E5300 1200 0051 95940 00000 00000	0	0	54040

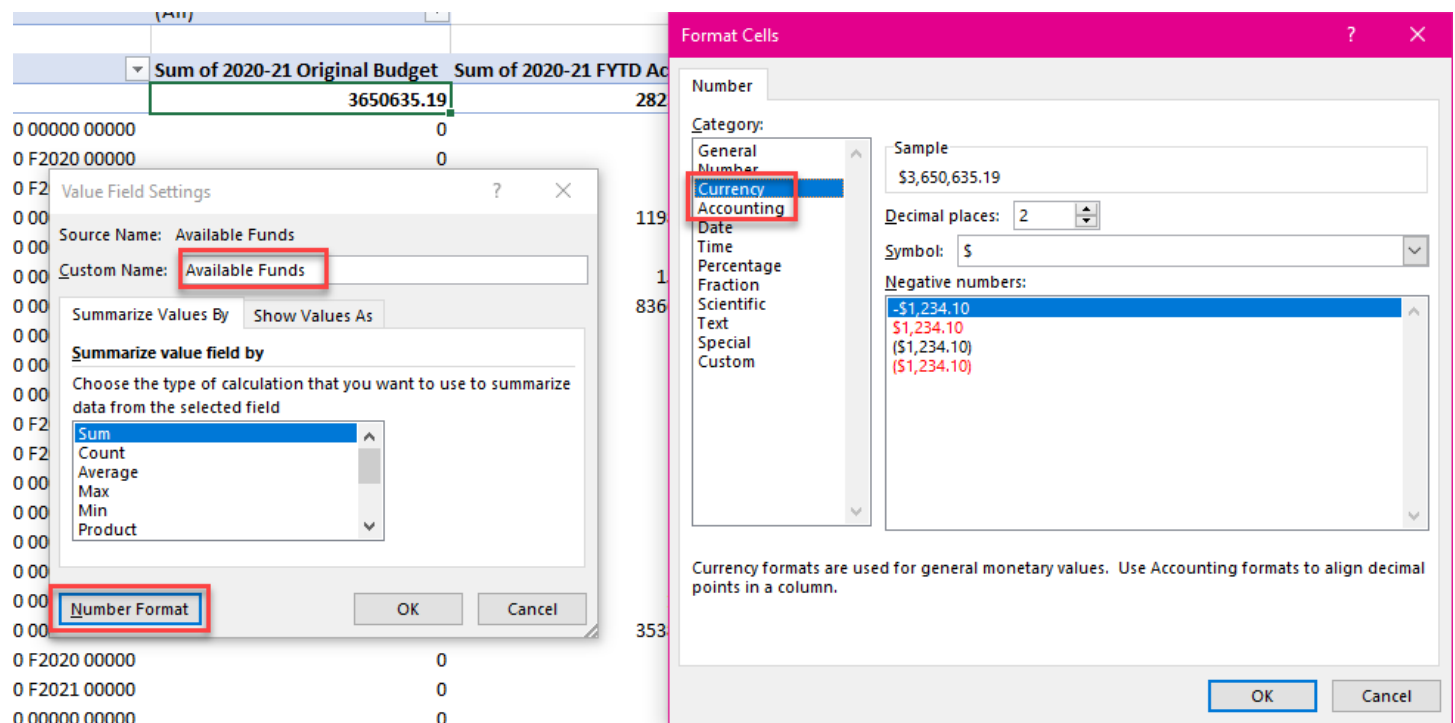
PivotTable Fields task pane configuration:

- Filters:** Fund, Func, Obj, Proj, Subpr
- Columns:** Values
- Rows:** Fund Desc, Account Number
- Values:** Sum of 2020-21 Origin..., Sum of 2020-21 FYTD ..., Sum of Available Funds

For each of the items in the “Values” box, click the down arrow and then select **Value Field Settings**.



Update the field name, if desired. Click the **Number Format** button in order to change to currency or accounting.



The data is now in the form of an interactive pivot table, which allows the user to filter the data. The process detail here needs to be done once and then the file can be saved. When the data needs to be updated, run the data mining report in

Skyward with updated dates (the report must stay in this exact format – only the data changes). That Excel version of the data mining report can be downloaded from Skyward and then REPLACE the file in the folder. Once the file has been replaced, simply click the “Refresh” button to bring new data into the Excel data model.

