HEALTH GEOLAB COLLABORATIVE

Supporting countries to use geospatial data and technologies to achieve SDG 3

# Starter kit –

# ArcGIS Solution Coronavirus Case Dashboard

## Version 1.1 (06.05.2020)


**In collaboration with and with the support of:**

esri

# Revision History

| Version | Revision Date | Comment | By |
|---|---|---|---|
| 1.0 | 28 April 2020 | Document created | HGLC |
| 1.1 | 05 May 2020 | Adjustments in Section 5 | Izay Pantanilla |
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## Acknowledgements

Our gratitude goes to Esri for the support provided to the Health GeoLab Collaborative.

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## Purpose and audience

The purpose of this document is to guide new users on how to operationalize the Coronavirus Case Dashboard.

The audience for this document are ArcGIS Online users/subscribers who would like to operationalize the Coronavirus Case Dashboard in order to respond to the on-going COVID-19 pandemic.

## Abbreviations

| | |
|---|---|
| AeHIN | Asia eHealth Information Network |
| AGOL | ArcGIS Online |
| COVID-19 | Coronavirus disease |
| Esri | Environmental Systems Research Institute |
| GIS | Geographic Information System |
| GOARN | Global Outbreak Alert and Response Network |
| HGLC | Health GeoLab Collaborative |
| PHEIC | Public Health Emergency of International Concern |
| SDG | Sustainable Development Goal |
| WHO | World Health Organization |

# 1. Background

The Health GeoLab Collaborative (HGLC)[1] is a collective of institutions and individuals sharing the same vision - for low- and middle-income countries in Asia and the Pacific to fully benefit from the power of geospatial data and technologies to reach the health-related SDG 3 - and ready to engage their respective skills, experience, and resources to achieve it.

The HGLC has been established and builds on the work done as well as the network and documents developed through the activities of the AeHIN GIS Lab over the 2016-2017 period.

The HGLC uses the 4Ts (Training, Tooling, Testing and Teaming) approach to strengthen in-country capacity. The present starter kit has been developed as part of this approach and with the objective to be used by the largest number of users possible.

This starter kit is a living document made to evolve based on the inputs received from the users. Please therefore don't hesitate to contact us at info@healthgeolab.net if you have any suggestions for improvement.

Should you use this document as part of your activities and would like to have your organization recognized as one of document's users, please contact us at the email address provided above.

# 2. Introduction

For a few months now, the Coronavirus disease (COVID-19) pandemic has swept all over the world with the World Health Organization declaring it a Public Health Emergency of International Concern (PHEIC). Public health institutions and other organization are looking for ways to better monitor the situation in their respective communities and respond accordingly.

As a way to help, Esri is offering public health institutions and other organizations fighting COVID-19 a complimentary six-month ArcGIS Online subscription which gives access to the ArcGIS Hub Coronavirus Response template and the ArcGIS Solution for Coronavirus Response.[2]

The present kit focuses on one of the apps in the ArcGIS Solution for Coronavirus Response which is the Coronavirus Case Dashboard.

# 3. ArcGIS Solution for Coronavirus Response

The ArcGIS Solution for Coronavirus Response is a collection of maps and apps that can be used by public health and other emergency response agencies to understand the impact of COVID-19 and share authoritative information about the pandemic with the community.

[1] http://healthgeolab.net
[2] https://coronavirus-resources.esri.com/

To deploy the ArcGIS Solution for Coronavirus Response, follow these steps:

1. On your browser, go to this link: https://links.esri.com/solutions/app/CoronavirusResponse/
2. When prompted, log in to your ArcGIS Online account.
3. You will be directed to the ArcGIS Solution for Coronavirus Response page. Click *Get now*. (Figure 1)

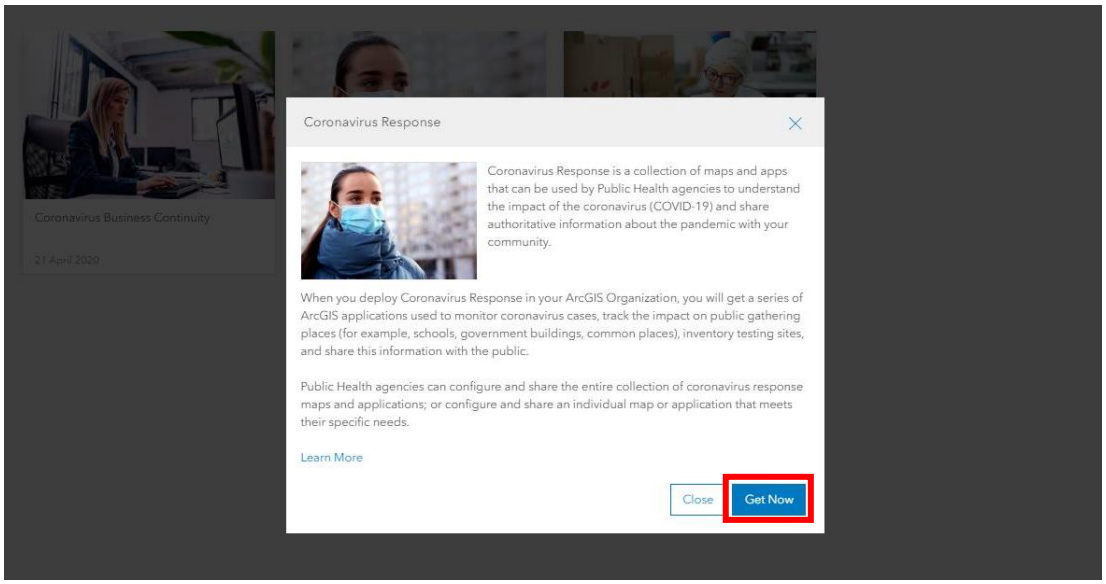


Figure 1

Once deployed, different items will appear inside the Coronavirus Response folder in the Content page of your AGOL account which include applications, maps, feature layers, and documents. The complete list of the items included in the ArcGIS Solution for Coronavirus Response can be seen in this page.[3]

These maps and apps present templates of solutions that are typically needed to monitor and respond to the COVID-19 situation in a community. You can configure, use, and share the entire collection or only those maps and apps that are needed by your organization.

# 4. Coronavirus Case Dashboard

The Coronavirus Case Dashboard is the application that is of most interest to organizations/institutions wanting to show the COVID-19 situation in their community.

The following sections discuss the different components of the Coronavirus Case Dashboard and how to operationalize it.

## 4.1 Dashboard components

The Coronavirus Case Dashboard utilizes different components to be operationalized. These components can be found in the Coronavirus Response folder in the Content page of your AGOL account. The following sections discuss these components in detail.

[3] https://solutions.arcgis.com/local-government/help/coronavirus-response/

### 4.1.1 Coronavirus Case Dashboard template

The Coronavirus Case Dashboard is a dashboard template presenting the COVID-19 cases and testing information of an area. (Figure 2) Across the top of the dashboard are the commonly sought for metrics such as active and total cases, recoveries, deaths, negative tests, and number of hospitalized.

The dashboard presents the breakdown of the cases such as the confirmed cases, deaths, and hospitalization by age and gender; the sources of exposure; the cases, testing, and hospitalization over time; and the distribution of cases by location accompanied by a map.

This application can be configured according to the needs of your organization and the data availability as some of the information needed for the dashboard may not be collected by or accessible to your organization.

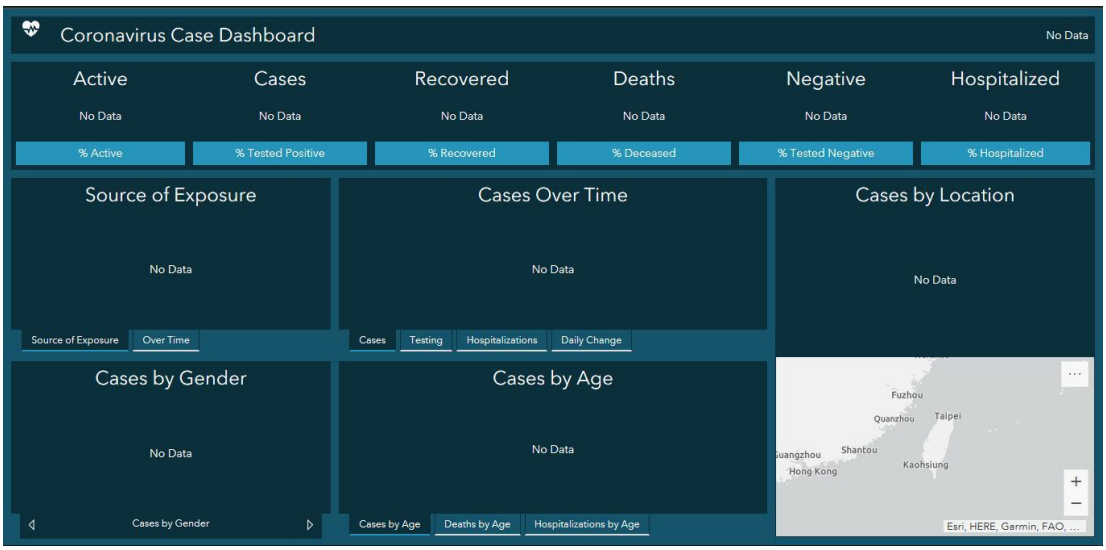


Figure 2

You can learn more about ArcGIS dashboards in general from this ArcGIS documentation.[4]

### 4.1.2 Feature layer

The dashboard pulls the information it displays from the CoronavirusCases feature layer. This feature layer has two sublayers – Reporting Areas and Cases.

The Reporting Areas are the geographic boundary (or boundaries) of the areas of which you are presenting the COVID-19 situation. A reporting area can be any administrative or operational division as used in your data collection such as village, municipality, province, health zone, etc.

This sublayer has two fields: Name and Aggregate Area. The Name field stores the name of the reporting area. The Aggregate Field is used when you would like to present the information by differing jurisdiction or division. For example, you would like to show the COVID-19 situation for the whole province as well as the breakdown for the different municipalities within that province. In this case, the boundary of each location would be

[4] https://doc.arcgis.com/en/dashboards/get-started/what-is-a-dashboard.htm

added to the Reporting Areas feature layer and the Aggregate Area field would be populated with Yes for the Province. (Figure 3)

Reporting Areas (Features: 5, Selected: 0)

| Name | Aggregate Area |
|---|---|
| Province | Yes |
| Municipality C | No |
| Municipality A | No |
| Municipality D | No |
| Municipality B | No |

Figure 3

The Cases sublayer is a table that contains the COVID-19 data such as active cases, recoveries, deaths, positive and negative test results, total test, sources of exposure, hospitalizations, and breakdown by age and gender. The complete list of fields in the Cases table is presented in Annex 1. However, as mentioned before, it is possible that not all of the data for these fields are available or accessible to your organization.

A row in the Cases table represents one date-based report. For example, many public health agencies including Ministries of Health are reporting COVID-19 data daily. Each day's numbers would have a corresponding row in the Cases table. Alternatively, the data can be aggregated to represent a few days, a week, a month, etc.

### 4.1.3 Coronavirus Case Dashboard Web map

While the dashboard pulls the information from the CoronavirusCases feature layer, the Coronavirus Case Dashboard web map is needed as a container for this source as well as to visualize the COVID-19 data.

Included in the web map is the CoronavirusCases_current feature layer view shown as the Active Cases and Current Cases map layers. As a feature layer view, this contains the same data as the CoronavirusCases feature layer but has already been configured to show only the total active cases. More information on feature layer view can be found in this page.[5]

It will be discussed in the next section how you can modify the symbology of the layers to better showcase your data in the web map.

## 4.2 How to operationalize the dashboard

Operationalizing the Coronavirus Case dashboard is done through 4 main steps:

1. Prepare your data
2. Update the CoronavirusCases feature layer with your data
3. Edit the Coronavirus Case Dashboard web map
4. Configure the dashboard
5. Share your dashboard

[5] https://www.arcgis.com/apps/Cascade/index.html?appid=1884d94a00074098add274c84c8209e2

The following sections describe these steps in detail.

### 4.2.1 Prepare your data

In order to quickly operationalize the Coronavirus Case Dashboard, it is best to have the COVID-19 data ready and available.

It is important that there is a corresponding boundary for each of the reporting area in the Cases table. By default, the matching is done through the values in the Name fields of the Reporting Areas and Cases sublayers. However, using the actual name of the reporting area may create problems particularly if there are duplicate names (areas with the same name). It is then advisable to use a unique code for each area (taken from a master list, if possible) as the value to match to avoid this problem. Example of unique codes from a master list is the Philippines Standard Geographic Code (PSGC) for each administrative division in the country.[6] Additional letters such as "PH" (for Philippines) can be added at the beginning of each code to prevent the removal of the leading "0" as can happen in spreadsheet programs.

#### *4.2.1.1 Reporting Areas*

For the Reporting Areas, you must have a polygon shapefile or file geodatabase corresponding to the boundaries of the areas which your COVID-19 data represents.

Your shapefile or file geodatabase must have the following fields in the attribute table:

- "Name" to contain the name of the reporting areas
- "RA_ID" to contain the unique code of each reporting area
- "Aggre_area" to indicate whether the reporting area is an Aggregate Area or not (Yes or No).

Note: The Aggregate Area field is shortened into "Aggre_area" to accommodate the 10-character limit for field names for those using shapefile.

If you have only one reporting area, you can indicate No in the Aggregate Area field or leave it empty.

You can edit the attribute table in ArcMap[7], ArcGIS Online[8], or ArcGIS Pro[9]. However, editing the attribute table when you have a large number of reporting areas can be time consuming. As an alternative, you may join the shapefile to an Excel table containing the unique codes which you can do in ArcMap[10], ArcGIS Online[11], and ArcGIS Pro[12].

[6] https://psa.gov.ph/classification/psgc/?q=psgc/municipalities&page=1
[7] https://desktop.arcgis.com/en/arcmap/latest/manage-data/tables/editing-a-value-in-a-table-cell.htm
[8] https://doc.arcgis.com/en/arcgis-online/manage-data/work-with-tables.htm
[9] https://pro.arcgis.com/en/pro-app/help/editing/edit-feature-attributes.htm
[10] https://desktop.arcgis.com/en/arcmap/latest/manage-data/tables/joining-attributes-in-one-table-to-another.htm
[11] https://doc.arcgis.com/en/arcgis-online/analyze/join-features.htm
[12] https://pro.arcgis.com/en/pro-app/help/data/tables/joins-and-relates.htm

Once you have your final shapefile or file geodatabase, save it in a compressed (.zip) file with the date when it is created.

*4.2.1.2 Cases table*

You would normally have your COVID-19 situation data in a tabular form. What is needed to be done is to transfer the data to the form required by the dashboard.

For the Cases table, follow these steps:

1. Make sure you are logged in to your AGOL account.
2. In the Coronavirus Response folder in the Content page, look for the *CoronavirusCasesSources* CSV table. Download the table by clicking the 3 dots along its name and choosing *Download*. (Figure 4)

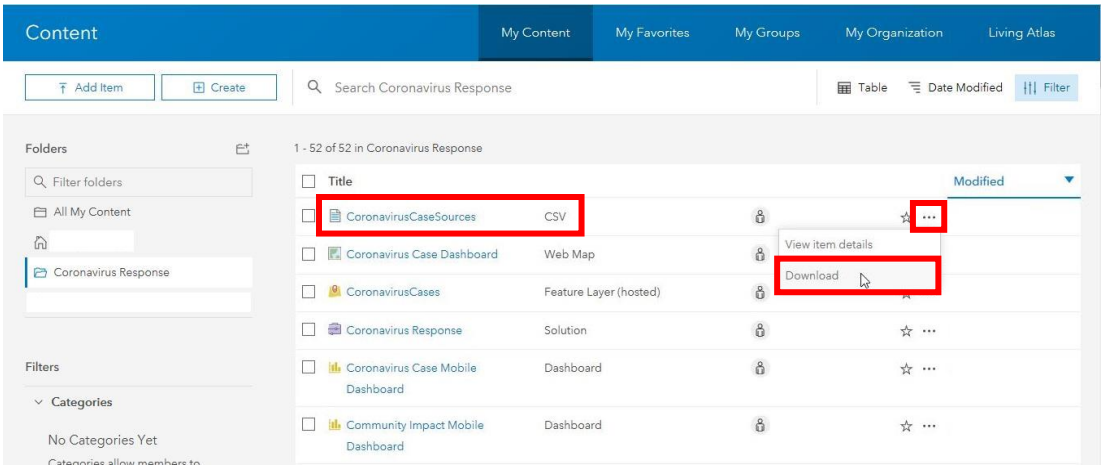


Figure 4

3. Open the downloaded table in a spreadsheet program such as Microsoft Excel.
4. Insert a field that will contain the unique codes of the reporting areas by right clicking on Column B and choosing *Insert*. (Figure 5)

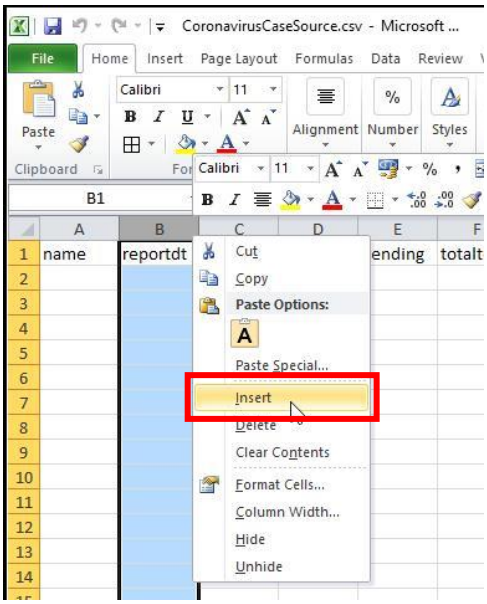


Figure 5

5. In the new field that appears, type “RA_ID” as the field title. (Figure 6)

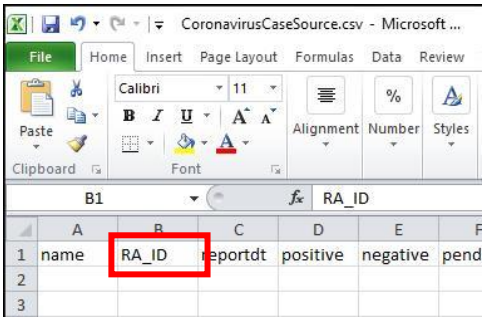


Figure 6

6. The reporting area name goes in the “name” field while the unique code of each area goes in the “RA_ID” field.
7. As mentioned in the previous section, each row represents one date-based report. This can be the actual date for the report or, for aggregated data, this can be the latest update date. The “reportdt” field is a date/time field and should be populated in UTC format. (For example, if the data is for 22 April 2020, 12:00:00 Philippine Standard Time, the value in the “reportdt” field should be 04/22/2020 04:00:00.)
8. Populate the rest of the table with the available data for each reporting area. Refer to Annex 1 to understand what data each field is asking for.
   Note: It is possible that you do not have the data for all the fields. If this is the case, just leave these fields blank.
9. Save your file with the file name containing the date when it is created or the update date of your data.

### 4.2.2 Update the feature layer with your data

Once you have your data ready, you can update the CoronavirusCases feature layer in AGOL.

#### *4.2.2.1 CoronavirusCases feature layer*

Before you upload your data on the reporting areas and cases table, you must do the following to the CoronavirusCases feature layer to ensure that the unique code of the reporting areas is used as the matching value between the shapefile and table:

1. Make sure you are logged in to your AGOL account.
2. Inside the Coronavirus Response folder in the Content page, look for the CoronavirusCases feature layer. Click the 3 dots along its name and choose *View item details*. (Or click the feature layer name.) (Figure 7)

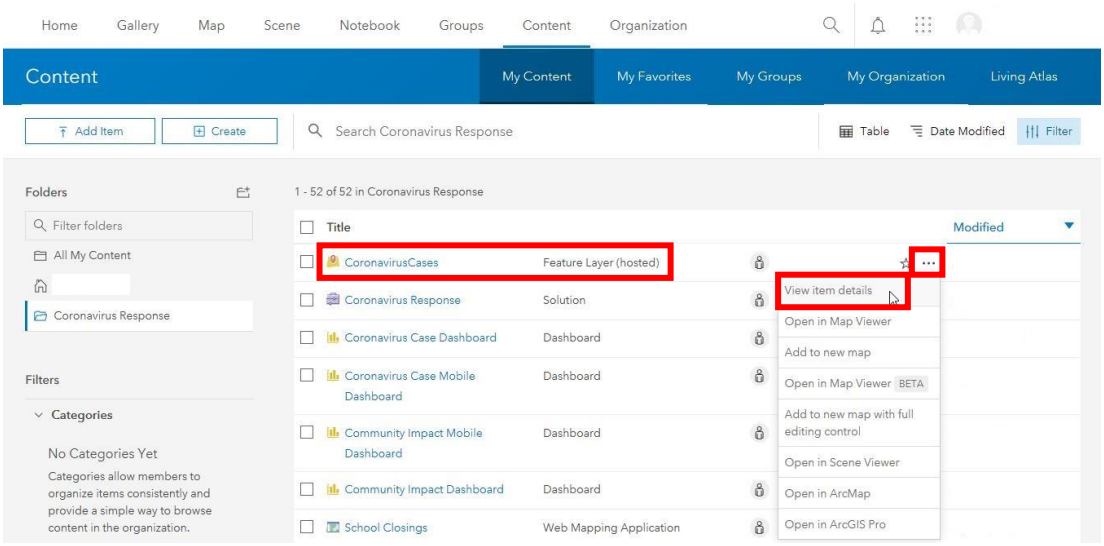


Figure 7

3. Go to the Data tab. Choose *Reporting Areas* as the Layer and click the *Fields* button. (Figure 8)

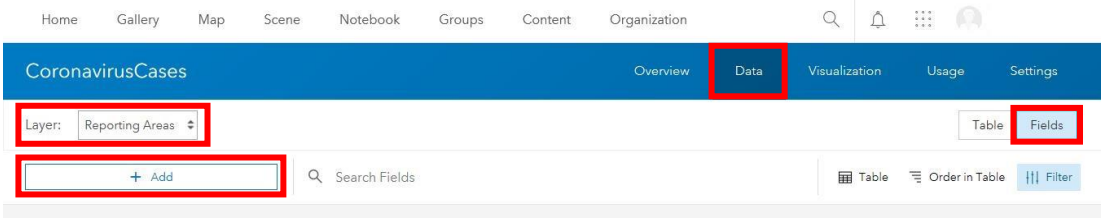


Figure 8

4. Click the *+ Add* button. (Figure 8)
5. In the panel that opens, enter the following values: (Figure 9)
    a. Field name: RA_ID
    b. Display name: Reporting Area ID
    c. Type: String
    d. Length: 256 (default)
    e. Allow Null Value: Uncheck

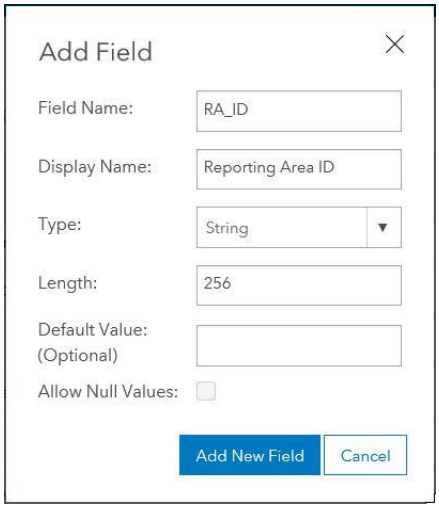


Figure 9

6. Click *Add New Field*. The new field will be added at the bottom of the list.
7. Click the display name *Reporting Area ID*. You will be directed to the settings of that field.
8. In the Settings for Unique, click *Edit*. (Figure 10)

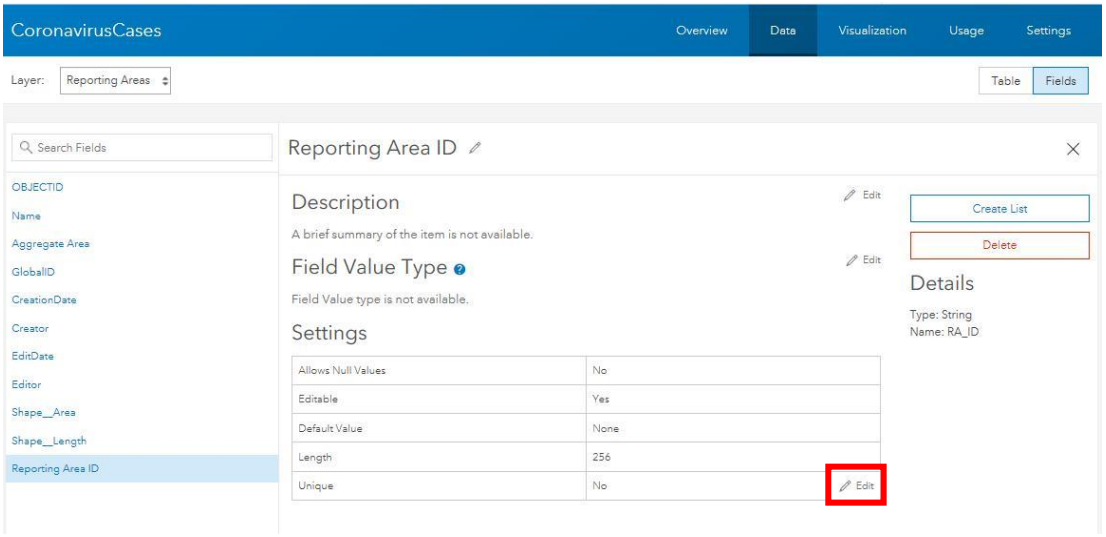


Figure 10

9. Check the box beside "Field contains unique values." Click *Save*. (Figure 11) The setting for Unique will change to Yes.


Figure 11

10. Add the same field for the Cases table. Choose *Cases* as the Layer and make sure the *Fields* button is selected. (Figure 12)

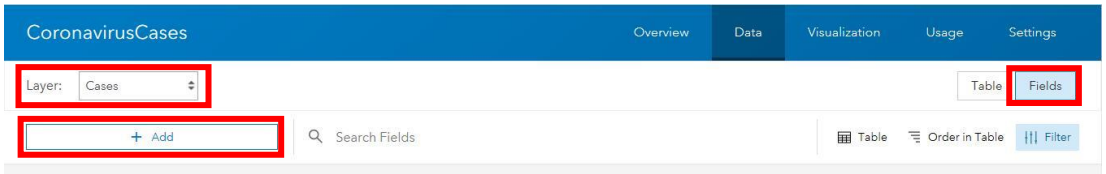


Figure 12

11. Click *+Add*. (Figure 12)
12. In the panel that opens, enter the following values:
    a. Field name: RA_ID
    b. Display name: Reporting Area ID

c. Type: String
d. Length: 256 (default)
e. Allow Null Value: Uncheck

13. Click *Add New Field*. The new field will be added at the bottom of the list.
14. Go to the Visualization tab. (Figure 13)


Figure 13

15. Click the *Configure Pop-up* button. (Figure 14)

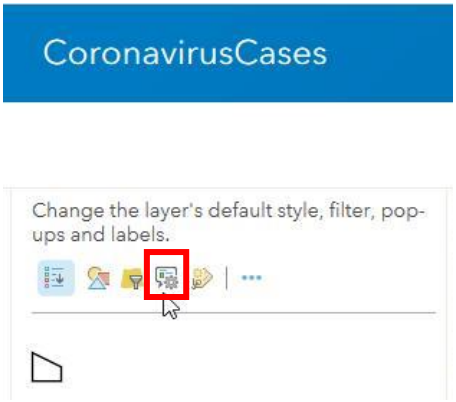


Figure 14

16. Ensure that *Reporting Area ID {RA_ID}* is in the box "These field attributes will display:" Click *OK*. (Figure 15)

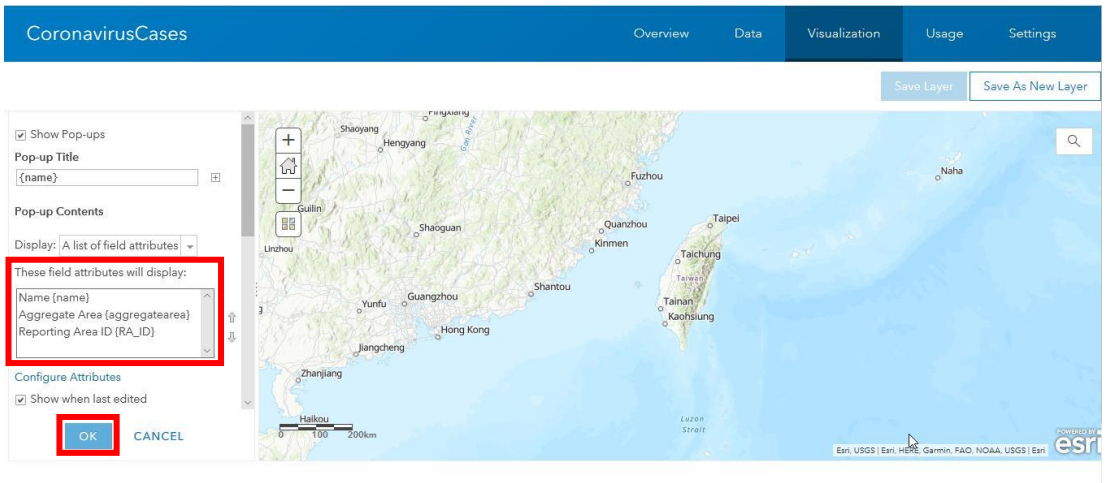


Figure 15

17. Click *Save Layer*. (Figure 16)


Figure 16

The Reporting Area ID field will now appear in the Table for the Reporting Areas and Cases sublayer. (Figure 17)

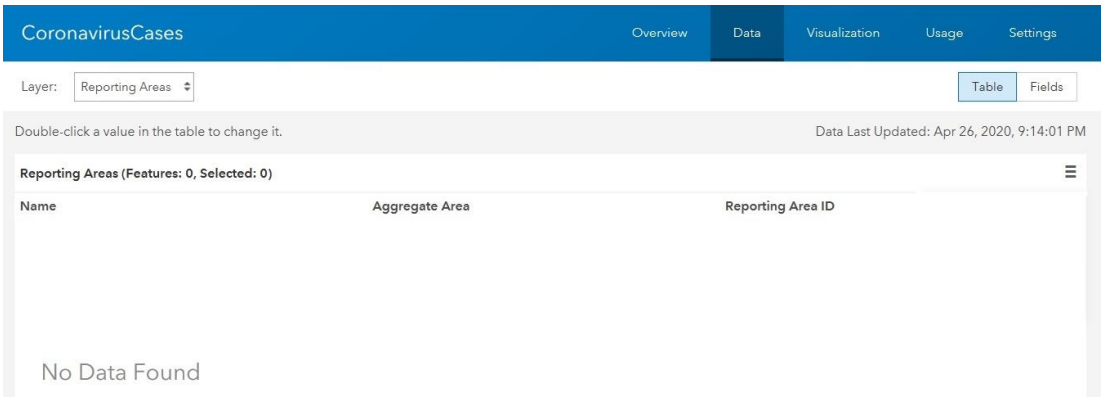


Figure 17

*4.2.2.2 Reporting Areas*

There are several ways to update the Reporting Areas sublayer with your data[13]:

- Load data from a shapefile or file geodatabase on ArcGIS Online[14]
- Copy and paste features using the clipboard in ArcGIS Pro[15]
- Use the Append tool in ArcGIS Pro

To load your data using ArcGIS Online:

1. Making sure that you are in the Item details page of the CoronavirusCases feature layer, go to the Data tab. Choose *Reporting Areas* as the Layer and click the *Table* button. (Figure 18)

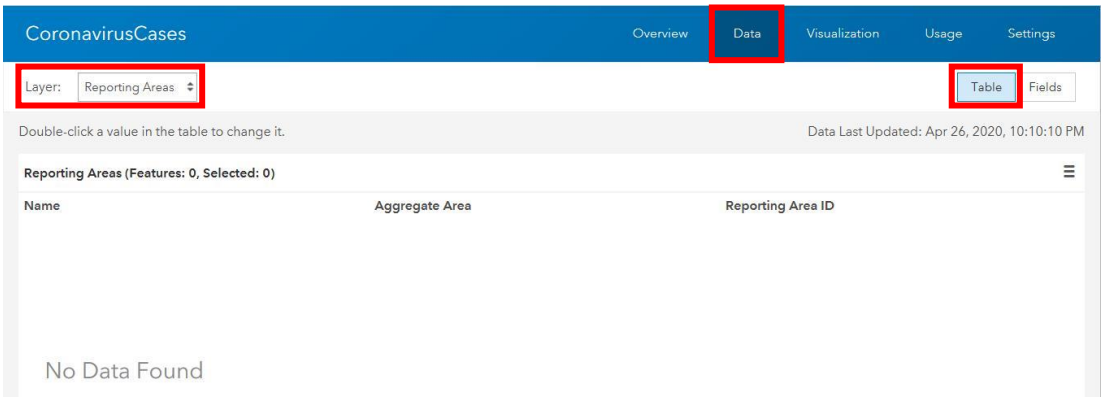


Figure 18

2. Click the menu button (3 lines) at the top right corner of the table and choose *Append Data to Layer*. (Figure 19)

[13] https://solutions.arcgis.com/local-government/help/coronavirus-response/get-started/load-data/

[14] https://doc.arcgis.com/en/arcgis-online/manage-data/manage-hosted-feature-layers.htm#APPEND

[15] https://pro.arcgis.com/en/pro-app/help/editing/copy-and-paste-using-the-clipboard.htm

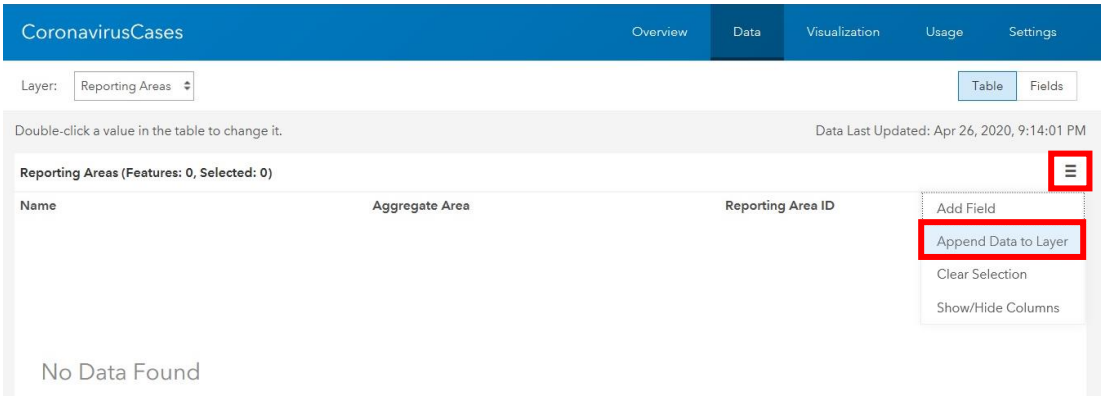


Figure 19

3. In the panel that opens, click *Browse* and navigate to the location of your compressed shapefile or file geodatabase.
4. Choose whether the content of your compressed file is a shapefile or file geodatabase. Click *Upload and Continue*. (Figure 20)

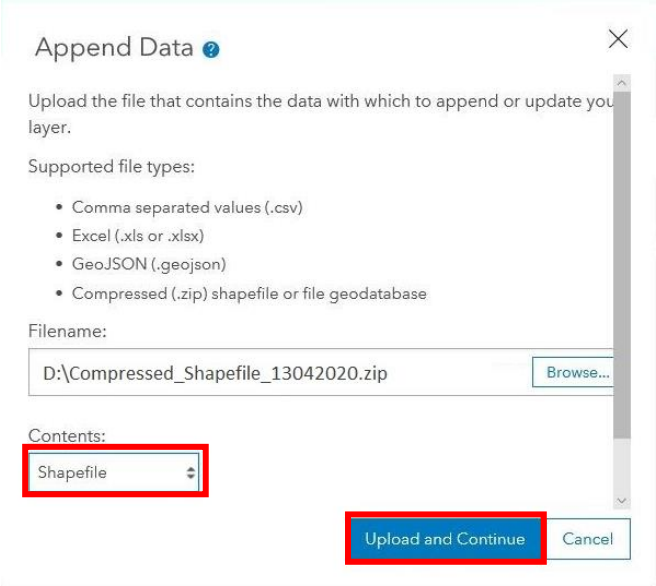


Figure 20

5. As this is the first time you are uploading your data, uncheck the box beside "Update existing features". Click *Show field matching*. (Figure 21)

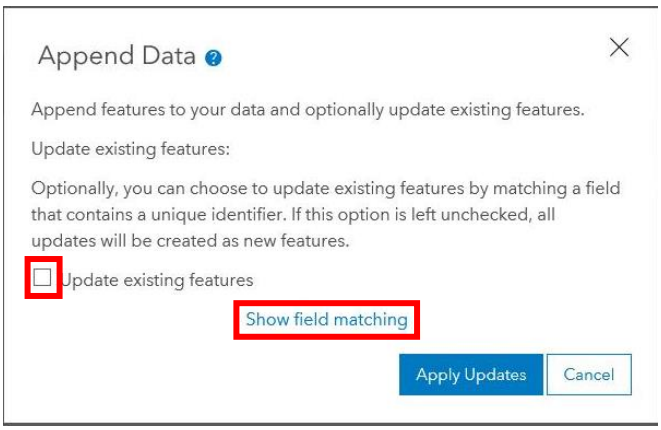


Figure 21

6. Match the field “aggregatearea” in the feature layer to “aggre_area” in your compressed file. The “name” and “RA_ID” fields are automatically matched because each has the same field name in the shapefile and in the Reporting Areas sublayer. Click *Apply Updates*. (Figure22)

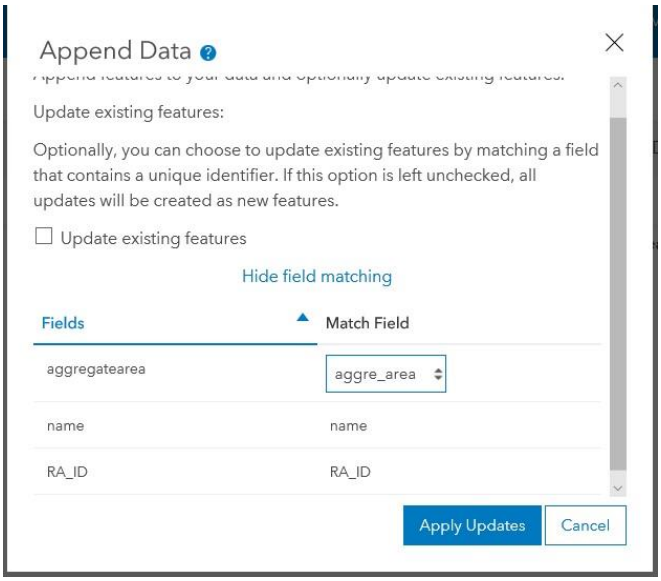


Figure 22

The Reporting Areas table should now show your data.

*4.2.2.3 Cases table*

To upload your data to the Cases sublayer, follow these steps:

1. Making sure that you are in the Item details page of the CoronavirusCases feature layer, go to the Data tab. Choose *Cases* as the Layer and click the *Table* button. (Figure 23)

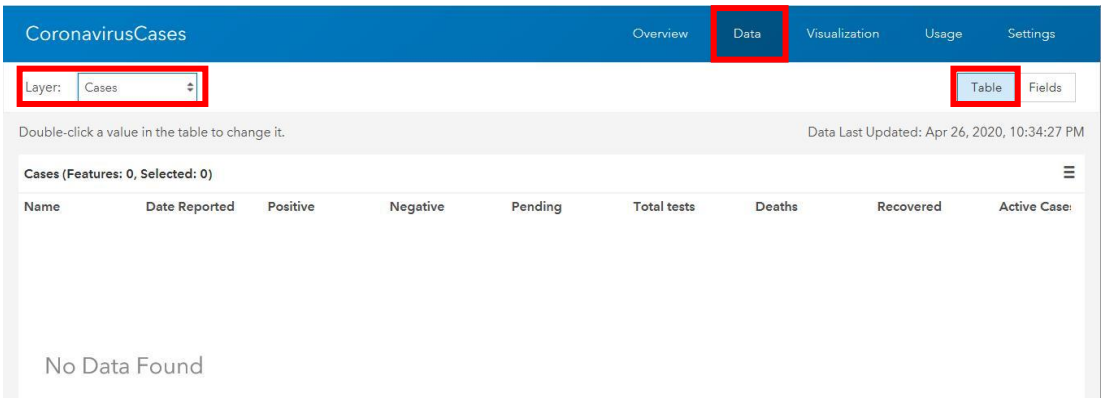


Figure 23

2. Click the menu button (3 lines) at the top right corner of the table and choose *Append Data to Layer*. (Figure 24)

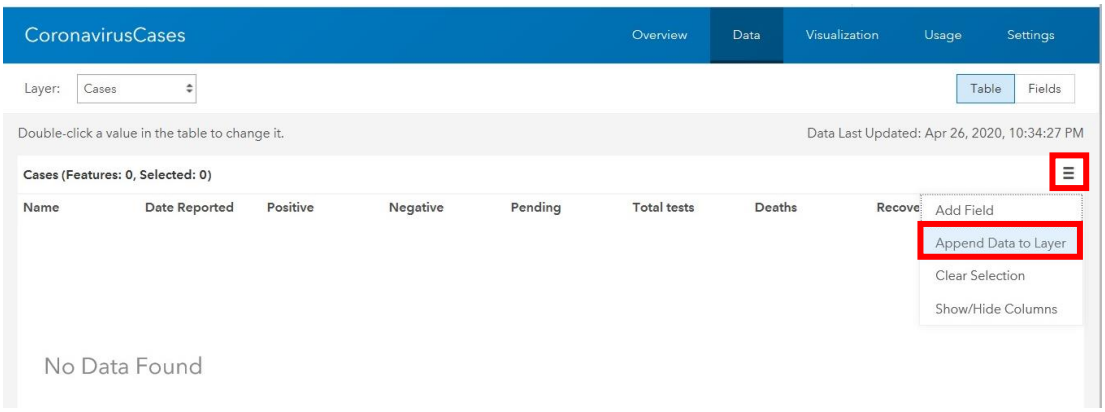


Figure 24

3. In the pane that opens, click *Browse* and navigate to the location of the CoronavirusCasesSources CSV table on your computer. Click *Upload and Continue*. (Figure 25)

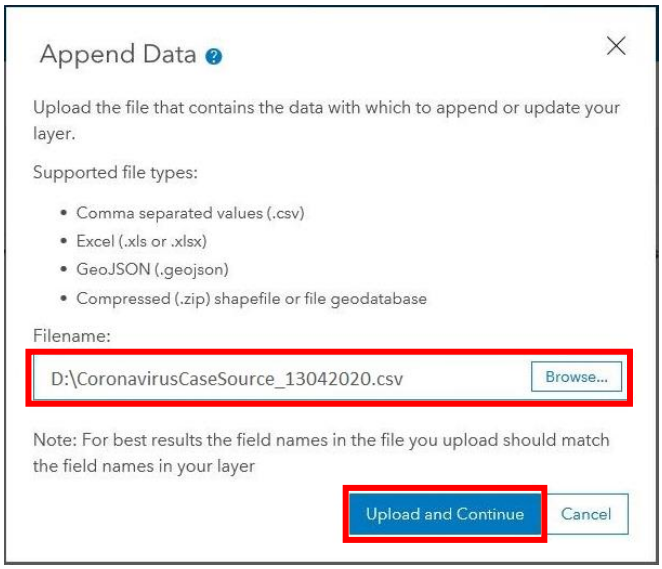


Figure 25

4. As this is the first time you are uploading your data, uncheck the box beside "Update existing features". Click *Show field matching*. (Figure 26)

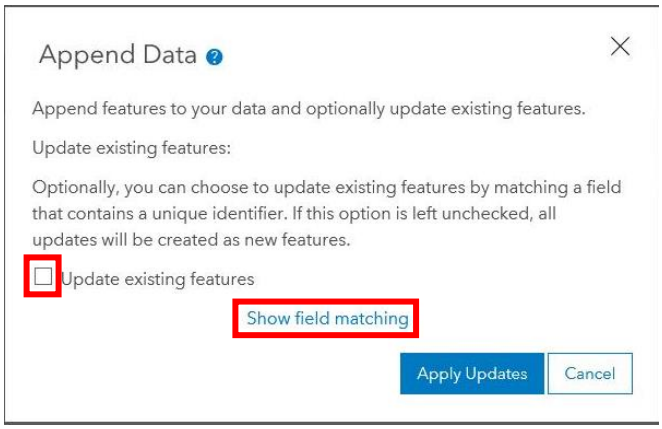


Figure 26

5. Notice that all the fields which you have populated are automatically matched with the corresponding fields in the Cases table. Click *Apply Updates*. (Figure 27)

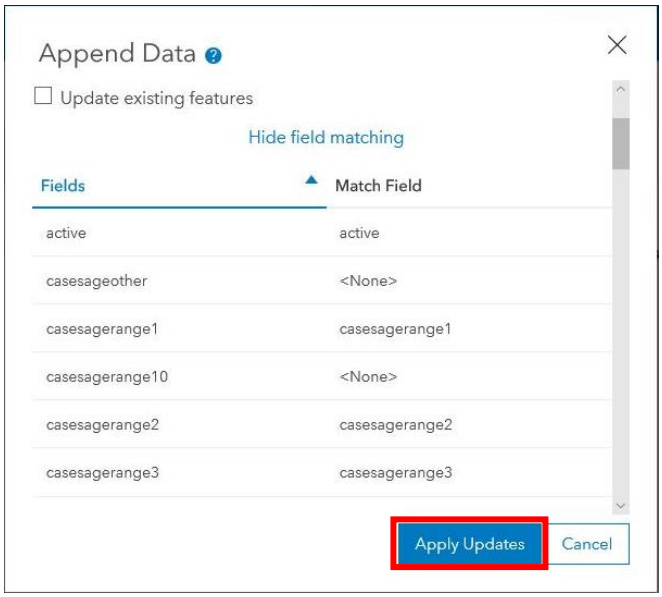


Figure 27

The Cases table should now show your data. (The Reporting Area ID is the last field in the table.)

### 4.2.3 Edit the Coronavirus Case Dashboard web map

You can now edit the Coronavirus Case Dashboard web map to visualize your COVID-19 data.

#### *4.2.3.1 Zoom in to your reporting areas*

1. In the Coronavirus Response folder in the Content page of your AGOL account, look for the Coronavirus Case Dashboard Web Map. Click the 3 dots along its name and choose *Open in Map Viewer*. (Figure 28)

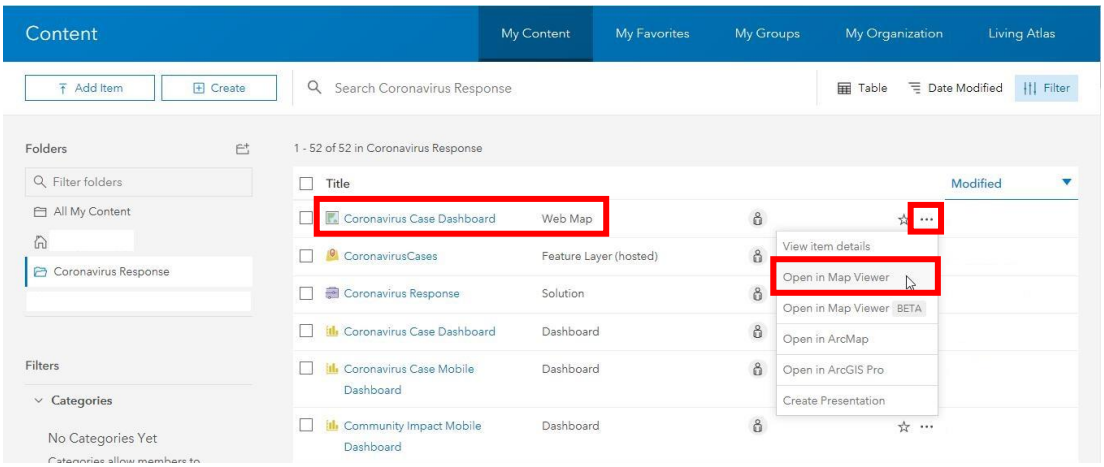


Figure 28

The web map will open and you will see the image below. At the moment, the map is centered on the location of Taiwan. (Figure 29)

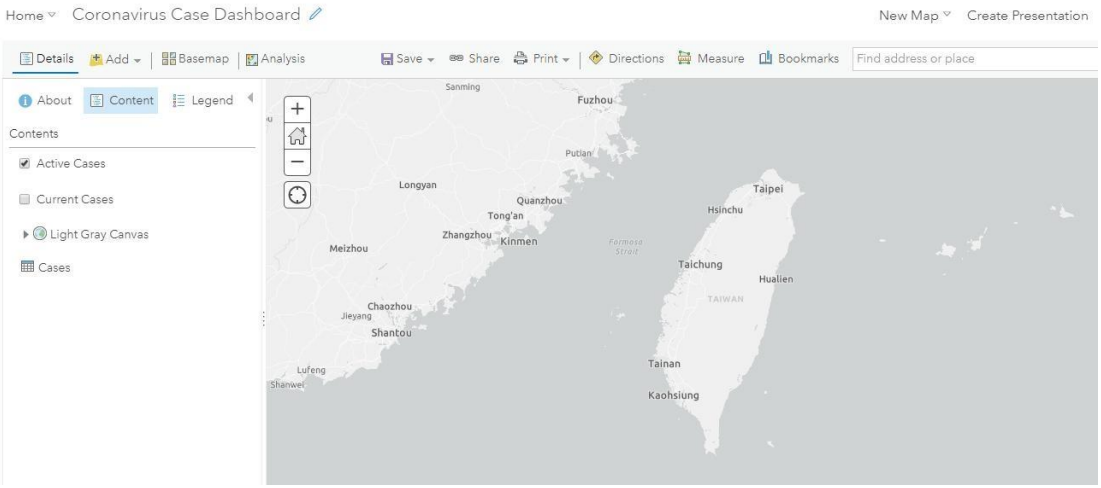


Figure 29

2. To zoom in to the location of your reporting areas, hover your mouse pointer over the Active Cases map layer to see the options below it. Click the 3 dots at the end which says *More Options* and choose *Zoom to*. (Figure 30)

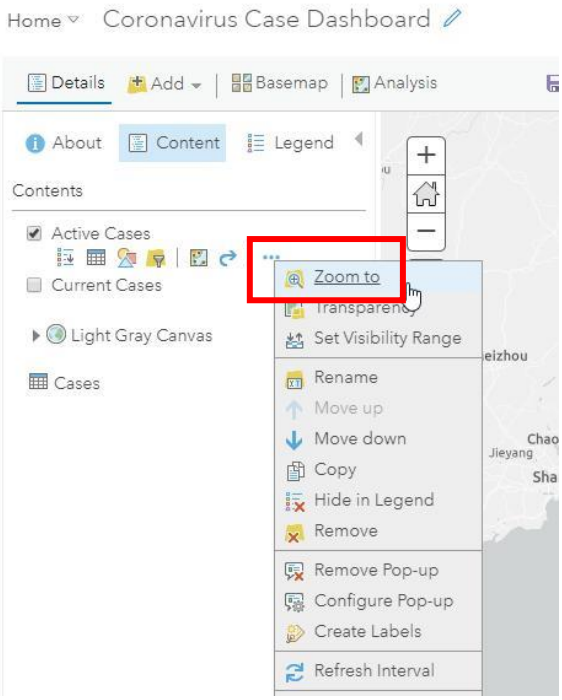


Figure 30

3. Your map will now be zoomed in to the location of your reporting areas. You may use the Zoom In or Zoom Out button (or the wheel of your mouse) to better position the reporting areas to be the focus of the map. Click the *Save* button to save your map and regularly do so after you make significant changes in your web map. (Figure 31)


Figure 31

*4.2.3.2 Symbolize your map data*

You may modify the symbology or the way you represent the layers on your map depending on the data you want to communicate to those who will view your map. In AGOL, this is known as the style of your layer.

The visibility of the layer being shown in the map depends on which layer has a check mark on the box beside its name. Only the Active Cases layer is visible in the map at the moment which means you need to modify the symbology of only this layer. However, if you want to instead show the Current Cases then check the box beside it and uncheck the box for Active Cases. You may also choose to show both layers but will have to modify both their symbologies in such a way that the viewers will understand the information being communicated.

You can learn more about how to change the symbology of the layers in your map from this ArcGIS Online Help page.[16]

*4.2.3.3 Configure pop-ups*

A pop-up is a small box with information that appears on your map when you click on a feature. By default, this shows all the content in the attribute table for the feature you selected. This can be configured to show a list of field attributes, a description from one field, a custom attribute display, or no attribute information but a title or an image. You can learn more about how to configure pop-ups from this ArcGIS Online Help page.[17]

The layers in the Coronavirus Case Dashboard web map have their pop-ups already configured to show the active and confirmed cases, deaths, recoveries, and the last date

[16] https://doc.arcgis.com/en/arcgis-online/create-maps/change-style.htm

[17] https://doc.arcgis.com/en/arcgis-online/create-maps/configure-pop-ups.htm

and time of update in a reporting area. You may, however, choose to change this by configuring the pop-up.

Once you are satisfied with how your web map looks, save it once again by clicking the *Save* button.

### 4.2.4 Configure the dashboard

Your dashboard is ready to be configured and deployed now that you have the data source (feature layer and web map) ready and done.

*4.2.4.1 Opening your dashboard for editing*:

1. In the Content page of your AGOL account, look for the Coronavirus Case Dashboard *Dashboard*. Click the 3 dots along its name and choose *Edit Dashboard*. (Figure 32)

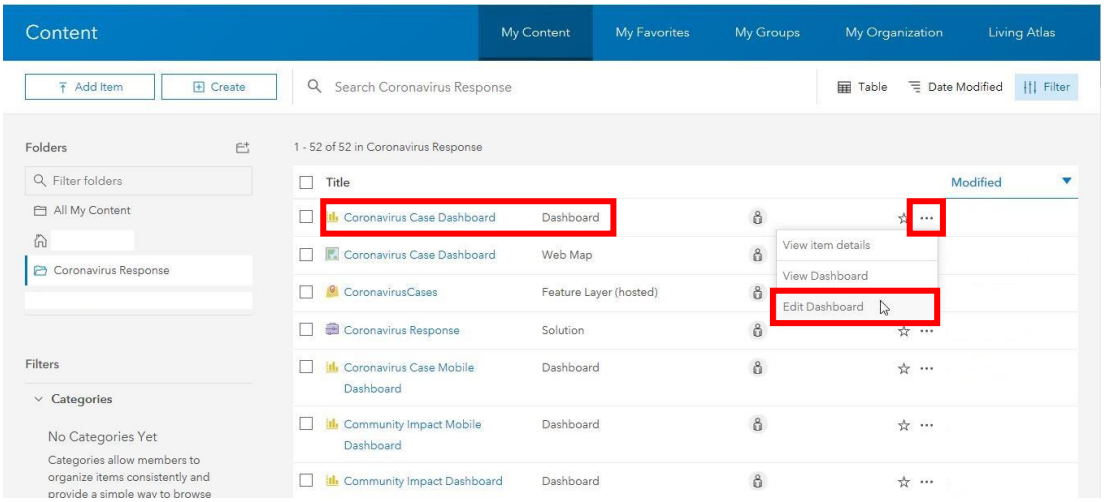


Figure 32

Because the dashboard is already configured to draw data from your web map, once your dashboard opens, you will see that it already contains the information for the different elements depending on what fields in Cases table you were able to populate. (Figure 33)

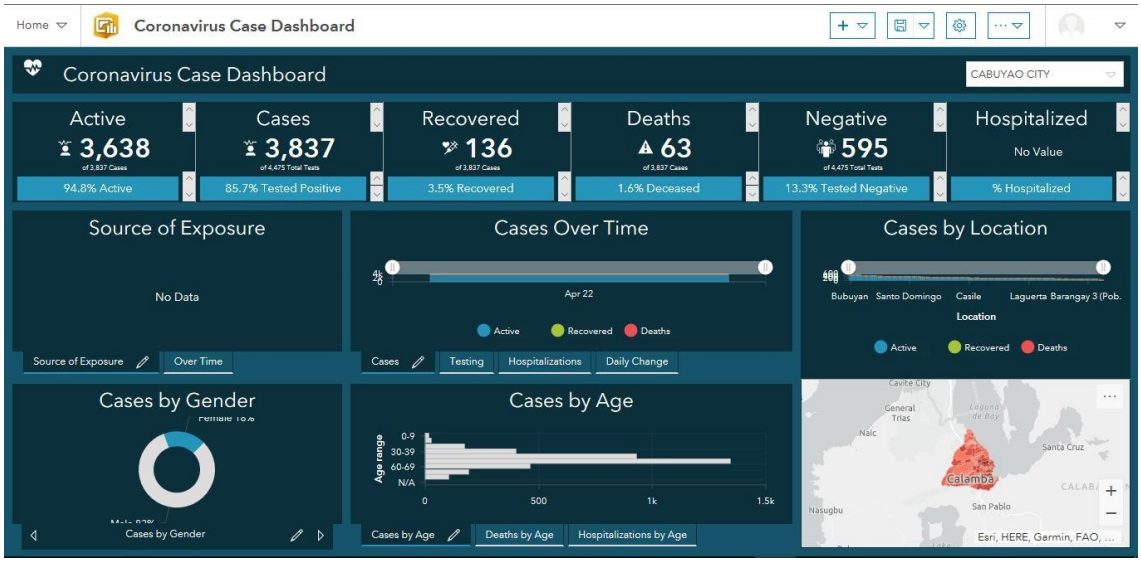


Figure 33

*4.2.4.2 Deleting unnecessary elements in the dashboard*

If you were not able to completely populate all the fields in the Cases table, some elements of the dashboard will show “No Data” or will be blank for elements showing changes over time. In this case, you have to determine whether these fields will be populated in the future or not.

If you will collect the data for a field in the future, you can leave the corresponding section blank at the moment and this will be populated later when you update your data. If you will not collect the data for a field in the future then the corresponding section can be deleted.

To delete a dashboard element:

1. Check if the element you want is visible. If the element is part of a stack, make sure that it is the selected/active tab. In this dashboard, the tab which has the pencil icon and darker color is the active tab. (Figure 34)

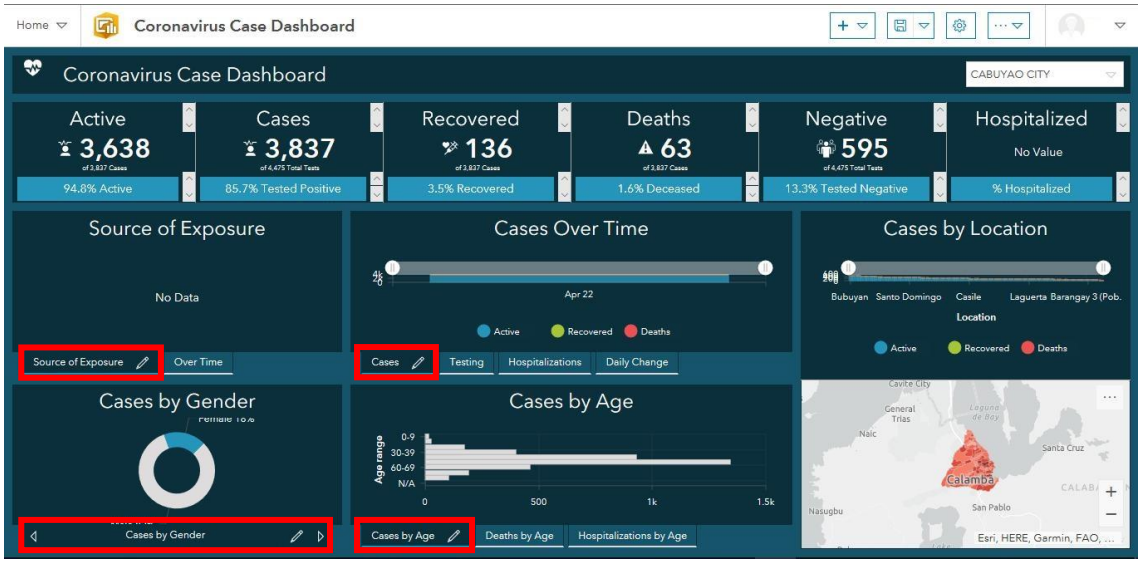


Figure 34

2. Bring your mouse pointer to the dashboard element you want to delete. You will see rectangle/s on the upper left corner of the element. (one or two depending on whether the element is on its own or part of a stack). (Figure 35)


Figure 35

3. Hover on the rectangle and you will see the available options for the element. Click on the trash bin icon to delete the element. (Figure 36)

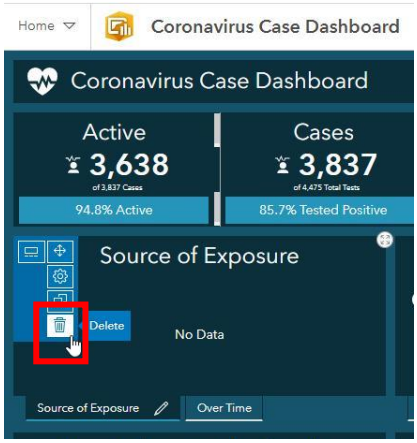


Figure 36

4. When prompted if you want to delete the element, click *Delete*. (Figure 37)

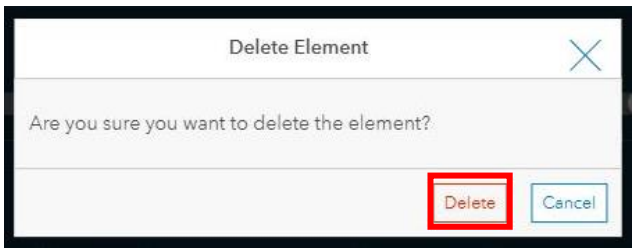


Figure 37

5. Save the change you made to the dashboard by clicking the Save icon on the upper right section of the dashboard. Remember that the Save icon turns blue if there are any unsaved changes in the dashboard. (Figure 38)

Figure 38

6. Repeat steps 1-5 to delete other unnecessary elements.

*4.2.4.3 Modifying the dashboard layout*

Deleting some elements may cause the layout of the dashboard to change. While you may opt to just keep the changes, you can also rearrange the position of the elements.

You can learn more about dashboard layout from this page.[18]

*4.2.4.4 Configuring the dashboard and its elements*

You can customize the dashboard to better align with the look or theme being used by your organization by configuring its elements.

[18] https://doc.arcgis.com/en/dashboards/get-started/dashboard-layout.htm

You can change the title, logo, text, font style, color theme, etc.

You can learn more about configuring dashboard elements from this page.[19]

### 4.2.5 Share your dashboard

Once you are satisfied with your dashboard, you can start sharing it with your whole organization, specific groups, or with everyone (public).

Sharing the dashboard with specific groups allows you to control who can view or manage the items associated with the dashboard. You can learn more about ArcGIS Online Groups from this page.[20]

To share the dashboard, you can follow the steps from this page[21].

### 4.2.6 Update your dashboard with new data

You will want to update your dashboard to reflect the new data you have collected on the COVID-19 situation in your community.

*4.2.6.1 Reporting Areas*

You must update your Reporting Areas sublayer if you have new reporting areas or the boundaries of your reporting areas have changed.

For new reporting areas, you can have a shapefile or file geodatabase:

- with the polygons of only new reporting areas, or
- combining the polygons of new reporting areas with the polygons of the original reporting areas.

Either way, prepare your data using the guidelines in Section 2.4.1.1.

If you have a shapefile or file geodatabase with the polygons of only new reporting areas, you may upload it using the same steps in Section 2.4.2.2.

If you have a shapefile or file geodatabase combining the polygons of new reporting areas with the polygons of the original reporting areas or containing new boundaries of the old reporting areas, follow these steps to update the Reporting Areas sublayer:

1. Make sure you are logged in to your AGOL account.

[19] https://doc.arcgis.com/en/dashboards/get-started/configure-an-element.htm
[20] https://doc.arcgis.com/en/arcgis-online/share-maps/groups.htm
[21] https://doc.arcgis.com/en/arcgis-online/share-maps/share-items.htm

2. Inside the Coronavirus Response folder in the Content page, look for the CoronavirusCases feature layer. Click the 3 dots along its name and choose *View item details*. (Or click the feature layer name.) (Figure 39)

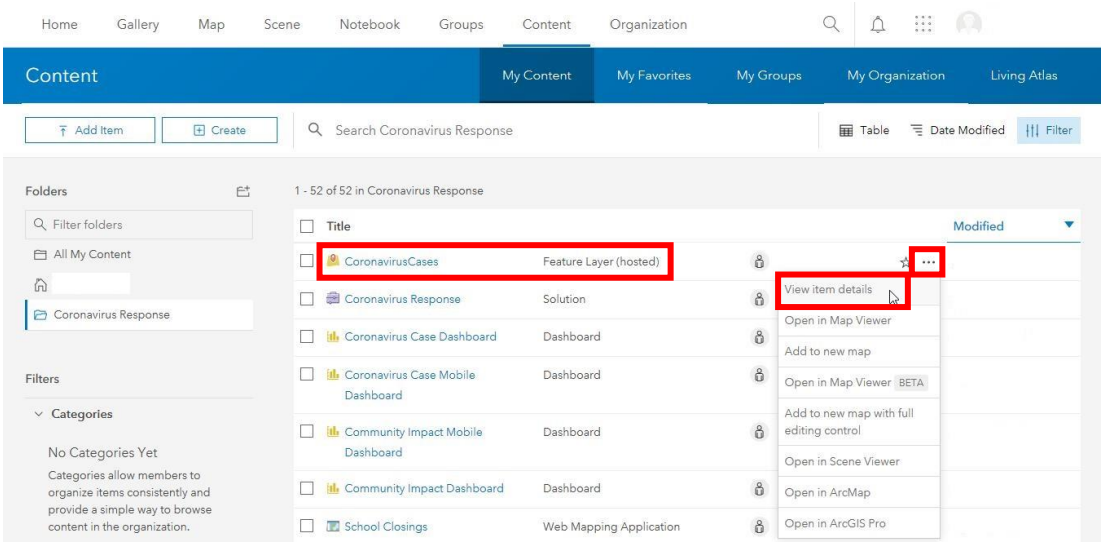


Figure 39

3. Click on *Update Data* > *Append Data to Layer*. (Figure 40)

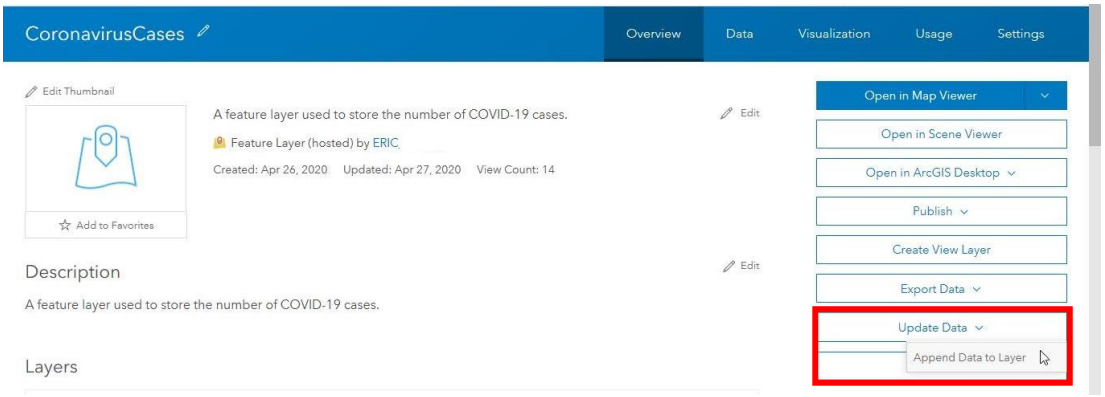


Figure 40

4. In the panel that opens, click *Browse* and navigate to the location of your compressed shapefile or file geodatabase.
5. Choose whether the content of your compressed file is a shapefile or file geodatabase. Click *Upload and Continue*. (Figure 41)

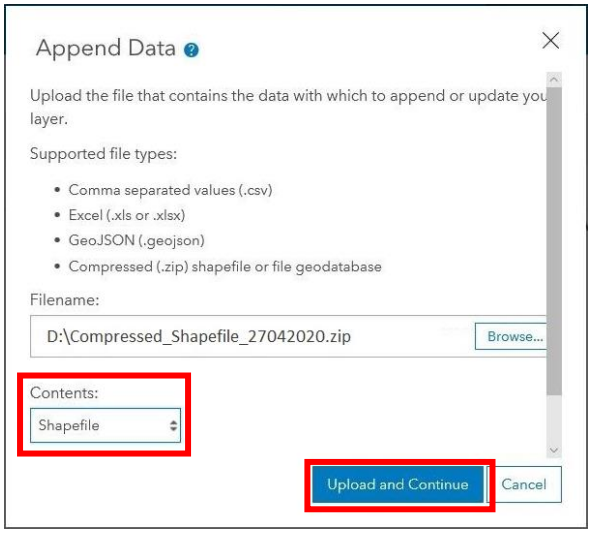


Figure 41

6. Choose *Reporting Areas* as the layer you wish to append the data into. (Figure 42)

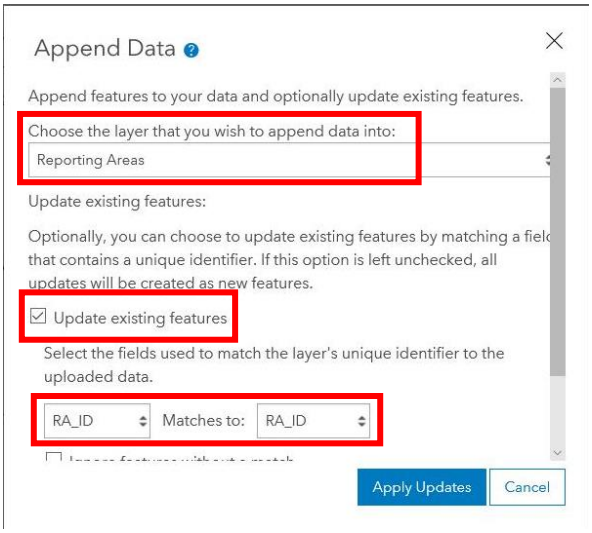


Figure 42

7. Make sure the box beside “Update existing features” is checked. Select “RA_ID” as the fields to match the layer’s unique identifier to the uploaded data. (Figure 42)
8. Scroll down and check the box beside “Update geometry for features.” (Figure 43)

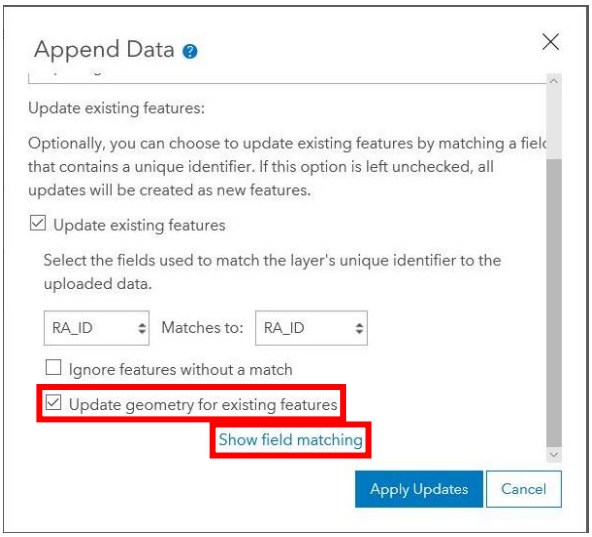


Figure 43

9. Click *Show field matching*. (Figure 43)
10. Match the field "aggregatearea" in the feature layer to "aggre_area" in your compressed file. The "name" field is automatically matched because it has the same field name in the shapefile and in the Reporting Areas sublayer. Click *Apply Updates*. (Figure 44)

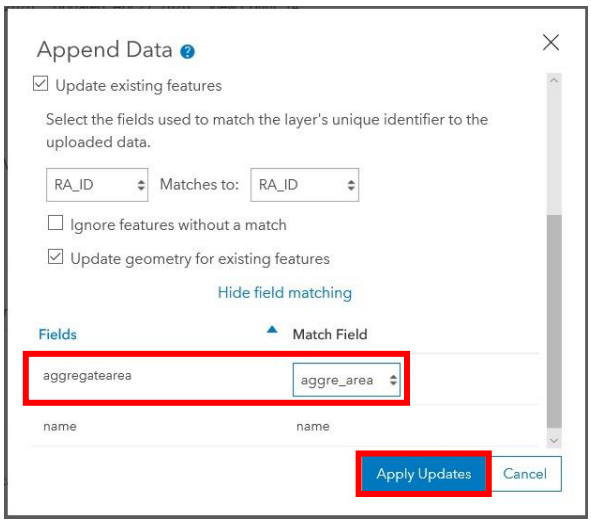


Figure 44

Your Reporting Areas sublayer is now updated.

*4.2.6.2 Cases table*

You must update your Cases sublayer if you have collected data for new reporting areas or new data for the original list of reporting areas on the COVID-19 cases in your community.

To update the Cases sublayer, it is best to have a blank copy of the CoronavirusCasesSources CSV table and populate it with the new data. Save this new file to include the date of the latest update (e.g., if the new data update is for 27 April 2020, save your file as CoronavirusCasesSources_27042020.csv)

You can then upload the table with the new cases using the steps in Section 4.2.2.3.

Once you have updated your data, you may revisit relevant parts of Section 2.4.3 to ensure that your web map is centered on your reporting area and that the symbologies are appropriate for you new data.

Check that your dashboard is still shared with the appropriate individuals or groups.

# 5. Other resources

You may visit these links to know if an organization is eligible to receive the complimentary ArcGIS Online subscription from Esri:

- For WHO Member States and Global Outbreak Alert and Response Network (GOARN) partners (until 31 December 2020): https://www.esri.com/about/newsroom/announcements/esri-to-provide-mapping-resources-to-who-member-states/
- For organizations fighting COVID-19 (six-month subscription): https://www.esri.com/about/newsroom/announcements/esri-provides-free-mapping-software-for-organizations-fighting-covid-19/

You can learn more about the ArcGIS Solution for Coronavirus Response by visiting the following links:

- Home page: https://solutions.arcgis.com/local-government/help/coronavirus-response/
- Discuss the New Coronavirus Response Solution webinar: https://bit.ly/3cOVbDn
- Getting to Know the Coronavirus Response Solution Dashboards: https://bit.ly/356WBGW

To jump-start your response to COVID-19, you can learn more about launching your own COVID-19 Response Hub Site through these blogs:

- How to Launch a Coronavirus Response Website Today: https://bit.ly/3aAioYE
- In a GIF: Deploy a coronavirus website in 45 seconds: https://bit.ly/3bJE6L5

For your technical questions on the best practices to respond to COVID-19, you may join the discussion at Esri's GeoNet GIS Coronavirus Community: https://community.esri.com/community/coronavirus-disease-2019-covid-19.

# Annex 1 – Complete list of fields in the Cases table

This is the complete list of fields in the *CoronavirusCasesSources* CSV table that is used to update the Cases sublayer of the CoronavirusCases feature layer.

| Display Name | Field Name | Type |
|---|---|---|
| OBJECTID | OBJECTID | ObjectID |
| Name | name | String |
| Date Reported | reportdt | Date |
| Positive | positive | Integer |
| Negative | negative | Integer |
| Pending | pending | Integer |
| Total tests | totaltests | Integer |
| Deaths | deaths | Integer |
| Recovered | recovered | Integer |
| Active Cases | active | Integer |
| Male case count | casesmale | Integer |
| Female case count | casesfemale | Integer |
| Cases Sex Other or Not Available | casessexother | Integer |
| 0-9 case count | casesagerange1 | Integer |
| 10-19 case count | casesagerange2 | Integer |
| 20-29 case count | casesagerange3 | Integer |
| 30-39 case count | casesagerange4 | Integer |
| 40-49 case count | casesagerange5 | Integer |
| 50-59 case count | casesagerange6 | Integer |
| 60-69 case count | casesagerange7 | Integer |
| 70-79 case count | casesagerange8 | Integer |
| 80-89 case count | casesagerange9 | Integer |
| 99 and above case count | casesagerange10 | Integer |
| Cases Age Other or Not Available | casesageother | Integer |
| Male deaths count | deathsmale | Integer |
| Female deaths count | deathsfemale | Integer |
| Deaths Sex Other or Not Available | deathssexother | Integer |
| 0-9 deaths count | deathsagerange1 | Integer |
| 10-19 deaths count | deathsagerange2 | Integer |
| 20-29 deaths count | deathsagerange3 | Integer |

| | | |
|---|---|---|
| 30-39 deaths count | deathsagerange4 | Integer |
| 40-49 deaths count | deathsagerange5 | Integer |
| 50-59 deaths count | deathsagerange6 | Integer |
| 60-69 deaths count | deathsagerange7 | Integer |
| 70-79 deaths count | deathsagerange8 | Integer |
| 80-89 deaths count | deathsagerange9 | Integer |
| 99 and above deaths count | deathsagerange10 | Integer |
| Deaths Age Other or Not Available | deathsageother | Integer |
| Hospitalized | hospitalized | Integer |
| Not Hospitalized | nothospitalized | Integer |
| Hospitalized Other or Not Available | hospitalizedother | Integer |
| Male hospitalized count | hospitalizedmale | Integer |
| Female hospitalized count | hospitalizedfemale | Integer |
| Hospitalized Sex Other or Not Available | hospitalizedsexother | Integer |
| 0-9 hospitalized count | hospitalizedagerange1 | Integer |
| 10-19 hospitalized count | hospitalizedagerange2 | Integer |
| 20-29 hospitalized count | hospitalizedagerange3 | Integer |
| 30-39 hospitalized count | hospitalizedagerange4 | Integer |
| 40-49 hospitalized count | hospitalizedagerange5 | Integer |
| 50-59 hospitalized count | hospitalizedagerange6 | Integer |
| 60-69 hospitalized count | hospitalizedagerange7 | Integer |
| 70-79 hospitalized count | hospitalizedagerange8 | Integer |
| 80-89 hospitalized count | hospitalizedagerange9 | Integer |
| 99 and above hospitalized count | hospitalizedagerange10 | Integer |
| Hospitalized Age Other or Not Available | hospitalizedageother | Integer |
| New Cases | positiveincrease | Integer |
| New Tests | totaltestsincrease | Integer |
| New Deaths | deathsincrease | Integer |
| New Hospitalizations | hospitalizedincrease | Integer |
| Close Contact | sourceclosecontact | Integer |
| Possible Travel | sourcepossibletravel | Integer |
| Under Investigation | sourceunderinvestigation | Integer |
| Travel | sourceTravel | Integer |

| | | |
|---|---|---|
| Community Spread | sourcecommunity | Integer |
| Source Other or Not Available | sourceother | Integer |
| GlobalID | GlobalID | GlobalID |
| CreationDate | CreationDate | Date |
| Creator | Creator | String |
| EditDate | EditDate | Date |
| Editor | Editor | String |