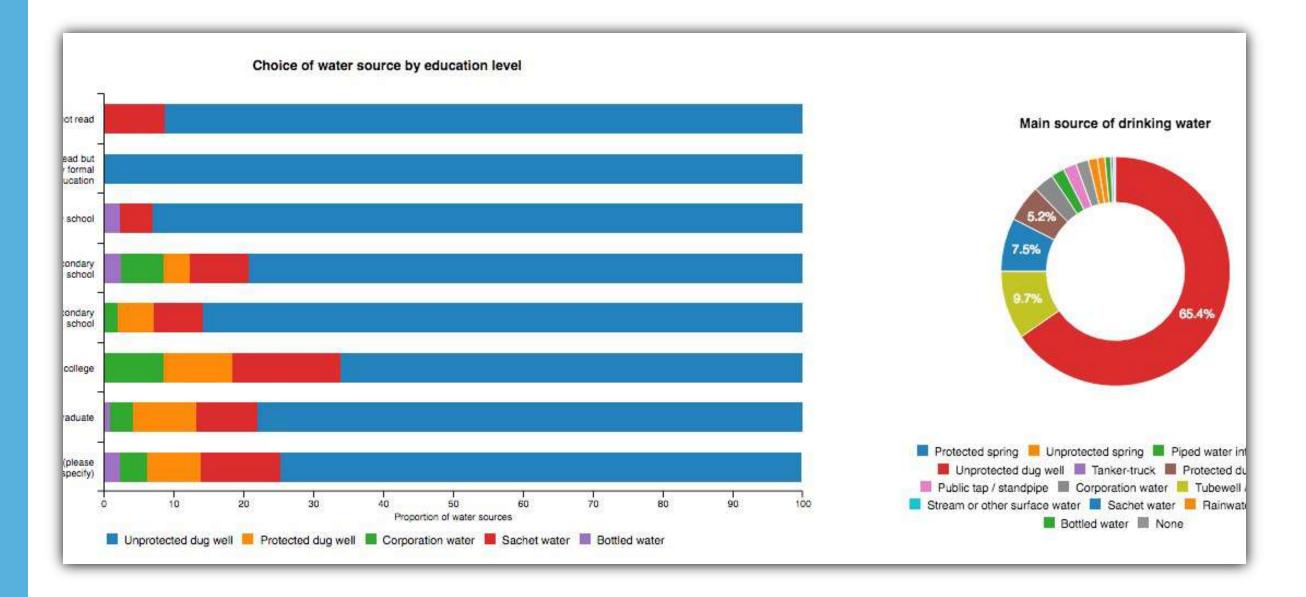
mWater Portal Training

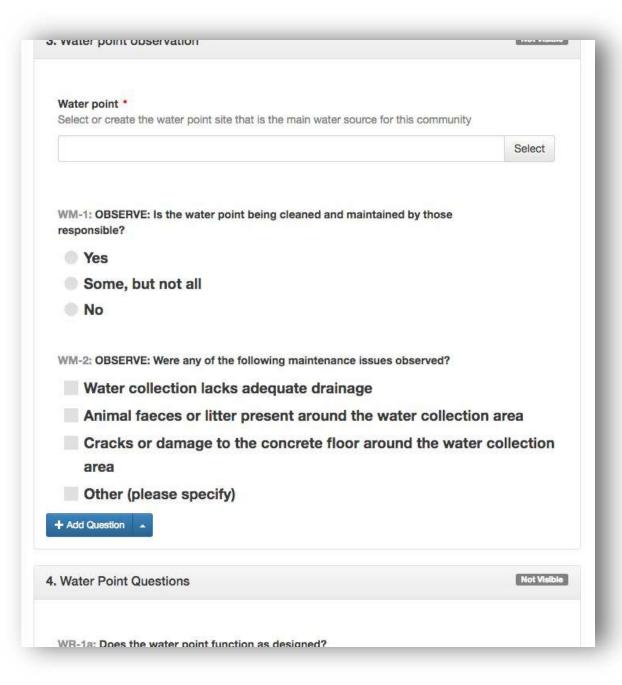


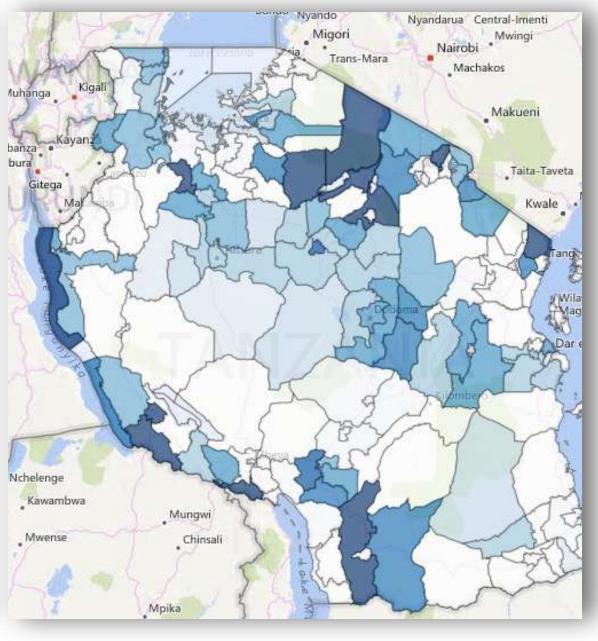
mWater Portal Training

Modules:

- 1. Portal overview
- 2. Core concepts
- 3. Surveys Design
- 4. Surveys Deployments
- 5. Surveys Cleaning and managing survey data
- 6. Sites
- 7. Data visualization
- 8. Organizations and user management
- 9. <u>Issues</u>



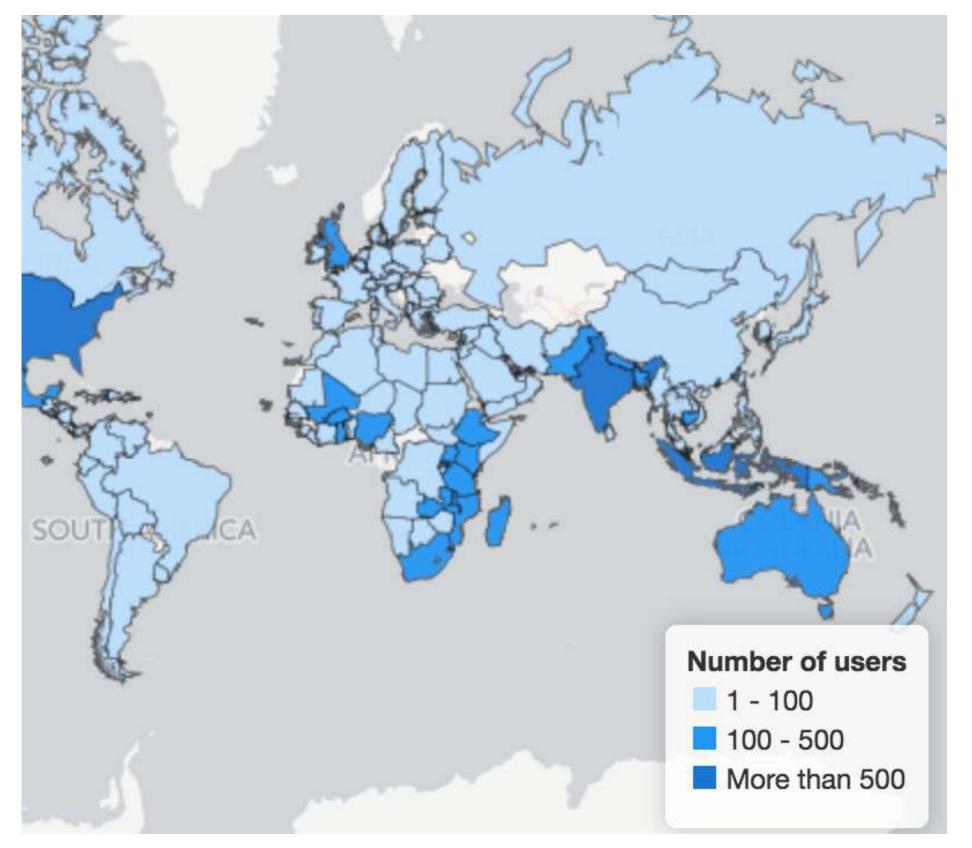






Governments and utilities







Section

Portal overview

Topics:

- About mWater
- What can you do with mWater?
- Accessing and exploring the Portal

Local NGOs and researchers



International organizations and large NGOs



About mWater

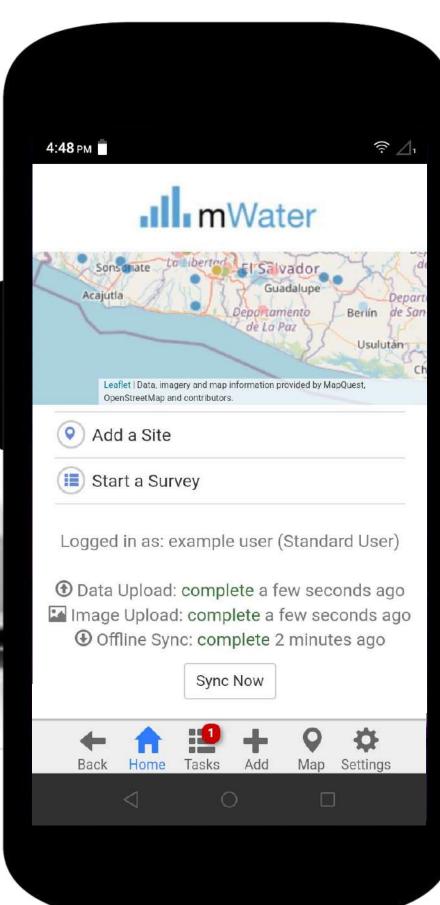
mWater is a mobile data collection and analysis platform which is **free for unlimited use!**

Used by 100,000+ users in 187 countries

mWater consists of two main components:

- **1. mWater Surveyor –** Mobile app for Android, iPhone, & web
- Data collection Online & offline
- 2. mWater Portal Website at portal.mwater.co
 - Design of data collection (Surveys, sites, issues, etc)
 - Survey deployment and assignment
- Data approvals and cleaning
- Visualization, analysis, sharing and export



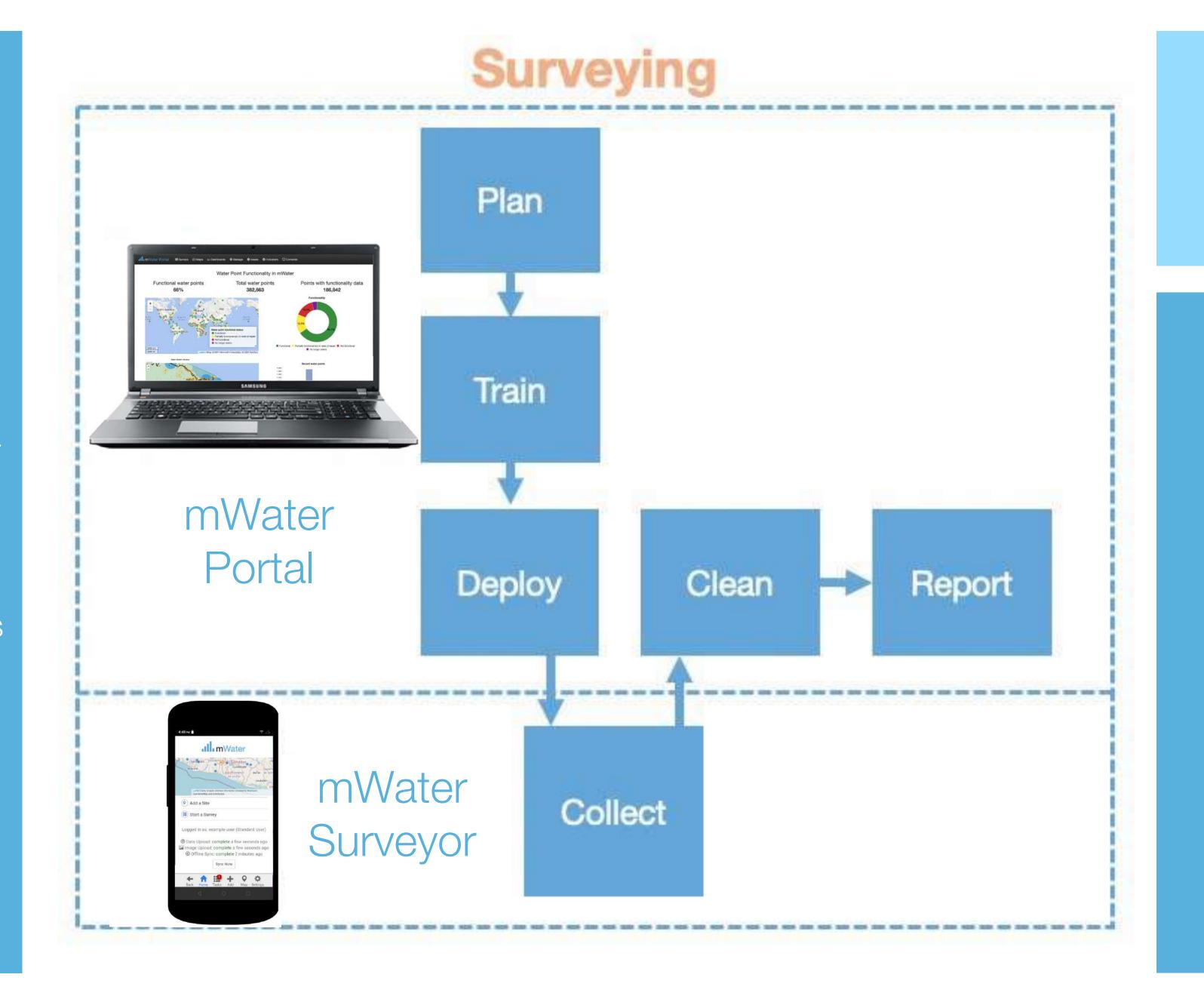


mWater Surveyor



What can you do with the mWater platform?

- **1. Surveying –** A one-time or infrequent data collection activity
 - e.g. sampled household survey
- 2. Monitoring, evaluation, and learning (MEL) A recurring data collection, learning and adaptation cycle
 - e.g. annual water point updates
- **3. Management –** A regular process of identifying, assigning, performing, and responding to tasks (in addition to MEL)
 - e.g. water utility maintenance issues



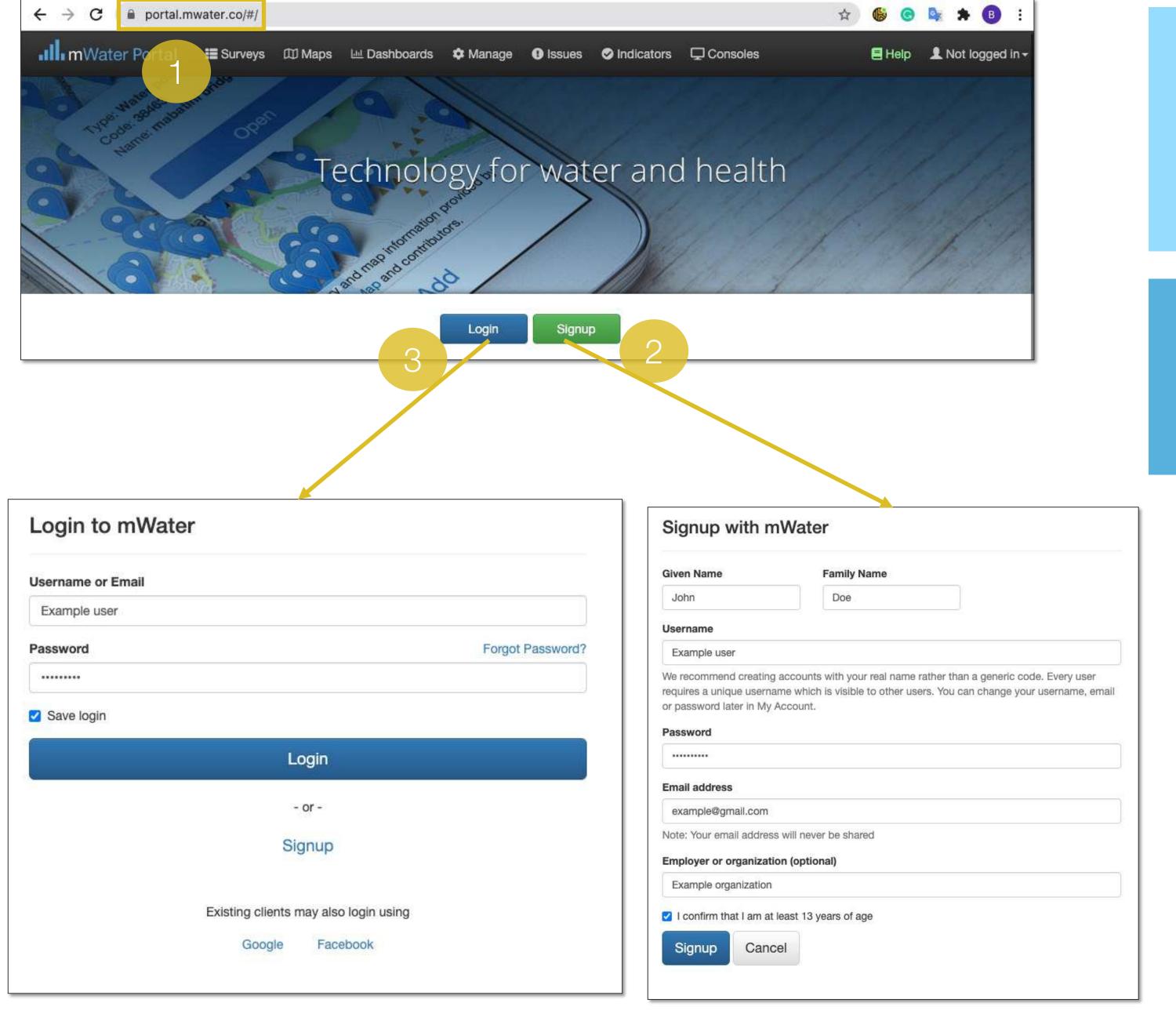


Accessing the portal

To access the portal:

- 1. Go to https://portal.mwater.co/
- 2. If you **do not already** have an account:
 - a) Click the Signup button
 - b) Enter in your information and click **Signup**
- 3. If you **already have** an account:
 - a) Click the **Login** button
 - b) Enter in your username or email address and the password
 - c) Click the **Login** button

Note: The same mWater account is used for both the Portal and Surveyor app





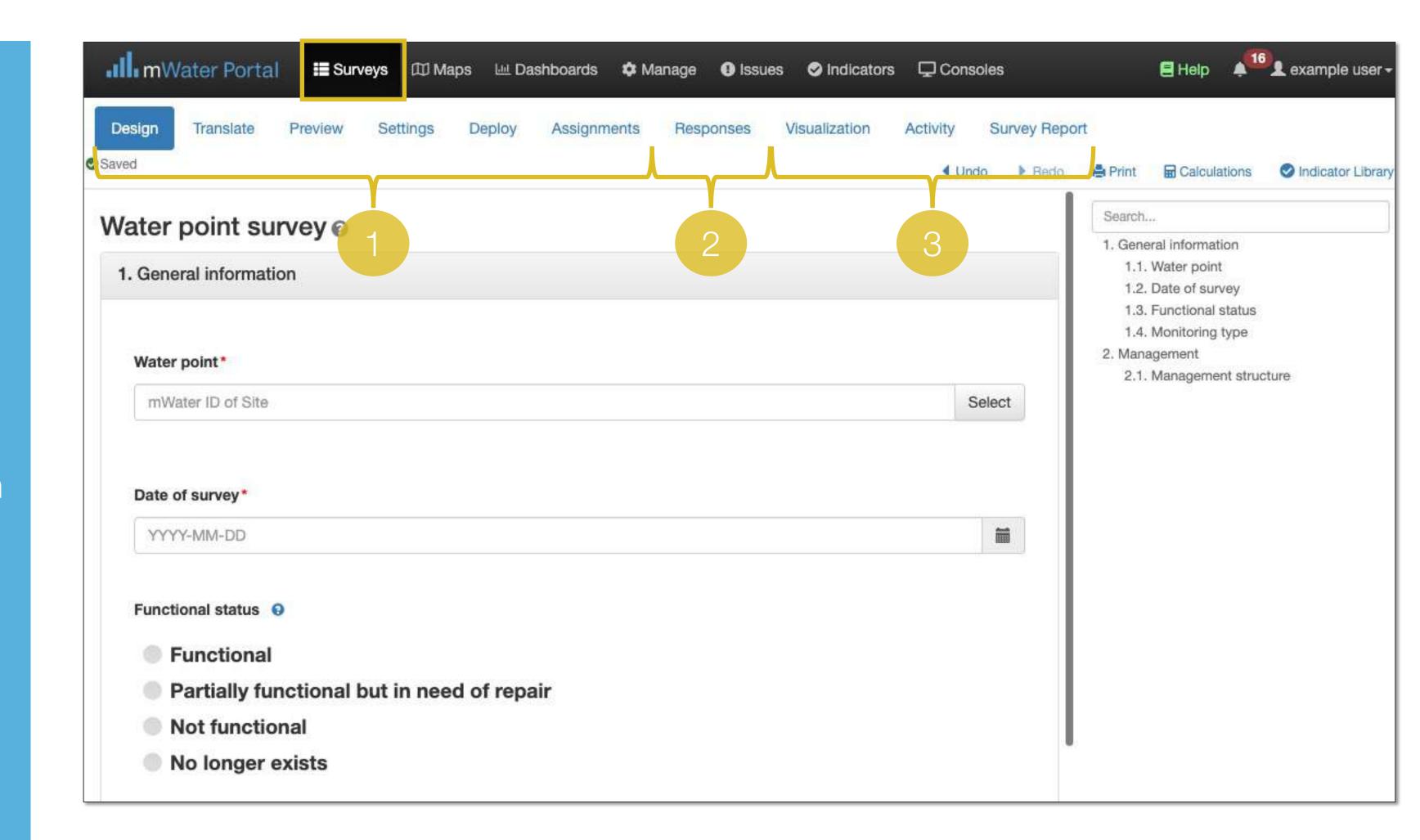
Portal tabs -Surveys

Surveys -

- 1. Design, translated, assign, and deploy survey forms
- 2. Clean and approve completed survey responses
- 3. Visualize and report survey data in maps, graphs, tables, and more

The **Survey** is the questionnaire template that is used when creating new survey responses *e.g. Water point survey*

The **Survey responses** are the individual questionnaires which are created for each visit *e.g. Khamasa well report, March 2020*





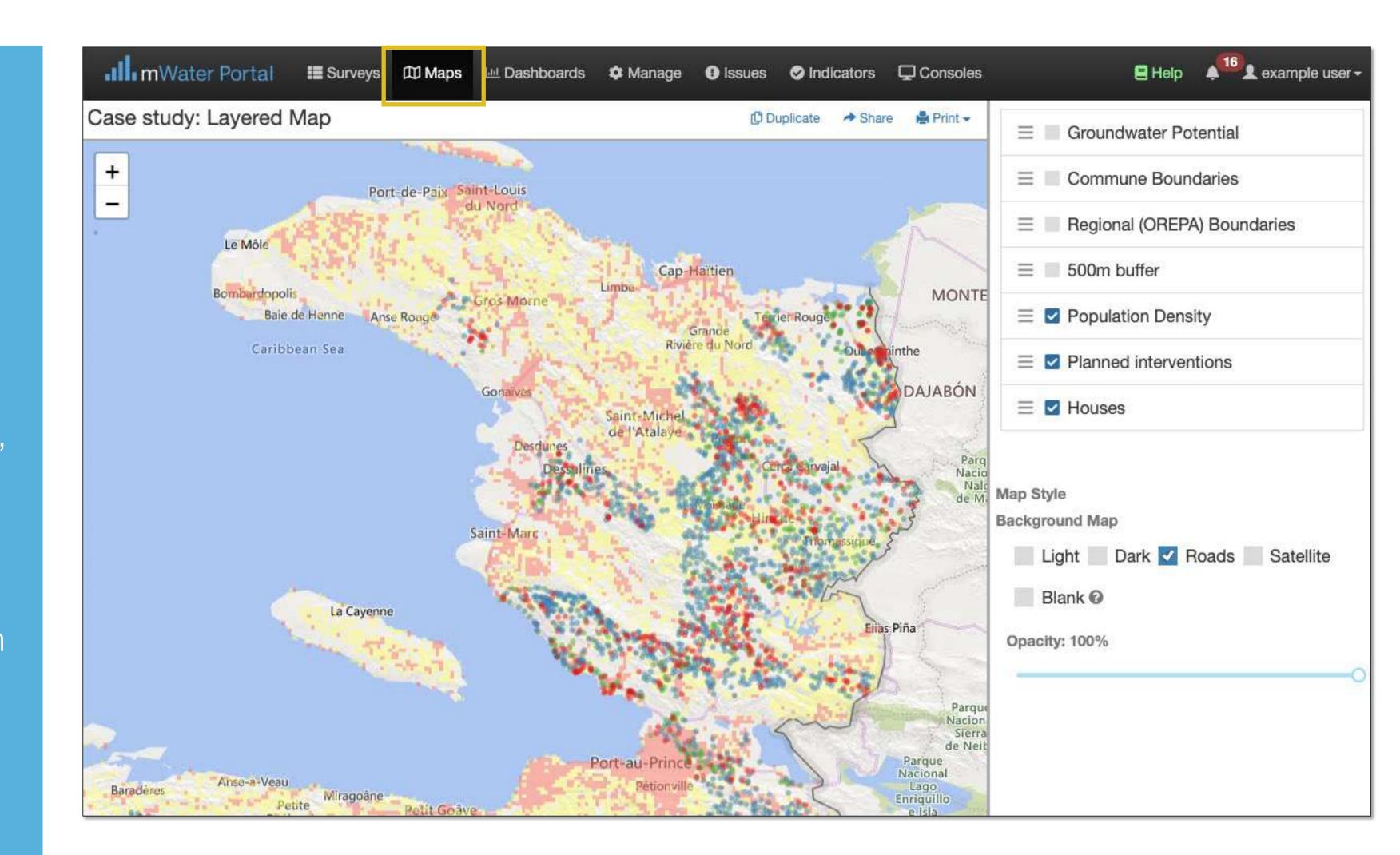
Tabs - Maps

Maps - Displays location data on a full-page map

- Create, share, and export multilayered maps
- Display mWater data points, lines, regions and grids
- Customize the symbology and perform spatial analytics on the data
- Can show population and custom basemaps

Note: The map tab displays full-page maps, which can be added tabs within multi-tabbed Consoles.

Map modules are smaller maps which can be integrated on the same page as other modules like graphs, tables, etc.



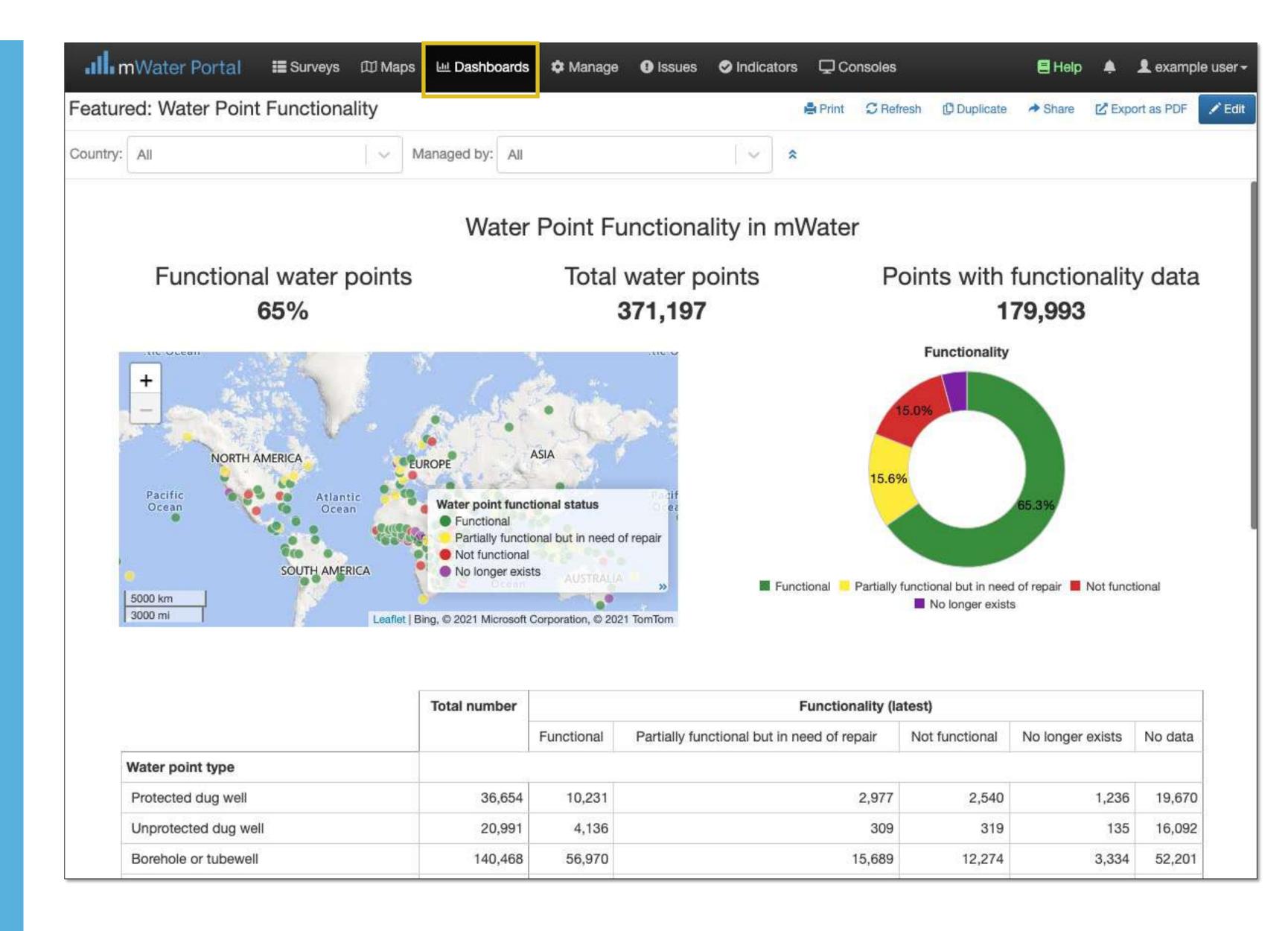


Tabs - Dashboards

Dashboards - Individual pages which can contain many data visualization widgets e.g. maps, graphs, tables

Dashboards allow users to:

- Filter, search, and drilldown into the data
- Print and export data and reports
- Share data with other users or via a shareable/embeddable link

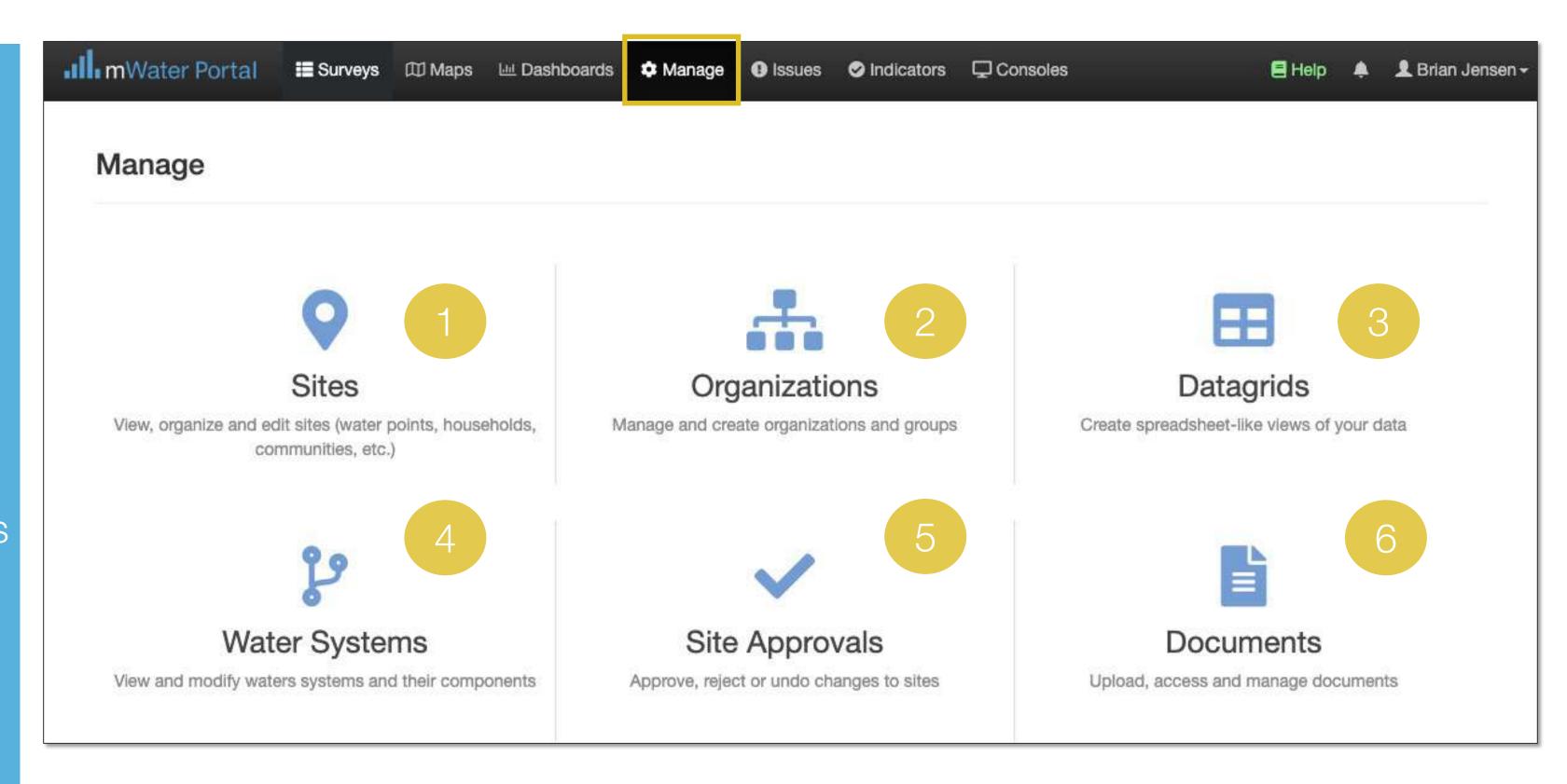




Tabs - Manage

Manage – Users can manage site data, organizations and documents

- 1. Site data are locations which can be monitored over time
- 2. Organizations can be used to create hierarchal branches of roles and permissions
- 3. Datagrids are live data spreadsheets
- 4. Water systems is an interface for managing piped water systems
- 5. Site approvals is where administrators can approve changes made to sites
- 6. Reference documents of any type can be stored for individual users or for an organization

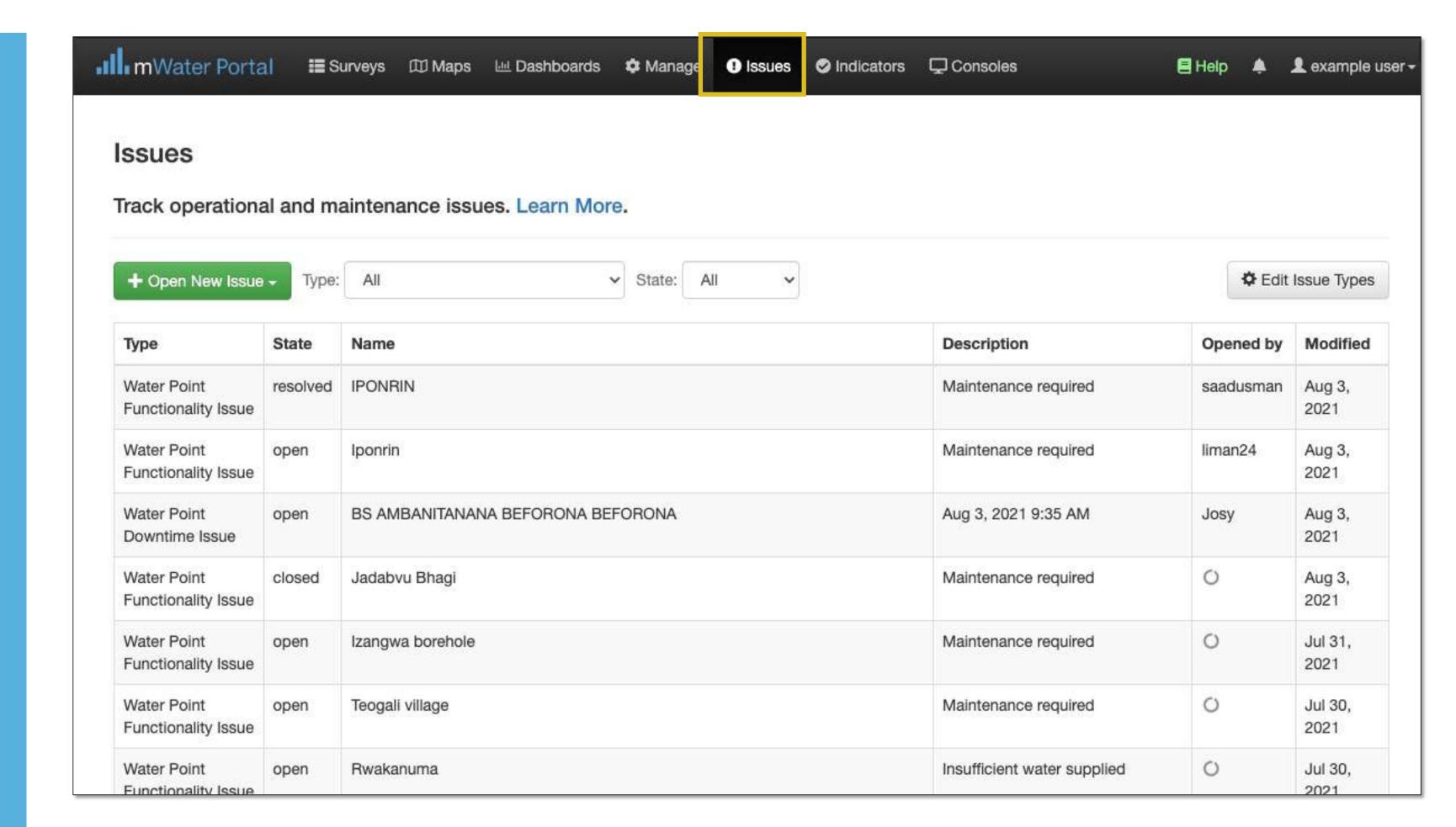




Tabs - Issues

Issues- Users can manage multistep processes including opening, assigning, updating, resolving and closing steps e.g. water system leak issue

Issue types are standardized processes for a specific use-case

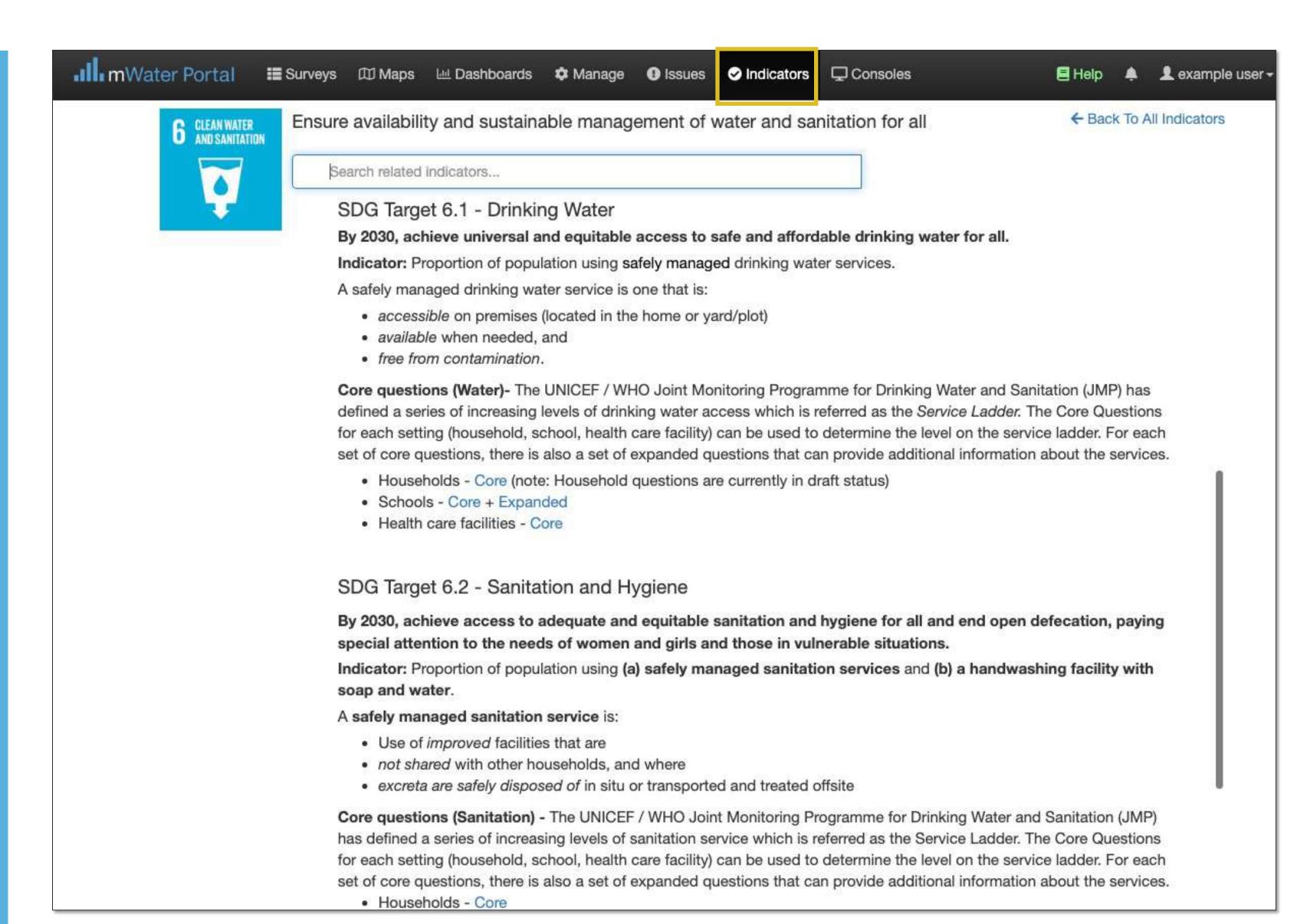




Tabs - Indicators

Indicators – Allows users to easily align with standard global, national, and institutional indicators e.g. JMP SDG 6 monitoring

Survey forms can contain indicators as questions in the form. This ensures consistency across various different and organizations. A full indicator set can be added to a survey form with only one click!



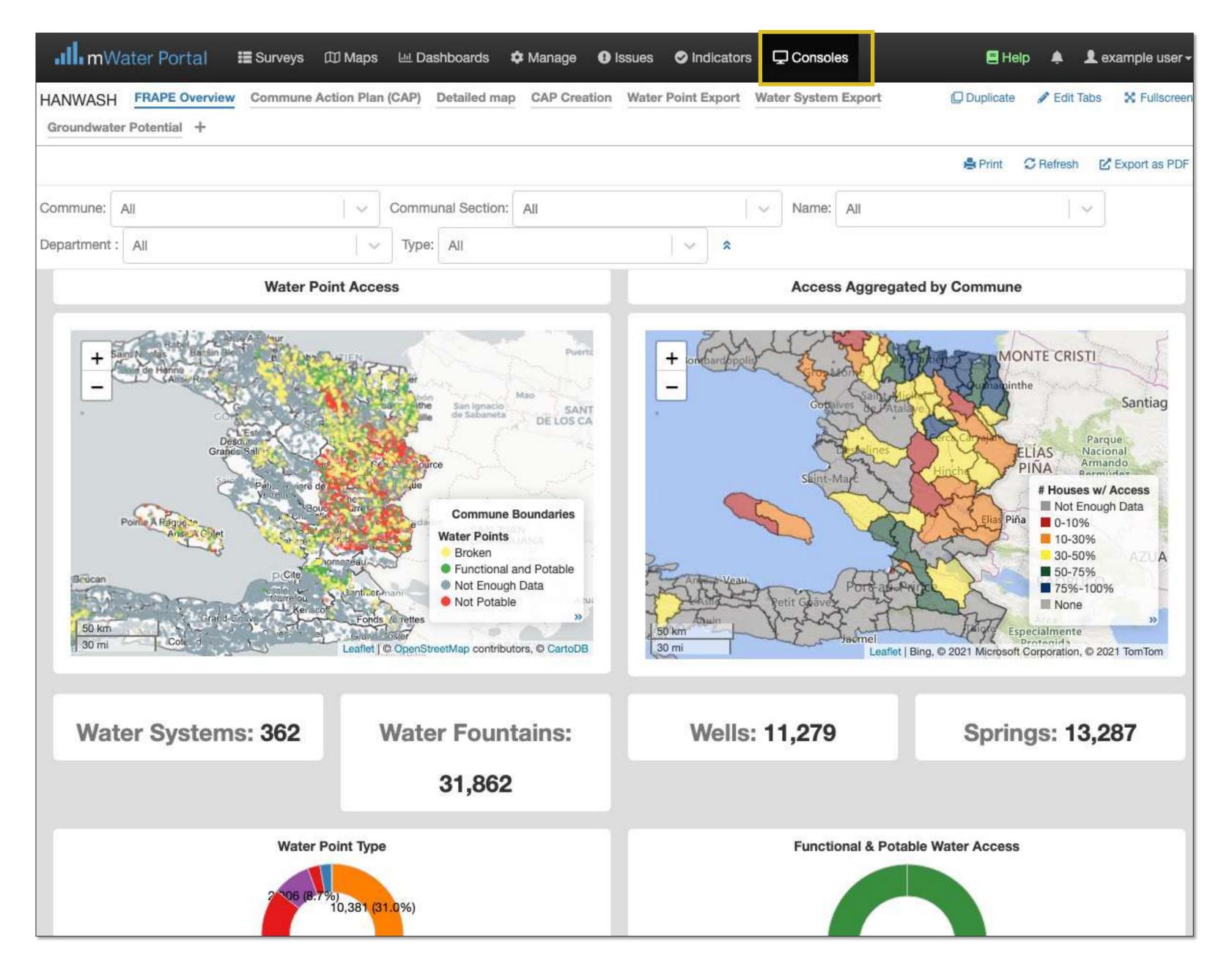


Tabs - Consoles

Consoles – Multi-tabbed interfaces for data visualization, analysis, and sharing

e.g. water infrastructure and access console

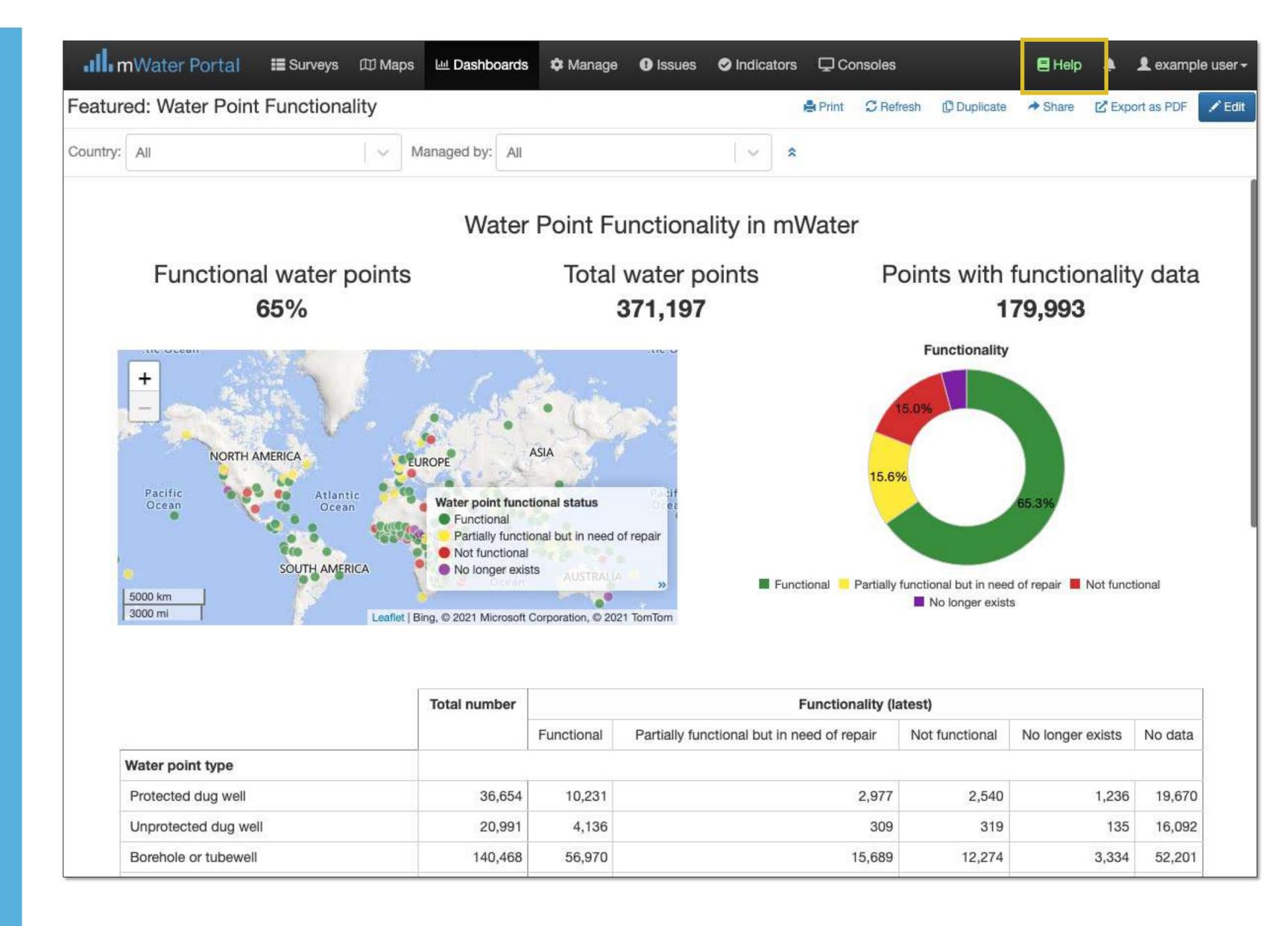
Existing maps, dashboards, and datagrids can be added as separate tabs.





Resource center

Help (Resource center) – Provides users with information on the mWater platform like user manuals, video tutorials, training materials, troubleshootings guides, and case studies





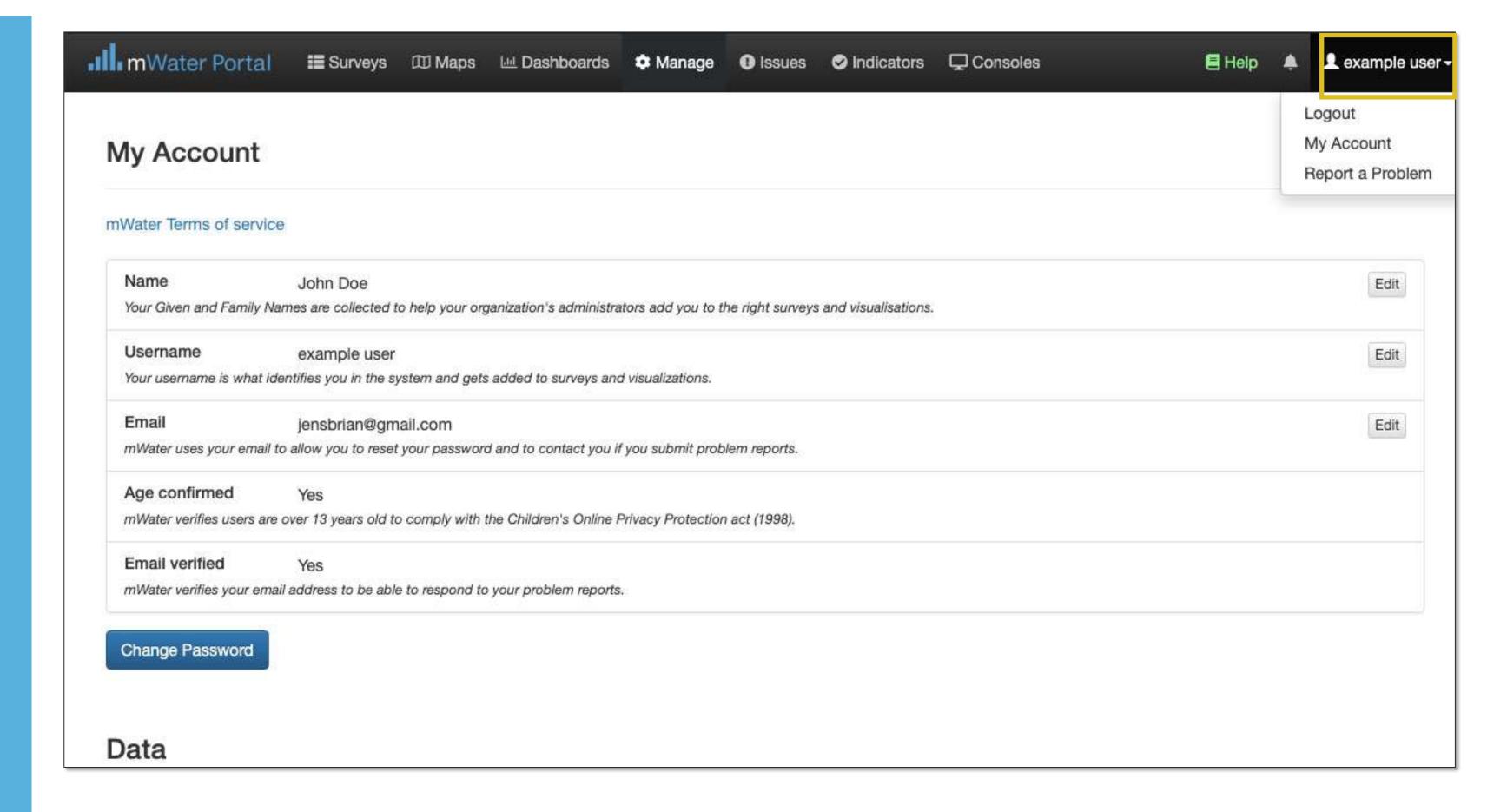
User account

User account – Manage your user account information like:

- Name
- Username
- Email address
- Password

You can view and remove any personal data from the platform at any time using the Data section

Clicking your account name also displays the **Report a problem** button, which can be used to contact **mWater staff** to report technical bugs with the platform





Section



Core concepts

Basic Topics:

- Sites and surveys
- User roles
- Survey approvals

Surveys and sites

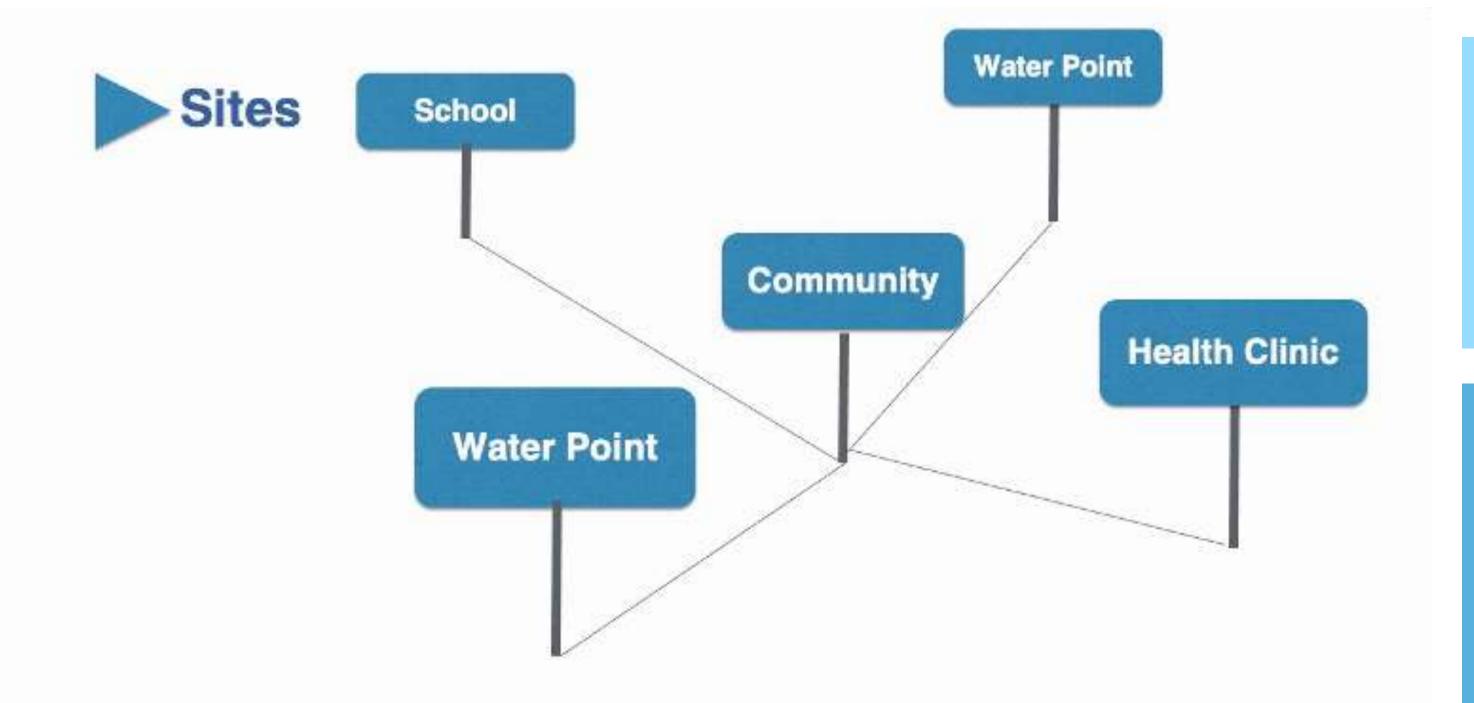
Sites are locations or facilities that can be monitored over time.

Surveys can be used to monitor changes in Sites over time.

This permits powerful data analysis and visualization to provide insight into specific sites and their history instead of just the survey sample as a whole.

Sites can be shared with the whole mWater community so that the entire sector can work from a common dataset.

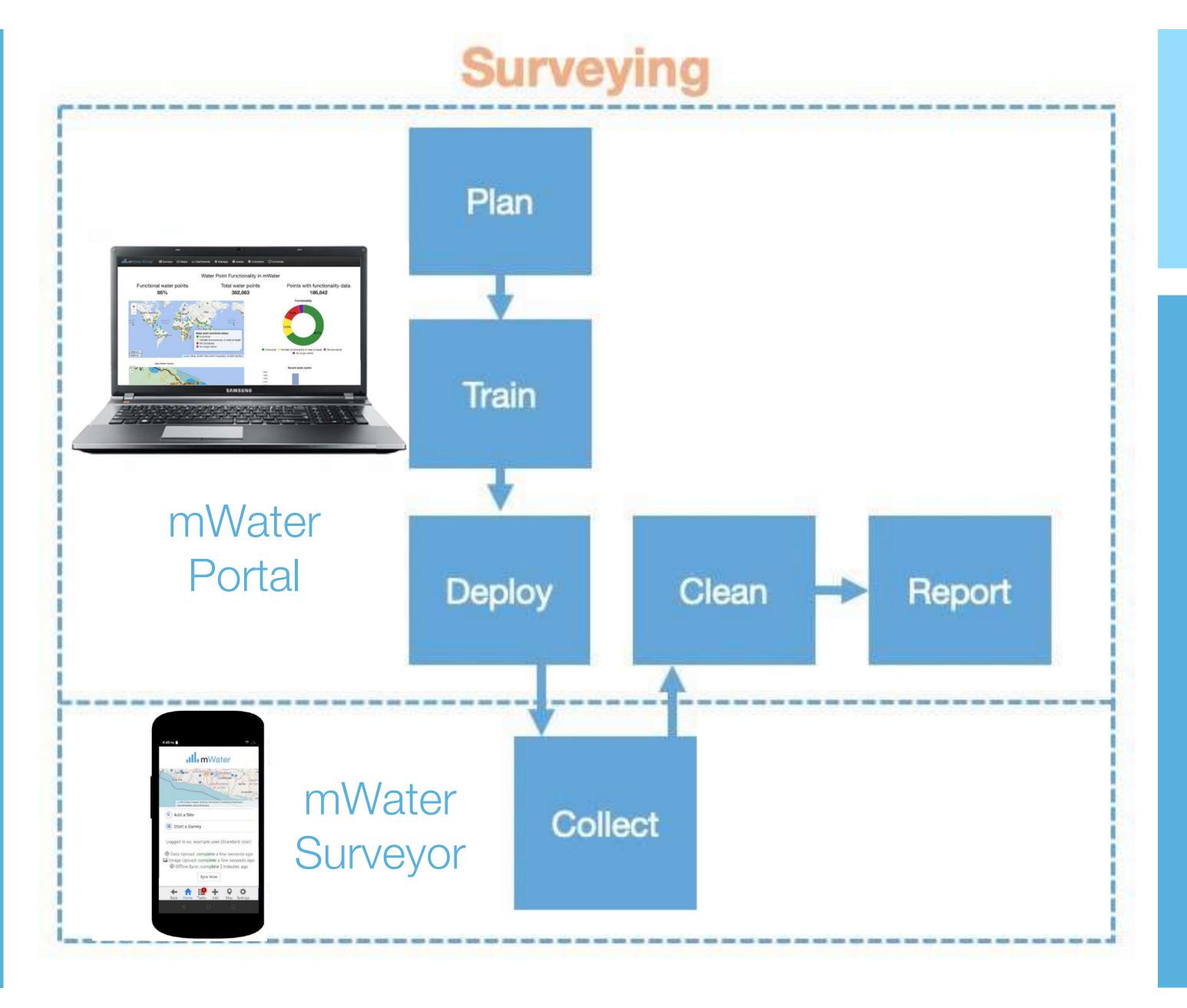
All sites use a table with standardized questions common to all users





User roles

- 1. Survey administrator Uses the mWater Portal to create, deploy and manage surveys, sites, issues, etc.
- 2. Enumerator Uses the mWater Surveyor app to collect data, update data, and respond to assignments.
- 3. Respondent Responds to the questions asked by the enumerator.





Survey approvals

To ensure that data collected is reliable, most survey administrators will add a survey approval step which requires the supervisor to approve or reject each survey response before it is finalized.

Approval steps:

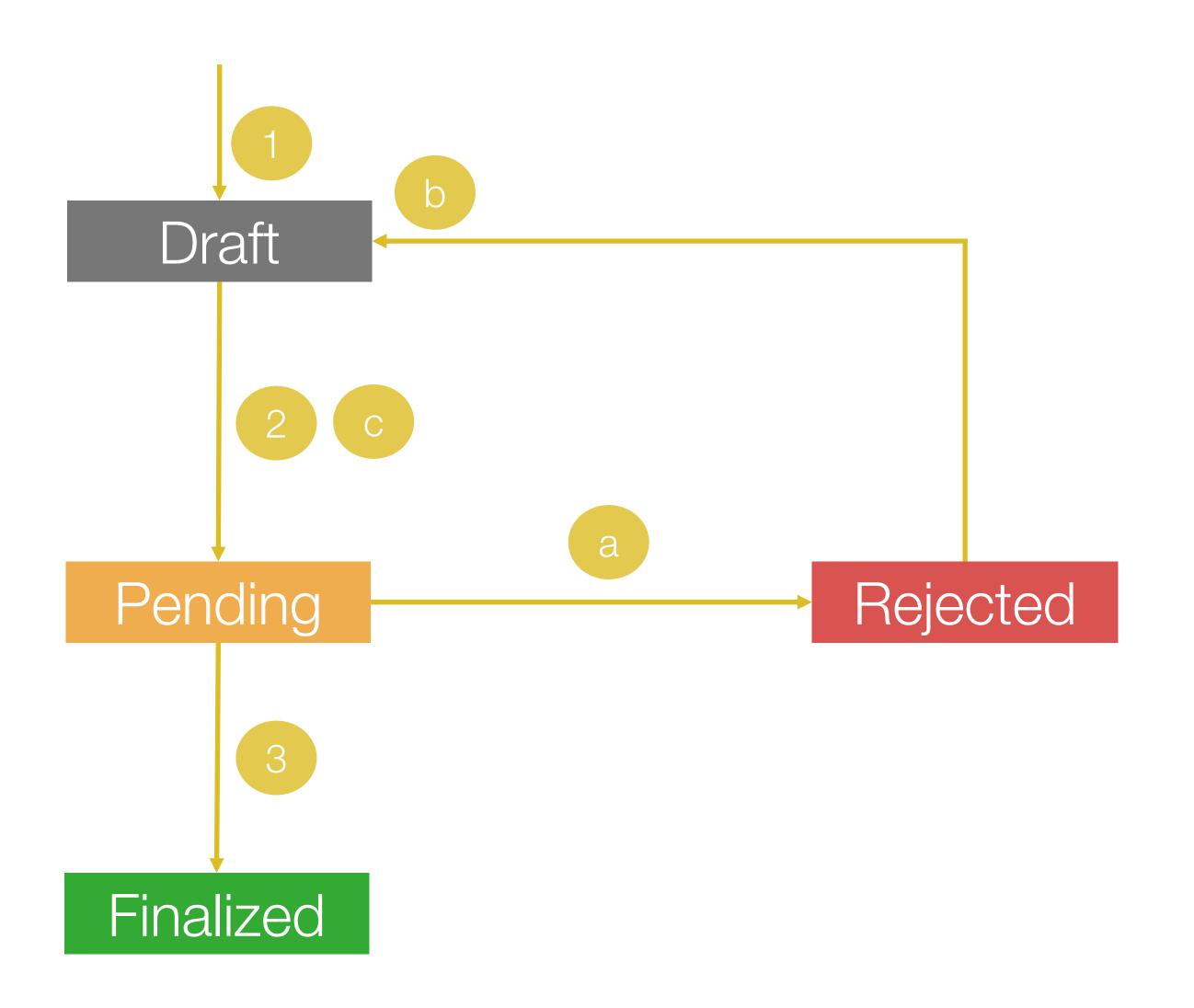
- 1. Enumerator starts a survey response
- 2. Enumerator submits the response

If the response has errors:

- a) Supervisor rejects the response due to errors
- b) Enumerator corrects the response
- c) Enumerators submits it again

If the response does not have errors:

3. Supervisor approves the response





Section



Surveys – Form design

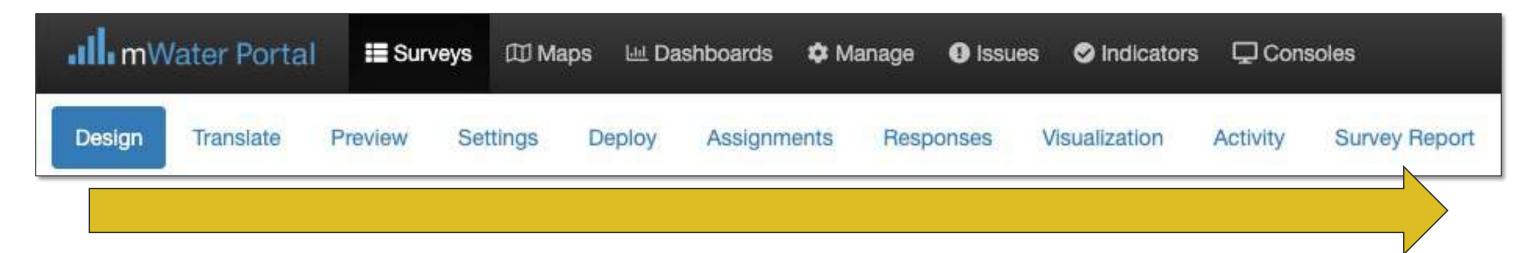
Basic Topics:

- Creating a new form
- Design view
- Adding questions
- Question types (overview)
- Instructions
- Sections
- Conditions
- Editing forms
- Translate
- Preview
- Share (permissions)

Advanced Topics:

- Question options
- Indicators

Surveys workflow



Surveys follow a workflow which is shown by the order of the tabs in the survey form view:

Design - Create the questionnaire that the enumerator will use to collect data

Translate - Set the base language and translate survey text into any other language

Preview - View the survey en the same format at the enumerator will see it

Settings – Set permissions and other options

Deploy – Define roles and permissions for a set of survey responses

Assignments - Delegate enumerators to conduct a specific set of survey responses

Responses - View, approve, reject, and edit individual survey responses

Visualizations - Visualize aggregate data in a standard way

Activity - Track progress and performance of the survey and enumerators

Survey report - Customize a data dashboard for viewing results from the survey



Key terms

In mWater various terms have very specific meanings, as shown at right

Form:

the set of questions that will be asked in a survey

Response:

the set of answers from a form that was filled out

Deployment:

one instance of a form being sent to users to fill out

Enumerators:

users or groups who can submit responses to a form

Assignment:

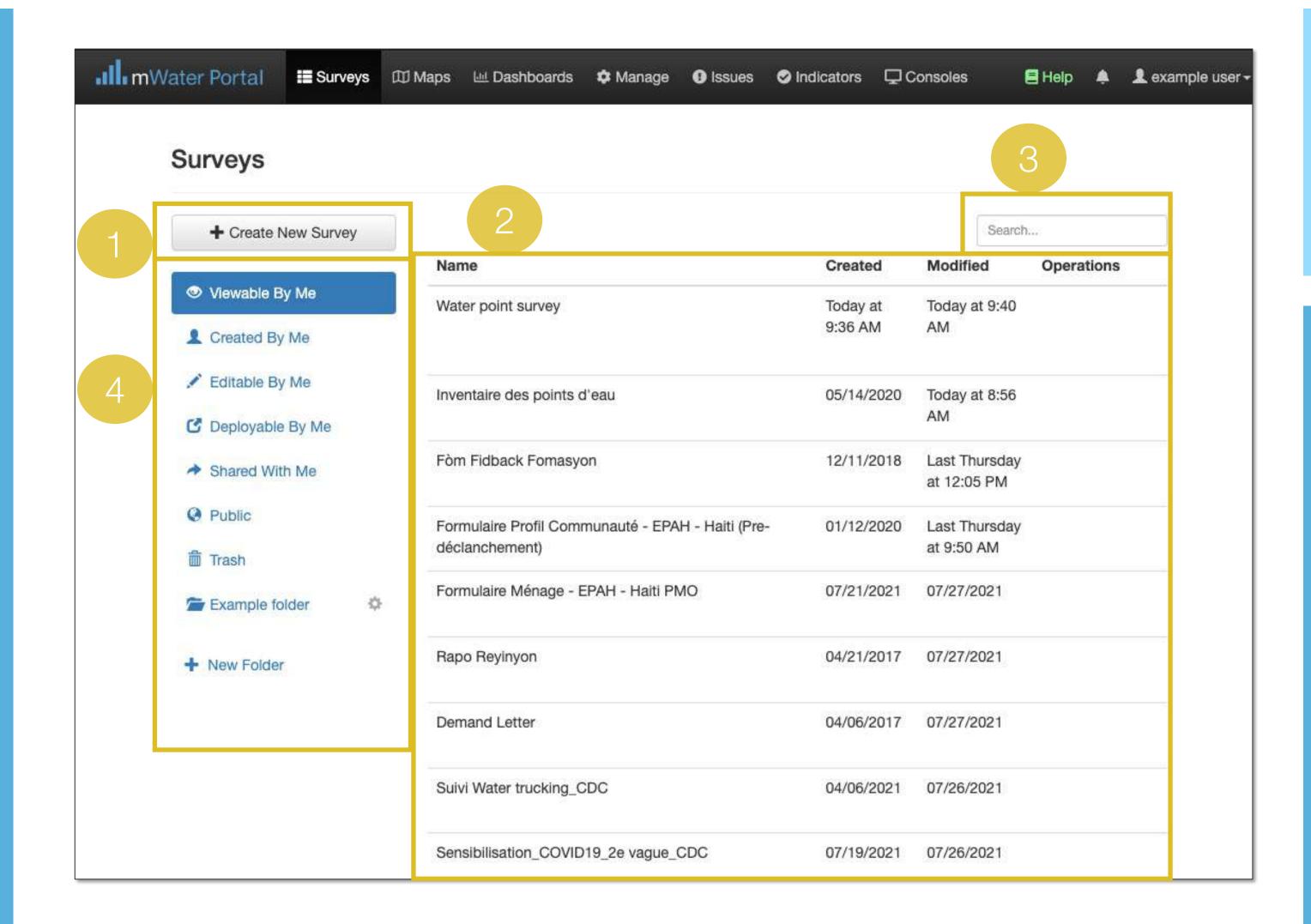
one pre-filled survey response for the assigned enumerator to complete



Survey list

The survey list page contains:

- 1. A +Create a new survey button
- 2. A list of surveys that your user account has access to
- 3. A search bar to find specific surveys
- 4. A set of default and customizable folders to filter and organize different survesys

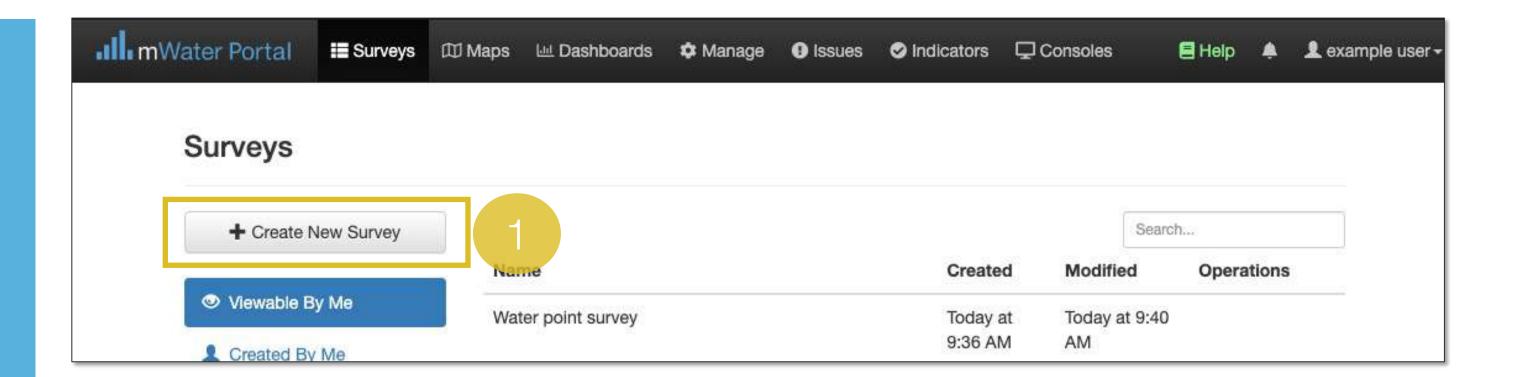


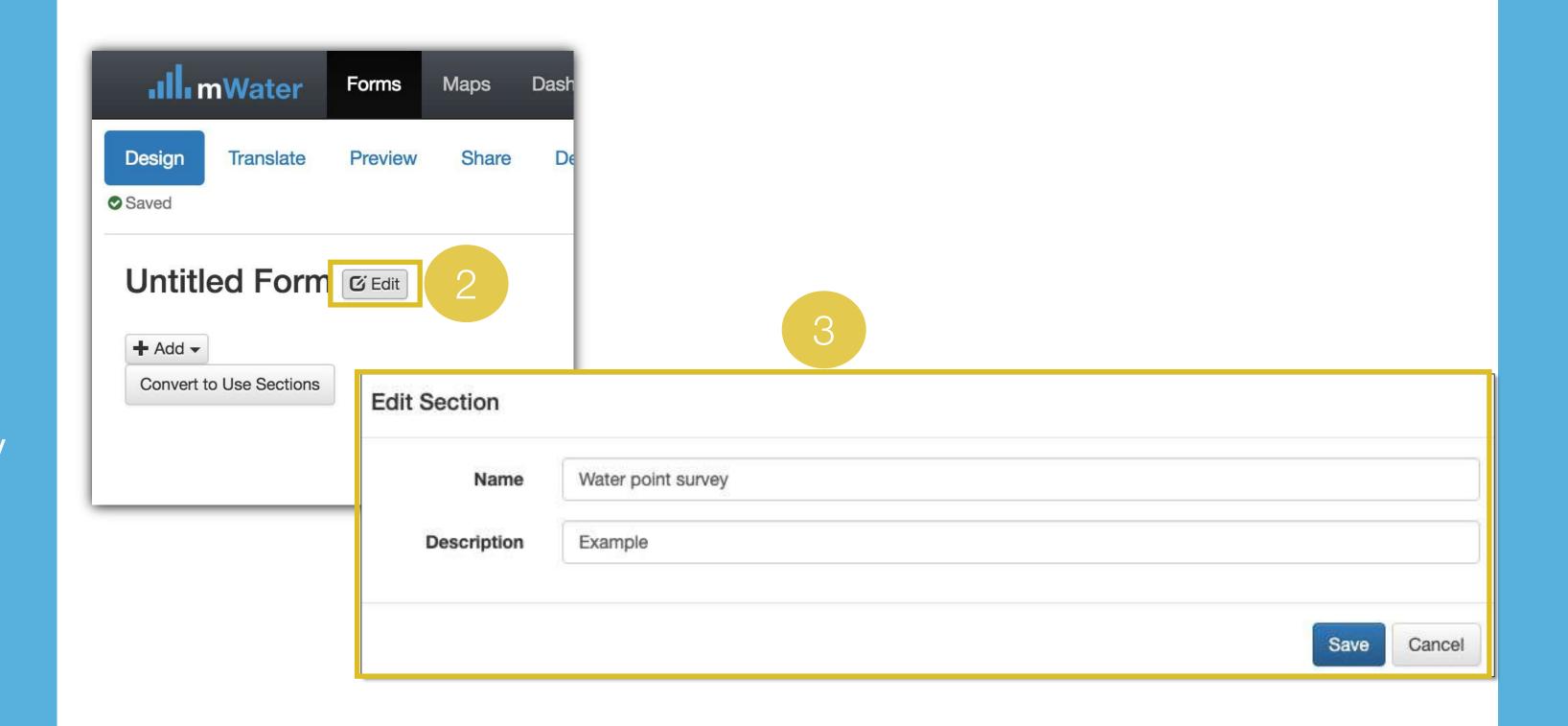


Creating a new form

To create a new form:

- 1. Click the +Create new survey button
- 2. Select Edit
- 3. Enter a name and description for the survey form and click **Save**







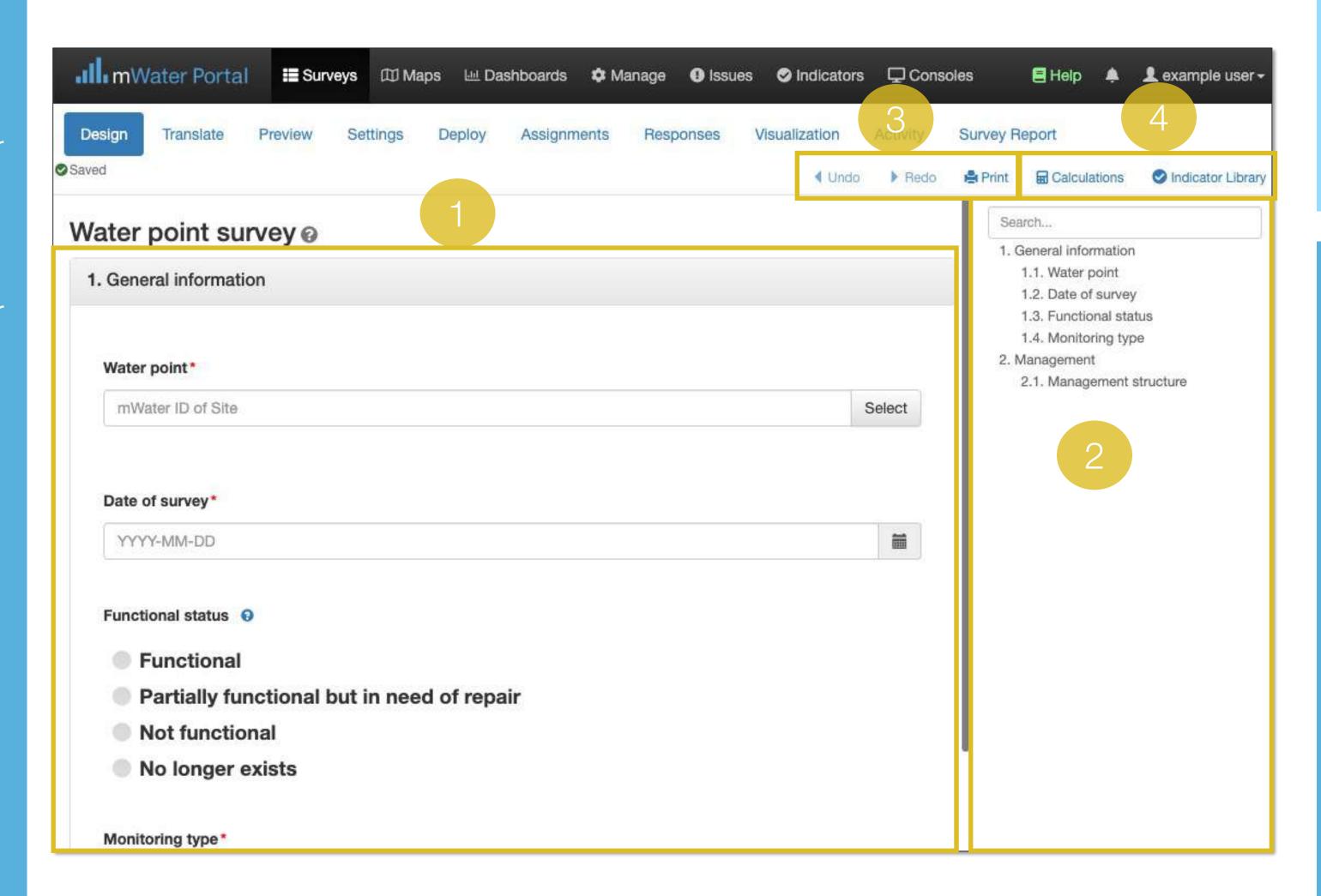
Design view

This tab is where the survey administrator configures the structure of the survey form, including:

- **1. The form view –** Displays each question, similarly to how it will appear for the enumerator
- **2. Table of contents –** The overall view of the structure of the survey form
- 3. Basic controls Undo, redo, print
- **4. Advanced controls -** Add calculated values and standard indicators to the survey form

Notes:

- All changes are instantly saved (green Saved icon)
- More than one user can work at the same time
- Move your cursor over a section or question to get more choices
- For surveys with sections (pages), these will all show up here as a single page, separated by grey boxes

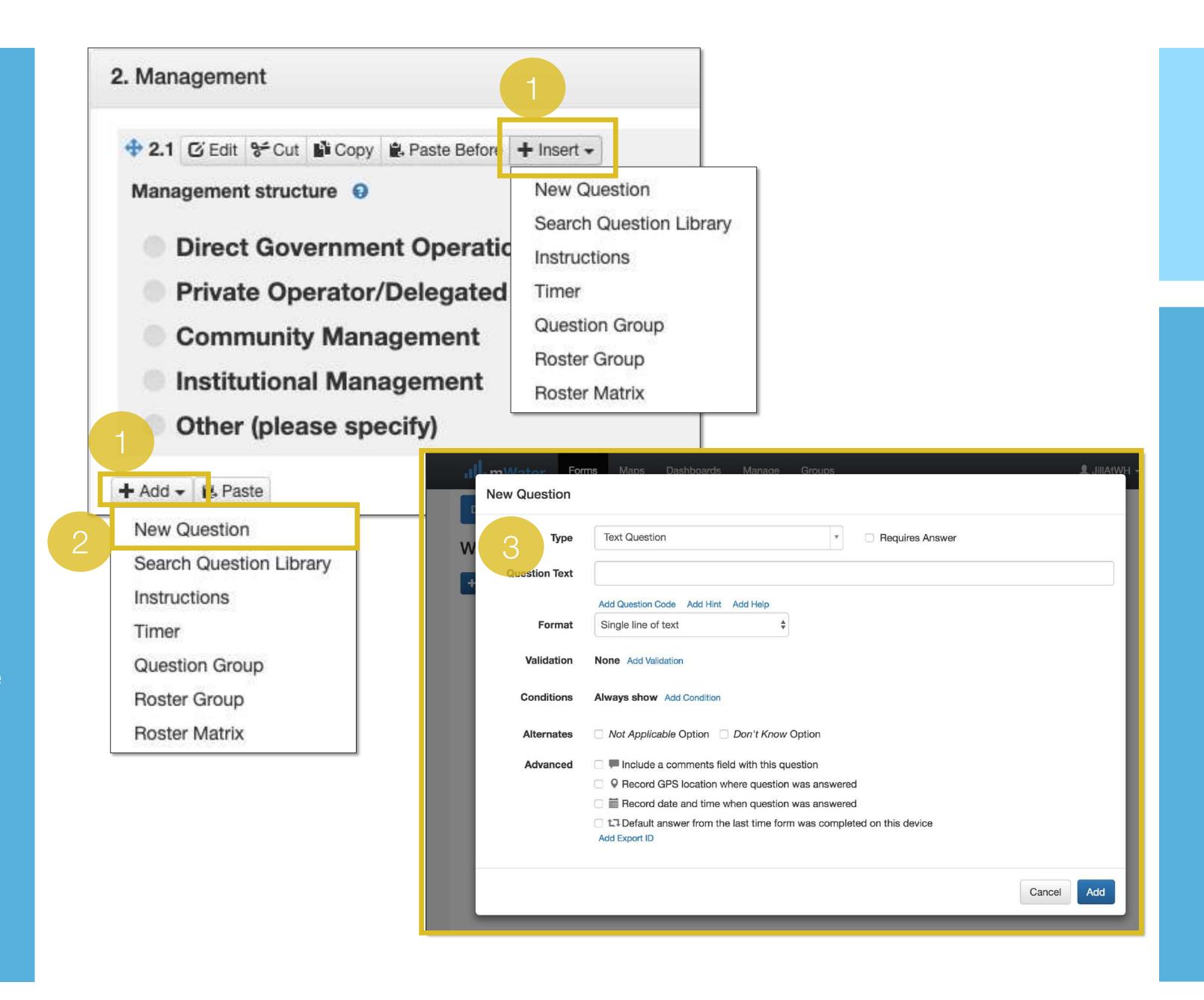




Adding questions

To add a question to the survey form:

- 1. Click the **+Add** or **+Insert** button
- 2. Select an option from the dropdown menu
- a) New question creates a new blank question
- b) Search question library Search for an existing question within any other survey and add it to this form
- c) Instructions Insert notes for the enumerator
- d) Timer Insert a timer which can be stopped by the enumerator
- e) Question/roster group and roster matrix Inserts a set of questions grouped together
- 3. Use the popup to configure the question and click **Save**





Question types

The question **Type** controls what kind of data can be entered.

Question type	Description
Text	type a response using the keyboard
Number	type a number using the number keypad
Dropdown	pick a single answer from a dropdown
Radio Button	pick a single answer from a list
Checkbox	single checkbox
Multi-check	pick more than one answer from a list
Date	enter a date, time, or both using a calendar
mWater Site	select a site to link to this survey
Location	set GPS coordinates using device or map
Units	number with units of measure included
Image (s)	use camera (or gallery) to capture one or more images
Text List	add multiple items of text in a list
Cascading lists	displays several dropdown questions which are each conditional on the previous ones
Scan Barcode	get text or numbers from a QR or barcode
Matrix	enter data in a table with pre-defined rows and columns
Roster matrix	enter data in a table with pre-defined columns, where enumerators can add rows
Question group	enter a set of questions, grouped together
Roster group	enter a set of questions, grouped together, where enumerators can click +Add to repeat the question group



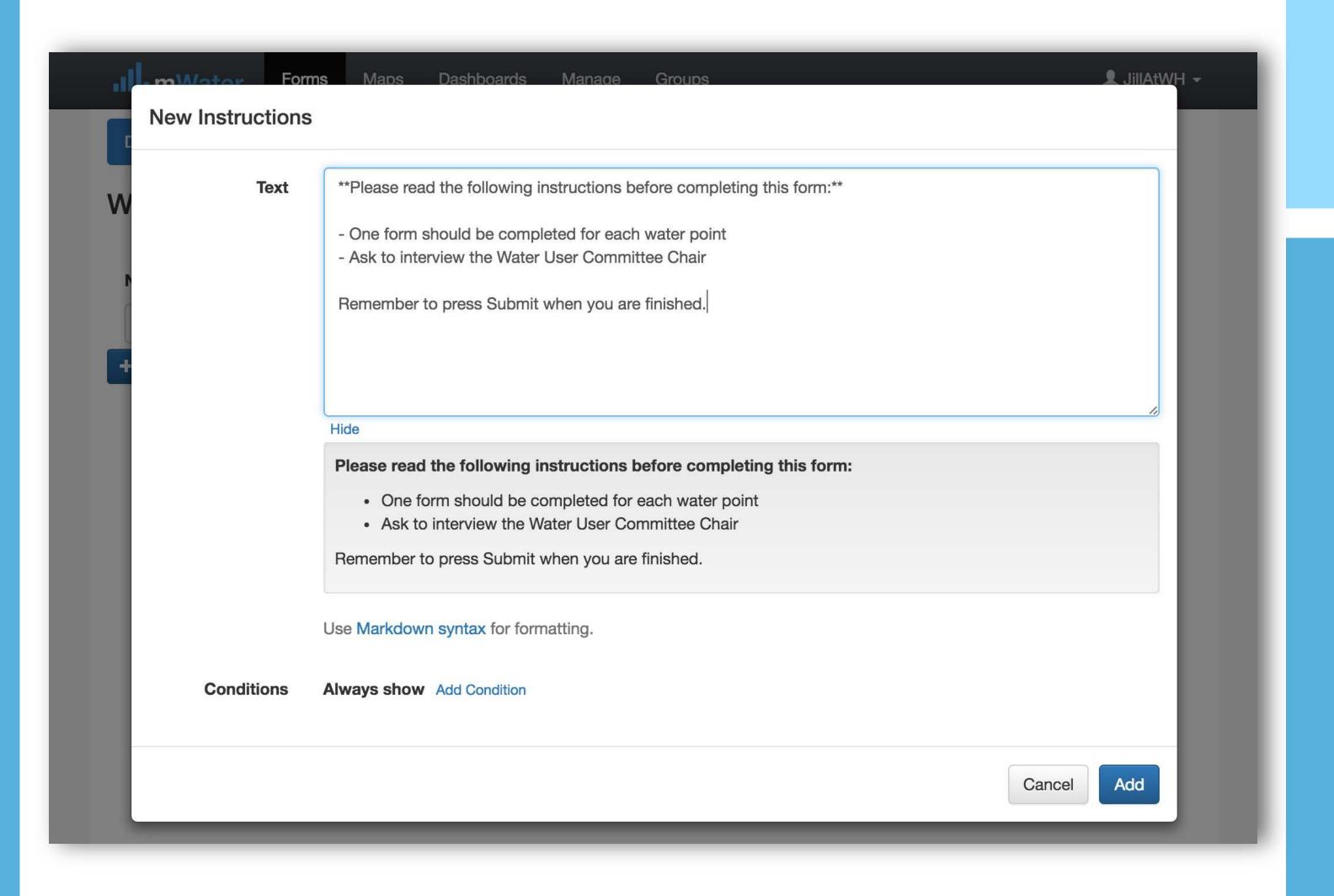
Instructions

Instructions are blocks of informational content that you want to include in the form for the enumerator

You can add special codes using a language called Markdown to add formatting to the text:

- Click on Markdown syntax for more details on formatting
- Press Preview to see how the text will look

Note: Instructions can contain calculated formulas and also embedded images





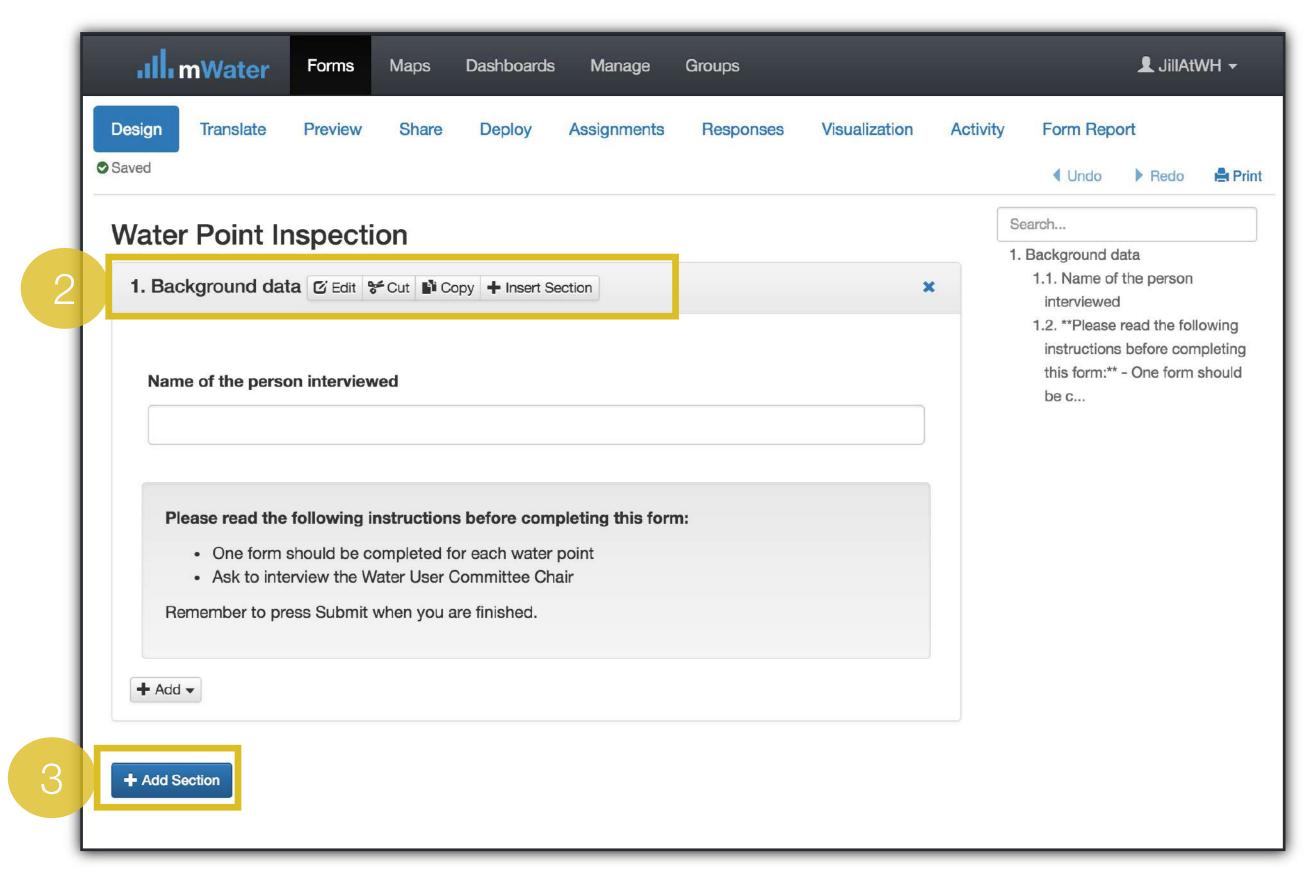
Sections

Using sections splits a survey form into pages for the enumerator. Each page must be completed before advancing to the next.

To use sections:

- 1. Click on **Convert to Sections.** A box will appear around all of the current questions, grouping them into a single section
- 2. Move your mouse over the section title to see more options
 - a) Edit Change the name, description, and conditions of the section
 - b) Cut/copy/paste Move or duplicate the section to another location
- 3. Further sections can be added via the +Add section or +Insert sectionbutton







Conditions

Conditions - Control whether a question, section, etc will be displayed, based on the answers to previous questions.

Example:

Question mwf03 asks "Is water available at all times of the day from this source?" (Yes/No)

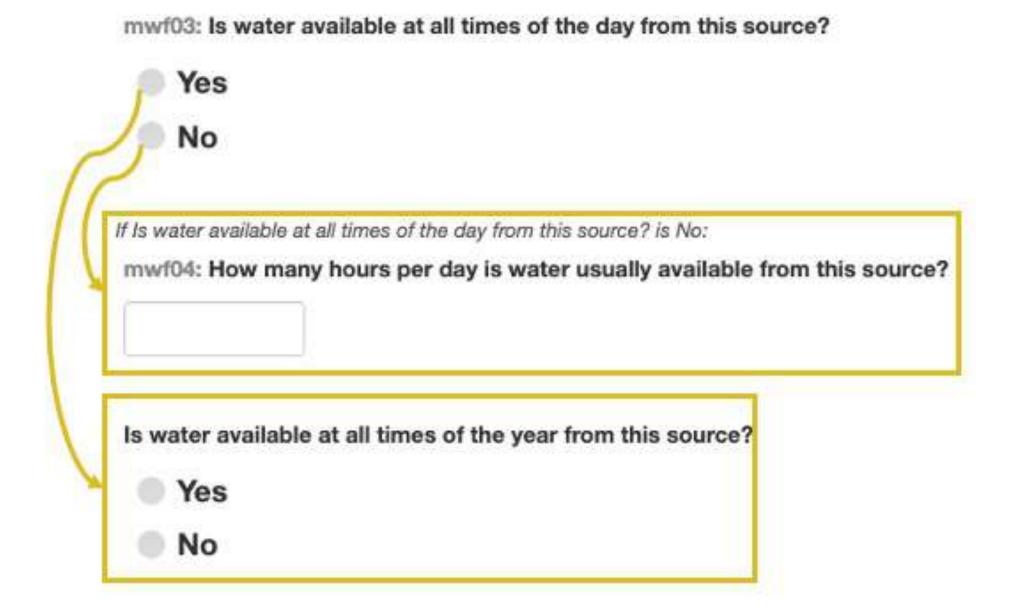
Question mwf04 asks "How many hours per day is water usually available from this source?" (Number)

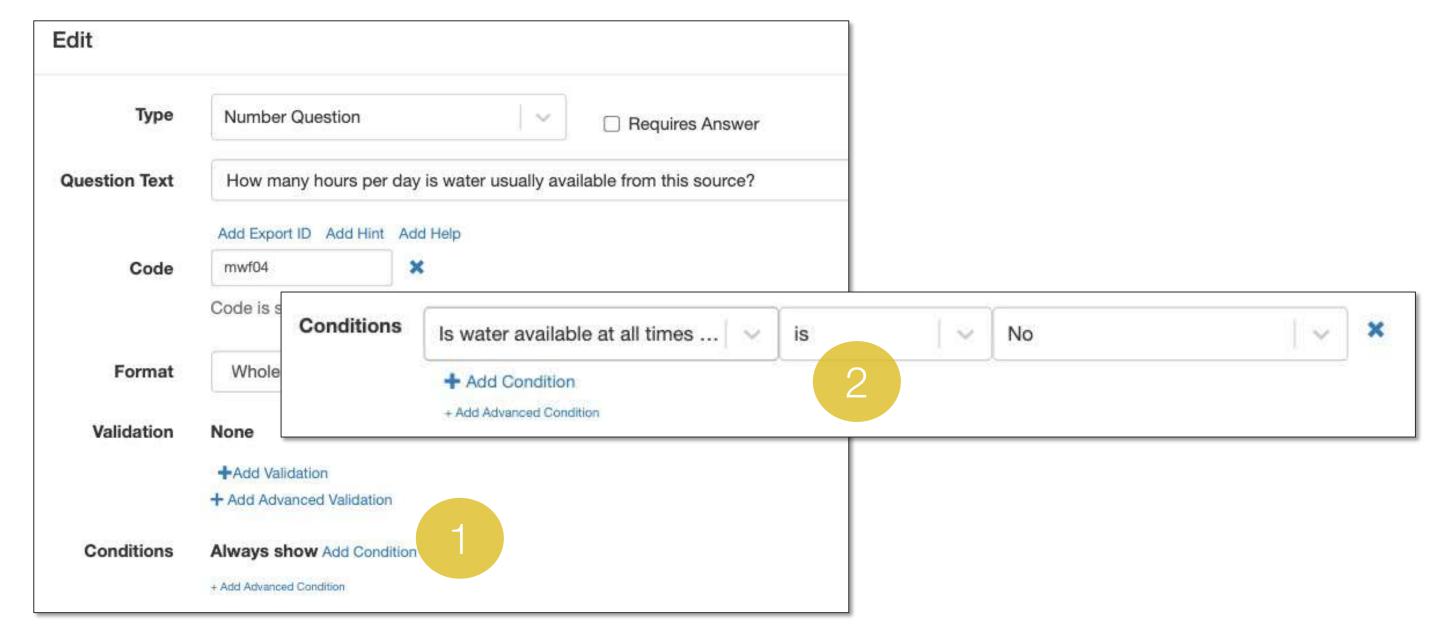
IF MWF03 IS NO -> ASK MWF04

IF MWF03 IS YES -> DO NOT ASK MWF04

To add this condition:

- 1. From the MWF04 popup menu, add a condition
- 2. Use the menus to enter "Is water available at all times of the day from this source? Is No"







Editing forms

Cut and paste (moves a question anywhere)

1. Click **Cut** tbutton and then select **Paste** or **Paste before**

Copy and paste (duplicates a question)

2. Click **Copy** tbutton and then select **Paste** or **Paste before**

Move (moves a question within a section)

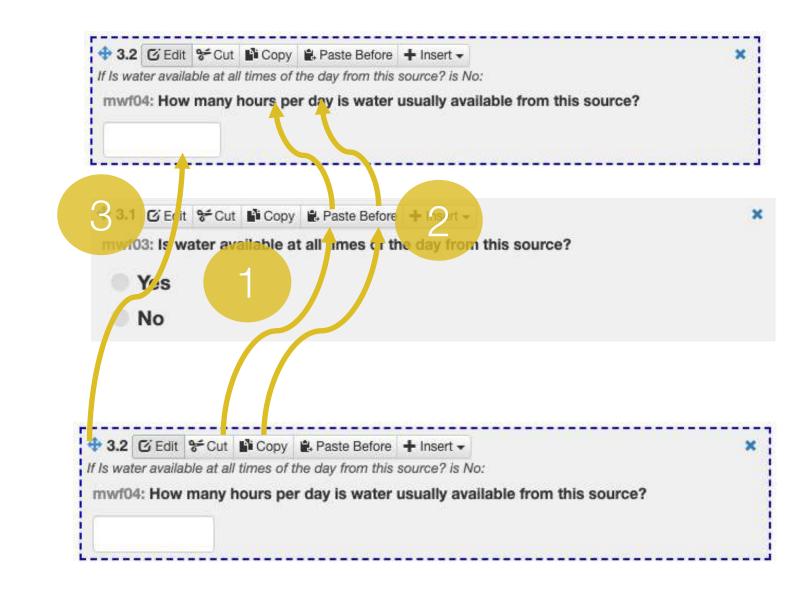
3. Use the icon to drag a question to a different lation within a section

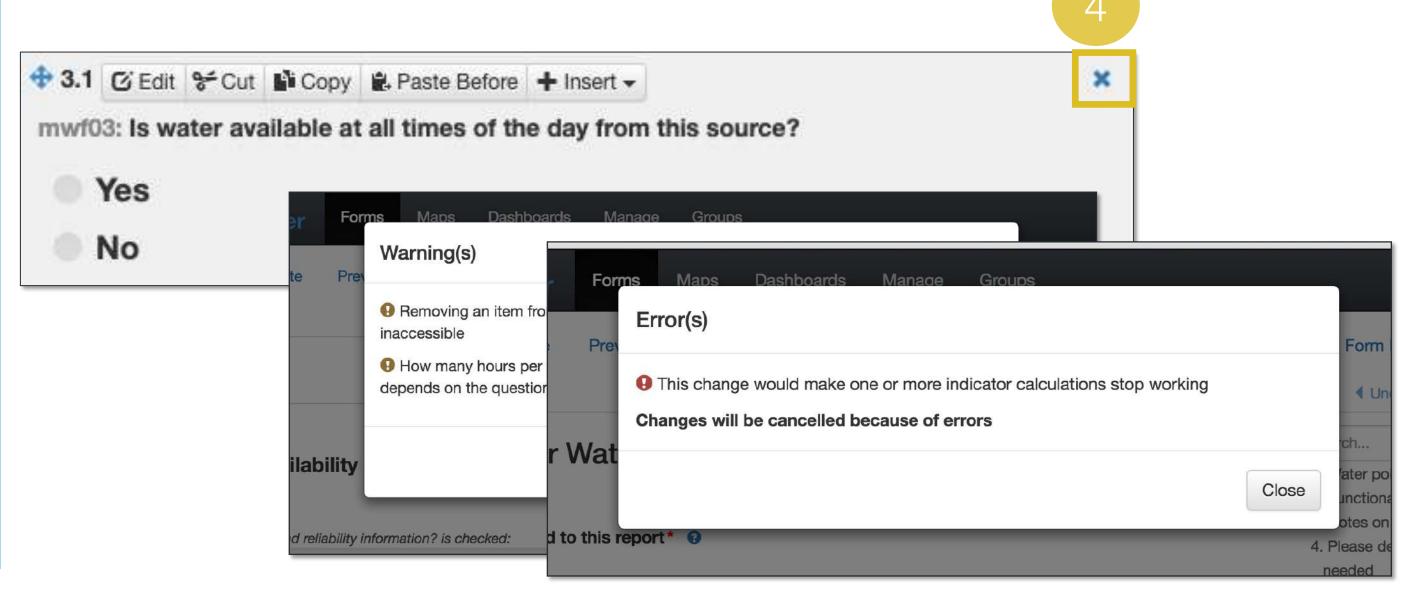
Delete a question

1. Click on the X at the top right of the object to delete it.

A warning will appear and you will be asked if you are sure you want to delte the item:

- Deployed form. If a question is deleted from an active, deployed form the data already collected will be lost.
- Condition. If a condition depends on a question, you will be warned before it can be deleted.
- Indicator. Questions that inform indicators cannot be deleted without deleting the calculation first. Contact a form administrator if you receive this error.







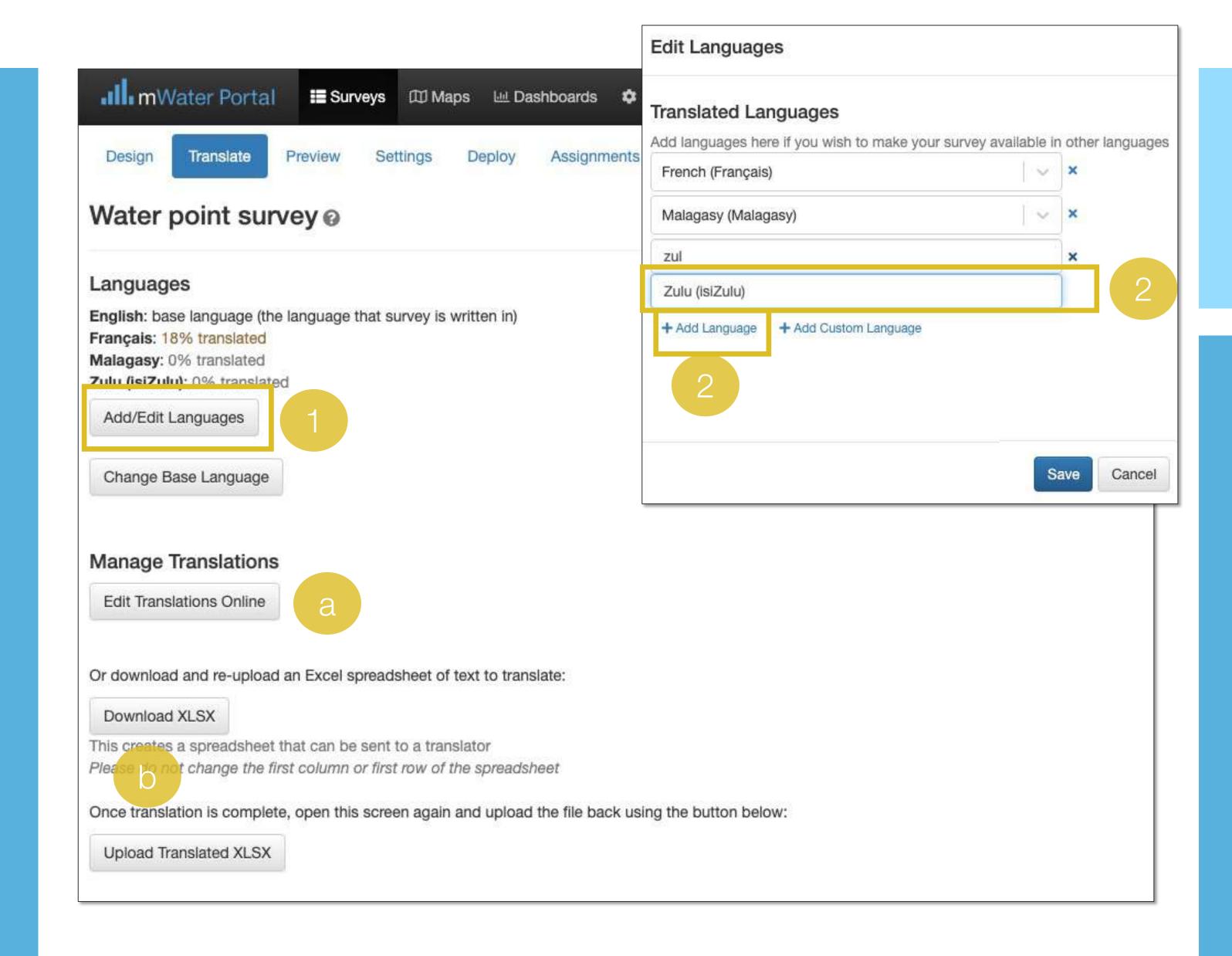
Translate

Adding a language:

- Click the button Add/Edit Languages
- 2. Use +Add language to choose a language from the list or +Add custom language.
- 3. Enter a language in the list and click Save.

There are two methods to translate the survey:

- a) Edit translations online
- b) Download/upload XLSX

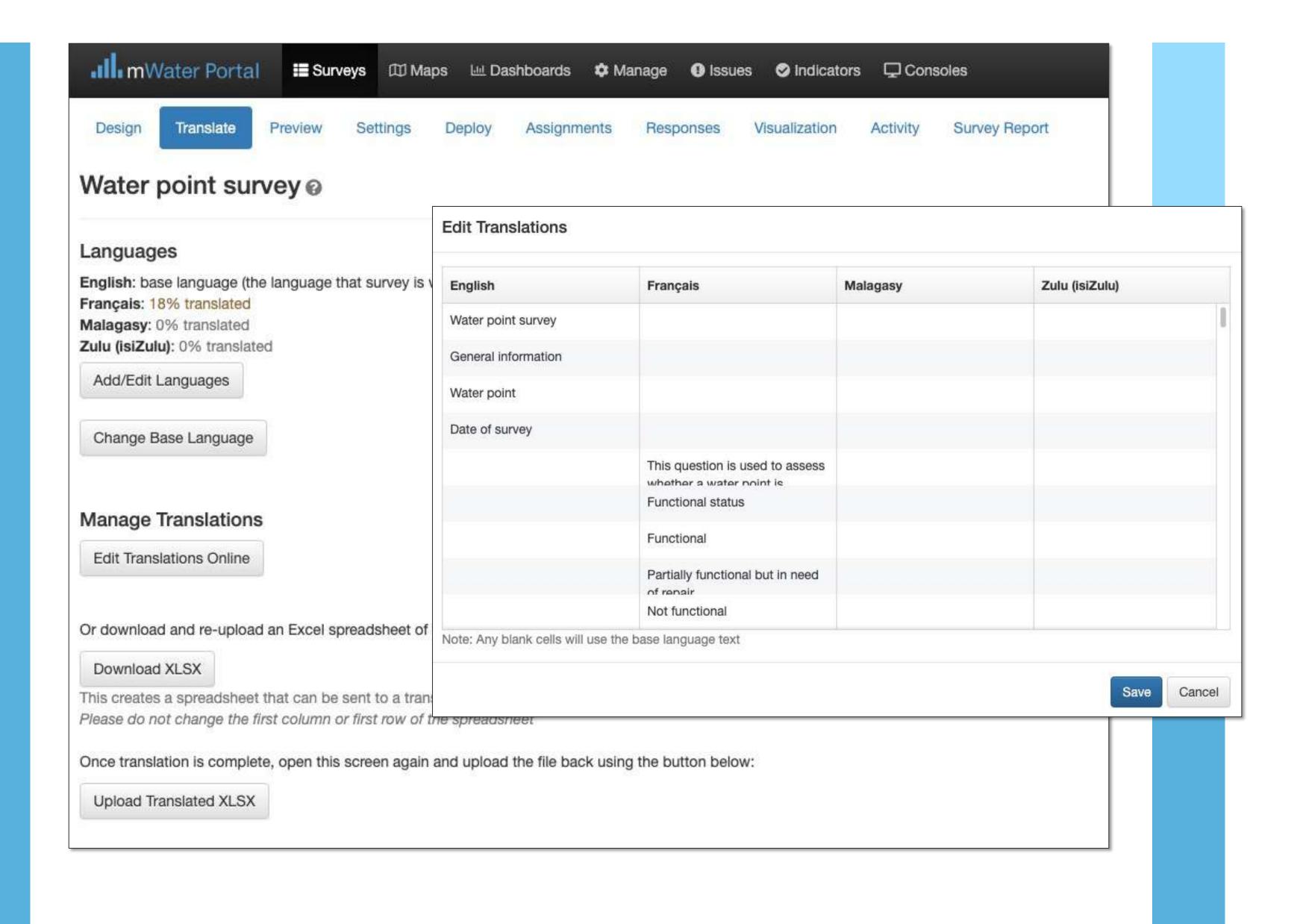




Translate – Edit translations online

Translations can be added for each line by:

- 1. Selecting the cell in the translated language column
- 2. Typing in the translation
- 3. Clicking outside of the cell to store the translation
- 4. Clicking Save when finished

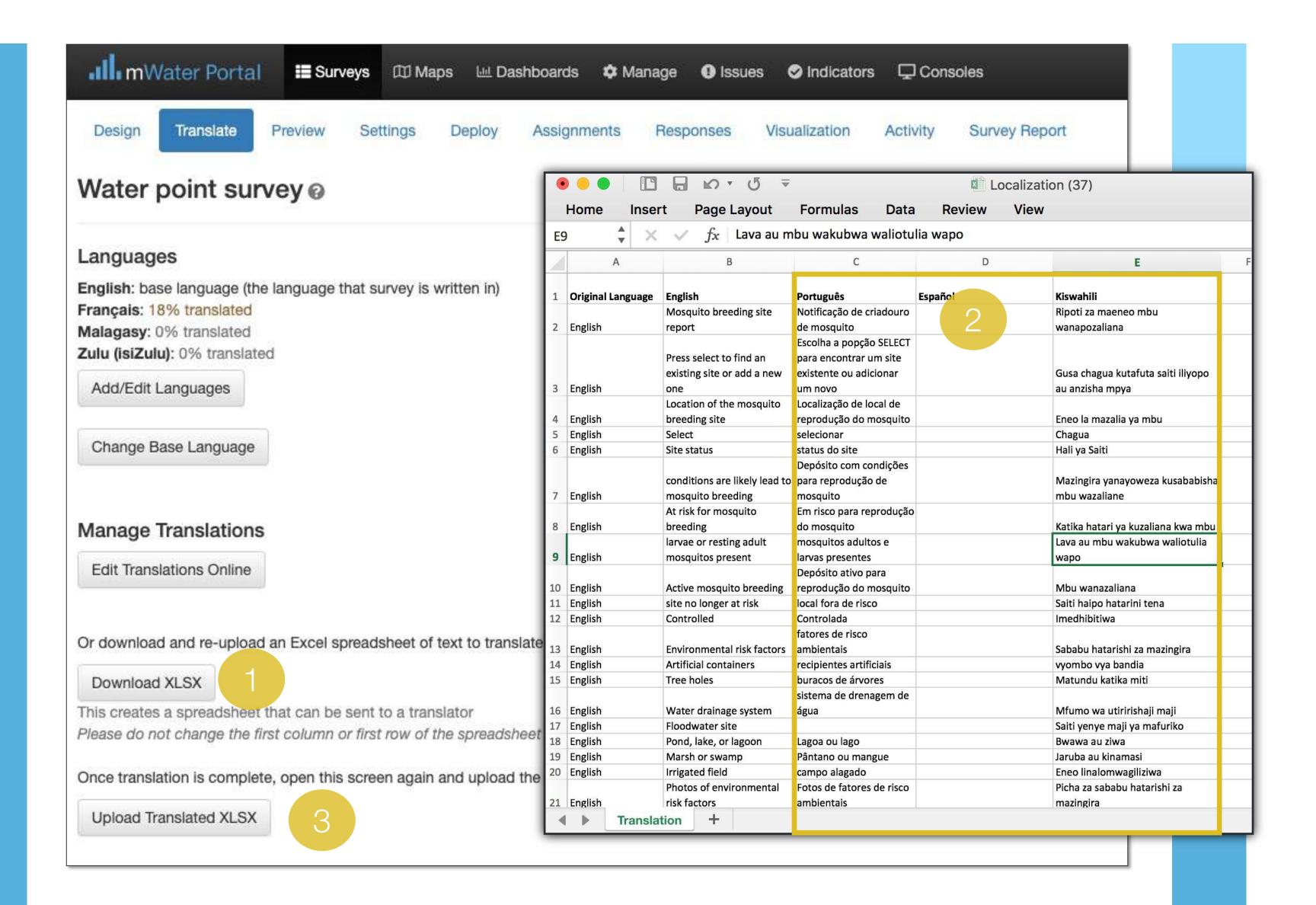




Translate – Download/upload XLSX method

- 1. Download the XLSX file
- 2. Translate the blank cells after columns C
- 3. Upload the completed file

Note: This method is recommended for surveys with long help text descriptions with markdown formatting or for outsourcing the translation to someone who does not have an mWater account

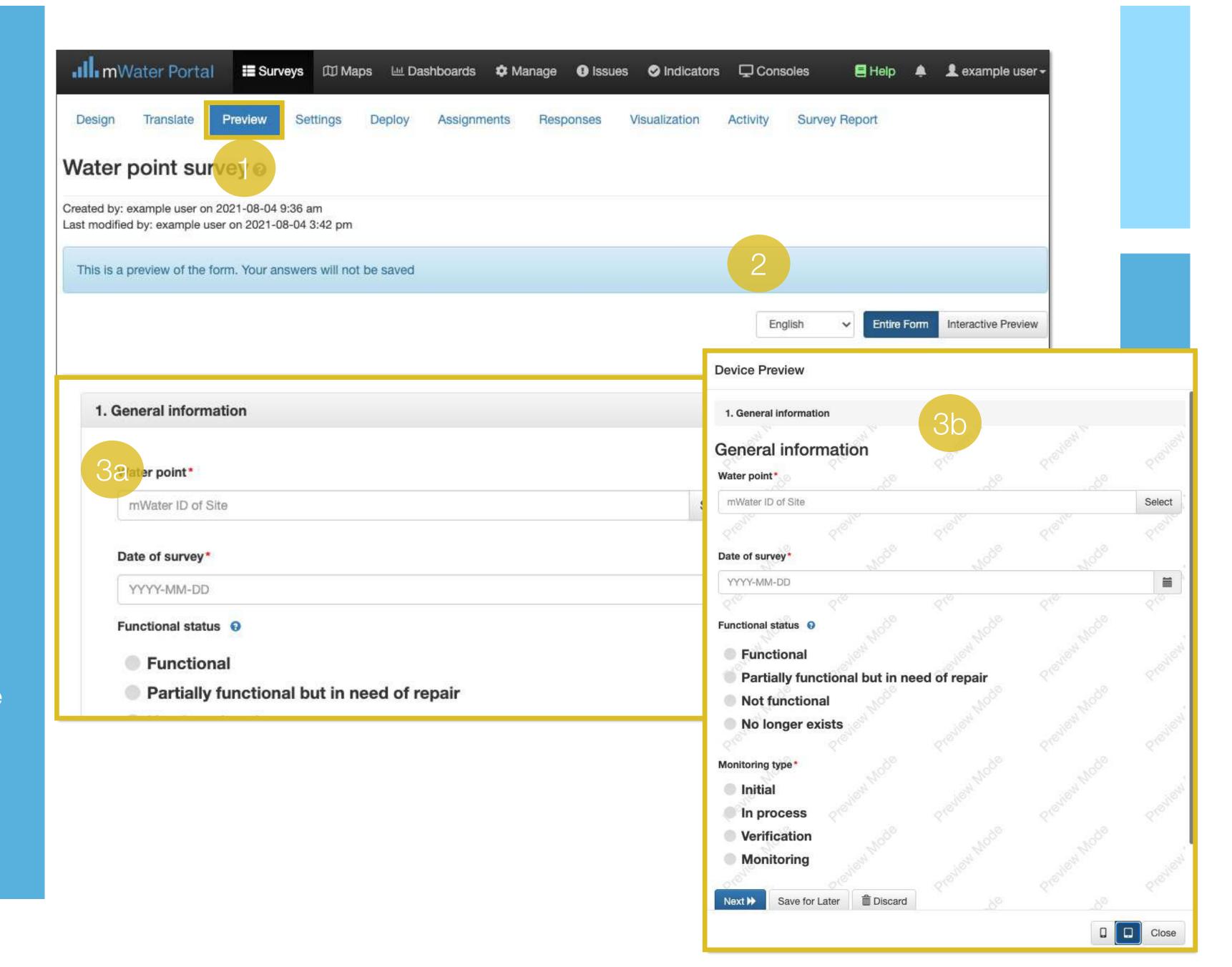




Preview

- 1.Click on the **Preview** tab to view how the form will appear to enumerators.
- 2. Choose the language from the dropdown box.
- 3. Choose the type of preview:
 - a) Select the Entire Form This will display the entire form as an interactive preview. All sections will appear on the same page.
 - b) Interactive preview Displays the form exactly how it will appear on the device. Sections will be displayed as different pages. You may also choose the type of device (phone or tablet) for the preview.

Note: This tab is only to preview the survey form, not for data collection. Data that is entered here will not be saved.





Settings

Under the Settings tab, the survey level permissions controls which users have permission to view/edit the survey form itself.

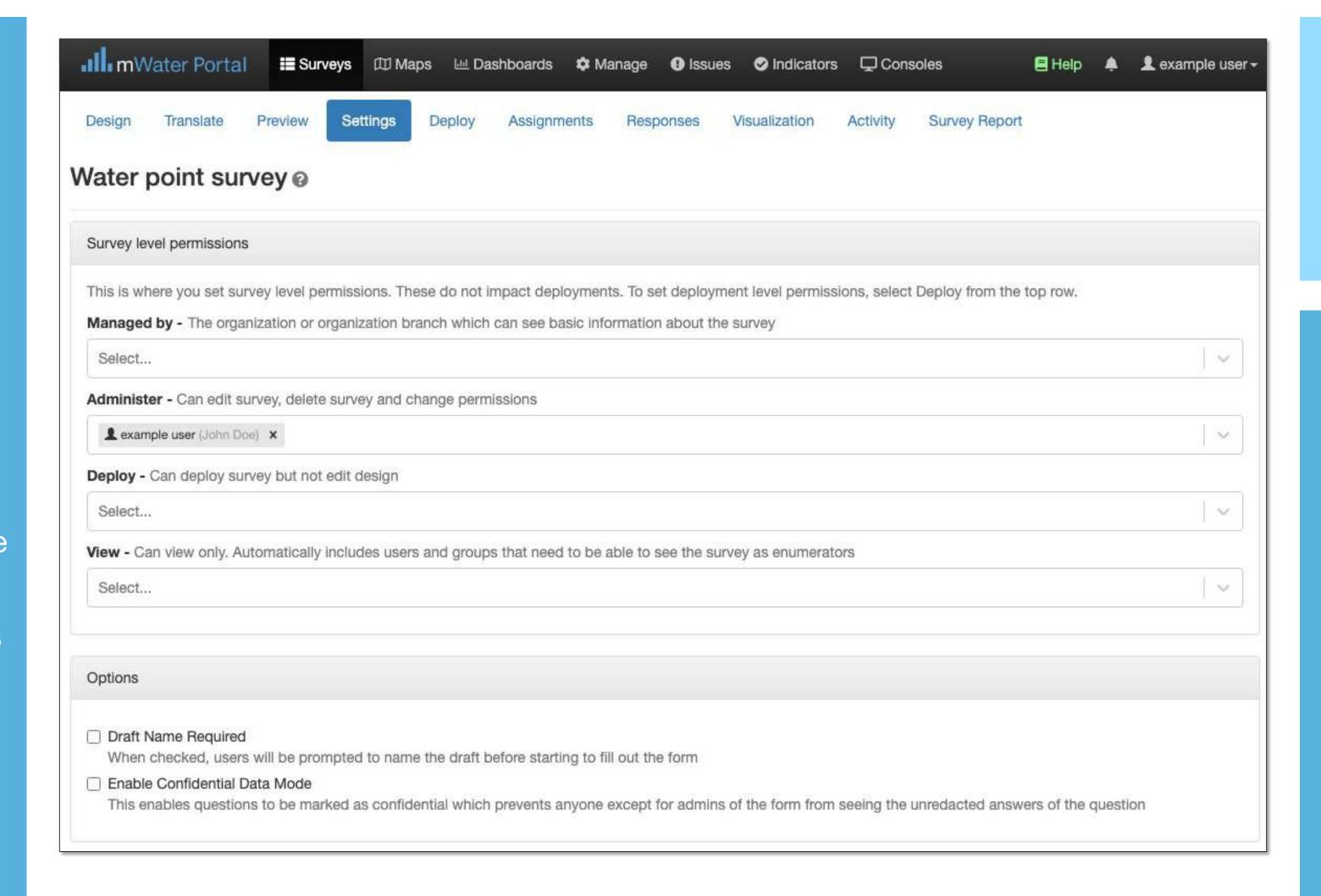
To add a user or organization to the role:

- 1. Click Select...
- 2. Type the name of the user or organization
- 3. Select the user or organization from the list

Note: The ability to view survey responses (the data itself) is controlled separately in each Deployment.

Draft name required – when checked, users will be prompted to name the draft before starting to fill out the form.

Enable confidential data mode – This enables questions to be marked as confidential, which prevewnts anyone except for admins of the form to see the unredacted answers





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(Design of a form)

Deployment

(Set of responses to a form)

Organization

(Structured group of users)

Site

(Location monitored over time)

Dashboard, Map, Datagrid, & Console

(Data visualizations)

Managed by

The organization or organization brand which can see basic information about the survey

Admin

Can edit form design and view and edit all responses

Deploy

Can create new deployments

View

Can view the design of the form

Enumerators

Can open the form in Surveyor App and submit responses

Approvers

Can approve or reject responses

Managers

Can view, edit, or approve responses at any time

Viewer

Can view final approved responses

Admin

Can create lower level branches and teams, add/remove users, change settings

Managers

Automatically added as managers to new deployments

Viewer

Automatically added as viewers to new deployments

Managed By

User or organization that can edit or delete the site data

Site privacy levels:

Protected (recommended): any user can see the basic site data and reference site in surveys

Private: only the Managed By organization can view site

Public: any user can view and edit the site data

Admin

Can view, edit, and delete visualization and share access to it

View

Can view all data and visualizations on the page

Create Shareable Link

Generates a unique URL to provide view access without an mWater account

Create Shareable Link With Quickfilters Locked

Generates a unique URL to provide view access without an mWater account only to the filtered dataset

Survey permissions



Surveys -Form design Advanced Topics

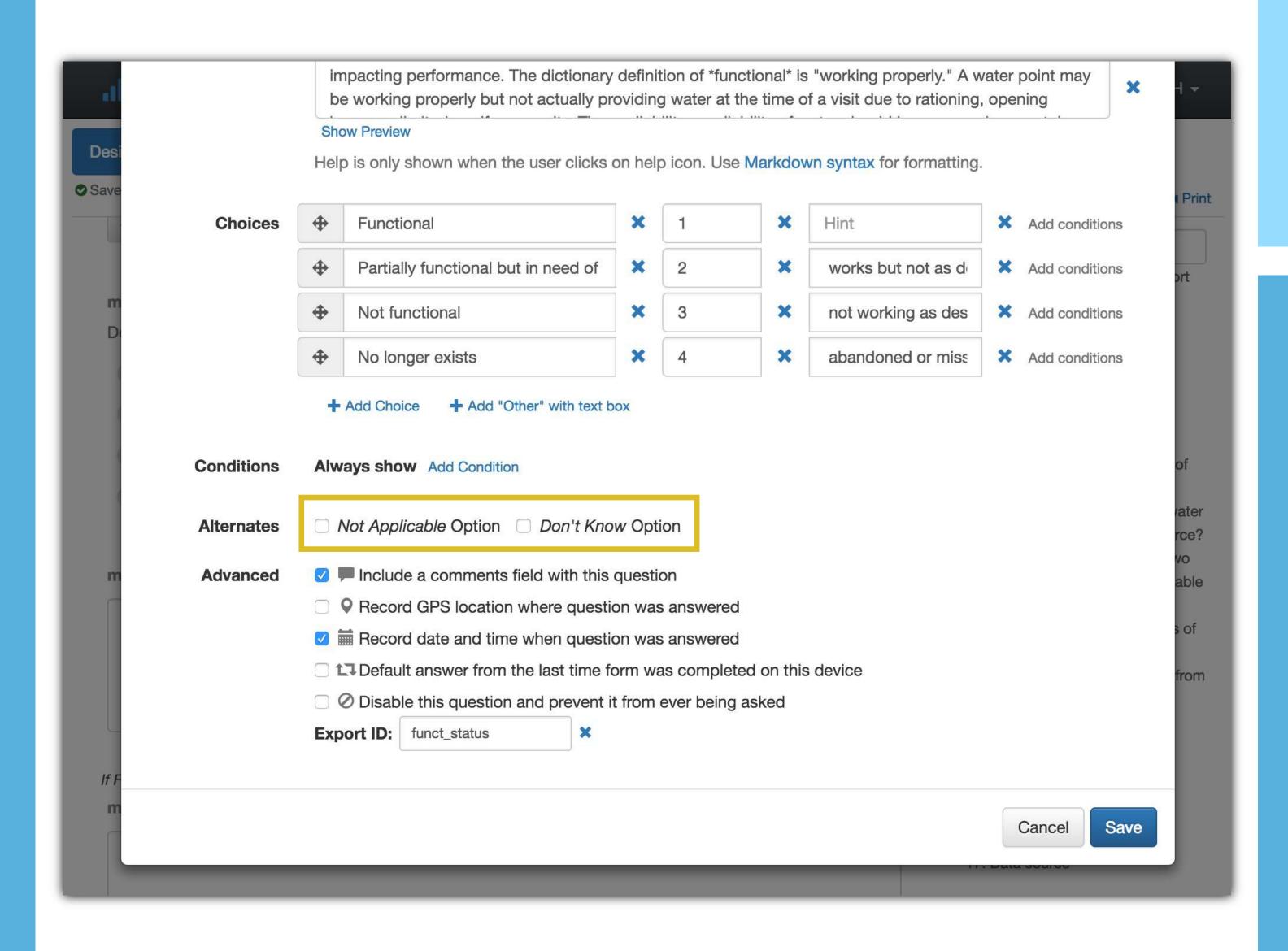
- Question options
- Assignments
- Indicators



Alternates

Adds a checkbox for two common situations:

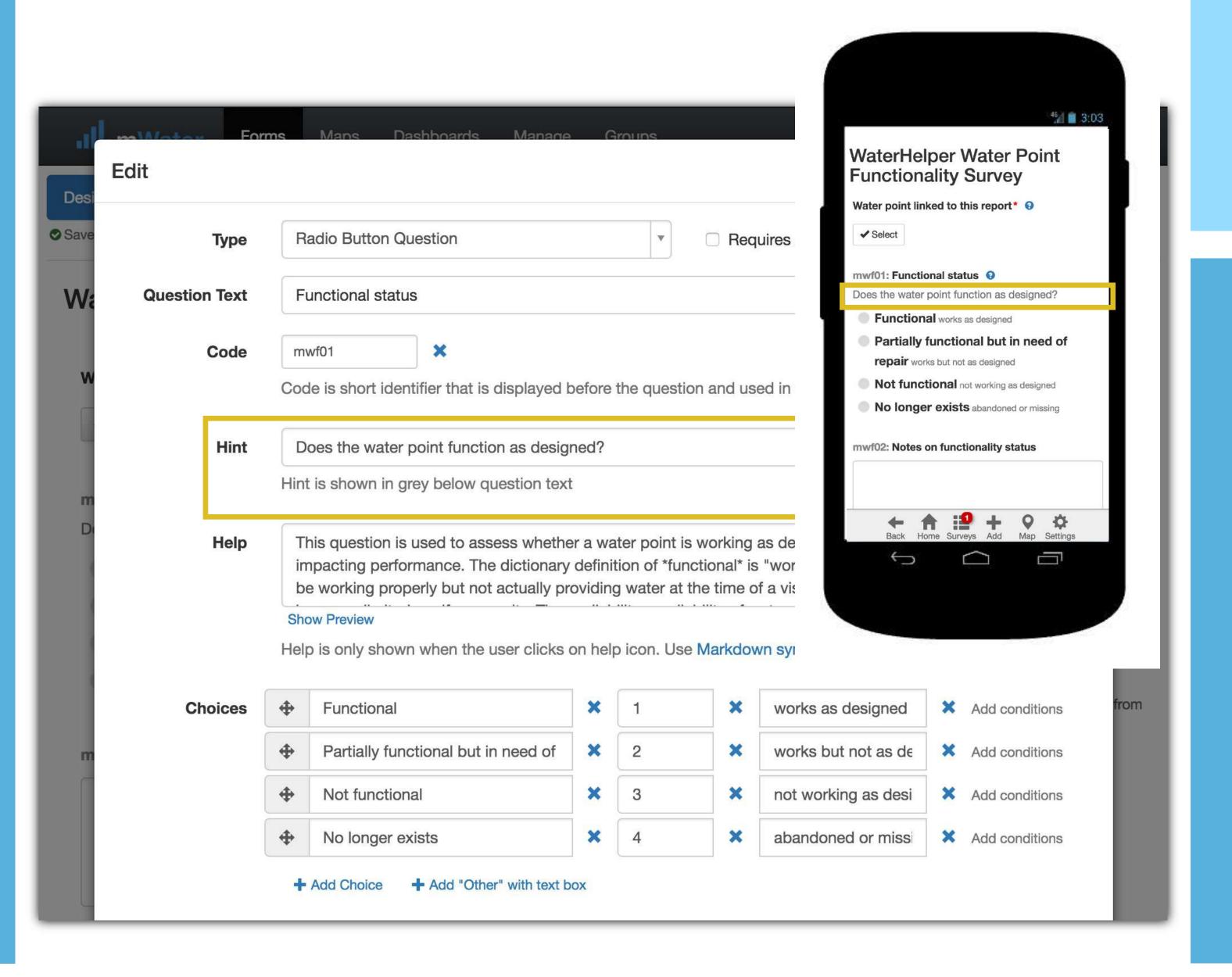
- Not Applicable
- Don't Know
 - 1.These options are shown in a separate column on export.





Hint

The **Hint** contains text that is always shown below the question or next to an answer choice. Use this for short reminders or explanations to enumerators.

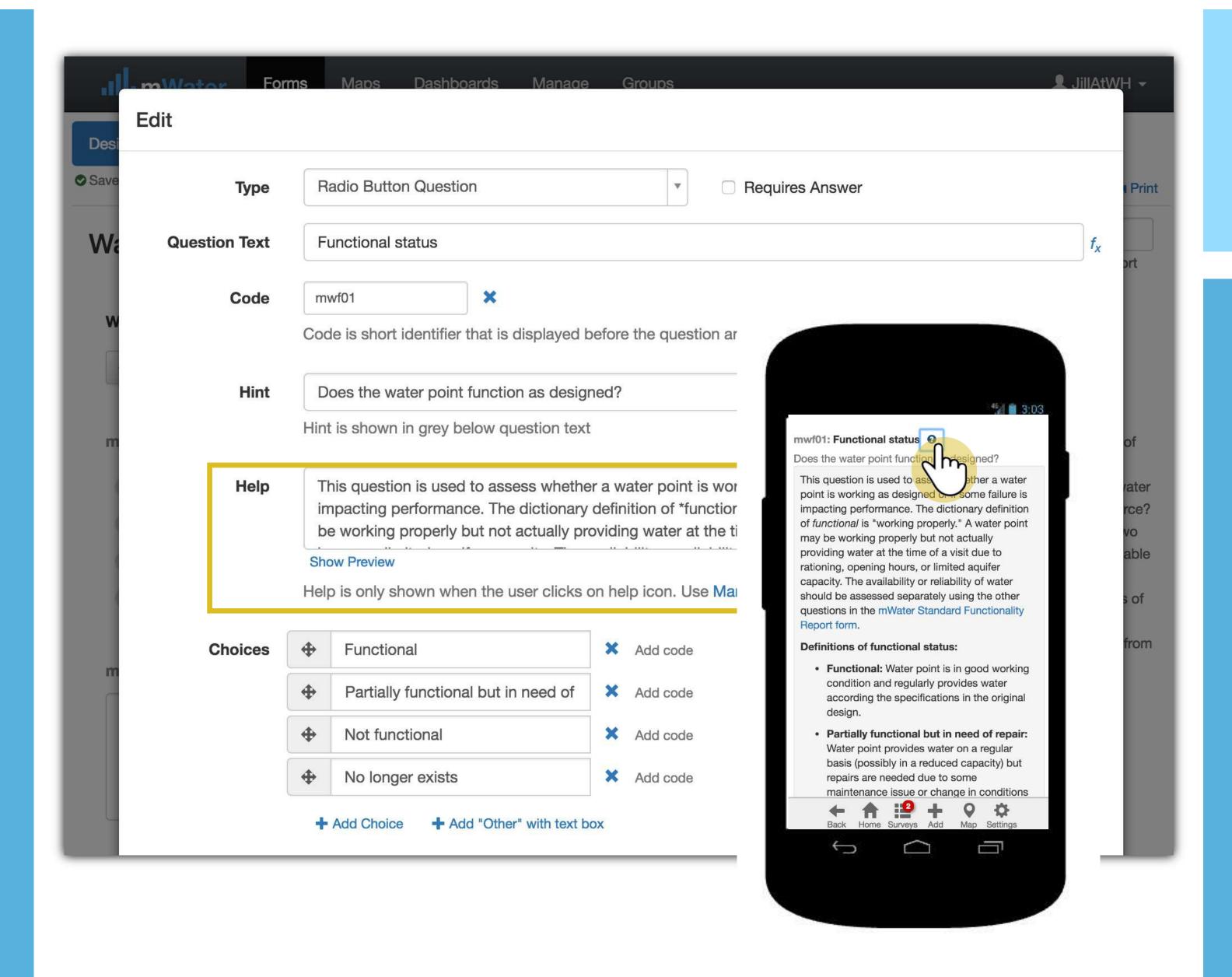




Help

The **Help** text is only shown when the enumerator clicks on the ? icon next to the question text.

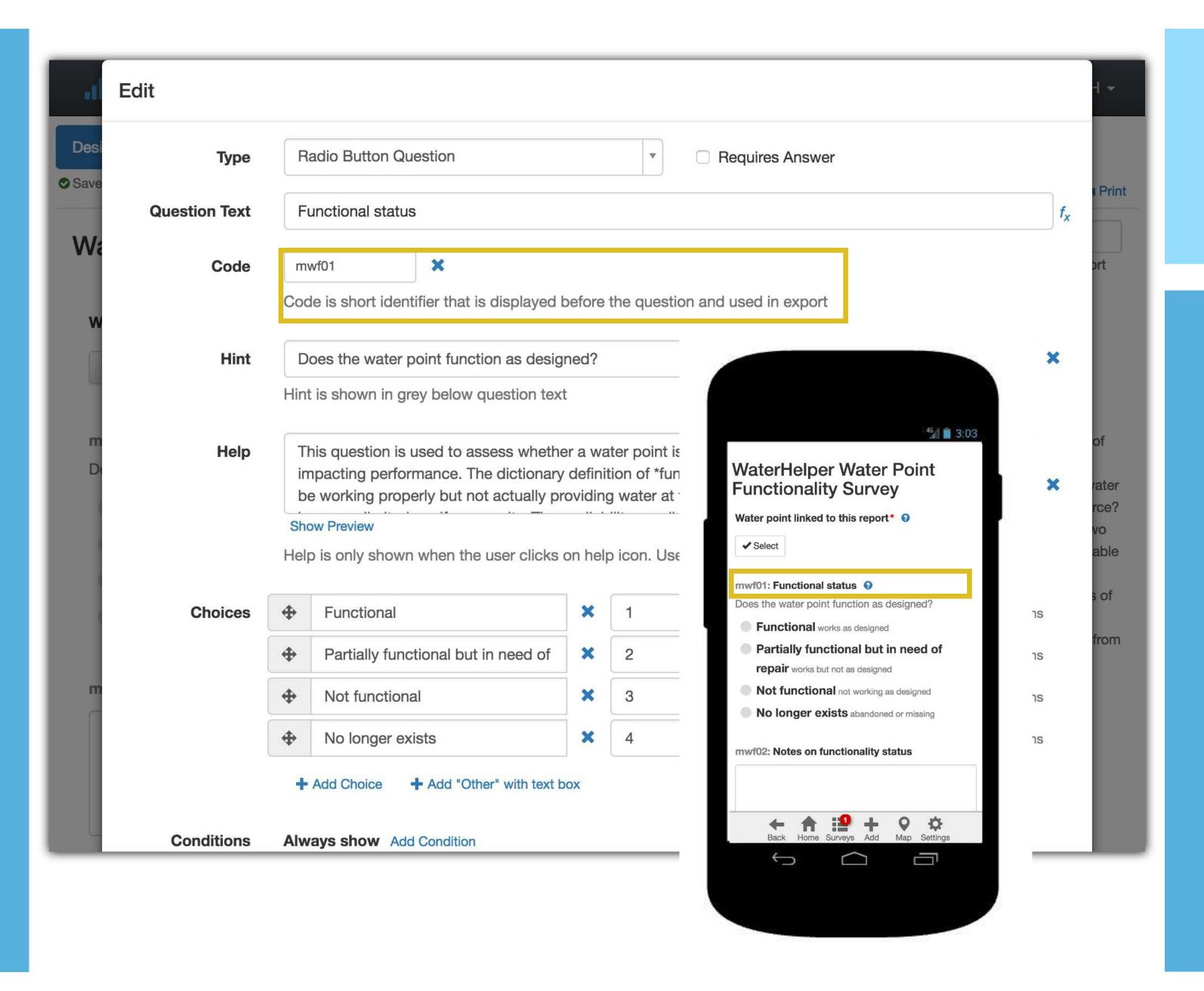
Help text can include formatting, links, and images (when online). Click on "Markdown syntax" in the question popup for more information on formatting.





Code

The question **Code** is optional text that will be shown in front of the question in a different font.

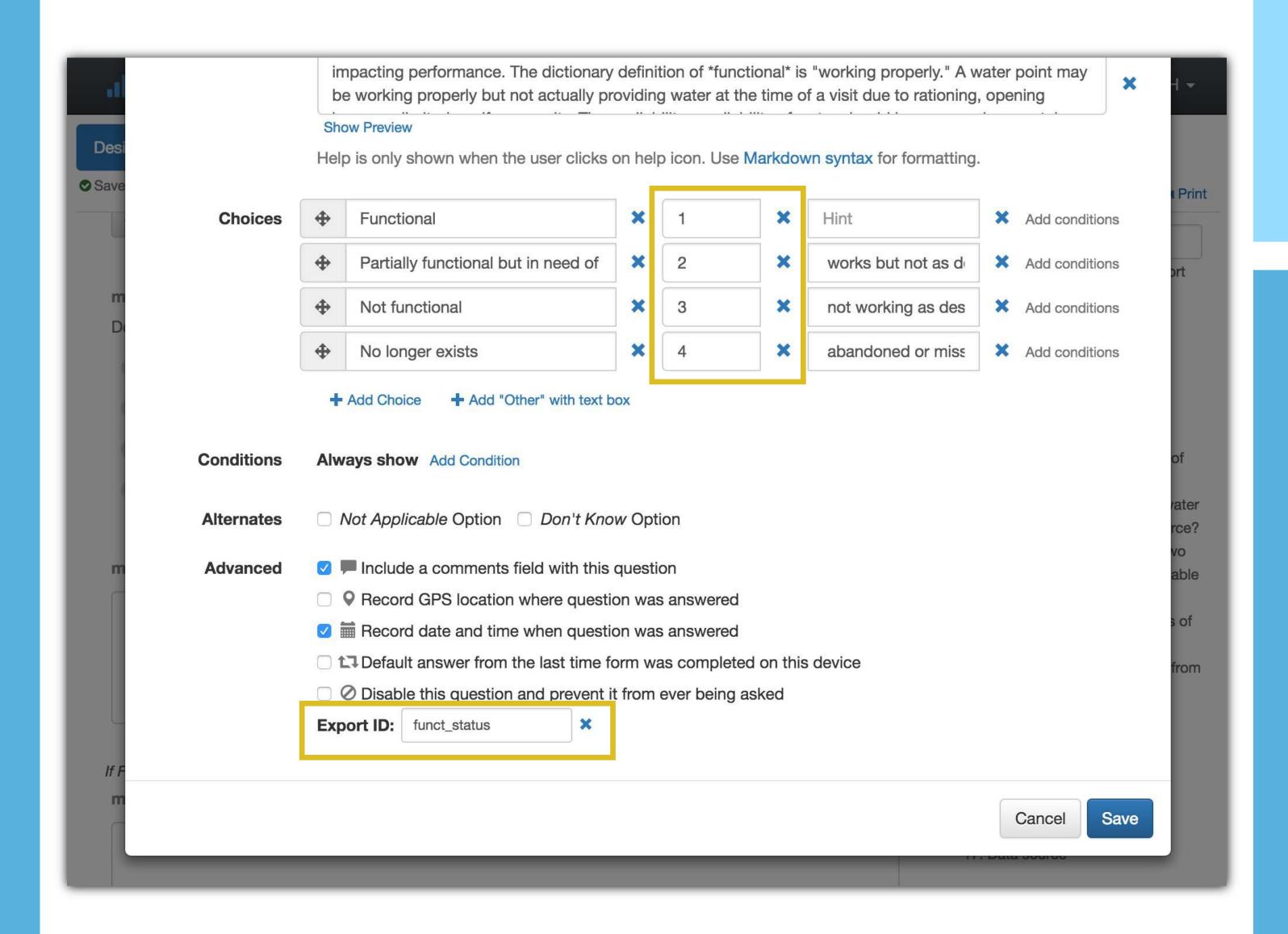




Export ID

Questions and answer choices can each have an **Export ID** that replaces the full text when exporting survey data.

- The enumerator does not see the Export ID
- You can choose whether or not to use the ID at the time of export.





Indicators

Indicators are the best way to collect standardized data in mWater. They allow you to:

- Standardize data collection across surveys
- Automatically calculate results

To add an indicator:

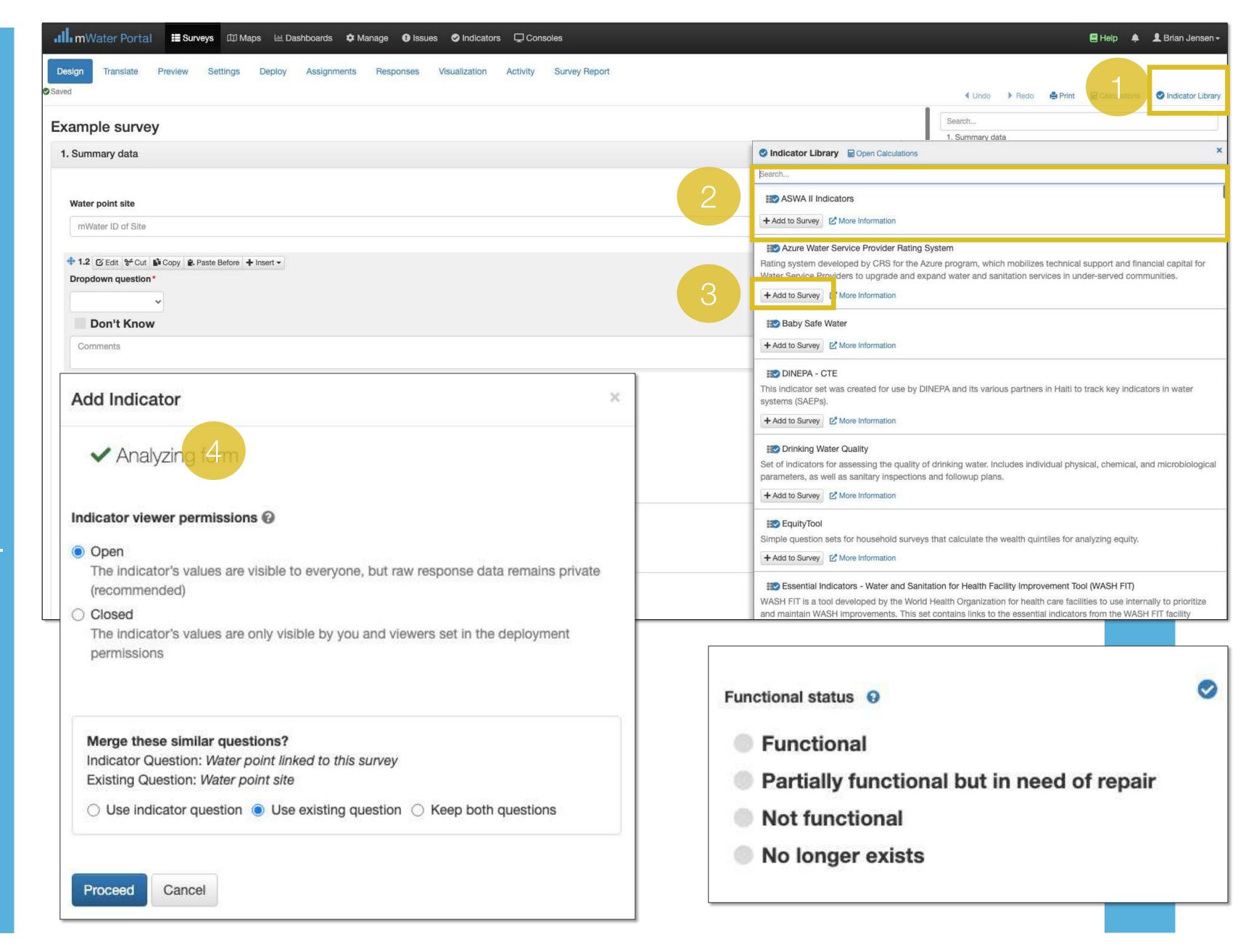
- 1. Click the indicator library button
- 2. Search for an indicator via the search box and list
- 3. Click the "Add to Survey" button
- 4. Configure the parameters and click Proceed.

Open – The indicator values are visible to everyone, while raw responses are private

Closed – The indicator values and raw responses are private (only visible to viewers of the ddeployment)

Merge these similar questions – This option allows admins select whether to create a new question, use existing question, or both.

Any question which is part of an indicator will show up with a blue check mark at the top right.



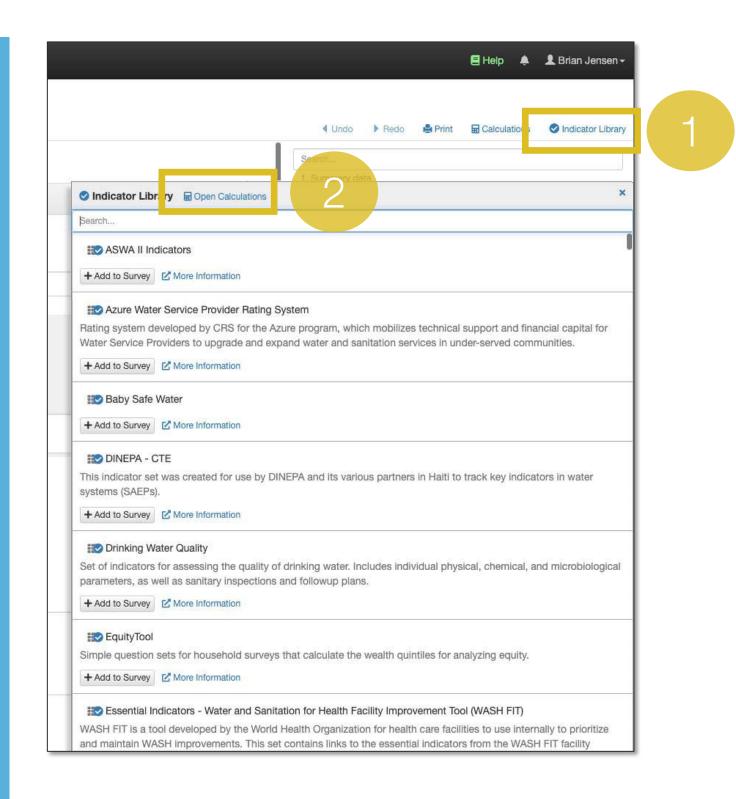


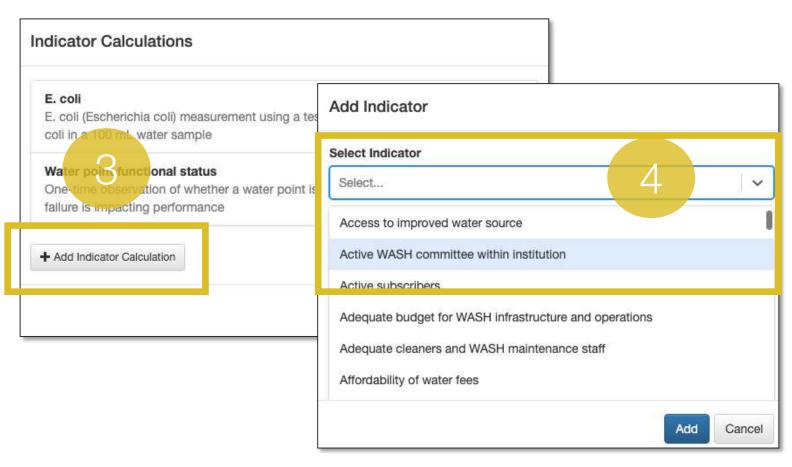
Manually adding/editing an indicators

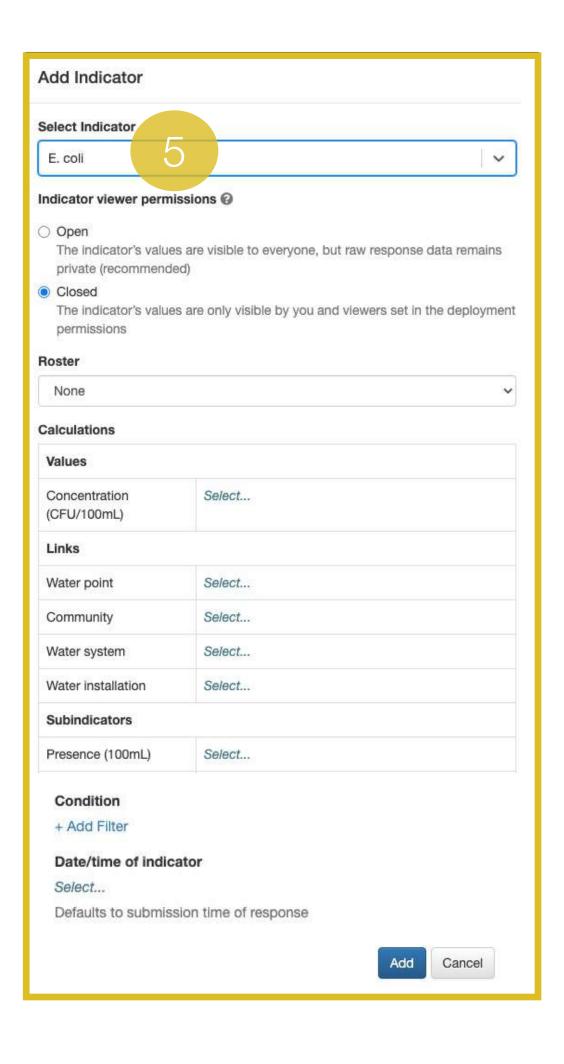
To manually add/edit an indicator:

- 1. Click the Indicator Library
- 2. Select Open Calculations
- 3. Click Add indicator calculation
- 4. Select the indicator from the list
- 5. Configure the indicator as needed and select Add. Make sure to select an input question from the survey for each indicator calculation. Any of them left blank will cause that part of the indicator to be blank.

Note: Each indicator has a documentation page in the indicator library which can be accessed via the More information button







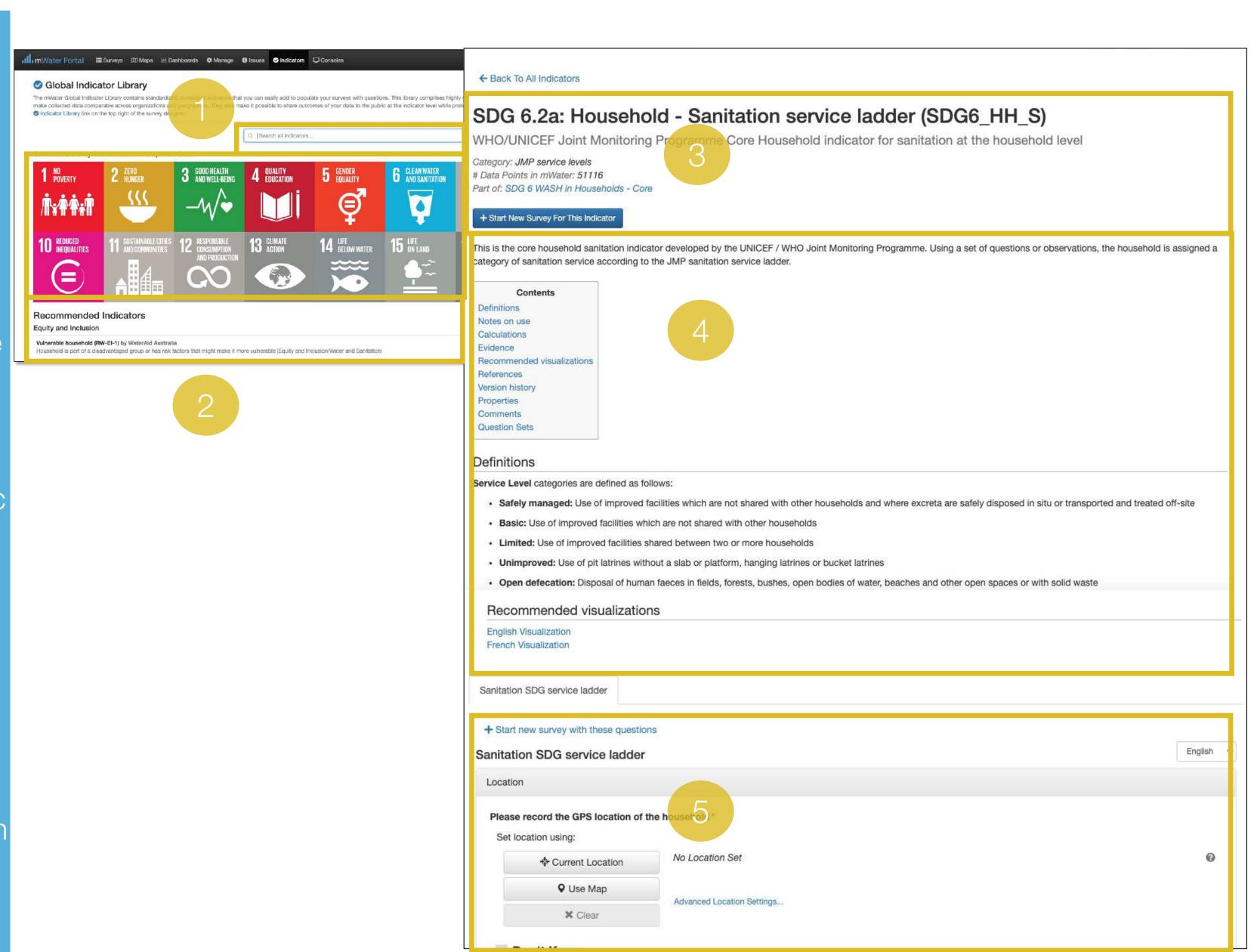


Using the indicator library

The indicator library contains documentation on each indicator.

To access an indicator:

- 1. Use the search bar or the Sustainable Development Goals diagram to search/filter the indicator list
- 2. Select the indicator from the list
- 3. The title of the indicator displays basic information like the number of data points in the system and an option to start a new survey with these indicators
- 4. The documentation section outlines definitions, Calculations, evidence, recommended visualizations, properties, and notes on use.
- 5. The last section of each indicator page contains an example survey with the indicator questions. This can be easily duplicated by clicking "Start new survey with these questions"





Section



Deployments and assignments

Basic Topics:

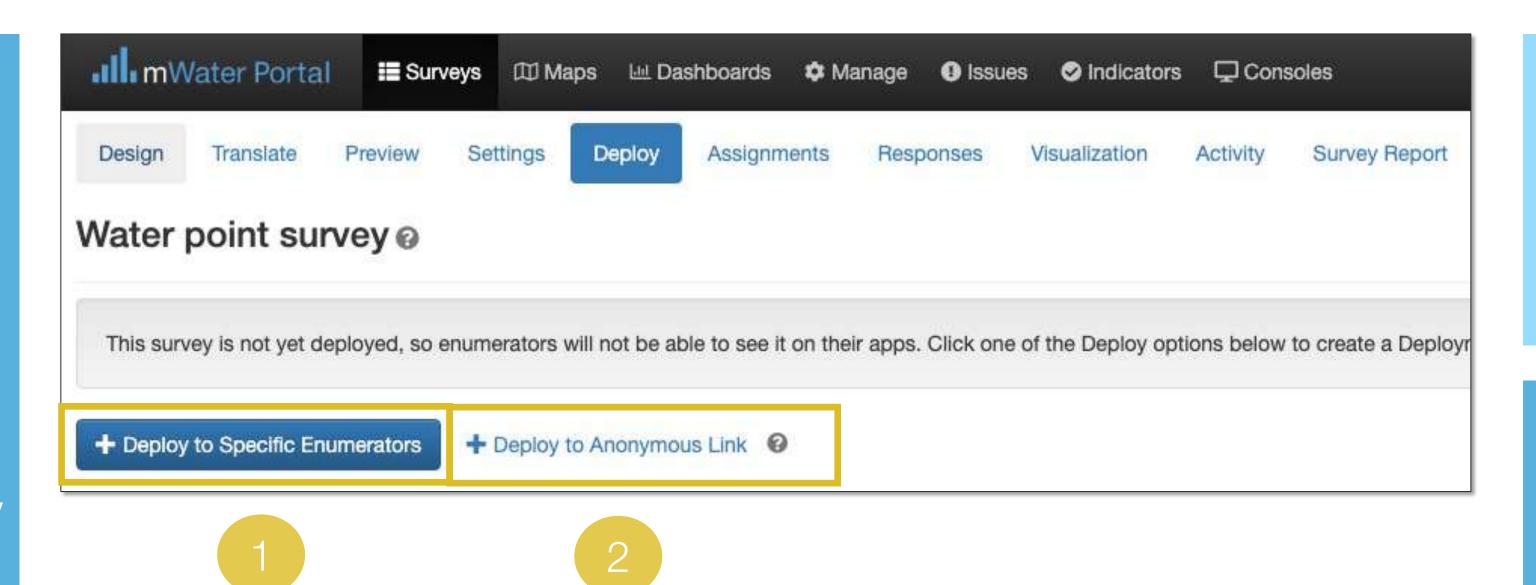
- Using the deployment wizard
- Deployment popup
- Roles and permissions
- Approval chains
- Assignments

Creating a deployment

The deploy tab sets up the roles and permissions for a set of survey responses.

There are two types of survey deployments:

- 1. Deploy to Specific
 Enumerators This is used in
 the majority of cases for
 deploying the survey to mWater
 users via the Surveyor app.
- 2. Deploy to Anonymous Link This is used for deploying the survey to anyone with the link. Users click the link and use the web browser to complete the response.





Survey (Design of a form)	Deployment (Set of responses to a form)	Organization (Structured group of users)	Site (Location monitored over time)	Dashboard, Map, Datagrid, & Console (Data visualizations)	
Managed by	Enumerators	Admin	Managed By	Admin	
The organization or organization brand which can see basic information about the survey	Can open the form in Surveyor App and submit responses	Can create lower level branches and teams, add/remove users, change settings	User or organization that can edit or delete the site data	Can view, edit, and delete visualization and share access to it	
				View	
Admin	Approvers		Site privacy levels:	Can view all data and visualizations on	
Can edit form design and view and edit all responses	Can approve or reject responses	Managers Automatically added as	Protected (recommended): any user can see the basic site	page	
				Create Shareable Link	
		managers to new deployments	data and reference site in	Congretos a unique LIDI to provide view	

View

Deploy

Can view the design of the form

Can create new deployments

Viewer

Managers

Can view final approved responses

responses at any time

Can view, edit, or approve

managers to new deployments

Viewer

Automatically added as viewers to new deployments

data and reference site in surveys

Private: only the Managed By organization can view site

Public: any user can view and edit the site data

zations on the

Generates a unique URL to provide view access without an mWater account

Create Shareable Link With Quickfilters Locked

Generates a unique URL to provide view access without an mWater account only to the filtered dataset

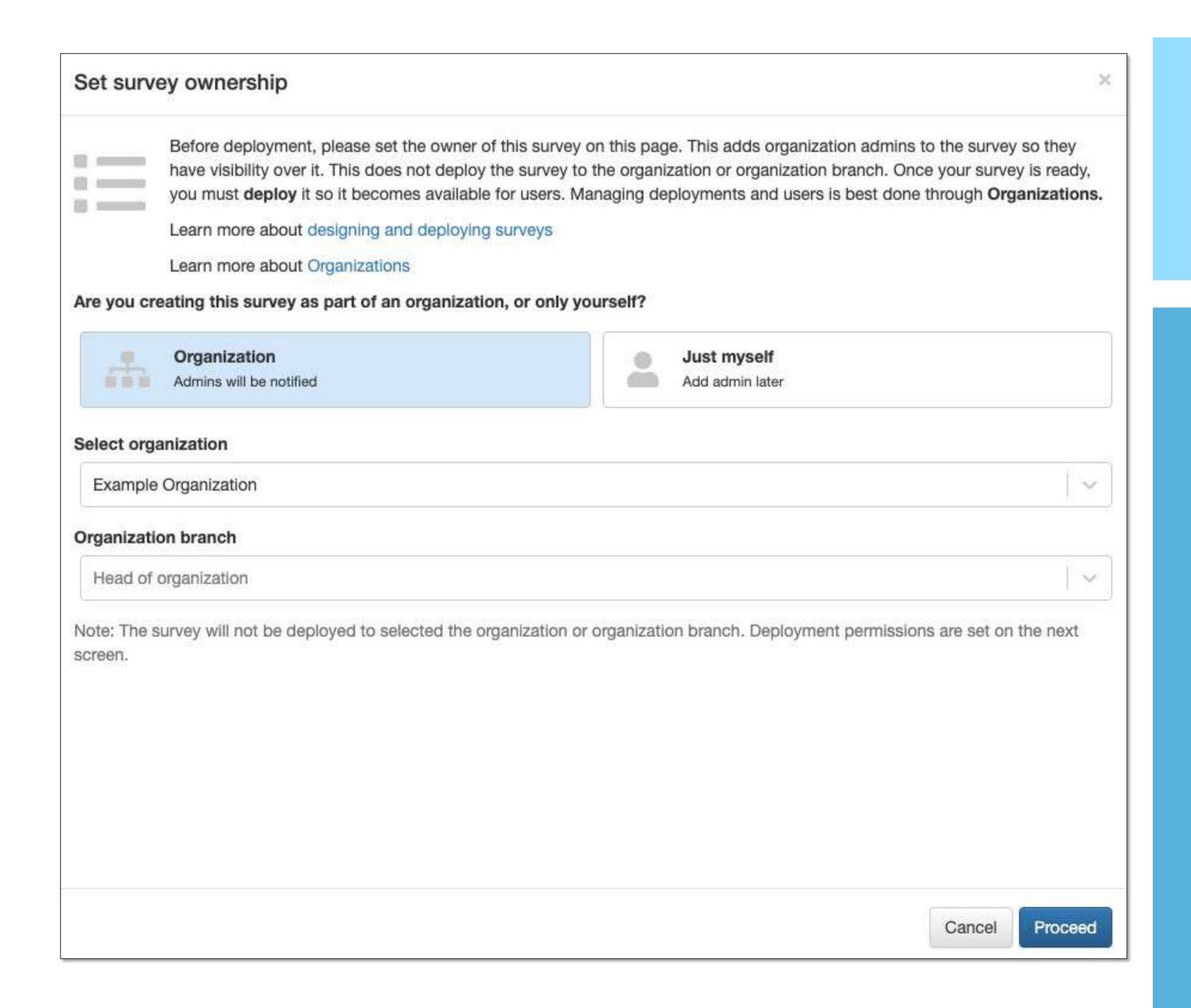
Deployment permissions



Deploy to specific enumerators

The first time that a deployment is created from this survey, mWater will ask how you want to manage the ownership of the survey deployment:

- Selecting Organization will add the organization's administrators as admins of this Survey
- Selecting Just myself will not change the administrators of the form



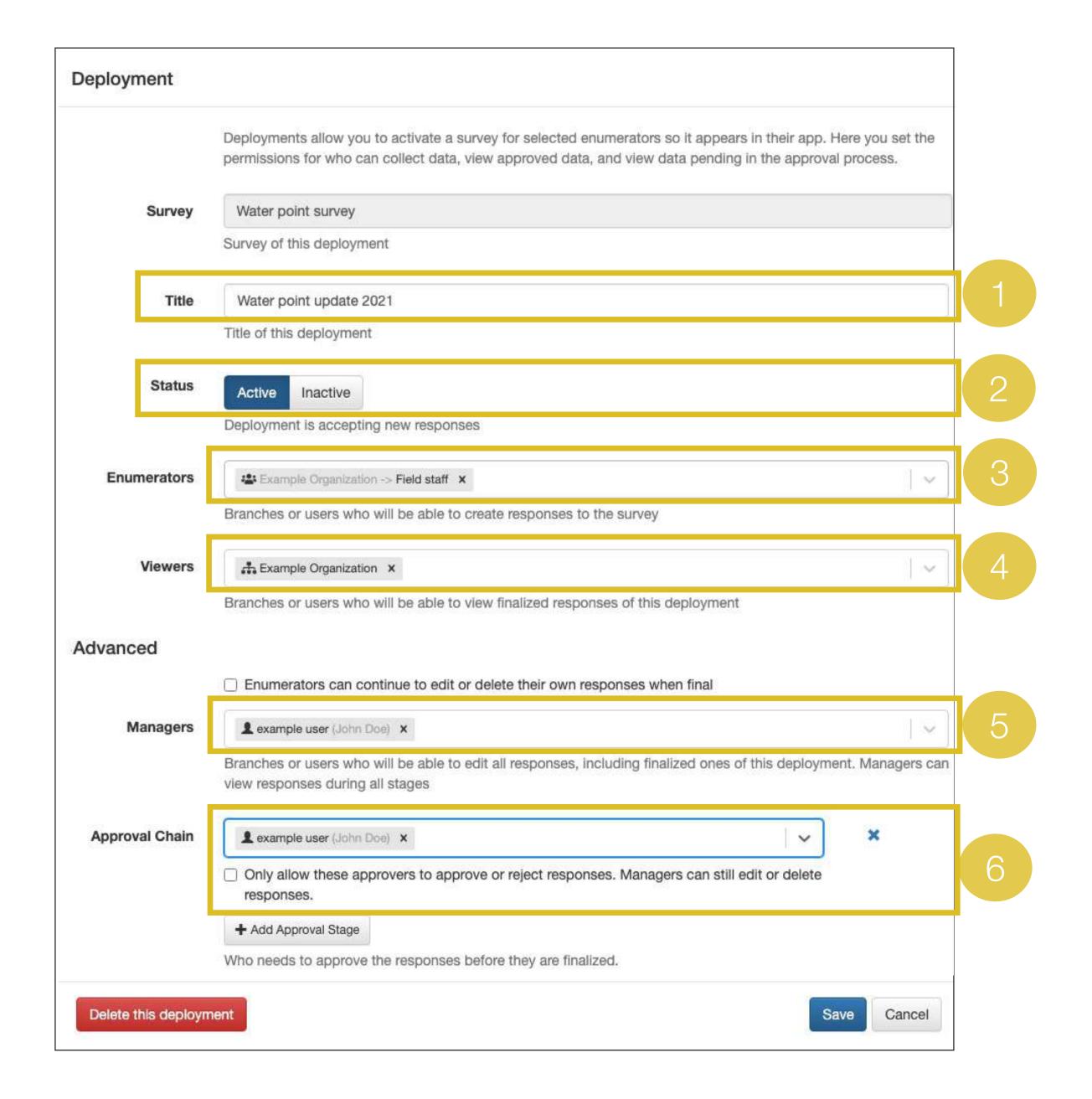


Deployment settings

The deployment menu contains the following parameters:

- 1. Title The name of the data collection activity e.g. water point update 2020
- 2. Status Active means that enumerators will be able to create new survey responses
- 3. Enumerators The users or branches which can create responses to the survey. The survey will automatically show up in their Surveyor app
- **4. Viewers –** Users or branches which can view finalized survey responses
- 5. Managers Can view, edit, or approve responses at any time. Checking the box will allow enumerators to edit/delete their responses even after finalized.
- 6. Approvers These users or branches need to approve the responses before they are finalized (if none, then responses are automatically finalized). Multiple approval stages can be added

WARNING: DELETING A DEPLOYMENT WILL PERMANANTLY DELETE THE SURVEY RESPONSES IN THAT DEPLOYMENT. THIS CANNOT BE UNDONE!



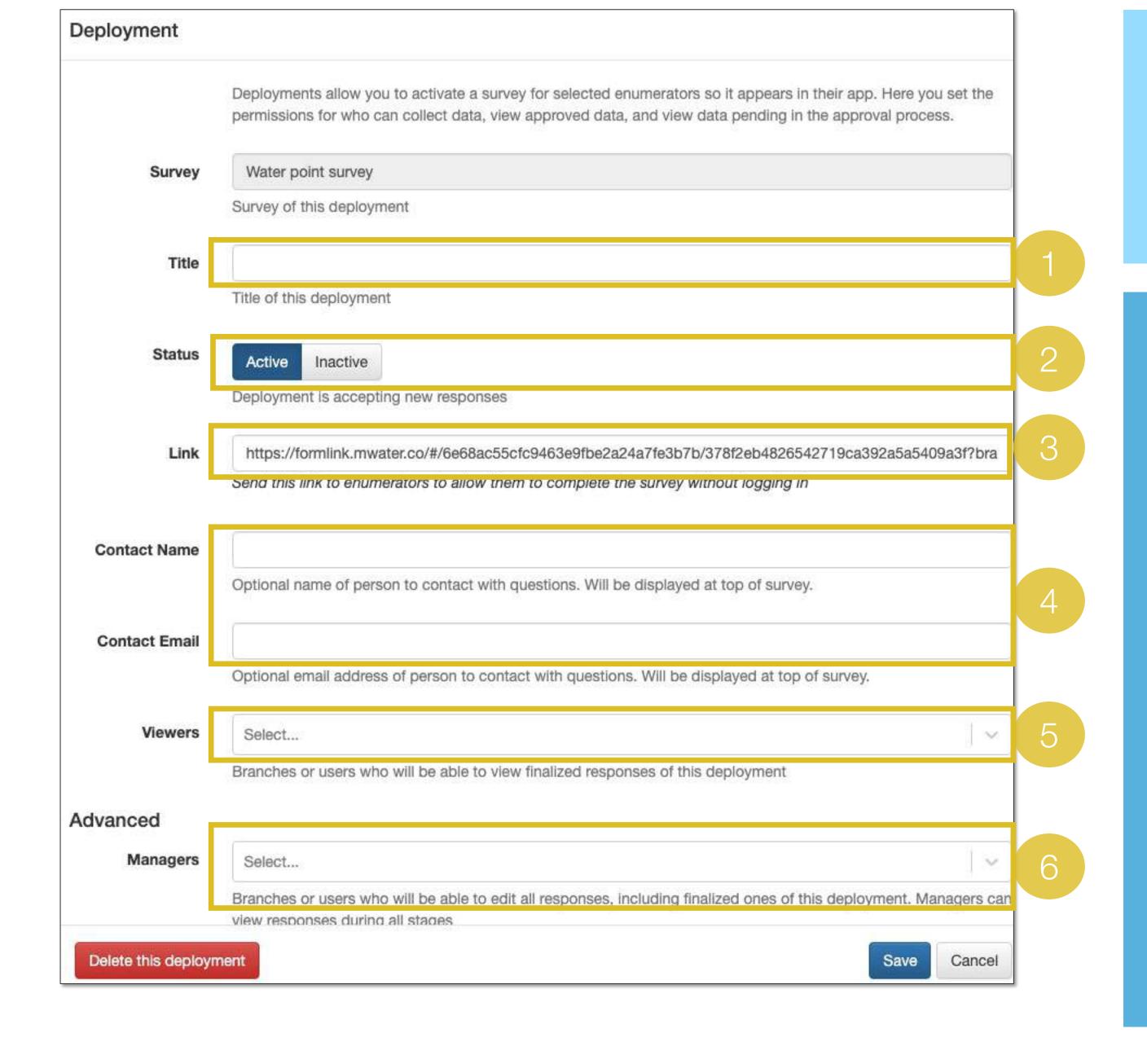


Deploy to anonymous link

Deploying surveys to an anonymous link displays the following paramters:

- 1. Title The name of the data collection activity e.g. water point update 2020
- 2. Status Active means that enumerators will be able to create new survey responses
- 3. Link This is the link that anyone can use to complete a survey response for this deployment
- **4. Contact name and email –** This will be displayed at the top of the Survey, so that enumerators can contact themwith questions
- **5. Viewers -** Users or branches which can view finalized survey responses
- **6. Managers –** Can view, edit, or approve responses at any time.

Note: Surveys with Site questions cannot be deployed to Anonymous link



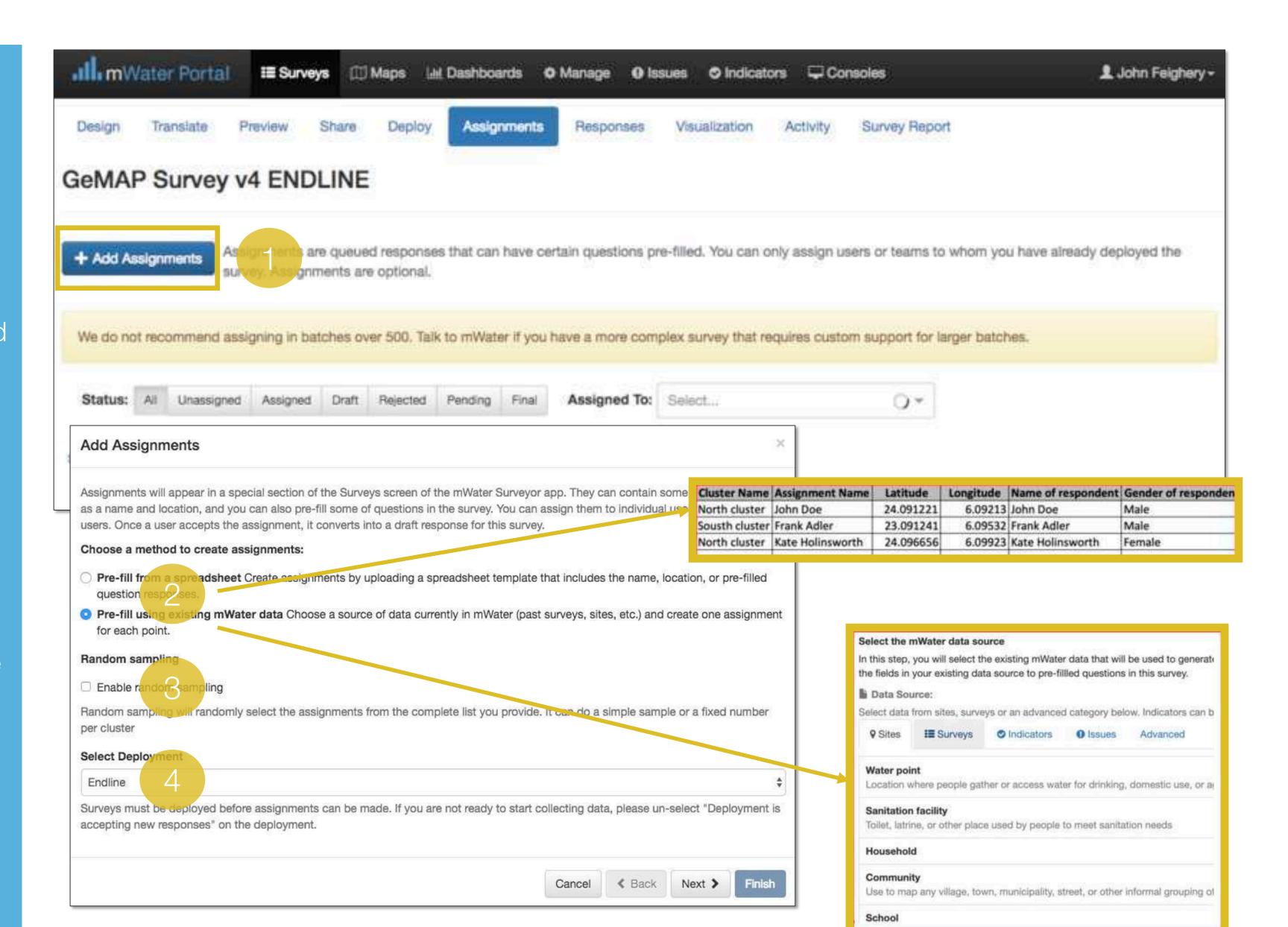


Assignments

Assignments allow adminsitrators to create pre-filled responses that can be assigned to specific enumerators to complete. The enumerator will receive the assignment on their device, go to the assigned location, and complete the survey response.

To create assignments:

- 1. Click the +Add assignments button
- 2. Select an option
- a) Prefill from spreadsheet Use an excel spreadsheet for the list of assignments
- b) Pre-fill using existing mWater data –
 Uses existing sites or surveys to create
 a list of assignments
- 3. Enable random sampling Allows for a random sampling of a user-defined percentage of the assignment list
- 4. Choose the deployment for which the responses will be collected



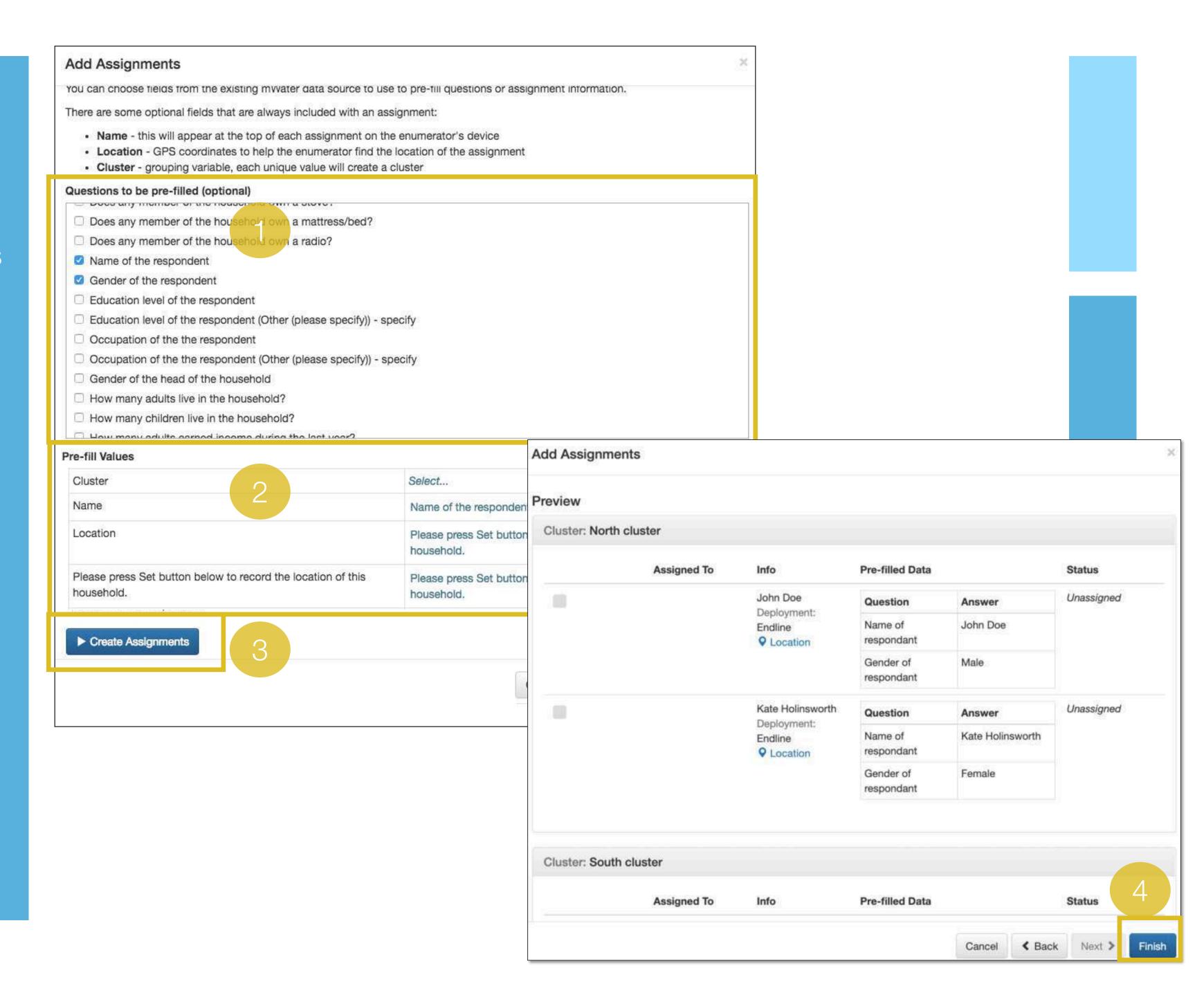


Pre-filling values

The next step is to choose which questions to pre-fill and which values to use.

This page includes:

- 1. A section to select all of the question to pre-fill
- 2. A section to choose which values to put in those questions. The values on the right hand side are selected from the assignments data source e.g. the uploaded excel or existing mWater data source
- 3. A button to create assignments.
- 4. Clicking Preview will prepare the assignments for preview. These can be finalized by clicking Finish.





Managing assignments

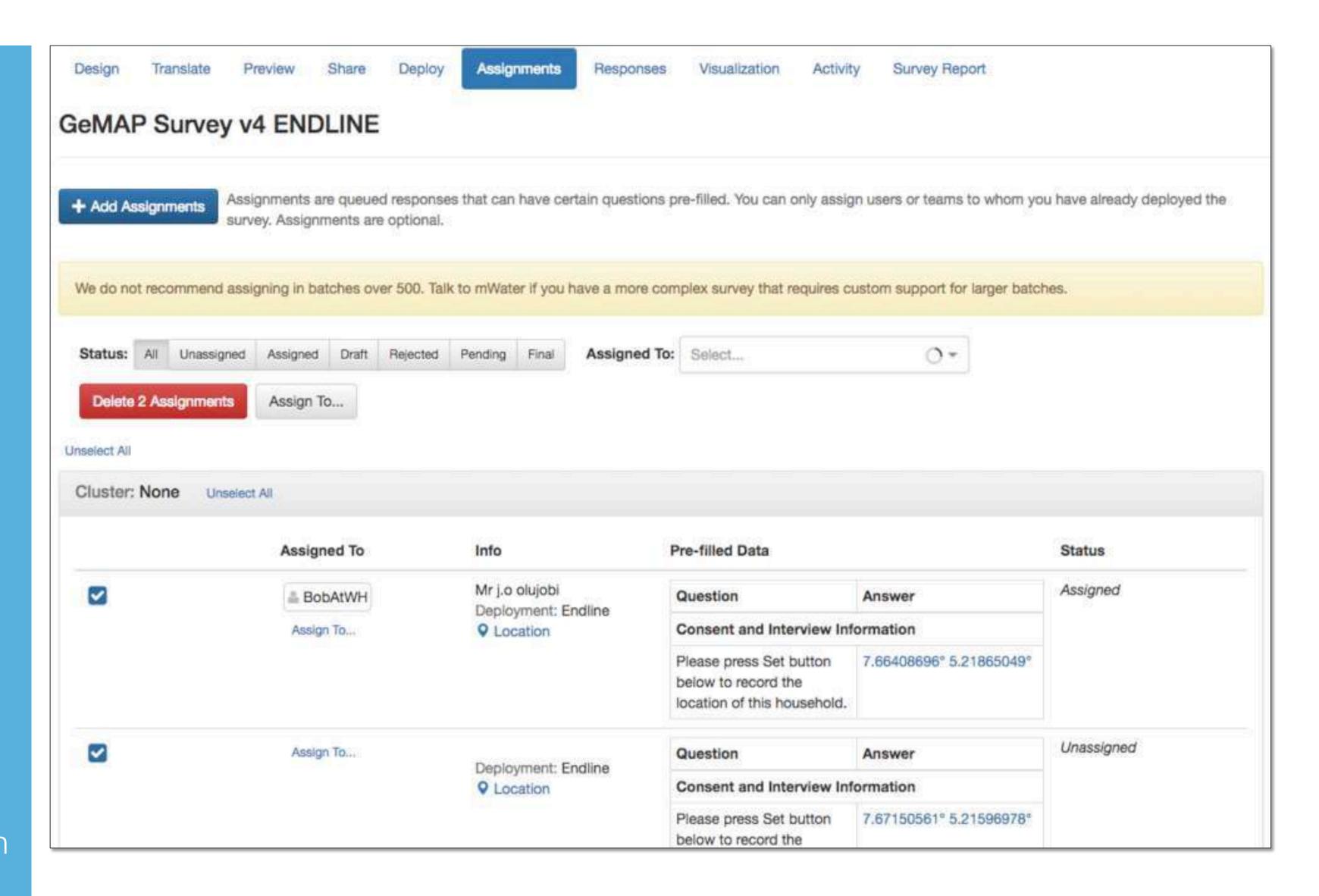
One the assignments have been created they can be assigned out to enumerators.

To do so:

 In the row for each assignment, select the blue Assign To button and choose an enumerator

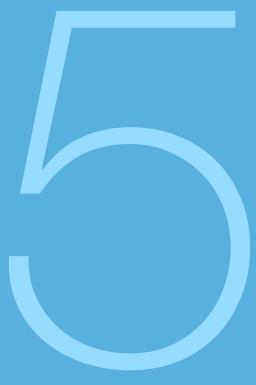
OR

- Select the checkmark next to the assignment (or click the Select all button)
- Click the grey Assign To button at the top of the page and choose an enumerator.





Section



Cleaning and managing survey data

Basic Topics:

- Responses
- Rejecting a response
- Approving a response
- Exporting responses
- Managing sites

Advanced Topics:

Importing responses

Responses tab

The responses tab allows authorized users to view, edit, delete, and approve individual survey responses. This page can also be used to import and export survey responses.

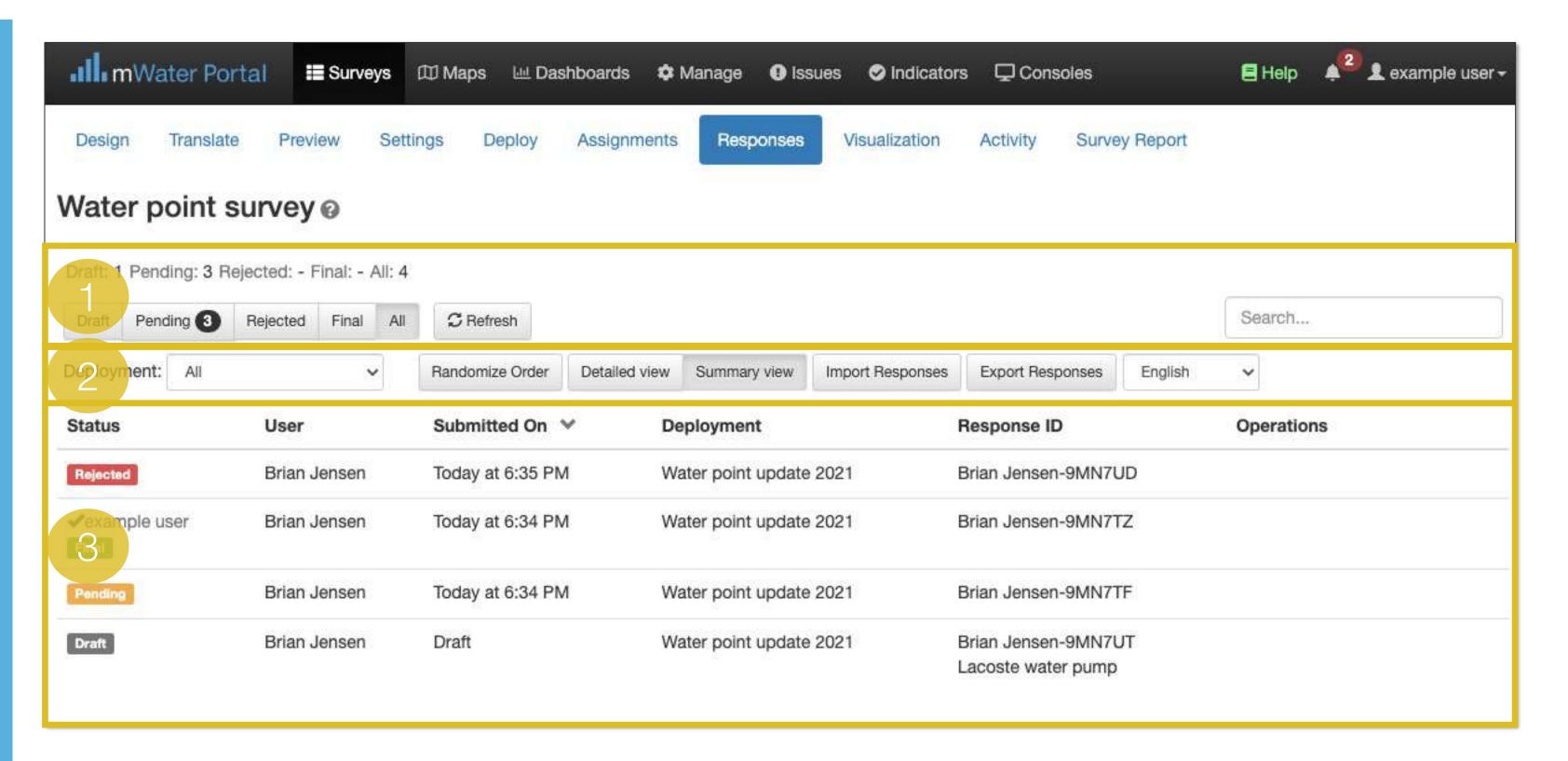
This page includes:

- **1. Filters and search controls –** Use these controls to locate a specific set of responses
- 2. View controls
- a) Randomize order Displays the survey responses in a random order
- b) Detailed view Shows the responses in a table where each column is a survey question
- c) Summary view Shows the responses in a table, with summary data like status, user, submitted on, deployment, and response ID.
- d) Import/export responses Import/export responses from/to an excel or CSV format
- 3. Response list Displays responses in a table. Click the row to approve, reject, edit, or delete the response.

Note: The approve/reject buttons will only display for Approvers

Note: The edit/delete buttons will only display for Managers and Approvers

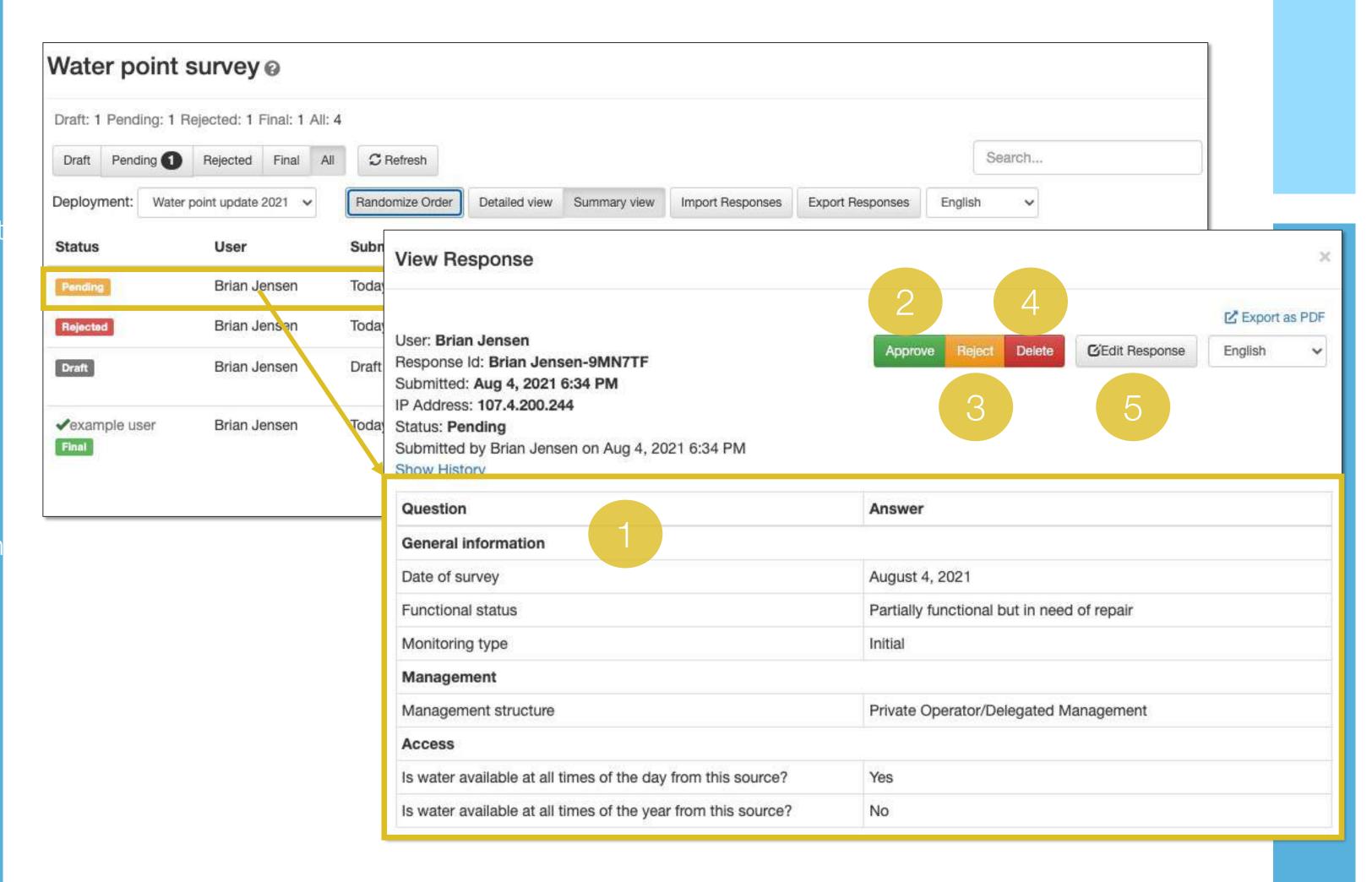




Viewing, editing, and approving response

To view a detailed survey response, click on it from the Survey list:

- 1. View Review the question response to see if it was completed correctly
- 2. Approve- This will change the survey status to Final. If the deployment has multiple approval stages, this will only approve one of the stages. The next stage must be handled by one of the users in that approval stage.
- 3. Reject- This will return the response to the enumerator for corrections. The manager can enter notes on the errors that the enumerator must fix, which will appear in their application. In mWater Surveyor, rejected surveys can be viewed in the Rejected section of the Tasks page.
- **4. Delete-** WARNING THIS WILL PERMANENTLY DELETE THE RESPONSE DATA.
- **5. Edit response-** This will allow the approver or manager to modify any of the fields in the response. This modification will add an "Edited" tag on the response and be tracked in the History of Changes.
- **6. Export as PDF –** Exports the full survey response as a PDF

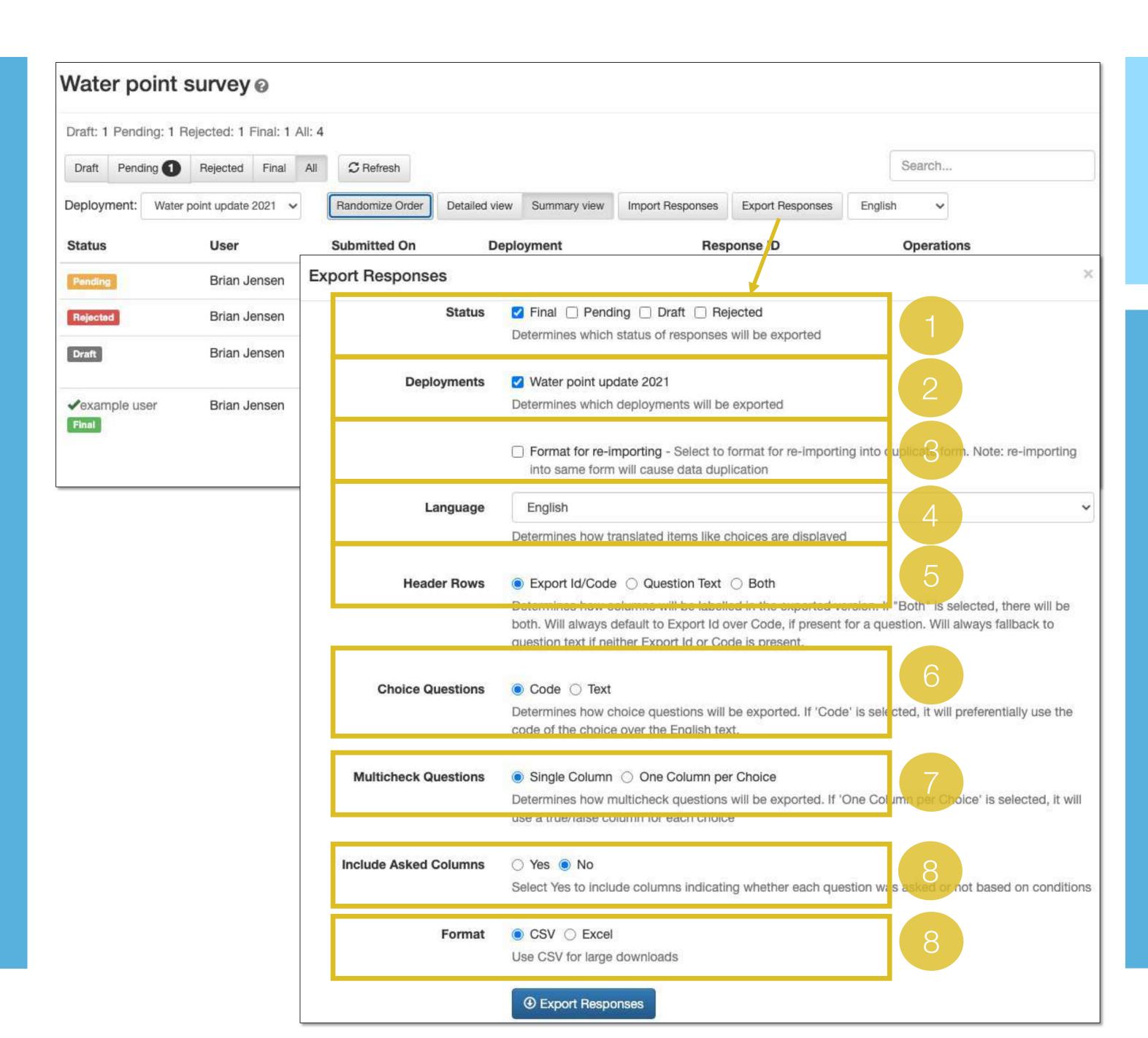




Exporting survey reponses

Clicking the button Export Responses will display a popup with the following parameters:

- **1. Status –** Check the status of survey responses you want to include in the export
- 2. **Deployments –** Select the list of deployments to export
- **3.** Format for reimporting Check this box to format the export so that it can easily be imported into into a survey form
- **4.** Language Select the language for the export questions and options
- **5. Header rows –** Export Id/Code (shorter), question text (longer), Both (longest)
- 6. Choice questions determines how choice questions are exported. If Code is selected, it will preferentially be used over the option text
- 7. Multicheck questions Determines how multicheck questions will be exported. If one column per choice is selected, it will use a true/false column for each choice
- 8. Include asked columns Select Yes to include columns whether each question was asked or not, based on the conditions in the survey design
- **9.** Format CSV or Excel





Section Surveys - Advanced

Advanced topics:

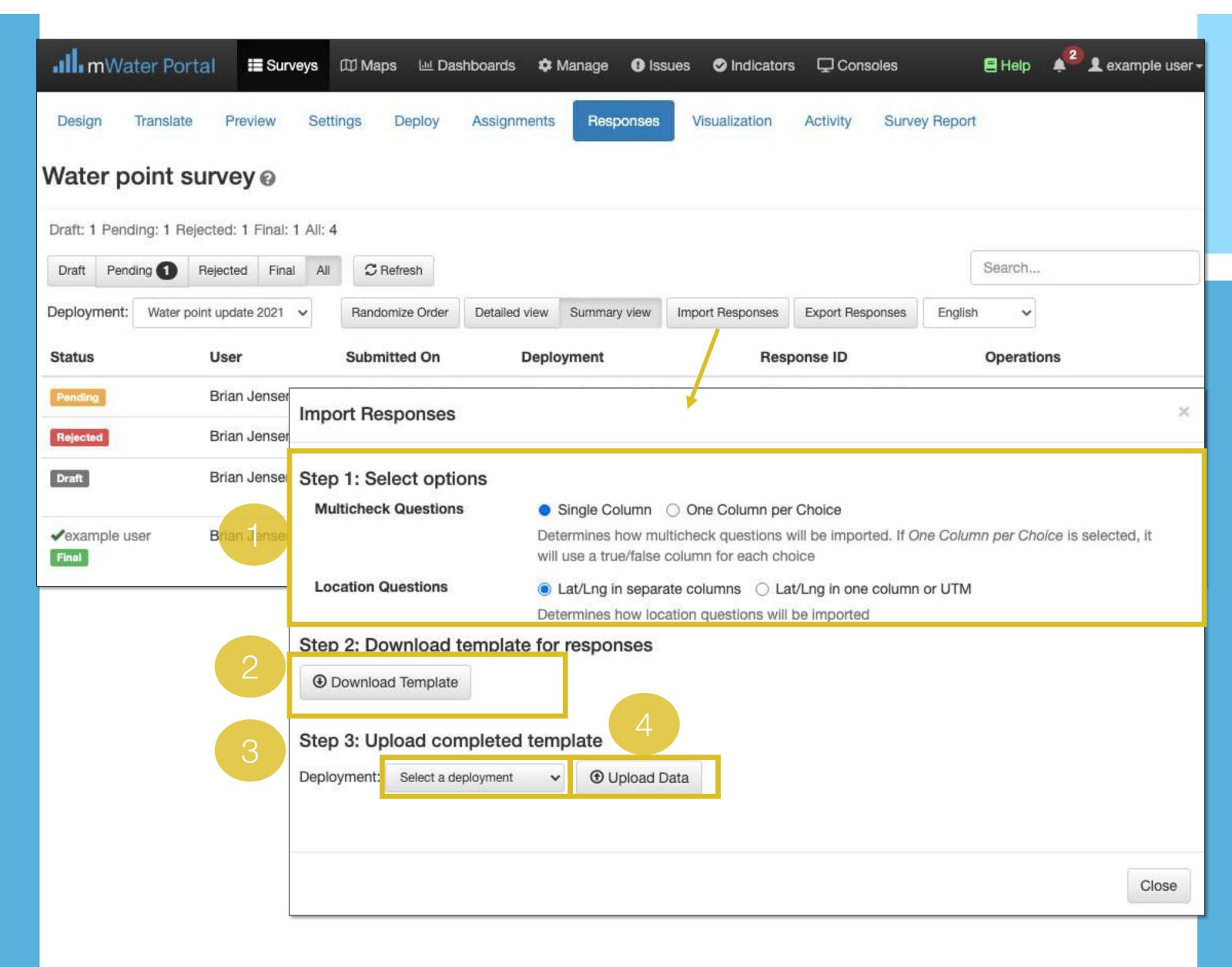
Importing survey responses

Import survey responses

Importing responses allows users to upload responses to the survey from CSV or Excel files.

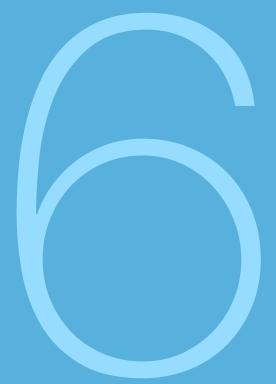
Steps to import responses:

- 1. Select how multicheck and location questions are formatted in the source document
- 2. Download a Template of the survey structure. In the source document, copy the data into the correct location of the Template
- 3. Choose a deployment to store the uploaded response
- 4. Select the Upload Data button to choose the completed template. Click Ok when the import has completed.





Section



Sites

Basic Topics:

- About sites
- Sites permissions
- Viewing, editing, and deleting sites
- Exporting site data

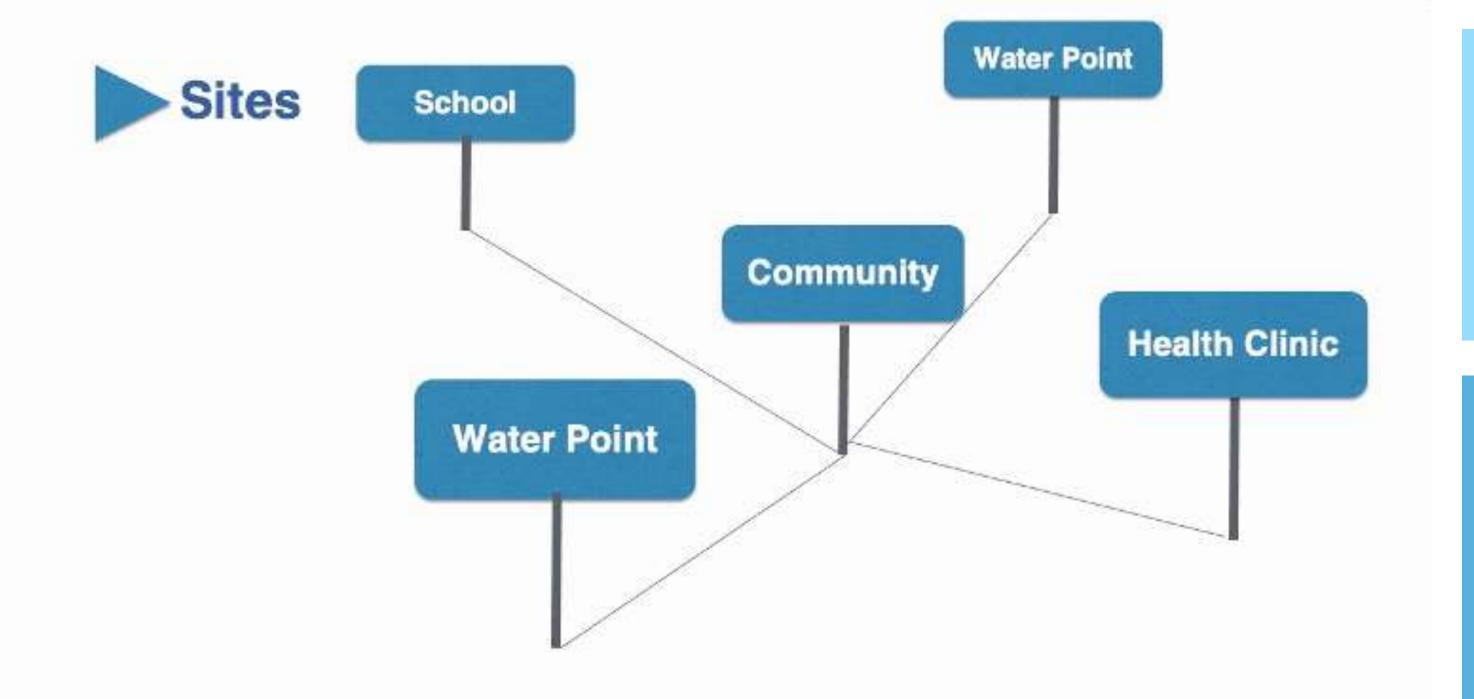
Advanced Topics:

- Importing sites
- Bulk editing
- Deduplicating sites
- Site approvals

What are Sites and Surveys?

- **1.Sites** are locations or facilities that can be monitored over time.
- 2.Surveys can be used to monitor changes in Sites over time.

This permits powerful data analysis and visualization to provide insight into specific sites and their history instead of just the survey sample as a whole.





Sites

All sites use a table with standardized questions common to all users

- 1. There are standard site types available for all users. These types are published by mWater and cannot be changed by users.
- 2. Each site type has various fields, some of which are standard for all types of sites.

Site types

Site Type	Description	
Abstraction point	Location where water is abstracted from surface or groundwater	
Access site	Location with access to transportation	
Business	A location where a commercial enterprise operates	
Community	The location of any village, town, municipality, street or other informal grouping of people.	
Energy	Energy source	
Gathering site	A place where people gather e.g. public plaza, sports facility, market, etc	
Handwashing facility	Location used for washing hands	
Health facility	Location where health care services are available	
Household	A grouping of people who live together as a single unit. Definition may vary by country and context.	
Hydromet station	Hydrologic and/or meteorologic monitoring station	
Mosquito breeding station	A location with standing water where mosquitos may breed	
Pipe	Pipes attached to a water distribution network	
Place of worship	Church, mosque, or temple	
Sanitation facility	Toilet, latrine, or other place used by people to meet sanitation needs	
School	A location where formal education takes place	
Surface water	Site used for ongoing monitoring of a surface water body	
Waste disposal site	Formal or informal location where waste is disposed of	
Wastewater treatment system	System or process used to convert wastewater or sewage into an effluent that can be safely released to the environment or reused	
Water installation	The location of equipment or facility which is connected to a piped water system but does not supply water directly to users. For points which supply water directly to users please use "Water point".	
Water point	Location where people gather or access water for drinking, domestic use, or agriculture	
Water service provider	The location of a water utility which manages one or more water systems	
Water system	ystem System or scheme that supplies water through a distribution network	

Standard site fields

Property Name	Data Type	Description	
Unique ID	Numerical ID	ID generated automatically by mWater to uniquely identify each site	
Name	Text	Stores a short name which refers to the site. Note: This name does not have to be unique	
Description	Text	Stores a detailed description of the site	
Photos	Multi-photo	Stores photos of the site	
Custom ID / assigned by	Text / Text	Contains any custom assigned ID and the name of the organization who manages this ID	
Import code	Text	Contains a custom import code to help when importing site data and connecting it to survey data	
Pending approvals	True/False	Defines whether the site is currenly pending approvals (True) or not (False)	
Location	Section folder	Contains GPS location, Administrative region, Location accuracy, Location altitude, and Altitude accuracy	
Attributes	Section folder	Contains standard properties for this site type	
Custom fields	Section folder	Contains non-standard properties for this site type which are specific to an organization	
Managed by	Reference	Contains a referenc to the user or organization who manages the site	
Added	Section folder	Contains the Date/time and user who created the site	
Modified	Section folder	Contains the Date/time and user who last modified the site	
Datasets	Reference list	Contains a reference to all datasets to which this site belongs	
Related surveys	Reference list	Contains a reference to all surveys containing a related site question	
Related or Linked sites	Reference list	Contains a reference to all site types to which the site can be connected	
Related indicators	Reference list	Contains a reference to all indicators containing a related site question	



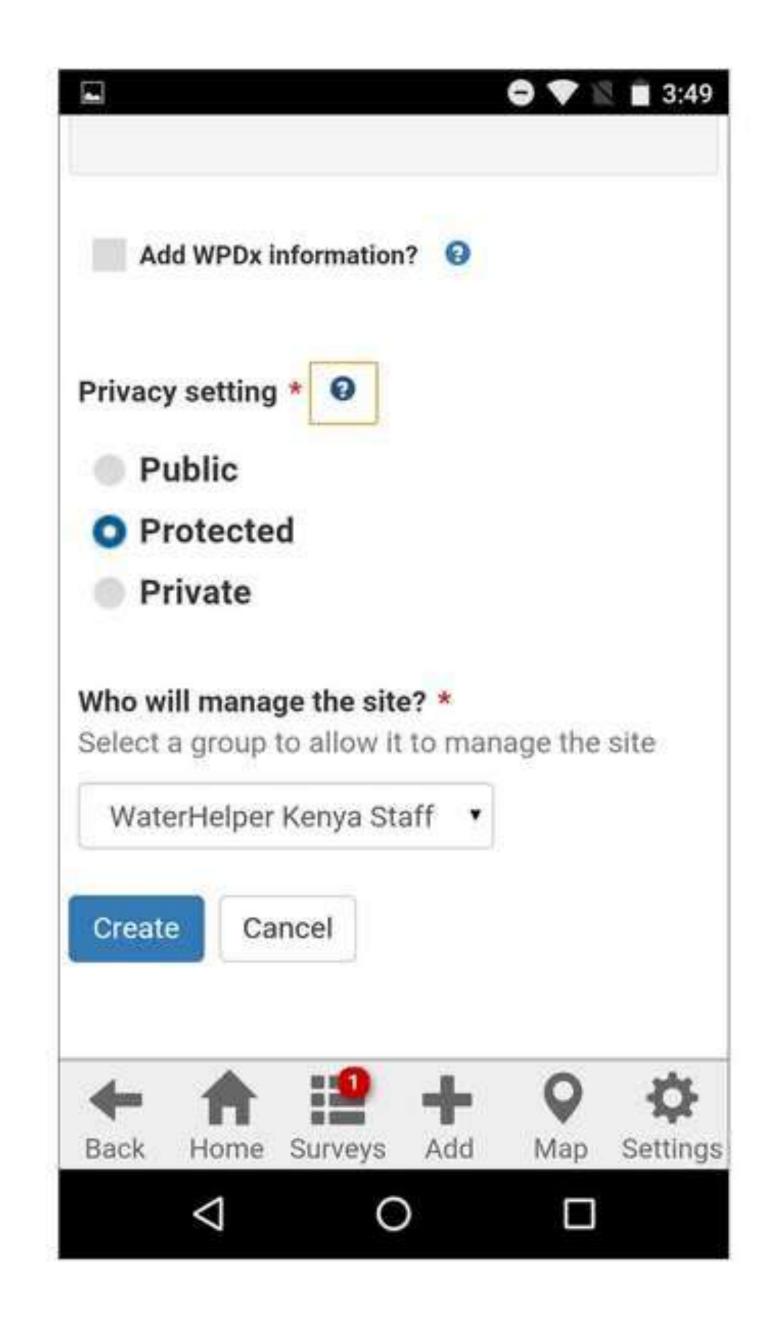
Site permissions

Every site has sharing permissions, which can be set to allow different levels of data privacy.

The different privacy levels are:

- Private Only the managing organization/user can view and edit the site data
- Protected (recommended) All users can view the site data, but only the managing organization/user can edit it
- Public All users can view and edit the site data

Who will manage the site? - When data is made Private or Protected, users must define which organization manages the data. Users in the managing organization can view, modify, and delete the site.





Viewing site data

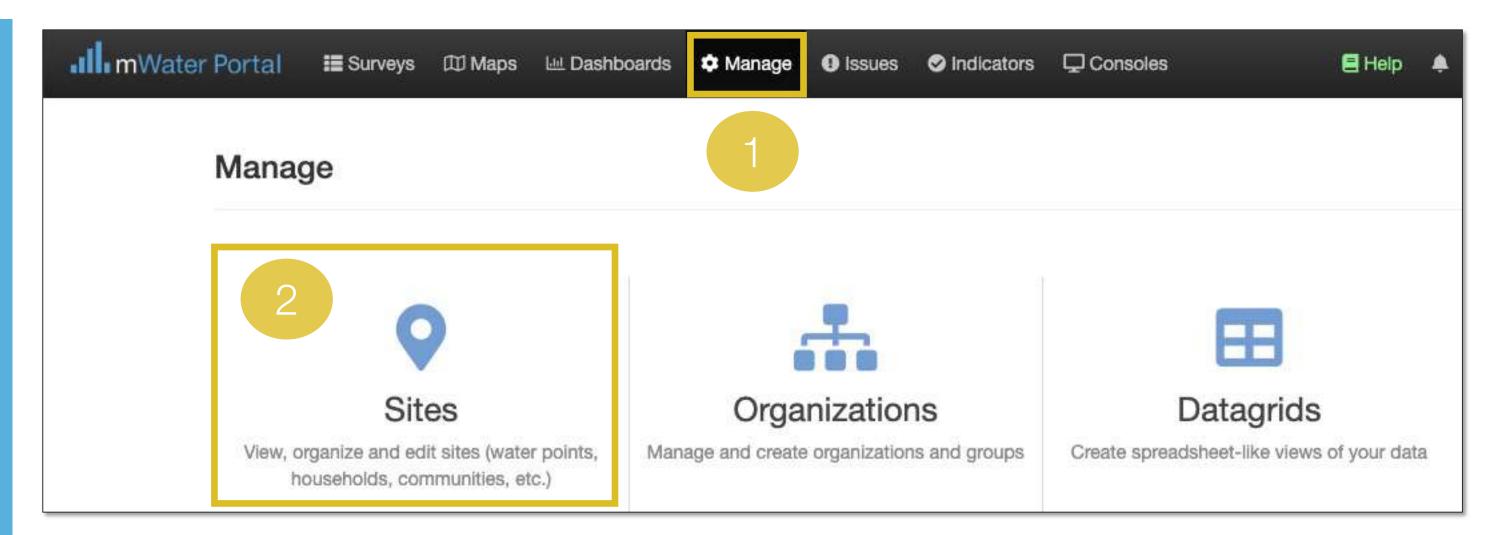
Sites can be viewed and modified from various pages, but are typically viewed from the Sites management page.

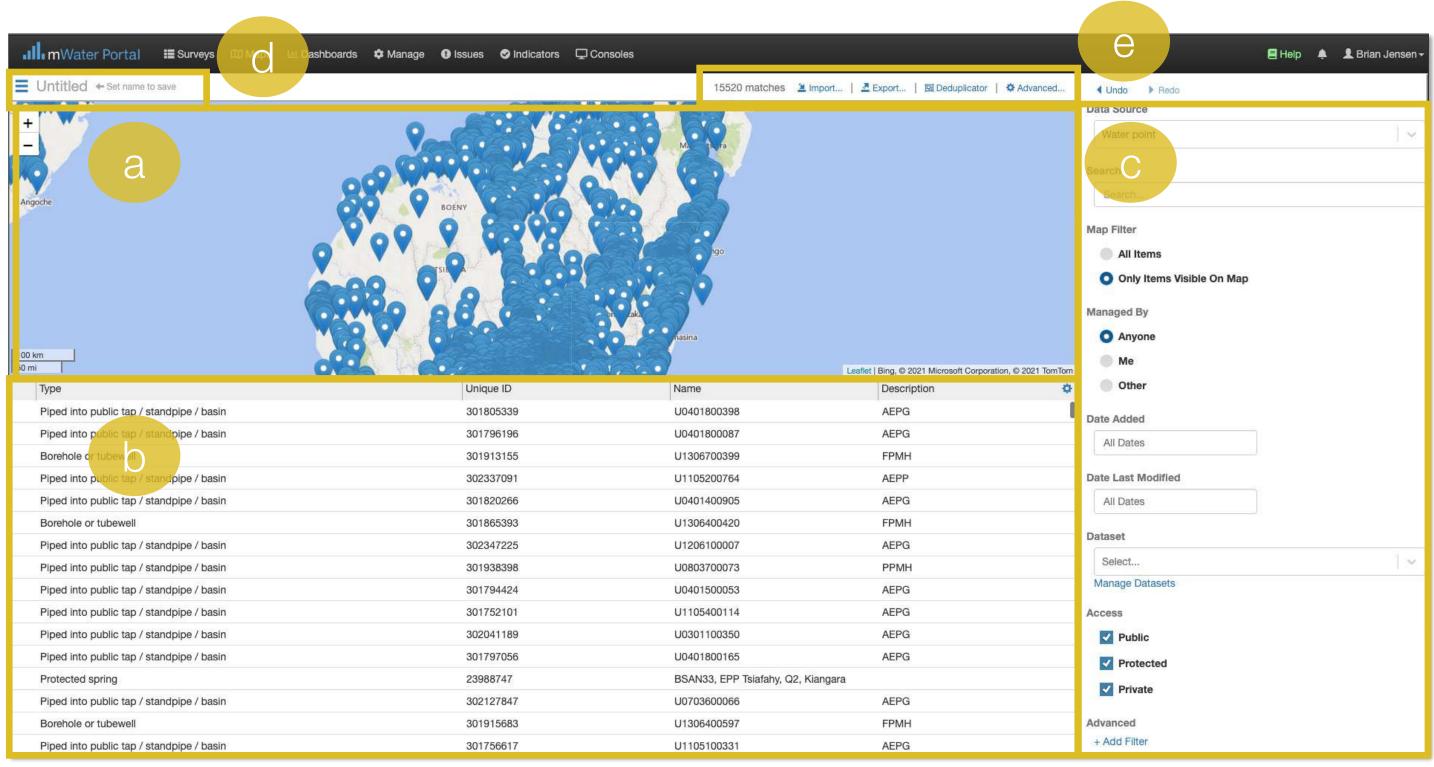
To locate this page:

- 1. Click Manage
- 2. Select Sites

This page includes:

- a) A map sites
- b) A list of sites
- c) Options to filter and search for sites
- d) Buttons to ave the page or load a different one
- e) Buttons to import, export, and duplicate the page



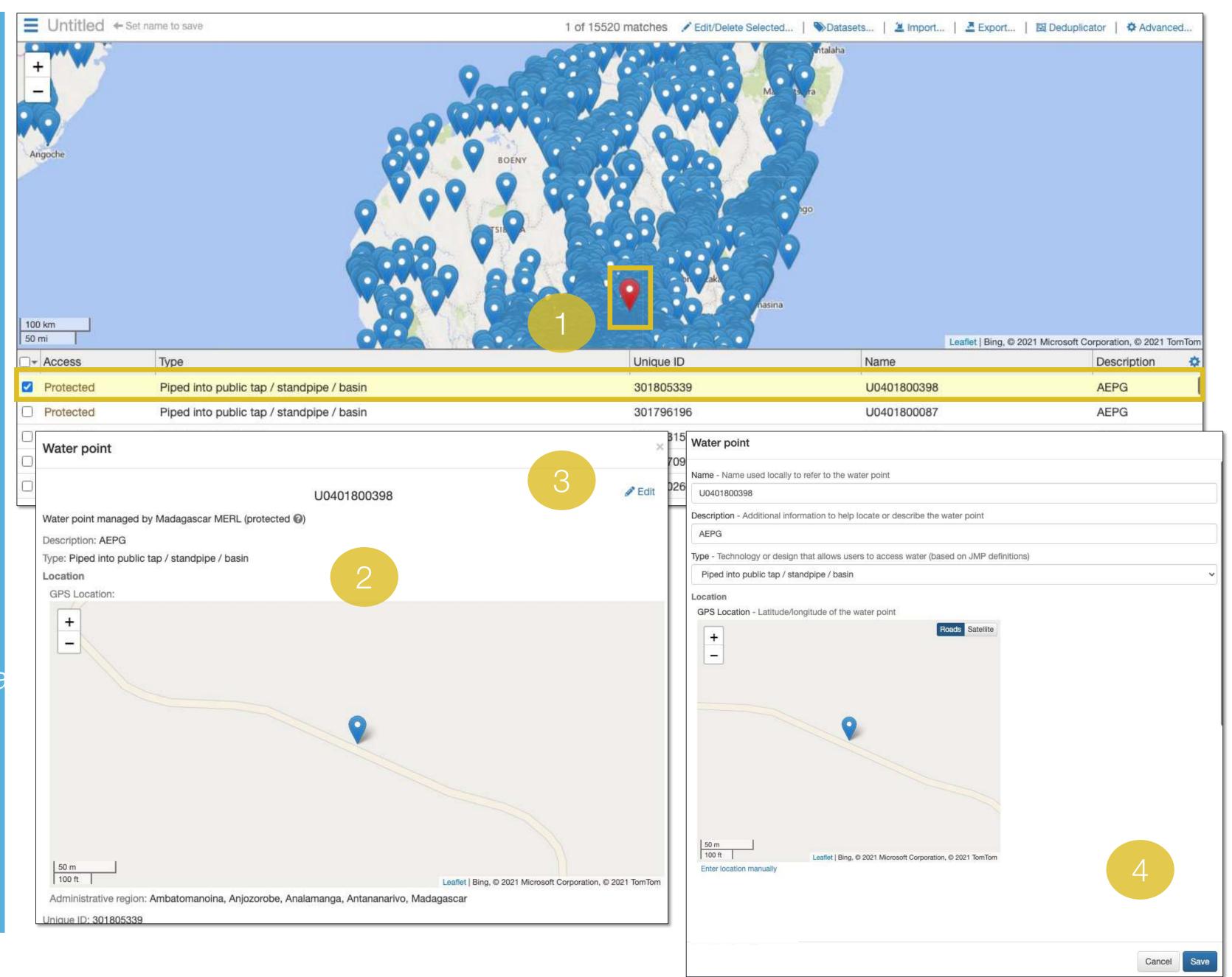




Viewing, modifying, and deleting a site

To modify or delete a site:

- 1. Select the site from the list or map
- 2. The site page contains:
- a) Basic information about the site
- b) A list of all surveys and issues connected to the site
- c) There is a section containing all related surveys and issues
- d) The bottom of the page contains a X Delete button
- 3. Click Edit
- 4. Modify the data and click the Save button





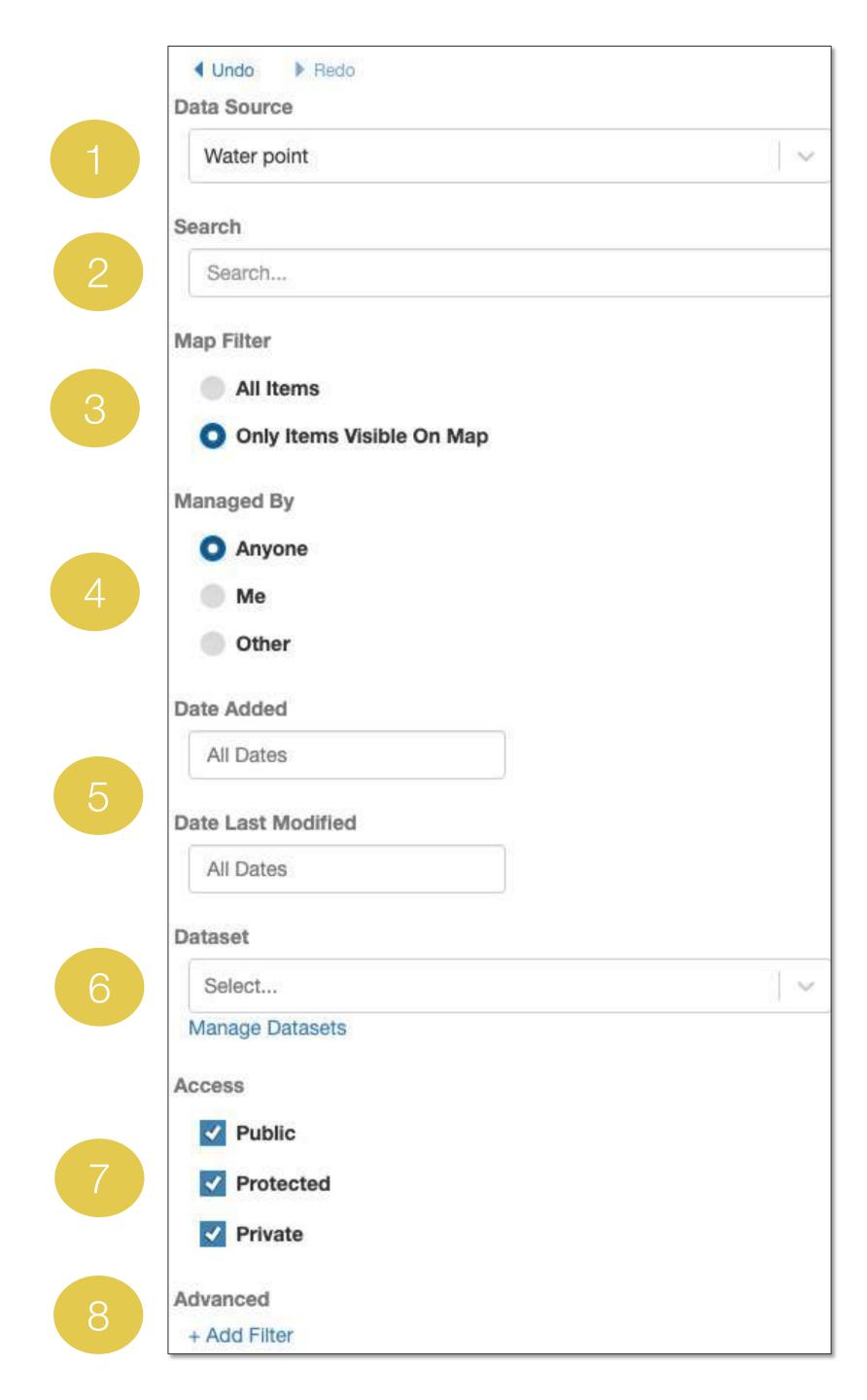
Locating a specific set of sites

The sites page has various data filters to help locate any sites in the system.

This includes:

- A data source dropdown listing all Site types
- A search bar which searches site name, ID, and descriptions
- A map filter which displays all items or just those which are currently visible on the map
- Managed by Filter the sites those managed by Anyone, Me, or a selected organization/user
- Date added/modified Filters sites based on their date fields
- Dataset If sites were added to a dataset, they can be located by selecting the dataset
- Access Filters sites based on their privacy settlings
- +Add filter Allows users to create any other type of filter on the sites page



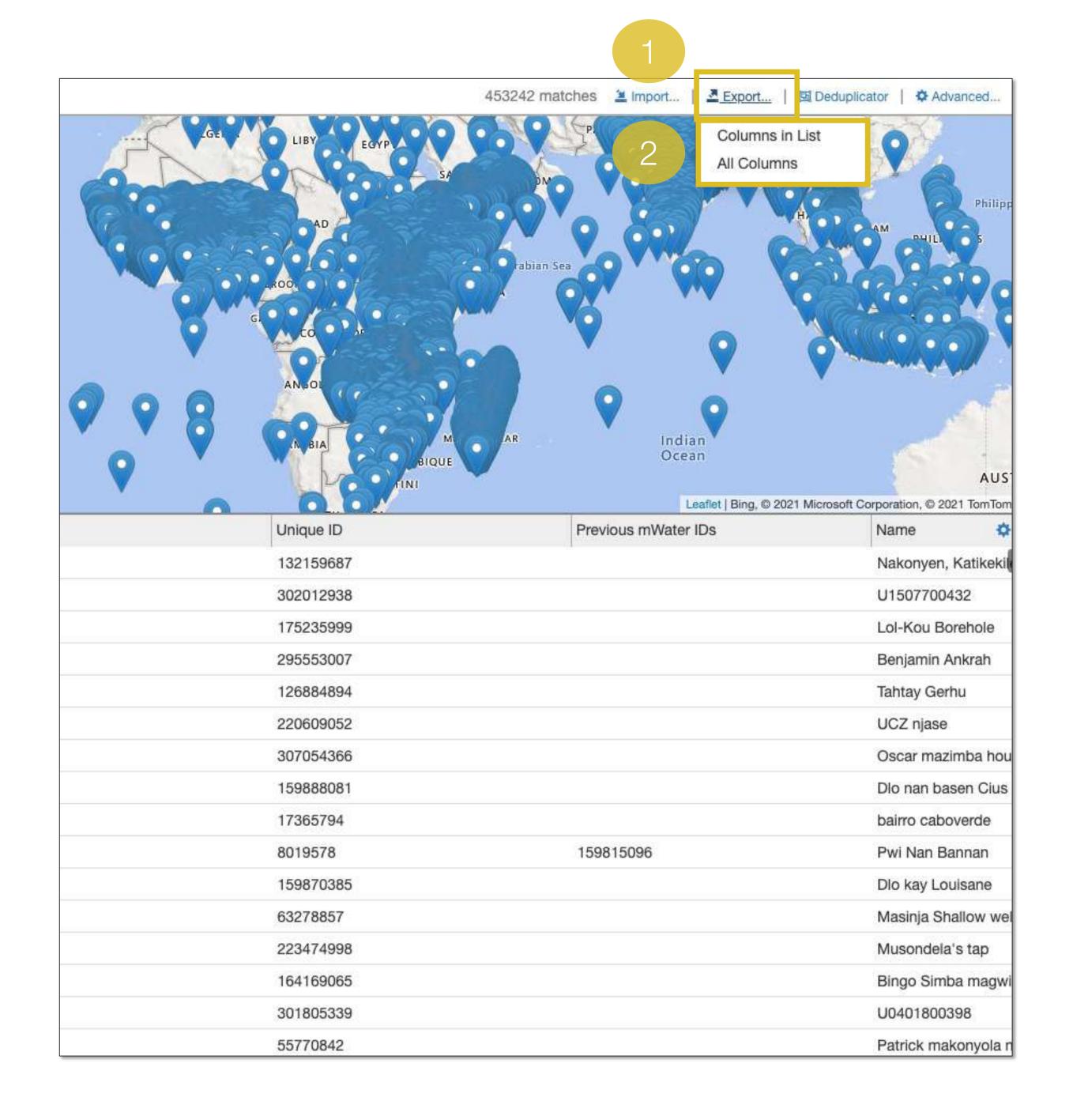


Export data

Site data can be exported from the Site page by:

- 1. Clicking the Export button
- 2. Selecting the option to Export the columns in list or All Columns

By clicking the gear icon in the list, users can add any or all columns.





Section Sites - Advanced

Advanced Topics:

- Importing site data
- Bulk editing sites
- Site deduplicator
- Site approvals



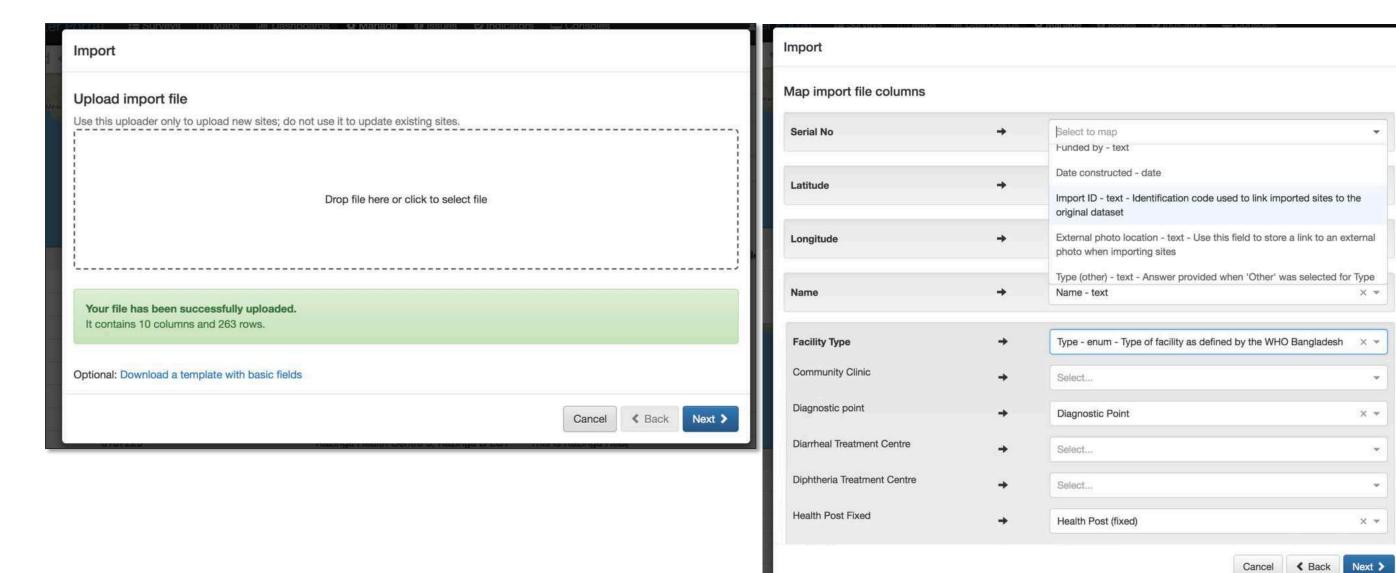
Importing sites

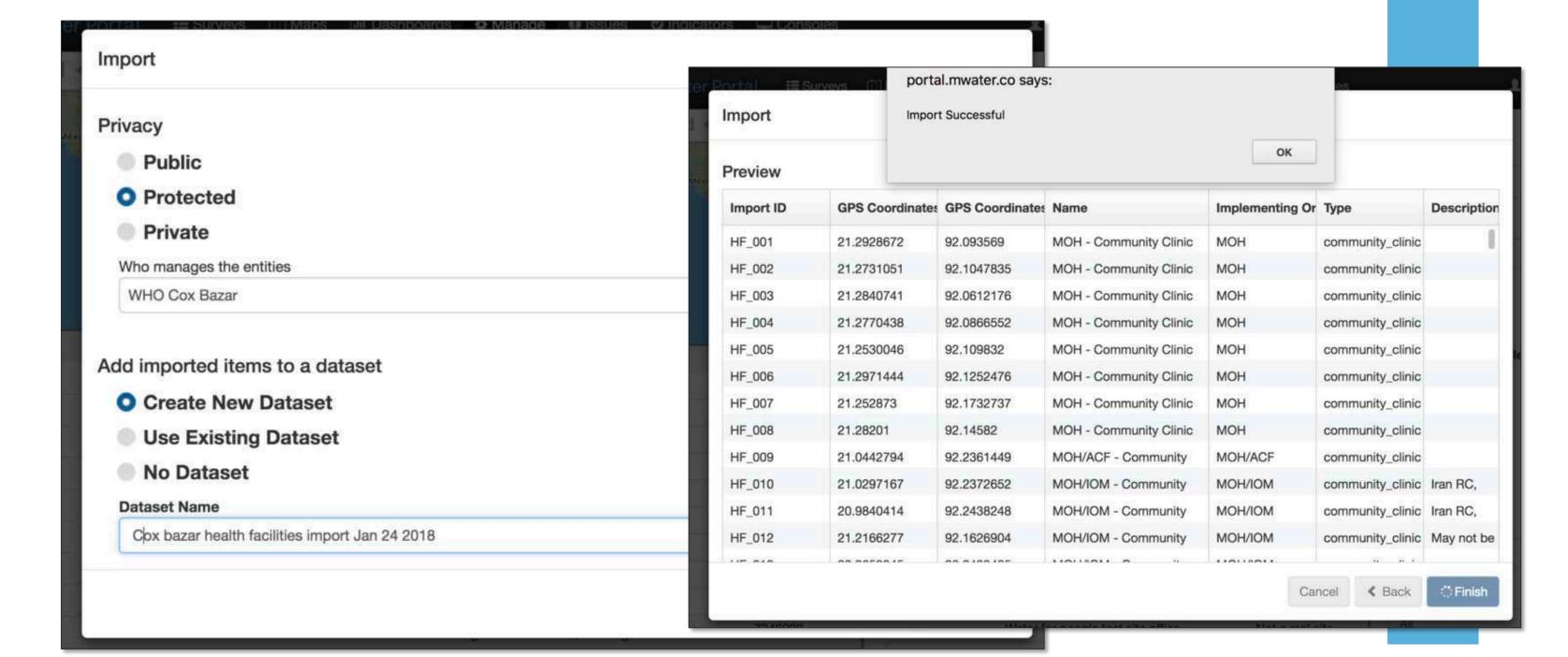
Sites can be imported from the Manage > Sites page.

To do so:

- 1. Click the Import button
- 2. Choose an excel or CSV file from the device. A template is available for download with the site fields. Once the green message has confirmed the upload, click Next
- 3. This page displays the column name from the Excel/CSV on the left and the mWater Site field on the right. Choose which fields and values to import as the site fields. Click Next.
- 4. Select a privacy level, Managed by, and Data set for the imported sites. Click Preview.
- 5. Click Finish and wait until the data is finished uploading.

Note: For large datasets, the import function can take a long time. If the page times out in the middle of an import please wait a few minutes and reload the page to verify if the data has been uploaded.







Sites – Bulk editing

WARNING: Using this feature can result in unintended data loss or modification. This cannot be undone!

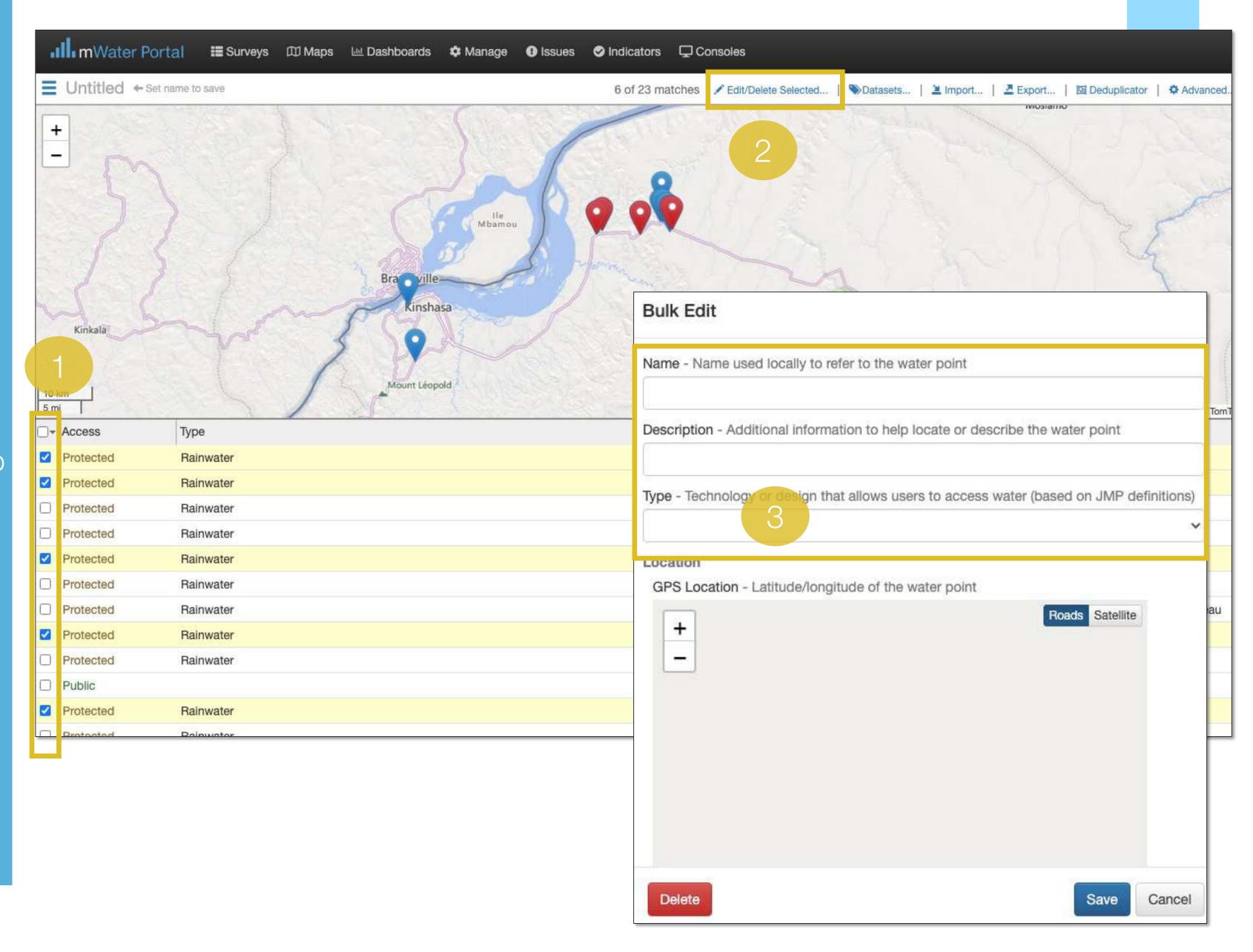
The site page allows users to edit any number of sites simultaneously.

To edit multiple sites:

- 1. Click the Checkbox next to any site to select it OR click the Checkbox header to select all sites
- 2. Click the Edit/Delete Selected button
- 3. Modify an data field and click Save to finalize the changes.

OR Select **Delete** to permanently erase the sites.

Note: The user must have permission to modify all selected sites in order to edit them.



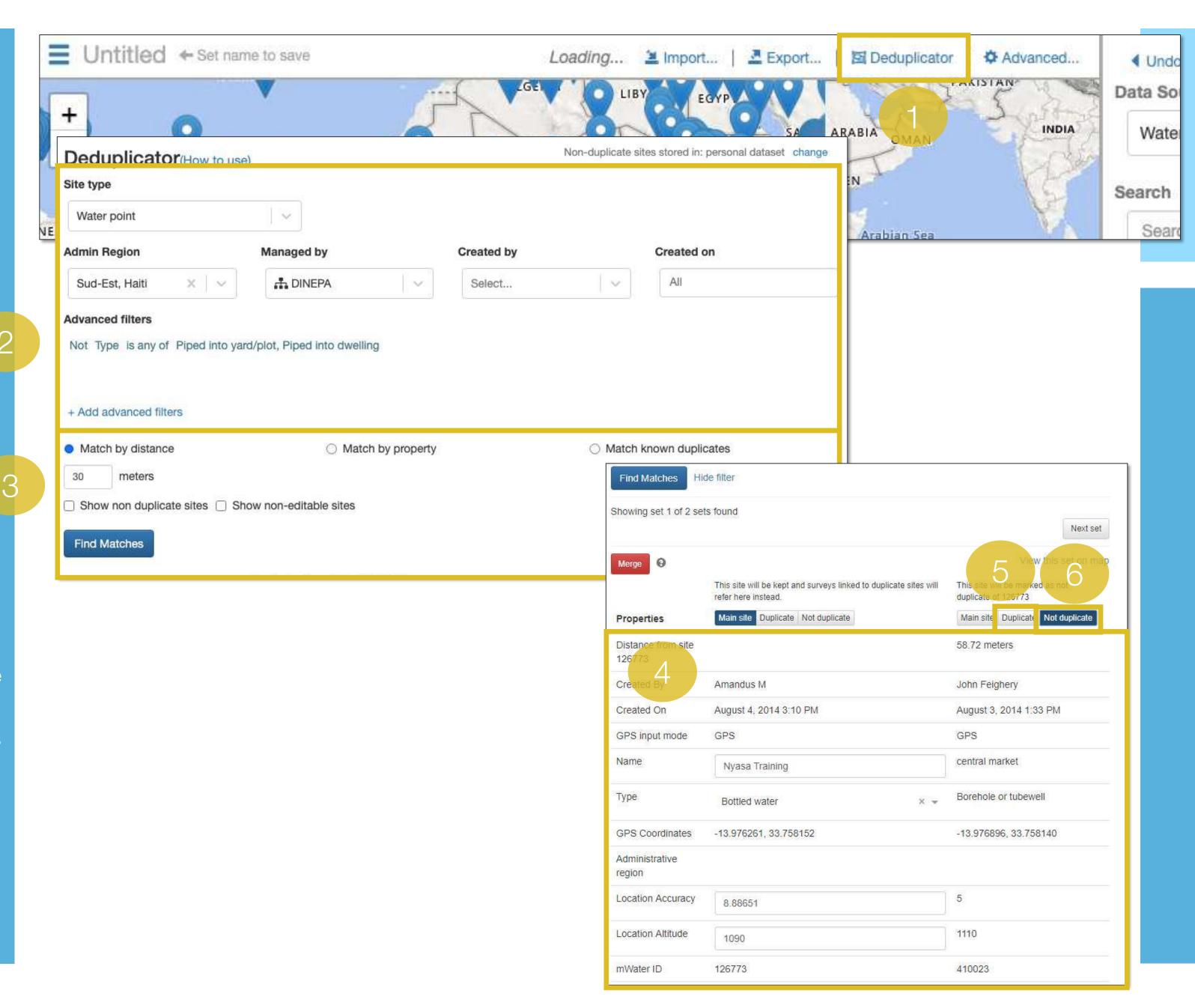


Site deduplicator

The site deduplicator allows users to identify and combine duplicate sites into one site.

To deduplate sites:

- 1. From the Manage > Sites page select the Deduplicator button.
- 2. Filter to a subset of sites for which to check for duplicates
- 3. Select a match criteria and click Find matches:
- a) Match by distance All points within X distance of each other will be selected as a set e.g. within 30meters
- b) Match by property All sites which have the same value for a property e.g. Name = Lacoste well
- c) Match known duplicates Add sites, separated by commas to view only those sites in the set
- 4. Each set of potential matches will be displayed one next to the other.
- 5. Selecting one site as the main site and the other as the Duplicate then clicking Merge them will delete the Duplicate site and connect any survey, indicator, or issue data to the Main site instead.
- 6. Selecting Not duplicate and selecting Merge indicates that they are not duplicates, so they will not appear in the list again



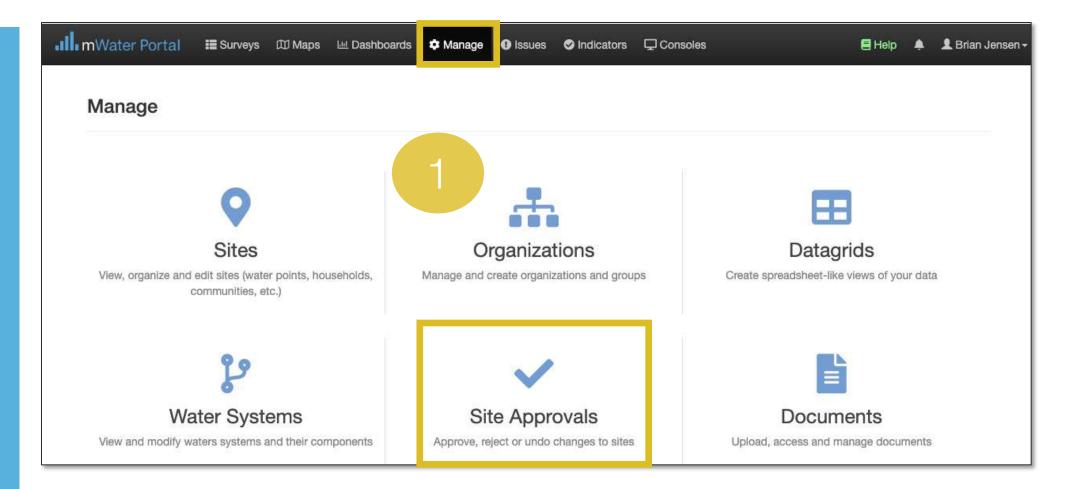


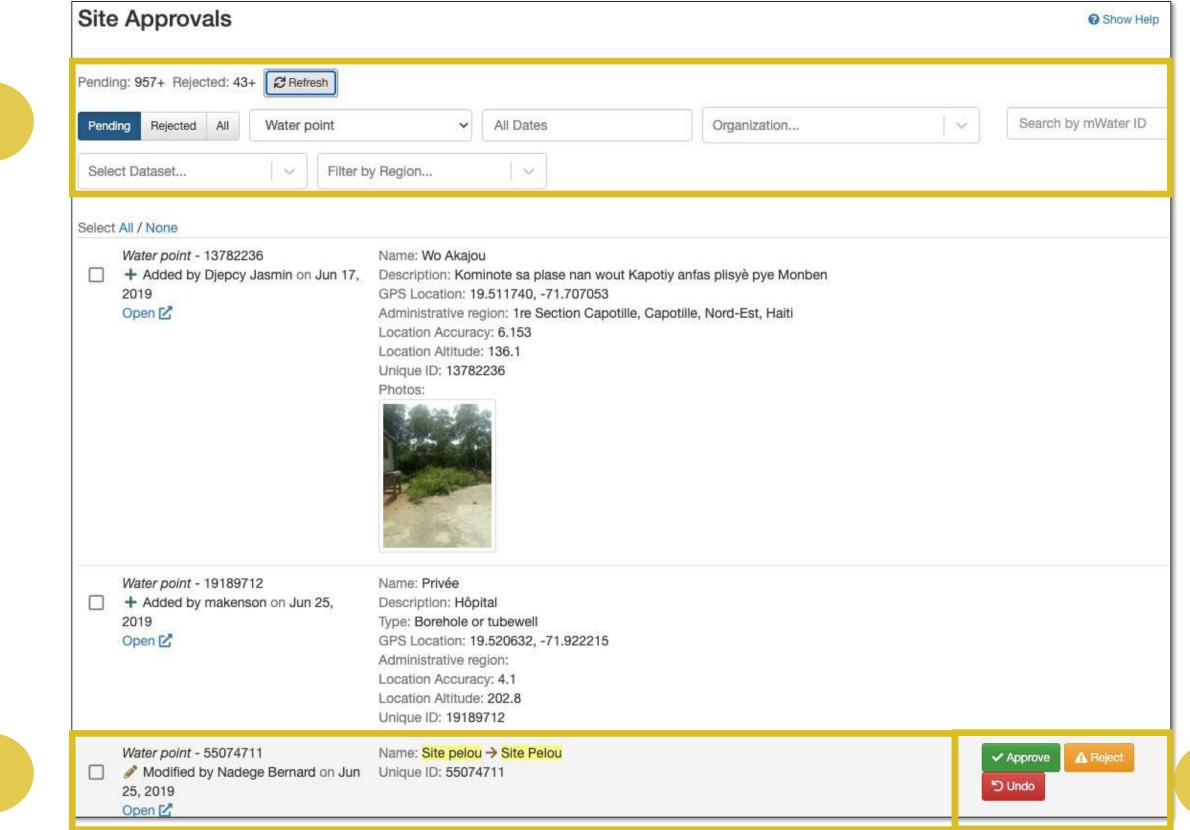
Site approvals

Site approvals allows authorized users to approve, reject, or undo modifications made to Sites by any user in their organization.

To do so:

- 1. Click Manage, Site approvals
- 2. Filter sites to the desired set
- 3. Review the Site modification
- 4. Approve, Reject or Undo the site modification using the buttons







Section



Data visualization

Basic Topics:

- Dashboards, consoles, datagrids, and maps
- Common elements of all visualizations
- Maps
- Charts
- Tables
- Pivot tables
- Filters
- Expressions

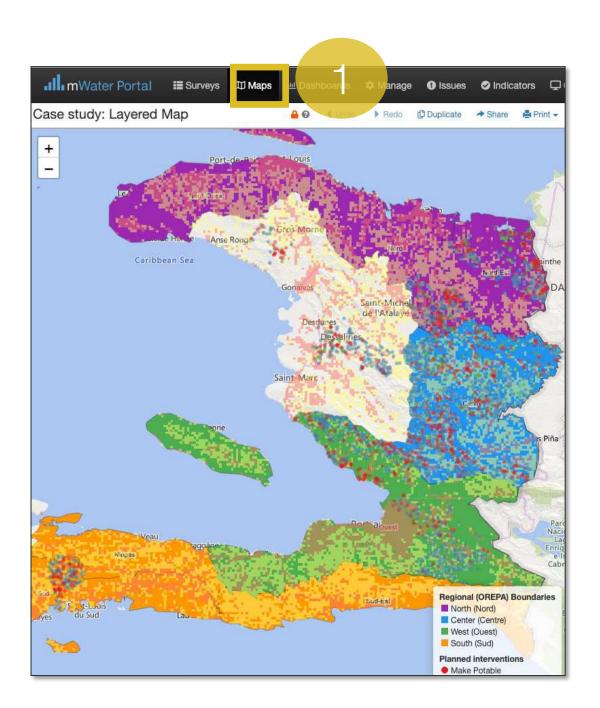
Vizualisations – Maps, Dashboards, datagrids, and consoles

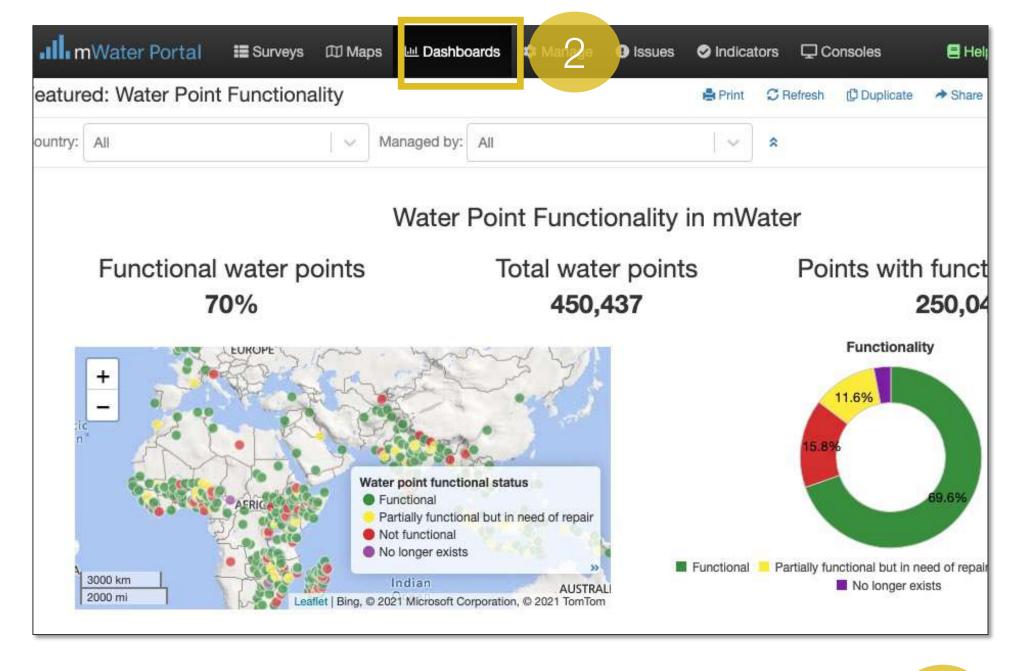
The mWater portal has a robust set of features for visualizing site and survey data in various formats.

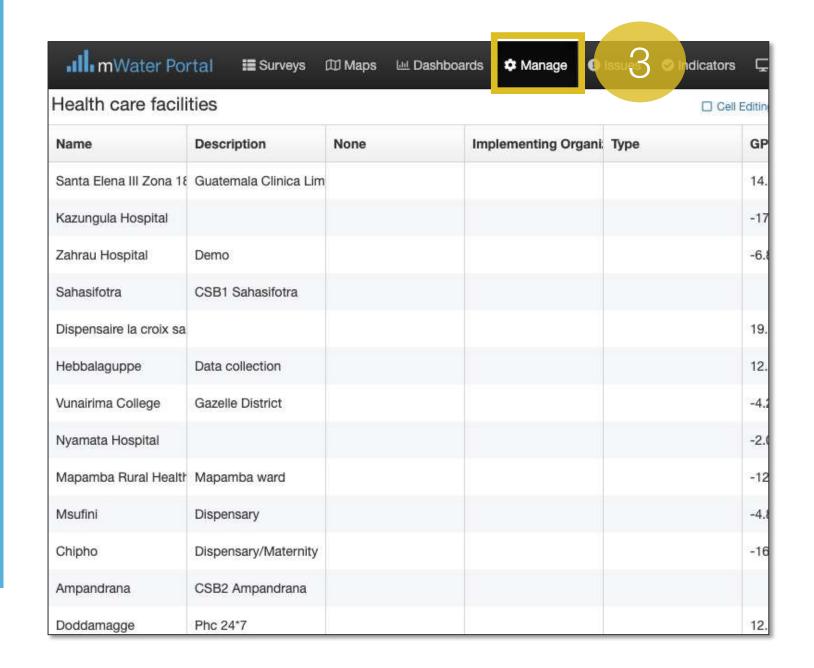
These visualization features include:

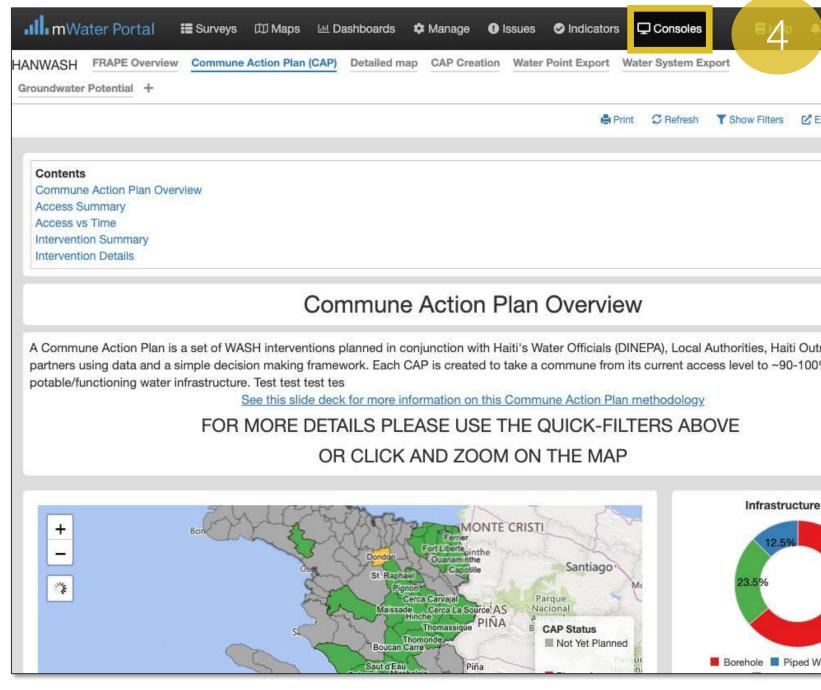
- 1. Maps Full page maps for displaying geospatial data as points, lines, polygons, or grids
- 2. Dashboards A single page interface with various different widgets
- 3. Datagrids Excel-like data tables
- 4. Consoles A multi-tabbed interface which combines maps, dashboards, and datagrids











Visualization gallery

Each type of visualization has a gallery which displays existing visualizations and an option create a new one.

The gallery includes:

- 1. Make a [Dashboard, maps, etc] -Creates a new visualization
- 2. My [Dashboards, maps, etc] Shows visualizations created by you
- 3. Featured [Dashboards, maps, etc] Displays visualizations published by mWater for key use cases
- 4. Shared with me Shows any visualization which another user has shared with you
- 5. Public All visualizations shared with Public (all users)
- 6. Search bar used to locate the appropriate visualization

My Dashboards

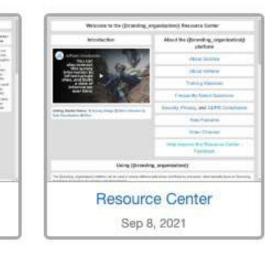








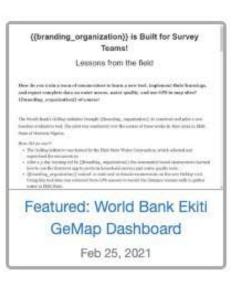


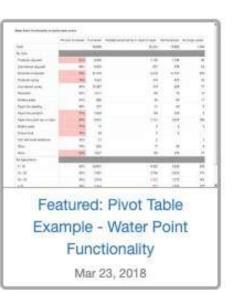


Featured Dashboards



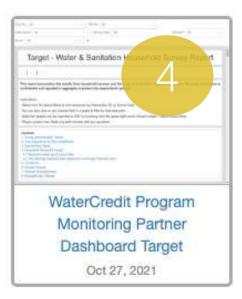








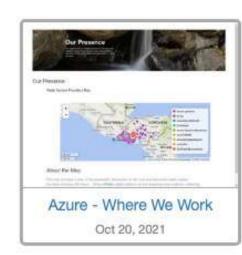
Shared With Me













Public







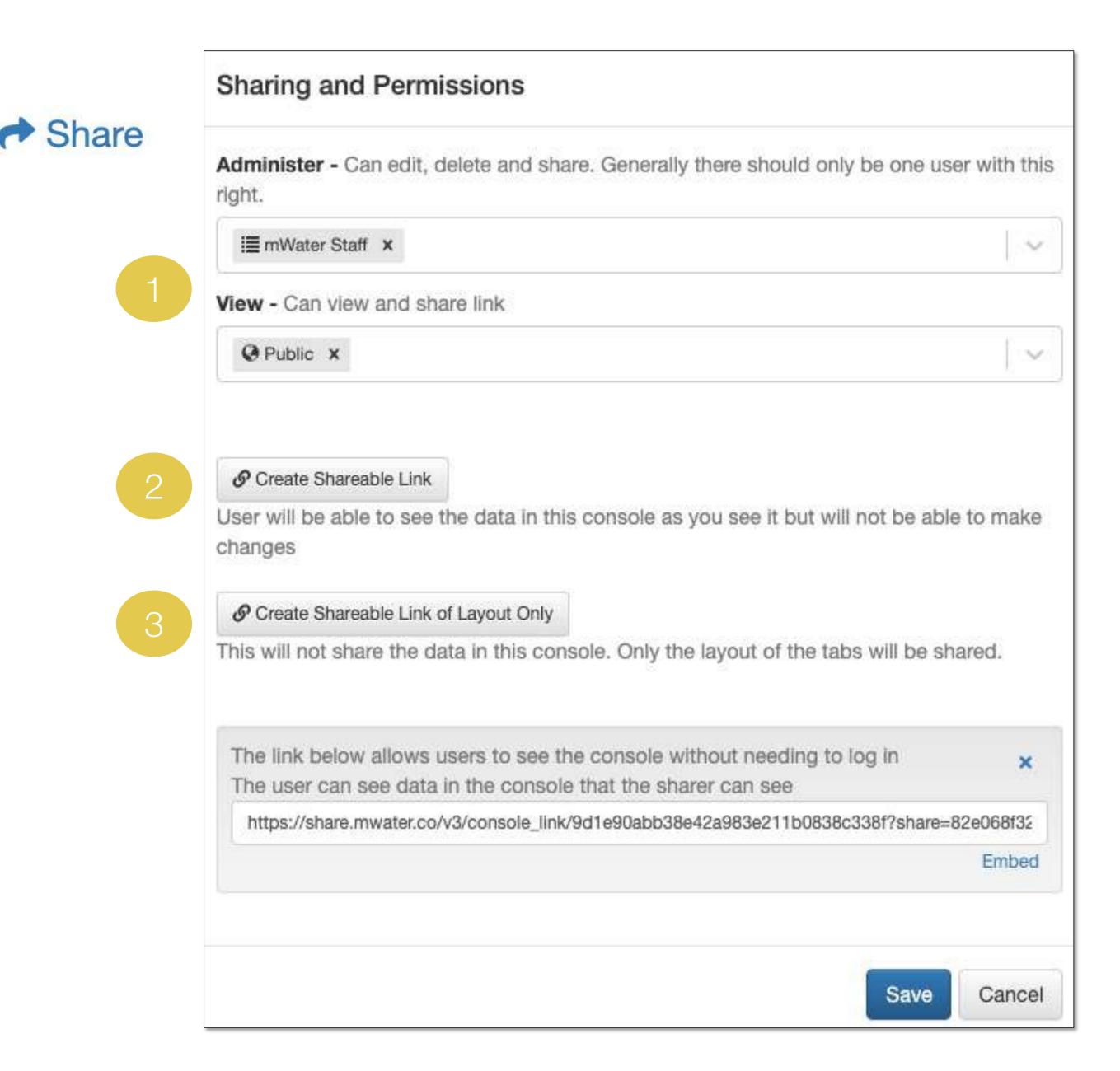


Sharing visualizations

Each visualization has a Share button which is displayed to administrators.

There are several ways to share a visualization:

- 1. Adding mWater Users
- a) Administrator These users can modify the visualization
- b) View These users can only view the visualization
- 2. Creating a shareable link Creates a link which can be used by anyone, even non-mWater users
- 3. Creating a filtered share link The same as a shareable link, but with a pre-established filter which cannot be removed by the user.





Survey (Design of a form)	Deployment (Set of responses to a form)	Organization (Structured group of users)	Site (Location monitored over time)	Dashboard, Map, Datagrid, & Console (Data visualizations)
Managed by	Enumerators	Admin	Managed By	Admin
The organization or organization brand which can see basic	Can open the form in Surveyor App and submit responses	Can create lower level branches and teams, add/remove users,	User or organization that can edit or delete the site data	Can view, edit, and delete visualization and share access to it
Admin	Approvers	change settings	Site privacy levels:	View Can view all data and visualizations on the
Can edit form design and view	Can approve or reject responses	Managers Automatically added as managers to new deployments	Protected (recommended): any user can see the basic site data and reference site in surveys	page Create Shareable Link
and edit all responses Deploy	Managers Can view, edit, or approve			Generates a unique URL to provide view access without an mWater account
Can create new deployments	responses at any time	Viewer	Private: only the Managed By organization can view site	Create Shareable Link With Quickfilters Locked
View Can view the design of the form	Viewer Can view final approved	Automatically added as viewers to new deployments	Public: any user can view and edit the site data	Generates a unique URL to provide view access without an mWater account only to

edit the site data

the filtered dataset

Data visualization permissions

responses



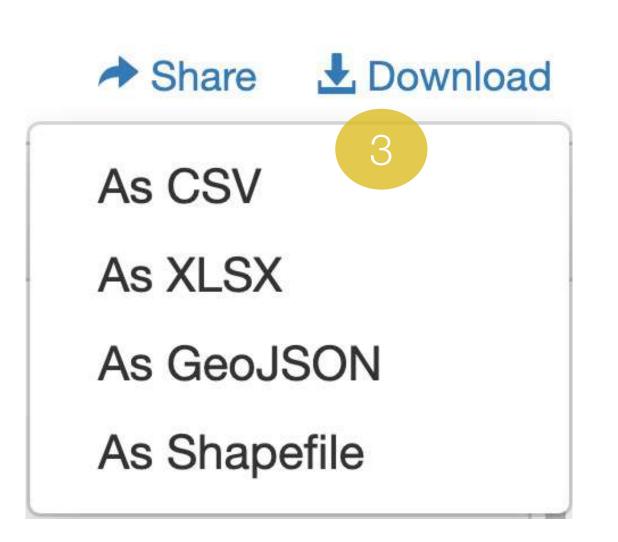
Downloading, printing, and exporting

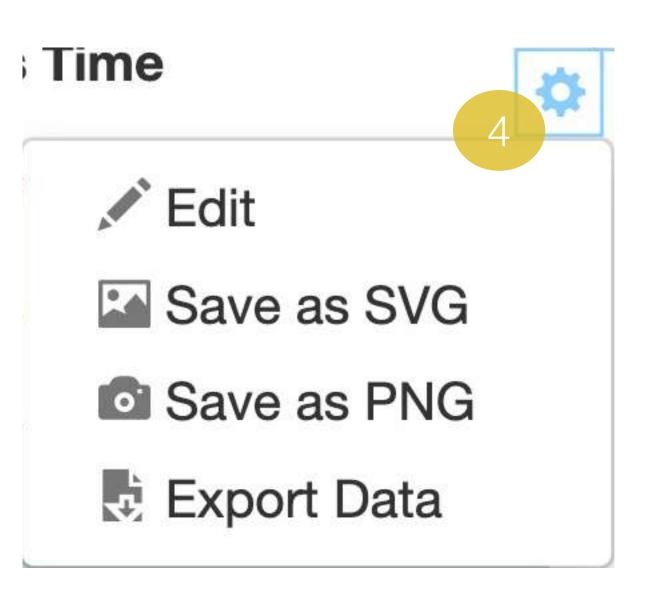
Each visualization has various methods to download, print or export the data:

- 1. Print Prints the full page visualization without the Portal menu and buttons
- 2. Export as PDF Exports data in a PDF format
- 3. Download (Click the Download button)
 - XLSX Microsoft Excel format
 - CSV Similar to XLSX, but more appropriate for large dataset
 - Shapefile Used for geospatial/mapping applications
- 4. Widgets downloads (Click the gear icon)
 - Export data Exports an CSV file of the underlying data
 - SVG Scaleable vector graphics allow for images to be scaled to any dimension without pixilation or stretching
 - PNG Exports an image file of the visualization











Maps

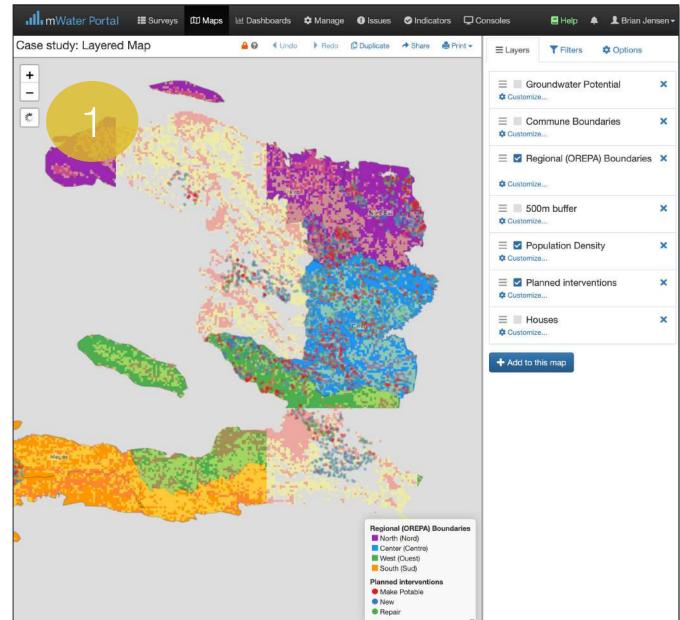
Maps can be used:

- 1. Maps As a full-page map display
- 2. Map widget As a map widget within a dashboard or console
- 3. Map tab As a map tab, which is a full-page map display within a console. By clicking the + button, a blank map tab can be added or an existing full-page map can be imported to the console.

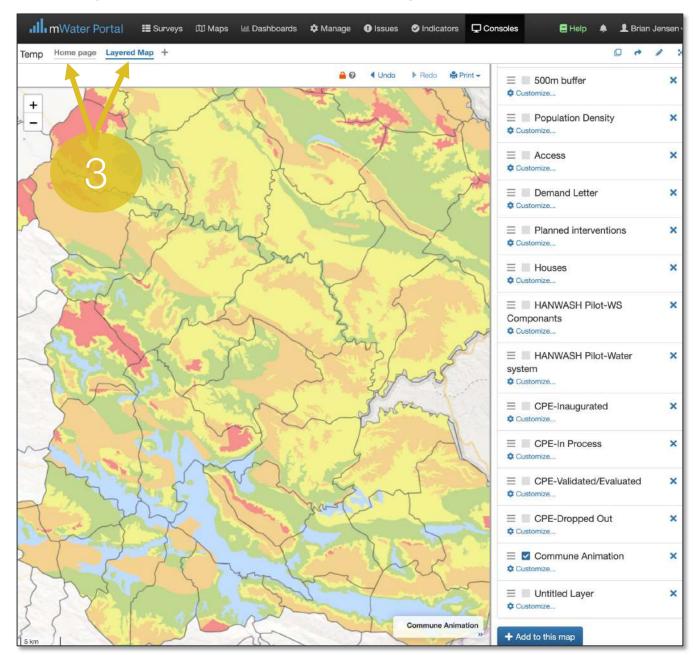
Using full-page maps allows users to turn off and on map layers.

In map widgets, users can click a layer icon and select/deselect layers to turn them on/off.

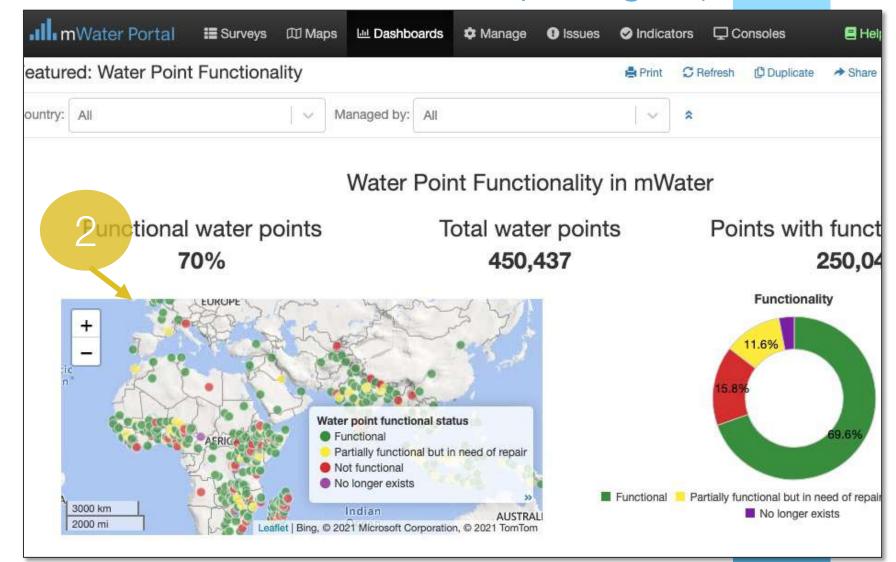
1) Maps – Single tab



3) Console - Multiple tabs



Dashboards – Modular map widget2)





Maps - Starting a new map

To create a full-page map:

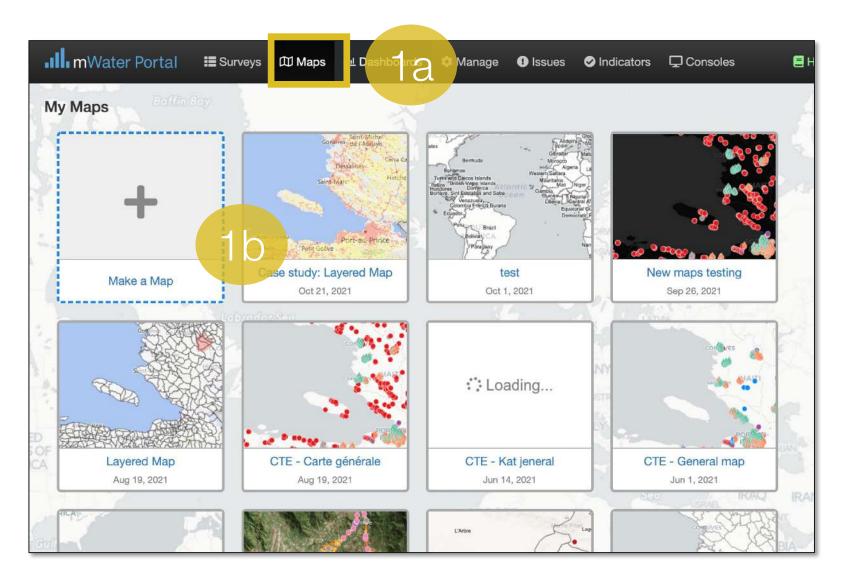
- 1a) Select the Maps tab
- 1b) Click the + Add icon

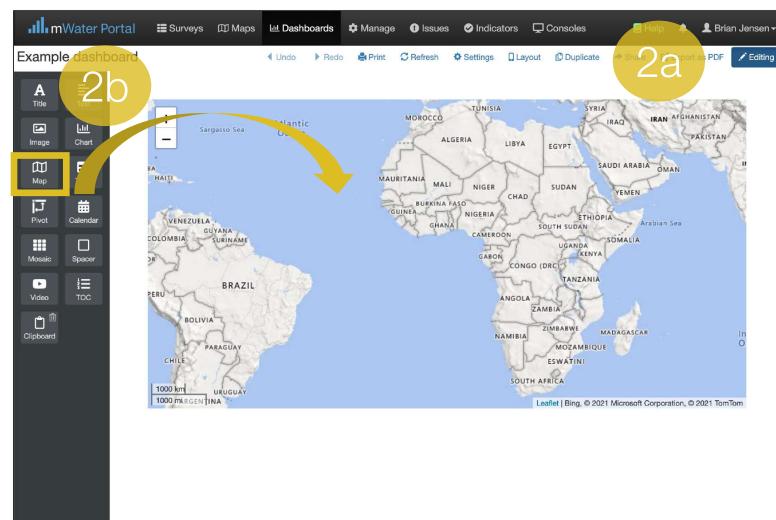
To add a map widget to a dashboard:

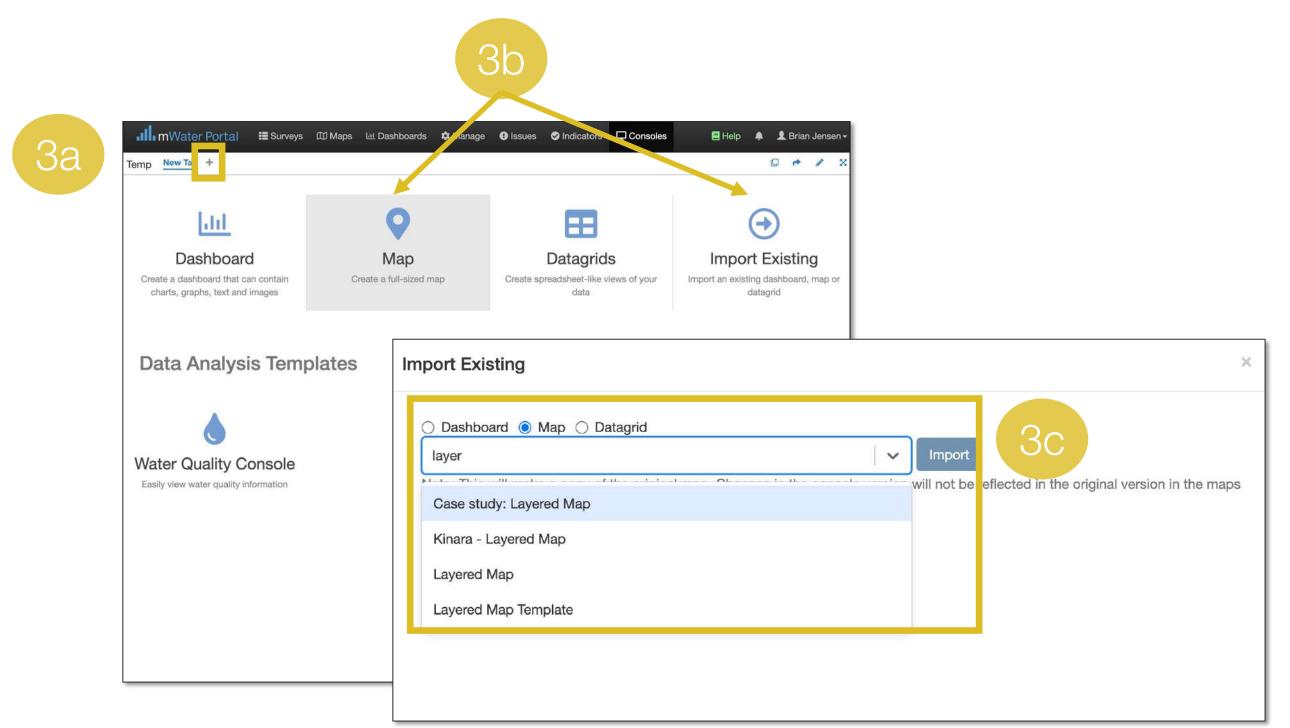
- 2a) Click the Edit button
- 2b) Drag the map icon from the left onto the white work space

To add a full-page map to a console:

- 3a) Select the + icon
- 3b) Click Map for a blank map or Import Existing to import an existing full-page map
- 3c) Choose Map from the menu, select the map to import, and click import.





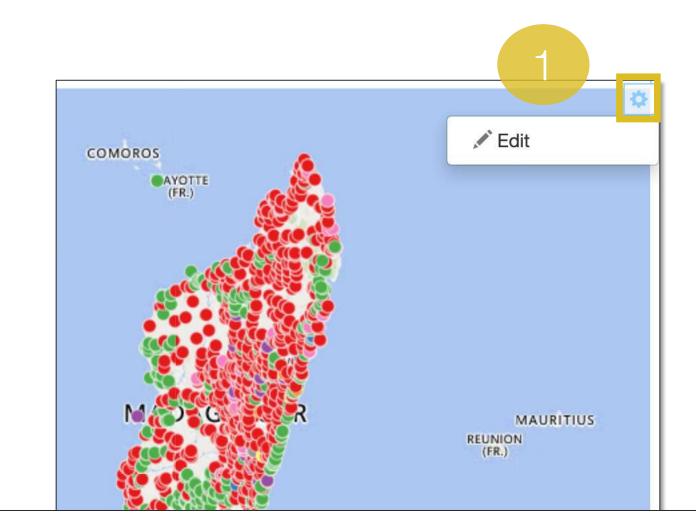


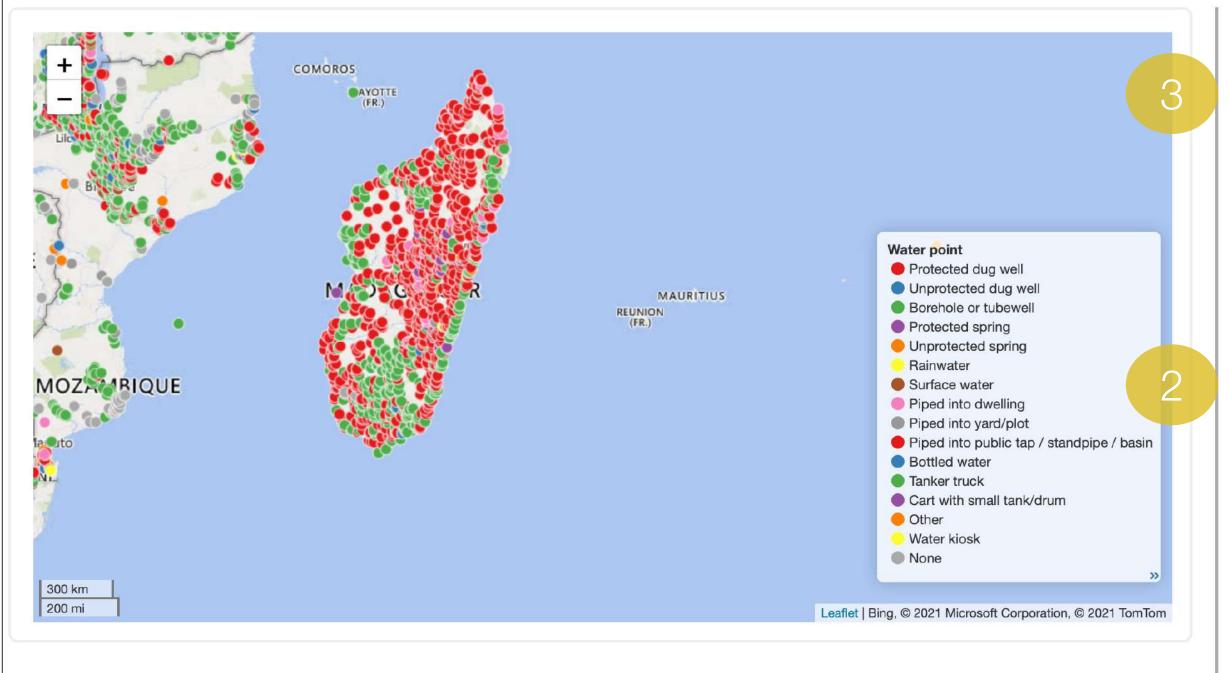


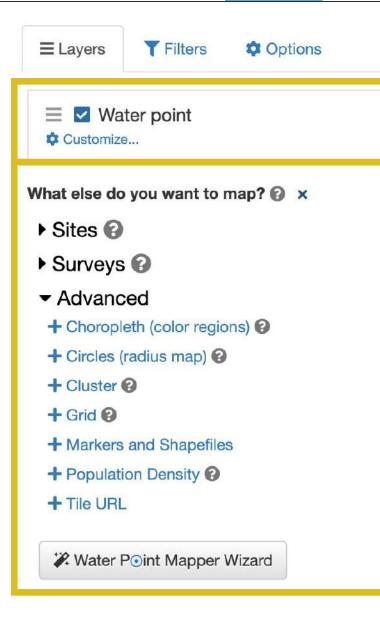
Editing a map

- 1. Click the edit button at the top right of the map widget
- 2. Add data using the section "What else do you want to map?". This allows users to add
- Sites Locations monitoring over time
- Surveys –
- Choropleths Colored regions
- Circles User-defined radius around points
- Cluster Many points concentrate into a cluster based on proximity
- Grid Colored grid cells
- Markers and shapefiles View point, line, or polygons which were imported as shapefiles
- Population density Displays a grid of population density
- Tile URL Displays any tiled data source from outside mWater
- 3. To edit an existing data layer, click the blue "Customize" button

Note: A single map can have many different data layers which can be turned on and off by the user







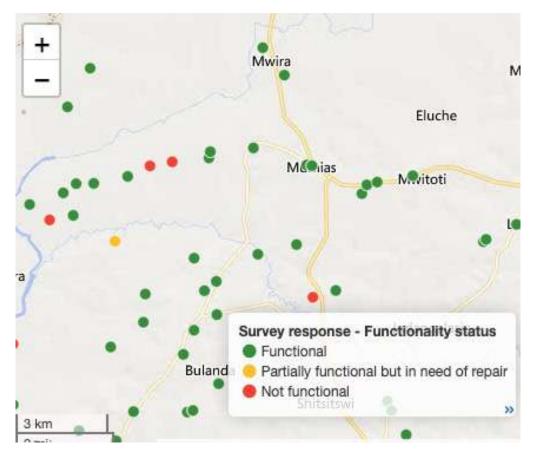


Types of map data layers

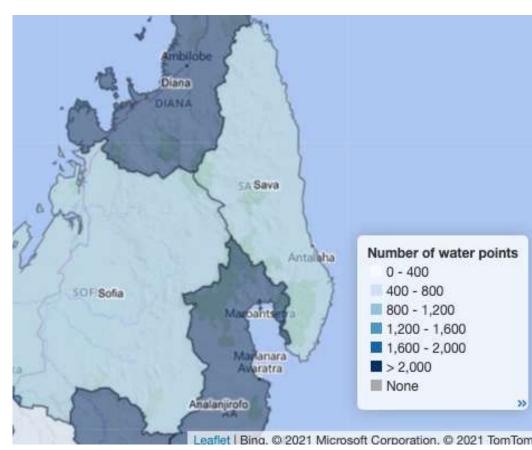
Various other map layers are available including:

- Markers Individual points displayed on a map. This can also include lines and polygon shapefiles, depending on the data source.
- Choropleth Displays aggregate data for each administrative region
- Circles Displays a circle of a specific radius around a point
- Population density Displays a grid of the number of people per 30m x 30m grid
- Grid map Aggregates point data into a grid
- Cluster map Combines point data into clusters with the number of points on them. Zooming in will provide more detailed clusters.

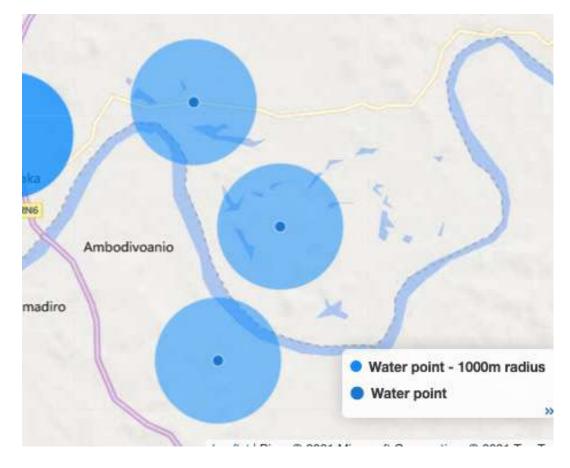
1) Markers (points)



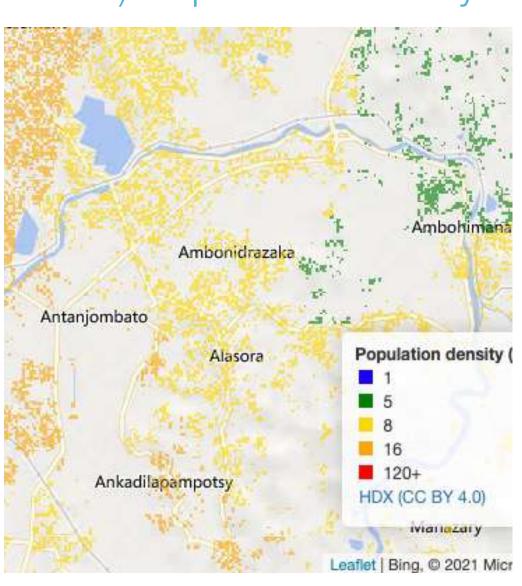
2) Choropleth (color regions)



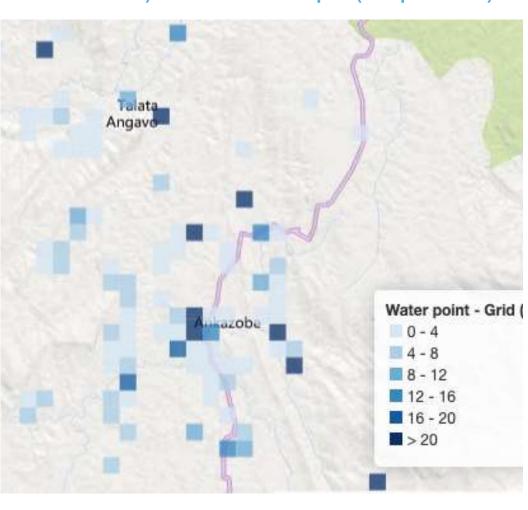
3) Circles (radius map)



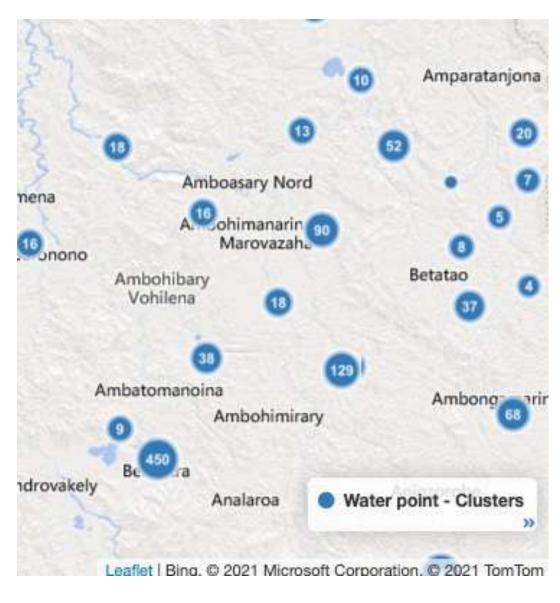
4) Population density



5) Grid map (square)



6) Cluster





Creating a point map layer

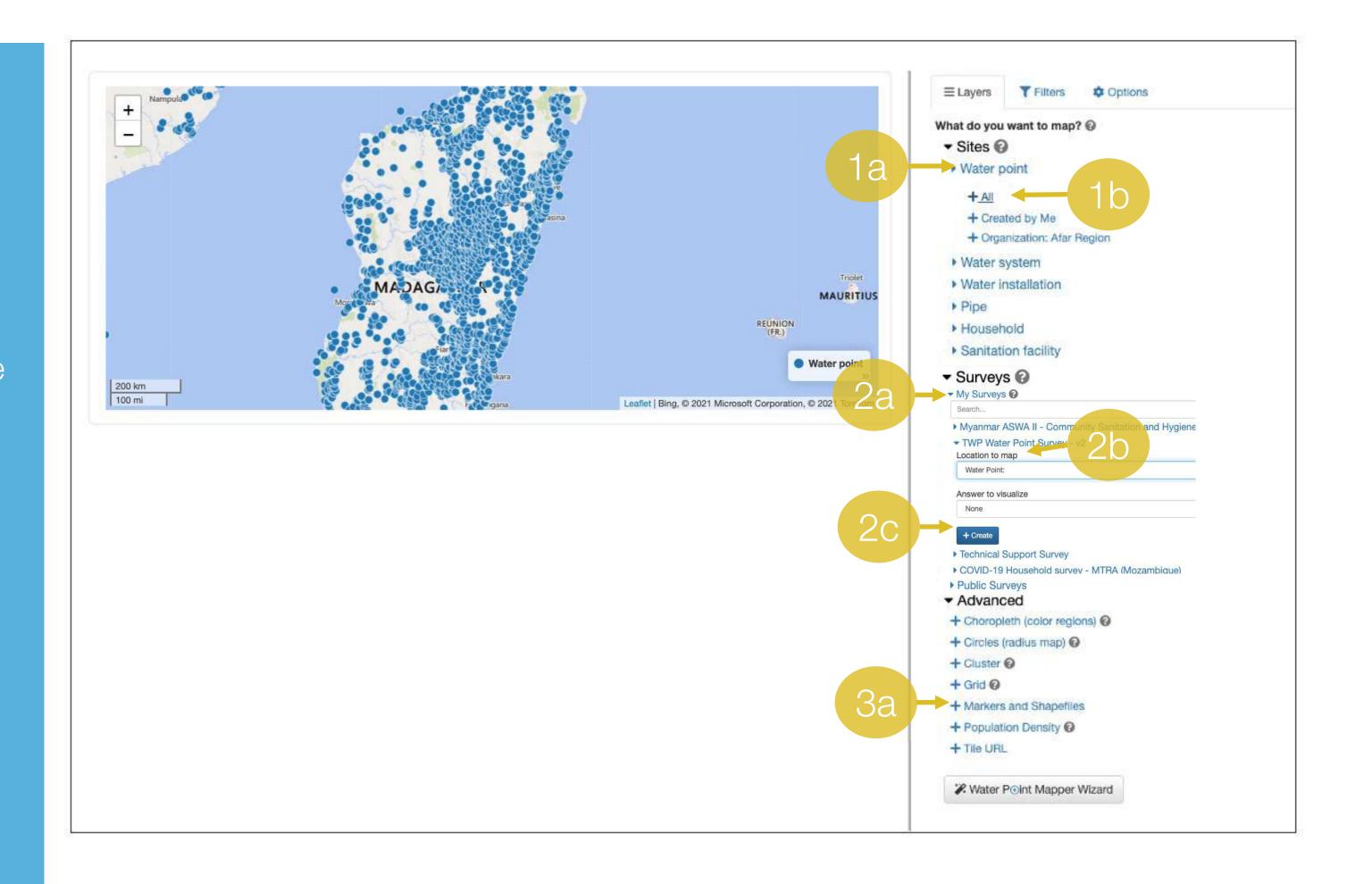
- 1a) Click a Site type from the list
- 1b) Select which subset of sites you'd like to map: All, Created by Me, or managed by a certain organization

OR

- 2a) Select My Surveys or Public surveys
- 2b) Select a Survey to map and choose which survey question to use as the location and color by parameter.
- 2c) Click the +Create button

OR

- 3a) Under Advanced, select Markers and Shapefiles*
- *This same option can be used to map shapefiles uploaded via custom tables.

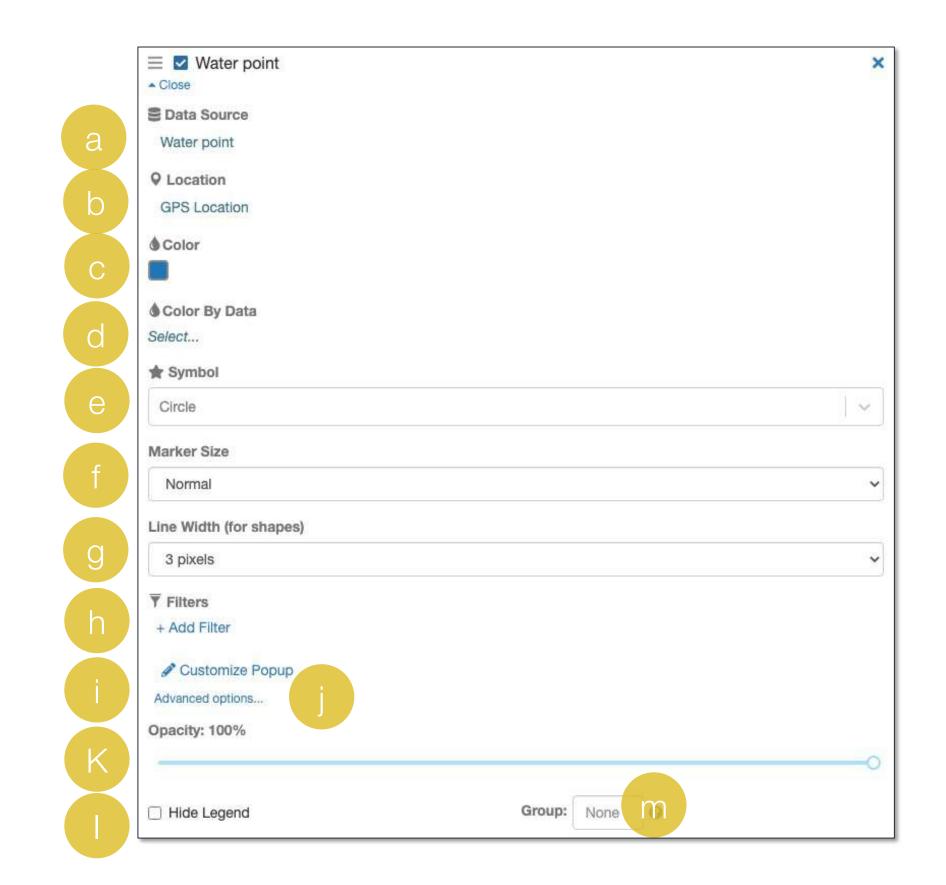




Customize a point map layer

Each map layer has various parameters which can be set:

- a) Data source Select the Data source to display
- b) Location Select which Location question to use to display the point on the map
- c) Color Change the symbol color
- d) Color by Data Color the data based on the reponses to a specific question e.g. Water point type
- e) Symbol Select the Symbol to use to represent each point
- f) Marker size Select the size of each point
- g) Line width Only for shapes, not points. Selec the width of shape lines.
- h) Filters Add a filter to the data source to only view specific points e.g. Type is Borehole or tubewell
- i) Customize popup Use a dashboard-like editor to create a custom popup which appears for each point clicked
- j) Advanced options Define the zoom levels at which the points will appear
- k) Opacity Define the opacity/transparency of the points on the map
- I) Hide legend This map layer will show on the map, but not the legend
- m) Group Use this feature to group similar map layers so that turning one layer off will turn the other layer on



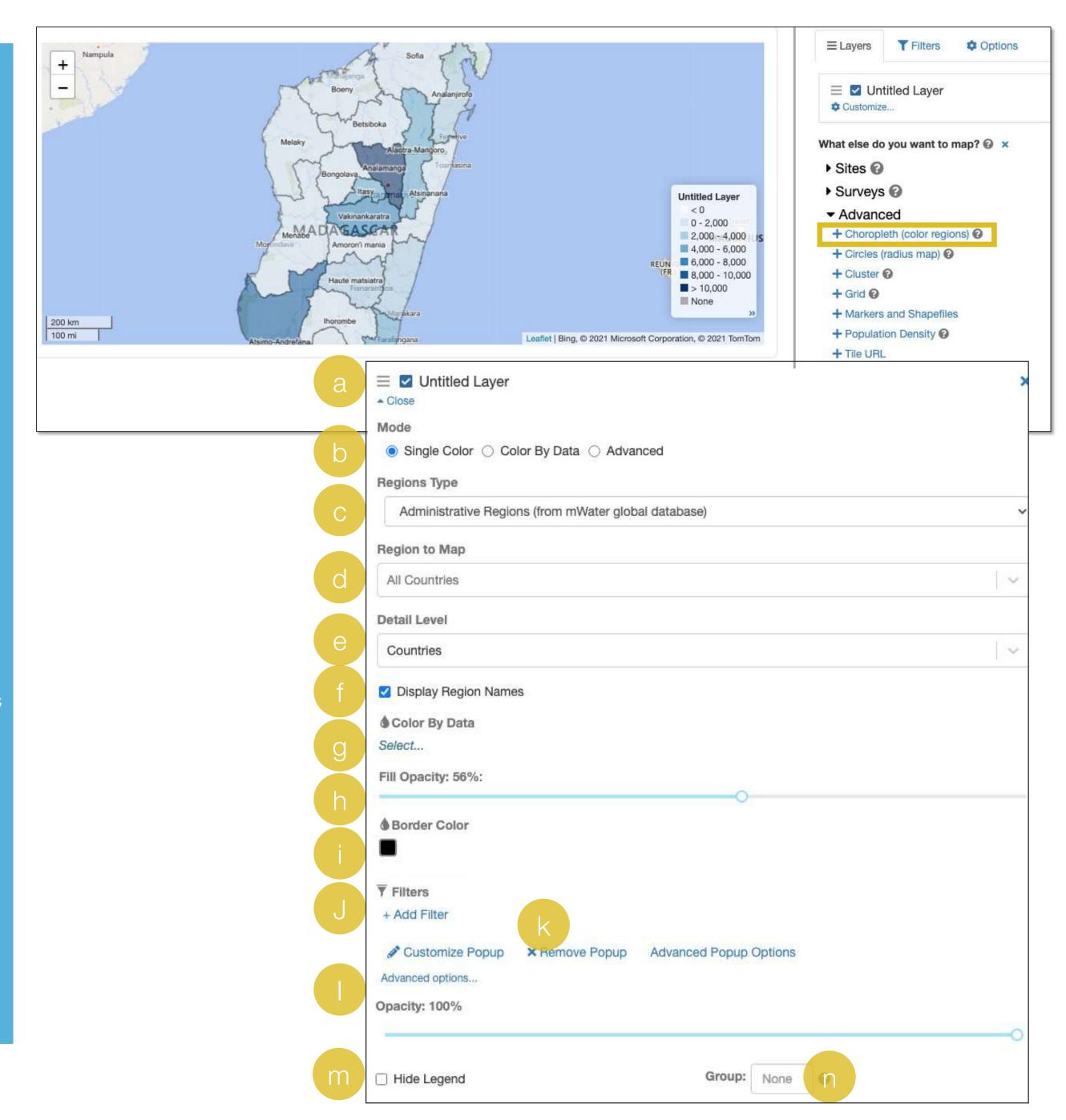


Add a choropleth layer

Choropleth maps display administrative regions which can be colored by various data fields.

A choropleth map layer has various parameters which can be set:

- a) Name This is the name which will appear in the legend
- b) Mode
 - Single color All regions are displayed with the same color
 - Color by Data Regions are displayed in various colors depending on the data source's value
 - Advanced Regions are displayed in various colors, but the data sources is fixed to Administrative Regions.
- c) Region to map Select a country to map
- d) Detail level Select which level of admin region to display
- e) Display region names This option will add the region name as a label on the map
- f) Color by Data Select which question to map and the colors which represent each value
- g) Fill opacity Choose the level of opacity of the region's color fill
- h) Border color Choose the color of the line which represents the admin region borders
- i) Filters Use the filter to select only a subset of the data
- j) Customize popup Use a dashboard-like interface to create a custom popup which appears when the region is clicked
- k) Advanced options Choose the zoom levels at which this layer will appear
- Opacity Choose the opacity of the choropleth as a whole, including the line and fill
- m) Hide legend Select this option to show the layer on the map, but not on the legend
- n) Group Use this feature to group similar map layers so that turning one layer off will turn the other layer on





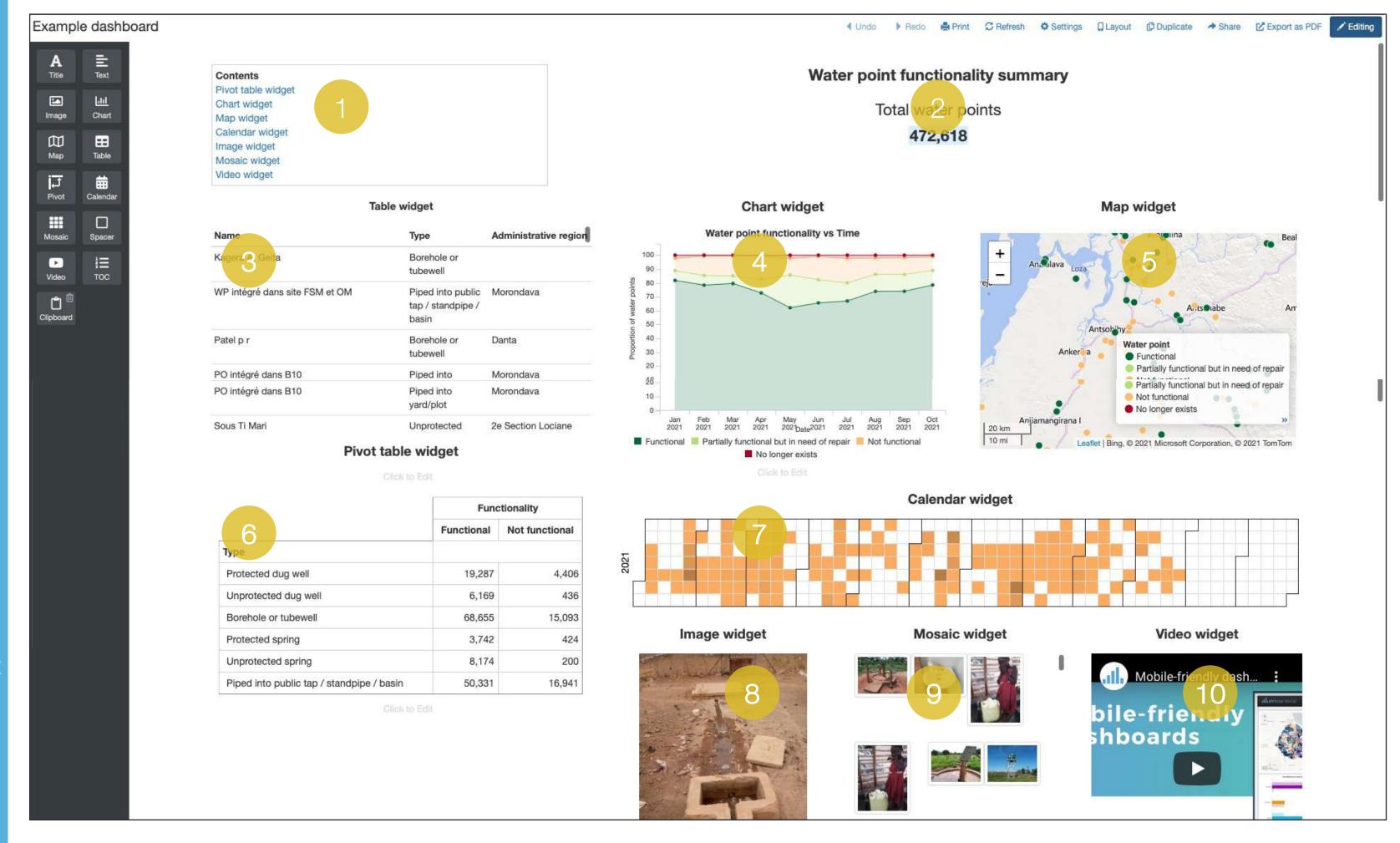
Dashbaords

Dashboards are used for sharing data visualizations and text together to create data-driven analyses. They are made up of any number of modules called widgets.

Widgets can be added/modified in edit mode by clicking the Edit button.

Widgets include:

- 1. Table of contents Click an item to navigate to that section
- 2. Text Add formatted text and dynamic data calculations
- 3. Tables Show a table of individual records
- 4. Maps Display geospatial data
- 5. Charts Display data in a graphical format
- 6. Pivot tables Display a summary of the dataset
- 7. Calendars Displays data by date, month, year, ect
- 8. Images Displays a single image
- 9. Image mosaics Displays multiple images
- 10. Embedded videos Plays an embedded video





Adding text and dynamic fields

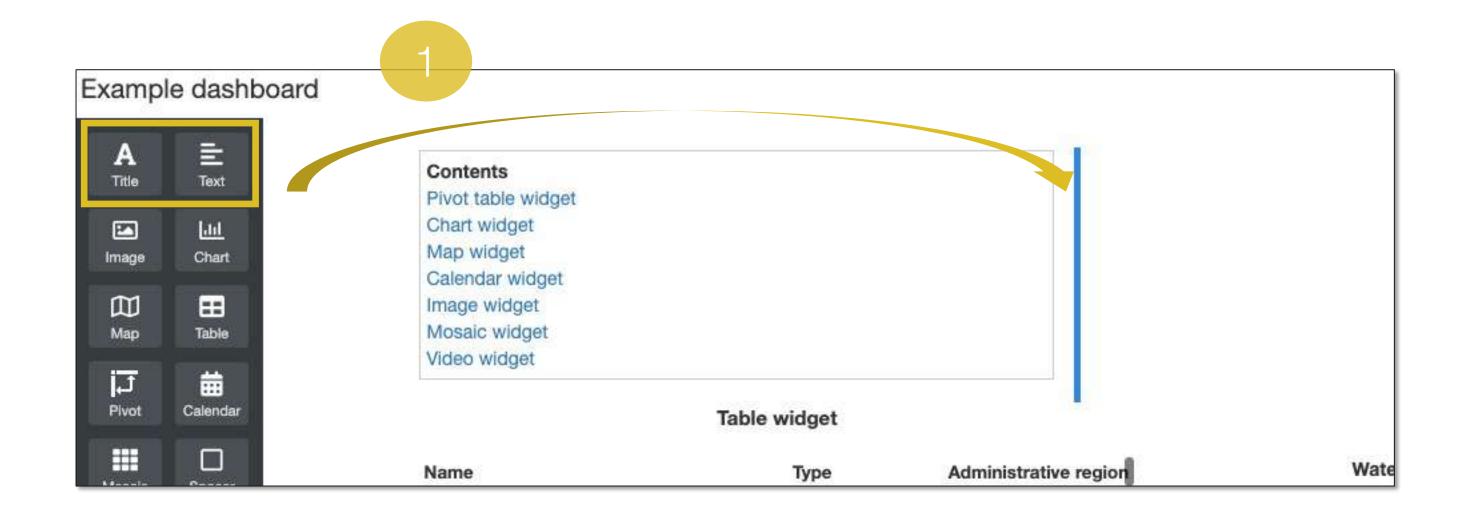
Text widgets allow users to add any formatted text alongside calculations.

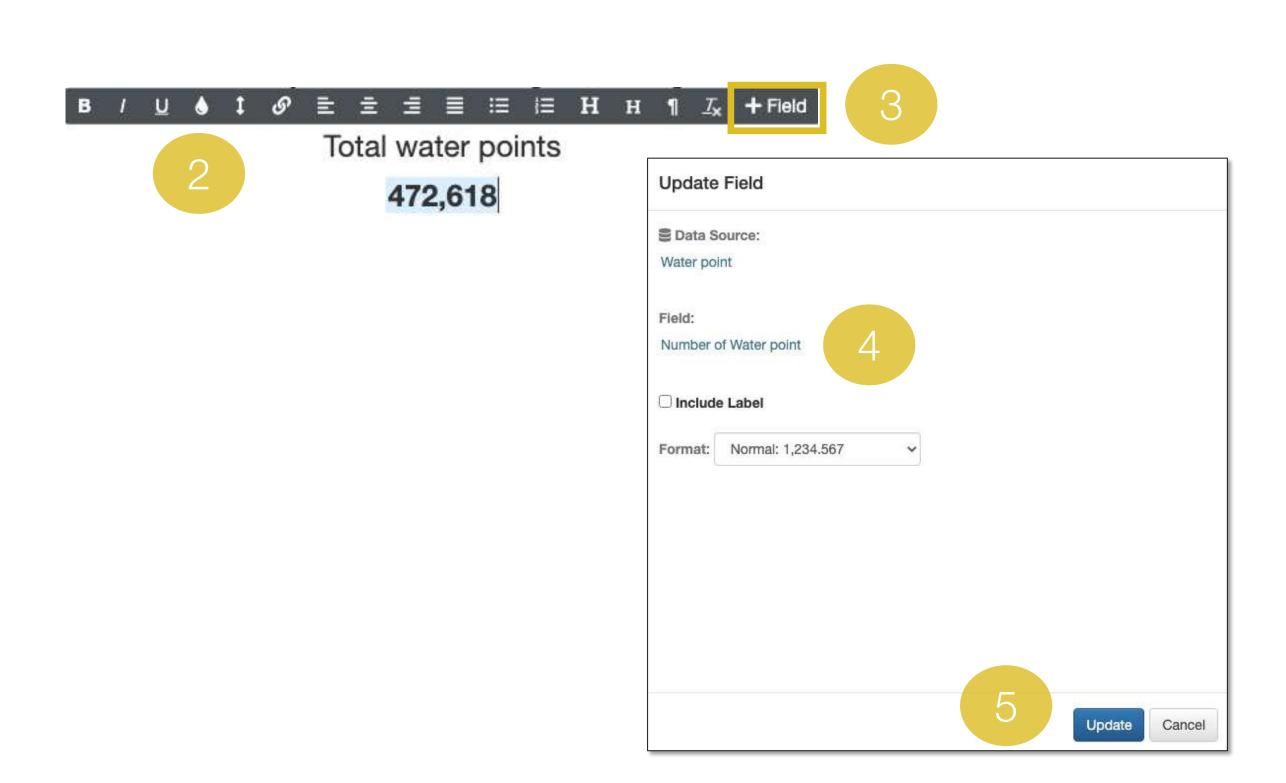
To add a text field:

- 1. Drag the Text or Title widget on to the dashboard
- 2. Type and format the text

To add dynamic calculated text

- 3. Click the +Field button in the text formatting bar
- 4. Select a data field to display e.g. Number of water points
- 5. Click Insert







Charts Types of Charts

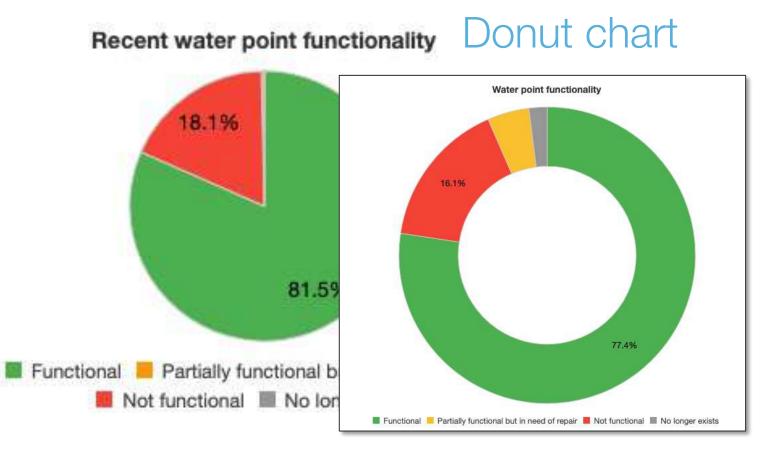
Dashboards and consoles allow users to add various types of charts to visualize their data.

These include:

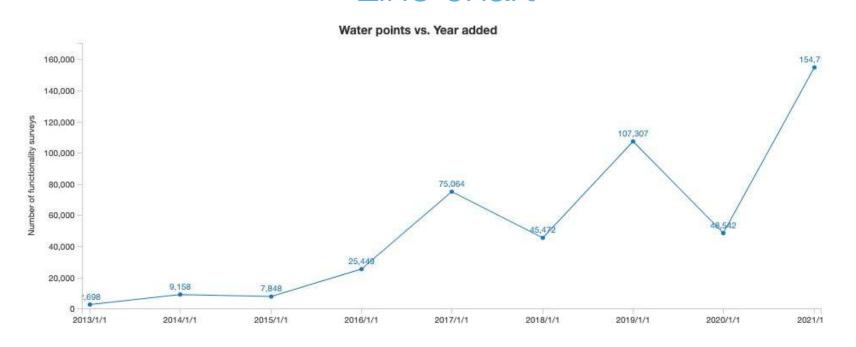
- Bar charts used for values by category or bin
- Pie and doughnut charts Used for visualizing proportions by category or bin
- Line charts Used for plotting values vs time
- Scatter plots Used for showing
- Smoothed line charts Used for plotting values vs time
- Area charts Used for showing proportions over time

Bar chart

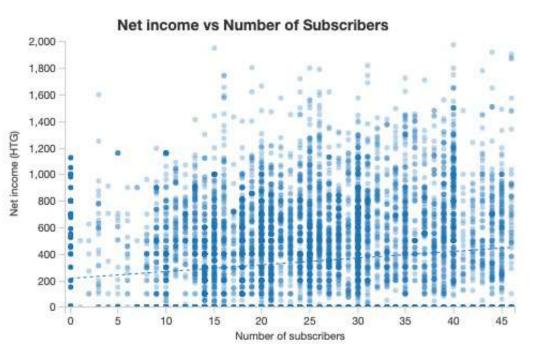
Pie chart



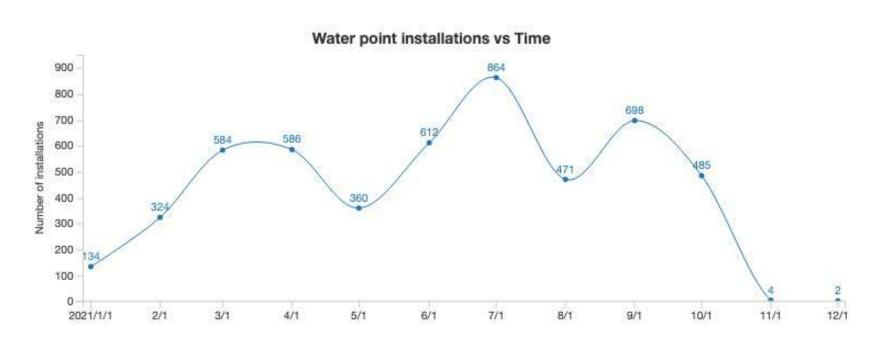
Line chart



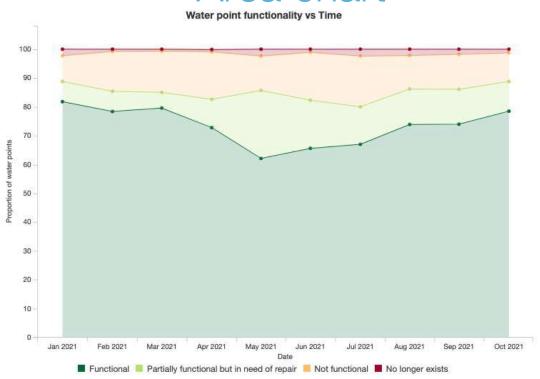
Scatter plot



Smoothed line chart



Area chart





Adding and editing a chart

To add and edit a chart:

- 1. Click **Edit** on the dashboard or console
- 2. Drag and drop the Chart widget from the side menu
- 3. Click the Gear icon of the widget and select **Edit**
- 4. Edit the parameters of the chart

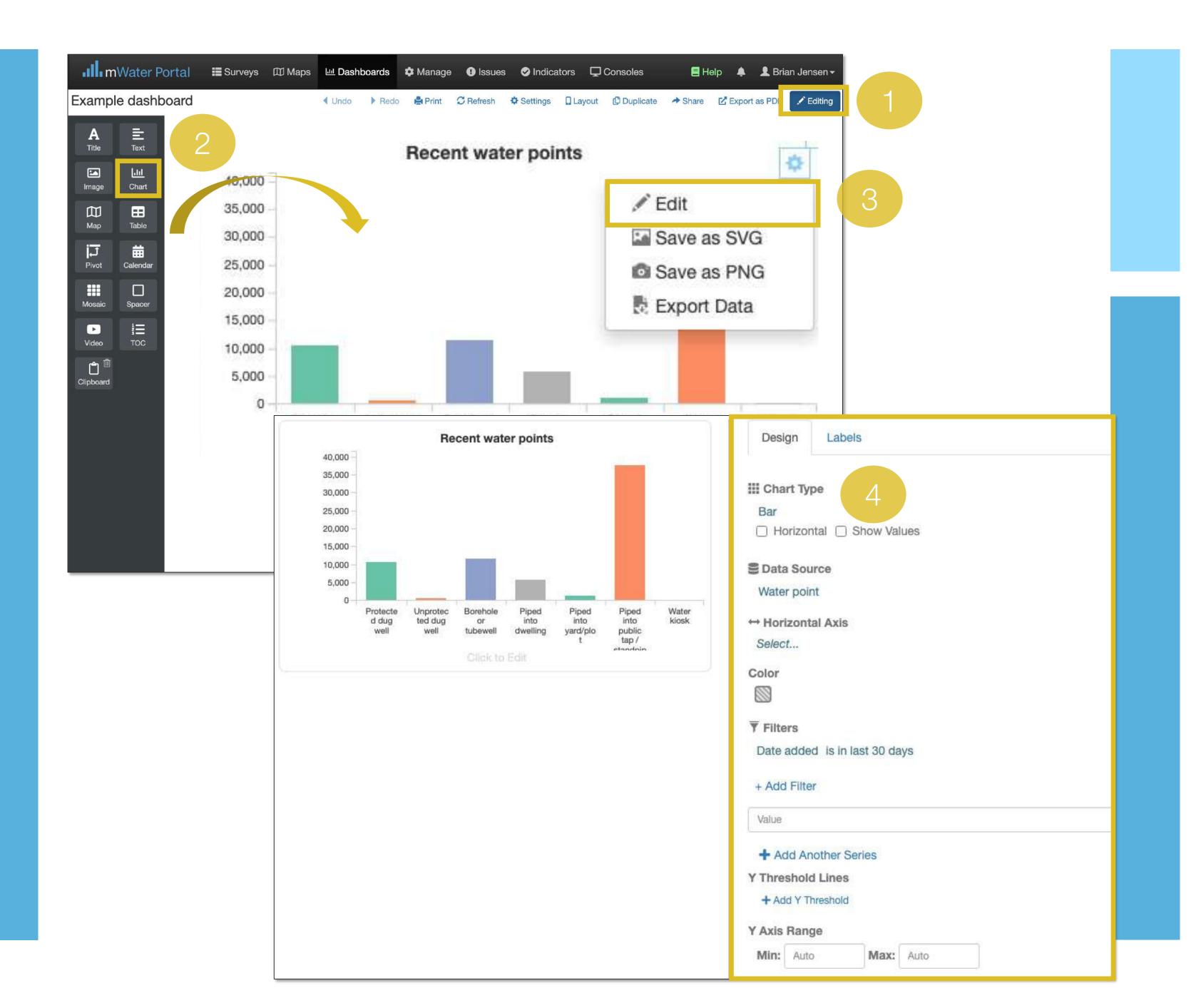




Chart parameters

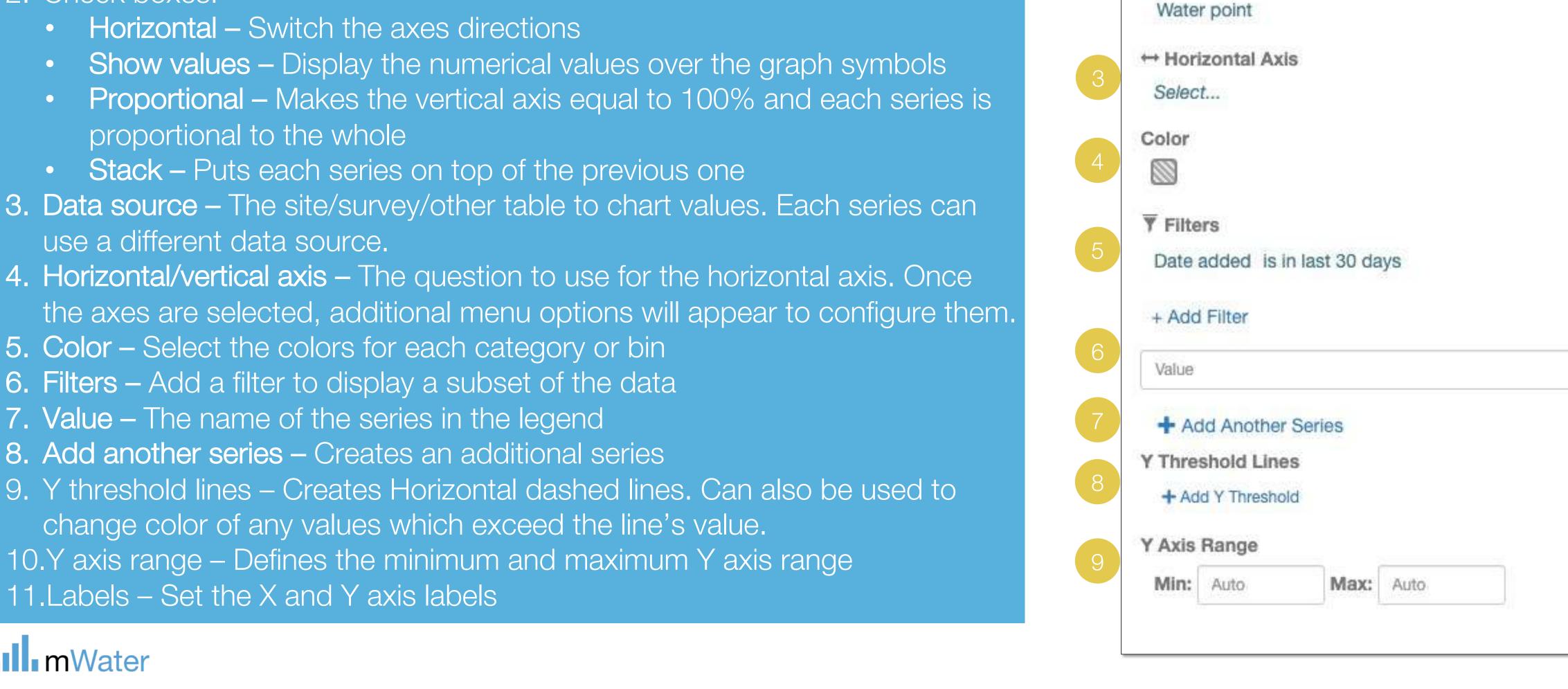
Charts have various parameters which help the user configure it to their needs.

These include:

- 1. Chart type Defines the overall type of the chart
- 2. Check boxes:

- 3. Data source The site/survey/other table to chart values. Each series can use a different data source.

- change color of any values which exceed the line's value.
- 10.Y axis range Defines the minimum and maximum Y axis range



Labels

Show Values

Design

III Chart Type

Horizonta

Data Source



Data tables

Tables display individual sites or survey response in each row. These can be added to any dashboard or console by:

To add and edit a table:

- 1. Click **Edit** on the dashboard or console
- 2. Drag and drop the Table widget from the side menu
- 3. Click the Gear icon of the widget and select **Edit**
- 4. Edit the parameters of the chart

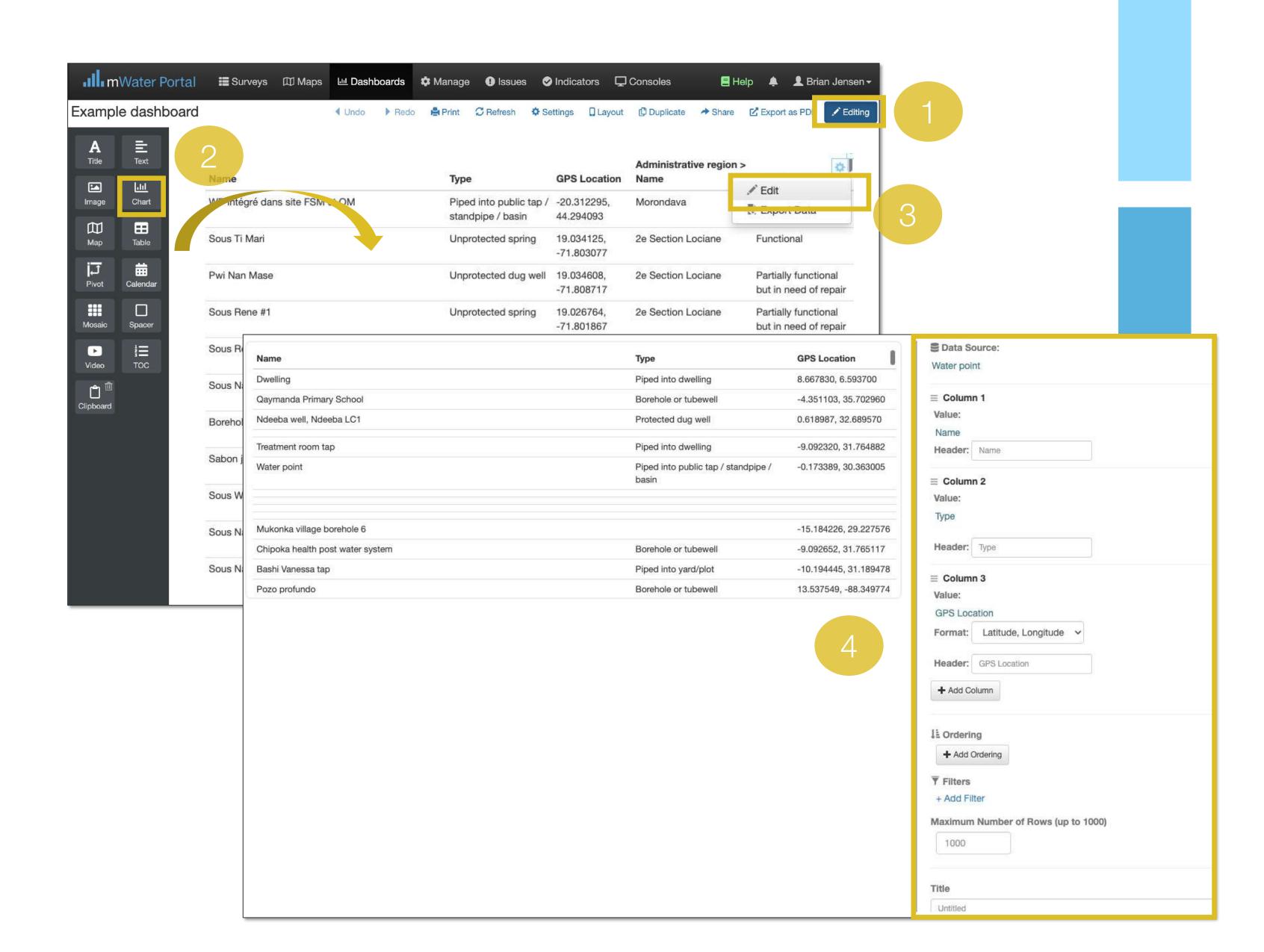




Table parameters

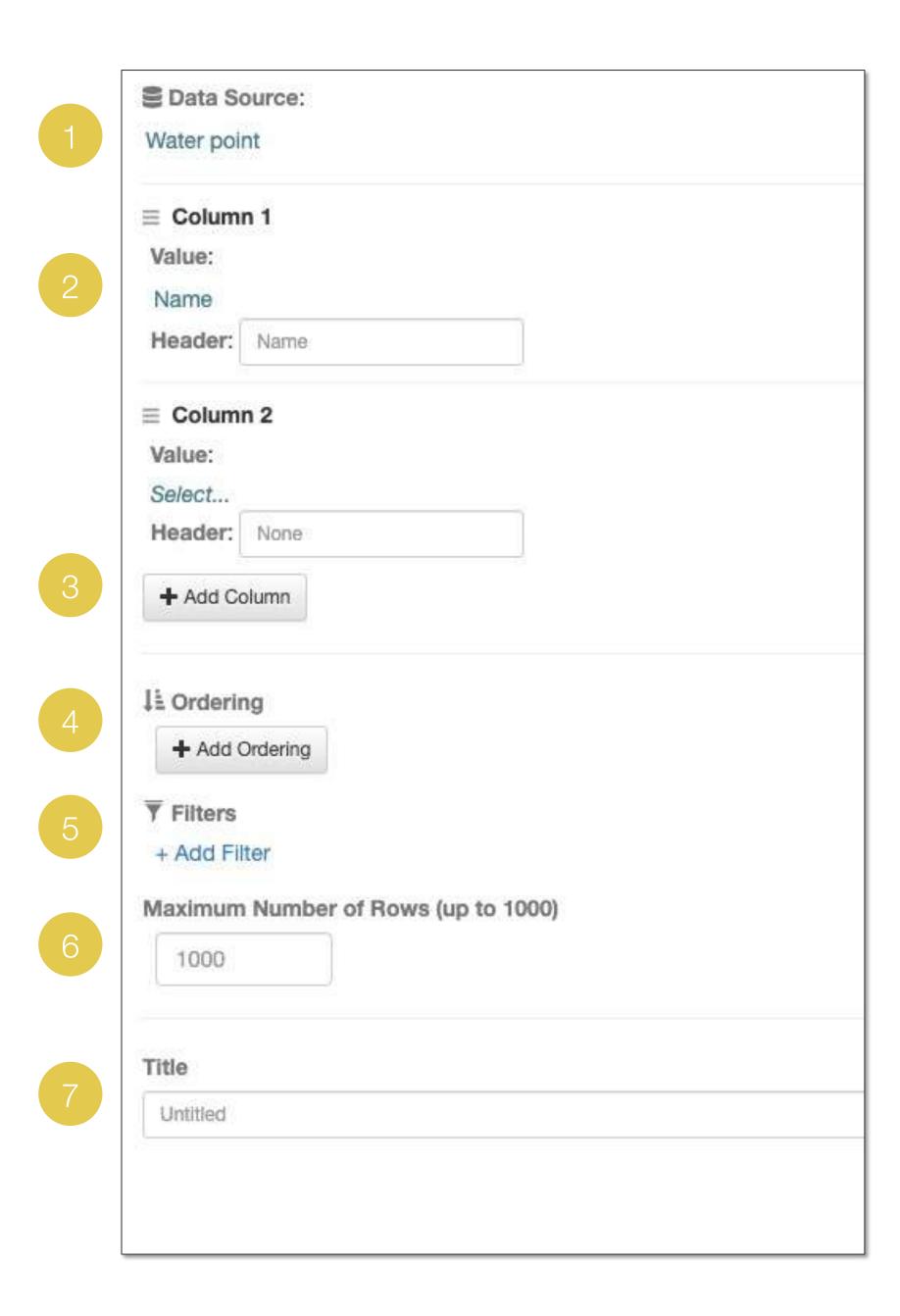
Tables have various parameters which help the user configure it to their needs.

These include:

- 1. Data source Select the site or survey form to use in the table
- 2. Column 1 Click Select... to choose a question from the data source. Use the Header text box to change the Column name.
- 3. Click +Add column for additional columns
- 4. Add ordering Choose a question to use for a sorting/ordering the table
- 5. Add filter Set a filter to display a subset of the data
- 6. Maximum number of rows Define the maximum number of rows in the table. The table will only display that number of rows.
- 7. Title Add atitle to the data table

Note: Drag and drop the \equiv symbol to reorder the columns.

Note Use the 💢 button to delete a column.





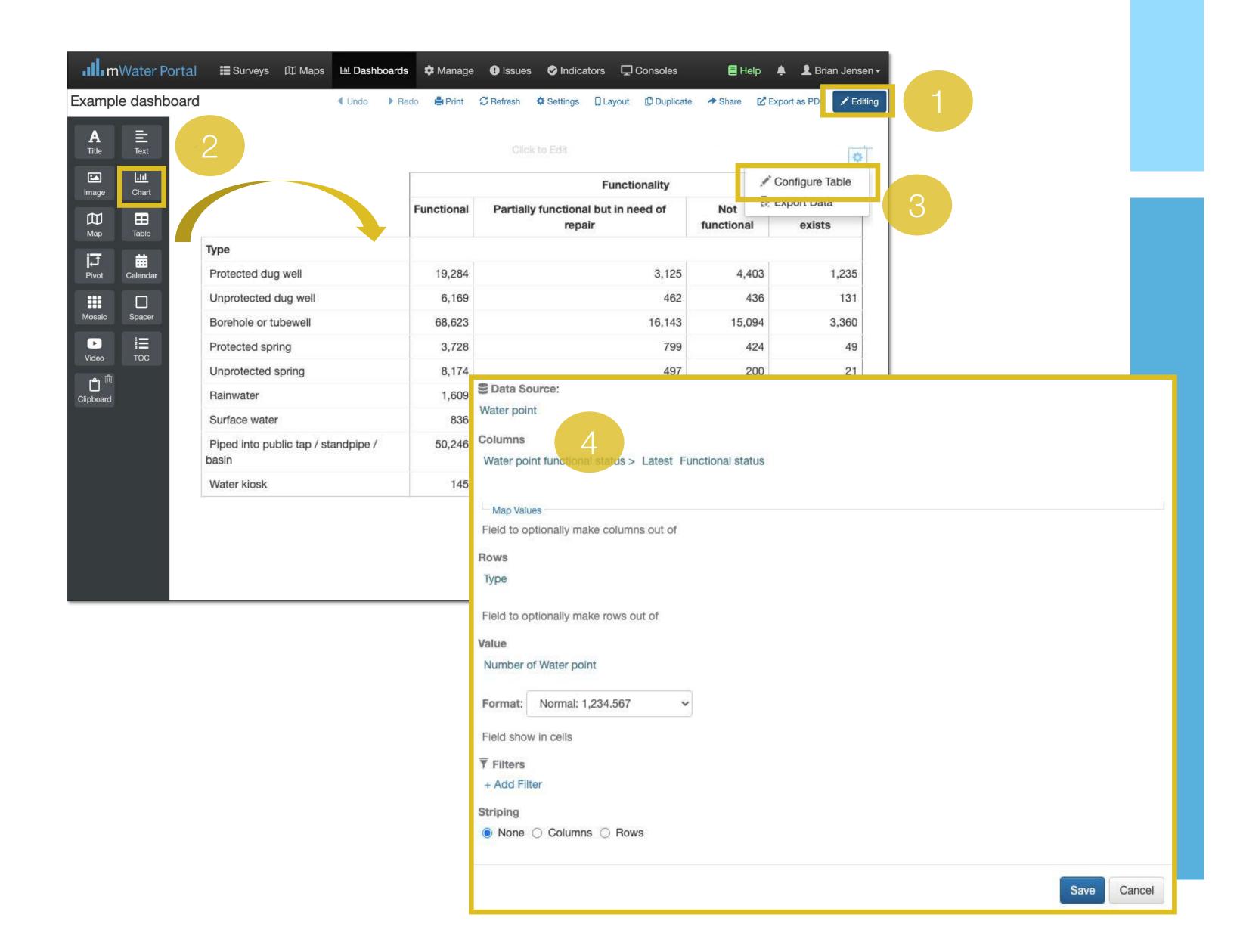
Pivot tables

Pivot tables display summary data in a tabular format. Each row represents multiple sites or surveys, aggregated together.

To add and edit a pivot table:

- 1. Click Edit on the dashboard or console
- 2. Drag and drop the Pivot widget from the side menu
- 3. Click the Gear icon of the widget and select **Edit**
- 4. Edit the parameters of the pivot table

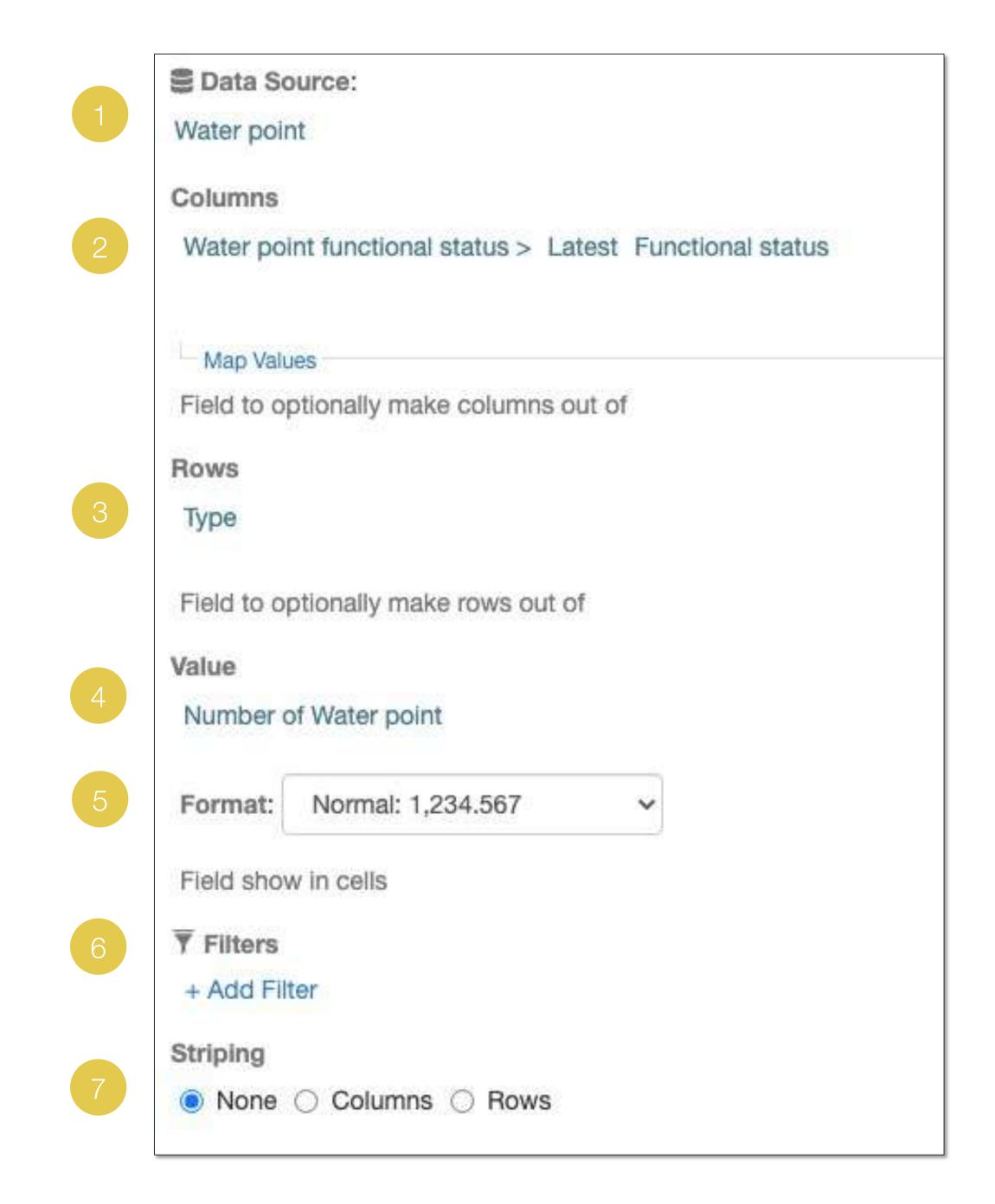
Each cell in a pivot table contains an expression which defines how to calculate that value. Expressions can be Aggregate (e.g. number of surveys, total of revenue, latest where..., etc) or individual values (e.g. revenue, name, etc)





Pivot table parameters

- 1. Data source Select the site or survey form to use in the table
- 2. Columns Either leave this blank (for a single column) or select a question for multiple columns
- 3. Rows Either leave this blank (for a single rows) or select a question for multiple rows
- 4. Value Select the value which will be displayed in the cells of the table e.g. number of water point, % of total, etc
- 5. Format Choose the number format for these values
- 6. Filters Create a filter to view a subset of the data
- 7. Striping Add alternating grey/white stripes to ealy distinguish data





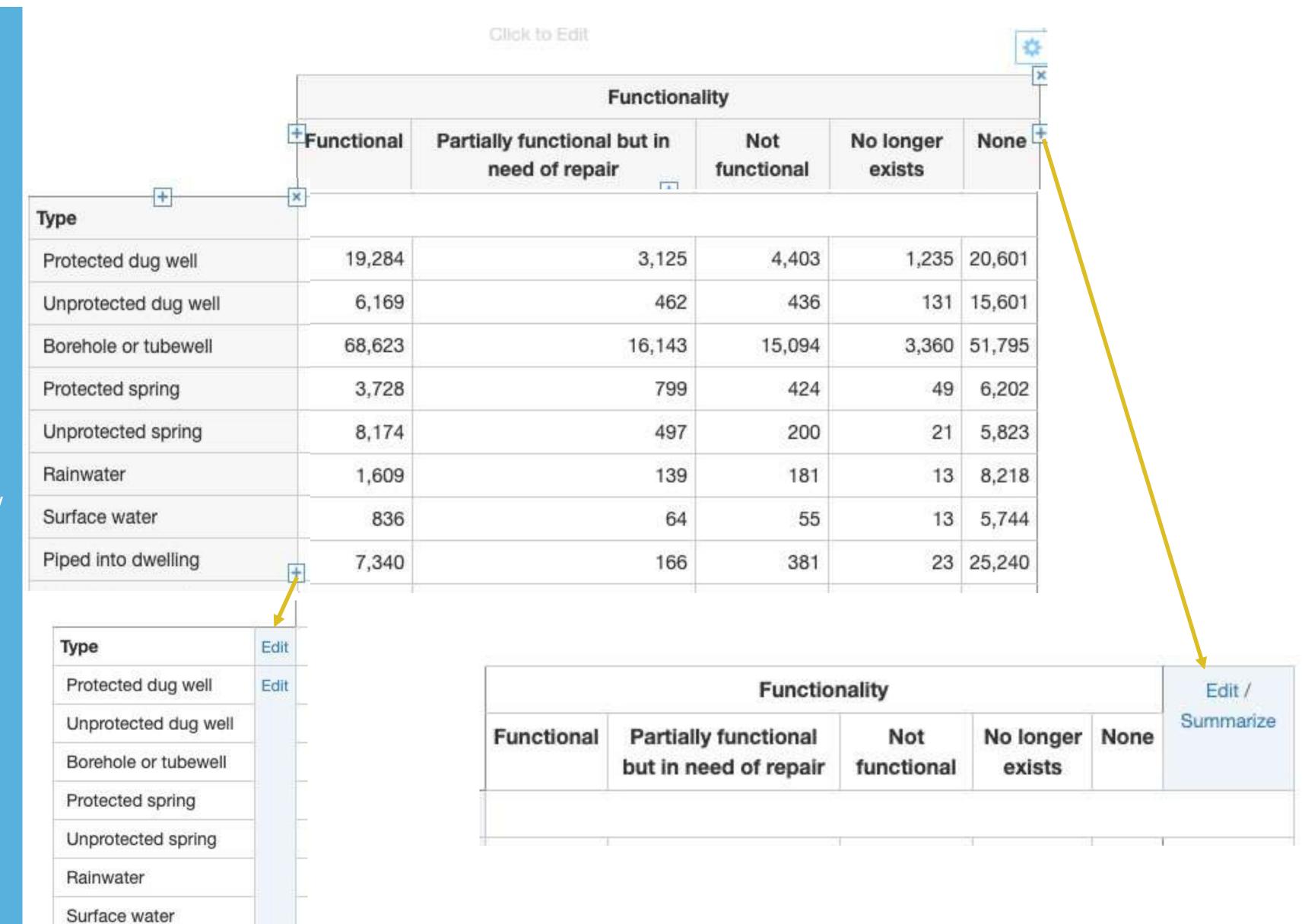
Additional Pivot Table Functions

- 1. Click the + icon to add an extra row or column to the table
- 2. Click the button to delete a row or column

Note: Adding a column to the right or bottom of the table will displays
Summarize option to total all values.

Users can add multiple layers of diaggregation to split the data into smaller sub categories.

Piped into dwelling





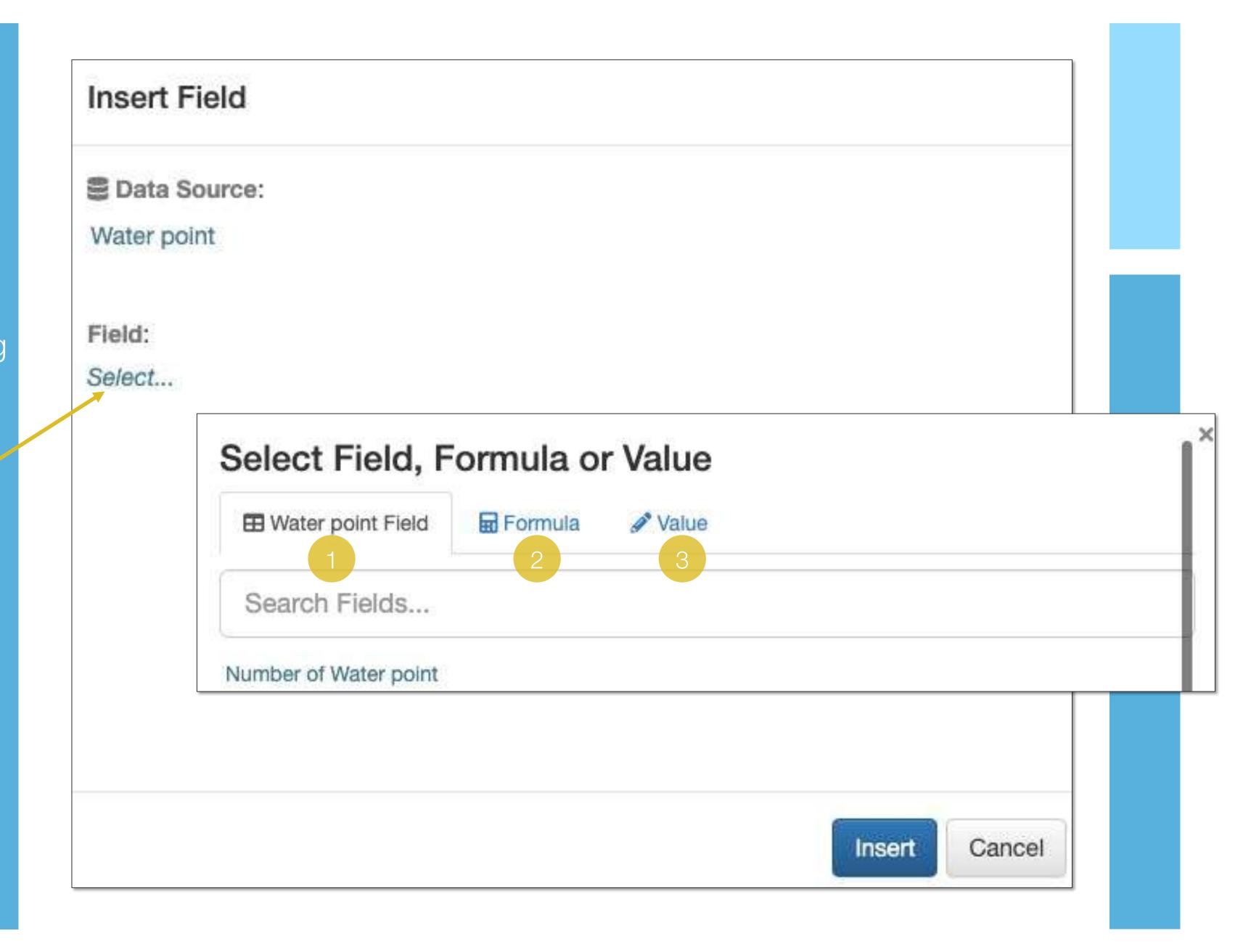
Expressions

The mWater portal has a sophisticated Expression Builder which allows users to choose how to calculate values from their data. Expressions are also used for creating filtering and sorting data.

The expression builder will open anytime the user clicks the *Select...* icon.

The expression builder displays:

- 1. [Data Source] Fields tab Shows all data fields within the chosen data source.
- 2. Formula tab Displays functions which can be used to calculate values from the data.
- 3. Value Allows users to enter in a data value manually.



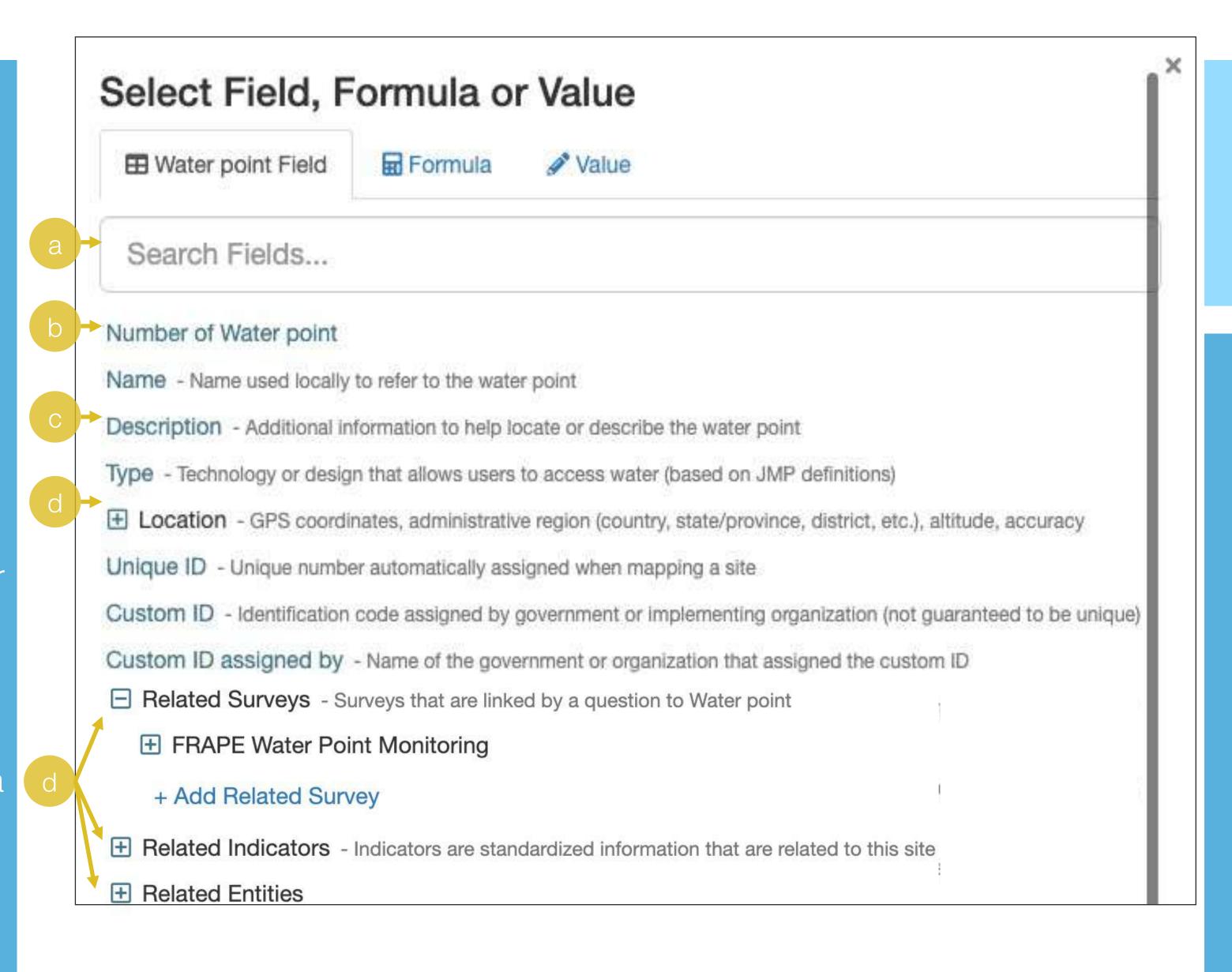


Data Source Fields

The first tab in the Expression builder displays the data source fields e.g. Water point Field.

This tab includes:

- a) A full-text search bar for data fields
- b) An automatically calculated field for the Number of rows in the data source e.g Number of water points
- c) Each blue field is selectable
- d) Each black field with a loon is a section which can be expanded
- e) Related data sources like Surveys, Indicators, and Entities (Sites)





Formula

The Formula option in Expression Builder allows users to calculate values from base data. Each formula takes one or more input and calculates a single output value.

This includes:

- Logical functions Display different data depending on which logical statements are true
- Conversion functions Converts data from one type/format to another
- Date and time functions Converts date/time data to different formats
- Aggregate functions Define how to combine multiple values together into a single value
- Geospatial functions Calculates a value based on the geospatial location information of the data

Туре	Name	Description	
Logical functions	If/then	Choose different values based on a condition	
	Score	Assign scores to different choices of a field and find total.	
	Not	Opposite of a value	
Conversion functions	Convert to text	Advanced: convert a choice, text list, or number type to a text value	
	Convert to date	Convert a datetime to a date	
	Convert to number	Convert a text value to a number or null if not valid number	
	Round	Round a number to closest whole number	
	Floor	Round a number down	
	Ceiling	Round a number up	
	Make list of	Converts a multi-check into a single, comma-separated list	
	Days between	Get the number of days between two dates	
	Months between	Get the number of months between two dates	
	Years between	Get the number of years between two dates	
	Days since	Get number of days from a date to the present	
	Month	Month of year	
Date and time	Year and Month	Date of start of month	
functions	Year	Date of start of year	
	Week of month	Week within the month	
	Day of month	Day within the month (1-31)	
	Year/Quarter	Year and quarter of a date	
	Year/Week	Year and week of a date	
	Week	Week of a date	
	Today	Advanced: current date. Do not use in comparisons	
	Now	Advanced: current datetime. Do not use in comparisons	

Туре	Name	Description	
	Latest	Get latest value when there are multiple	
	Latest where	Get latest value that matches a condition	
	Is latest for each	Only include latest item for each of something	
	First	Get first value when there are multiple	
	First where	Get first value that matches a condition	
Aggregation functions	Previous	Get 2nd latest value when there are multiple	
	Number where	Get number of items that match a condition	
	Number of unique	Count number of unique values	
	Number of values in	Advanced: number of values selected in a multi-choice field	
	Total	Add all values together	
	Total Number	Get total number of items	
	Total where	Add together only values that match a condition	
	Percent of Total	Percent of all items	
	Percent where	Get percent of items that match a condition	
	Average	Average all values together	
	Least of	Takes the smallest of several numbers	
	Greatest of	Takes the largest of several numbers	
	Minimum	Get smallest value	
	Minimum where	Get smallest value that matches a condition	
	Maximum	Get largest value	
	Maximum where	Get largest value that matches a condition	
	Latitude of	Get latitude in degrees of a location	
	Longitude of	Get longitude in degrees of a location	
Geospatial functions	Distance between	Get distance in meters between two locations	
	Length of line	Length of a line shape in meters	
	Spatial Join	Advanced: Join to another table based on location distances	
	Population Within	Advanced: Estimates population within certain number of meters of location(s)	



Quick formula

In addition to the options shown in the Formula tab, mWater has various logical and mathematical functions which can be performed on each value.

By hovering the cursor over any expression, mWater will display applicable formulae which can be added to the expression like:

- 1. Arithmetic functions Addition (+), Subtraction (-), Multiplication (*), Division (/)
- 2. Logical functions And, Or, Not, Is blank, etc.

Note: Clicking on any part of the expression will allow the user to remove or replace that field, operator, or value with a similar one.



And – If both of the expressions are true, it will be true
Or – If either of the expressions is true, it will be true
Not – Negates the expression which follows it
Is blank – If the field has a blank value, it will be true



Filters

Dashboards, consoles, maps, and datagrids can all use filters to display subsets of any data set.

The diagrams at right show the same visualization widgets with and without filters applied.

Filters are statements which define which records in a data source to display. If the statement is True, then the record will be displayed.

Filters have the following components:

- 1. A data field
- 2. An operator
- 3. A value

Filters

Filters are built in to the dashboard and cannot be changed by viewers of the dashboard

Water point

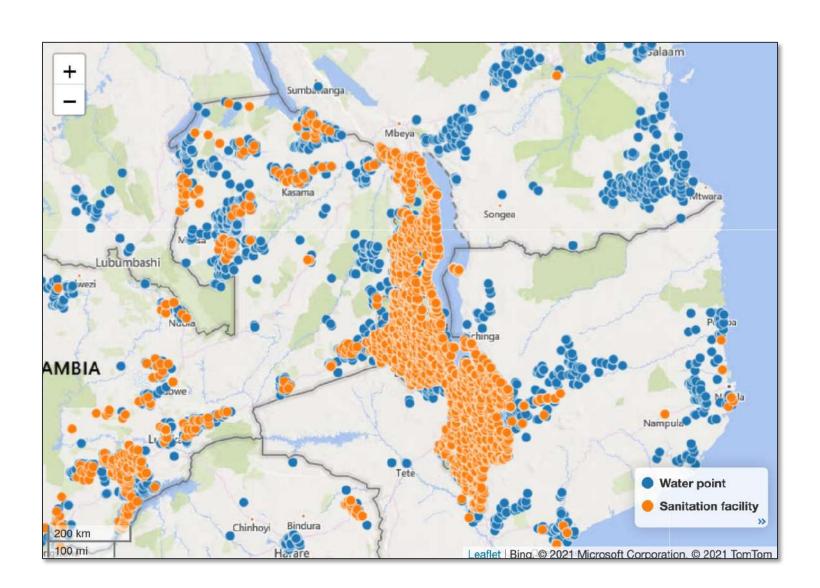
Administrative region is within Malawi



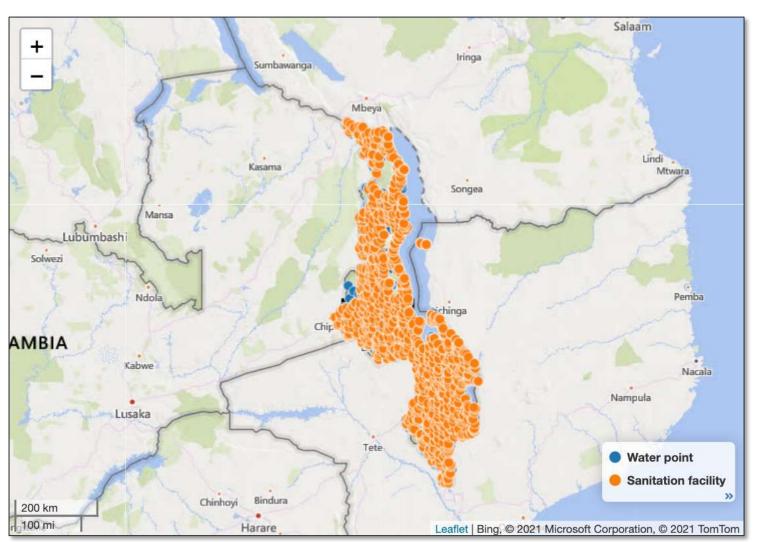




Filtered



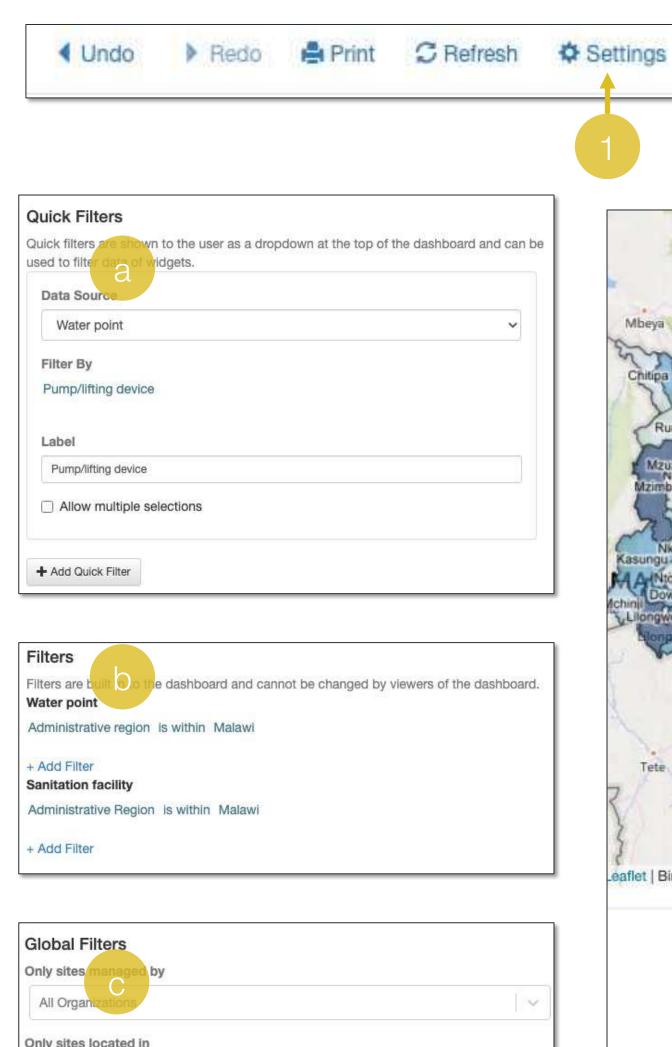
Unfiltered



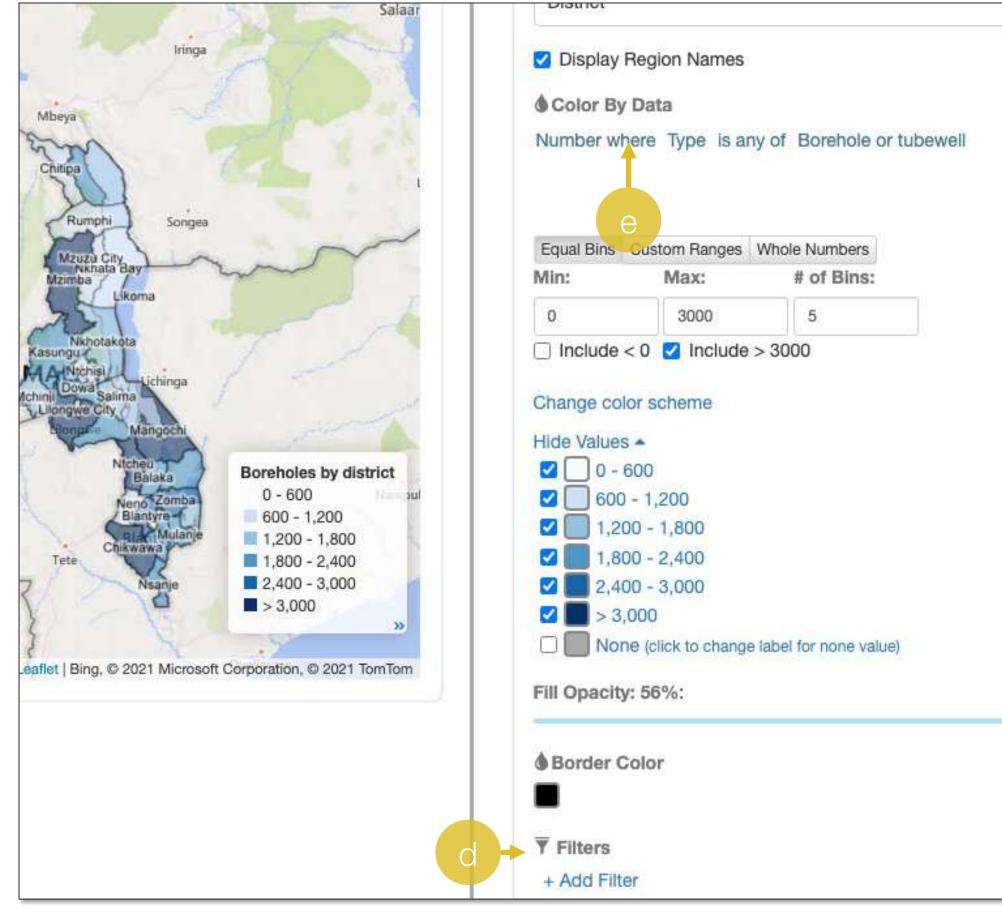


Types of Filters

- 1. Page level filters Filters which apply to all widgets on the page. Click Settings to access the menu.
- Quick filters Filters displayed on the dashboard itself, that can be used by all users.
- Filters Filters set by administrators via the settings menu.
- Global filters Filters set by the administrator which applies to all sites on the page. This only includes Managed by and Admin region filtesr.
- 2. Widget level filters Filters which apply to only one widget. Click Edit on the widget to access the menu.
- Widget Filter which applies only to a specific widget or data layer.
- Formula with "where..." clause -Filter which applies to an expression formula.







Export as PDF

Editing

☐ Layout

Duplicate

Share



Consoles

Consoles allow user to bring together many different visualization types into a single, tabbed interface.

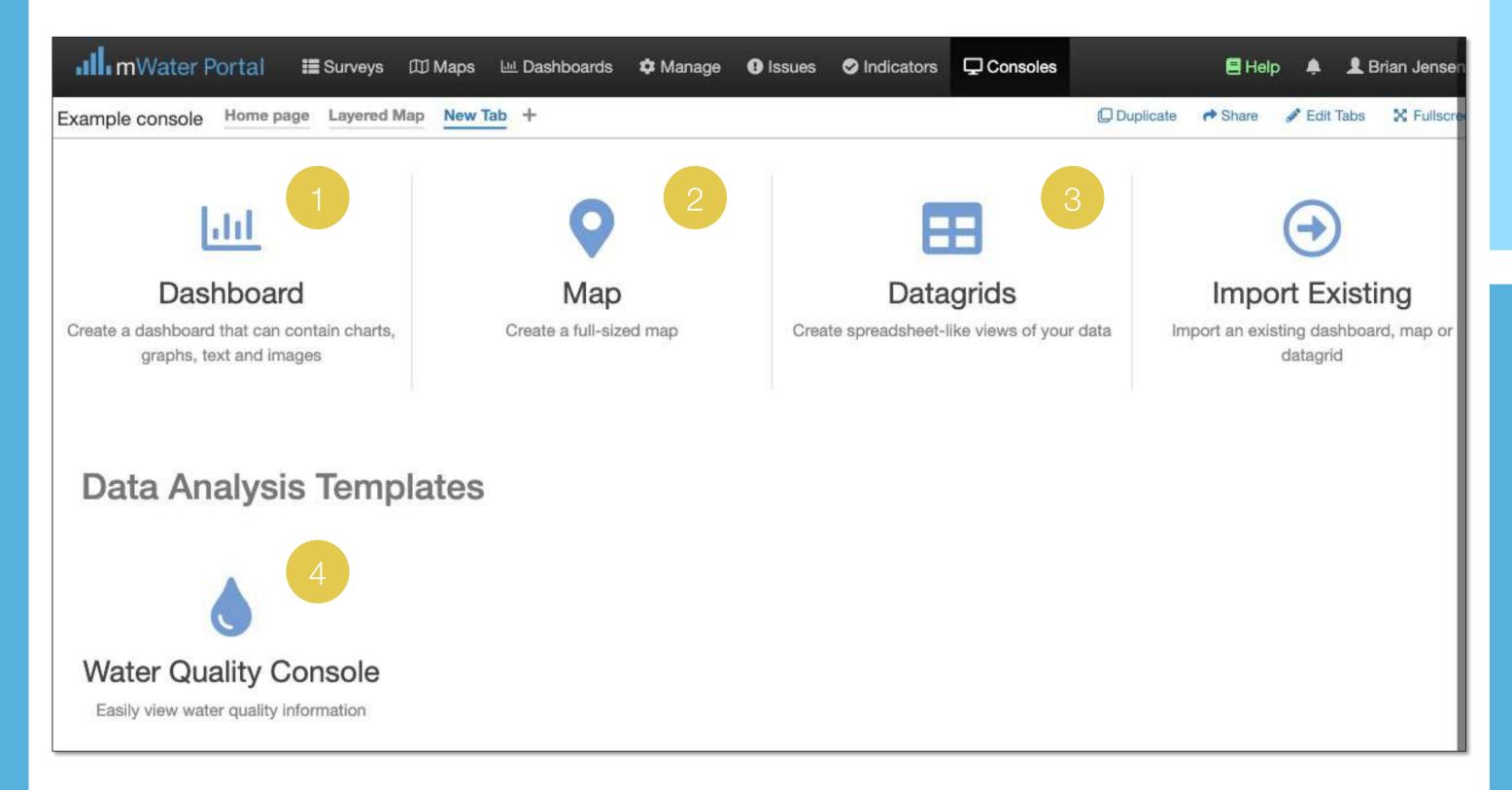
These can incorporate:

- 1. Dashboards
- 2. Maps
- 3. Datagrids
- 4. Water quality A pre-configured visualization page focusing on water quality parameters

Each of these items can either be created a blank copy or imported from existing visualizations. Importing an existing visualization copies its contents to the console.

To add a new tab click the ticon







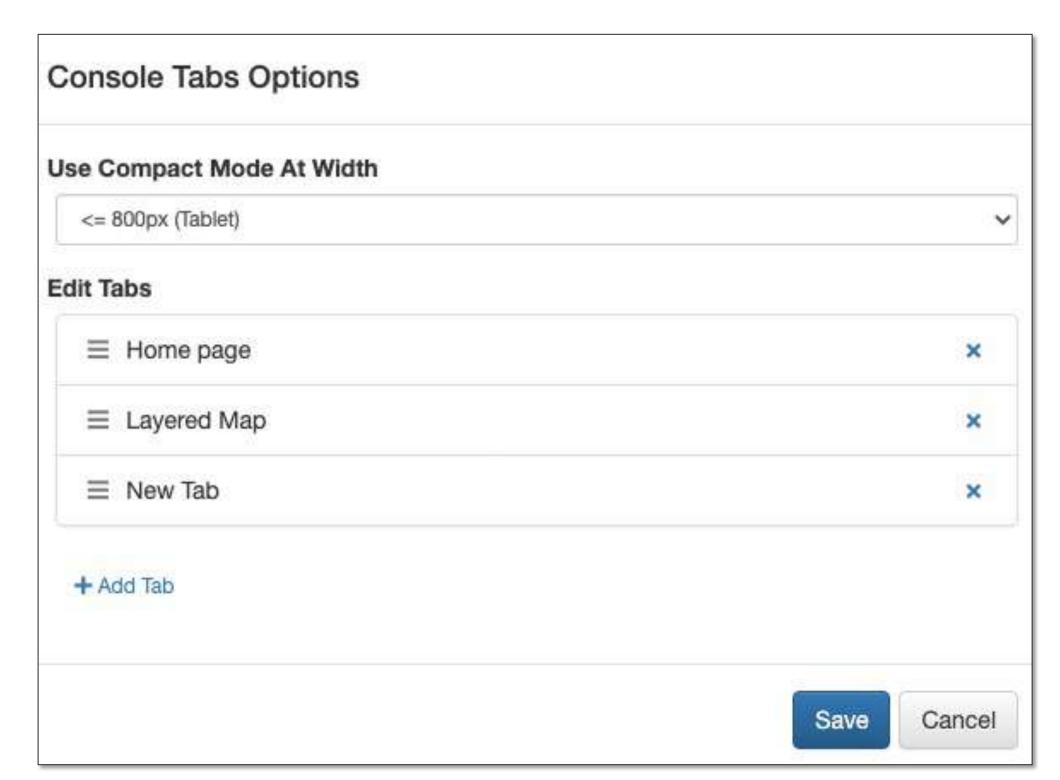
Managing tabs

Consoles can contain as many tabs as needed.

The edit tabs button includes

- 1. A button to add new tabs
- 2. An button to delete existing tabs
- 3. A icon to reorder the tabs
- 4. A Use compact mode at width parameter to set the resolution below which the tabs will collapse into a dropdown list. This is especially important for mobile devices like tablets and smartphones.





Standard mode



Compact mode

Example console



Dashboard layouts

By clicking on the Layouts button, users can change the format and mobile responsive parameters of the dashboard.

Themes:

- 1. Classic Dashboard Has a white background that is optimized for data visualizations with minimal text.
- 2. Framed Dashboard The same as the classic theme except that the background of the page is grey.
- 3. Story Dashboard Has a white background on a page that is optimized for text and photos. The width of the text will only fill the screen at resolutions of laptop sizes or below (<1000pixels).

Setting mobile friendly parameters will adjust how the layout is presented on different screen sizes.

Parameters:

- a) Collapse to single column On smaller screens, horizontal widgets will be placed vertically instead
- b) Hide quickfilters On smaller screens, quickfilters will collapse to a button to save screen space
- c) Minimum width Defines the resolution below which the widgets will start to scroll or scale
- d) Scroll/scale Scrolling will keep the original size of the widgets and add a scroll bar. Scaling will make the widgets smaller to match the smaller screen size.
- e) Maxiumum width If the maxiumum width of the page is exceeded mWater will insert blank padding on either side

Classic Dashboard

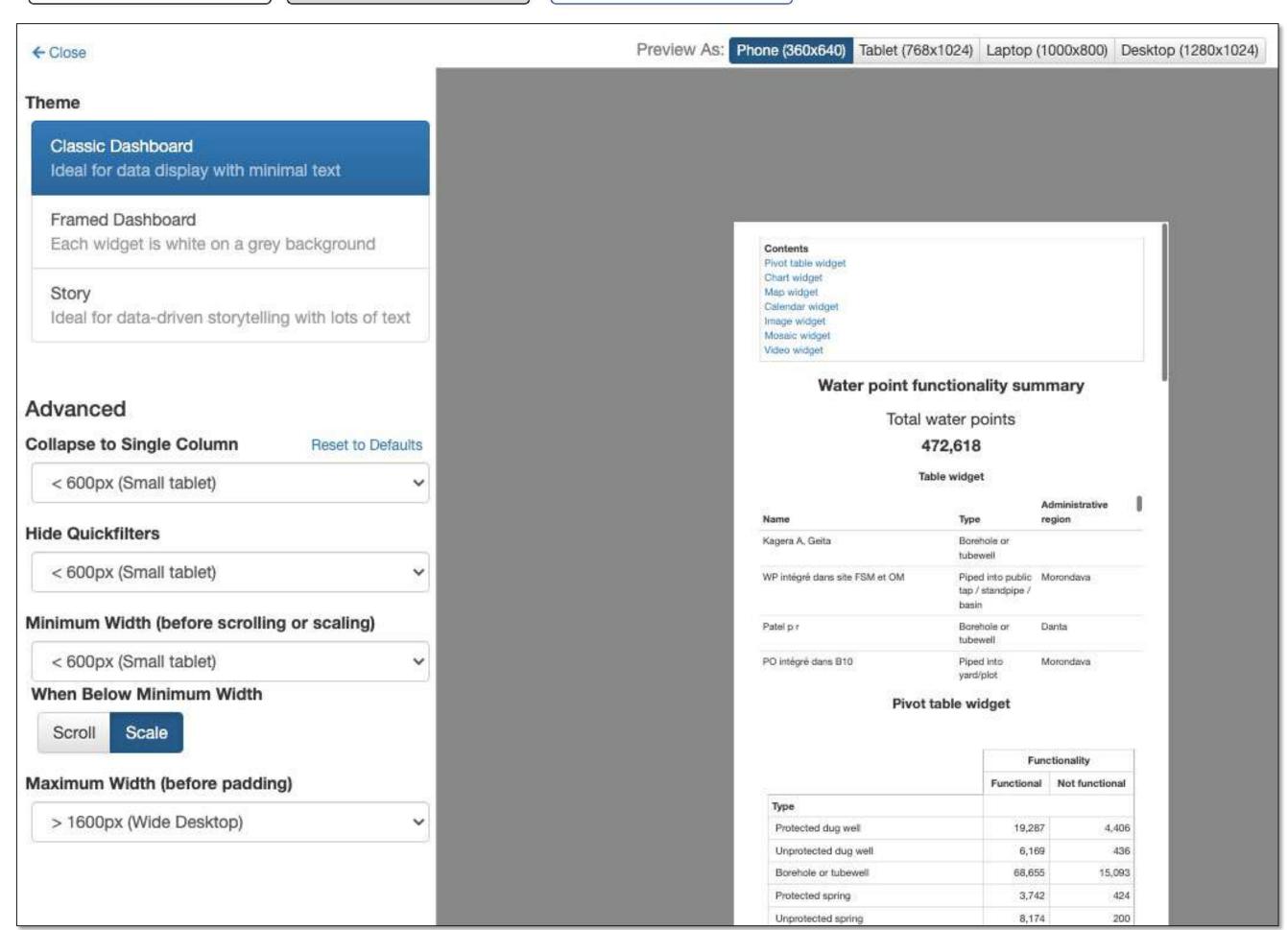
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim.

Framed Dashboard



Story





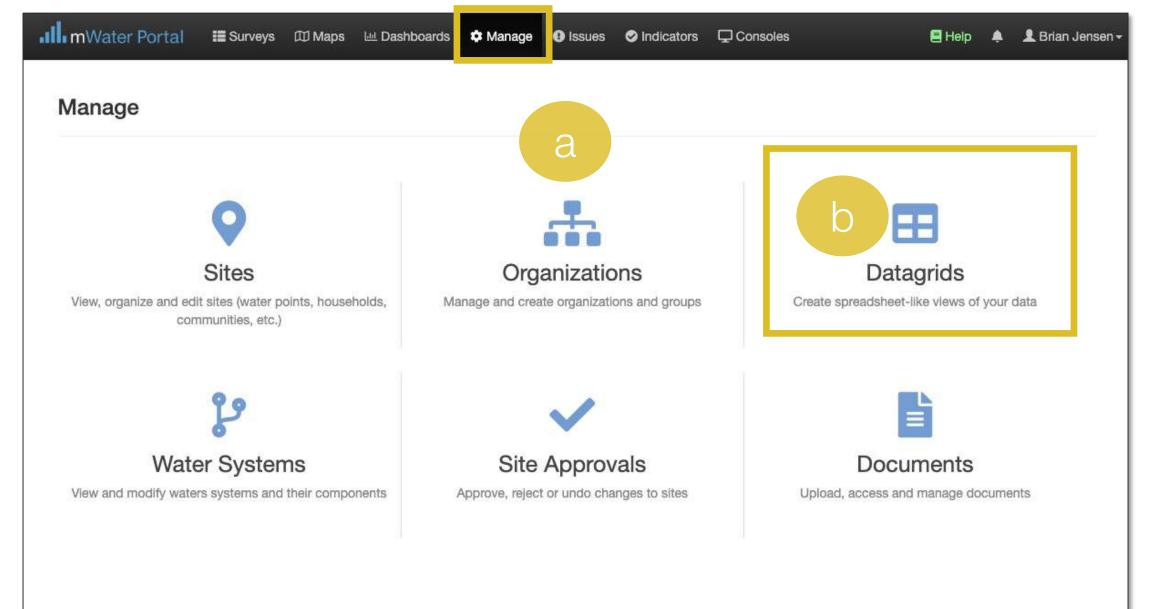


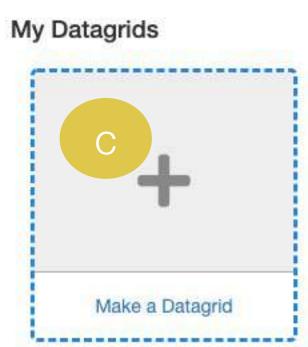
Using datagrids

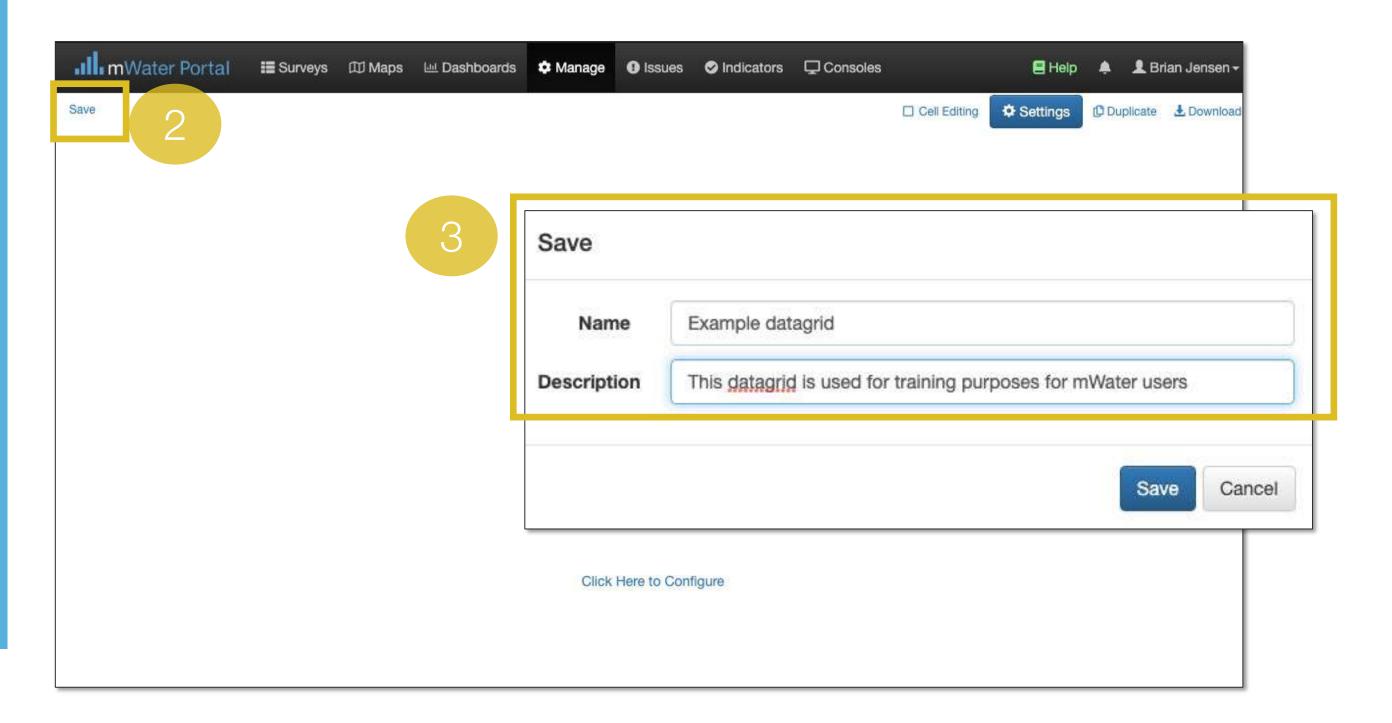
Datagrids are mWater's version of spreadsheets where an entire page is filled with tabular data. These are the same as tables in dashboards, but are better for larger quantities of data and more columns.

To make a datagrid:

- 1. Add a new datagrid
- a) Click Manage
- b) Select Datagrids
- c) Make a datagrid
- 2. Click the Save button
- 3. Add a name and description for the datgrid





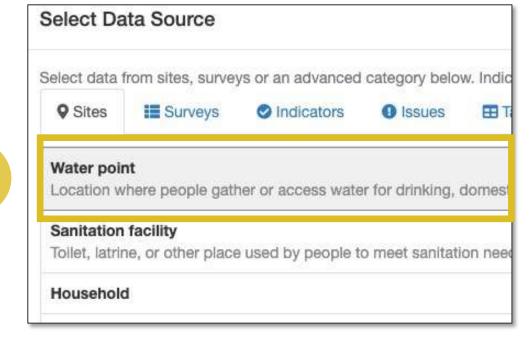


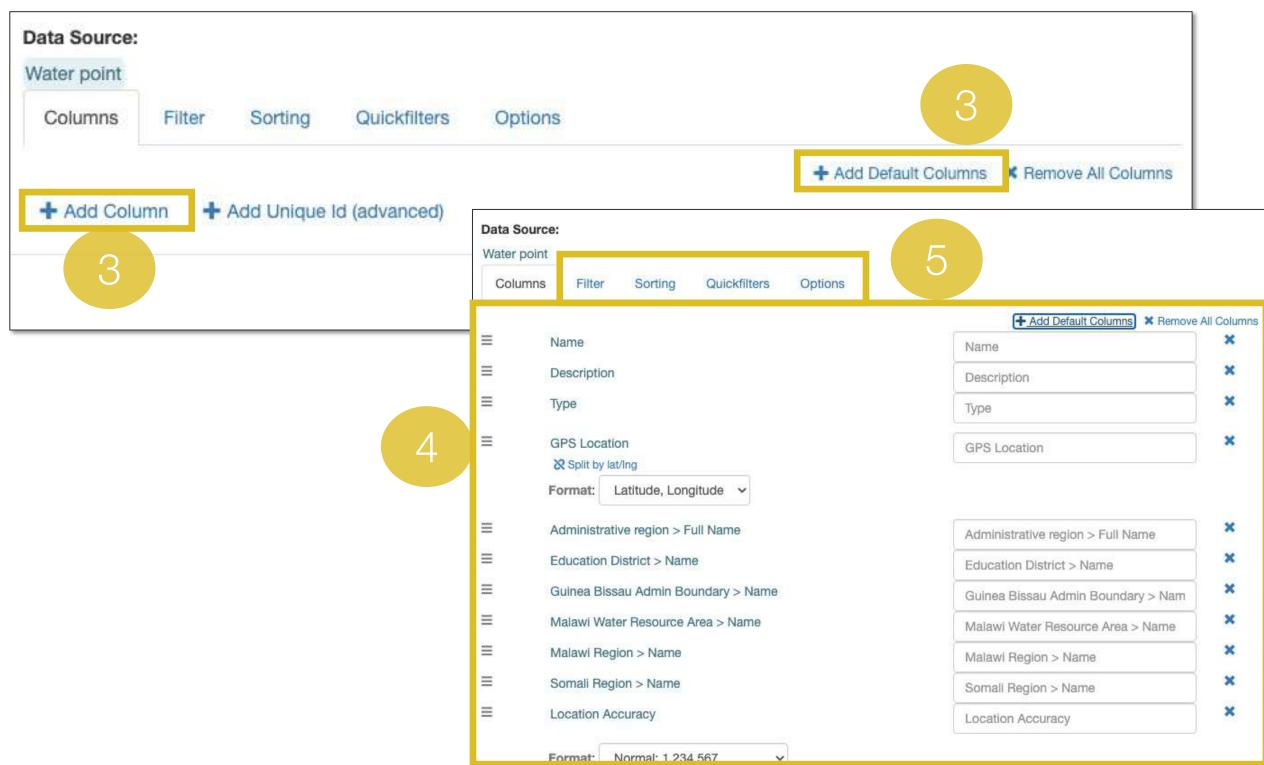


Configuring a datagrid

To configure a datagrid:

- 1. Click the Settings button
- 2. Select a data source
- 3. Add columns one by one, or add all columns in the data source via the +Add default columns button
- 4. Modify the columns by naming, rearanging, deleting columns
- 5. Add filters, sort ordering, quickfilters or options like line numbering







Section Visualizations - Advanced

Advanced topics:

- Visualizing related tables (e.g. sites and surveys)
- Spatial joins and population within (a distance)

Related data sources

Any time that a related data source is chosen, the user must define how to aggregate the related records into a single output value.

This follow the format:

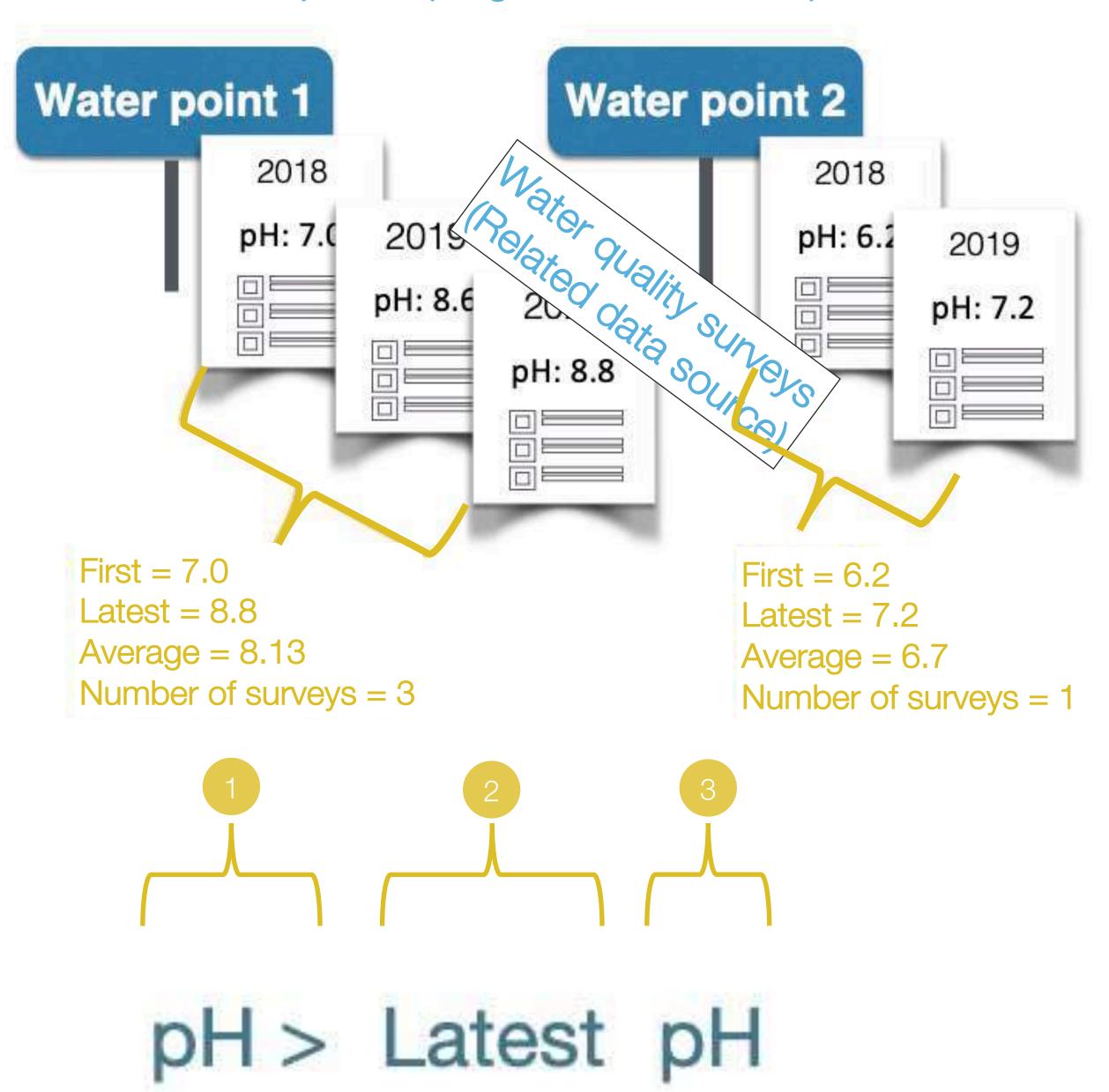
[Related data source] > [Aggregator] [Data field]

- 1. Related data source The data source which is linked to the original data source e.g. the pH survey is linked to Water points
- 2. Aggregator A calculation which combines many data records into one value e.g. the Latest response
- 3. Data field The field whose value will aggregated to produce the output value e.g. the pH question

There are many types of aggregators which can be used.



Water points (Original Data Source)

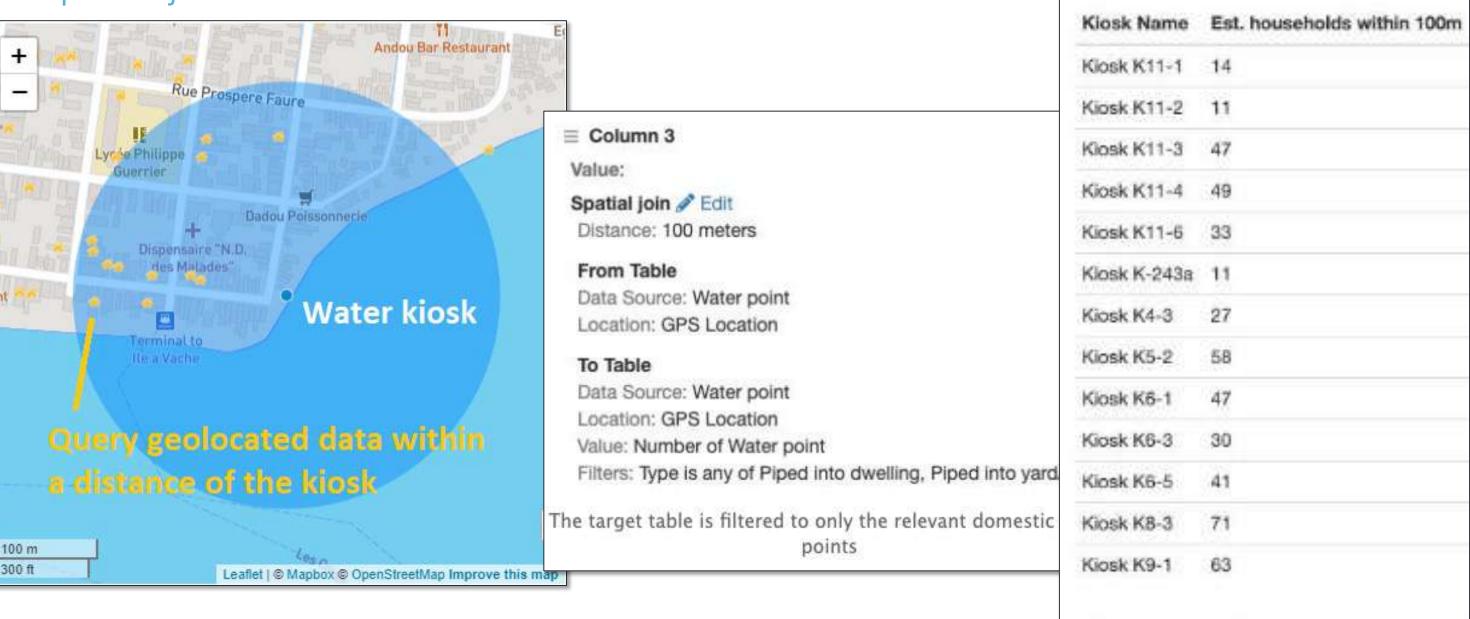


Spatial joins and population within

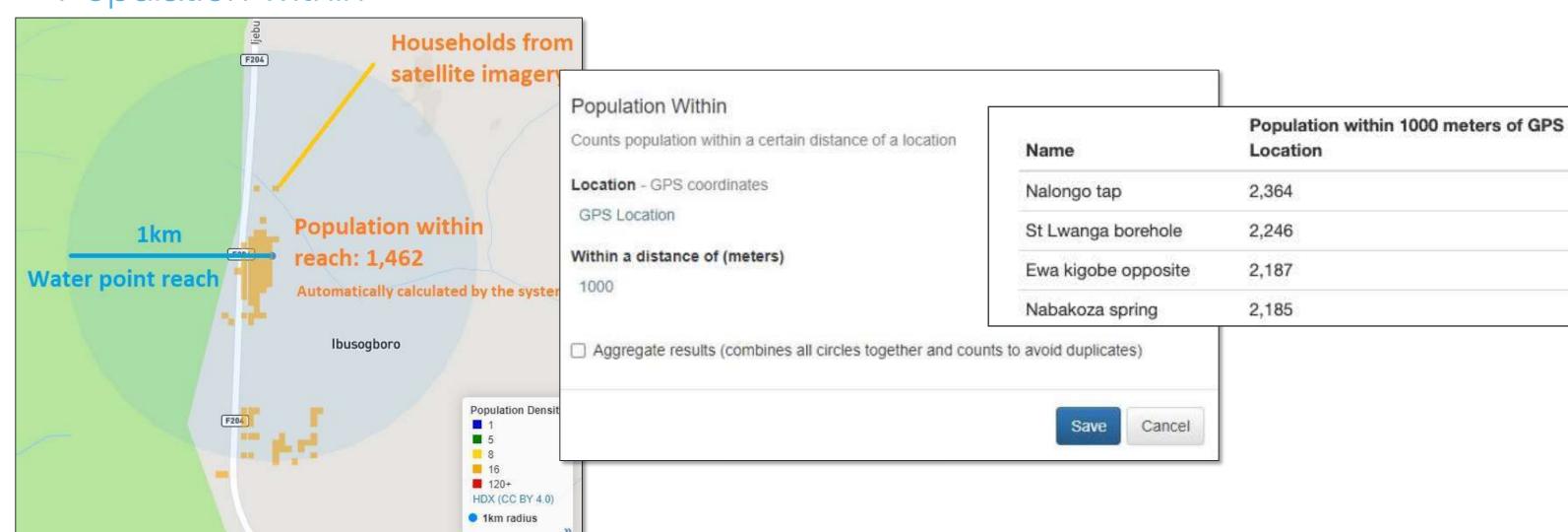
The mWater portal includes geospatial (Location) analysis features like:

- 1. Spatial join Summarizes data from data source, based on its relative location to data in another data source
- 2. Population within Calculates the estimated population within a certain distance of a shape e.g. within 500 meters of a water point

Spatial join

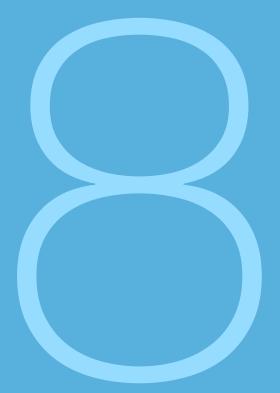


Population within





Section



Organizations

Basic Topics:

- About organizations
- Managing users
- Managing deployments

Advanced topics:

Settings

Organizations

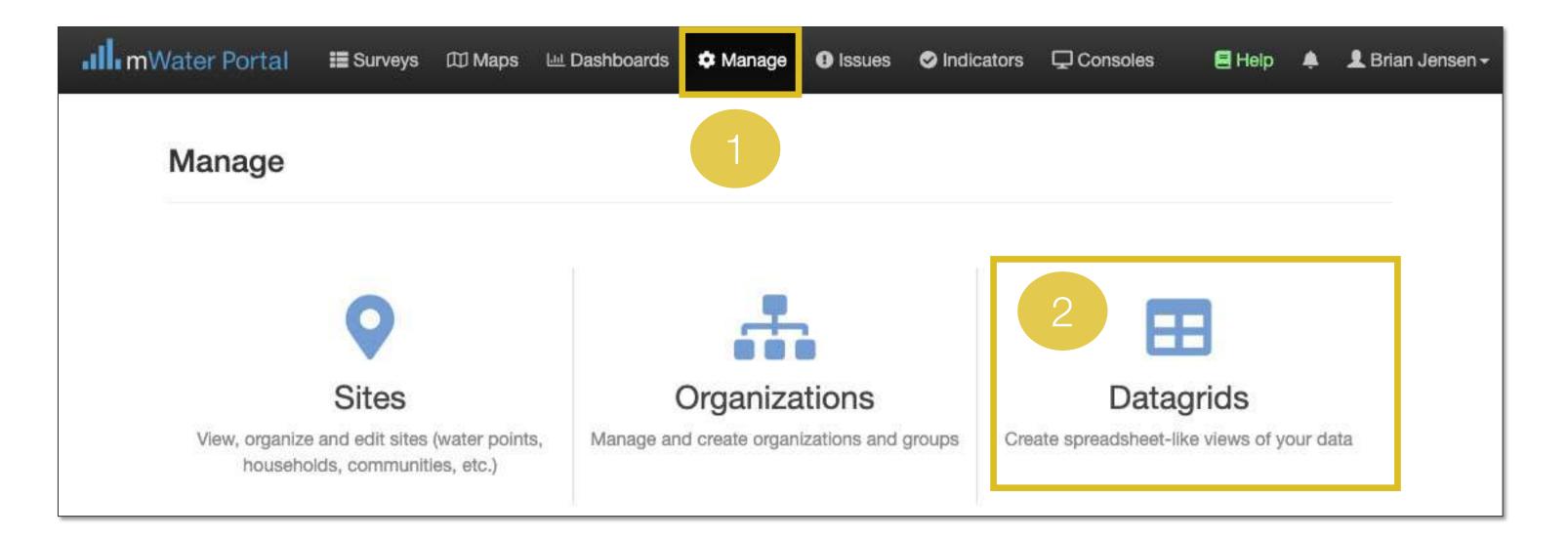
The organizations feature makes user management at scale much easier via a tree-like hierarchy where users are added to individual branches.

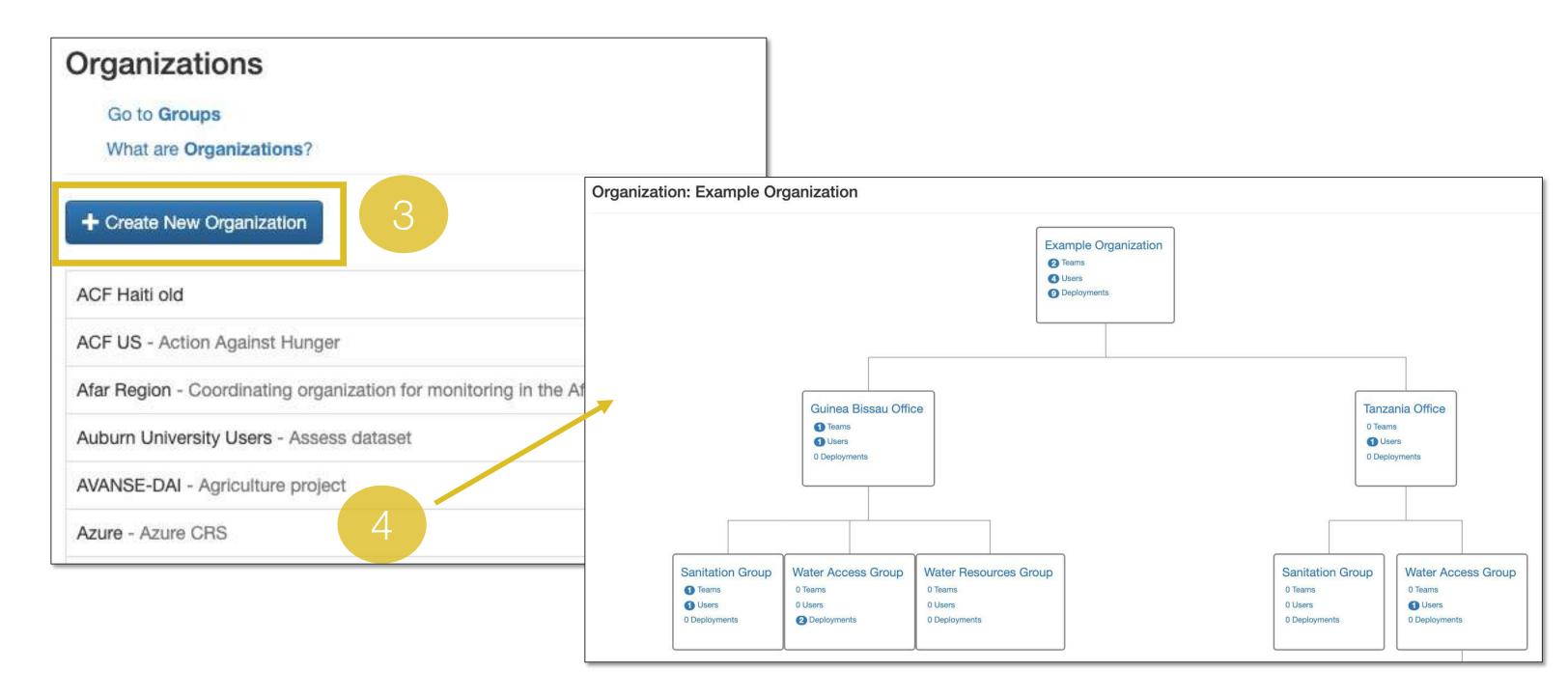
To access Organizations:

- 1. Select the Manage tab
- 2. Click Organizations
- 3. Create a new organization

OR

4. Select an existing one







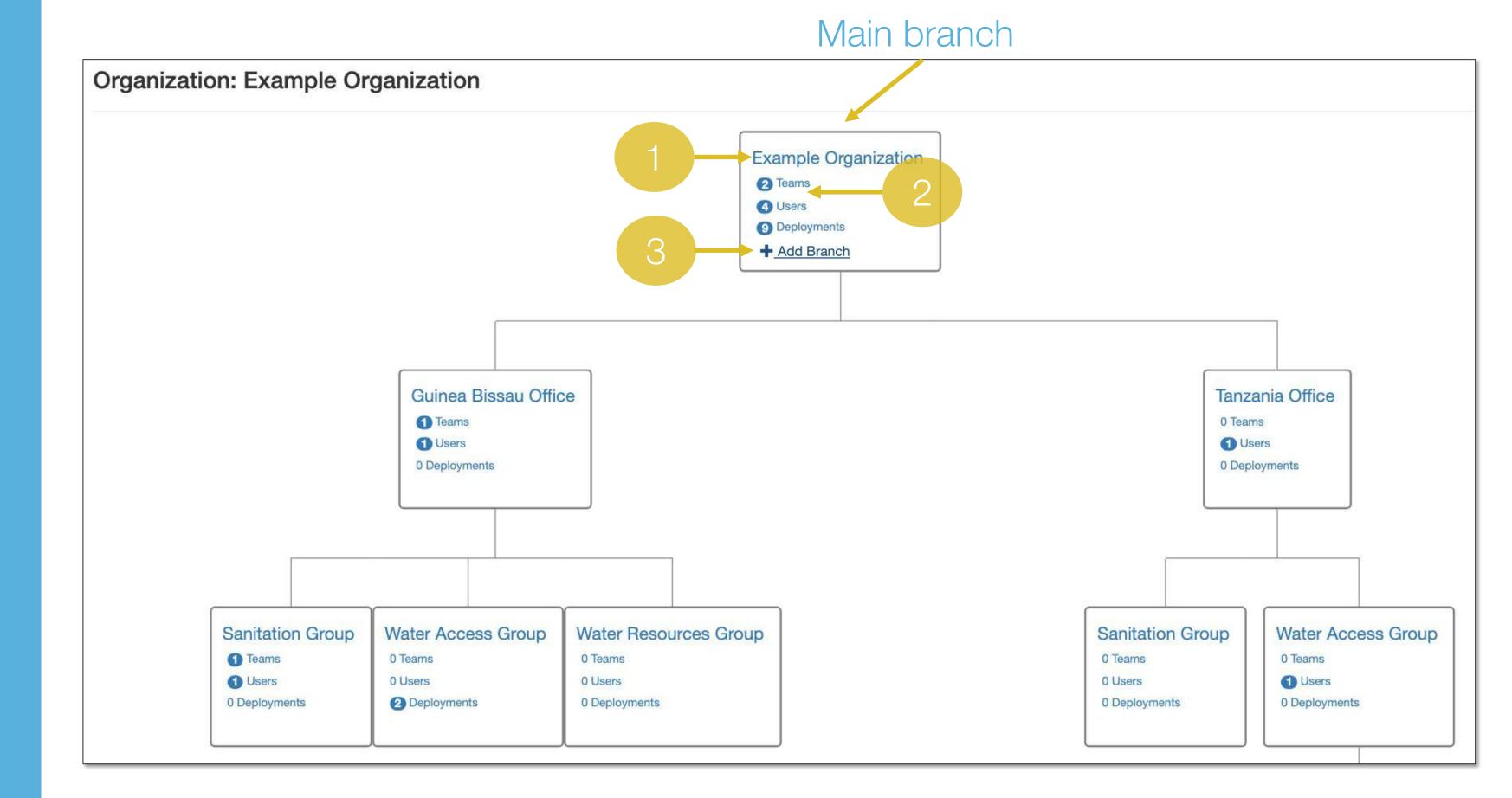
Organizational chart

The organizational chart is made up of hierarchical branches. The main branch is at the top.

Each branch has

- 1. Clickable name for detailed management
- 2. A summary of the teams, users, and deployments which are a part of that branch
- 3. An +Add branch button which appears when the user hovers their cursor over the branch

Note: Administrators of the head branch are automatically admins of the sub-branches.





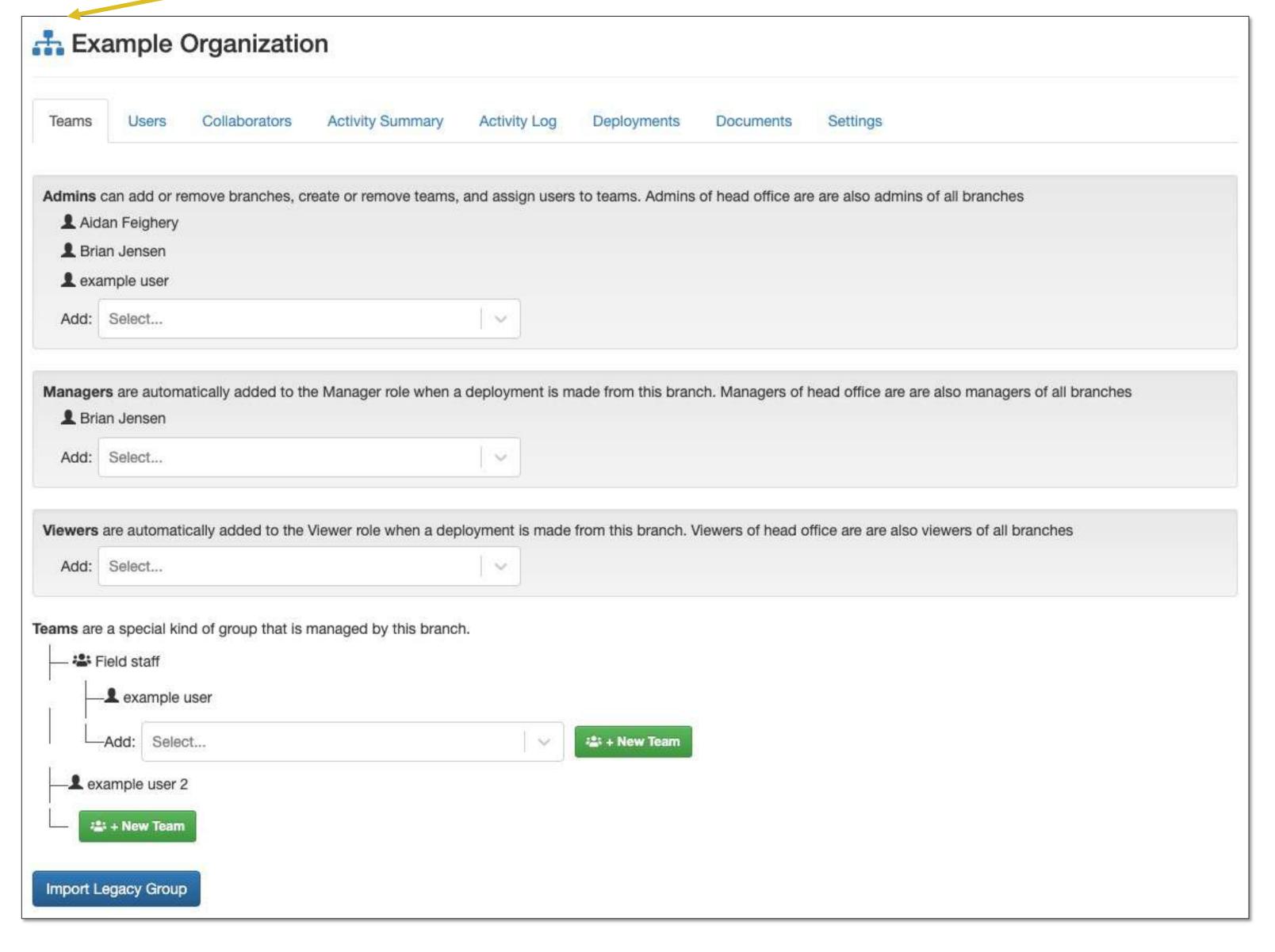
Branch managment

By clicking on a branch, users can view the many parameters for the branch.

This includes:

- 1. Teams This page is for adding users to the branch's standard roles (admin, managers, viewers) or user created Teams
- 2. Users Provides a table of each user in the branch and their level of permissions
- 3. Collaborators Allows the organization to add other organizations to be able to view and collect data as though they were a part of this branch
- 4. Activity summary Displays a table of users and information on their use of the app and portal
- 5. Activity log Displays data activities done by users within the organization e.g. Sites/surveys added/deleted/approve
- 6. Deployments Displays all deployments managed by this organizations
- 7. Documents Allows admins to add, view. and share documents of any time
- 8. Settings Contains advanced parameters like organization access code, site approvers, and data backups







Teams

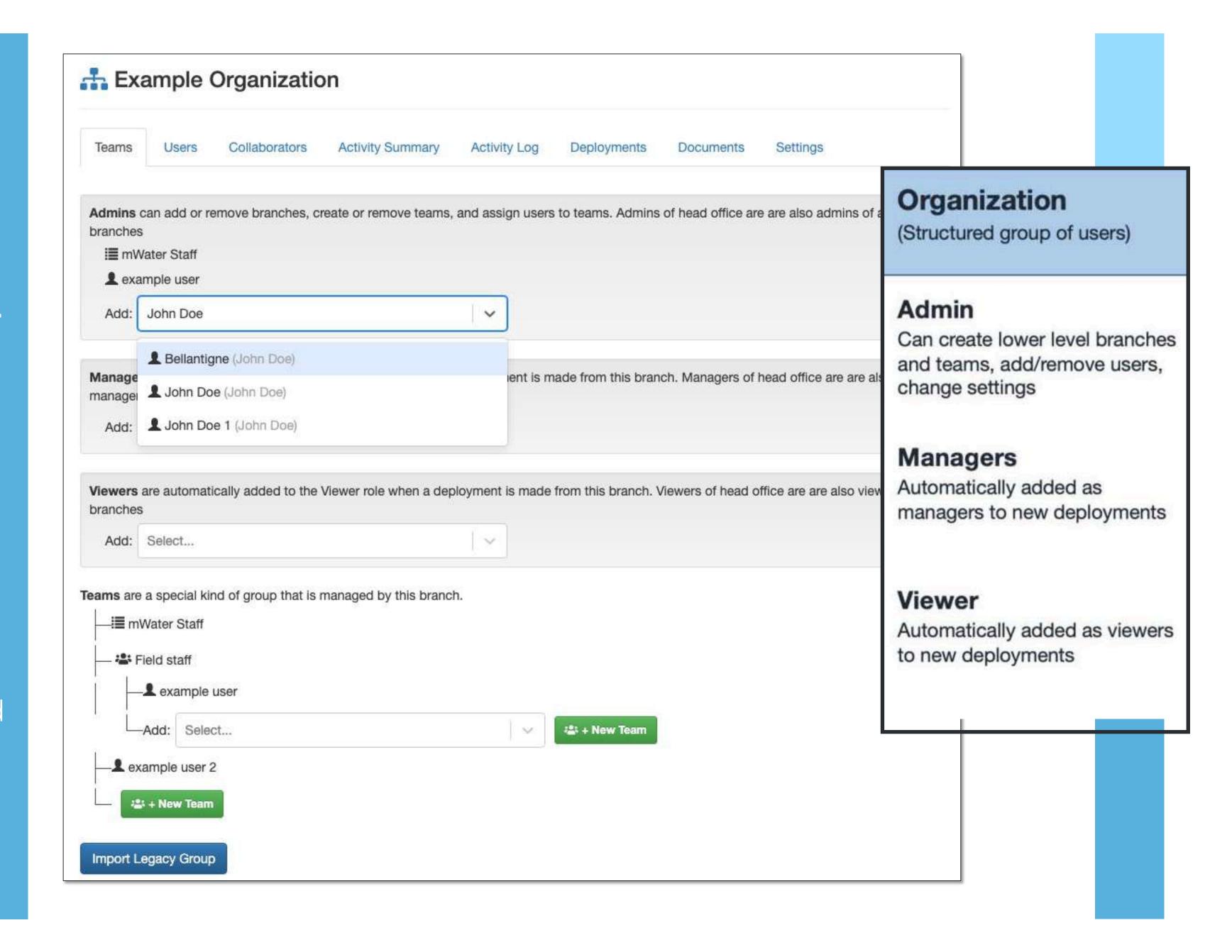
The teams page allows administrators to add users to different roles within the organization.

Default roles are Admin, Managers, and Viewers.

To add a user to the role:

- Click the dropdown list
- Type a user's name or username
- Select them from the list

Teams are used to group users together. These teams can be added to any survey, deployment, and visualization so users don't have to be added individually.





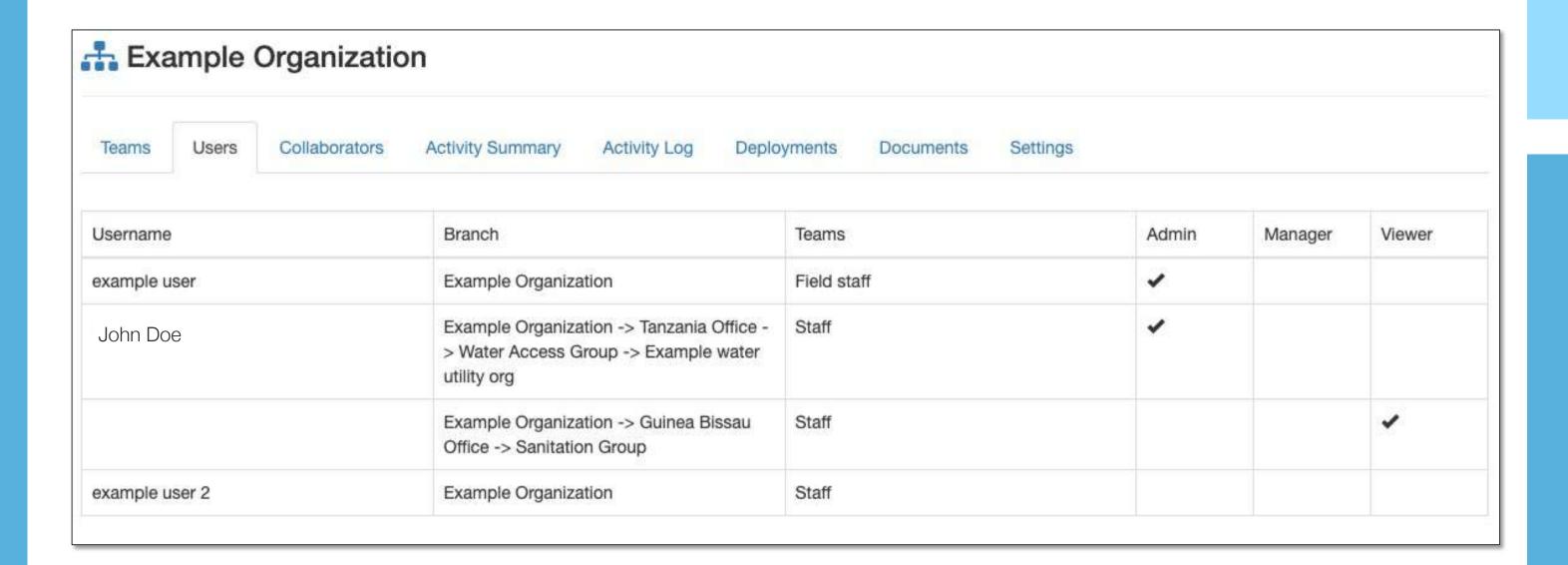
Users

The Users tab displays a list of each user, including those in sub-branches.

The table contains:

- 1. Username There is one line for each instance of a user in a branch
- 2. Branch The name of the branch to which that user belongs. Each subbranch is separated by a -> sign e.g. Example organization -> Tanzania office
- 3. Teams Displays a list of teams to which that user belongs
- 4. Admin, manager, view A check box is shown with the roles for each user.

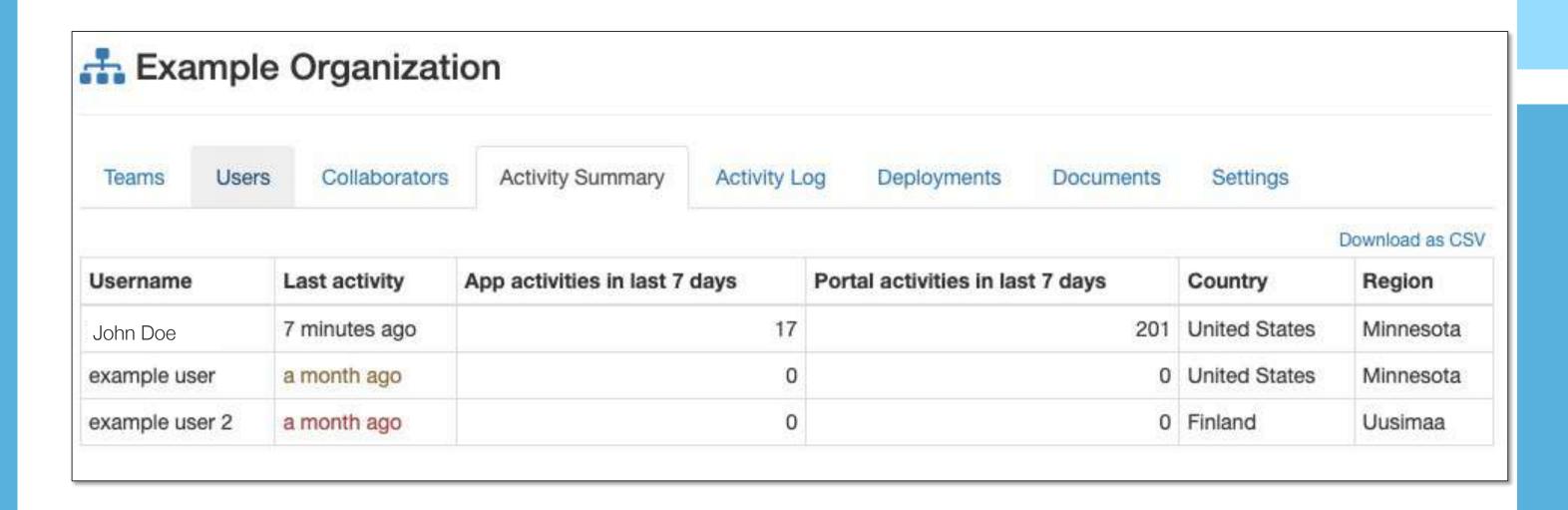
Note: Users can be a member of any number of branches or teams





Activity summary

This page shows all users and their recent mWater activity. This table can be downloaded by using the Download as CSV button.





Activity log

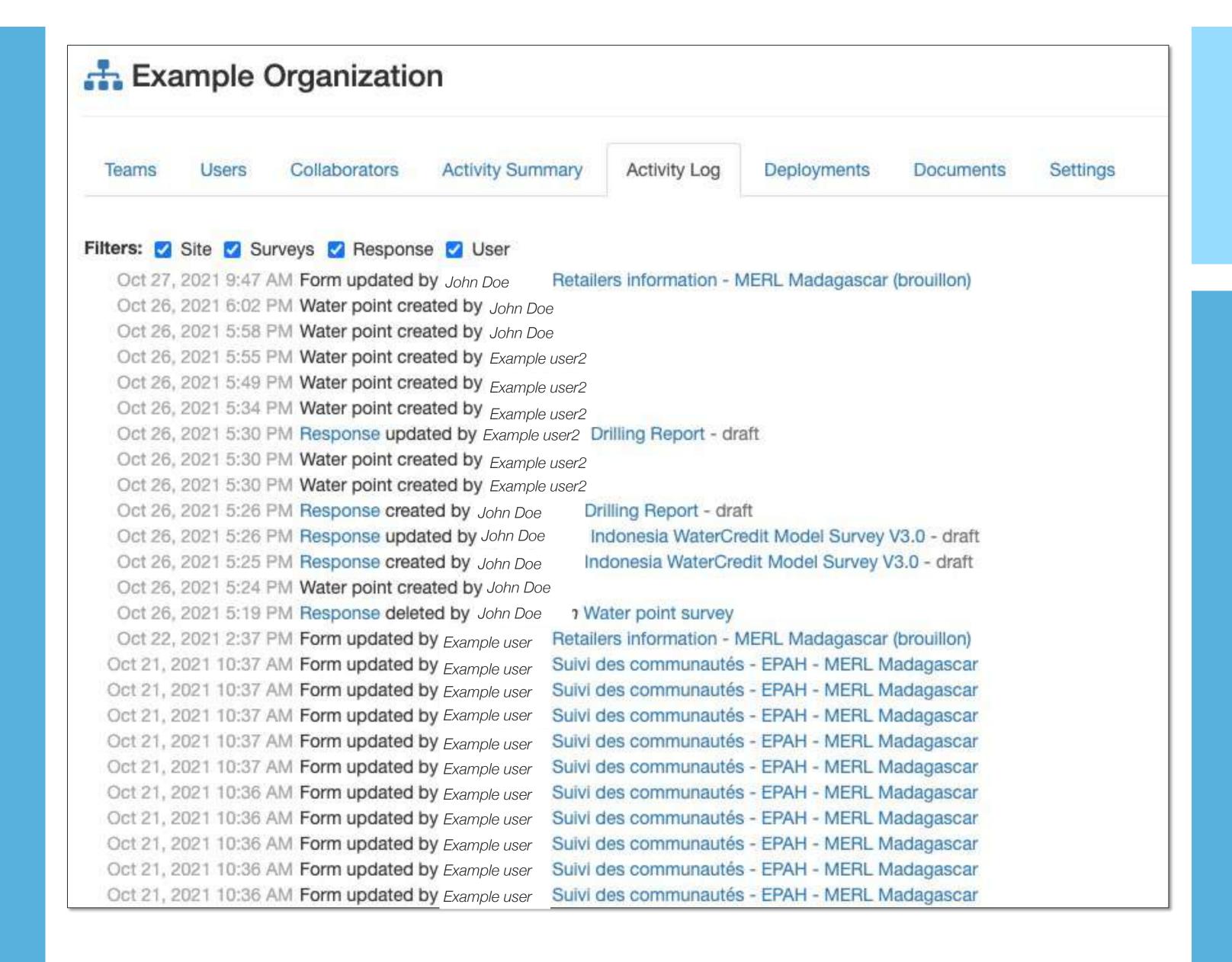
The activity log displays information on every data modification made by users in the organization.

Each entry follows the format:

[Date] [Data_type] [Change_type] by [Username] [Survey_URL]

Data types include Sites, Surveys, Responses, and User

Change types include created, updated, and deleted



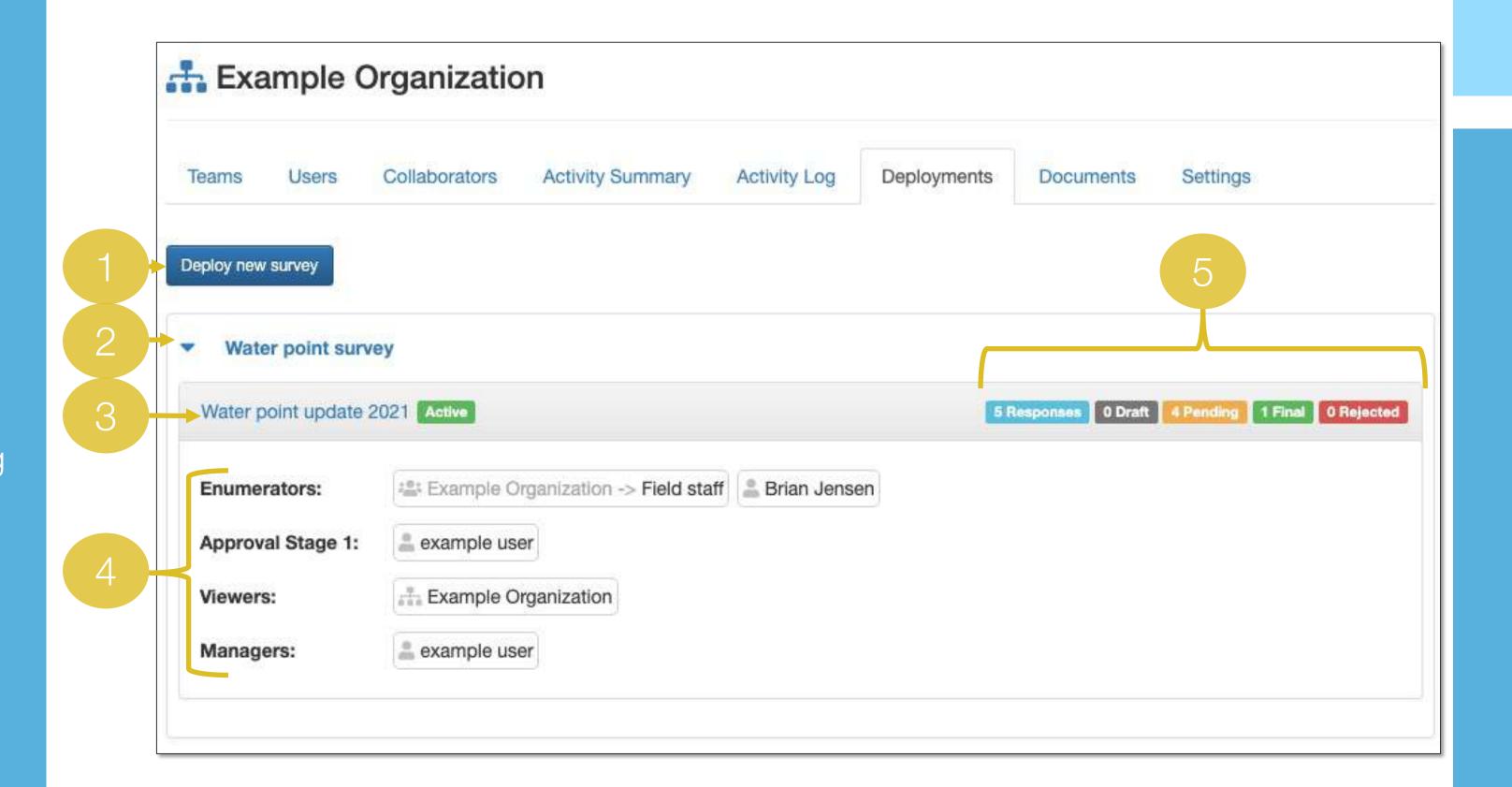


Deployments

The deployments tab displays all survey deployments managed by this organization. For large organization it's recommended to deploy surveys directly from the Organization page.

The deployment page includes:

- 1. A button to deploy a new survey
- 2. A section for each survey managed by the organization. Clicking the title will open the survey's design page.
- 3. A section for each deployment. Clicking the title will open the survey deployment page.
- 4. A summary of the permissions for the deployment
- 5. A summary of existing responses in the deployment





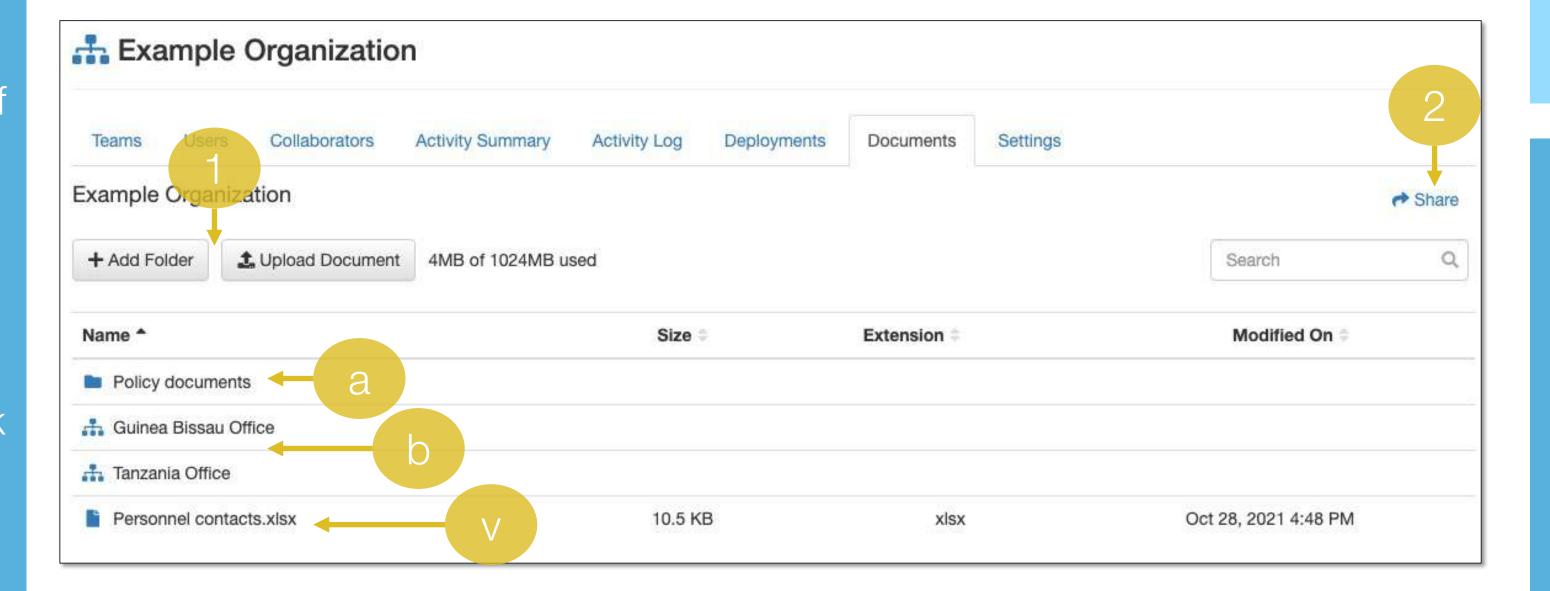
Documents

The documents tab allows users to add, view, download, and share documents of any type.

The page includes:

- 1. Buttons to add a folder or document
- 2. A button to share the current folder with other users or via a shareable link
- 3. A list of all:
 - a) Folders Contain documents
 - b) Sub-branches and their documents
 - c) Documents Files of any type

Note: Individuals are able to store 100MB and organizations can store 1GB of files



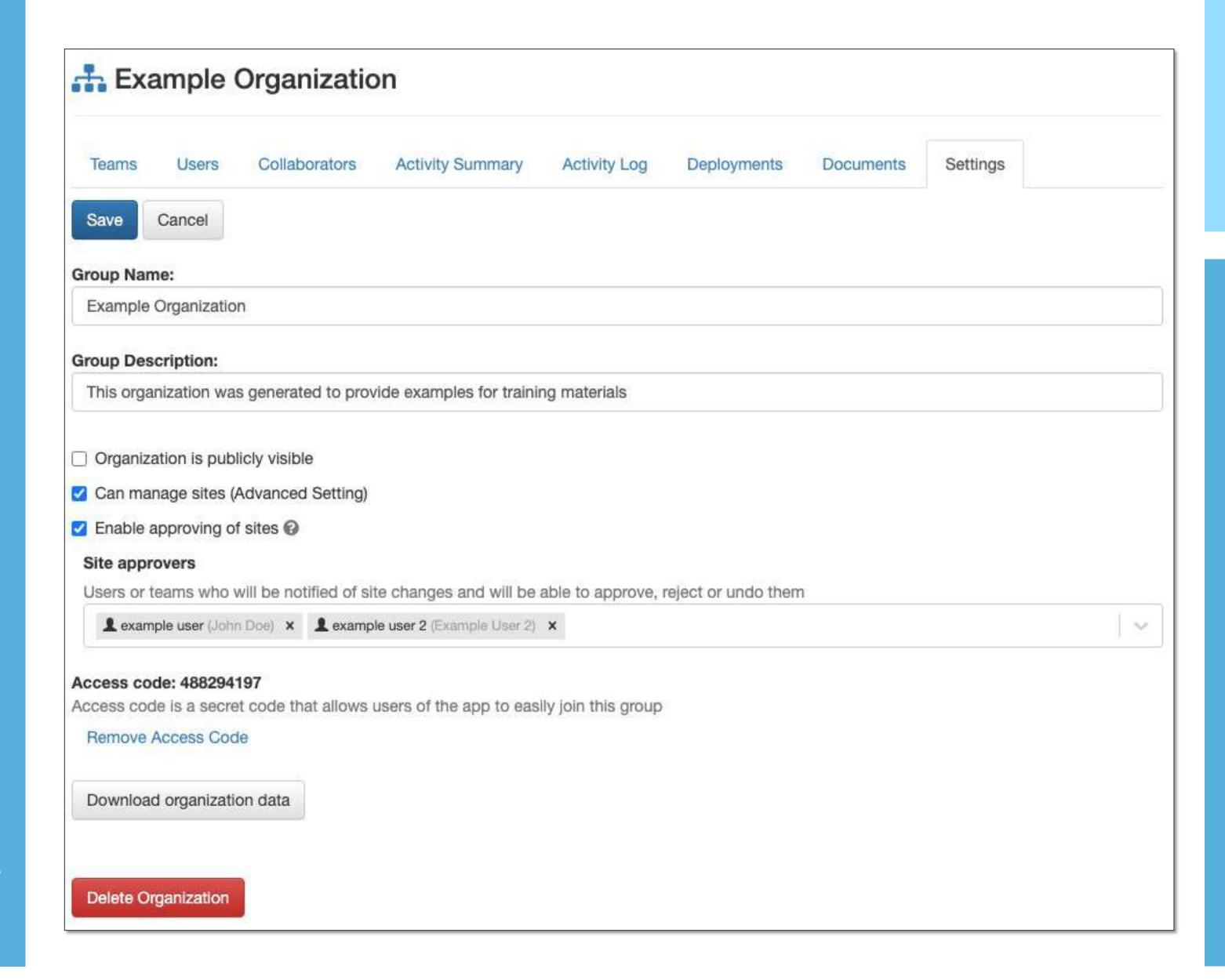


Advanced -Settings

The settings page has general settings for the organization.

This page allows administrators to:

- 1. Change the organization name and description
- 2. Set whether the organization is publicly visible to all users
- 3. Set up site management, approvals and approvers. Every site that is added or modified by users in the organization will me marked as Pending approvals until these site approvers review and approve the changes.
- 4. Generate an access code Users can enter on signup to automatically join the group.
- 5. Download organization data –
 Downloads all surveys, responses, sites, and visualizations
- 6. Delete organization Completely deletes the organization





Section

Issues

Issues

Issues are a feature in mWater to help handle operations and maintenance by allowing users to report, track and resolve tickets e.g. pipe leaks or broken water points.

Issues have states and actions to transition between states:

- 1. Open Identify and report the problem
- a) State: Open
- 2. Assign Managers can assign issues to technicians
- a) State: Open
- 3. Update Issue is not yet resolved but important information can be added
- a) State: Open
- 4. Resolve Report when and how the problem was resolved
- a) State: Resolved
- 5. Close Issue has been confirmed as resolved
- a) State: Closed





Managing issues in the Portal

Issues can be managed from the issues tab.

This page includes:

- 1. A button to open a new issue
- 2. Dropdowns to filter the issues to a specific type or step
- 3. A list of all issues

Clicking on an issue allows users to view, modify, assign, update, resolve, comment and close an issue. The entire history of that issue can be viewed from the issue's page.

