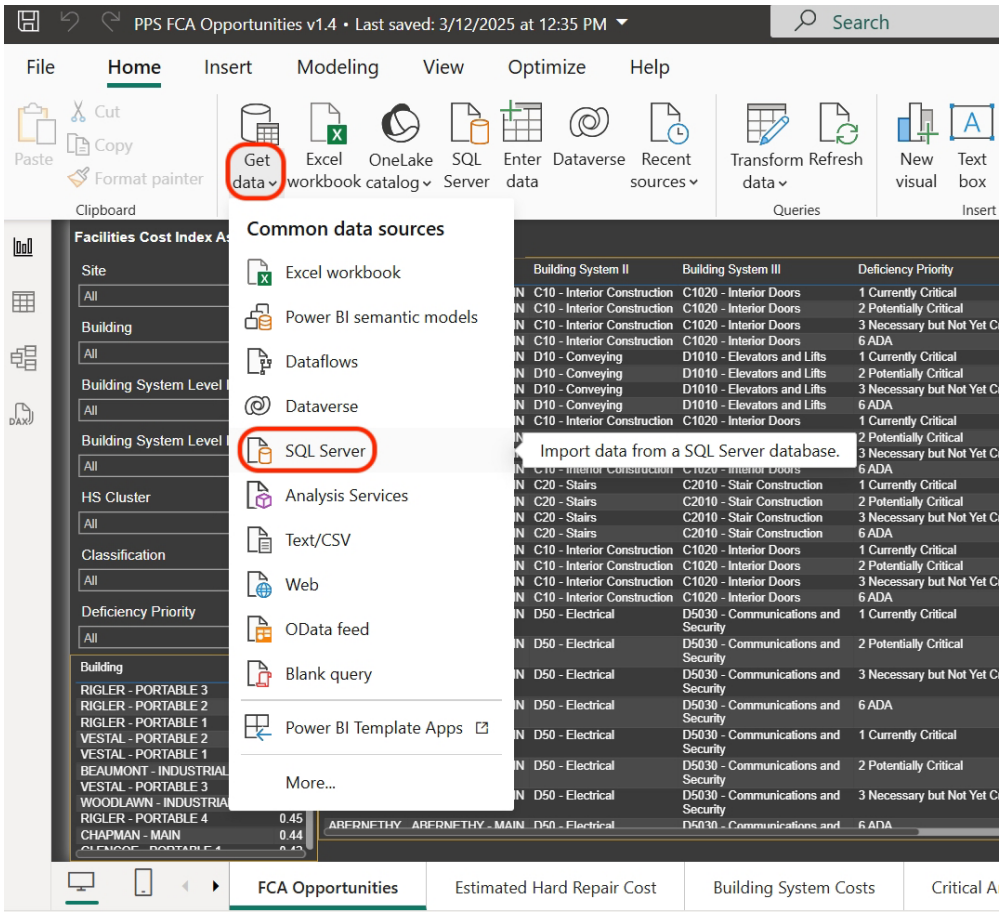
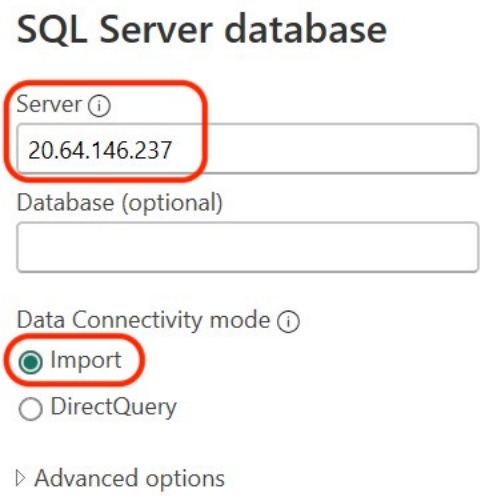
Power BI Tips & Tricks

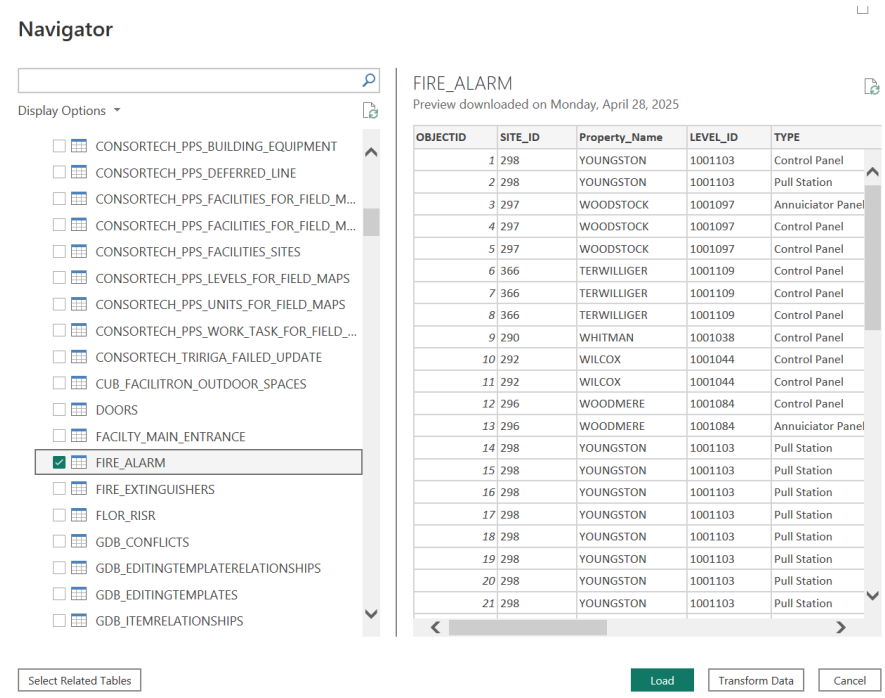
Importing Data into Power BI

After opening PowerBI you'll need to add some data. There are many ways to add in the data but let's **click** on the **Get data** button on the Home menu. That will drop down the dialog to add different types of datasets. **Click** on the **SQL Server** option. This will open a new window where you enter the server address. Unfortunately, it doesn't save this and you have to enter it EVERY SINGLE TIME you want to add a dataset. So, if you know there are a few files you want to load into PowerBI it might be a good practice to load them all at once. **Add in the server address** and make certain the **Import** radio button is **checked** and **not Direct Query** and **click** the **OK** button.

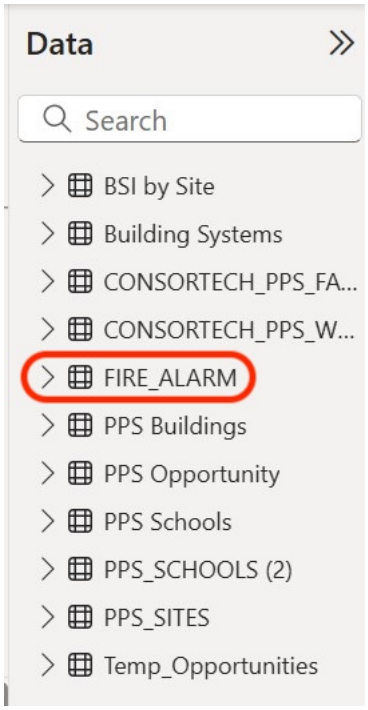




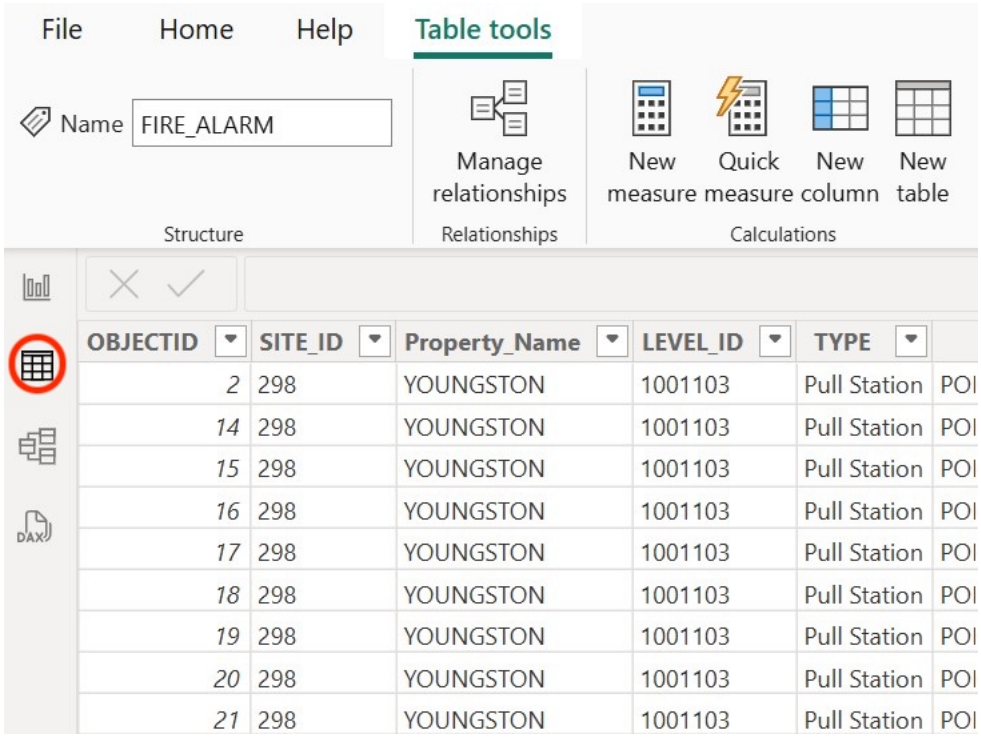
Click the **OK** button. It will take you (hopefully) to the dialog that shows the database contents. **Navigate** to the **file** you wish to add. You may also preview files by checking the box to the left of the file's name. This will pull up the table in the window pane to the right. This allows you to verify if this is the file you wish to add as well as give you an opportunity to figure out if there are columns to exclude in the next steps.



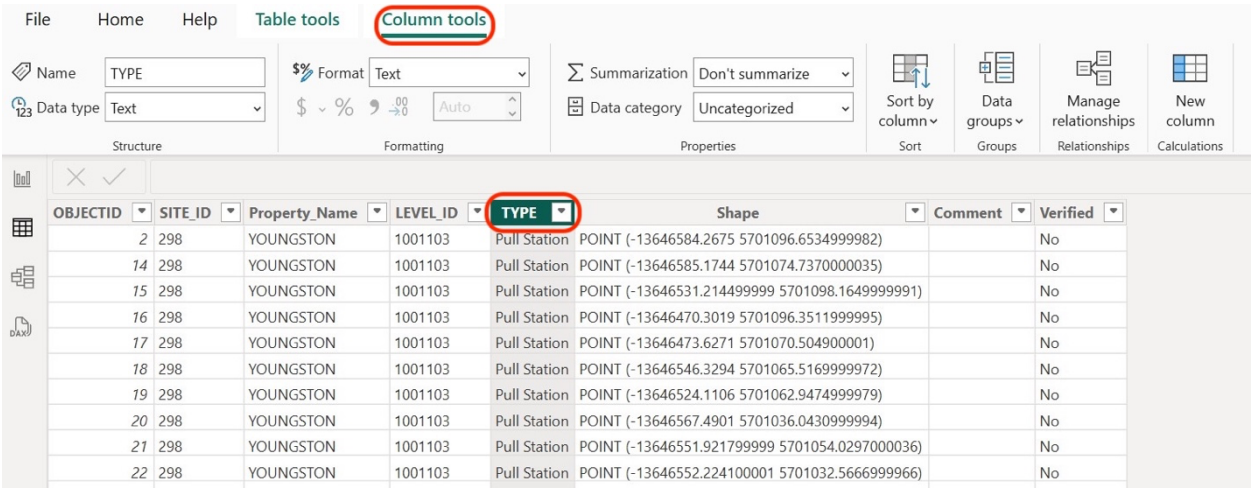
You ***could*** click Transform Data to alter what is imported but I highly suggest importing everything and then modifying it in PowerBI if you feel that's necessary. **Click** the **Load** button and it will import your data into PowerBI. Yay you! Who loves ya? You should now see your data in the Data column list on the right side of PowerBI.



You can get a better idea of what was imported (by the way *use Import and not Direct Query*) into your Dashboard by **clicking** on the **Table** icon on the **left menu**.



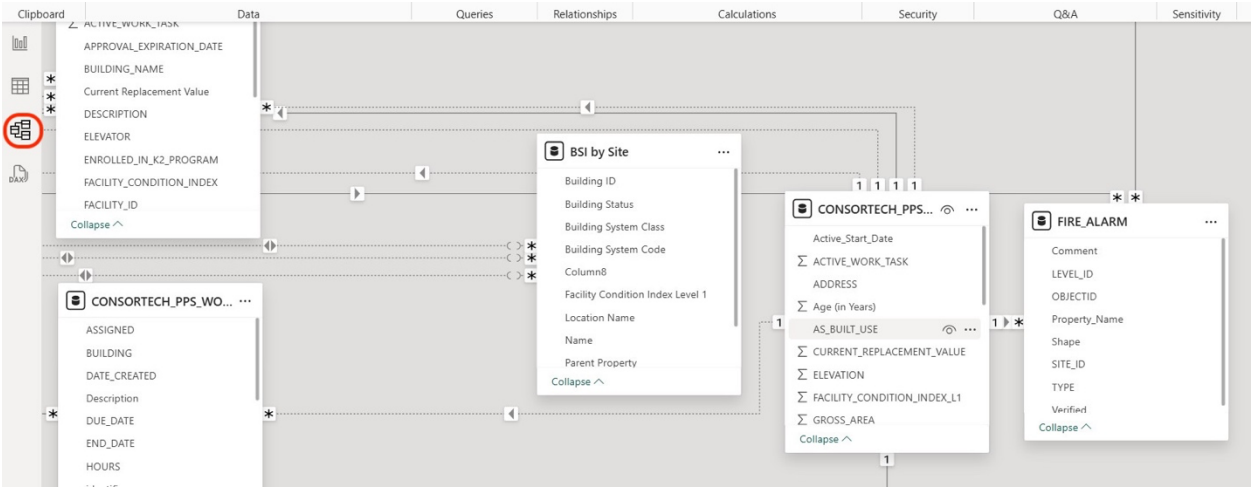
OBJECTID	SITE_ID	Property_Name	LEVEL_ID	TYPE	
2	298	YOUNGSTON	1001103	Pull Station	POI
14	298	YOUNGSTON	1001103	Pull Station	POI
15	298	YOUNGSTON	1001103	Pull Station	POI
16	298	YOUNGSTON	1001103	Pull Station	POI
17	298	YOUNGSTON	1001103	Pull Station	POI
18	298	YOUNGSTON	1001103	Pull Station	POI
19	298	YOUNGSTON	1001103	Pull Station	POI
20	298	YOUNGSTON	1001103	Pull Station	POI
21	298	YOUNGSTON	1001103	Pull Station	POI



OBJECTID	SITE_ID	Property_Name	LEVEL_ID	TYPE	Shape	Comment	Verified
2	298	YOUNGSTON	1001103	Pull Station	POINT (-13646584.2675 5701096.6534999982)		No
14	298	YOUNGSTON	1001103	Pull Station	POINT (-13646585.1744 5701074.7370000035)		No
15	298	YOUNGSTON	1001103	Pull Station	POINT (-13646531.214499999 5701098.1649999991)		No
16	298	YOUNGSTON	1001103	Pull Station	POINT (-13646470.3019 5701096.3511999995)		No
17	298	YOUNGSTON	1001103	Pull Station	POINT (-13646473.6271 5701070.504900001)		No
18	298	YOUNGSTON	1001103	Pull Station	POINT (-13646546.3294 5701065.5169999972)		No
19	298	YOUNGSTON	1001103	Pull Station	POINT (-13646524.1106 5701062.9474999979)		No
20	298	YOUNGSTON	1001103	Pull Station	POINT (-13646567.4901 5701036.0430999994)		No
21	298	YOUNGSTON	1001103	Pull Station	POINT (-13646551.921799999 5701054.0297000036)		No
22	298	YOUNGSTON	1001103	Pull Station	POINT (-13646552.224100001 5701032.5666999966)		No

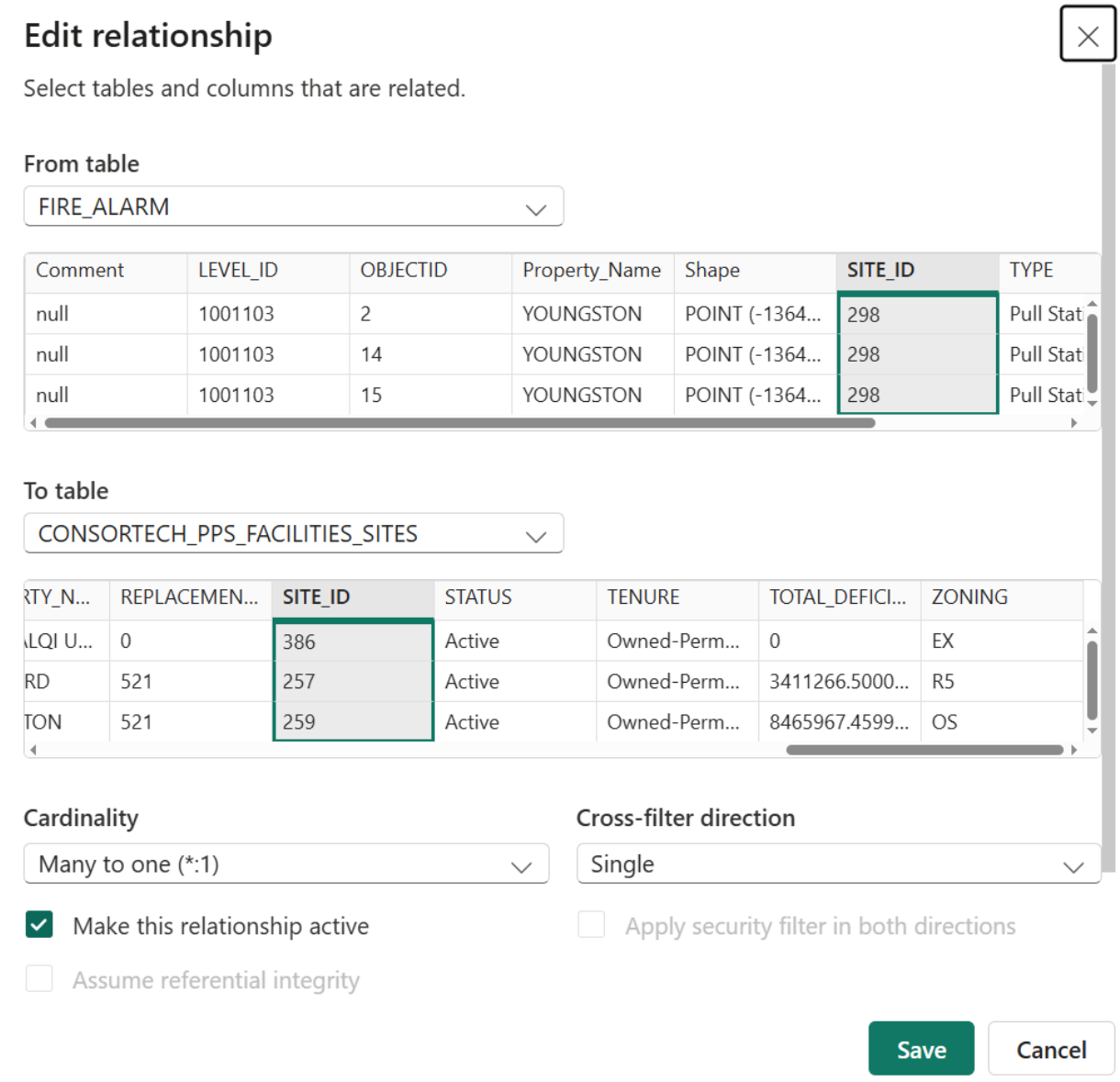
If you **click** on a **column** you will then see the **Column Tools** option available to you. In there you can change many settings for a single column. Sometimes it tries to summarize numeric data and this is an easy place to tell it not to do this. You can change formats (dates are a good one) and other parts of the data. You can remove columns but I find it easier to just leave columns in there and rename the columns you'll be using to something logical. It's easier to ignore useless data than to have to reimport the dataset again and start over. ***Once you remove columns it's impossible to get it back without importing again.*** At this point your data is in PowerBI and can be used. Sort of. The important part is relating it to other datasets in your dashboard. Let's do this.

Click on the **icon below the table icon** in the **left menu**. This takes you to the relational section. This will allow you to relate tables to each other using common key fields. This allows the data to interact with each other. Without the relations the data often won't work together in PowerBI and it makes for a frustrating experience.

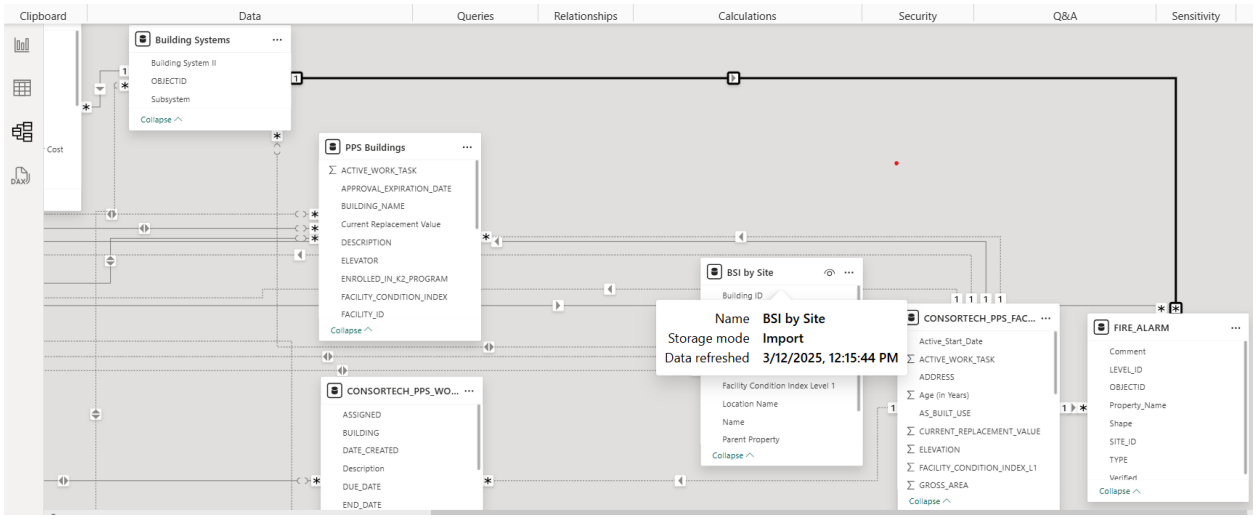


You can see the Fire Alarm data that was just imported. It's already relating to other datasets as PowerBI attempts to find the relations for you. ALWAYS double check these relations! Just **double click on any**

part of the line/shapes between two files and it will pull up the relation between them.

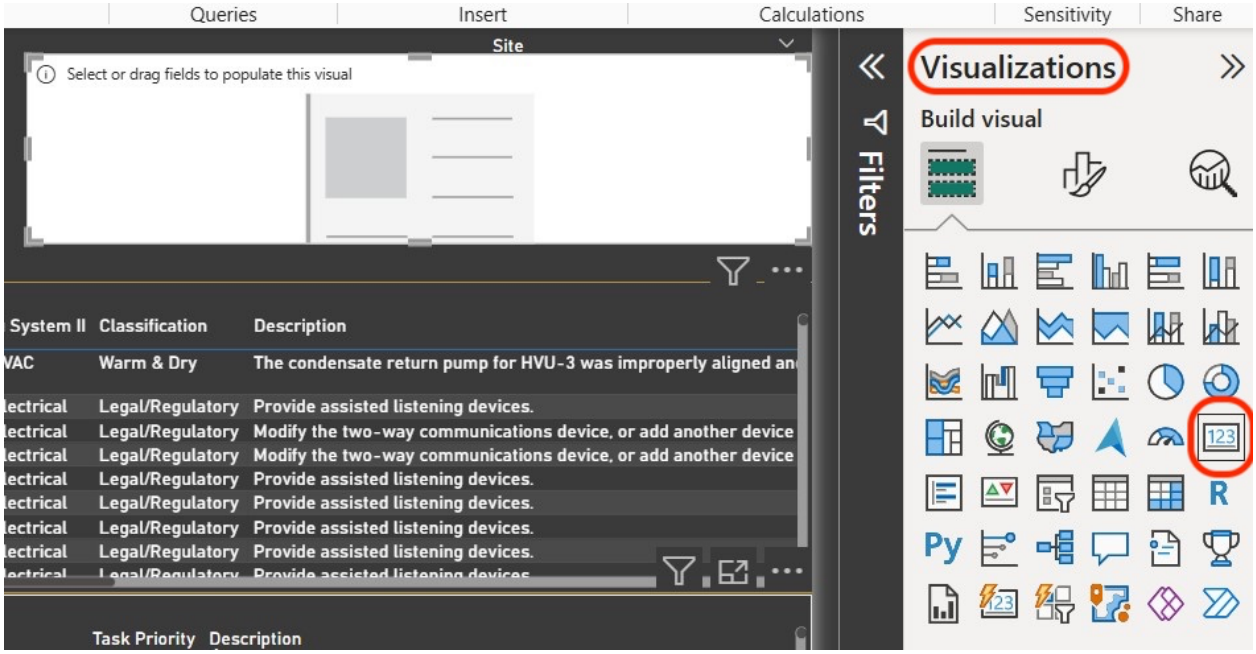


In this case, between Facilities/Sites and the Fire Alarms it's relating on the Site ID, which is fine so we can **click** the **Save** button unless we want to change the **Cardinality or Cross-filter Direction**. This could work as a 'Both' Cross-filter direction but we will leave this as is. Usually, these can stay as PowerBI suggests and work fine. Check all the relations just to make certain. Or, if there's a new relation that needs to connect two of the files just **click** on the **field** and **drag it** to **the field in the other file** where you want it to relate. PowerBI seems to want to connect the Fire Alarms with the Building Systems which doesn't actually relate. **Single click** on the **relation between them** and **click Delete** on your computer and it will remove the relation between them. The only relation we really need for this file is to Site. So, you could relate them either by Property Name or Site ID. Now you have a relation between the files that you can use for dashboards! Good work!

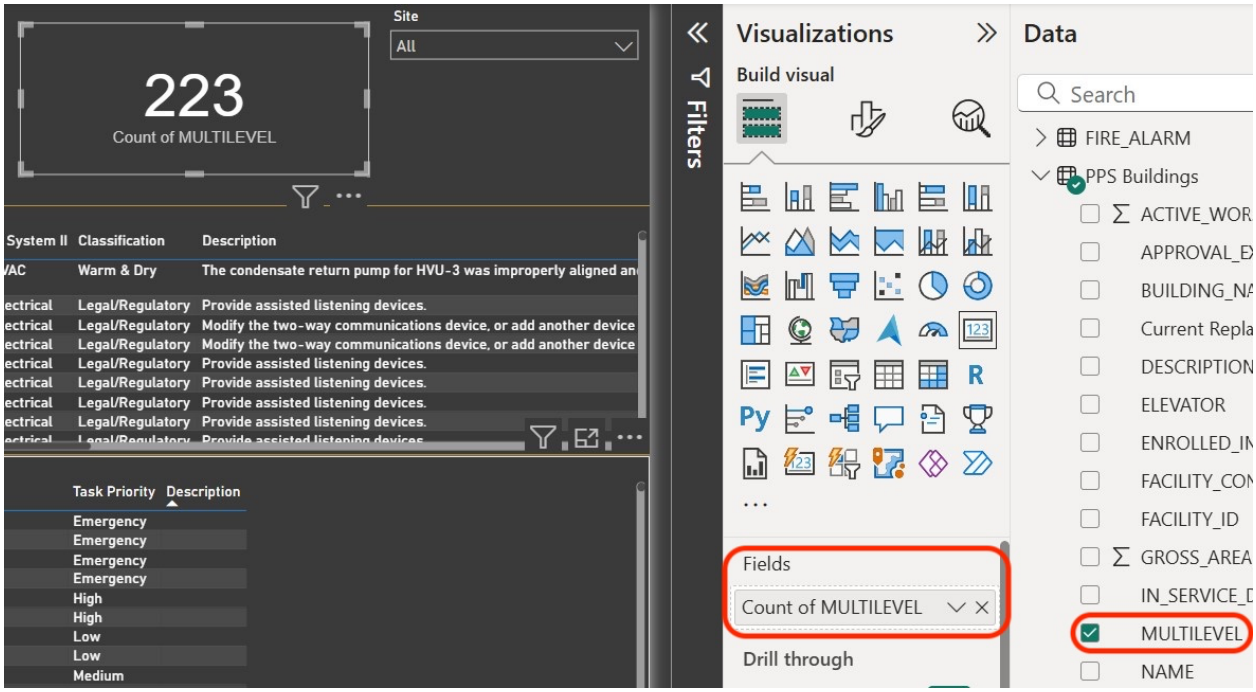


Adding Dashboard Visualizations/Editing Dashboards

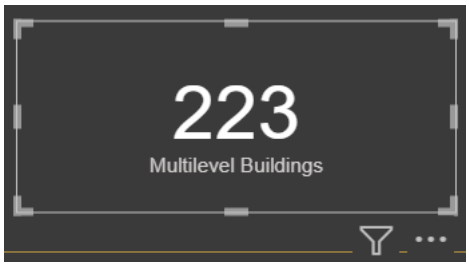
The visualizations pane in PowerBI is where you wield the power. Depending on what you're attempting to display there is likely a tool for that. In this case, let's add a visualization component to the dashboard. **Click** on the **Card** option in the middle right section of the **Visualizations** pane. This will add a component to the dashboard.



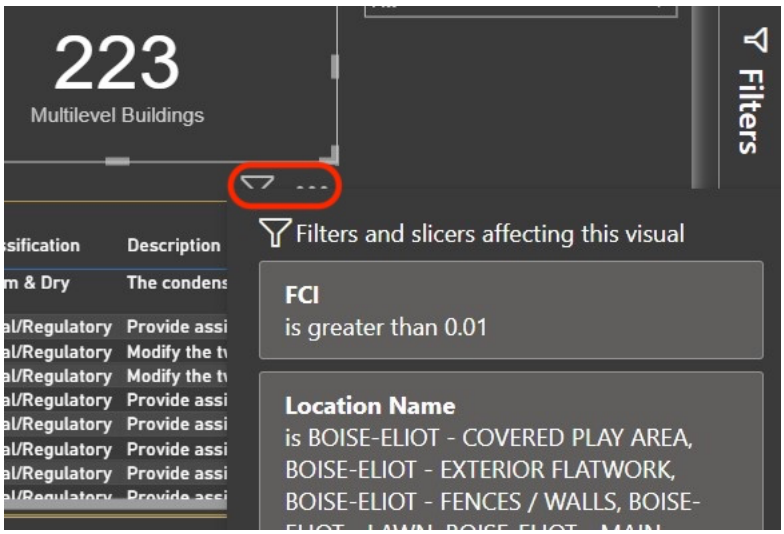
Now, we can drag the fields we want to tabulate over to the new box or use the fields under the visualization tools in the **Visualizations** pane. Let's **add** the **MULTILEVEL** field from the **PPS Buildings** file by **dragging it over**. This should build a count of the Multilevel buildings in the district. The **Card** tool **summarizes** a data field.



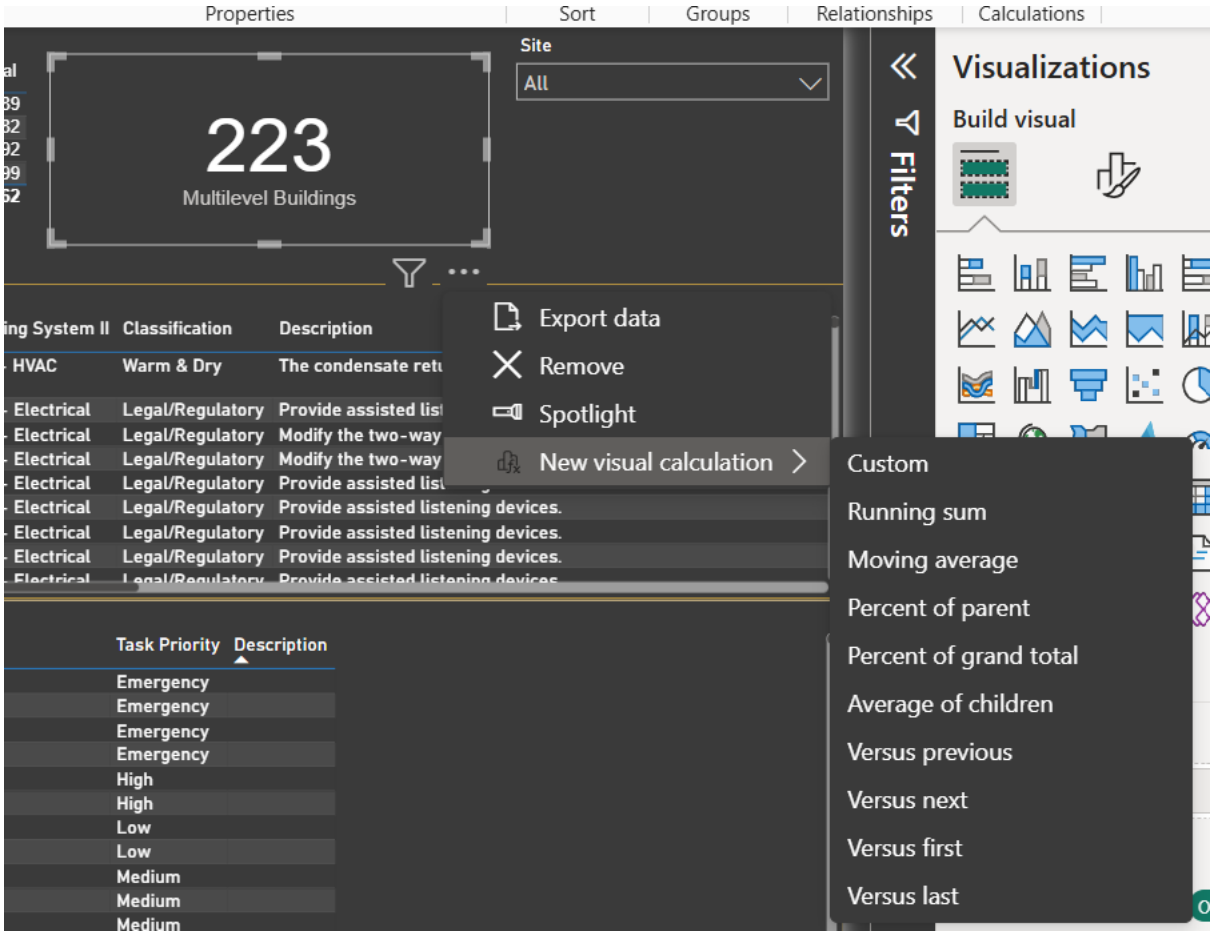
You can edit the display of the wording in the **Fields** area of the **Visualizations** pane. If you **double click** on **'Count of MULTILEVEL'** it will allow you to change the field.



Underneath the card, you will see a funnel (filter) and the ellipse dots. If you need to change any filtering affecting this card, go into the **Filters** pane and edit them accordingly. Here, you can see that there are filters on FCI as well as location names.

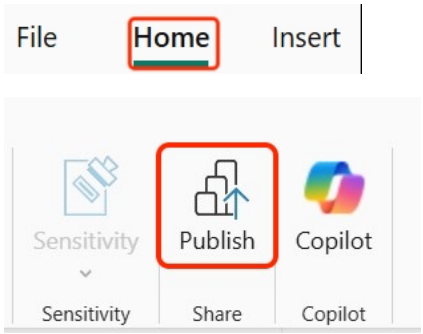


If you **click** the **Ellipsis** button, you're presented with extra options for the card. You can change the calculation or export the data, etc. Now you've added a dashboard component! As a bonus, you can also edit field names in the **Data pane** to help you identify them better or you can edit the field names in the **Table view**.

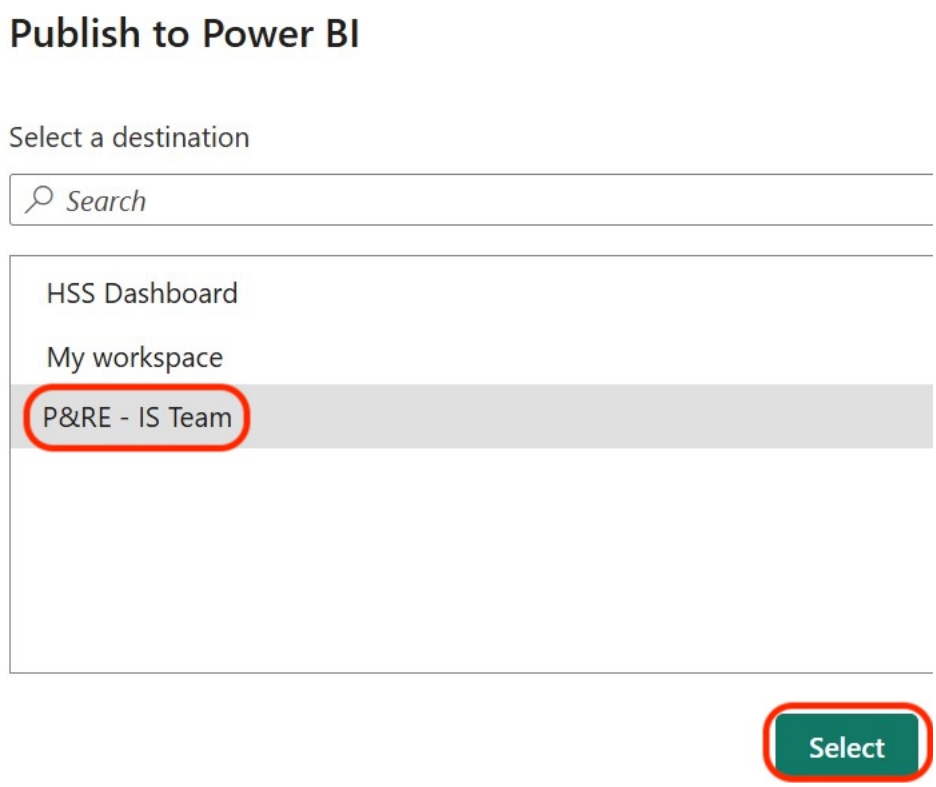


Publishing to Web Services

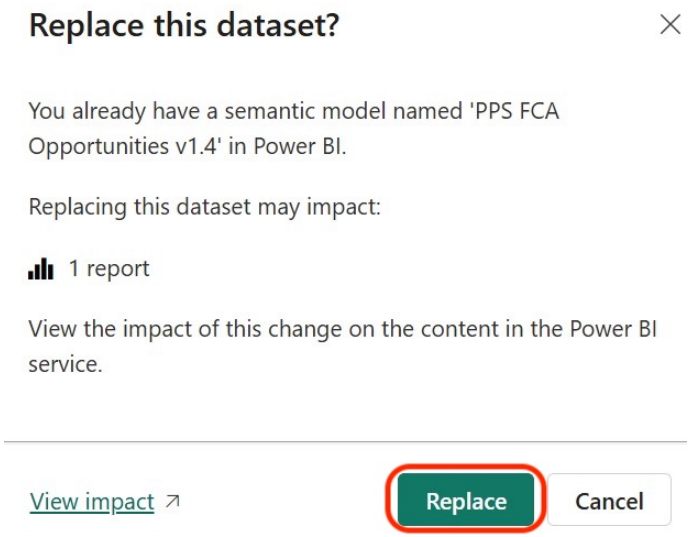
Let's say you have the dashboard ready and exactly like the client wanted. (right?!?!?) Now would be the time to save it and publish online. The dashboards are stored in the **P&RE area** of the PPS instance of PowerBI. In the **Home** section of the top menus there will be the **Publish** tool. **Click** on the **Publish** tool and the dialog will pop up. **Save** your changes and continue.

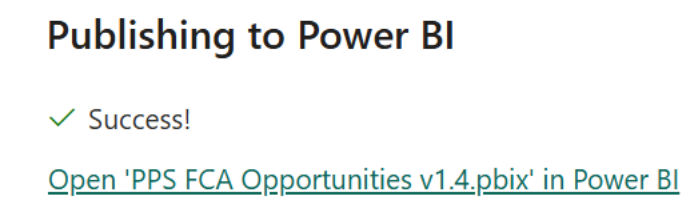


The Publish to Power BI dialog will pop up. **Click** on the **P&RE – IS Team** option and **click** the **Select** button.



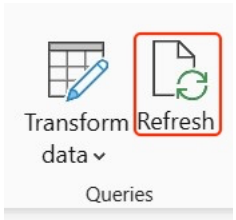
If you have already published a dashboard prior it will ask if you're certain if you want **replace** the **Semantic Model**. **Click** on the **Replace** button and it will overwrite and publish the newly edited dashboard. It will then display a window with a link where you can view the online version of the dashboard. Wallah!

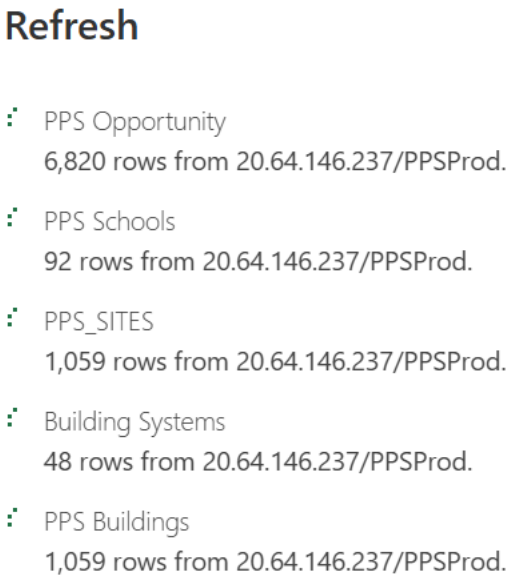




Negotiating Data Updates

Since we ***Imported*** the data and it's not a ***Direct Query*** (more needed for real time data monitoring), we need to update the data when we're using it. This is easy to do in Power BI itself. In the **Queries** section of the **Home** menu **click** on the **Refresh** icon. This will query into SQL and update the records. If all goes well then it will refresh the data. If not, you'll start to get some errors. First, try closing your project and reopening and updating it. If not, you'll likely have to delete the dataset and pull it back in.

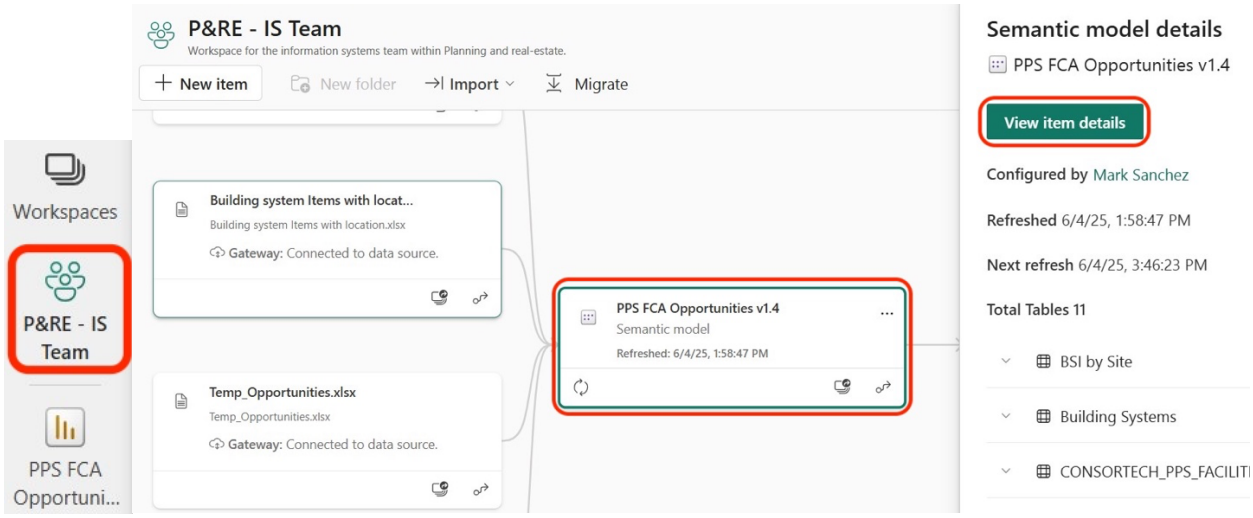




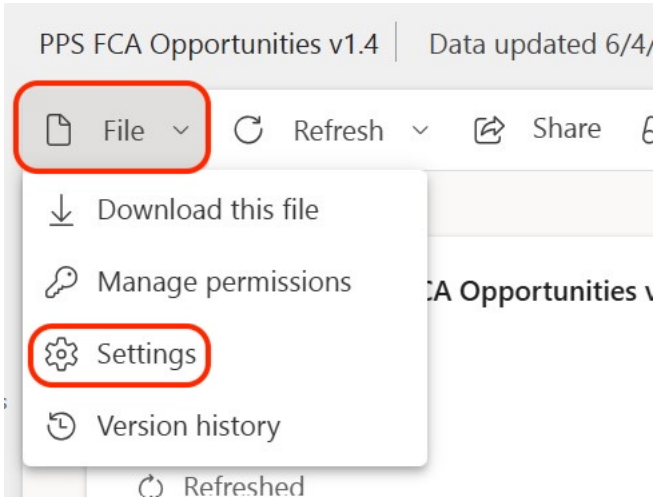
This will update the data in your dashboard. It's good practice to do this every time you use the dashboard just so that the data is up to date.

Automatic Data Updates in the Online Semantic Model

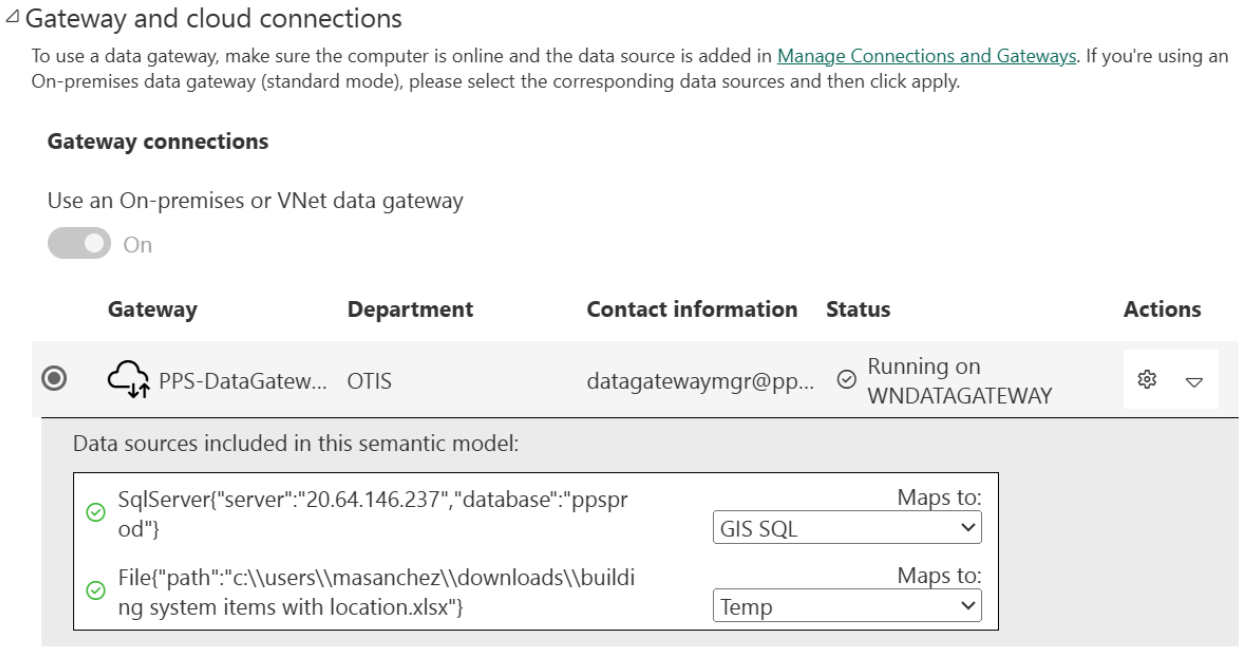
Though we can update the data for a dashboard when we use it, we aren't often working in the dashboard once it's up and running. If this is the case, you still want the data to get updated on a recurring basis. This is where setting this up in the **Semantic Model** online comes into play. **Navigate to** the **Power BI online** component (the link from publishing the dashboard is the easiest way). Once we are in there, let's **click** on the **P&RE IS Team** icon. This will take us into our models and show us the workflow for them in the online component.



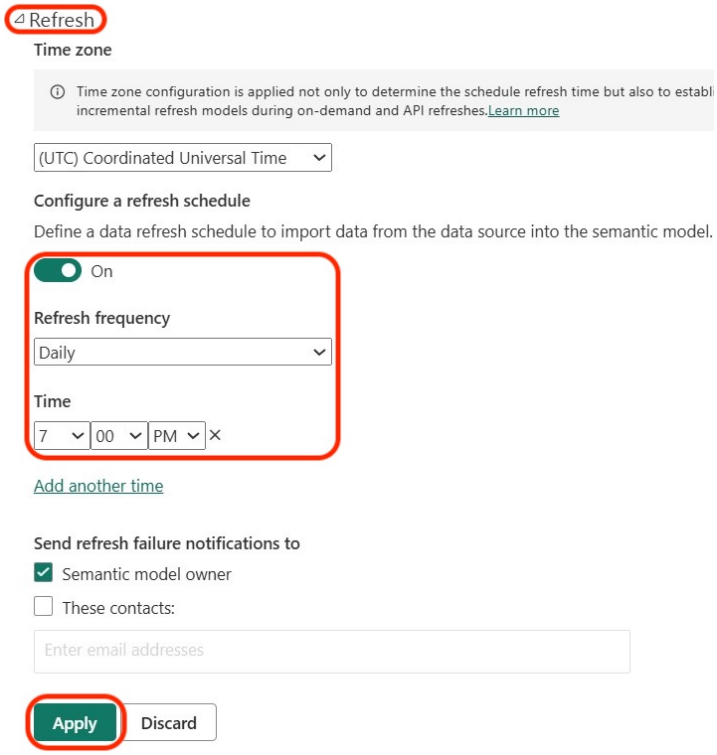
C click on the **PPS FCA Opportunities v1.4** link in the **Semantic model** section. Then **click** on the **View item details** button. This will take us into the Semantic model area. Now go up and **click** on **File** and a dropdown menu will appear. Then, **click** on **Settings**.



Check under **Gateway and cloud connections** by **clicking on** the **arrow** to see that all of your data sources are working. If the GIS SQL connection is not working contact Kris Large for assistance.



Below the **Gateway** section is the **Refresh** section. **Click** the **arrow** to drop down that section and we can begin to configure a refresh schedule for the data. Let's **set** this **semantic model** to **refresh** the data on a **daily** schedule at **7 pm**. **Toggle** the **On** slider and **fill out** those **fields** and click **Apply**. The model will now refresh weekly. You can set to a daily schedule instead if your data doesn't require frequent updates.



Hopefully this gets you up and more comfortable within Power BI! Cheers!