



# Configuring Citizen Problem Reporter

Configuring the Citizen Problem Reporter solution template.

Publication date: June 27th, 2019



# Task checklist

TASK	COMPLETE
1. <a href="#">Deploy the ArcGIS Solution template</a>	<input type="checkbox"/>
2. <a href="#">Add a new problem category</a>	<input type="checkbox"/>
3. <a href="#">Modify problem types and responsible agencies</a>	<input type="checkbox"/>
4. <a href="#">Revise satisfaction survey questions</a>	<input type="checkbox"/>
5. <a href="#">Configure the satisfaction survey email</a>	<input type="checkbox"/>
6. <a href="#">Extend the Citizen Problem Reporter</a>	<input type="checkbox"/>

# Overview

A few years ago, the public had to use a telephone to report nonemergency problems (for example, blight, graffiti, trash, pothole, and flooding) in their community. They relied on blue pages in a telephone directory to determine which government agency was responsible for the public asset, or service, and who they could call to report a problem. Today, location-enabled smartphones allow members of the public to report problems when and where they see them.

The Citizen Problem Reporter solution template includes a collection of maps and apps that can be used by government agencies to collect nonemergency problems from the public. Reported problems can be triaged to appropriate staff for resolution and activities monitored to visualize trends and organizational performance.

In this guide, you will learn how to configure the Citizen Problem Reporter solution template by adding a new problem category or categories; modifying problem types and responsible agencies; revising satisfaction survey questions; adding a button to the Citizen Problem Manager application that sends a satisfaction survey; and extending the solution template with a series of Python tools.

## Build skills in these areas

- Deploying ArcGIS solution templates
- Revising feature layer domains and views
- Modifying survey questions
- Configuring python tools

## What you need

- ArcGIS Pro 2.2 or later
- ArcGIS Online
- Operations Dashboard for ArcGIS
- Survey123 Connect for ArcGIS

# 1. Deploy the ArcGIS solution template

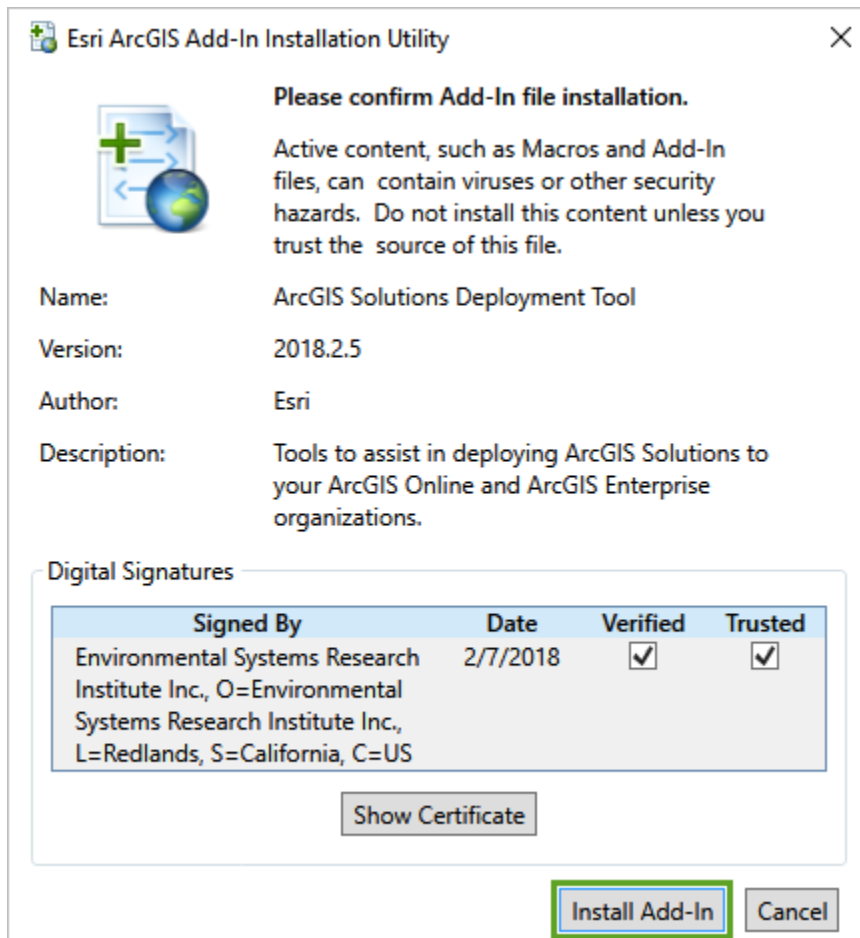
First, you'll install the ArcGIS Solution Deployment Tool Add-In and deploy the Citizen Problem Reporter, Citizen Problem Manager, and Citizen Problem Dashboard solution template.

## Install the ArcGIS Solutions deployment tool

1. [Download](#) the ArcGIS Solutions Deployment zip file.

The Esri Downloads page opens.

2. Close ArcGIS Pro before installing the add-in.
3. Browse to the folder to which you downloaded the zip file and extract its contents.
4. Double-click SolutionDeployment.esriAddinX to run the installer.
5. Click **Install Add-In**. After the installation is complete, click **OK**.



Now that you've downloaded the add-in, you can deploy ArcGIS solution templates to your ArcGIS organization using ArcGIS Pro.

## Deploy solution template

Next, you'll create a new ArcGIS Pro project and deploy the Citizen Problem Reporter, Citizen Problem Manager, and Citizen Problem Dashboard solution templates to your ArcGIS organization.

1. Open ArcGIS Pro. If necessary, sign in to your ArcGIS organization.

Note:

If you don't have ArcGIS Pro, you can sign up for an [ArcGIS free trial](#).

The start page appears. The 10 most recent projects you've worked on are listed.

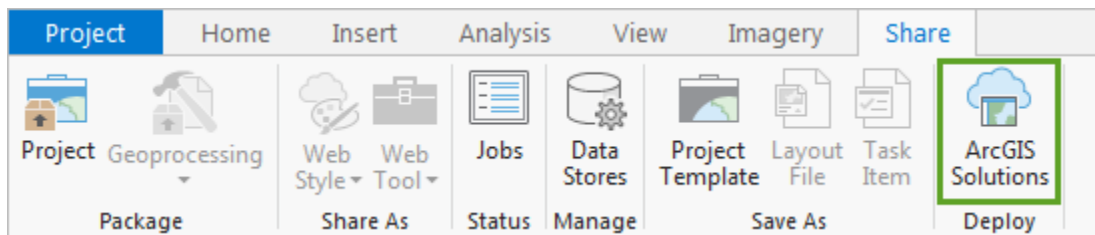
2. Under **Create a new project**, choose the **Blank** template.
3. In the **Create a New Project** window, change **Name** to **Deploy Solutions** and click **OK**.

The project opens with a blank map.

Note:

If you already created a Deploy Solutions project, open the project.

4. On the **Share** tab, in the **Deploy** group, click **ArcGIS Solutions**.



The ArcGIS Solutions Deployment Tool opens in the **Tasks** pane. Tasks are sets of preconfigured steps that guide you through a workflow. The first task is to sign in to your organization. You've already done that, so you can skip it.

5. Double-click the **Deploy an ArcGIS Solution** task.

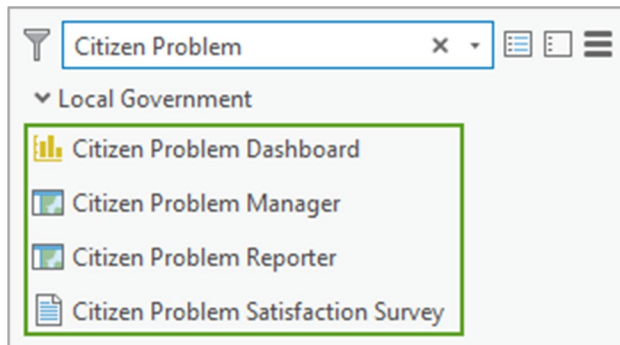


This task contains a directory of available solution templates. The solution templates are organized by industry. You can also search for solution templates.

6. In the search box, type Citizen Problem and press **Enter**.

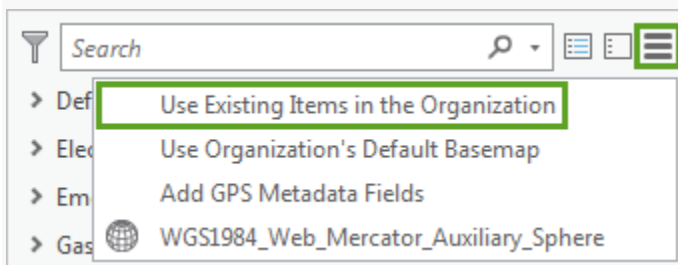
The search returns multiple results. You'll deploy Citizen Problem Dashboard, Citizen Problem Manager, Citizen Problem Reporter, and Citizen Problem Satisfaction Survey solution templates and use them later in the Learn lesson.

7. Under **Local Government**, hold the **Shift** key and click Citizen Problem Dashboard, Citizen Problem Manager, Citizen Problem Reporter, and Citizen Problem Satisfaction Survey.



Note:

If you see a check mark next to any of the Citizen Problem Reporter solution templates, it means the solution template has been deployed in your organization. To deploy the solution templates, click the **Options** button and ensure that **Use Existing Items in the Organization** is not checked.



8. Type Citizen Problem Reporter in the **Output Folder** text box.
9. Click **Deploy**.

The solution template deploys to your ArcGIS organization.

10. Click **Finish**.

The **Tasks** pane returns to the list of tasks.

11. Close ArcGIS Pro and save your changes.

In this task, you downloaded and installed the ArcGIS Solution Deployment tool and deployed the Citizen Problem Dashboard, Citizen Problem Manager, Citizen Problem Reporter, and Citizen Problem Satisfaction Survey maps and apps in your ArcGIS organization.

For the next task, you add a new problem category to Citizen Problem Reporter.

## 2. Add a new problem category

The Citizen Problem Reporter application allows the public to submit nonemergency problem reports. Problem reports are grouped into categories that make it easier to submit a report. The problem categories appear when one logs in to the application and are stored in the CitizenProblems feature layer and visualized in feature layer views.

Citizen Problem Reporter includes nine problem categories: Animal, Blight, Health, Land Use, Park/Tree, Road, Snow/Ice, Trash, and Utility. In some cases, you may want to add a problem category to Citizen Problem Reporter to meet your organization's needs.

### Add problem category

Review the CitizenProblems feature layer categories and identify a category your organization may want to add to Citizen Problem Reporter.


1. Sign in to your [ArcGIS organization](#).

Note:

If you don't have an organizational account, you can sign up for an [ArcGIS free trial](#).

2. At the top of the site, click **Content**.
3. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
4. Click the Citizen Problem Reporter folder.
5. Under **Item Type**, click **Layers**.
6. On the right side of the page, click the CitizenProblems feature layer.
7. On the item page, click the **Data** tab.
8. Click **Fields**.
9. Click the Category display name.

In the **List of Values (Domain)** section, review existing categories and identify ones that are not applicable and ones that are missing.

10. Click **Edit** next to **List of Values (Domain)**.
11. Optionally, click the **Delete** button  to remove a category from the list, and then click **Save**.
12. Click **Add**.
13. Type in the new category name into the **Displayed Value** and **Stored Value** text boxes.
14. Repeat steps 11 and 12 to add the remaining missing categories.

15. Optionally, drag the category to a new location in the list to reorder them.
16. Click **Save**.

Add or delete the same category or categories to the CitizenProblems\_dashboard feature layer view.

17. Open ArcGIS Pro. Under **Recent Projects**, choose **Deploy Solutions**.
18. If necessary, sign in to the ArcGIS organization to which you deployed the Citizen Problem Reporter solution template.
19. On the **Share** tab, in the **Deploy** group, click **ArcGIS Solutions**.
20. Double-click Configure an ArcGIS Solution task.
21. On the Configure an ArcGIS Solution step, click **Next Step**.
22. On the Add Fields step, click **Skip**.
23. On the Modify Domains step, click browse next to the **Input Layer or Table** parameter.

The **Input Layer or Table** dialog box appears.

24. Under **Portal**, click **My Content**.
25. Double-click the Citizen Problem Reporter folder.
26. Double-click the CitizenProblems\_dashboard feature layer view.
27. Click **Citizen Problems**, and then click **OK**.
28. In the **Field** parameter, click the drop-down arrow and choose **Category**.
29. In the **Domain** section, type a new category in the **Code** text box, and then type it in the **Description** text box. Repeat this step until all the domains that apply to your organization have been added.
30. Optionally, delete a domain by hovering to the left of the domain you want to delete and click remove **X**.
31. Optionally, drag the category to a new location in the list to reorder them.
32. Once you have finished adding or removing domains, click **Run**.
33. Click **Finish**.
34. Close ArcGIS Pro and save your changes.

## Create feature layer view

Create a feature layer view of each new category added to the CitizenProblems feature layer.

1. Click the **Overview** tab.
2. On the CitizenProblems feature layer item page, click **Create View Layer**.
3. Type the name of the category in the **Title** text box. For example, CitizenProblems\_animal
4. Type tag terms separated by commas.
5. Type a summary in the **Summary** text box. For example, A public view of <insert category name> problems reported by the public through focused citizen engagement applications.
6. Save the feature layer view in the Citizen Problem Reporter folder.



7. Click **OK**.

Update the editing setting, so the public can submit nonproblem reports with the Citizen Problem Reporter application.

8. On the item page, click the **Settings** tab.
9. Scroll to the **Feature Layer (hosted, view)** section and check the **Enable editing** check box.
10. Choose the **Add and update features** option under the **What kind of editing is allowed** setting.
11. Click **Save**.

Set the view definition so the public sees the new problem report category.

12. Click the **Overview** tab.
13. Click **Open in Map Viewer**.
14. On the new category layer, click **More Options ...**, and click **Set View Definition > Define Features**.
15. Create the following expression: Category is new category.
16. Click **Add another expression** and create the following expression: Visible to the public is Yes.

By default, all problem reports submitted using the Citizen Problem Reporter will automatically set the Public View field to Yes, thus making it visible to the public. Note, you can manually set the visibility to No using the Citizen Problem Manager when triaging the issue.

17. Click **Apply Definition**.
18. On the new category layer, click **More Options ...**, and click **Show Item Details**.
19. Close the new category map tab.
20. On the item page, click the **Data** tab.
21. Click **Fields**.
22. Click the Type of Problem display name.

Add a problem type domain for the new problem report category.

23. Open ArcGIS Pro. Under **Recent Projects**, choose **Deploy Solutions**.
24. If necessary, sign in to the ArcGIS organization to which you deployed the Citizen Problem Reporter solution template.
25. On the **Share** tab, in the **Deploy** group, click **ArcGIS Solutions**.
26. Double-click Configure an ArcGIS Solution task.
27. On the Configure an ArcGIS Solution step, click **Next Step**.
28. On the Add Fields step, click **Skip**.
29. On the Modify Domains step, click browse next to the **Input Layer or Table** parameter.

The **Input Layer or Table** dialog box appears.

30. Under **Portal**, click **My Content**.

31. Double-click the Citizen Problem Reporter folder.
32. Double-click the new category feature layer view.
33. Click Citizen Problems, and then click **OK**.
34. In the **Field** parameter, click the drop-down arrow and choose **Type of Problem**.
35. In the **Type** parameter, click the drop-down arrow and choose **Coded Value**.
36. Type the category name in the **Name** text box. For example, Animal.
37. In the **Domain** section, type a new category in the **Code** text box, and then type it in the **Description** text box. Repeat this step until all the domains that apply to your organization have been added.
38. Once you have finished adding domains, click **Run**.
39. Click **Finish**.
40. Close ArcGIS Pro and save your changes.
41. In your browser, refresh the Type of Problem page.
42. Click **Fields**.
43. Click the Type of Problem display name.

Under the **List of Values (Domain)**, you will see the newly added domains. The domains added will appear in the **Type of Problem** drop-down list in the **Report a problem** form.


The image shows a web form titled "Report a problem:". Below the title is a label "Type of Problem:" followed by a dropdown menu. The dropdown menu is open, showing a list of options: "Select...", "Select..." (highlighted in blue), "Animal Abuse", "Animal Bite", "Barking or Noisy Dog", "Dangerous Animal", "Dead Animal", "Pest Infestation", "Rodent Activity", and "Other".

*CitizenProblems\_animal feature layer view type of problems domains*


Repeat the steps in this section for each new category you would like to add to your Citizen Problem Reporter application. Once you have finished adding new categories, you will create a map for each category.

## Create a map


Each problem category displayed in the Citizen Problem Reporter application is a single map. Create a map for each category you would like to add to your Citizen Problem Reporter application.

1. At the top of the site, click **Map**.
2. Click the **Add** button and choose **Search for Layers**.
3. Type the name of a category feature layer view in the search box.
4. Click the **Add** button  on the layer result.
5. Click the **Back** button.
6. Click the **Content** button.
7. On the new category layer, click **More Options ...**, and click **Rename**.
8. Type the category name in the **Layer Name** text box. For example, Animal Problems.
9. Click **OK**.


Create feature templates for each new problem report category.

10. On the layer, click **Change Style** .
11. Click the **Choose an attribute to show** drop-down arrow and choose **Show location only**.

A warning window appears, informing you the changes made to the symbology will affect the symbols displayed. Add and update the symbology once you have created a feature template for your new category.

12. Click **Yes**.
13. Click **Done**.
14. Click the **Edit** button.
15. Click **Manage**.
16. Click the drop-down arrow next to New Feature and choose **Properties**.
17. Type the category name – Submitted in the **Name** text box. For example, Animal Problems - Submitted
18. Click the **Category** drop-down arrow and choose the new category.
19. Click **Done**.
20. Click **Save Changes**.
21. Click the **Close** button .

Update the symbology to reflect your new problem report category.

22. Click the **Details** button.
23. On the layer, click **Change Style** .
24. Click the **Choose an attribute to show** drop-down arrow and choose **Status**.


A warning window appears, informing you the changes made will affect the symbols displayed.

25. Click **Yes**.
26. Click **Options**.
27. Click the Submitted symbol.
28. Click **Shape**.
29. Click the drop-down and choose a symbol set or **Custom Images**.



30. If you chose to add a symbol from a symbol set, click a symbol and set the symbol size, click **OK**.

Tip:

If you chose a symbol from the Government symbol set, set the symbol size to 21 px.

31. If you chose to add a custom image, click **Use an Image**, paste a URL in the text box, set a symbol size, and click **OK**.
32. Repeat steps 27 through 29 and assign symbols for the remaining category statuses.
33. Optionally, click the options button  next to the symbol to drag and reorder the symbols.
34. Click **OK**.
35. Click **Done**.

Update the pop-up on the new problem report layer.

36. On the layer, click **More Options** , and click **Configure Pop-up**.
37. Enter a title for your pop-up by clicking the [+] button and choosing the Type of Problem field.
38. Click **Configure**.
39. Click the **View HTML Source** button  in the editor.
40. Delete the existing HTML code.
41. Copy and paste the following HTML code:

```
{category} problem reported on {CreationDate}.<br /><br />
```

```
<b>Details:</b> {details}<br /><br />
```

```
<b>Status:</b><br />
```

```
<table style="border-collapse: separate; border-spacing: 2px 4px; width: 100%; table-layout: fixed; margin: 0px -2px; max-width: 350px;">
```

```
<tbody><tr height="16">
```

```
<td style="{expression/expr0}; text-align: center; width: 25%"></td>
```

```
<td style="{expression/expr1}; text-align: center; width: 25%"></td>
```

```
<td style="{expression/expr2}; text-align: center; width: 25%"></td>
```

```
<td style="{expression/expr3}; text-align: center; width: 25%"></td>
```

```
</tr>
```

```
<tr height="24" style="text-align: center;">
```

```
<td style="text-align: center; width: 25%; font-weight: normal; padding-left: 0px; word-wrap: break-word;">Submitted</td>
```

```
<td style="text-align: center; width: 25%; font-weight: normal; padding-left: 0px; word-wrap: break-word;">Received</td>
```

```
<td style="text-align: center; width: 25%; font-weight: normal; padding-left: 0px; word-wrap: break-word;">In Progress</td>
```

```
<td style="text-align: center; width: 25%; font-weight: normal; padding-left: 0px; word-wrap: break-word;">Completed</td>
```

```
</tr>
```

```
</tbody></table>
```

```
<table style=" border-collapse: separate; border-spacing: 0px 0px; width: 100%; table-layout: fixed; margin: 0px -1px;">
```

```
<tbody>
```

```
<tr>
```

```
<td style="display:{expression/expr4}; text-align: left; width: 100%">
```

```
<b><br />Resolved On:</b> {resolutiondt}<br /><br />
```


```
<b>Resolution:</b> {resolution}
```

```
</td>
```

```
</tr>
```

```
</tbody>
```

```
</table>
```

42. Click the **View HTML Source** button  in the editor.
43. Click **OK**.
44. Click the **Configure Attributes** link.
45. Click the check box next to **Edit**, and then uncheck the check box.
46. Click the check box next to **Display**, and then uncheck the check box.

47. Click the **Display** check box next to the following fields: {proptype}, {status}, {details}, {expression/expr0}, {expression/expr1}, {expression/expr2}, {expression/expr3}, and {expression/expr4}.

Display fields will be displayed in the **Report a problem** form.

**Report a problem:**

Type of Problem:  
Select... ▼

Problem Details:

Full Name:

Phone Number:

Email:

**Where is the problem located?**  
Click the map to draw the location.

Place or Address

**Would you like to add a photo?**

*Citizen Problem Reporter Report a problem form*

48. Check the **Edit** check box next to the following fields: {proptype}, {details}, {pocfullname}, {pocmail}, and {pocphone}. Ensure {pocfullname}, {pocmail}, and {pocphone} display check box is unchecked, so this information isn't publicly visible.

Edit fields will be editable in the form, so when the public submits a problem report, the information will be written to the editable fields.

Optionally, you can choose to use the {pocfirstname} and {poclastname} fields in your Report a problem form instead of the {pocfullname} field. If you choose to, the First Name and Last Name parameters will appear in the form instead of Full Name.

49. Click the {details} field row.
50. Click the **Textbox Type** drop-down arrow and choose **Multiple Line**.
51. Rename the {details} field alias to **Problem Details**.

The details field (in the **Report a problem** form) will be renamed to **Problem Details** and the text box has doubled in size, so users can add more information about the problem they are submitting.

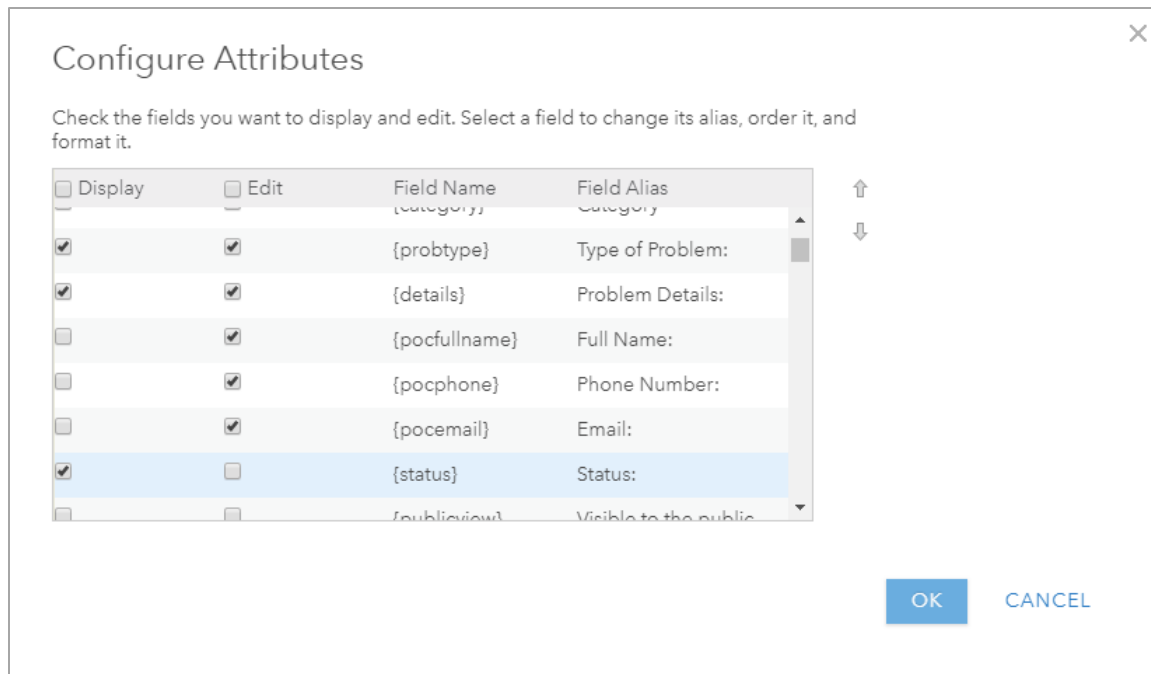


*Problem Details parameter displayed in the Report a problem form*

52. Reorder the fields in the following order: {proptype}, {details}, {pocfullname}, {pocphone}, {pocmail}, {status}. To reorder the fields, click the field name and use the **Move up** and **Move down** arrows.

The order of the fields in the **Configure Attributes** window reflects the order of the questions in the **Report a problem** form.

53. Add a colon after the following **Field Alias**: Type of Problem, Problem Details, Full Name, Phone Number, Email, and Status.



*Configure Attributes window*

54. Click **OK**.
55. Check the **Show feature attachments as links** check box.
56. Uncheck the **Show when last edited** check box.
57. Under **Attribute Expression**, press the **Shift** key and click the **Resolution Time** and **Full Name** expressions.
58. Click the **Remove expression (x)** button.

The **Resolution Time** and **Full Name** Arcade expressions persisted when you created the category feature layer view from the CitizenProblems feature layer. These Arcade expressions are not used in the Citizen Problem Reporter application.

The first four expressions define the color used in the status bar in the layer pop-up as well as in the problem details in the Citizen Problem Reporter application. The status bar will update as the problem reported status is updated to Submitted, Received, In Progress, and Completed.



**Barking or Noisy Dog**

---

Animal problem reported on April 1, 2019.

**Details:** Dog has been barking for 3 hours

**Status:**

Submitted	Received	In Progress	Completed
-----------	----------	-------------	-----------

*Details about a problem reported in the Citizen Problem Reporter application.*

The last Arcade expression is configured to only display the Resolved On date and Resolved fields and information in the pop-up and problem details if the status is set to Completed.

59. Click **OK**.
60. On the layer, click **More Options** ..., and click **Save Layer**.
61. On the Comments table, click **More Options** ..., and click **Rename**.
62. Rename the table to **Comments**.
63. Click **OK**.
64. On the **Comments** table, click **More Options** ..., and click **Configure Pop-up**.
65. Delete the pop-up title.
66. Click **Configure Attributes** link.
67. Click the check box next to **Edit**, and then uncheck the check box.
68. Click the check box next to **Display**, and then uncheck the check box.
69. Click the **Display** check box next to the {comments} field.

Display fields will be displayed in the Citizen Problem Reporter comment form.

**Comment**

Leave a comment:

Full Name:

Phone Number:

Email:

*Citizen Problem Reporter comment form.*

70. Check the **Edit** check box next to the following fields: {comments}, {pocfullname}, {pocphone}, and {pocemail}. Ensure {pocfullname}, {pocmail}, and {pocphone} display check box is unchecked, so your citizen information isn't publicly accessible.

Edit fields will be editable in the comment form, so when citizens make comments about a problem report, the information will be written to the editable fields.

Optionally, you can choose to use the {pocfirstname} and {poclastname} fields in your Report a problem form instead of {pocfullname} field. If you choose to, the First Name and Last Name parameters will appear in the form instead of Full Name.

71. Click the {comments} field row.  
 72. Click the **Textbox Type** drop-down arrow and choose **Multiple Line**.  
 73. Rename the {details} field alias to Leave a comment.

The comment field (in the form) will be renamed to **Leave a comment** and the text box has doubled in size, so users can add more information about their comment.

Leave a comment:

*Leave a comment parameter displayed in the Comment form*

74. Change the Phone **Field Alias** to Phone Number.
75. Add a colon after the following **Field Alias**: Leave a comment, Full Name, Phone Number, and Email.

### Configure Attributes ✕

Check the fields you want to display and edit. Select a field to change its alias, order it, and format it.

<input type="checkbox"/> Display	<input type="checkbox"/> Edit	Field Name	Field Alias	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	{comments}	Leave a comment:	↑ ↓
<input type="checkbox"/>	<input checked="" type="checkbox"/>	{pocfullname}	Full Name:	
<input type="checkbox"/>	<input type="checkbox"/>	{pocfirstname}	First Name	
<input type="checkbox"/>	<input type="checkbox"/>	{poclastname}	Last Name	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	{pocphone}	Phone Number:	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	{pocemail}	Email:	
<input type="checkbox"/>	<input type="checkbox"/>	{publicview}	Public View	

OK
CANCEL

*Configure Attributes changes that will be reflected in the comment form.*

76. Click **OK**.
77. Uncheck the **Show when last edited** check box.
78. Click **OK**.
79. On the Surveys table, click **More Options ...**, and click **Remove**.
80. Click **Yes, Remove Table**.
81. Click **Save > Save As**.
82. Type a title. For example, Animal Problems.
83. Type tags that describe your map.
84. Provide a summary that describes the map. For example, A map used to report animal concerns in our community.

85. Save the map in the Citizen Problem Reporter folder.
86. Click **Save Map**.
87. Click **Share**.
88. Check the check box next to the **Citizen Problem Reporter** group.
89. Click **Cancel** to update sharing. You do not want to share the feature layer view to the Citizen Problem Reporter group.
90. Click **Done**.
91. Click the **About** button.
92. Click the **More Details** link.
93. Close the new category map tab.
94. On the item page, click **Edit Thumbnail** and upload an image for the new category map.

Repeat the steps in this section for each new category you want to add to your Citizen Problem Reporter application. In addition, you can view your new problem report category, or categories, in the Citizen Problem Reporter application.

95. At the top of the site, click **Content**.
96. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
97. Click the Citizen Problem Reporter folder.
98. Under **Item Type**, click **Apps**.
99. On the right side of the page, click the Citizen Problem Reporter application
100. On the item page, click **View Application**.
101. If you haven't shared the Citizen Problem Reporter application and all of the maps referenced in the application publicly, choose **Sign in with ArcGIS**.

You will see the new category or categories in the application.


102. Click a new category, and then **Submit Problem**.
103. Click the **Type of Problem** drop-down arrow to see the type of problem domains you added in ArcGIS Pro.

Once you finished reviewing the Citizen Problem Reporter application, close the tab.

## Add problem category symbology

Add new problem category symbology to the Citizen Problem Reporter application.




1. At the top of the site, click **Content**.
2. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
3. Click the Citizen Problem Reporter folder.
4. Under **Item Type**, click **Layers**.
5. On the right side of the page, click the CitizenProblems layer.

6. On the item page, click the **Open in Map Viewer** drop-down arrow and choose **Add to new map**.
7. On the layer, click **Change Style** .
8. Click the **Choose an attribute to show** drop-down arrow and choose **Category**.


A warning window appears, informing you the changes made to the symbology will affect the symbols displayed.

9. Click **Yes**.
10. Click **Options**.
11. Click the Animal symbol.
12. Click **Shape**.
13. Click the drop-down arrow and choose the Government symbol set.

All category symbols except for the new category you created are available in the Government symbol set.

14. Browse to the Animal symbol  and type 21 in the **Symbol Size** text box.
15. Click **OK**.
16. Repeat steps 11 through 15 to symbolize the remaining categories.
17. Optionally, click the options button  next to the symbol to drag and reorder the symbols.
18. Click **OK**.
19. Click **Done**.
20. On the layer, click **More Options** , and click **Save Layer**.



Repeat the steps in this section to update the CitizenProblems\_dashboard feature layer view symbology.

21. Click the **Add** button and choose **Search for Layers**.
22. Type CitizenProblems\_dashboard feature layer view in the search.
23. Click the **Add** button  on the layer result.
24. Click the **Back** button.
25. Repeat steps 7 through 20 to apply symbols to the CitizenProblems\_dashboard feature layer view.


#### Advanced:

You can restore the original CitizenProblems symbols, as well as adding new category symbols, by adding a point to the map with every category and status combination.




26. Click the **Edit** button.

27. In the **Add Features** pane, click the Animal feature and add a point to the map.
28. In the pop-up, click the **Status** drop-down arrow and choose **Submitted**, and then click **Close**.
29. Repeat this step to add a point symbol for Animal Received, Animal In Progress, and Animal Completed because it already exists.
30. Repeat step 27 and 28 to add the remaining category status to the map.
31. Once all the category and status point combination have been added to the map, click the **Close** button .
32. On the CitizenProblems layer, click **Change Style** .
33. Click the **Choose an attribute to show** drop-down arrow and choose **New Expression**.
34. Copy and paste the following expression in the text box:

```
return $feature.category + " " + $feature.status.
```

35. Click **OK**.
36. Click **Options**.
37. Click **Ungroup** to ungroup the remaining categories.
38. Click the Animal Completed symbol.
39. Click **Shape**.
40. Click the drop-down and choose the **Government** symbol set.
41. Choose the **Animal Problems - Completed** symbol  and type 21 in the **Symbol Size** text box, click **OK**.
42. Repeat step 37 through 40 for the remaining symbols.

All category symbols except for the new category you created are available in the **Government** symbol set.

43. Optionally, click the options button  next to the symbol to drag and reorder the symbols.
44. Click **OK**.
45. Click **Done**.
46. On the CitizenProblems layer, click **More Options** , and click **Save Layer**.
47. Repeat steps 31 through 45 to apply the original and new category symbology to the CitizenProblems\_dashboard feature layer view.
48. Click the **Edit** button.
49. In the map, click one of the points and scroll to the bottom of the pop-up and click Delete. Repeat this step to delete the remaining points.
50. Click the **Close** button .

Browse to the Citizen Problem Dashboard map and open it. You will see the new category, or categories, in the map legend.

51. At the top of the site, click the **Home** drop-down arrow and choose **Content**.
52. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
53. Click the Citizen Problem Reporter folder.

54. Under **Item Type**, click **Maps**.
55. On the right side of the page, click the **Citizen Problem Manager** map.
56. On the item page, click **Open in Map Viewer**.
57. Click **Yes, open the map**.
58. Click the **Legend** button and review the symbology.





Repeat steps 50 through 57 to review the symbology in the Citizen Problem Dashboard map.

## Add problem category indicator

Add or remove a category indicator to the Citizen Problem Dashboard application.

1. At the top of the site, click the **Home** drop-down arrow and choose **Content**.
2. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
3. Click the **Citizen Problem Reporter** folder.
4. Under **Item Type**, click **Apps**.
5. On the right side of the page, click the **Citizen Problem Dashboard** application.
6. On the item page, click **Edit Dashboard**.

On the **Overview** tab, not all the problem categories may apply to your community; you can add new category indicator or indicators to your dashboard.

7. To add a new indicator, hover over the upper corner of the Animal Control and choose **Duplicate Element** .
8. Hover over the new indicator upper corner and choose **Configure** .
9. In the **Value** area, under **Filter**, click the **Value** drop-down arrow and choose a new category.
10. Scroll down to the **Reference** area, under **Filter**, click the **Value** drop-down arrow and choose a new category.
11. Click the **Indicator** tab, in the **Style for value at or above reference** area, type a new category in the **Top Text** text box.
12. In the **Style for value below reference** area, type a new category in the **Top Text** text box.
13. Click the **General** tab and type a new indicator name in the **Name** text box.
14. Click **Done**.
15. Hover over the new indicator in the upper corner and choose **Drag item** .
16. Press the **Shift** key on your keyboard while dragging the item to group as a column. Dock the indicator next to an existing indicator.
17. Optionally, to delete an indicator, hover over the upper corner of the indicator you want to delete and choose **Delete** .
18. Click **Save** to save changes made to the dashboard and close the dashboard.

In the next task, you will learn how to modify the problem types and responsible agencies used in the Citizen Problem Reporter solution template.

## 3. Modify problem types and responsible agencies

The Citizen Problem Reporter application allows the public to submit nonemergency problem reports. Problem reports are grouped into categories that make it easier to submit a report. Each problem category has a problem type that helps the public provide more detailed information about their report. The problem types appear in the application when one logs in to the application and submits a new report.

The Citizen Problem Manager application allows responsible agencies to help an organization assign a problem report to the agency most likely to respond to the report. The responsible agency appears in the application when one selects a problem report and edits the details.

Citizen Problem Reporter includes problem types and responsible agencies for each problem category. In some cases, you may want to add a problem type to an existing category; or add a new problem type for any new problem category you created. In addition, you may want to modify the responsible agencies provided to more accurately reflect the name of the agency, department, or team that is responsible for responding to problem reports.

In this task, you will learn how to modify the problem types and responsible agencies used in the Citizen Problem Reporter solution template.

1. Verify you are signed in to your ArcGIS organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
4. Click the **Citizen Problem Reporter** folder.
5. Under **Item Type**, click **Layers**.
6. On the right side of the page, click the feature layer view you want to modify. For example, CitizenProblems\_Animal.
7. On the item page, click the **Data** tab.
8. Click **Fields**.
9. Click the **Type of Problem** display name.

Review the **List of Values (Domain)**. Identify domains that are missing or need to be removed from the list.

10. Open ArcGIS Pro, under **Recent Projects**, choose **Deploy Solutions**.



11. If necessary, sign in to the ArcGIS organization to which you deployed the Citizen Problem Reporter solution template.
12. On the **Share** tab, in the **Deploy** group, click **ArcGIS Solutions**.
13. Double-click the **Configure an ArcGIS Solution** task.
14. On the **Configure an ArcGIS Solution** step, click **Next Step**.
15. On the **Add Fields** step, click **Skip**.
16. On the **Modify Domains** step, click browse next to **Input Layer or Table**.

The **Input Layer or Table** dialog box appears.

17. Under **Portal**, click **My Content**.
18. Double-click the **Citizen Problem Reporter** folder.
19. Double-click a feature layer view.
20. Click **Citizen Problems**, and then click **OK**.
21. In the **Field** parameter, click the drop-down arrow and choose **Type of Problem**.
22. In the **Domain** section, optionally, to delete a domain, hover to the left of the domain you want to delete and click remove **x**. Repeat this step until all the domains that do not apply to your organization have been removed.
23. Optionally, to add a new domain, type a new category in the **Code** text box, and then type it in the **Description** text box. Repeat this step until all the domains that apply to your organization have been added.
24. Optionally, to modify an existing domain or domains, click in the **Code** text box and type a new problem type, and click in the **Description** text box and type a new problem type.
25. Once you have finished modifying domains, click **Run**.
26. Click **Finish**.
27. Close ArcGIS Pro and save your changes.
28. In your browser, refresh the **Type of Problem** page.
29. Click **Fields**.
30. Click the **Type of Problem** display name.

Under the **List of Values (Domain)**, you will see the newly added or removed domain or domains.

Repeat the steps in this section for each problem type you want to add, or modify, in your Citizen Problem Reporter application.

31. At the top of the site, click **Content**.
32. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
33. Click the **Citizen Problem Reporter** folder.
34. Under **Item Type**, click **Apps**.
35. On the right side of the page, click **Citizen Problem Reporter**.
36. On the item page, click **View Application**.
37. Sign in to the application using **Sign in with ArcGIS**.
38. Click the category for which you modified the problem types, and then click **Submit Problem**.


39. In the **Report a problem** form, click the **Type of Problem** drop-down arrow and you will see the updated type of problem domains.

Once you finished reviewing the Citizen Problem Reporter application, close the tab.

Now, let's review the list of responsible agencies and modify to meet the needs of your organization.

1. Verify you are signed in to your ArcGIS organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
4. Click the **Citizen Problem Reporter** folder.
5. Under **Item Type**, click **Layers**.
6. On the right side of the page, click the **CitizenProblems** feature layer.
7. On the item page, click the **Data** tab.
8. Click **Fields**.
9. Click the **Assigned To** display name.

Review existing agencies and identify missing ones in the **List of Values (Domain)** section.

10. Click **Edit** next to **List of Values (Domain)**.
11. Optionally, click **Add**.
12. Type the new agency name in the **Displayed Value** and **Stored Value** text boxes.
13. Repeat steps 11 and 12 to add the remaining missing agencies.
14. Optionally, click **Delete**  to remove an agency.
15. Optionally, click in the **Label** text box with an existing agency labeled and change the agency name. Repeat this step to change the **Code** as well.
16. Optionally, drag the category to a new location in the list to reorder them.
17. Click **Save**.

In the next section, you will learn how to modify the Citizen Problem Satisfaction Survey.


## 4. Revise satisfaction survey questions


The Citizen Problem Satisfaction Survey allows you to solicit feedback from the public that helps you improve your community's customer service. The survey includes six questions. In some cases, you may want to add, or remove, questions from the survey.

In this task, you will add, modify, or remove a survey question to meet your organization's needs.

1. Verify you are signed in to your ArcGIS organization.
2. At the top of the site, click **Content**.

3. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
4. Click the **Citizen Problem Reporter** folder.
5. Type Citizen Problem Satisfaction Survey in the **Search Citizen Problem Reporter** text box.
6. Click the **Citizen Problem Satisfaction Survey** application.
7. On the item page, click the **Open in Survey** drop-down arrow and choose **Edit in Survey123 Connect**.
8. Click **Open Survey123 Connect for ArcGIS**.

If you receive an **Error with URL request** message, click **OK**, and then click the **Settings** button . Click **Add Portal** and type your ArcGIS organization's URL in the **URL of your Portal for ArcGIS** box, and then click **Add Portal**. For example, <http://myorganization.maps.arcgis.com/>. Click **OK**.

9. Click **Sign in**.
10. Sign in using your ArcGIS organization credentials.
11. Click the **Citizen Problem Satisfaction Survey**.
12. Click **Yes** to download the Citizen Problem Satisfaction Survey.
13. Click **OK**.
14. Click the **Citizen Problem Satisfaction Survey** again to open it.
15. On the left pane, click **Open XLSForm Spreadsheet** .

The editable spreadsheet opens.

16. If necessary, click the **survey** tab.

Under the **type** column, review the existing question types.

Tip: Click in the cell to get more information about the column.

17. Insert a new row and add a [question type](#).

Under the **name** column, review the existing field names.


18. Type a name of your question under the **name** column.

Under the **label** column, review the existing survey questions.

19. Type a question under the **label** column. This is the text you will see in the form.

Under the **appearance** column, review the existing survey questions.

20. You can change the way questions are presented. [Type an appearance](#) under the **appearance** column.


21. Click the **choices** tab. This tab comprises all the selectable options for survey questions. To add cascading selects to your survey, complete the steps in the [Cascading and external selects](#) topic.
22. Save the spreadsheet.
23. Click the **survey** tab.
24. Optionally, click a row, right-click and choose **Delete** to remove a question.
25. Optionally, to modify a question, by click in a cell under the **label** column and type a new question. Depending on your question, you may need to change the type, name, and appearance.
26. Save and close the spreadsheet.
27. In Survey123 Connect for ArcGIS, click **Update survey from XLSForm spreadsheet** in the left pane to preview your changes.
28. In the left pane, click **Publish** .
29. Close Survey123 Connect for ArcGIS.

In the next section, you will learn how to add a button to the Citizen Problem Manager application to solicit feedback from individuals who have submitted problem reports.

## 5. Configure the satisfaction survey email

After a problem has been resolved, you may want to solicit feedback from the public to help you improve your community's customer service. You can incrementally send the Citizen Problem Satisfaction Survey to those who have reported a problem by adding a button to the Citizen Problem Manager application. When the button is clicked, a prewritten email with a link to the Citizen Problem Satisfaction Survey will be addressed to the individual who submitted the problem report. Once the email is sent, the individual can then use the survey to rate their satisfaction with the resolution of the problem.

In this section, you will learn how to add a button to the Citizen Problem Manager application to solicit feedback from individuals who have submitted problem reports.

1. Verify you are signed in to your ArcGIS organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
4. Click the **Citizen Problem Reporter** folder.
5. Under **Item Type**, click **Maps**.
6. On the right side of the page, click the **Citizen Problem Manager** map.
7. On the item page, click **Open in Map Viewer**.
8. On the **Problems** layer, click **More Options ...**, and click **Configure Pop-up**.
9. Click **Configure**.
10. Click the **View HTML Source** button  in the editor.
11. To add the satisfaction survey button, scroll to the bottom of the window.
12. Copy and paste the following code below the Resolution `</br></br>` line:

```
<a href="mailto:{pocemail}?subject={category}%20Problem%20Report%20Survey&body=Hello%20{expression/expr6}%2C%0D%0A%0D%0AYou%20are%20receiving%20this%20email%20because%20we%20recently%20resolved%20your%20{category}%20%20{probtype}%20problem%20report.%20Your%20feedback%20is%20important%20to%20us.%20Please%20take%20a%20moment%20to%20complete%20the%20survey%20below%20about%20your%20experience.%0D%0A%0D%0Ahttps%3A%2F%2Fsurvey123.arcgis.com%2Fshare%2F2e1f4da41a634f9ba8424e51b054bcdc?field:probguid={GLOBALID}%0D%0A%0D%0AThank%20you%20in%20advance%20for%20your%20participation.%20We%20appreciate%20the%20time%20you%20have%20taken%20and%20will%20actively%20use%20it%20to%20improve%20our%20services%20to%20you." style="background-color: #1973ad;color: #FFFFFF;padding: 10px 10px;text-decoration: none;margin: 0px auto;width: 220px;display: block;text-align:center;">Send Satisfaction Survey</a>
```

13. Click **OK**.
14. At the top of the site, click the **Home** drop-down arrow, right-click **Content** and choose to open the page in a new tab.
15. On the **My Content** tab, under **Folders**, type Citizen Problem Reporter in the search box.
16. Click the **Citizen Problem Reporter** folder.
17. Type Citizen Problem Satisfaction Survey in the search box.
18. Click the **Citizen Problem Satisfaction Survey** form.
19. On the item page, copy the application ID. The application ID is found at the end of the application URL.

For example:

```
http://myorganization.maps.arcgis.com/home/item.html?id=2ef11dad8ff04178b2b236e867e9c952.
```

20. Click the **Citizen Problem Manager** map tab.
21. Click **Configure**.
22. Paste and replace the existing application ID 2e1f4da41a634f9ba8424e51b054bcdc in the code with your application ID.
23. Click **OK** twice.
24. Click **Save** to save the changes you made to the map.
25. Click **Cancel** on the **Update Sharing** window.

The Send Satisfaction Survey button will appear on the Details tab when a record is present in the Citizen Problem Manager and the record status is Completed.

Details

Comments (0)

## Dilapidated Building

Blight problem reported on April 1, 2019.

**Details:** Building is falling down, dangerous to the neighborhood

Jamal Baxter  
333-645-2176  
jbaxter@email.com

**Location:** 1422 N Main St, Naperville, Illinois, 60563

**Status:**

Submitted	Received	In Progress	Completed
-----------	----------	-------------	-----------

**Assigned To:** Facilities

**Resolved On:** 4/1/2019

**Resolution Time:** 0 days

**Resolution:** Owners have been contacted

Send Satisfaction Survey

*Details tab including the Send Satisfaction Survey button*

In the next section, you will learn how to extend the Citizen Problem Reporter solution template with a set of Python tools.

## 6. Extend the Citizen Problem Reporter

You can extend the Citizen Problem Reporter solution template with a set of Python tools that can be used to generate report IDs, moderate reports, send email notifications, and enrich reports. These tools can be executed automatically via Task Scheduler and as new problem reports are submitted, or updated, the corresponding action will occur.

### Add the ServiceFunctions toolbox

The ServiceFunctions toolbox contains tools for generating report IDs, moderating reports, sending email notifications, and enriching reports. Download and add the ServiceFunctions toolbox to your ArcGIS Pro project before configuring the appropriate tools.

1. [Download](#) the ServiceFunctions toolbox.
2. Browse to the ServiceSupport.zip file and unzip the file to the desired location from which you want to the tools to execute.
3. Open ArcGIS Pro, under **Recent Projects**, choose **Deploy Solutions**.
4. If necessary, sign in to the ArcGIS organization to which you deployed the Citizen Problem Reporter solution template.
5. If necessary, on the **View** tab, in the **Windows** group, click the **Catalog** pane.
6. In the **Catalog** pane, right-click **Toolboxes** and choose **Add Toolbox**.

The **Add Toolbox** dialog box appears.

7. Browse to the **ServiceReport** folder and double-click the folder twice.
8. Click the **ServiceSupport.pyt** Python toolbox, and then click **OK**.
9. In the **Catalog** pane, expand **Toolboxes** and **ServiceSupport.pyt**.  
If you've never used the ServiceSupport toolbox before, run the Define Connection Settings tool to establish a connection between the toolbox and the CitizenProblem feature layer.
10. In the **Catalog** pane, in the **ServiceSupport.pyt** Python toolbox, double-click the **Define Connection Settings** tool.
11. In the **ArcGIS Online organization or ArcGIS Enterprise portal URL** parameter, click the drop-down arrow and choose a URL.
12. In the **Username** parameter, type your user name for the organization you chose in step 11.
13. In the **Password** parameter, type your password for the user name provided in the **Username** parameter.
14. Click **Run**.

## Generate report IDs

Many workflows require that a unique identifier be generated when a feature or record is created so it can be referenced and tracked in other workflows. The Generate IDs tool can be used to configure custom unique identifiers that will be applied to features at a regularly scheduled interval of your choosing. The tool only generates the configuration; an additional script (provided) must be run to update the features with incrementing identifier values.

1. If necessary, in the **Catalog** pane, expand **Toolboxes** and **ServiceSupport.pyt**.
2. Double-click the **Generate ID's** tool.
3. In the **Layer** parameter, click **Browse**.

The **Layer** dialog box appears.

4. Under **Portal**, click **My Content**.
5. Double-click the **Citizen Problem Reporter** folder.
6. Double-click the **CitizenProblems** feature layer.

7. Click **Citizen Problems**, and then click **OK**.

Expand General Identifier Settings. If the tool has not been run previously, start by specifying at least one identifier sequence.

8. In the **Sequence Name** parameter, type a name for the sequence. This value will appear in the drop-down menu for selecting the sequence to assign to each layer.
9. In the **Pattern** parameter, type a pattern to use for the sequence.

This can be a combination of letters, number, and symbols. Mark the location for the incrementing value with a pair of curly braces {}. Python formatting will be applied to the pattern text, so string formatting syntax such as {0:03d} will pad the incrementing number section with zeros to a length of 3. For example, the pattern seq-{0:05d} would result in identifier values such as 'seq-0001', 'seq-002', 'seq-0010', and so on.

10. In the **Next Value** parameter, type a value.

When initially creating the sequence, this should be the first value want to use in the identifiers. After this point, this value will show the value to be used for the next identifier generated.

11. In the **Interval** parameter, type a value.

The interval by which the identifier values should increase between features. For example, an initial Next Value of 1 and an Interval of 10 would create identifiers with the incrementing values of 1, 11, 21, and so on.

Keep in mind that deleting or changing these sequences will impact all the layers that are configured to use the edited sequences.

12. If an identifier configuration already exists, a check box will appear that, when checked, will delete the existing identifier configuration for the selected layer. Alternatively, edit the identifier configuration and run the tool to overwrite the existing identifier configuration for the selected layer.
13. Choose the sequence to use to generate the identifiers for each feature in the layer.
14. Choose a text field to store the generated identifier.
15. Click **Run** to write out the identifier configuration for the layer and any changes to the identifier sequences.
16. To configure identifiers for another layer, rerun the tool with the settings for the next layer.

Keep in mind that the General Identifier Settings are not specific to any one layer—they apply to all layers configured using this tool.



## Moderate reports

Public comment applications can occasionally generate feedback that should not be made publicly visible. Data entered into specific fields, such as personal information, can be hidden and protected using the pop-up configuration and layer security, but sometimes entire comments need to be hidden to avoid displaying sensitive or explicit content to other users.

Features can be hidden by updating the value of a field so that it no longer meets the requirements of a filter applied to that layer in the map. The Moderate Reports tool can be used to configure which layers and fields to scan for explicit or sensitive words and phrases, and how to update the feature so that it can be filtered from the map. Features and records can be scanned with a frequency of your choosing. The tool only generates the configuration; an additional script (provided) must be run to scan the features.

1. In the **Catalog** pane, expand **Toolboxes** and **ServiceSupport.pyt**.
2. Double-click the **Moderate Reports** tool.
3. In the **Layer** parameter, click **Browse**.

The **Layer** dialog box appears.

4. Under **Portal**, click **My Content**.
5. Double-click the **Citizen Problem Reporter** folder.
6. Double-click the **CitizenProblems** feature layer.
7. Click **Citizen Problems**, and then click **OK**.

Expand General Moderation Settings. If the tool has not been run previously, start by specifying at least one moderation list.

8. In the **List Name** parameter, type a name. This value will appear in the drop-down menu for selecting the moderation list use when scanning each layer.
9. In the **Filter Type** parameter, click the drop-down arrow and choose to scan feature for words and phrases that exactly match the provided list of words and phrases.


For example, when the filter type is EXACT, if the list contains the word 'duck', the script will update the specified field when the feature contains the word 'duck', but not when it contains the word 'duckling'. When the filter type is FUZZY, the script will update the feature when either 'duck' or 'duckling' are found.

10. In the **Words and Phrases** parameter, type in a word or phrase. Provide a comma-separated list of words or phrases to scan for.

Keep in mind that deleting or changing these lists will impact all the layers that are configured to use the edited sequences.

11. If a moderation configuration already exists for the selected layer, choose to either edit an existing configuration by selecting the name of the moderation list used in the configuration, or choose the option to add a new moderation configuration.

If you choose to edit an existing configuration, a check box will appear that, when checked, will delete the existing moderation configuration for the selected layer. Alternatively, edit the moderation configuration and run the tool to overwrite the existing moderation configuration for the selected layer and moderation list.

To add a new moderation configuration, click the **Add New** button  and continue with the following steps.

12. Choose the moderation list to use to process the features in the selected layer.
13. Choose the fields that will be scanned for content that matches the words and phrases in the selected moderation list.
14. Optionally, provide a SQL query to only apply moderation to some features.  
If no query is provided, all features are processed.
15. Choose a **Field to Update** when a match is found between the value of a field and the content of a moderation list. Use the **Found Value** parameter to specify the value that should be written to this field indicating a match.
16. Click **Run**.

## Send email notifications

Many workflows require that an email be sent when a feature or record is created and updated. The Send Emails tool can be used to configure emails that can be sent based on attribute values and a schedule of your choosing. The tool only generates the configuration; an additional script (provided) must be run to actually generate and send the emails.

1. In the **Catalog** pane, expand **Toolboxes** and **ServiceSupport.pyt**.
2. Double-click the **Send Emails** tool.
3. In the **Layer** parameter, click **Browse**.

The **Layer** dialog box appears.

4. Under **Portal**, click **My Content**.
5. Double-click the **Citizen Problem Reporter** folder.
6. Double-click the **CitizenProblems** feature layer.
7. Click **Citizen Problems**, and then click **OK**.

All existing email settings for the layer will load and can be edited by updating the parameter values for each configuration. To delete a single email configuration, click the **x** next to the

configuration. To delete all the email configurations for the layer, check the **Delete all existing email configurations for this layer** check box. Execute the tool to save your changes.

8. In the **Email Template** parameter, click **Browse** to the ServiceSupport folder.
9. Click one of the HTML templates for the body of the email, and then click **OK**.


To add attributes from the triggering feature to the email, use unique string keys in the places where the values should appear in the HTML and reference these strings in the **Find** column of the **Substitutions** section of the General Email Settings along with the name of the field that contains the value to be substituted for the string key in the **Replace** column.

10. Optionally, in the **SQL Query** parameter, provide a SQL query to only trigger an email from specific features.

If no query is provided, all features will trigger emails every time the script is run, so you most likely want to use this query along with the **Field to Update** and **Sent Value** parameters to ensure that the same email isn't sent repeatedly for the same feature.

11. In the **Recipient Email Address** parameter, type an email address of the recipient, or the name of a field in the layer that contains the address of the recipient.
12. In the **Email Subject** parameter, type the subject for the email.

Like the email body provided in the HTML document, this text can contain string keys that will be swapped out for attribute values based on the **Find** and **Replace** values defined in the Email Substitutions list in the General Email Settings section.

13. In the **Field to Update** parameter, type Email. When the email has been sent for each feature. Use the **Sent Value** parameter to specify the value that should be written to this field indicating that the email has been sent. This field and value can be used in the previously described SQL query to prevent duplicate emails from being sent.
14. Configure additional emails to be sent for the currently selected layer by clicking the **Add New** button . Emails will be sent in the order they are configured.

Expand General Email Settings. If the tool has not been run previously, start by specifying the connection information for your SMTP server in the tool.

15. In the **SMTP Server** parameter, type the URL of the SMTP server used for sending emails.
16. In the **SMTP Username** parameter, type the user name required to authenticate to the SMTP server. This is not required if authenticating through a port.
17. In the **SMTP Password** parameter, type the password required to authenticate to the SMTP server. This is not required if authenticating through a port.
18. In the **From Address** parameter, type the address from which the emails should be sent.

19. In the **Reply Address** parameter, type the address that should be used for any replies to the email message.
20. Check or uncheck the **Use TLS** check box to enable or disable TLS.
21. In the **Email Substitutions** section, type **Find** and **Replace** values. Swap out one piece of text for another in the outgoing email subject or body. Anywhere a value in the **Find** column is found in the email subject or body, it will be replaced with the corresponding value from the **Replace** column. If the value in the **Replace** column is a field in the layer, the **Find** value will be replaced with the value in that field in the triggering feature.

For example, to add the ID of a feature from the REQUESTID field to the email subject, include a piece of text such as {ID} in the configured Email Subject, and add {ID} to the **Find** column and REQUESTID to the **Replace** column in this parameter. All specified substitutions are applied to all emails configured for all layers so, while the Find values can be any piece of text, it's suggested that you use something that is clearly variable-like and unlikely to appear elsewhere in the messages in a literal form.

Keep in mind that deleting or changing these settings will impact all the emails for all the layers configured with this tool.

22. Click **Run**.

## Enrich reports

Reports made in public comment applications can be enriched with information about the report location. This information can then be used to efficiently direct the report to the correct person or agency responsible for its resolution.


The Enrich Reports tool can be used to configure which attribute values to calculate from a coincident or intersecting set of features at a regularly scheduled interval of your choosing. Note that the tool only generates the configuration; an additional script (provided) must be run to update the features based on intersecting features.

1. In the **Catalog** pane, expand **Toolboxes** and **ServiceSupport.pyt**.
2. Double-click the **Enrich Reports** tool.
3. In the **Layer** parameter, click the browse button.

The **Layer** dialog box appears.

4. Under **Portal**, click **My Content**.
5. Double-click the **Citizen Problem Reporter** folder.
6. Double-click the **CitizenProblems** feature layer.
7. Click **Citizen Problems**, and then click **OK**.

8. In the **Enrichment** parameter, if an enrichment configuration already exists for the selected layer, choose to either edit an existing configuration by selecting the configuration from the drop-down list, or choose the option to add a new enrichment configuration.

If you choose to edit an existing configuration, a check box will appear that, when checked, will delete the existing enrichment configuration for the selected layer. Alternatively, edit the configuration and run the tool to save the changes. To add a new enrichment configuration, click the **Add New** button  and continue with the following steps.

9. Choose the polygon feature layer that will provide the enriching attribute values by either choosing a layer from the active map, or by browsing to your hosted content and choosing a polygon feature layer.
10. In the **Source Field** parameter, click the drop-down arrow and choose a field from the enrichment layer.
11. In the **Target Field** parameter, click the drop-down arrow and choose a field from the **CitizenProblem** feature layer. The script will not process features that already have a value in the target field.
12. In the **Priority** parameter, type a value. Specify the priority that should be given to this enrichment configuration relative to the other configurations for the **CitizenProblem** feature layer. Enrichment configurations for a layer that have a lower priority value will override enrichment configurations with a higher value.

For example, a layer has two enrichment configurations that use the same target field, but one has a priority value of 1 and the other a priority of 2. If the configuration with priority 1 does not produce a valid value for the field, the field will be populated with the value produced from the configuration with priority 2.

13. Click **Run**.

## Set up Task Scheduler

Use Windows Task Scheduler to schedule the script to generate report IDs when a feature or record is created, moderate reports when feedback contains inappropriate language, send email notifications when a feature or record is created or updated, or enrich reports. All the tools in this toolbox share a common configuration file and execution script, so only one scheduled task is required to automate running all the associated processes.

1. Open the Task Scheduler on the computer that is hosting the scripts.
2. Click **Action** > **Create Task** and name your task.
3. Click the **Action** tab and click **New**.
4. Set **Action** to **Start a Program**.

5. Browse to the location of your Python 3 installation (for example, <default directory>\C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3\python.exe).
6. In the **Add arguments** text box, type the name of the script (servicefunctions.py).
7. In the **Start in** text box, type the path to the folder where your script is and click **OK**.
8. Click the **Trigger** tab, click **New**, and set a schedule for your task.
9. Click **OK**.

When the trigger occurs, the scripts will begin scanning the configured layers and, for each one, processing (in order) configurations for generating identifiers, enriching reports, moderating reports, and sending emails.

In this guide, you learned how to configure and extend the Citizen Problem Reporter solution template to meet your organization's needs by adding new problem categories; modifying problem types, responsible agencies, and satisfaction survey; adding an email satisfaction survey to the Citizen Problem Manager application; and extending the Citizen Problem Reporter solution template using the generate report IDs, moderate reports, send email notifications, enrich reports, and automate scripts using Task Scheduler.

# Additional resources

- [State & Local Government solutions](#)
- [Planning and Community Development](#)
- [Assessment, Tax, and Land Records](#)
- [Real-Time, Integrated Emergency Management Tools](#)
- [Law Enforcement and National Security](#)
- [Fire, Rescue, and Emergency Medical Services](#)
- [Emergency Call Taking, Dispatch, and Records Management](#)