DataViewer 2020 Manual of Features

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DataViewer Manual of Features

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Introduction

DataViewer provides secure cloud-based business data Query and Reporting capabilities for GeoPortal and for custom business applications. DataViewer can present business data from most major database technologies like SQL Server and Oracle.

DataViewer is a core end-user application of **GeoPortal**. The other core applications are:

- GeoViewer providing map-based business information integration and access; and,
- **DocumentViewer** providing file management and Reporting capabilities.

Note: The terms "field(s)" and "column(s)" are used interchangeably; as are "record(s)" and "row(s)"



Browsers, Devices and Functions

DataViewer supports the following browsers (latest version only) in both a desktop and mobile (where indicated) computing environment:

- MS Internet Explorer v11
- MS Edge
- Google Chrome (mobile and desktop)
- Apple Safari (mobile and desktop)
- Firefox

Note: the user interface and available functionality will change depending on the following:

- 1. Size of display. On mobile devices the interface will look and work differently because of the limited screen size.
- 2. User account role. The functions available to a user will depend on their GeoPortal account role. On mobile devices this is further limited primarily for the administrative functions, as the screen size limits functionality and usability.

Technical Note: DataViewer uses GeoPortal's Dynamic Access System (DAS) for defining user roles and security level

3. We refer to **desktop** and **mobile** environments. Mobile includes any device that's display uses its full screen (100% viewport) – such as a Smart Phone, or tablets such as an Apple iPad. Tablet PCs are not mobile devices and will behave like a desktop device, for example, a Microsoft Surface.

The following table identifies the function availability by device and role:

Function	Desktop	Mobile	User	Editor	Admin
Manage Query	Yes			Yes (own)	Yes (all)
- Add	Yes			Yes (own)	Yes (all)
- Edit	Yes			Yes (own)	Yes (all)
- Delete	Yes			Yes (own)	Yes (all)
Manage Report	Yes			Yes (own)	Yes (all)
- Add	Yes			Yes (own)	Yes (all)
- Edit	Yes			Yes (own)	Yes (all)
- Delete	Yes			Yes (own)	Yes (all)
Run Query	Yes	Yes	Yes*	Yes*	Yes (all)
Run Report	Yes	Yes	Yes*	Yes*	Yes (all)
Manage Metadata	Yes	Yes	View Only	Yes	Yes
GeoPortal Links	Yes	Yes	Yes	Yes	Yes
Export to Excel	Yes		Yes	Yes	Yes

^{*}User and Editor can only run what they can see.

DataViewer 2020 has introduced the concept of a User with access only to limited view/run functionality. The majority of current DataViewer users will have what are now described as Editor capabilities.



All functions are equal in their capabilities for both an Editor and an Administrator. The difference between the two roles' capabilities is that an Editor can only manage their own Reports and Queries while the Administrator can manage all of them. Any changes the Administrator makes are visible and accessible to all users who have access to those data.

Modes of Operation

DataViewer can work in two modes:

- Application Mode this mode is used when a business application calls DataViewer to execute a
 Query. For example, the user can perform an *Identify* in GeoViewer and then request
 DataViewer to execute a Query to select associated business data.
- 2. Generic Mode generic mode is when DataViewer is launched directly without a specific external application request to display data.

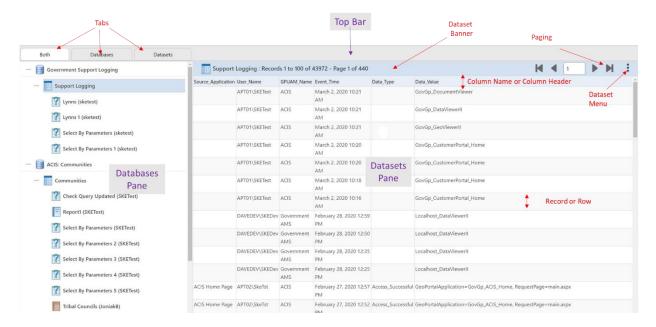
Note: Unless otherwise stated, the help documentation addresses the use of DataViewer in Generic Mode. However, there is no difference in functionality or display. All connections and datasets that the user has access to are available, as are functions.



DataViewer User Interface

Layout

The interface has three areas: the Top Bar; the Databases Pane on the left side, and the Datasets Pane on the right side.



1. The **Top Bar** shows:

- a. In the top left area three tabs for managing the display, consisting of:
 - i. Both shows both Databases and Datasets, which is the default mode for desktop environments. This option is not available when DataViewer is used on a mobile device.
 - ii. Databases only shows the Database Connections, associated Datasets, associated Queries and Reports. The user's account settings determine what dB connections they are allowed to see. (this is the default mode on mobile devices)
 - *iii.* **Datasets** either displays the currently selected data set, which often has links to the map and related information; or it displays the results of a Query or Report.
- 2. The **Databases Pane** (left frame) The menu uses a three-level hierarchy of:
 - I. Database Connections ()
 - II. associated **Datasets** from that Database Connection (); and,
 - III. associated Queries () and Reports (), created by the system administrator or by you (user with Editor role) to help extract/filter data from those data sets using specific criteria.



- 3. The **Datasets Pane** (right frame) shows the following:
 - a. Along the top there is a light blue bar (folder banner) which displays the name of the current Dataset; the current page number in the top centre (there are 100 records shown per page), along with all available page numbers; and, the current record count (top right side) for the Dataset or Query/Report. On the far right a paging icon appears for large Datasets, and a Dataset Menu icon [:] to bring up a menu with specific Dataset functions.



Navigating with + and -

The \pm icon to the left of a Database Connection is used for exploring the hierarchy within the Databases Pane or in a form when a function requires the user to browse for an item (e.g. results of a Keyword Search). Use these icons to navigate the hierarchy without selecting a particular Database Connection, its associated Datasets, Reports, and Queries.

Once Datasets are revealed the + changes to a '-' beside the parent Database Connection or Dataset name. Selecting the '-' will collapse and hide the Datasets, Reports, and Queries again.

When the required Database, Dataset, Query or Report is found, clicking on the name will highlight the background in light blue.

On the desktop, if the user has clicked on the Databases Tab then either the Both or Datasets Tab has to be selected to display the records. On a mobile device selecting the Databases Connection, Dataset, Query or Report will automatically open the Datasets Tab.

Each Database Connection can have many registered data sets, and each data set can have many Queries and Reports.

Your Queries and Reports are only visible and accessible to you and to the system administrator.

Selecting a **Dataset** will display all the records for that database view.

Selecting a **Query** will display the Query specifications form that lets you specify values and operators for each parameter and generate a result based on those specified parameters.

Selecting a **Report** will run that Report and display the results in the right frame. A Report is a predefined Query that returns results based on the same parameters, ie., the parameters are not dynamically selectable when you run the Report.



Databases and Datasets Panes Functions

DataViewer provides functions based on the pane you are in and the device you are using.

- Databases Pane To access specific functions: If using a mouse right click on the selected
 Database Connection, Dataset, Query or Report name and a context menu with functions will
 appear. This is not available in the mobile environment.
- 2. Datasets Pane for Selected Dataset To access the functions: If using a mouse right click on the selected Dataset name in the Dataset banner (light blue bar), and a menu with specific selected Dataset functions will appear. You can also click or press the ellipsis icon [:] on the far right of the folder banner (light blue bar) and a menu will appear at the bottom of your display, for both mobile and desktop environments.

Note: Right-clicking or pressing and holding to bring up a menu is not available in the Datasets Pane on the mobile interface. To do this in the mobile environment you must click on the ellipsis [:] on the far right.

3. **Datasets Pane** – Column functions for Selected Dataset - to access column functions: If using a mouse right-click on the column name or header and a menu with column functions will appear. In the mobile environment, tap the column name or header to display the column context menu which will appear at the bottom of your display. See the section on column functions for further guidance.

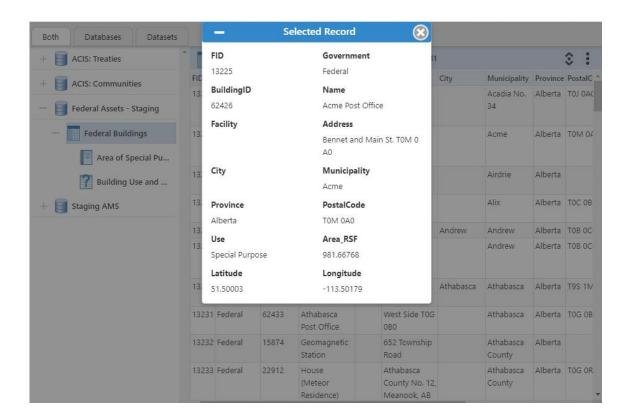


4. **Datasets Pane** – Column functions for Selected Query or Report - to access column functions: If using a mouse right click on the column name or header and a menu with column functions will appear. In the mobile environment, tap the column name or header to display the column context menu which will appear at the bottom of your display.





5. Datasets Pane – Record /Row functions: If using a mouse click on a Dataset, row or record and a form with all the field contents will be displayed in vertical/column format. In the mobile environment, tap on the row or record to display the Selected Record information form.





Column Functions

The Column Functions are available to **User**, **Editor** and **Administrator** roles for the **desktop** and **mobile** environments.

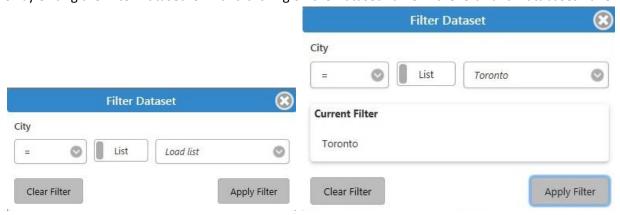
The column functions for a selected Dataset or the results of a Query or Report are accessed using a mouse right-click on the column name or header and a menu with column functions will appear. In the mobile environment, tap the column name or header to display the column context menu which will appear at the bottom of your display.

The functions are:

- **Filter** select records to be displayed based on values within the column.
- Sort Ascending sort all (or displayed/filtered results) records in ascending order.
- **Sort Descending** sort all (or displayed/filtered results) records in descending order.
- Ride Column hide the selected column from the current display.
- **•• View Metadata** display the metadata available for the selected column.

The display and available records can be reset by clicking on the Dataset name in the left-hand Databases Pane.

A Filter is created by selecting the desired Operator and Value from the Filter Dataset form and clicking the Filter button. Once a filter is executed the Filter Dataset form remains, and the filter parameters are displayed on the form. Filters can be cleared using the Clear Filter button; or by carrying out a new filter, or by exiting the Filter Dataset form and clicking on the Dataset name in the left-hand Databases Pane.



Help

Help is accessed via the Support page (https://staginggeoportal.com/IO/Support-en.html). This page contains links to the help page and other support resources including a help manual that can be downloaded.



GeoPortal Links

GeoPortal links for a selected record

The Dataset spreadsheet records often link to related information. When a Dataset has related information (GeoPortal Links) then on the left side of the spreadsheet you will see icon that enables access to all registered links. Clicking on the related information icon will display a list of related information link names in a new form.

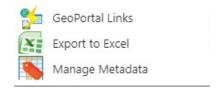
Related information might be an associated map, document, web page/site, or a Report from a connected business system or web service. There are three link types:

- 1. **GeoViewer:** If you click the icon then GeoViewer will be launched in a new window and zoom in on the map feature associated with the record. In other words, use this to map the record.
- 2. **DataViewer:** If you click the icon then a new DataViewer window will launch and display the associated record(s). This allows you to go from one Dataset to another and see the related details.
- 3. **Generic Links:** If you click the generic link icon it will open a new window and display any related information (e.g., photos, reports) associated with the selected record.



GeoPortal links for a selected Dataset

Links can also be accessed for ALL records within the current Dataset. If using a mouse click on the ellipsis [:] to the far right of the blue Dataset Banner. A slide-up menu will appear at the bottom of your screen. Select *GeoPortal Links* and the available links for ALL records in the current Dataset will be displayed in a form. Right-clicking on the Dataset Banner will bring up a context menu with the same menu options.





Building and Managing Queries

Queries Overview

Queries enable the user to specify values and operators for each parameter and generate a result that is based on those specified parameters.

Using a Query

Most data sets will have a "Select by Parameters" Query already built and ready for use. This Query contains many / all of the key fields in the data set and its purpose is to help you get started interrogating the data. If it does not have all the fields you need, use the Query/Report Form to create your own Query.

To run a Query, click on the Query name beside the icon and the Run Query form will appear:



Fill in one or more parameters and click the **Run Query** button. The results are displayed in the Dataset pane.

Each parameter applies additional filters on the source Dataset. For queries with more than one parameter, if you leave the parameter blank, that parameter is ignored when the Query is executed.

Each parameter has an operator (e.g. "=" or "like") and a field value. The operators are defined in the table below.

The field can be user-defined (**Value**) or chosen from a unique pick list (**List**). You can toggle between these two choices using the "Value"/"List" button. "Value" enables you to type in a specific value, while "List" accesses the data set and brings back all the possible values with a maximum of 10,000 values, for you to select from.

Notes:

- If you input a value, do not use any special characters.
- If you use a pick list, the system may take a few seconds to populate.
- When the field data is a Date, a **Date** button is shown. Clicking this button will launch a calendar for easy input.



The "Or" and "And" pick lists are important for queries when there is more than one parameter. Choosing "**Or**" tells the system to return all records that match consecutive parameter criteria (typically giving you more results). Choosing "**And**" tells the system to only return records that match both consecutive parameter criteria (typically giving you fewer results).

Note: the Or/And operators work in sequence, however the "And" operator always takes precedence. For example, if you have three parameters and the first uses "Or" and the second uses "And", the system will evaluate the second and third ("And") parameters, and then the results of that would be evaluated with the first ("Or") parameter. As well, when there are multiple parameters specified the Query evaluation is done for all the parameters for each record. For example, if you specify Parameter1 and Parameter2 then both parameters will have to be true for a specific record for that record to be returned.

Once you have established the parameter(s) conditions, click the Run Query button to execute the Query and see the results in the Dataset pane.

Operator Definitions

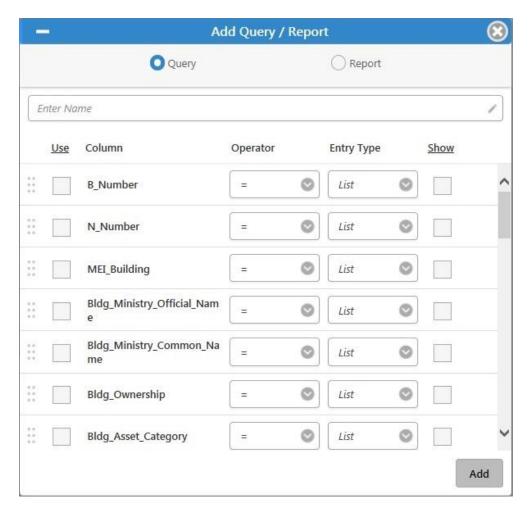
Operator	How it Works
=	As per the mathematical symbol's meaning: equals (=). The value defined must match the field value exactly, however, it is not case-sensitive (for text fields).
<>	Not equals. The resulting set of records would not equal the value provided. E.g. In a list of pro hockey teams <> "Pittsburgh"; the resulting list would not include Pittsburgh.
In	"In" works like "=" if there is only one value, but, if you provide multiple values separated by a comma, then it's like having a multiple "Or" parameter Query for the same field. For example, from a list of suppliers where the names are IN: 'IBM, Hewlett Packard, Microsoft' the result will be records of all three suppliers. Syntax: separate the values by a comma, it is not case-sensitive, the values must match exactly.
Not In	The opposite of "In", the resulting list is everything but what you define.
Like / Not Like	The "Like" parameter is available for fields that are text and works on the entire text string within the field. It returns all the record(s) that have the text string you define (partial or entire). For example, in a data set of hockey teams where "name" is Like 'new', records for both New Jersey and New York would be returned. "Not Like" would be all records without 'new'. If you use "double quotes", then the entire phrase is considered as one. So "Maple Leafs" hockey would return all exact matches on Maple Leafs and on
	hockey. Do not use a comma to separate words/phrases, use a space.
Is Blank/ Is Not Blank	"Is Blank" will return all records whose field has no value. "Is Not Blank" will return all records whose field has a value.



Add Query 👺

The Add Query / Report function is available to an **Editor** and **Administrator** for the **desktop** environment only. To create a Query, right click on the Dataset name and select Add Query/Report from the menu.

First, select if wishing to add a Query or Report by clicking on the Query radio button at the top of the form.



Define the Query parameters. Each parameter is based on a single column in the data set. You can reuse the same column more than once when defining the Query.

To include a Column, click on the Checkbox beside the column name in the Use column on the form you wish to add as a parameter.

Choose the **Operator** (=, <>, Is Blank, Is Not Blank, Like, Not Like, In, Not In) and the **Entry Type**. The **User Entry Type** can be a "List" or "Input". List gives you a pick list with all the field values in the data set, with a maximum of 10,000 values, while Input provides you with the opportunity to input a value. Of note: for large data sets, using "list" may take a few seconds to display. The operators are defined in the "Using a Query" section of the Help.



Both the Operator and User Entry Type can be changed when you run the Query. All you are doing is providing an initial default for the Query.

Specify if you want the column to be displayed in your results. You can select all the columns to show in your results by clicking the underlined "Show" label. This can be reviewed before adding the Query.

You can define another parameter with the same field or a different field.

To add a parameter, you can duplicate an existing column. To do so right click on a desired column and select "Duplicate Column".

Use the Drag and Drop Handle to the left of each row to change the display order for the Query results.

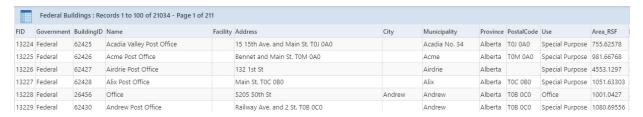
The results can be sorted using the Column Function (right-click on column header) once the Query has been executed and the results displayed.

Finally, give the Query a meaningful name.

When you are done, the user Query will appear in the menu under the data set with a blue Query icon.

Build Query Example

Here's an example of building a Query using the *Federal Assets – Staging* Database Connection and the "*Federal Buildings*" Dataset. Create a Query to show what special-purpose buildings have more than X square feet of space.

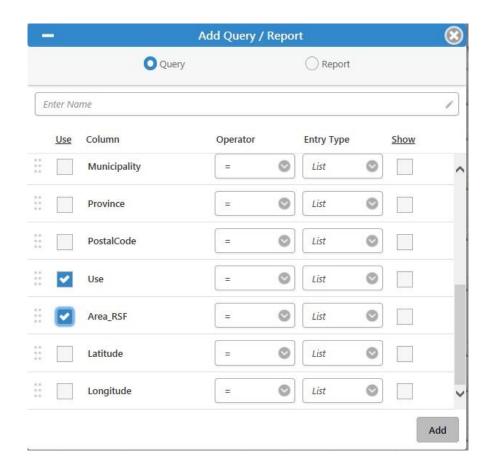


With the data set selected, right-click on the name and left-click to select Add Query/Report from the menu. Select Query by clicking on the radio button at the top of the form.

Create two parameters. One parameter will use the "Use" field because it contains the values "Office" and "Special Purpose". The second parameter will use the "Area_RSF" field because it contains the values associated with the square ft of the building. Choose for each if want the Entry Type to be a list or a value entered by the user. This is the initial default for the Query.

Choose to output all the fields (default), or select only those fields that are important. For this Query, you only need the BuildingID and the two-parameter fields, so the forms should look like the following:





Name the Query: "Building Use and Area".

The Query is now listed in the menu and can be run at any time.

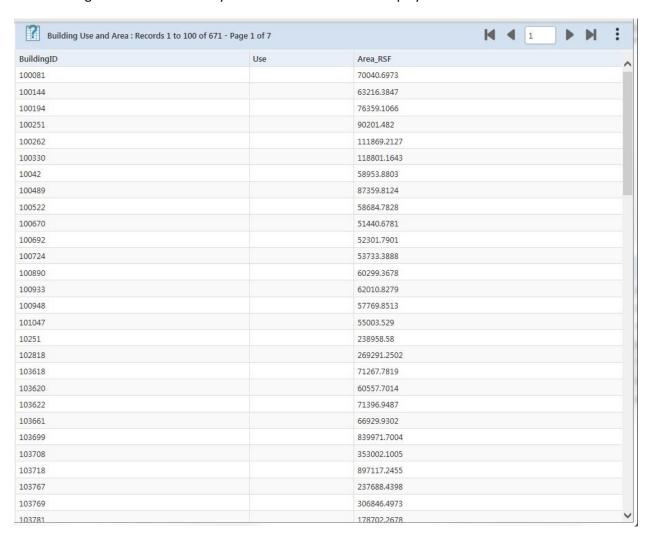


Run the Query: When you run the Query (click on it); the parameters form will appear. If you want all the leased buildings with more than 500,000 square feet of area, the form will look like this:





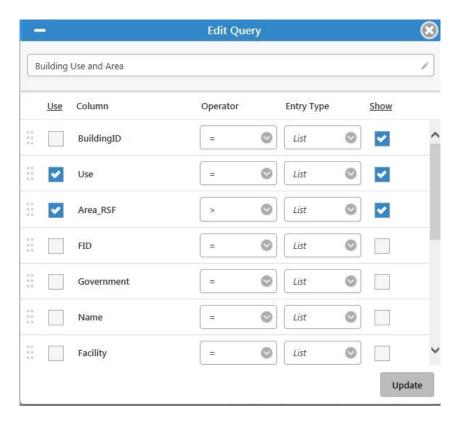
The resulting Dataset will have only the three fields of values displayed:





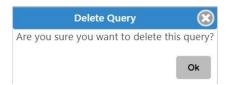
Edit Query 🚳

The Edit Query function is available to an **Editor** and **Administrator** for **desktop** environments only. To edit a Query, select an existing Query that you wish to edit, right-click on the existing Query and select Edit Query.



Delete Query

The Delete Query function is available to an **Editor** and **Administrator** for the **desktop** environment only. To delete a Query, select an existing Query that you wish to edit, right-click on the existing Query and select Delete Query.



Run Query

The Run Query function is available to **Users, Editors** and **Administrators** for the **desktop** and **mobile** environments. Only Reports that are visible for that user and their role can be run. To Run a Query, select an existing Query that you wish to run, with a mouse left-click (tap in the mobile environment) on the name of the existing Report and the Run Query form will appear. Select the values for the required parameters and click (or tap) the Run button to execute the Query and the results will appear in the Datasets Pane.



Building and Managing Reports

Reports Overview

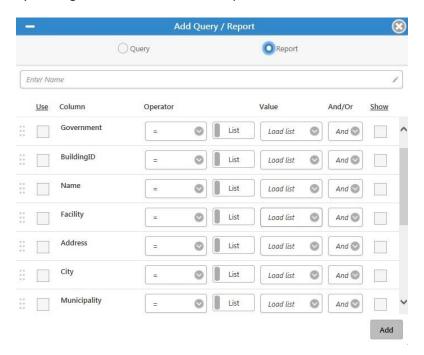
Reports are different than queries in that the parameters and parameter values cannot be specified when you run the Report. The parameters upon which the Report is based are specified when you define the Report and are always the same when you run it. Therefore, the Report will be the same each time it is run – except, the data in the Report will change to reflect how they have changed in the database.

To run a Report, click on the Report **name** beside the icon and it will run and the results will be shown in the spreadsheet.

Add Report 👺

The Add Query / Report function is available to an **Editor** and **Administrator** for the **desktop** environment only. To create a Report, right-click on the Dataset **name** and select Add Query/Report from the menu.

First, select Report by clicking the radio button at the top of the form.



Define the Report content by selecting the required parameters. Each parameter is based on a single column in the data set. You can re-use the same column more than once when defining the Report.

To include a Column click on the checkbox beside the column name in the Use column on the form you wish to add as a parameter.



If you are defining the Report with more than one field (such as a value for a particular year), use the And / Or column to define the relationships of those fields – whether their conditions both need to be met (AND); or whether they are independent (OR).

Of note, the *same parameter* can be selected more than once – each time with a different value. So, for instance, if you want your Report for two different dates, create the parameter with the date field for one of those dates; AND, then again for the other. The Report definition would look something like this:

Choose the **Operator** (=, <>, Is Blank, Is Not Blank, Is Like, Is Not Like, In, Not In). The operators are defined in the "Using a Query" section of the Help.

Specify, if you want the column to be displayed in your results. This can be reviewed before adding the Query and you can select the Show All checkbox.

You can define another parameter with the same field or a different field.

To add a parameter, you can duplicate an existing column. To do so right click on a desired column and select "Duplicate Column".

Use the Drag and Drop Handle to the left of each row to change the display order for the Report's results.

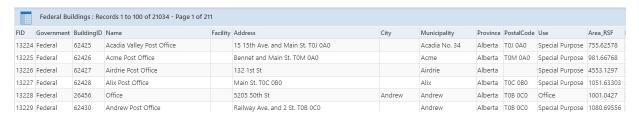
You can specify which data set columns you want displayed in the resulting Report. By default, none of the fields are going to be in the Report. Add the fields you want by selecting the checkbox if you want the Column to be displayed in your results. This can be reviewed before adding the Report and you can also select to show all the columns by left-clicking on the "Show" heading.

Finally, give the Report a meaningful name.

When you are done, the Report will appear in the menu with a blue Report icon. Your Reports are only seen by you and the system administrator.

Build Report Example

Here is an example of creating a Report using the *Federal Assets - Staging* Database Connection and the *Federal Buildings* Dataset. Create a Report of the buildings that are Special Purpose with more than 1,000,000 square ft.



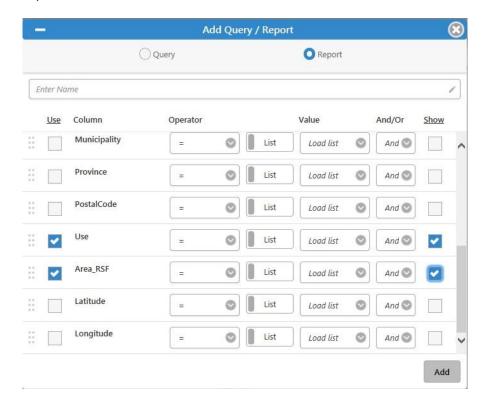


With the data set selected, right-click on the name and left-click to select Add Query/Report from the menu. Select Report by clicking on the radio button at the top of the form.

Create two parameters. One parameter will use the "Use" field because it contains the values "Office" and "Special Purpose". The second parameter will use the "Area_RSF" field because it contains the values associated with the amount of space for the building.

Choose the "Area_RSF" field. Click the "Value" toggle button and type in 1,000,000 – since you want only buildings with more than 1,000,000 sq ft in our Report.

Use "AND" since you want both conditions satisfied.



Choose which fields you want in your Report. Perhaps just the BuildingID and the two-parameter fields

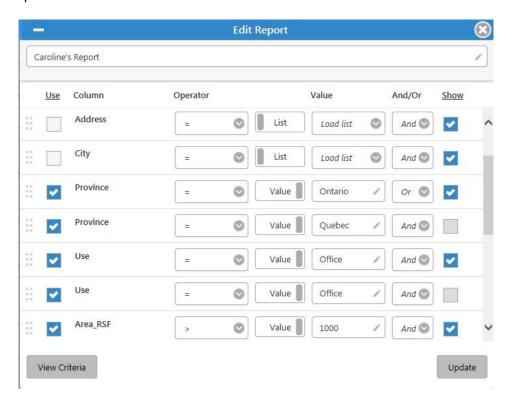
Finally, give a meaningful name – like "Area of Special Purpose Buildings" and click Add to commit the Report to the menu and run it automatically for the first time.





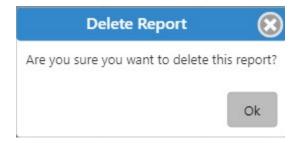
Edit Report

The Edit Report function is available to an **Editor** and **Administrator** for the **desktop** environment only. To edit a Report, select an existing Report that you wish to edit, right-click on the existing Report and select Edit Report from the menu.



Delete Report

The Delete Report function is available to an **Editor** and **Administrator** for the **desktop** environment only. To delete a Report, select an existing Report that you wish to edit, right-click on existing Report and select Delete Report.



Run Report

The Run Report function is available to **Users, Editors** and **Administrators** for the **desktop** and **mobile** environments. Only Reports that are visible for that user and their role can be run. To Run a Report, select an existing Report that you wish to run, with a mouse left-click (tap in the mobile environment) on the name of the existing Report and the results will appear in the Datasets Pane.



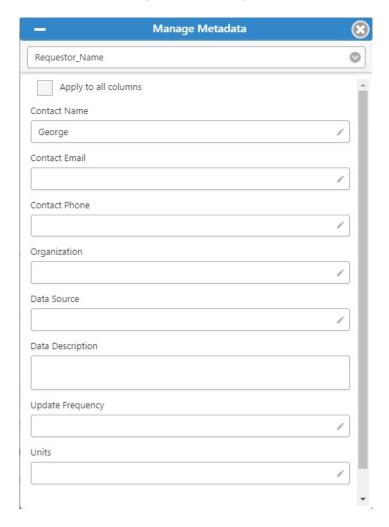
Manage Metadata

The Manage Metadata function is available to **Editors** and **Administrators** for the **desktop** and **mobile** environments.

The Manage Metadata function enables you to create and manage definitions associated with the various columns/fields in a data set.

If using a mouse, right-click on the selected Dataset Banner and select Manage Metadata from the context menu. Alternatively, left-click on the ellipsis on the far right of the selected Dataset banner and select Manage Metadata from the menu that appears at the bottom of your screen. In the **mobile** environment tap on ellipsis [:] and the menu will appear at the bottom of the screen.

The first step is to select a column from the picklist at the top of the form.



The next step is to provide the column definitions. You first select the field for which you wish to input a definition. The information elements available are:

Contact Name



- Contact Email
- Contact Phone
- Organization
- Data Source
- Data Description
- Update Frequency
- Units

All information elements, except Data Description and Units which will always be unique, can be used to "Apply to all columns". What this does is copy the content in that information element to all other fields in the Dataset – thus helping to significantly speed up the process.

When you have completed inputting the information elements for a field, click **Add**, and then, if necessary, select the next field from the list above. Any information elements for which "Select all fields" was turned on previously will be populated with the same content.

To delete metadata definitions, click the Delete button. The delete function is global and will delete all column definitions associated with the entire Dataset. The system will respond that the field definitions have been deleted.

To VIEW the metadata definitions for a Dataset, right-click on the column name, select View Metadata
 and a form will appear displaying the metadata for that column if it has been set.





Exporting to Excel

The Export to Excel function is available to an **Editor** and **Administrator** for the **desktop** environment only.

Export Excel sends the spreadsheet to Excel. The header will include the name of the source dB connection and the name of the data set. It then prompts to open or download and save the file on your computer.

When saving the file use "Save As Microsoft Excel Worksheet (*.xls)".

The function can export a maximum of 1,048,576 records.

Related information links are not transferred to Excel.