

Neighborhood Brownfield Inventory Toolkit: Unlocking Free Mapping Software



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Neighborhood Brownfield Inventory Toolkit

Lawrence Hoffman, Senior Manager of GIS and Data Services Groundwork USA

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I. INTRODUCTION

When planning a resident-led brownfield inventory, using accessible and user-friendly tools is crucial since participants will have varying degrees of experience and comfort with technology. Google provides a suite of powerful and free tools that can be leveraged to create a form for collecting data during a resident-led brownfield inventory. By using Google Forms, participants can easily gather information about brownfield sites in their community, contributing to a comprehensive inventory that can inform environmental initiatives and community development efforts. Google My Maps can then be used to map and share the inventory results.

This guide will walk you through the process of creating a resident-led brownfield inventory form using Google tools. We will focus on utilizing Google Forms, which provides a simple and intuitive interface for designing and administering surveys. By collecting data through a form, residents can systematically capture key attributes of brownfield sites, ensuring a standardized approach to data collection. Additionally, the integration of Google Maps and cloud storage solutions such as Google Drive can enhance the visualization and accessibility of the collected data.

Whether you are an individual resident, a community organization, or a local government entity, this guide will equip you with the knowledge to create a user-friendly and effective brownfield inventory using free Google tools. The methods shared in this tutorial are intended to create a neighborhood-scale brownfield inventory. Conducting a city-wide inventory would require more robust tools and would necessitate more intensive coordination and planning.

II. Reasons To Conduct A Resident-Led Brownfield Inventory In Your Neighborhood

A brownfield inventory is a systematic process of identifying and documenting abandoned or underutilized properties with potential environmental contamination. It involves collecting data on the location, characteristics, and potential risks of these sites, which can inform remediation efforts, land use planning, and community development initiatives. Brownfield inventories can serve as a valuable resource for understanding and addressing brownfield challenges and promoting sustainable revitalization.

A resident-led brownfield inventory describes the process by which residents (as opposed to municipalities or third party consultants) inventory sites in their own neighborhood. A resident-led brownfield inventory can be a powerful tool that enables community members to actively participate in identifying and addressing environmental issues in their neighborhoods. By organizing a resident-led brownfield inventory, residents can contribute to the improvement of their local environment, advocate for remediation efforts, and promote sustainable community development. Here are some compelling reasons why residents should consider undertaking a resident-led brownfield inventory:

1 Community Capacity-Building:

Conducting a brownfield inventory builds residents capacity to take an active role in identifying and addressing environmental issues in their neighborhoods. It allows them to contribute to the well-being and sustainability of their community.

2 Raise Health and Safety Concerns:

Brownfields can pose risks to public health and safety. Conducting an inventory helps residents identify areas that may have hazardous substances or conditions, such as abandoned industrial sites or polluted land. By documenting these areas, residents can advocate for cleanup and remediation to mitigate health risks.

3 Community Planning and Decision-Making:

Residents conducting a brownfield inventory gain a deeper understanding of the neighborhood's land use and environmental conditions. This knowledge can inform community planning and decision-making processes, enabling residents to advocate for land-use policies that prioritize environmental protection, sustainable development, and community well-being.

4 Collaboration and Networking:

Conducting a brownfield inventory can bring residents together, fostering collaboration, and building networks within the community. It encourages residents to share information, resources, and experiences related to brownfield identification, assessment, and remediation. Collaborative efforts can lead to more effective advocacy and better environmental outcomes that benefit the community.

5 Data-Informed Advocacy:

A resident-led brownfield inventory generates valuable data that can support evidence-based advocacy efforts. The collected information can be used to demonstrate the extent and impact of brownfields in the neighborhood, making a compelling case for governmental support, funding, and intervention.

6 Environmental Justice:

Brownfields are disproportionately located in communities of color and low-income neighborhoods. Conducting a brownfield inventory allows residents to address environmental justice concerns by highlighting inequitable distribution of environmental hazards and advocating for solutions that allow historically disadvantaged communities to realize the environmental, health, and economic benefits of development.

III. BUILD A BROWNFIELD INVENTORY FORM USING FREE GOOGLE SOFTWARE

Step-by-step tutorial for conducting a resident-led brownfield inventory using personal devices, free survey and mapping software, and publicly available datasets.

1

Create a Google Account:

Sign up for a Google Account. Google's free suite of online software tools includes everything you need to build out your inventory.

2

Create a Project Folder:

Open Google Drive and create a new folder called "Brownfield Inventory" to organize your project files.

3

Create an Inventory Form:

Design and customize your form by adding relevant questions about the brownfield inventory.

4

Connect Form Responses to a Spreadsheet:

Link the form to a Google Sheet by selecting the "Responses" tab in the form editor. Whenever someone submits a response to the form, it will be automatically recorded in the connected Google Sheet.

5

Conduct resident-led field inventory:

Train and prepare residents to conduct an in the field brownfield inventory using the Google Form created in previous steps.

6

Map and share inventory data:

In the Google My Maps editor, add a new layer and choose the "Import" option and use submitted addresses as the location information for each site. Share responses with residents and plan strategic uses of the newly created dataset.

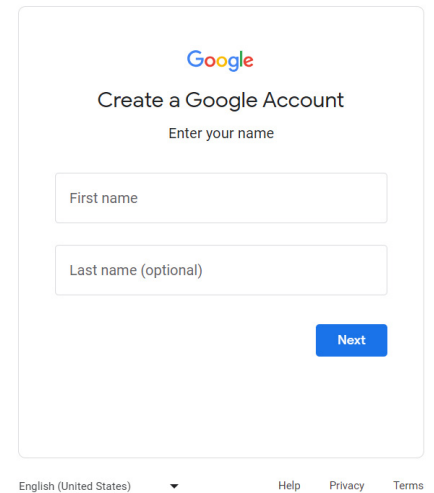
1

SET UP A GOOGLE ACCOUNT

If you don't already have one, you'll need to set up a Google account to follow along with this tutorial. Contemporary Google accounts come with many tools associated with common computing tasks like word processing, spreadsheets, and web-based cloud storage. In this tutorial we will use Google Drive cloud storage to store our survey, data and map, Google Forms to build our survey, Google Sheets to store our survey responses, and Google My Maps to put form responses on the map.

To set up a Google account and access Google Drive cloud storage:

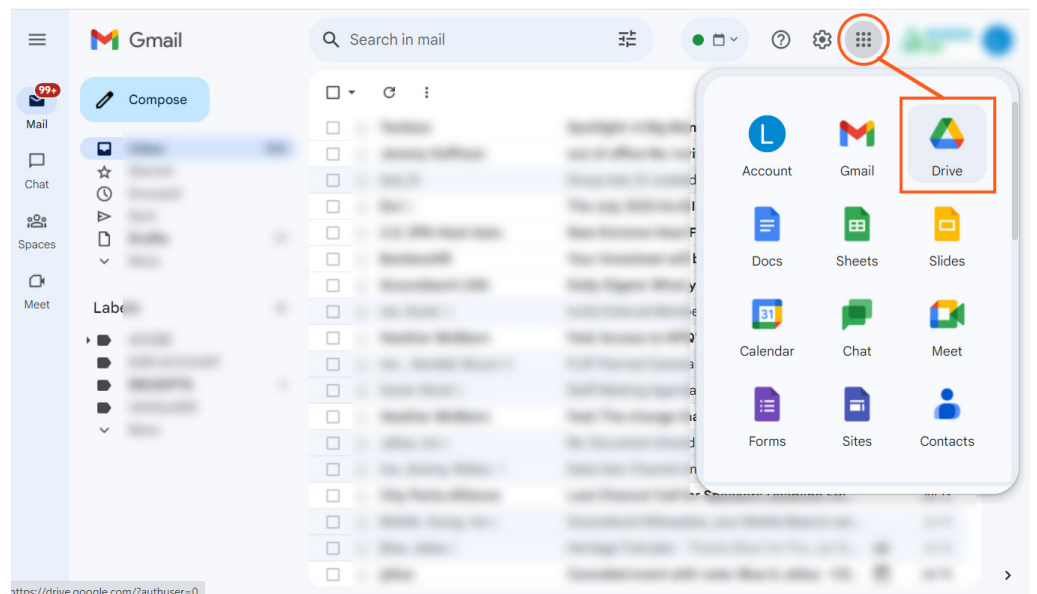
- 1 Go to the [Google Account Creation Page](#): Open a web browser and navigate to the Google Account creation page at accounts.google.com/signup.
- 2 Provide Personal Information: Fill in the required fields, including your first and last name, desired email address (username), and password. You may also need to provide a phone number for account verification purposes.
- 3 Complete the Setup Process: Follow the on-screen prompts to complete the setup process, including accepting the terms of service and privacy policy.
- 4 Verify Your Account: Depending on your chosen verification method (phone or email), you will receive a verification code. Enter the code to verify your account.



- 5 Access Google Drive:



Once your Google account is set up, you can access Google Drive by visiting drive.google.com or through the Google Drive mobile app. It can also be accessed, along with all of the other applications in Google's software suite via the menu in Gmail in the top right corner of the web interface.



- 6 For additional support setting up a Google account visit Google's Help Center: [Create a Google Account](#)

CREATE A PROJECT FOLDER

Now that you've created and accessed your drive space, we'll create a folder to store all of our tools.

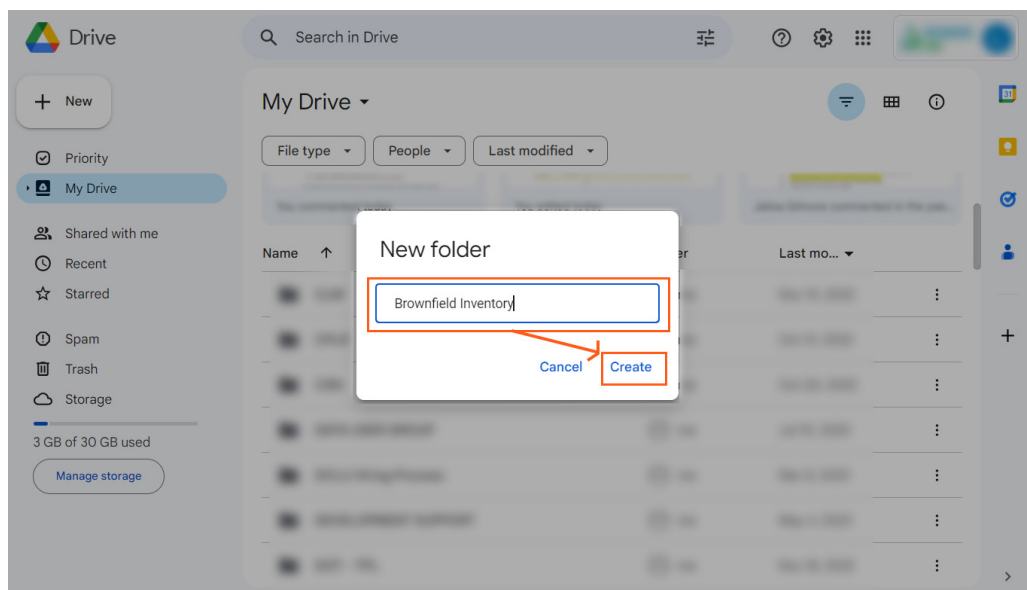
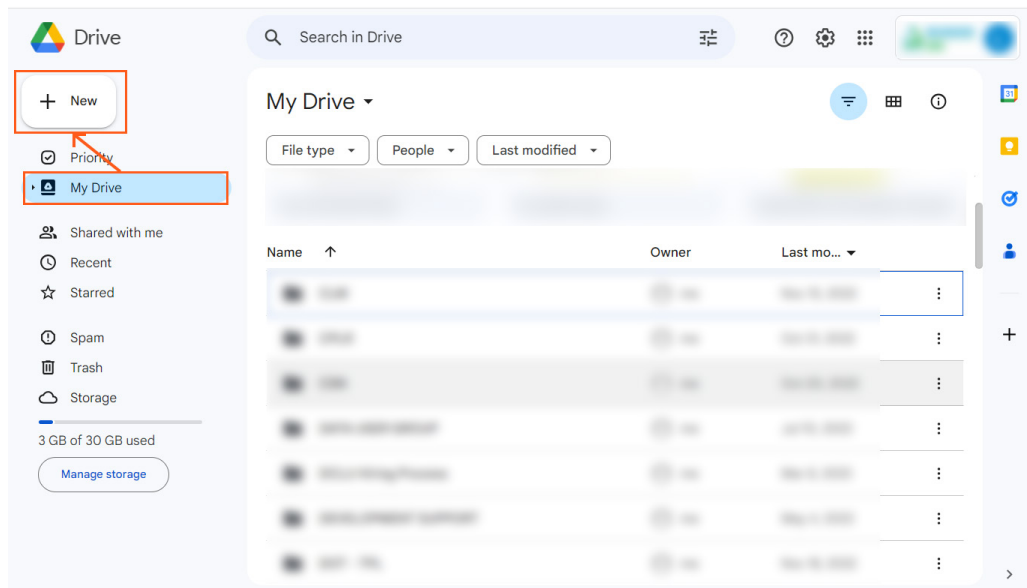
Create project folder in Google Drive:

1 In Google Drive, on the top left-hand side of the screen, locate the "My Drive" section. This is where all your files and folders are stored. Unless configured otherwise, your Google Drive will default open to your "My Drive" storage. Click on the "My Drive" section to open it.

2 In the top-left corner of the screen, you'll see a "+ New" button. Click on it to open a drop-down menu.

3 From the dropdown menu, select "New Folder." You will then be prompted to name the new folder. Name it "Brownfield Inventory." Click "Create" and the new folder will appear in your MyDrive storage.

4 Click on the folder to enter it.



CREATE A GOOGLE FORM

Next we will create a Google Form in your new folder. This form is what you will use in the field to capture information about brownfields. First, we'll create it and then we'll design the contents of the form.

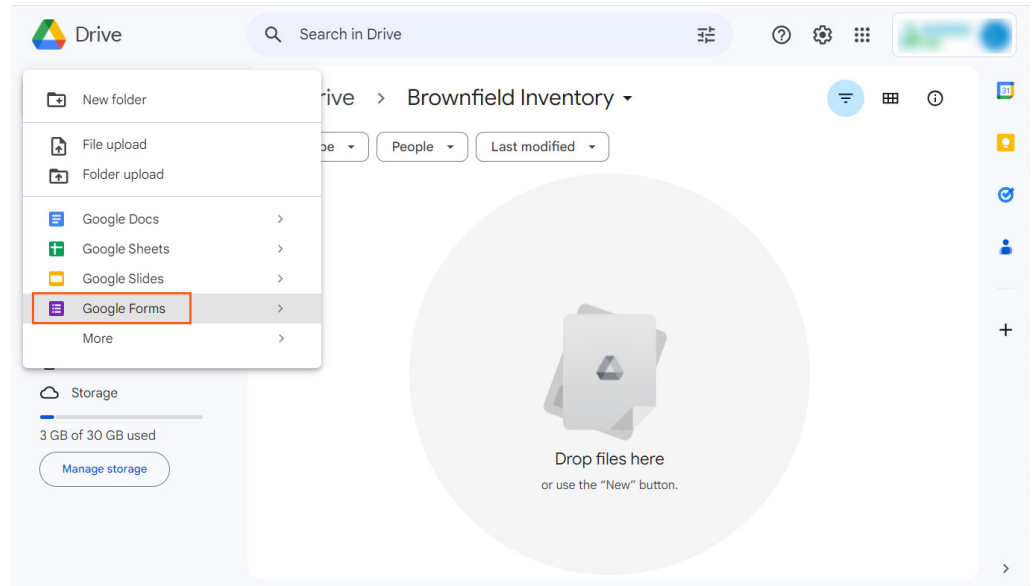
Create a Google Form within the 'Brownfield Inventory' folder:

1 Once inside the 'Brownfield Inventory' folder, click on the "+ New" button in the top-left corner of the screen.

2 From the dropdown menu, select "Google Form." If you don't see "Google Form" in the dropdown, select "More" to expand the options. Clicking "Google Form" will open a new tab containing a blank Google Form.

3 Change the form title from "Untitled form" to "Brownfield Inventory." Once you rename the form, it will be automatically saved within the

'Brownfield Inventory' folder in your Google Drive. Note that the form will not save until you edit it, and, as a result you will not see it in your folder until after you make your first edits. When using tools in the Google Suite all files autosave after editing.



CHOOSE FORM CONTENT

Before building the form, it's important to consider what information will be most important to collect about each site. Consider that all collected data must be visibly discernible from the sidewalk outside the brownfield in question. Below are some brownfield characteristics that you might want to collect in your inventory. The actual list should be formed in consultation with the residents and other stakeholders participating in the inventory.

1 **Surveyor Name:**

- Description: Collect surveyor names so you know who recorded what and can provide specific feedback where necessary.
- Type: Short answer
- Required: Yes

2 **Site Name:**

- Description: Provide a name or description for the brownfield site (e.g., "Old Shell gas station"). This should not be a required field but might be a useful piece of qualitative data to ensure the form submission is attached to the correct property.
- Type: Short answer
- Required: No

3 **Site Address:**

- Description: Provide the address of the brownfield. This must be a required field as it is the geographic information that will be used to map the data once it is collected.
- Type: Short answer
- Required: Yes

4 **Site Coordinates:**

- Description: There is not a simple way to collect GPS coordinates directly to a Google Form from a mobile device, so these coordinates would have to be recorded using another GPS app and then manually entered into the form. This should not be a required field as it will be too technical for most participants to capture these coordinates and manually enter them.
- Type: 2 Short answers, one for Latitude and one for Longitude.
- Validation: Set response validation to 'Number' 'is number'.
- Required: No

5 **Use History:**

- Description: If it is apparent from outside the facility, document the previous land use or historical activities on the site.
- Type: Short answer
- Required: No

6 **Vacant:**

- Description: does the site appear to be vacant or does it appear to be occupied?
- Type: multiple choice (Yes/No/Unclear)
- Required: Yes

7 **Structure:**

- Description: is there a structure / building on the site?
- Type: multiple choice (Yes/No)
- Required: Yes

8 **Accessibility and Hazards: Security**

- Description: Surveyors will check all that apply for this question. Does the site appear to be secure to unauthorized access? Are there barriers, fencing? Are there signs warning of hazardous materials? Does it appear that the site has been entered or used in an unauthorized manner?
- Type: checkboxes (barriers or fencing/warning signs/unauthorized entry)
- Required: No

9 **Large Scale Dumping**

- Description: Brownfields are often sites for unauthorized dumping. Document if there is dumping occurring on the site. Note that dumping is much larger scale than incidental litter.
- Type; multiple choice (Yes/No)
- Required: No

10 **Upload a Photo:**

- Description: Photos of the site, structures, or visible contamination.
- Type: File Upload
- Required: No

11 **Additional Notes:**

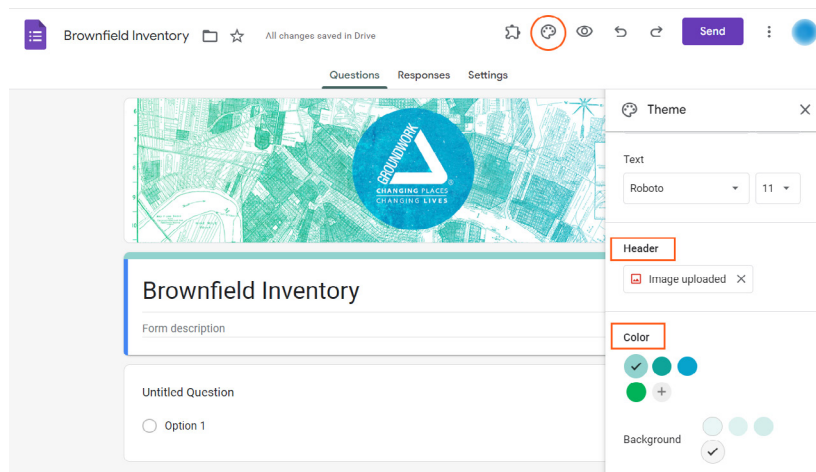
- Description: is there anything else important to know about the site?
- Type: Paragraph
- Required: No

CONFIGURE FORM

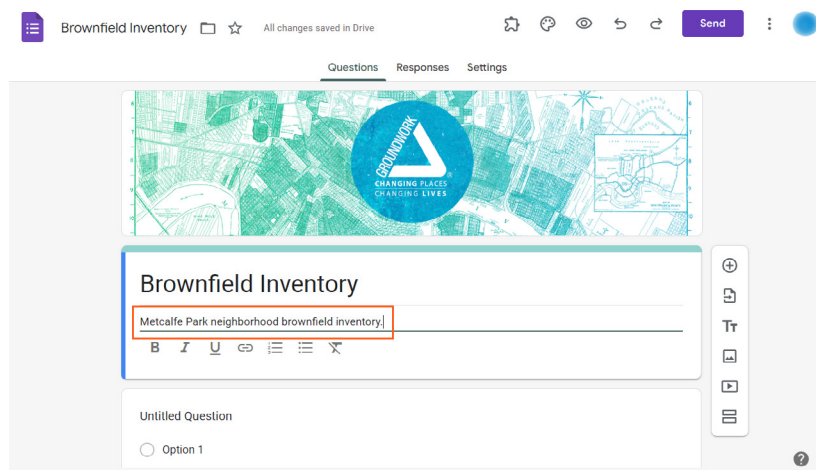
Once you've collaborated with residents to determine what information you'd like to collect about each site, it's time to build your form to collect the desired information.

To build your form with the desired questions, follow these steps:

- Edit Form Theme**
 Change the color theme of your form and add a banner image so participants know they are using the right form.

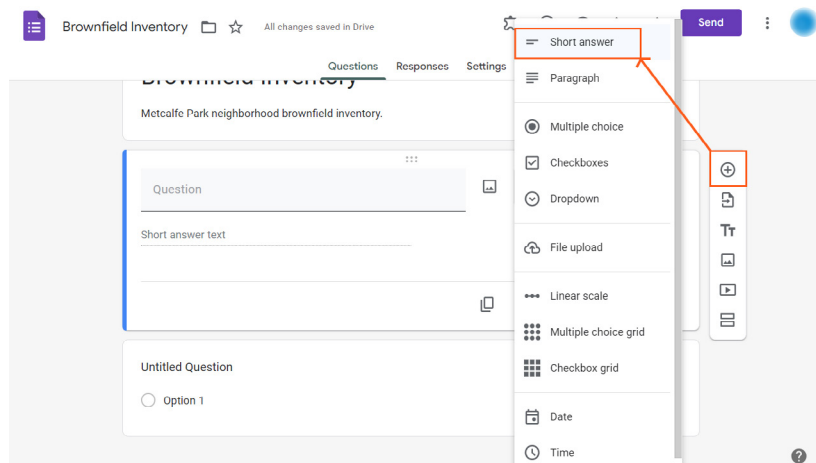


- Add a Form Description**
 Provide a description of the project and a purpose for the form in the 'Form description' field just below the form title. This will guide surveyors and establish the context for the survey questions.



- Add a new question**
 Click on the "+ Add question" button, located on the right side of the form builder. In the pictured example, we will set up the address field as it is required in order to map brownfield points.

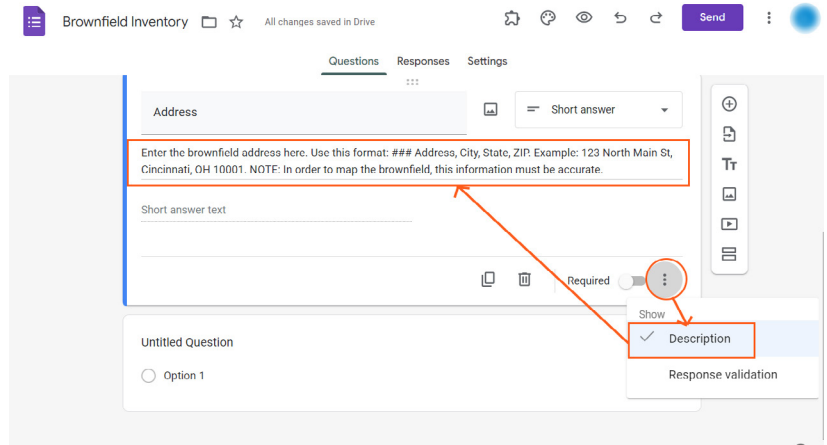
- Choose a question type**
 - Select the question type that best suits your needs from the available options (e.g., multiple choice, short answer, dropdown, etc.).
 - The address field will be set up as a "Short answer" question.



5

Enter the question text

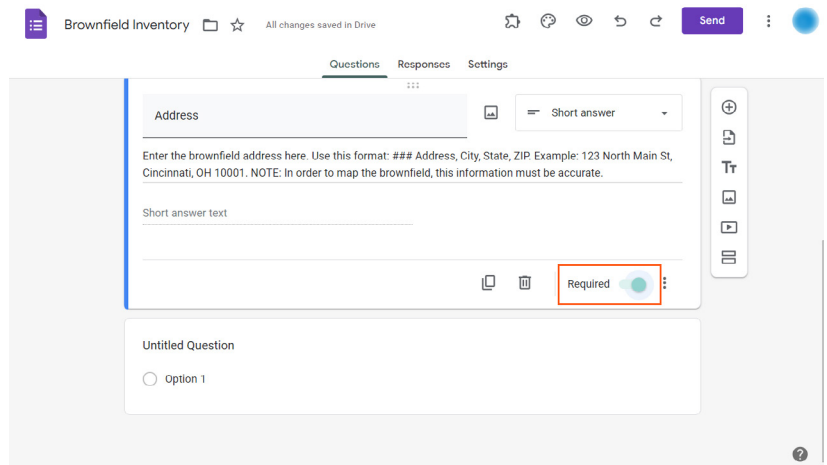
- a. In the new question, enter your question text where it says 'Untitled Question.' We'll enter 'Address' in that field. It's useful to keep this field as brief as possible and then add context in the description.
- b. You can also provide additional instructions or clarifications in the "Description" field, if needed (Example: Are you able to tell what this site was previously used for?). You will have to add this field manually by entering the menu in the bottom right of the question (three vertical dots) and selecting 'Description'.



6

Customize the question options (based on question type)

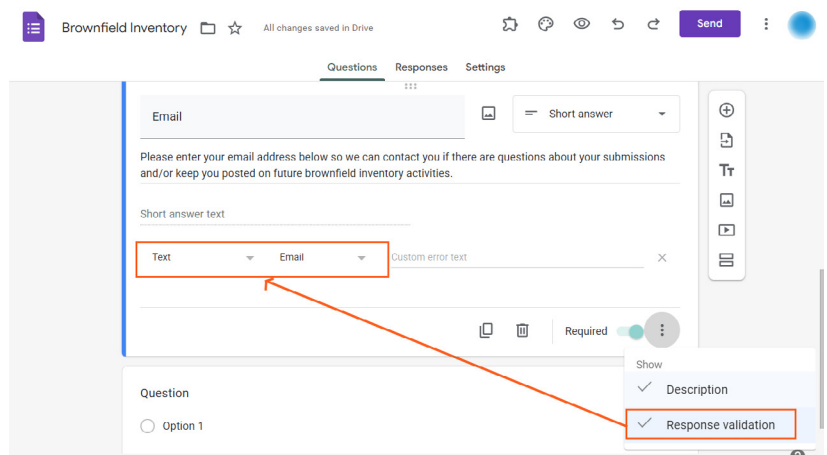
- a. Depending on the question type you selected, different options will be available for customization.
- b. For example, if it's a multiple-choice question, you can enter the answer choices in the provided fields.
- c. Adjust any additional settings specific to the question type, such as marking options as "Required" or enabling "Other" as an answer choice.
- d. In our "Address" example, we'll set the question to be a required entry since any form entries need to have an address to be mapped.



7

Add Response validation (optional)

- a. In some cases you will want to limit responses to certain types of formats like numbers or email addresses.
- b. You can set up data validation in the settings menu in the bottom right (three vertical dots). Select the menu, choose 'Response validation' and configure the necessary parameters.
- c. The "Address" example does not require 'Response validation.' But if you were requesting respondent email addresses you could use response validation to ensure only valid email addresses were submitted.



8

Repeat for additional questions

For each additional question repeat the above steps. Use the question template from the previous section as a guide if you have questions about configuring each new question.

9

Review and finalize your form

After adding all the desired questions, review your entire form for accuracy, clarity, and logical flow. Reorder questions by clicking and dragging the six dots in the top center of each question pane.

This screenshot shows the form editor interface for 'Brownfield Inventory'. The title is 'Brownfield Inventory' with a subtitle 'Metcalfe Park neighborhood brownfield inventory.' Below the title is a question pane for an 'Email' field. The question text is 'Please enter your email address below so we can contact you if there are questions about your submissions and/or keep you posted on future brownfield inventory activities.' The field type is 'Text' and the input type is 'Email'. There is a 'Required' toggle switch which is turned on. A red box highlights six dots in the top center of the question pane, with a red arrow pointing down to the question text. The interface includes a top navigation bar with 'Questions', 'Responses', and 'Settings' tabs, and a 'Send' button. A right-hand sidebar contains icons for adding, deleting, and reordering questions.

10

Test the form in the field before sharing it with others.

- Click the eye icon in the top right of the form editor to open a preview of the form.
- In the preview, click through and enter responses for each question.
- Submit the response.
- Note any issues or opportunities for improvement you encounter and correct them.

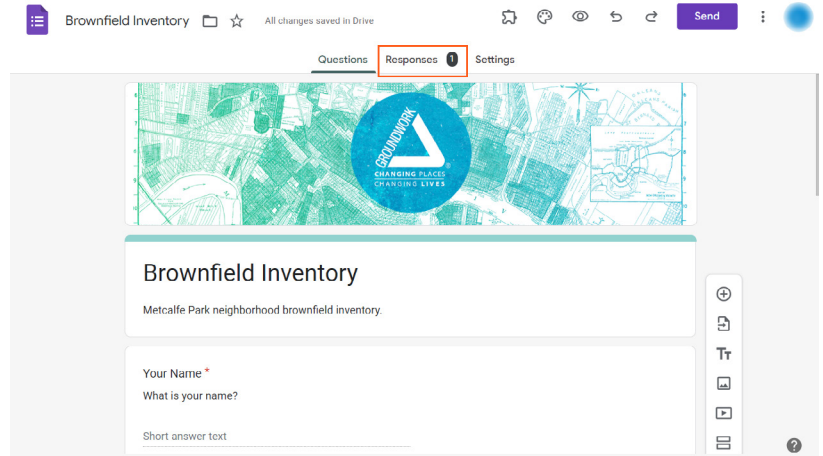
This screenshot shows the form preview interface for 'Brownfield Inventory'. The title is 'Brownfield Inventory' with a subtitle 'Metcalfe Park neighborhood brownfield inventory.' Below the title is a question pane for 'Your Name *' with the text 'What is your name?'. The field type is 'Text' and the input type is 'Short answer text'. The 'Required' toggle switch is turned on. The interface includes a top navigation bar with 'Questions', 'Responses', and 'Settings' tabs, and a 'Send' button. A right-hand sidebar contains icons for adding, deleting, and reordering questions. A red circle highlights the eye icon in the top right corner of the form editor, indicating the action to open the preview.

CONNECT FORM RESPONSES TO A GOOGLE SHEET

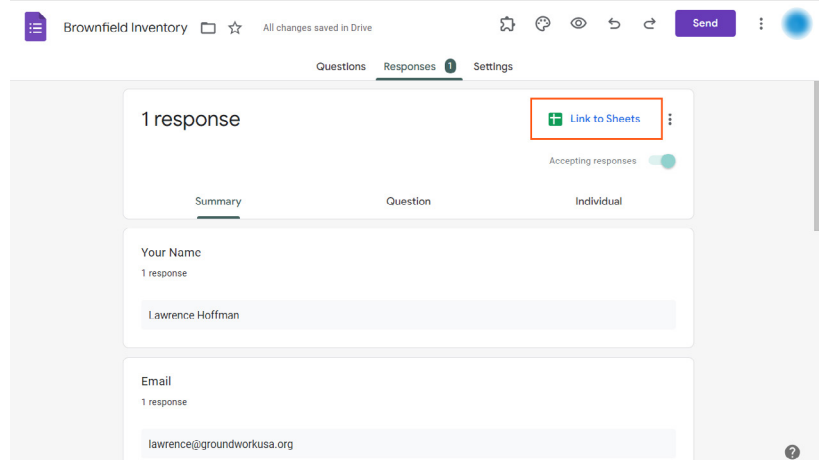
After you've set up the form, it's important to consider where the form responses will be stored. By default, the form responses are stored in the form. In order to work with responses more easily and to put them on a Google My Map, you'll need to send your form responses to a Google Sheet (Google's version of a spreadsheet).

To send your inventory responses to a Google Sheet, follow these steps:

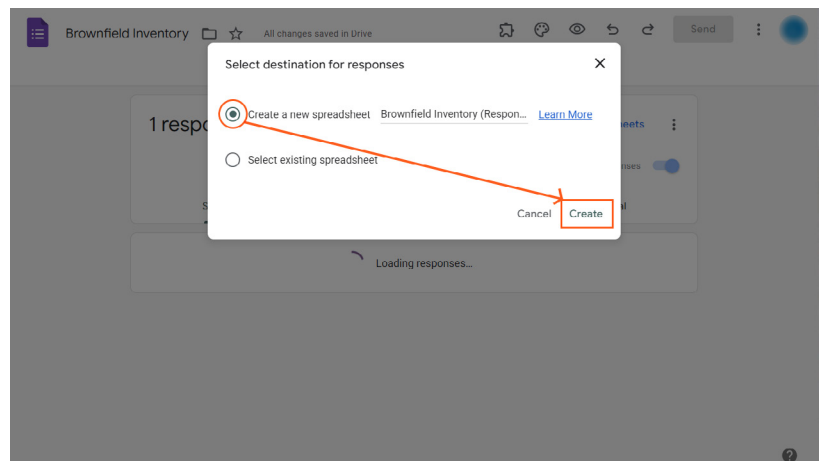
1 Inside your inventory form, access the "Responses" tab at the top-center of the Google Form editor.



2 In the top-right of the 'Responses' tab, click on the Google Sheets icon labeled 'Link to Sheets.'



3 Choose 'Create a new spreadsheet' and select the 'Create' button. This will create a new spreadsheet in the 'Brownfield Inventory' folder containing all form responses. Each column is a question and each row is a response.



4

The new spreadsheet will automatically open when you click create. Review it and familiarize yourself with how the data is laid out. Note that each column header contains the question text from the form. Individual responses will populate in the descending rows as they are submitted. Images and other file uploads are saved in a separate folder, but the url address to their location in Google Drive is stored in this response sheet.

Timestamp	Your Name	Email	Brownfield Address	Large-Scale Dumping	Site Photo
7/14/2023 16:00:35	Lawrence Hoffman	lawrence@groundworkus	2001 North James Aven	Yes	https://drive.google.com/open?id=1X0ZpXopNk

The 'Brownfield Inventory' form is now connected to a response sheet. Your form is now ready for surveying! Next we'll provide some guidelines for leading survey outings and then demonstrate how to map your results.

IV. TRAINING SURVEYORS AND PLANNING OUTINGS

1

SURVEYOR TRAINING

Once you have created the Brownfield Inventory Form using Google Forms, it is time to train surveyors on how to effectively use the form in the field. Proper training ensures consistent and accurate data collection, enhances surveyors' understanding of brownfield characteristics, and promotes a standardized approach to inventorying brownfield sites.

Here are some steps to consider when training surveyors to use the Brownfield Inventory form:

1 Familiarize Surveyors with the Form:

- a. Provide surveyors with access to the Brownfield Inventory Form and ensure they are familiar with its structure, question types, and required fields. Walk them through the form and explain the purpose of each question.
- b. Define Brownfield Characteristics: Educate surveyors about the key characteristics they should observe and document while conducting the inventory. Discuss factors such as site address, site coordinates (if applicable), site name or description, use history, vacant status, presence of structures, accessibility and hazards, large-scale dumping, and any additional notes. Provide examples and clarify any questions they may have regarding these characteristics.
- c. Explain the Importance of Data Quality: emphasize the significance of collecting accurate and reliable data. Discuss the potential uses of the collected information, such as advocating for environmental remediation, influencing policy decisions, or raising awareness. Highlight how high-quality data can contribute to the success of these endeavors.

2 Demonstrate Field Data Collection Techniques:

- a. Conduct a hands-on training session where surveyors can practice collecting data in a field-like setting. Demonstrate how to complete the form accurately, ensuring surveyors understand how to input information using their mobile devices or paper-based methods if necessary. Emphasize the importance of capturing complete and relevant information for each brownfield site.
- b. Note that there is no offline option for Google Form data collection. This means participants will need a cellular connection or wifi hotspot in the field.
- c. Save form to device home screen: Recommend participants save the link to their mobile device's home screen. This will allow the link, which must open in a web browser like Google Chrome, or Apple's Safari, to look and feel more like a natively installed application. It will be easy to find and open in the field.

3 Discuss Safety Precautions:

Ensure surveyors are aware of any potential safety hazards they may encounter while surveying brownfield sites. Provide guidelines and safety protocols to follow, such as avoiding trespassing, and reporting any immediate safety concerns to relevant authorities. Safety should always be a top priority during the inventory process.

4 Offer Ongoing Support:

- a. Channels of Communication: Establish channels of communication to provide ongoing support to surveyors throughout the inventory process. Encourage them to ask questions, seek clarification, or report any challenges they encounter. Consider creating a dedicated communication platform, such as a group chat or email thread, where surveyors can connect and share their experiences, insights, and best practices.
- b. Regular Check-ins: Schedule regular check-ins with surveyors to monitor progress, address any issues, and provide additional guidance if needed. Consider organizing refresher training sessions to reinforce proper data collection techniques, discuss any updates or changes to the form or process, and share success stories or lessons learned from the inventory efforts.

PLAN GROUP SURVEY OUTINGS

When planning brownfield inventory outings with residents, it is important to consider various factors, such as route planning, resident availability, and the provision of childcare when possible. Here are some tips to facilitate successful and inclusive inventory outings:

Here are some steps to consider when training surveyors to use the Brownfield Inventory form:

- 1 Determine Resident Availability:**
Before scheduling inventory outings, conduct surveys or community meetings to understand residents' availability and preferences. Consider their work schedules, family commitments, and other obligations that may affect their participation. Choose dates and times that accommodate a wide range of residents to ensure inclusivity.
- 2 Plan Routes in Advance:**
Identify a list of potential brownfield sites to visit and plan the inventory route accordingly. Optimize the route to minimize travel time and maximize the number of sites that can be surveyed during the outing. Consider the geographic distribution of brownfield sites to ensure residents from different areas have the opportunity to participate.
- 3 Provide Transportation Options:**
Recognize that not all residents may have access to transportation. Consider providing transportation options, such as arranging buses or vans, to ensure that everyone who wants to participate can join the inventory outing. Collaborate with local transportation services or seek support from community organizations to make transportation arrangements more accessible.
- 4 Conduct Route Previews:**
Before the actual inventory outing, conduct a route preview with a small group of residents or volunteers. This allows for a preliminary assessment of the route's feasibility and identification of any potential challenges or safety concerns. Make necessary adjustments to the route based on feedback received during the preview.
- 5 Offer Childcare Services:**
Recognize that childcare responsibilities may hinder some residents from participating in inventory outings. Whenever possible, consider providing on-site childcare services during the outings. Collaborate with local organizations, such as daycare centers or community centers, to arrange supervised activities for children, allowing parents or guardians to fully engage in the inventory process.
- 6 Acknowledge and Celebrate Participation:**
Recognize and celebrate the residents' contributions to the brownfield inventory efforts. Express gratitude for their involvement and acknowledge their dedication to improving the community. Consider organizing a post-inventory gathering or event to share the findings, discuss next steps, and celebrate the collective efforts of the residents.

By carefully planning brownfield inventory outings with residents, considering their availability, and addressing logistical challenges, you can foster meaningful community engagement and promote a sense of ownership and pride in the brownfield revitalization process. Through collaboration and active involvement, residents can play a vital role in transforming brownfield sites into vibrant and sustainable community spaces.

V. MAPPING AND SHARING INVENTORY RESULTS

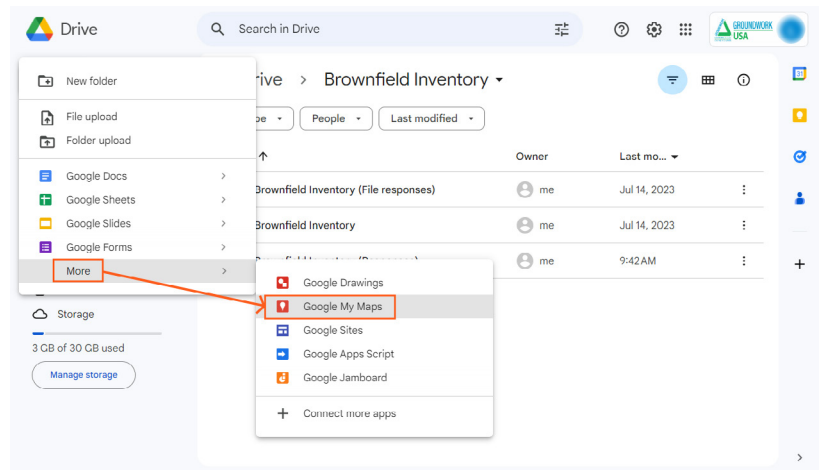
1

MAP INVENTORY RESPONSES

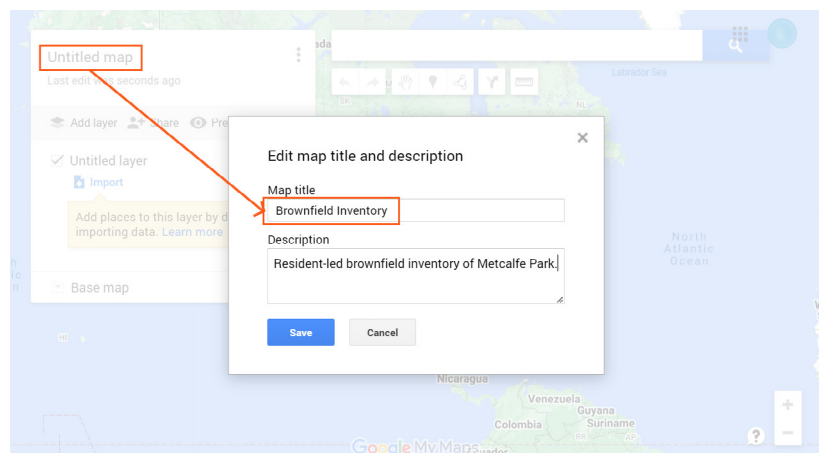
A useful way to visualize the information collected in the inventory form is to put it on a map. Mapping responses facilitates spatial analysis, issue awareness, and adds clarity to decision-making processes. It provides a spatial context that enriches understanding, supports effective communication, and promotes collaborative efforts in addressing brownfield issues.

Follow the steps below to put the resident-collected survey response on a Google My Map:

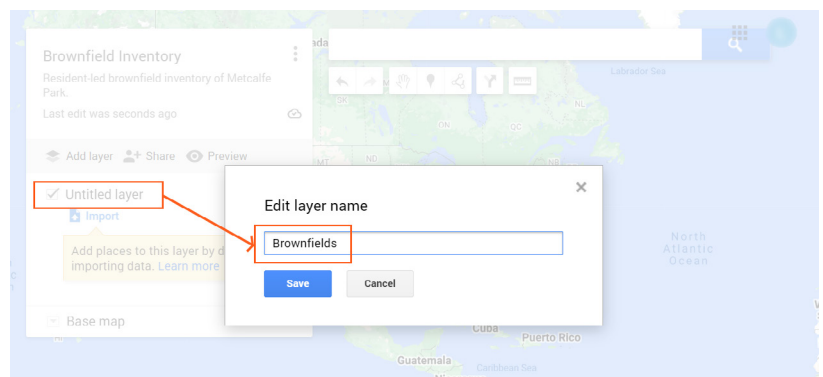
1 In your 'Brownfield Inventory' Drive folder, create a new Google Map by clicking on the "+ New" button and selecting "Google My Maps" from the drop-down menu. If you do not see this option in the dropdown menu select 'More'.



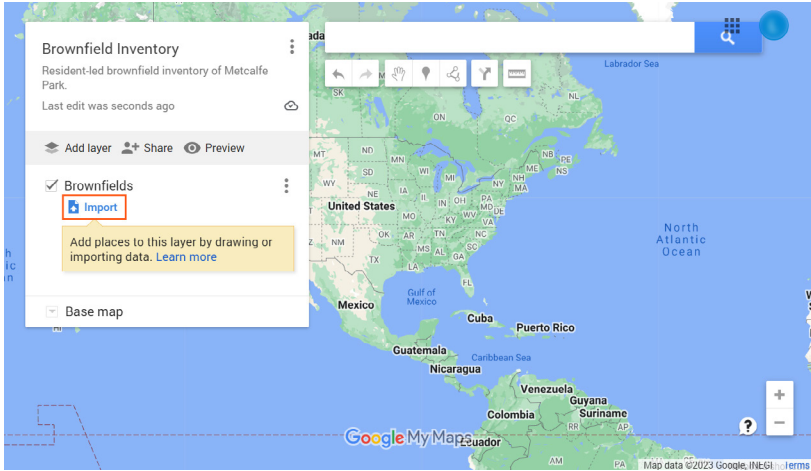
2 Your new map will open in a new window. In the Google My Maps editor, click on the "Untitled map" field at the top left corner and rename it as "Brownfield Inventory Map".



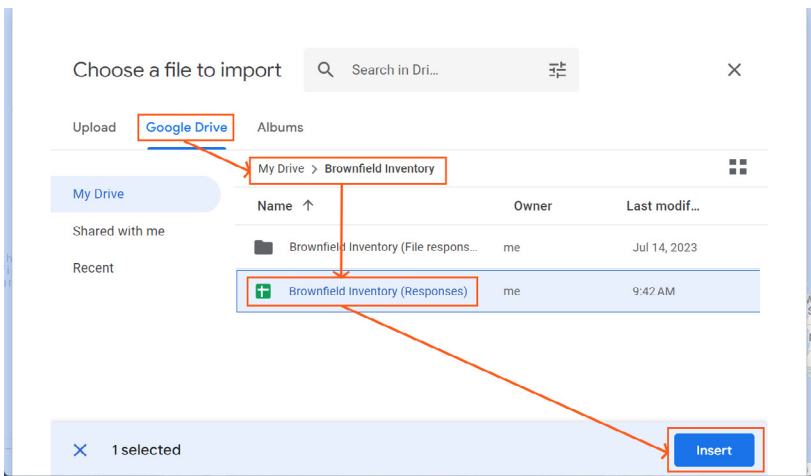
3 By default there will be an 'Untitled layer' in the map. Rename that layer 'Brownfields'. We will import our form responses to this layer.



4 Under the title, select the 'Import' button. This will open the import window.

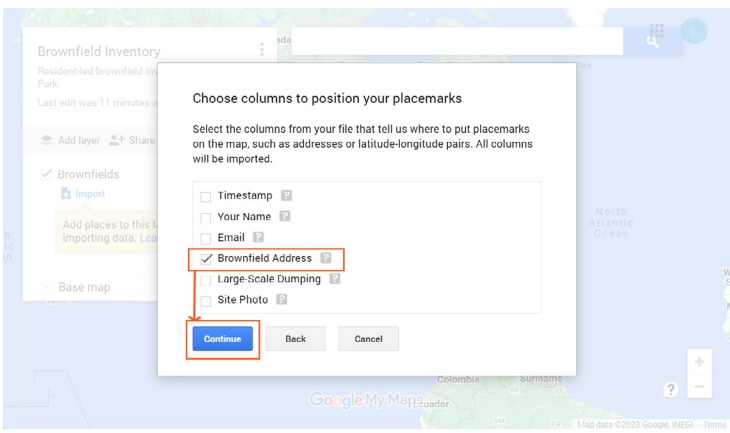


5 In the import window, select the 'Google Drive' tab in the top left and navigate to your form response sheet. Select it and click, 'Insert'.

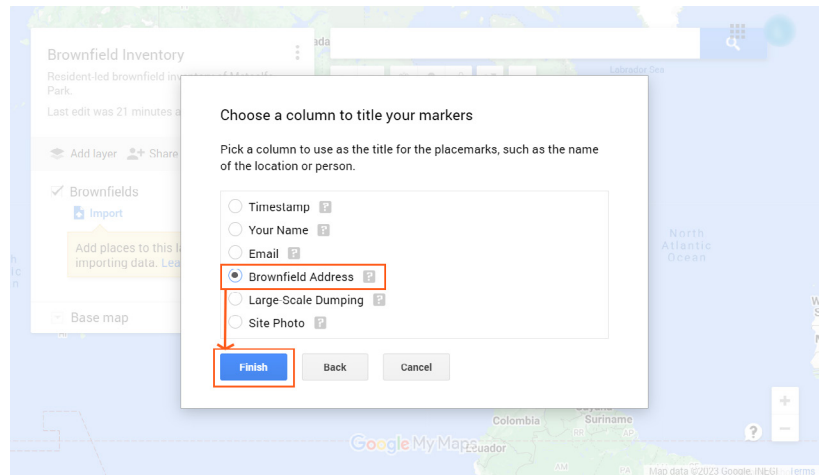


6 You are now prompted to select the field (or column) from the form response sheet that contains the location information that will allow the data to be put on the map. Select the 'Address' column from your form response table and click 'Continue'. Google will use its powerful geocoding engine to put the points on the map based on the addresses collected by surveyors. Note: if you were able to collect coordinates for your locations, you could also map the brownfields based on that information. In this step you would select your latitude and longitude fields from the table to put the points on the map.

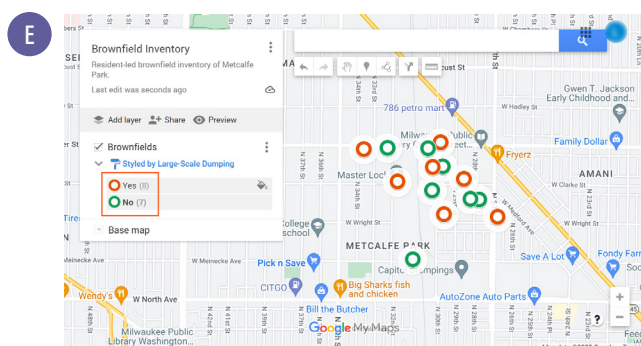
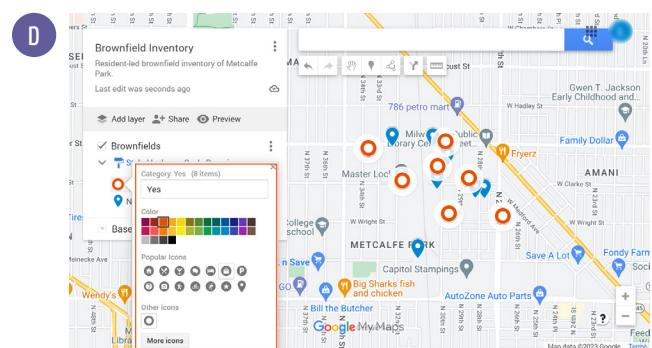
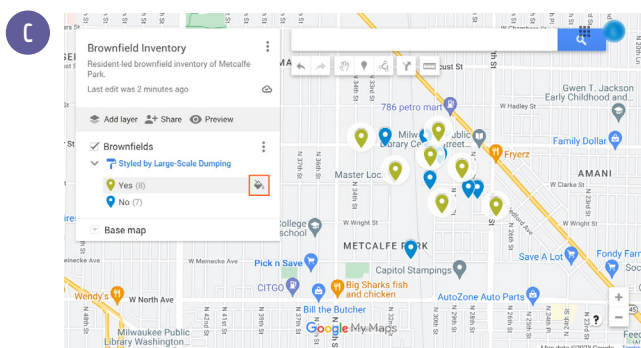
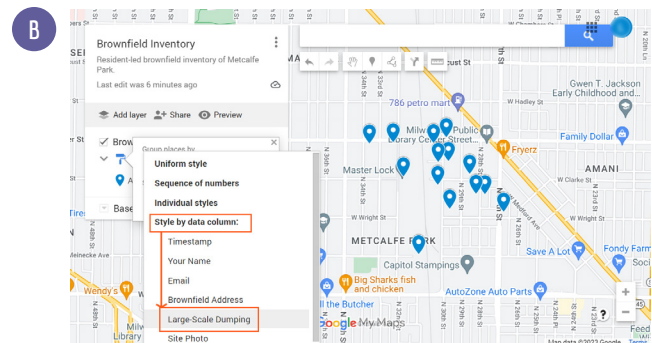
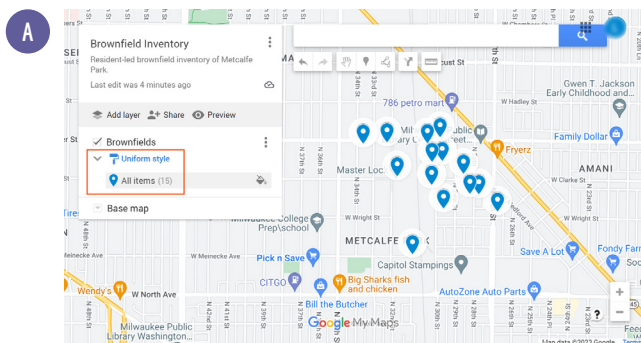
Timestamp	Your Name	Email	Brownfield Address	Large-Scale Dumping	Site Photo
7/14/2023 16:00:35	Lawrence Hoffman	lawrence@groundworkusa.org	2514 27TH STREET, MILWAUKEE, WI 53206	Yes	lilusa
7/15/2023 16:00:35	Ethan Adams	ethan.adams@example.com	2514 NORTH 27TH STREET, MILWAUKEE, WI 53210	Yes	
7/16/2023 16:00:35	Olivia Baker	olivia.baker@example.com	2540 N 28TH ST, MILWAUKEE, WI 53210	No	
7/17/2023 16:00:35	Liam Carter	liam.carter@example.com	2549 N 28TH, MILWAUKEE, WI 53210	No	
7/18/2023 16:00:35	Ava Davis	ava.davis@example.com	2550 N 30TH STREET, MILWAUKEE, WI 53210	Yes	
7/19/2023 16:00:35	Noah Evans	noah.evans@example.com	2577 N 30TH ST, MILWAUKEE, WI 53210	No	
7/20/2023 16:00:35	Isabella Foster	isabella.foster@example.com	2600 N 32ND ST, MILWAUKEE, WI 53210	No	
7/21/2023 16:00:35	Lucas Garcia	lucas.garcia@example.com	2636 N. 30TH STREET, MILWAUKEE, WI 53210	No	
7/22/2023 16:00:35	Mia Hernandez	mia.hernandez@example.com	2816 W CLARKE ST, MILWAUKEE, WI 53210-2621	Yes	
7/23/2023 16:00:35	Jacob Johnson	jacob.johnson@example.com	2930 W CENTER ST, MILWAUKEE, WI 53210	No	
7/24/2023 16:00:35	Sophia King	sophia.king@example.com	3015 W CENTER ST, MILWAUKEE, WI 53210	No	
7/25/2023 16:00:35	Michael Lee	michael.lee@example.com	3033 W PTMERIDON AVE, MILWAUKEE, WI 53210	Yes	
7/26/2023 16:00:35	Emma Martinez	emma.martinez@example.com	3056 W MEINCKE AVE, MILWAUKEE, WI 53210-3160	No	
7/27/2023 16:00:35	Alexander Nelson	alexander.nelson@example.com	3211 W CLARKE ST, MILWAUKEE, WI 53210	No	
7/28/2023 16:00:35	Charlotte Parker	charlotte.parker@example.com	3319 W. CENTER STREET, MILWAUKEE, WI 53210	Yes	



7 Next, you will be prompted to select a field by which to name each brownfield feature on the map. Using the 'Brownfield Name' field could be a good option here if surveyors entered it consistently, but a more foolproof approach would be to use the 'Brownfield Address' field here, too, as it is a more objective unique name for each site. Once you've made your selection, click 'Finish'. The points will be mapped.



8 By default, all features will have the same icon. It's possible to set the style of map features based on fields included in the dataset. For example, you could visualize the data based on whether or not there is large-scale dumping on site. Sites free of dumping could be symbolized by a green icon and sites with dumping could be visualized with a red icon. To do this select under the layer style where it says 'Uniform style.' Open the 'Group places by' dropdown menu and, under the heading, 'Style by data column,' select, 'Large-scale Dumping.' Features will now draw with symbology based on whether respondents entered 'Yes' or 'No' to the form question. To pick a different symbol, select the paint bucket icon that shows when hovering over each category in the menu.

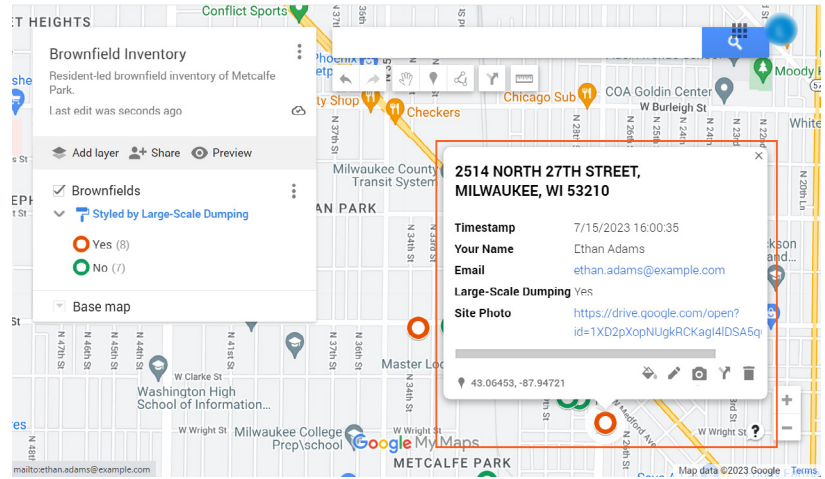


9

To view information for an individual site, click on its icon on the map and a popup window will open containing all the information surveyors entered for that site. To view photos or other attachments submitted to the form, click the link in the popup and the attachment will open in a new browser window.

10

This map will not live update as new form responses are entered. Updating the map can be done manually by the map owner by simply repeating these steps in a new layer and then removing the old layer from the map. If the survey is ongoing, it would be a good idea for the map owner to take a few minutes to update the map layer each time surveyors collect data. This will prevent duplicating work.

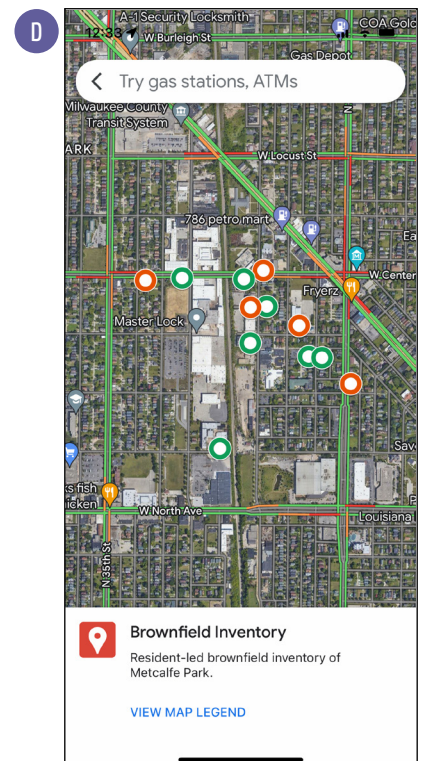
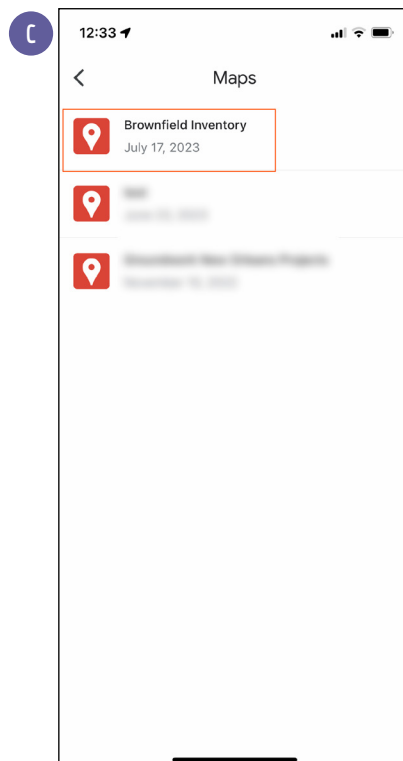
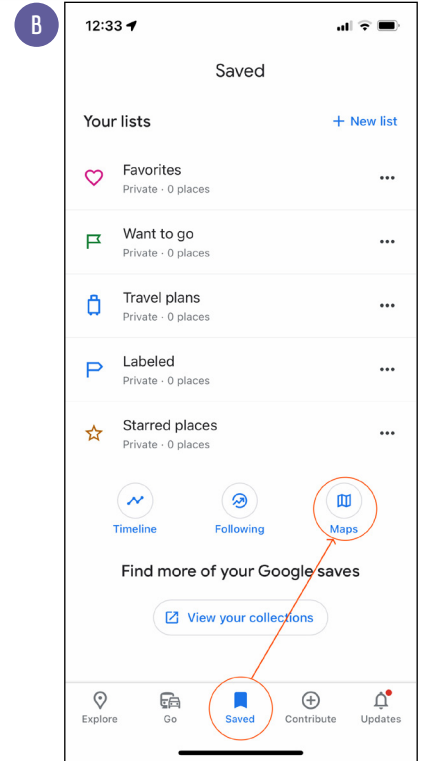
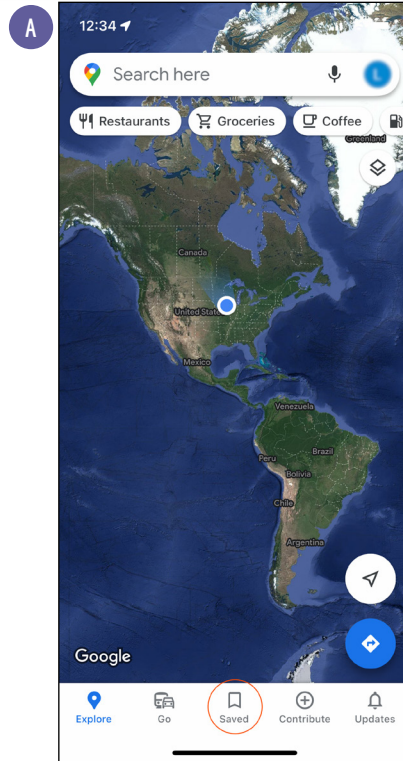


SHARING THE MAP

The goal of creating this map is to share it with residents. So, the resulting map needs to be able to be viewed outside of your Google Drive storage space. Here are some ways you could share the map.

1 Collaborator Access:

You can invite specific individuals as collaborators to the Google Map, granting them access to view and edit the map. This is useful when you want to collaborate with others in updating and maintaining the brownfield inventory. By sharing the map via Google Drive, collaborators can also view and edit the map in the My Maps editor. Collaborators can also view it on the Google Maps mobile application by selecting 'Saved' in the bottom center of the Google Maps home screen then selecting 'Maps'. Choose your desired map and it will open on the mobile device. Note you must be logged in to the mobile app with the same account with which the map is shared for this to work. Opening the map in a mobile device is useful while doing additional field collection to avoid duplicate data.

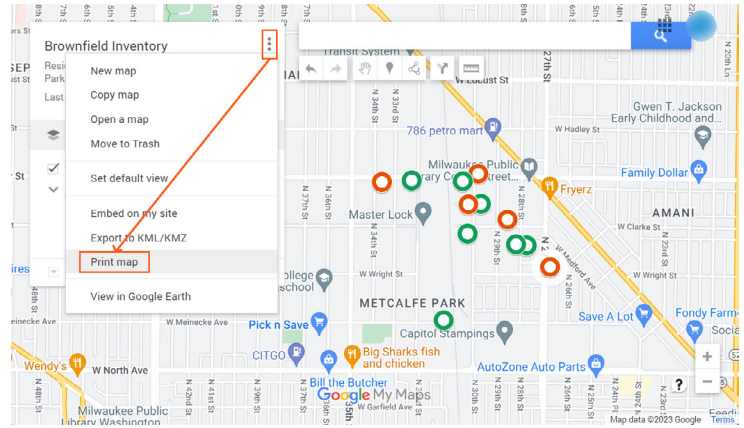


2

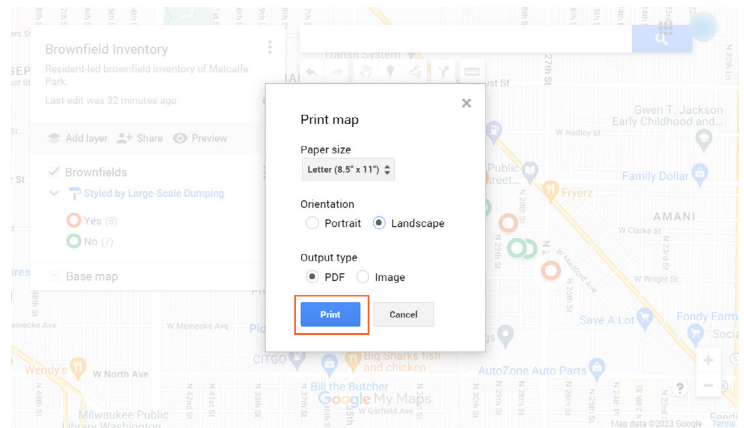
Export as Image:

If you want to share a static snapshot of the map, you can export it as an image file using the 'Print map' option in the maps main menu. This can be useful for presentations, reports, or sharing the map through platforms that don't support interactive maps. To select this option click the menu (three dot icon) next to the map title. In the menu select 'Print map' then click the download button in the top right to save the pdf to your computer.

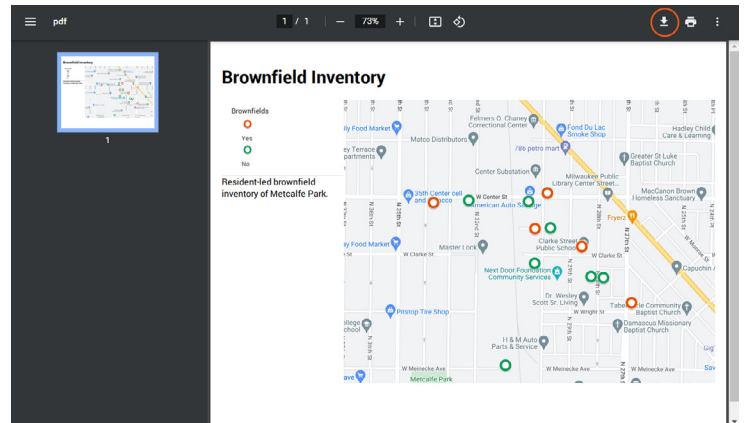
A



B



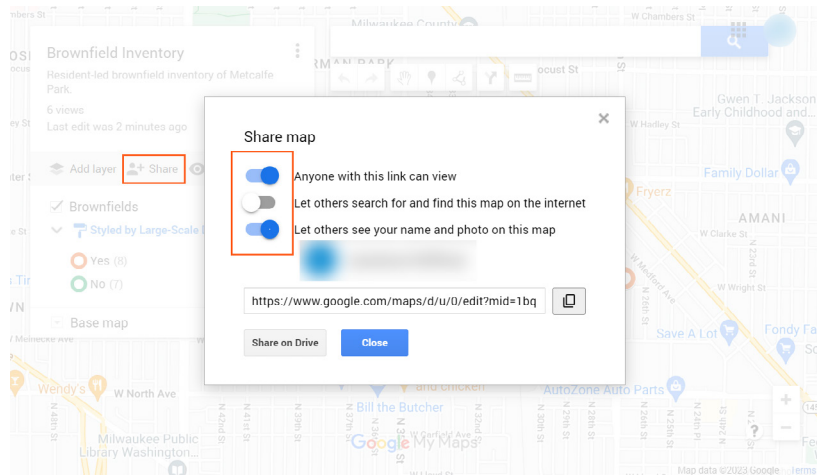
C



3

Share Publicly:

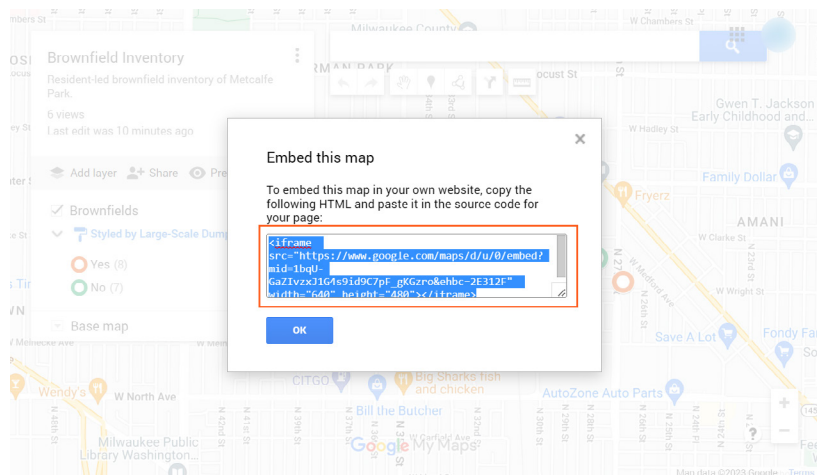
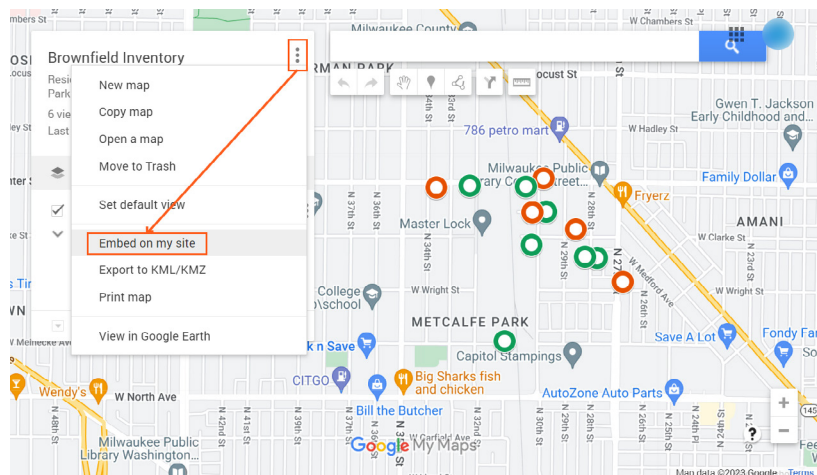
If the brownfield map is intended for public consumption, you can make it publicly accessible and searchable by configuring the share options in the map. It can be configured so that anyone with the link can view it. It can also be set up to be searchable on the internet. This allows anyone to find and access the map through search engines or by exploring public maps within the Google Maps platform. To open the map's share settings, click the 'Share' icon in the menu bar just above the layers list.



4

Embed Map on a Website:

Google My Maps provides an option to embed the map in a website or blog. This allows you to integrate the map directly into a webpage, making it easily accessible and visible to visitors. To do this, the map Share settings must be set to 'Anyone with the link can view' and 'Let others search for and find this map on the internet'. Once you've configured your share settings appropriately, open the map menu (three dot icon next to the map title) and select 'Embed on my site' from the dropdown menu. A window will appear with the embed link for your site. Your website administrator will know how to copy and paste the embed code to publish an interactive version of this map in the desired place on your site.



COMPARE WITH EXISTING DATA

Start by checking with your local government, including city, county, and state agencies, for existing brownfield data. Look for a dedicated brownfields office or a local environmental protection agency within your local department of natural resources. It's important to dig around and identify the most relevant office, as they are likely to have an existing dataset that may already be mapped. For example, in Rockford, IL, you can explore the City's brownfield data using a filter in their public-facing [property viewer](#) web map. If your municipality has a resource like this one, you can compare it to your own dataset and assess overlap and/or discrepancies.

Check for existing brownfield data at the following locations:

1 Local Government Websites:

Check the websites of local government agencies, such as city or county departments of planning, environmental protection, or economic development. They may provide information on brownfield sites and have datasets available for download.

2 State Environmental Agencies:

State environmental agencies or departments of environmental protection often maintain databases or inventories of brownfield sites. These agencies may provide access to GIS data or interactive maps showing brownfield locations. For example, the [Wisconsin Department of Natural Resources maintains the Bureau for Remediation and Redevelopment Tracking System](#) (BRRTS).

3 Regional Planning Organizations:

Regional planning organizations or councils may have information on brownfields within their jurisdiction. They often work closely with local governments and maintain regional datasets and maps.

4 Environmental Protection Agency (EPA):

The US EPA provides various resources related to brownfields. Their website may have information on local brownfield programs, grants, and databases. The EPA's [Facility Registry Service](#) is a database containing information on any site ever registered with the EPA. Search the database for 'Interest Type: Brownfield' or 'Program Acronym: ACRES.'

If you find a brownfield dataset that is in table format, you can put it on a Google My Map using the same steps you used above to map the resident-collected data. Upload the table to your Google Drive project folder, open it as a Google Sheet and then reference the 'Address' column when adding the table to your map. If you add both layers to the same map, you might identify gaps in the official data or add context to sites you inventoried as official datasets will contain more information about site history and contamination.

SHARE MAP WITH RESIDENTS / PARTICIPANTS

Once you've completed the inventory, it's important the resulting map and dataset are shared with those who helped create it. The organizer should lead a community conversation reviewing the results of the inventory.

These are some potential discussion questions:

- 1 What new insights were gained from the inventory process?
- 2 How does the resident-led inventory compare to existing datasets or official records?
- 3 Are there any disparities or discrepancies between the community's perspective and the official data?
- 4 Which sites identified in the inventory are of greatest concern to residents? Why?
- 5 What are the specific hazards or risks associated with these concerning sites?
- 6 Are there any patterns or trends identified in the data? For example, are certain types of sites more prevalent in certain areas?
- 7 Are there any sites that have the potential to become community assets? How can these sites be revitalized or transformed to benefit the neighborhood?
- 8 How can the inventory findings help strategically address community concerns and prioritize future actions or interventions?
- 9 Are there any additional data or information needed to complement the inventory findings and support decision-making processes?

The inventory should be one part of a larger process of relationship building and engagement aimed at establishing hazard locations, identifying community concerns, and realizing resident visions for their neighborhoods.

OTHER TOOLS

This tutorial demonstrated how to use free Google tools to conduct a resident-led brownfield inventory. These are some other tools you could use to conduct a similar inventory.

EpiCollect5: EpiCollect5 is a free data collection app that enables you to design and conduct field surveys. It offers form customization, GPS data capture, photo collection, and offline data entry. It can be used for various survey types, including parcel-based inventories. This fully integrated data collection app can take you from field survey to map with very little technical expertise. To create a Google map of results, export your inventory data and import it into Google 'My Maps' using XY or addresses to geolocate your points. Building your survey tool using EpiCollect5 is a good option if you prefer to use XY coordinates for your location information instead of addresses.

ArcGIS Online: ArcGIS Online is Environmental Systems Research Institute's (commonly referred to as "ESRI") online Geospatial Information Systems (GIS) platform. ESRI is the global leader in GIS technology and their free public online account has a lot of capability. Using their map viewer, you can view EPA brownfield layers like the Facility Registry Service (FRS) which includes pop-ups to detailed reports about sites. Non-profits can get an organizational ESRI license for around \$100/yr that includes most of their most powerful tools including a field survey tool called 'Field Maps' which could be used for conducting resident-led brownfield surveys.

OpenDataKit (ODK): ODK is an open-source data collection platform that provides a range of tools for conducting surveys in the field. It offers form creation, data collection, and data management functionalities. ODK Collect, their mobile app, can be used for parcel-based field inventory. This is a more customizable survey and data management tool. This added flexibility and power will require some additional technical expertise to design your tools and set up storage as ODK does not automatically connect to cloud storage. You will likely need to connect it to a Google Sheet unless you have access to and expertise to connect to a server.

QField for QGIS: QGIS is the leading open source GIS platform. QField is a mobile app for Android devices that allows you to take QGIS projects to the field. With QGIS, you can create parcel-based inventories and then use QField to collect data on the ground. It supports GPS data collection, attribute editing, and photo capture. This could be an option if someone on your team has GIS experience. Cloud storage may be challenging to set up, making group collection more difficult.

Looking for help getting your brownfields project off the ground? Groundwork USA is funded by the EPA's Office of Brownfields and Land Revitalization to offer no-cost technical assistance to support nonprofits interested or engaged in brownfield land reuse projects. Click the link below to learn more about, or apply to receive, our no-cost technical assistance services. <https://groundworkusa.org/ta-services/>