



# Emlid Flow 360

**USER DOCUMENTATION**

June 15, 2023

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# 1 Introduction

Emlid Flow and Emlid Flow 360 allow working with survey projects in an easy and convenient way. Create and configure projects in the cloud-based web app Emlid Flow 360, and work with them later in the field—collect or stake out data using the mobile app Emlid Flow.

To sync data between your devices, create an Emlid account. Once you're logged in, every change in your projects will be immediately backed up to the cloud and available on every device you use.

## 2 Getting started

This guide describes how to start working with the Emlid Flow 360.

### 2.1 Accessing the app

Create an Emlid account to access [Emlid Flow 360](#).

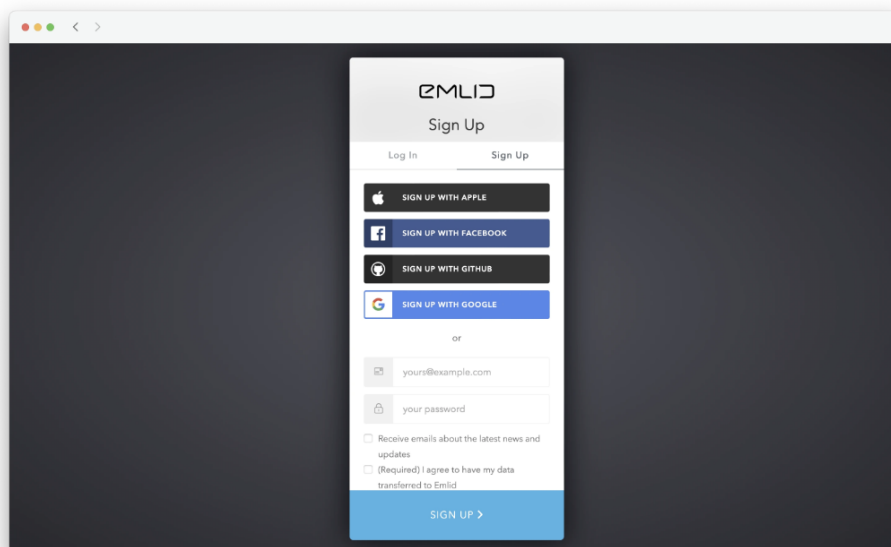
### 2.2 Creating Emlid account

Emlid account allows you to sync your projects between Emlid Flow and Emlid Flow 360 as well as between different devices, and instantly save the progress of your survey. You can have access to all your project data, custom coordinate systems, code libraries, and NTRIP profiles across your devices.

**Tip:** Using an Emlid account, you can access our Community forum and Emlid Caster.

To create an Emlid account, follow the steps below:

1. Go to [flow360.emlid.com](https://flow360.emlid.com).
2. Click the *Sign Up* tab.



3. Type in your email and password in the corresponding fields.
4. Click the *SIGN UP* button.
5. Verify your email address by following the on-screen instructions.

After you create an Emlid account, log in to Emlid Flow or Emlid Flow 360 to enable data sync between all your devices.

## 3 Preparing projects

### 3.1 Create or import project

**Tip:** We recommend creating projects before the survey since some coordinate systems require additional downloads in Emlid Flow.

This guide describes how to create or import a project in Emlid Flow to survey.

#### 3.1.1 Overview

Projects are a way to group and operate your survey data. Using projects, you can collect and stake out data in the preferred coordinate system. Projects can be linked with a code library to help you manage survey data later in the post-processing.

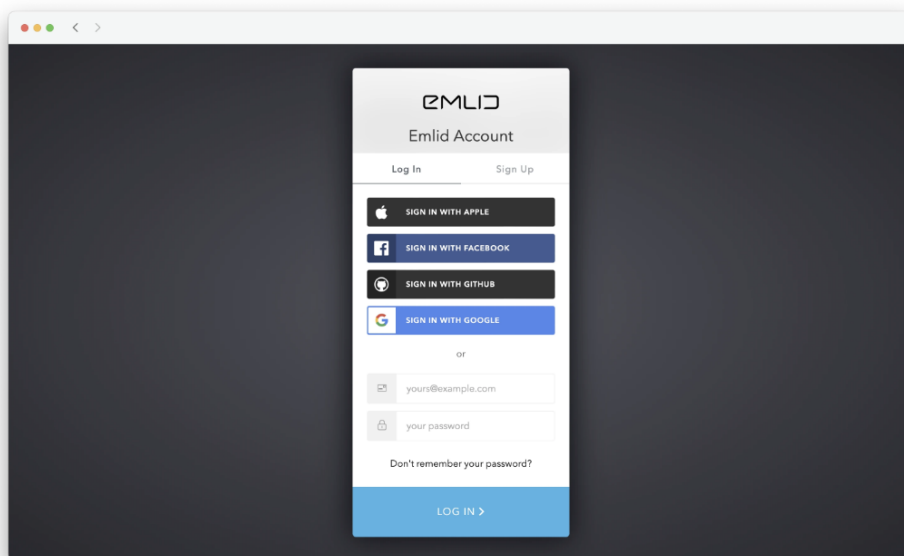
#### 3.1.2 Workflow

Every survey starts with a project.

#### 3.1.3 Creating project

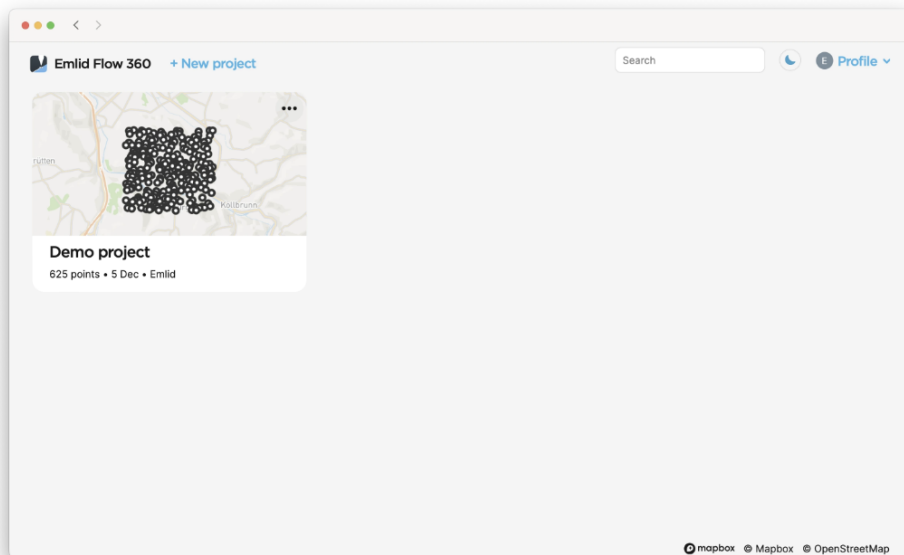
To create a project in Emlid Flow 360, follow the steps below:

1. Go to [flow360.emlid.com](https://flow360.emlid.com) and sign up or sign in using your Emlid account.

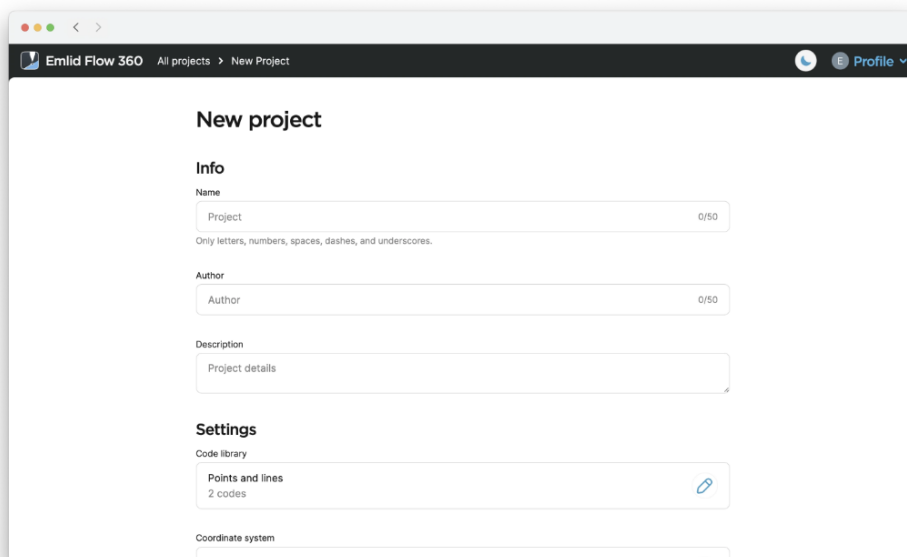


**Tip:** To learn how to create an Emlid account, check the [Getting started](#) guide.

2. Click + *New project* in the top left corner.



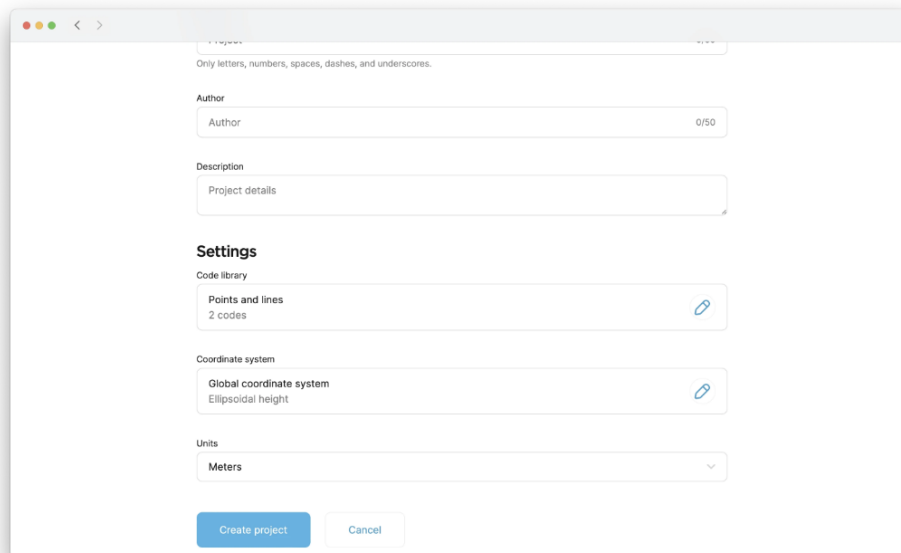
3. Fill in your project info.



4. With the subscription plan, you can link a code library to your project to work with lines and codes.

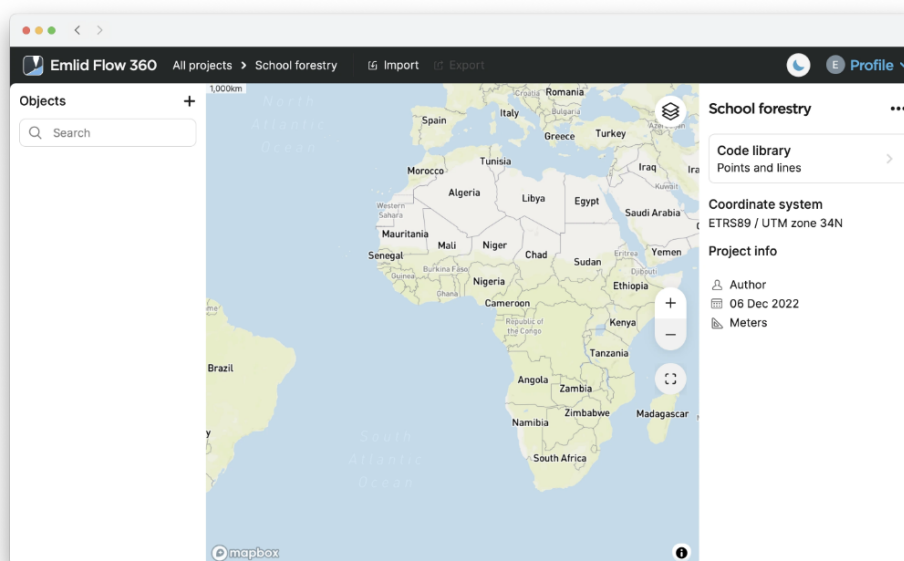
**Note:** You can specify the linked code library only when creating a project.

5. To specify the coordinate system you want to work in, click the *Edit button* in the *Coordinate system* cell.



**Tip:** Check the [Introduction to coordinate systems](#) to learn more.

6. Choose the units of your project in the *Projects units* dropdown menu.
7. Click the *Create project* button. Emlid Flow 360 will open the project.



8. Open your project in Emlid Flow and ensure the coordinate system files are downloaded to your mobile device.

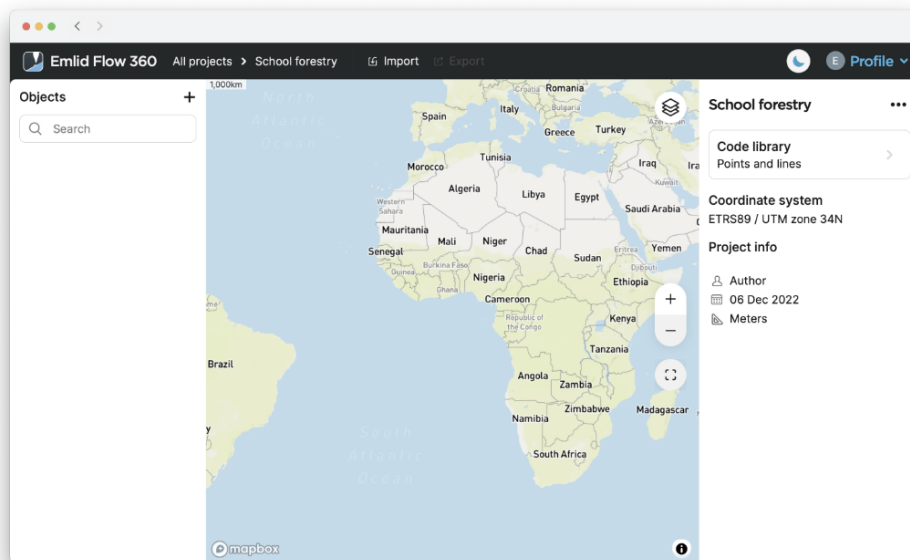
Once the project is created, you can start surveying with Emlid Flow.

### 3.1.4 Importing project data

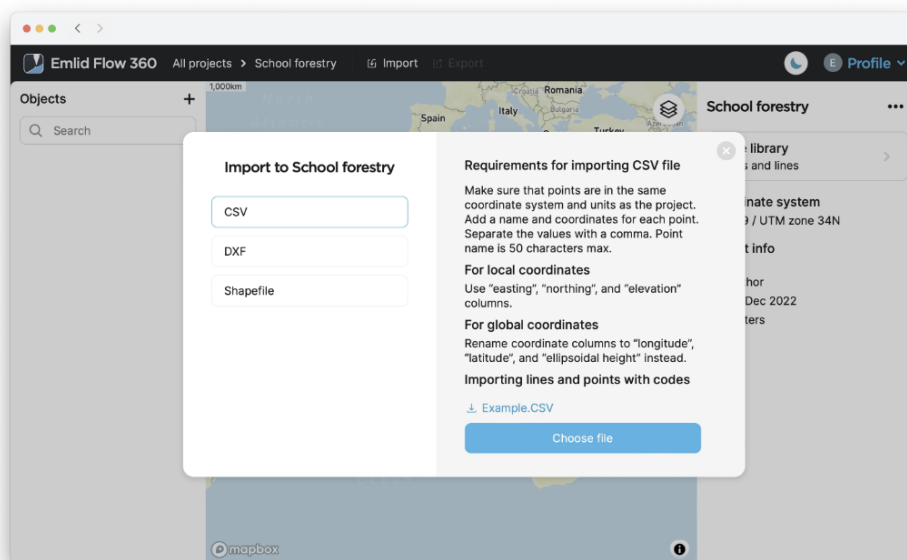
To import the project, follow the steps below:

1. Click on the *Import* button on the top panel.





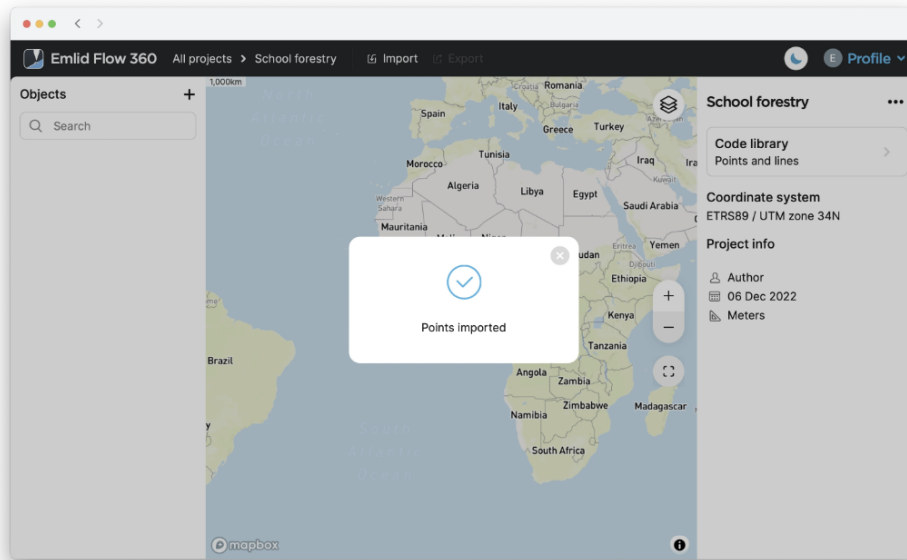
2. Choose the import format.



3. Choose the project file.

**Note:** *Emlid Flow 360 supports projects only with points and lines. Lines support is included only in the subscription plan.*

4. Wait until Emlid Flow 360 finishes importing the project. Once the project is imported, you will see the confirmation sign.



Now all the objects are imported to your project.

## 4 Work with coordinate systems

### 4.1 Introduction to coordinate systems

**Note:** You can specify the coordinate system only when creating a project.

When creating a project, you need to set up the coordinate system (CS). When it comes to choosing a required coordinate system for your project, you should make the decision based on the area you want to work in: for each region, there is a local coordinate system optimized for this specific area.

You can set up the CS for your project as follows:

- **Choose from the library.** Emlid Flow and contains the verified registry of local CS for specific countries. All you need is to find your country from the registry and apply it to your project.
- **Apply global CS.** This option is used to get started with the Emlid Flow app and quick tests in the field. This CS allows working with geographic coordinates—latitude, longitude, and ellipsoidal height.
- **Use custom CS.** If you know the projection parameters and the required system is not supported in Emlid Flow and Emlid Flow 360, you can add your own CS.

### 4.2 Set up coordinate system from library

**Tip:** *We recommend setting up the projects indoors before the survey as some coordinate systems require additional downloads in Emlid Flow.*

This guide shows how to set up a coordinate system for your project in Emlid Flow.

#### 4.2.1 Overview

**Caution:** *You can only configure the coordinate system while creating a new project.*

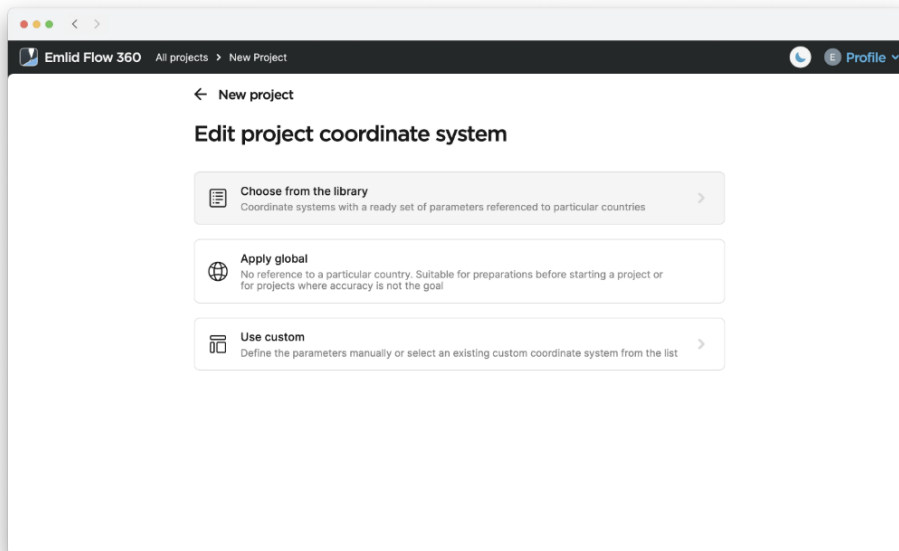
Emlid Flow contains a library of ready-to-use local coordinate systems and vertical datums for specific countries. If you need additional information on the coordinate system in your country.

To show you all the steps, we will walk you through the example of configuring a coordinate system for Switzerland.

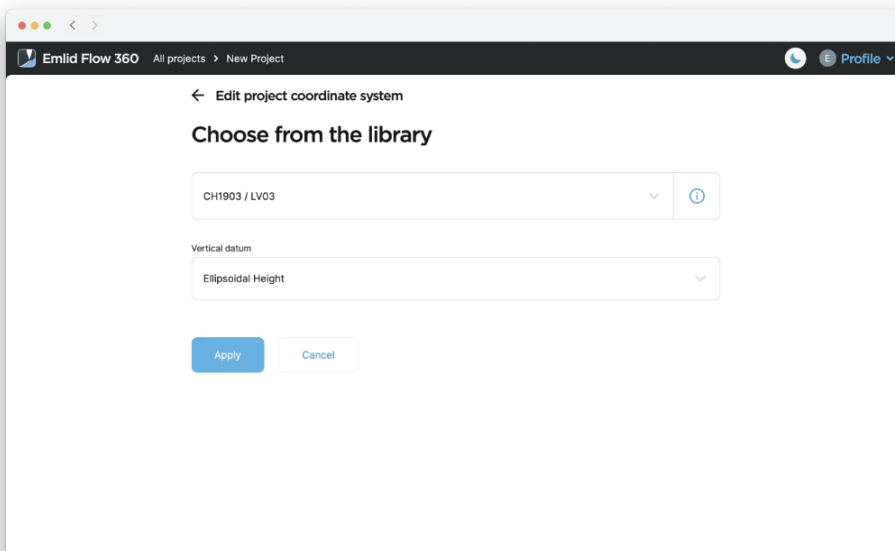
#### 4.2.2 Workflow

While creating a project, follow the steps below:

1. On the *New project* screen, click the *Coordinate system* cell.
2. Click *Choose from the library*.



3. Search the required coordinate system by its name, country, or code. We enter Switzerland and pick CH1903 / LV03.

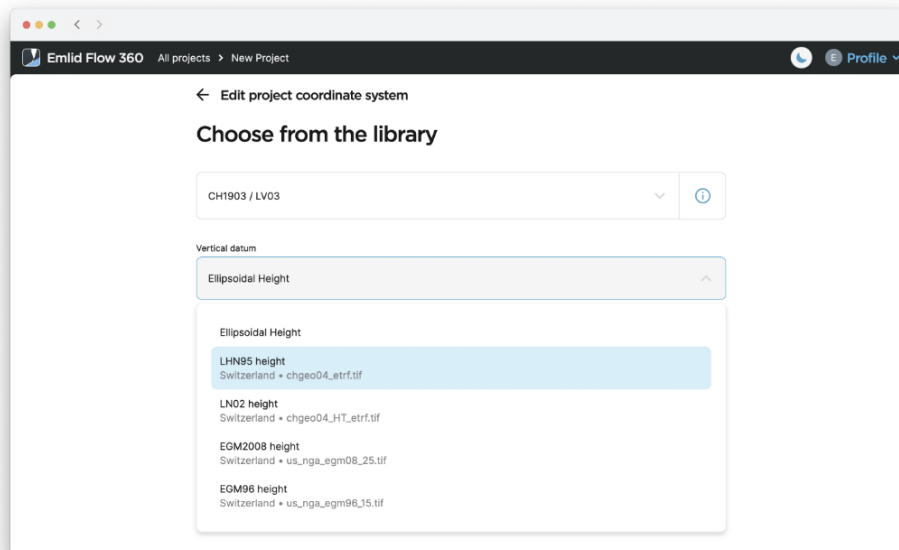


**Tip:** To learn more about the suggested coordinate system, tap the info icon next to the system. Depending on the chosen coordinate system, the screen can contain the following information:

- Datum and its reference ellipsoid with parameters
- Global datum and its reference ellipsoid with parameters
- Projection type and its parameters
- Transformation type and its parameters

4. Click the *Vertical datum* cell. The app will show you available vertical datums. Choose the one you need and click *Apply*.

We select LHN95 height.



**Tip:** Make sure that the coordinate system of your project and the base or NTRIP you use are in the required datum. You can find the required datum for your country in the countries list. You can also find this information in your project in Emlid Flow.

You can continue creating the project for survey.

## 4.3 Set up custom coordinate system

**Tip:** We recommend setting up the projects indoors before the survey as some coordinate systems require additional downloads in Emlid Flow.

This guide describes how to set up a custom coordinate system in Emlid Flow if you cannot find the required one and know its parameters.

### 4.3.1 Overview

**Note:** You can only configure the coordinate system while creating a new project.

To configure the custom coordinate system, you can use 4 different properties:

- Ellipsoid your datum is based on
- Projection type and its parameters
- Transformation type and its parameters
- Geoid model

**Note:** Since not every group of parameters is required for a coordinate system configuration, you may omit some of them and only use the parameters that you have for your projection.

- If the projection is based on the same datum as the base, skip the transformation step.
- If you decide to work with ellipsoidal height, don't select the geoid model.

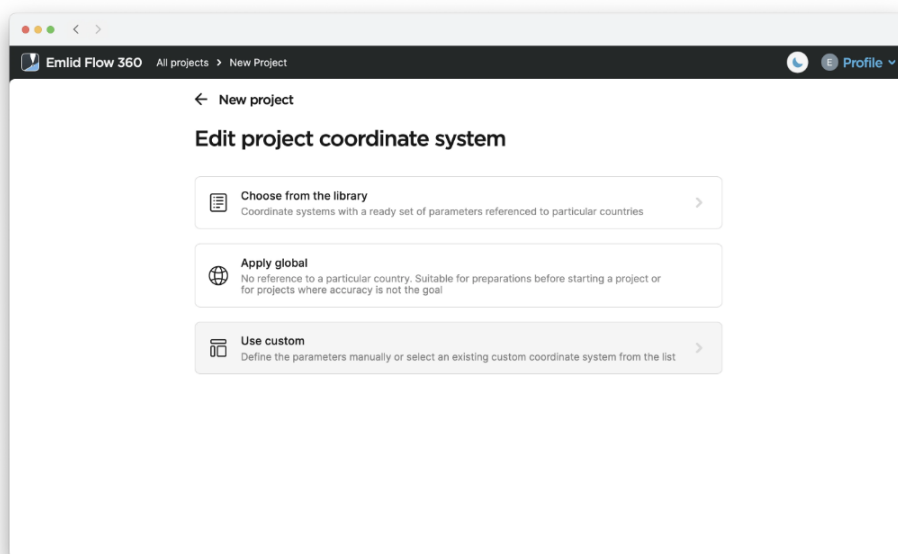
**Tip:** On some Android devices, default keyboards do not provide a minus sign. To get access to it, we recommend downloading Gboard, a virtual keyboard app, from the Google Play Store.

To show you all the steps, we will walk you through the example of transformation from the GDA2020 datum to GDA94, performing MGA zone 51 projection, and applying the AUSgeoid2020 geoid model to the GDA2020 datum.

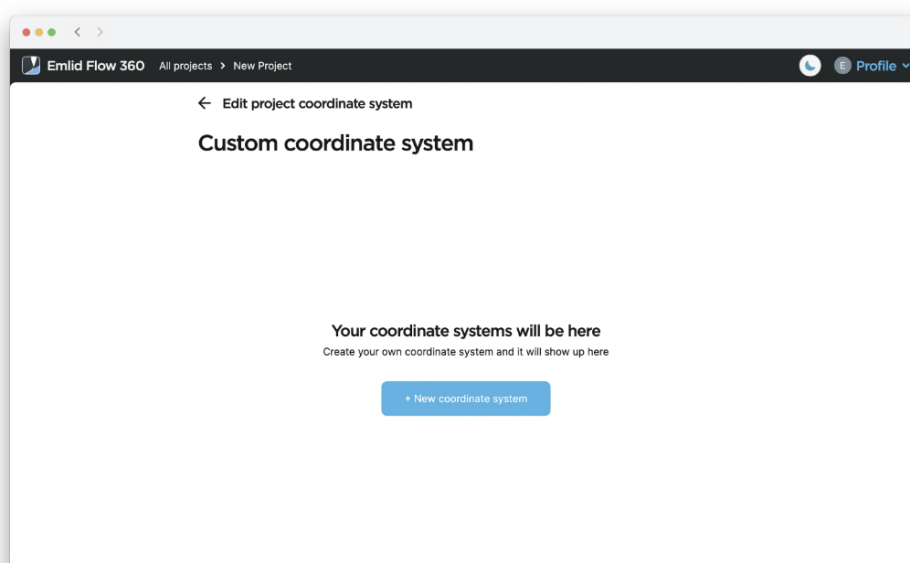
### 4.3.2 Creating Custom CS

When picking a coordinate system for your project, follow the steps below:

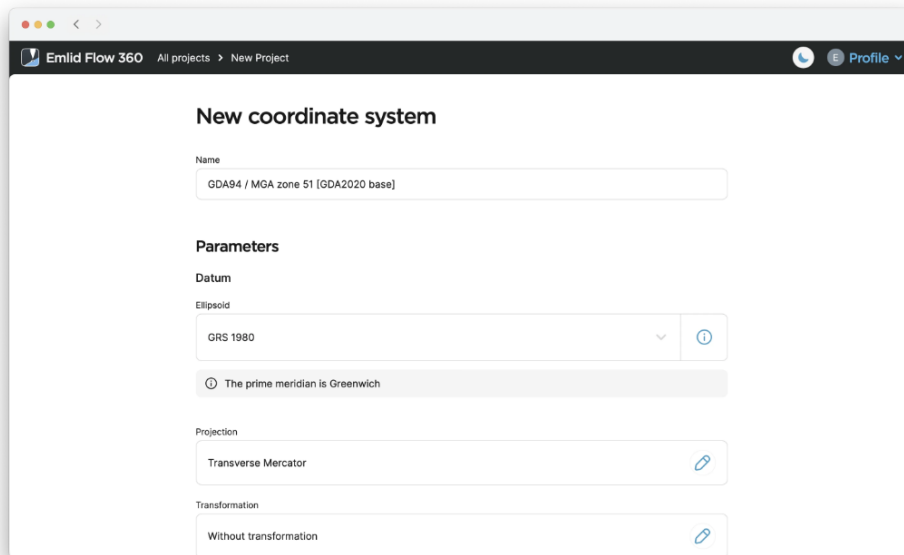
1. On the *Edit project coordinate system* screen, click *Use custom*.



2. To create a custom coordinate system, click the + *New coordinate system* button.



3. Enter the name of your custom coordinate system. Using this name, you will be able to find it in the list of coordinate systems later on.



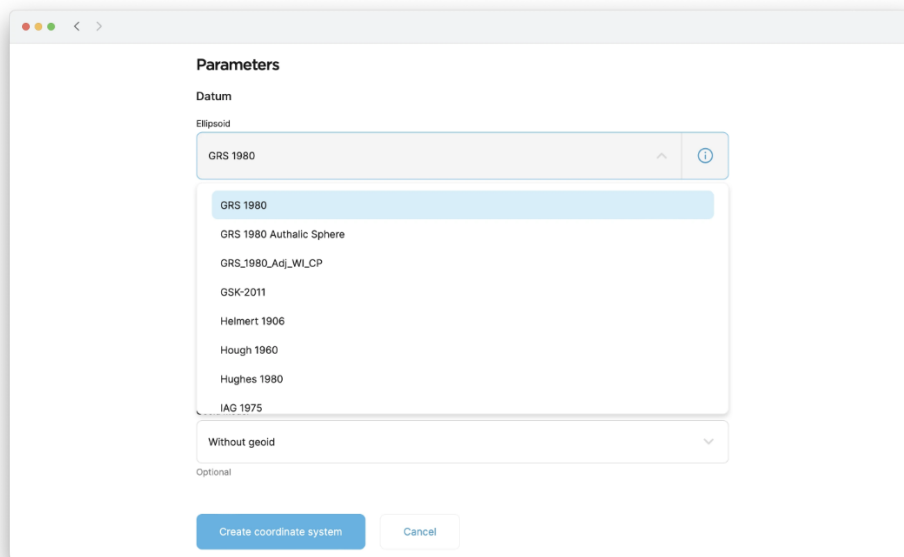
We name the coordinate system **GDA94 / MGA zone 51 [GDA2020 base]**.

### 4.3.3 Specifying ellipsoid for datum

**Note:** *This step is mandatory.*

In this section, we set up the ellipsoid the datum based on. By default, the GRS 1980 ellipsoid is selected. To change it, perform the following steps:

**Note:** *It updates the Semi-major axis and 1/f parameters accordingly. You can access these parameters by clicking the information icon on the right side of the Ellipsoid cell.*



The GDA94 datum uses the GRS 1980 ellipsoid, so we leave it as is.

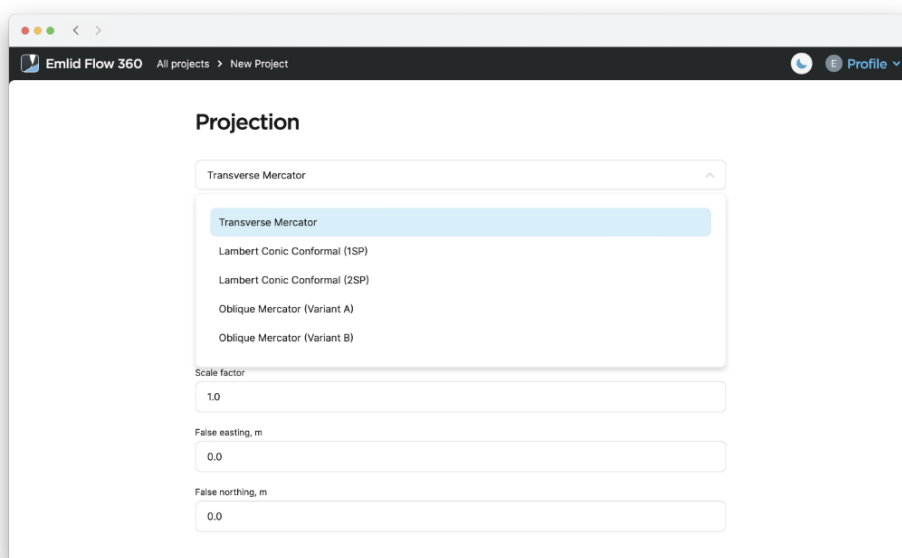
**Note:** If the required datum is missing, contact us at [support@emlid.com](mailto:support@emlid.com).

### 4.3.4 Applying projection

1. To configure projection, click the *Projection* cell.

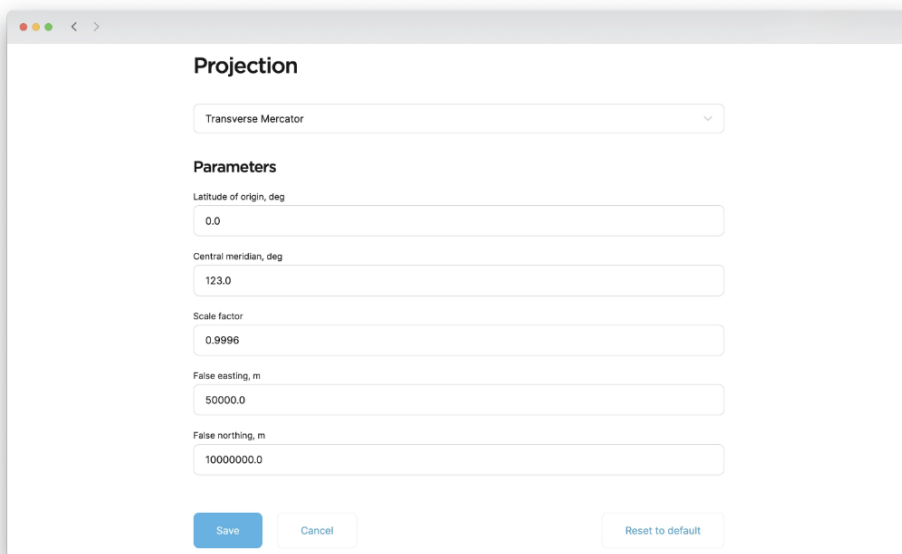
2. Choose the required projection type:

- Transverse Mercator
- Lambert Conic Conformal (1SP)
- Lambert Conic Conformal (2SP)
- Oblique Mercator (Variant A)
- Oblique Mercator (Variant B)



We perform the Transverse Mercator projection.

3. Enter the projection parameters.



4. Save changes.

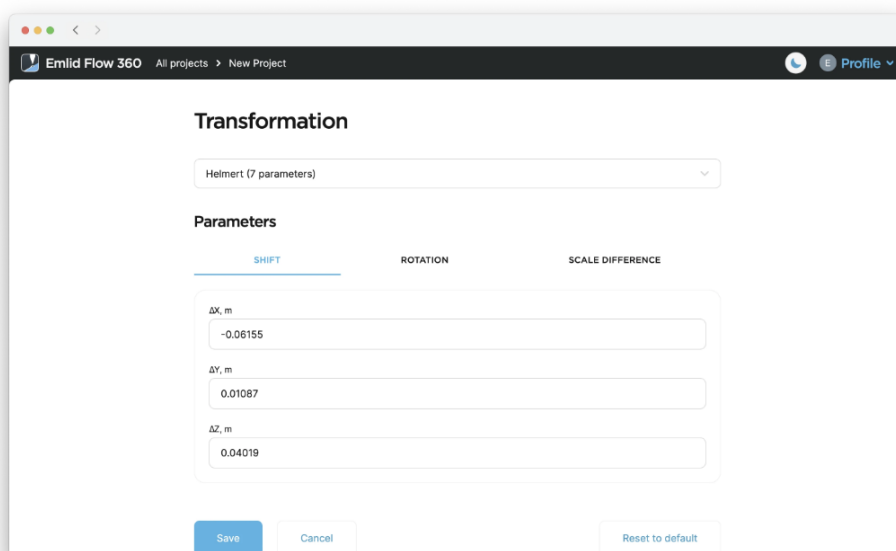


### 4.3.5 Specifying transformation parameters

**Note:** You need to configure this option only if your coordinate system uses a datum that differs from the base's one.

1. Click the *Transformation* cell.
2. Choose the required transformation type: Helmert or Molodensky-Badekas.
3. We need the Helmert transformation to go from GDA2020 to GDA94 datum.
4. Fill in the transformation parameters: there are 7 of them for the Helmert transformation and 10 for Molodensky-Badekas.

**Tip:** The app can also perform transformations with only 3, 4, and 6 parameters. You can type in the parameters you have and leave the others empty.



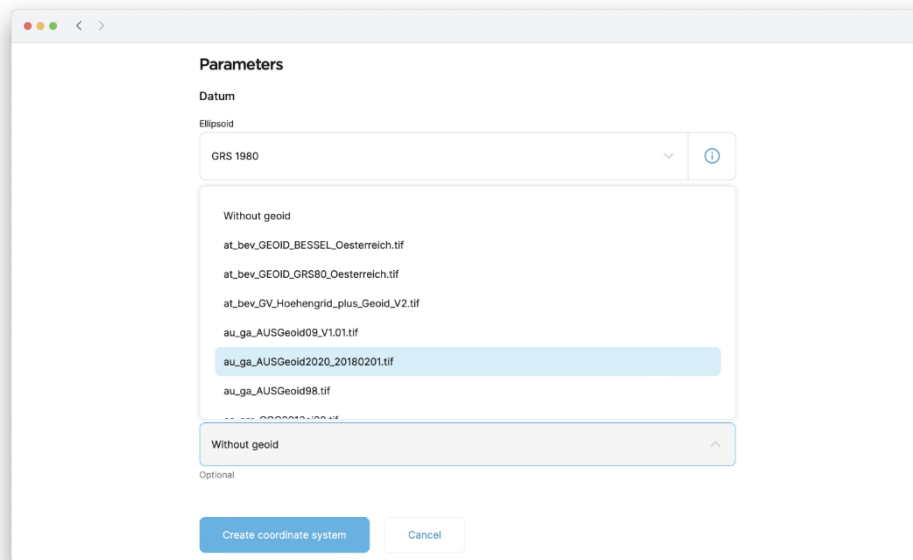
5. Save changes.

### 4.3.6 Choosing geoid model

**Note:** Apply the geoid model to your custom coordinate system only if you require orthometric height for your project. Emlid Flow applies geoid correction to the datum the base works with, so make sure to choose the appropriate one.

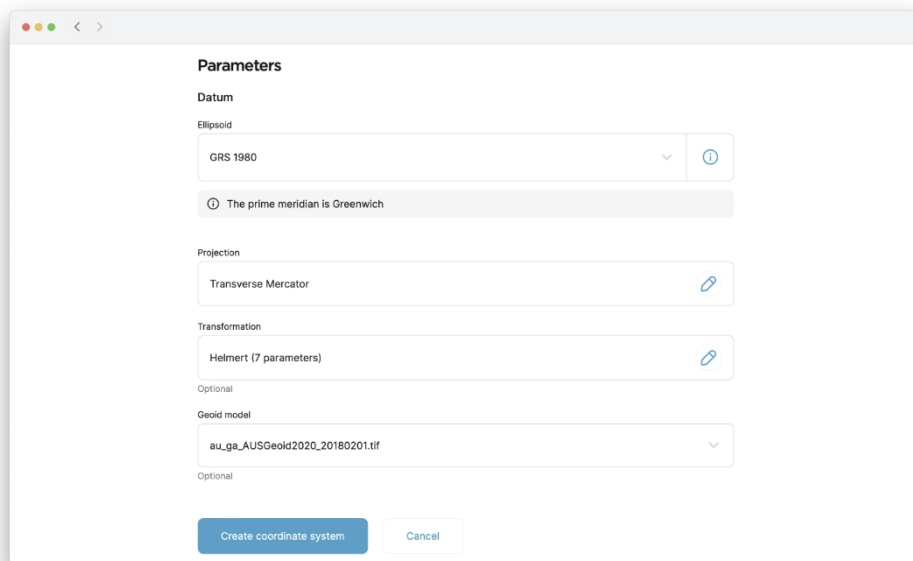
Click the *Geoid model* cell and select the appropriate geoid file from the list.

We select the AUSgeoid2020 that is meant to be used for coordinates in GDA2020.

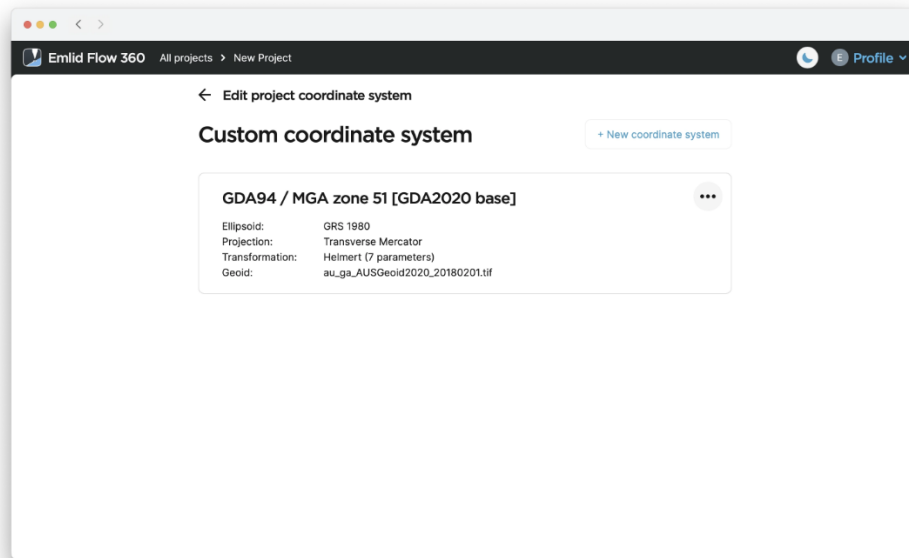


### 4.3.7 Saving custom CS

Once everything is configured, click *Create coordinate system* on the *New coordinate system* screen to save the coordinate system. From now on, your custom coordinate system is saved to your Emlid account and synced among all your devices.



You can find your custom coordinate systems on the *Custom coordinate system* screen.



You can continue creating the project for survey.

## 5 Manage code libraries

**Note:** *You can manage your code libraries only in Emlid Flow 360.*

This guide explains how to add new code libraries or update existing ones using Emlid Flow 360.

### 5.1 Overview

#### 5.1.1 What is survey code?

A survey code is a set of letters and numbers used to define collected data on a map, for example, a tree or a fence. Codes can include additional information about the collected object—such as geometry type and a brief description.

#### 5.1.2 What is code library?

A code library is a list of survey codes that can be linked to a project. Code libraries are a way to have all frequently used codes in one place to have consistency throughout all your projects. Using Emlid Flow 360, you can add your own code libraries and update them with new codes later. New codes will be automatically added to a particular code library on every device you use.

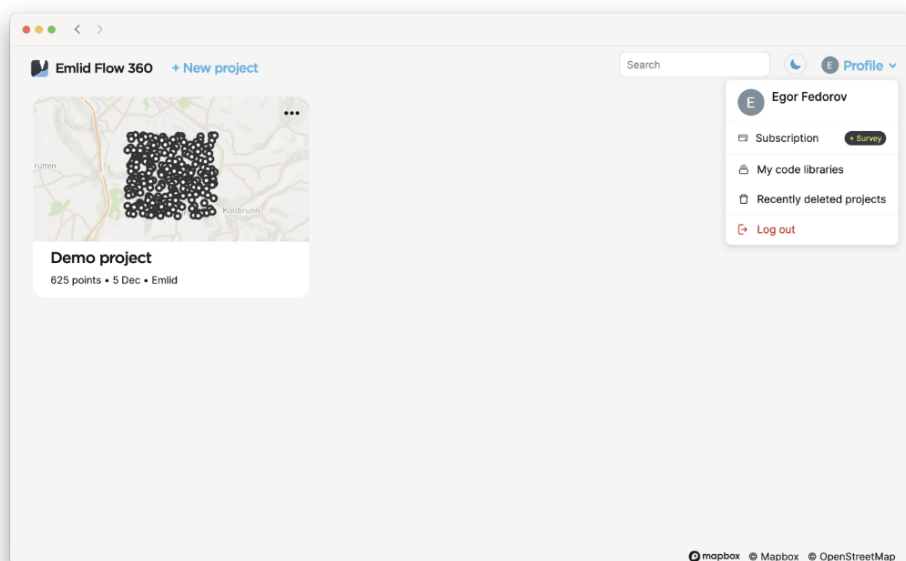
**Tip:** *If you forgot to add some codes that you need in the field, you can easily create codes on the go in Emlid Flow.*

### 5.2 Adding code library

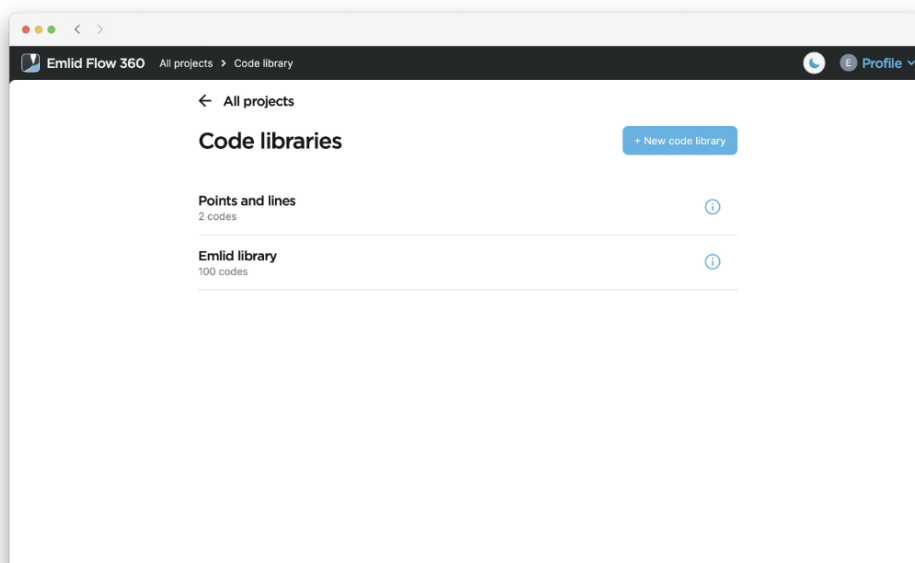
Your Emlid account has 2 default libraries: 'Points and lines' containing 2 simplest codes, and 'Emlid library' containing the most commonly used survey codes. Using Emlid Flow 360, you can add your own code libraries.

To add a code library, follow the steps below:

1. In the *Profile* menu, click *My code libraries*.

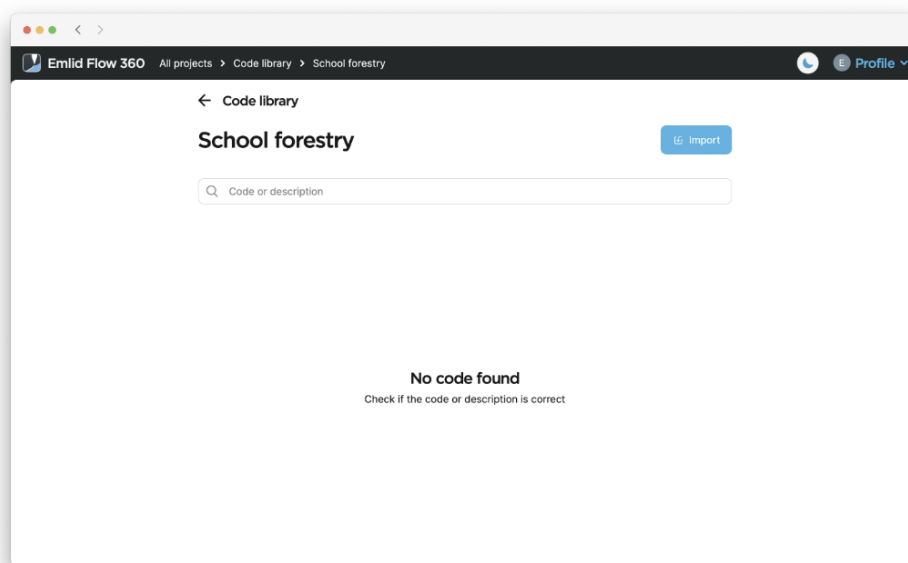


2. Click + *New code library*.

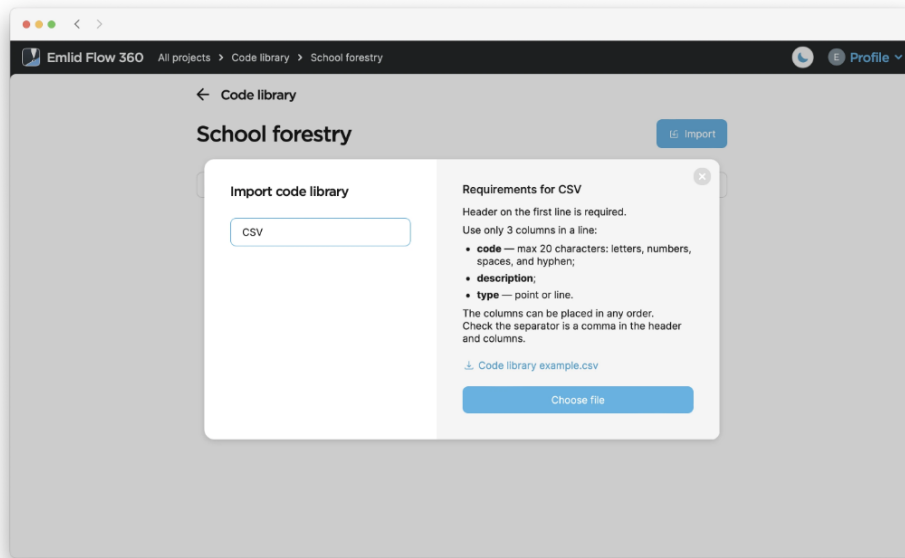


3. Name your library and click *Create*.

4. To add survey codes to your library, click the *Import* button.



5. Import the file with survey codes by clicking *Choose file*. When the library is imported, you will see the confirmation sign.



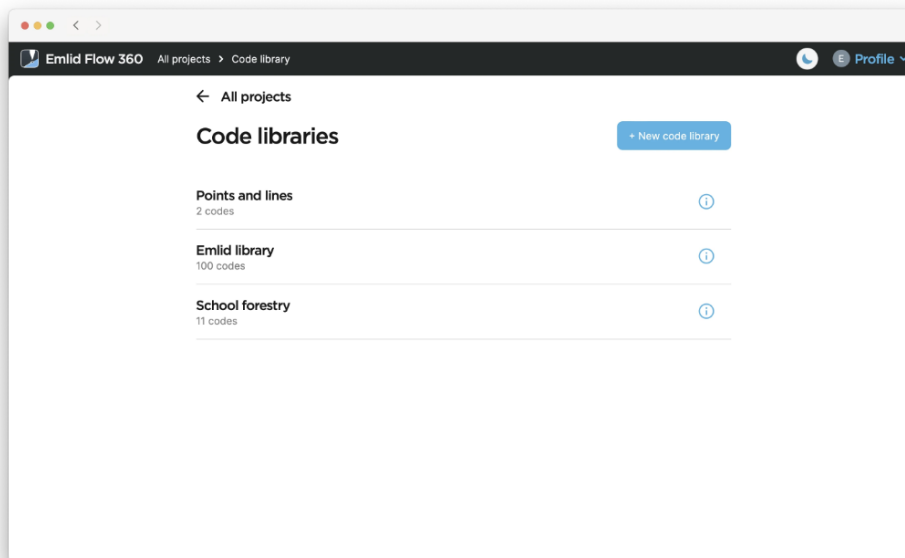
Once you added a new code library, it will be synced across all your devices. You can link this library to any of your projects.

### 5.3 Adding codes to existing code libraries

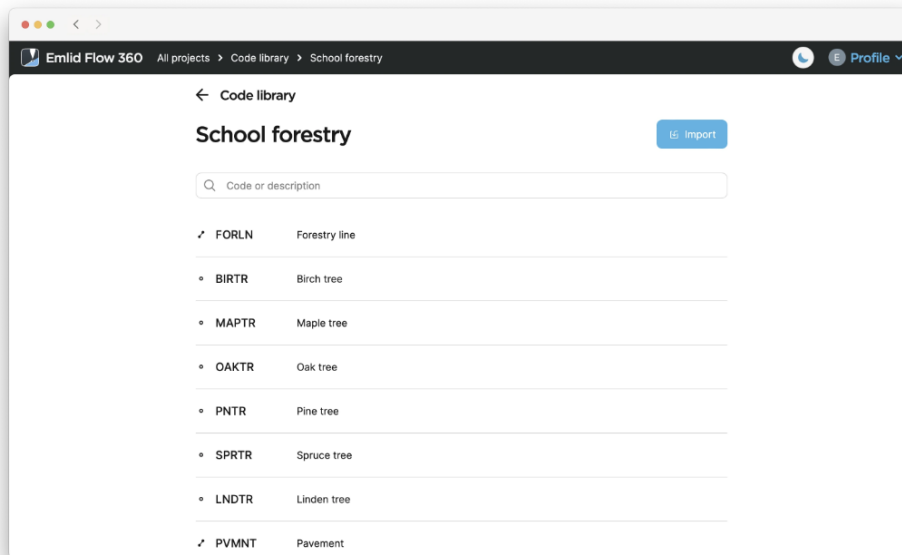
**Note:** You can add new codes only to the libraries created by you.

To add new codes to your existing code libraries, do the following:

1. Navigate to the *My code libraries* screen.

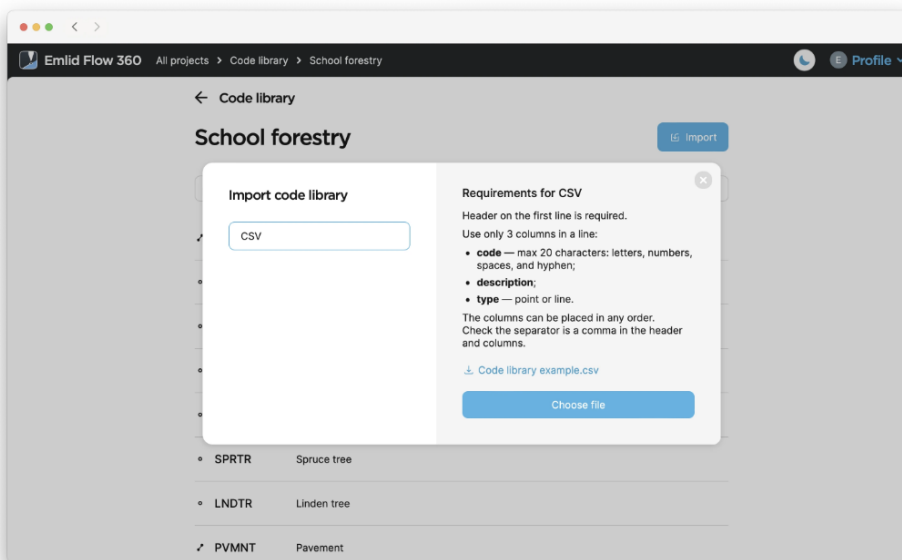


2. Select the library where you want to add new codes.
3. To add new codes, click *Import*.



4. Import the file with new survey codes by clicking *Choose file*. When the codes are imported, you will see the confirmation sign.

**Tip:** A single code library can't contain two survey codes with the same code name. Before adding new codes to your library, make sure the file you're uploading doesn't duplicate the already existing codes.



Once you added new codes to your code library, the code library will be updated with new codes among all your devices.

## 6 Manage map layers

### 6.1 Create WMS layers library

This guide explains how to create a WMS layers library in Emlid Flow 360 to add layers to your projects.

#### 6.1.1 Overview

In Emlid Flow 360, you can load WMS layers from web map services, create your own WMS layers library linked to your Emlid Account, and add WMS layers from it to the projects. The use of WMS layers in projects allows you to get visual control and context of your survey area.

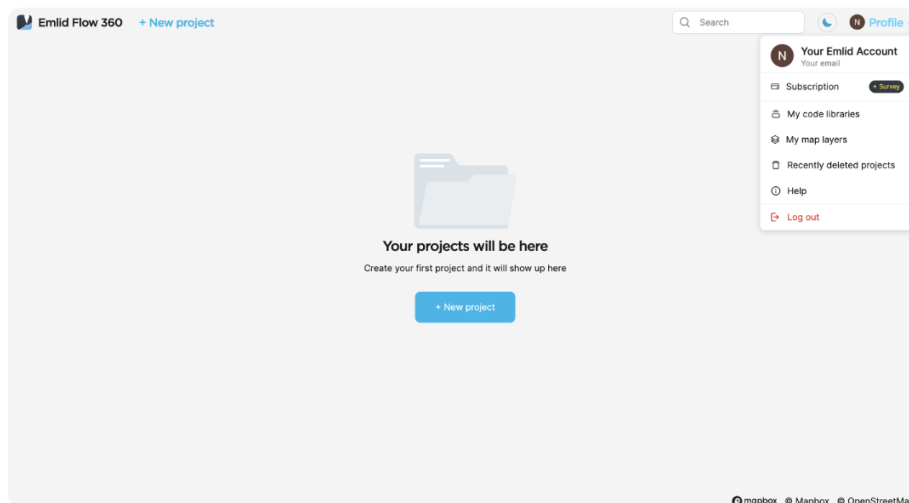
To add a WMS layer to the library, you need only a URL from the web map service—type or paste a link, and Emlid Flow 360 will load the list of available layers. After that, you can add the loaded layers to any of your projects in Emlid Flow 360.

**Note:** *You can add layers to your library and projects only in Emlid Flow 360.*

#### 6.1.2 Adding WMS layers to library

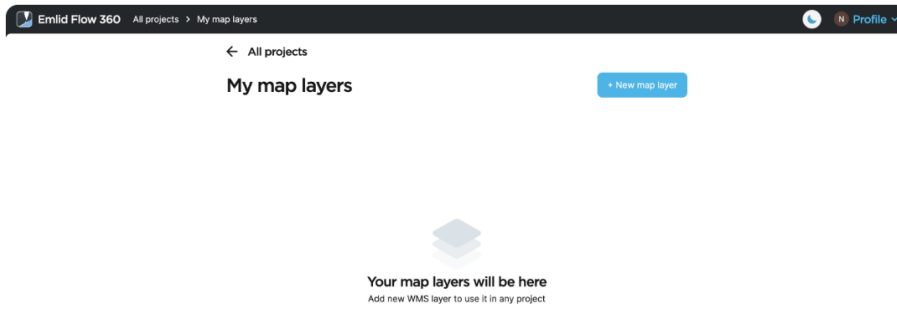
To add WMS layers from web map services and create your own library, follow the steps below:

1. Go to [flow360.emlid.com](https://flow360.emlid.com) and sign up or sign in using your Emlid account.
2. Go to the *Profile* menu and click *My map layers*.

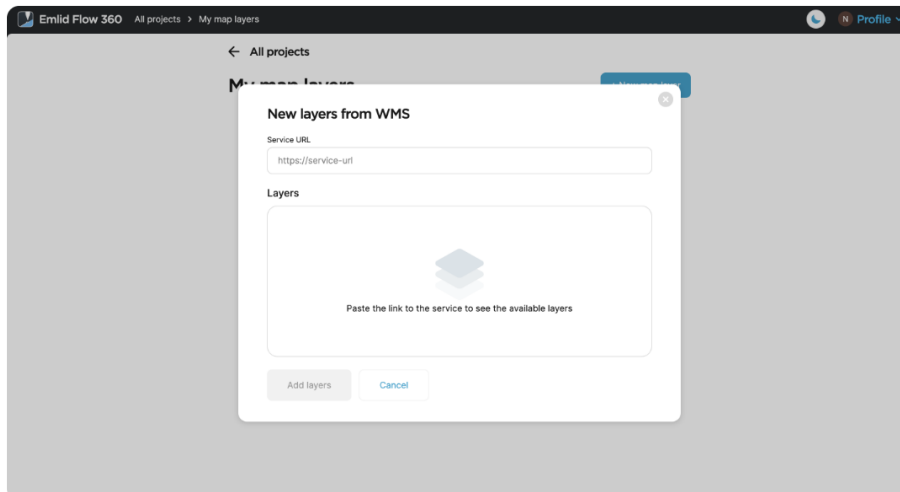


3. Click *+ New map layer* to add a new layer.

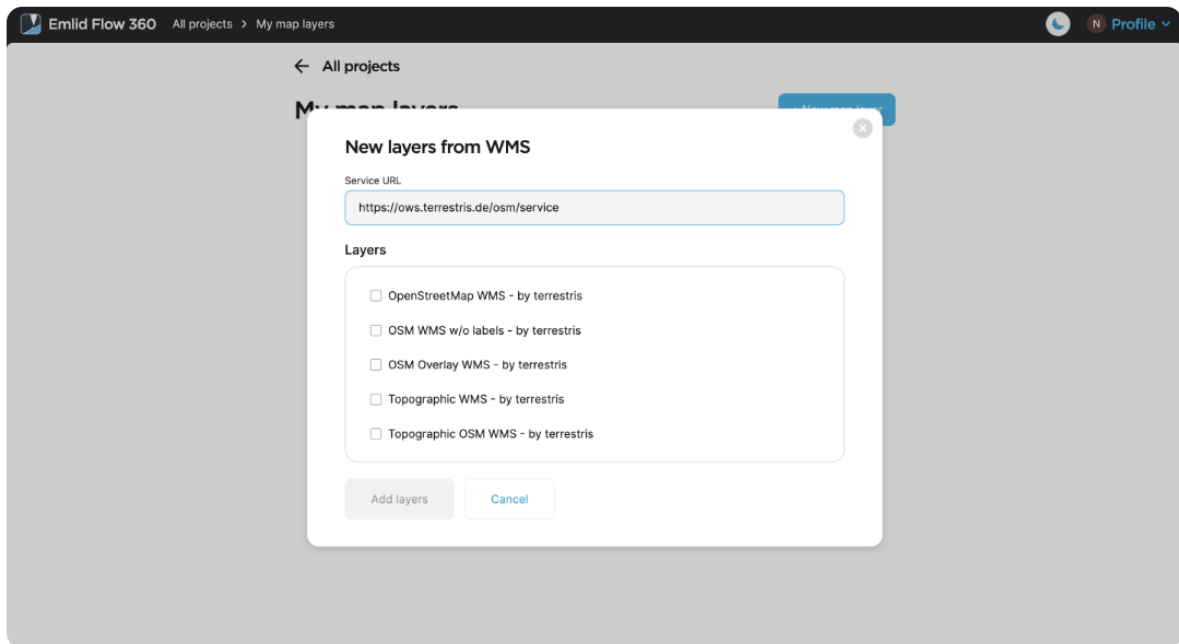




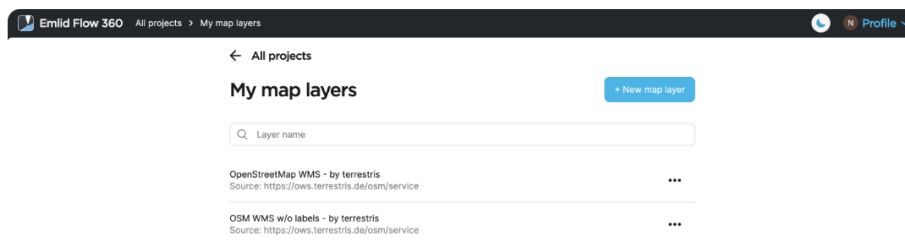
4. Type in or paste the address of the WMS service you use. Emlid Flow 360 will load the list of available layers.



5. Select the layers you want to add and click *Add layers*.



Wait until the layers are loaded.



Once WMS layers are loaded to the library, you will be able to add them to any project in Emlid Flow 360.

**Tip:** Learn more about adding WMS layers to your project from WMS layers library in Emlid Flow 360 in the [Add WMS layers to project guide](#).

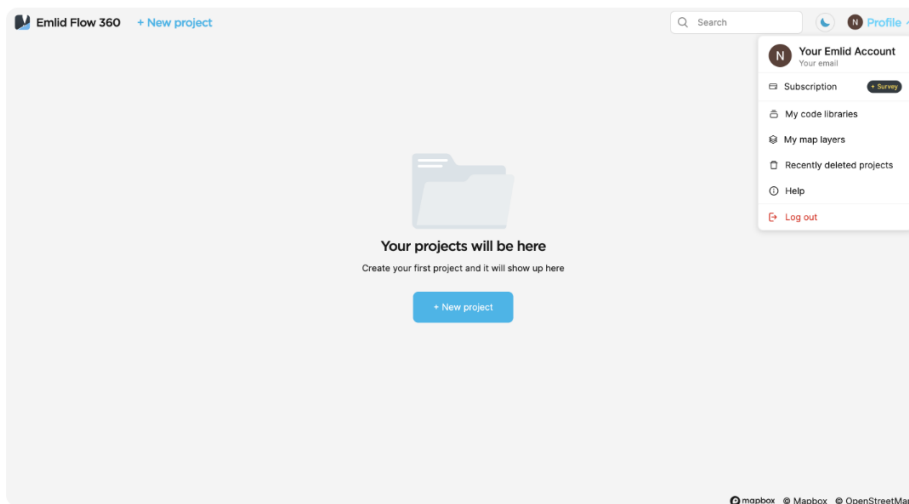
### 6.1.3 Deleting WMS layers from library

**Caution:** This action permanently removes layers from your WMS layers library and cannot be undone.

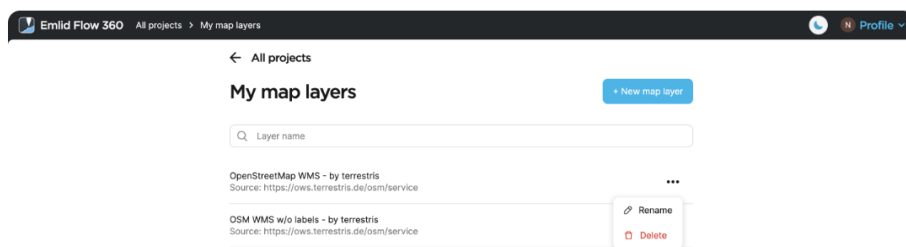
To delete a WMS layer from your WMS layers library, follow the steps below:

1. Go to [flow360.emlid.com](https://flow360.emlid.com) and sign up or sign in using your Emlid account.

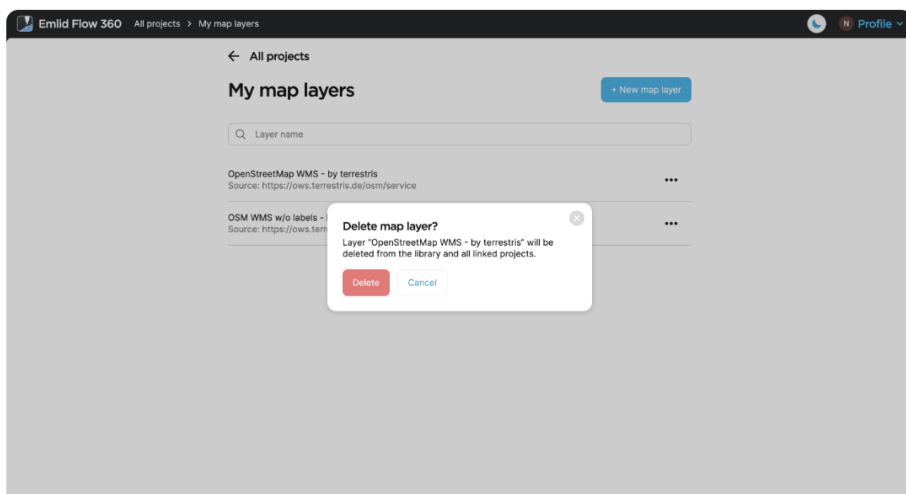
2. Go to the *Profile* menu and click *My map layers*.



3. Click the *My map layers* button, choose the layer you want to delete and click the menu button near it.



4. Click *Delete* and confirm the deletion.



## 6.2 Add WMS layers to project

This guide explains how to add WMS layers from the WMS layers library to your project in Emlid Flow 360.

### 6.2.1 Overview

With the WMS layers library in Emlid Flow 360, you can select and add layers to your projects in Emlid Flow 360. After that, you can get access to these projects in Emlid Flow.

The use of WMS layers in projects allows you to get visual control and context of your survey area.

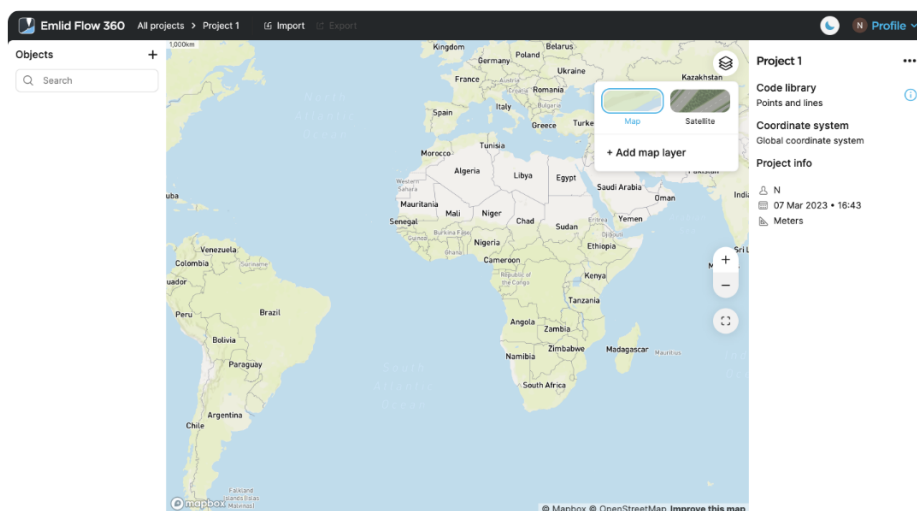
**Tip:** Learn more about creating a WMS layers library in Emlid Flow 360 in the *Create WMS layers library guide*.

**Note:** To get access to projects with added layers from the WMS layers library in Emlid Flow, you should log into the same Emlid account you use in Emlid Flow 360. Learn more in *Working with map layers*.

### 6.2.2 Add layers from library to project

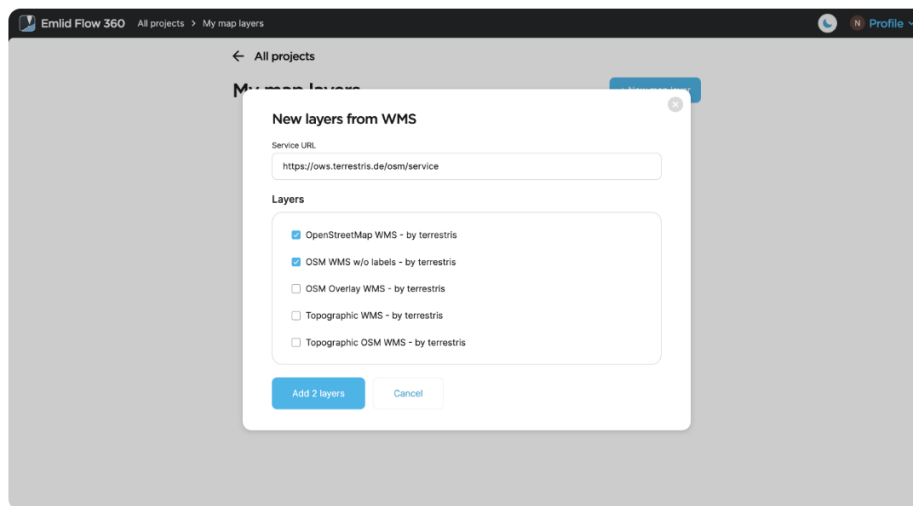
To add layers to your project from the WMS layers library in Emlid Flow 360, follow the steps below:

1. Go to [flow360.emlid.com](https://flow360.emlid.com) and sign up or sign in using your Emlid account.
2. Open your project and click the *Map layers* button.

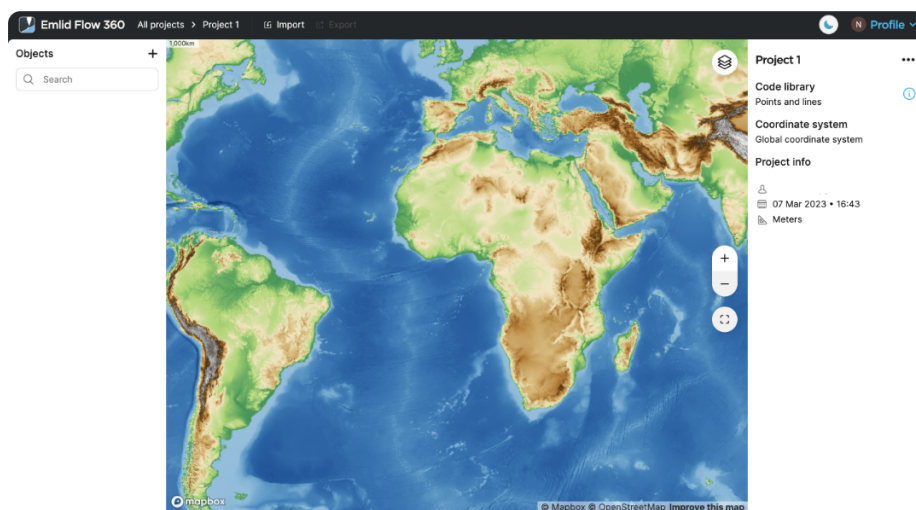


3. Click *Add map layer* and select required layers.

**Note:** You can also add new layers right in the project. Tap *New map layer*.



4. Click *Add to project*.



Once the layers are added to your project, you can start working with them both in Emlid Flow 360 and Emlid Flow.

**Tip:** Click the *Map layers* button to switch between vector and satellite map types, reorder layers using the drag-and-drop feature, and change their visibility and opacity on the map by clicking the eye icon near the layer and name of the layer correspondingly.

**Tip:** Learn more about accessing projects with added layers in Emlid Flow in *Working with map layers*.

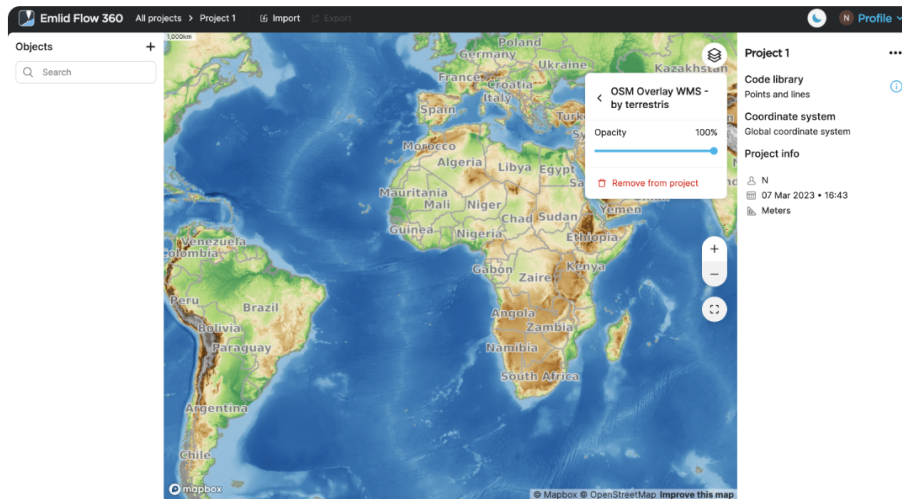
### 6.2.3 Delete layers from project

**Note:** The layer will be removed only from the project. You can add it again by clicking the *Map layers* button and *Add map layer*.

You can delete WMS layers from your project as follows:

1. Go to [flow360.emlid.com](https://flow360.emlid.com) and sign up or sign in using your Emlid account.
2. In Emlid Flow 360, open your project and click the *Map layers* button.

3. Click on the layer you want to delete.



4. Click *Remove from project* and then click *Delete*.

## 7 Export projects

This guide shows how to export project data from Emlid Flow or Emlid Flow 360 for further use in third-party GIS software.

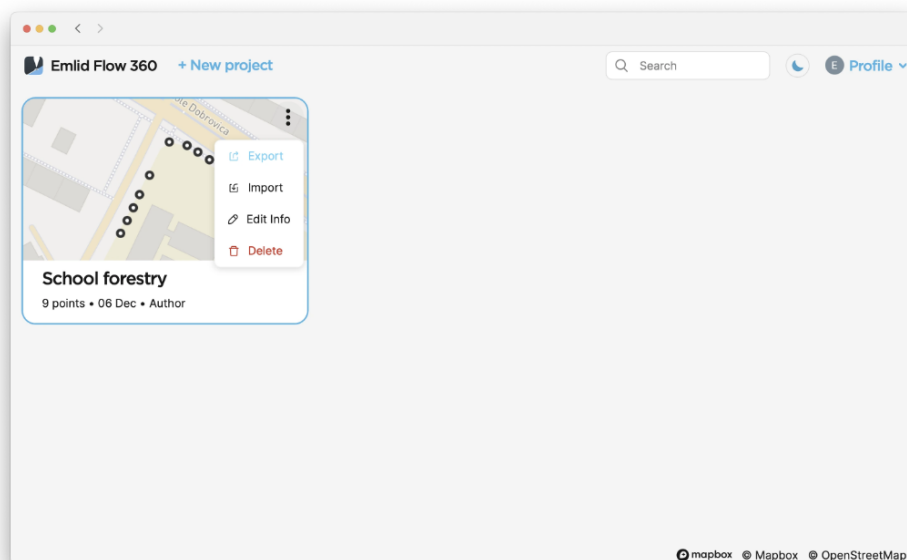
### 7.1 Overview

With Emlid Flow and Emlid Flow 360, you can export your projects CSV, DXF, or Shapefile to work with them in third-party GIS software.

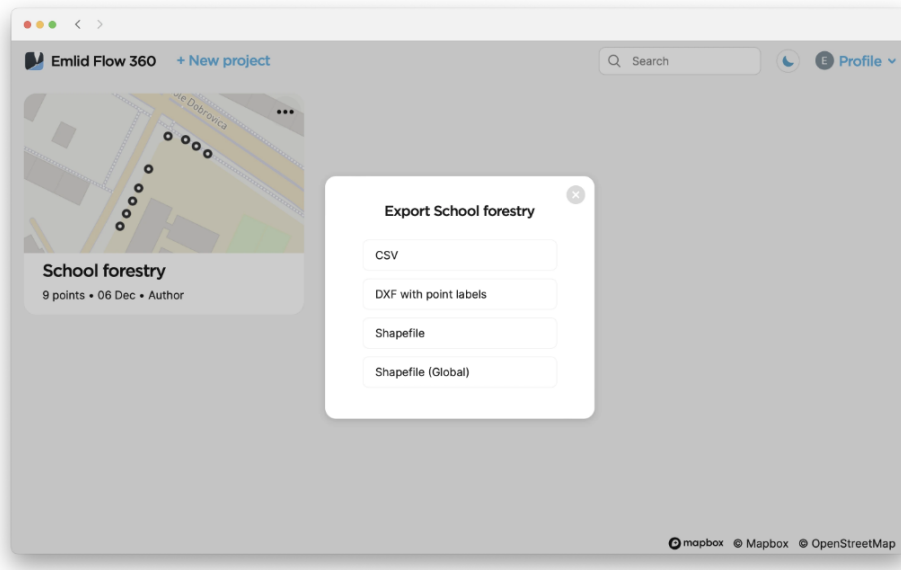
### 7.2 Exporting project

To export the project, follow the steps below:

1. Open Emlid Flow 360 and find the project you want to export.
2. Tap the 3 dots button in the top right corner of the project's plate. Click *Export*.



3. Choose the format in which you want to export your project.



4. Wait until Emlid Flow 360 finishes to export your project. Save the file depending on the device you use.

Now your project's data is ready for further use in third-party GIS software.



## 8 Account and subscription management

### 8.1 Account management

This guide describes how you can manage your Emlid account.

#### 8.1.1 Overview

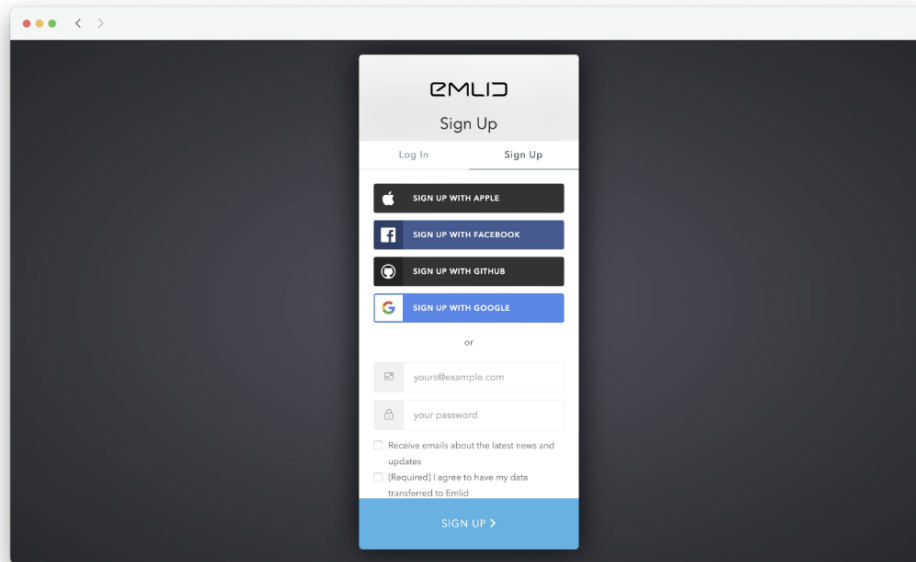
An Emlid Account is a free and simple way to synchronize your data from the Emlid Flow and Emlid Flow 360 apps across your mobile and desktop devices. Once you log in to your account, your data will be immediately backed up to the cloud and available on every device you use. Besides, with an Emlid Account, you can upgrade to the Survey subscription plan.

**Tip:** Learn more about the Survey subscription plan on the Emlid Flow and Emlid Flow 360 landing page.

#### 8.1.2 Create account

All you need to create an account is to enter your email and set a password. This will automatically create a profile that will store your projects, NTRIP profiles, and custom coordinate systems. Follow the steps below:

1. Go to [flow360.emlid.com](https://flow360.emlid.com).
2. Click the *Sign Up* tab.



3. Type in your email and password in the corresponding fields.
4. Click the *SIGN UP* button.
5. Verify your email address by following the on-screen instructions.

Once you create an Emlid account, log in to Emlid Flow or Emlid Flow 360 to enable data synchronization between all your devices.

**Note:** You can delete your Emlid Account only in Emlid Flow.

## 8.2 Subscription management

This guide describes how you can manage your Survey subscription.

**Tip:** *You can manage your subscription from both Emlid Flow and Emlid Flow 360.*

### 8.2.1 Overview

You can upgrade your Emlid Flow and Emlid Flow 360 apps to the Survey subscription. The upgrade requires an Emlid Account and offers two subscription plans based on monthly or yearly billing periods.

**Note:** *When subscribing for the first time, you will be offered a free 30-day trial.*

The subscription is multi-platform and features professional survey tools:

- coding,
- linework,
- and a satellite map.

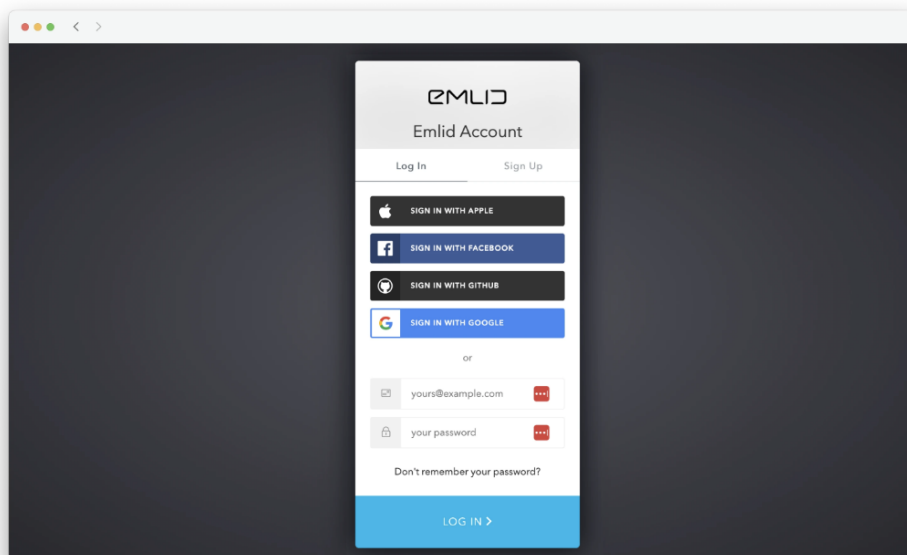
**Tip:** *Learn more about the Survey subscription plan on the Emlid Flow and Emlid Flow 360 landing page.*

### 8.2.2 Upgrade to Survey subscription

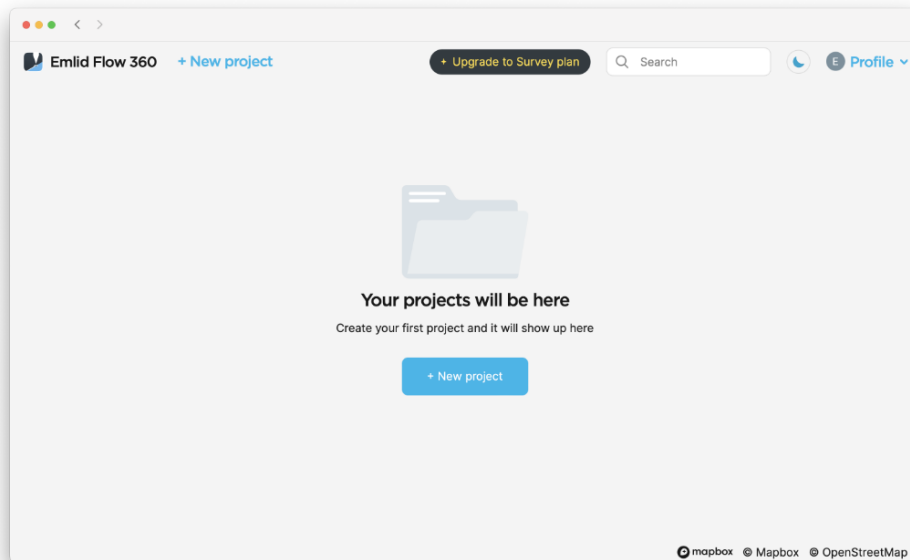
**Tip:** *If you haven't created an Emlid Account yet, check the [Getting started](#) guide.*

To upgrade to the Survey subscription, follow the steps below:

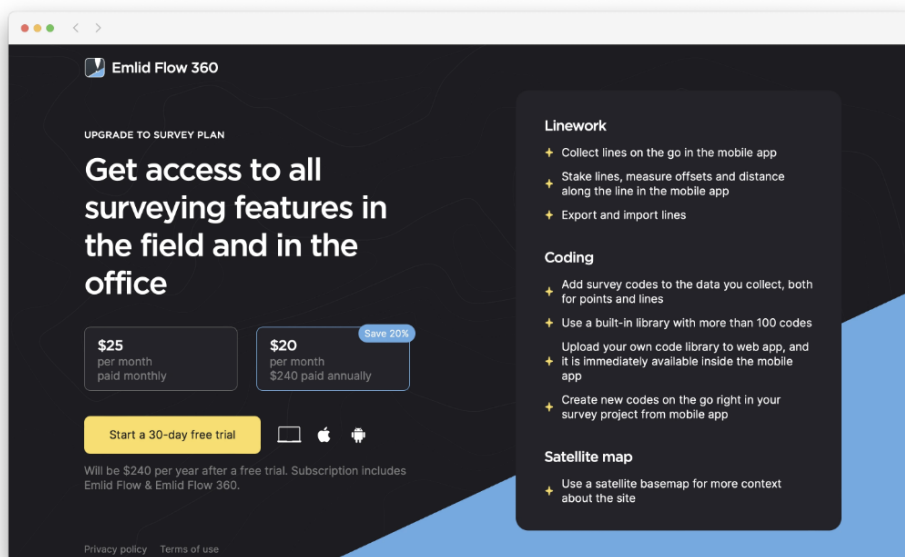
1. Go to [flow360.emlid.com](https://flow360.emlid.com).
2. Log in to your Emlid Account.



3. Click the subscription plate.



4. Start a free trial and fill in your details. Tap *Continue*.



**Note:** A free trial is 30 days. When the trial is over, the plan will be automatically renewed until cancelled. You can change the plan in the subscription management settings depending on your mobile device's platform.

5. Fill in the payment details and click *Start Your Free Trial*. You'll be automatically redirected to the main screen.

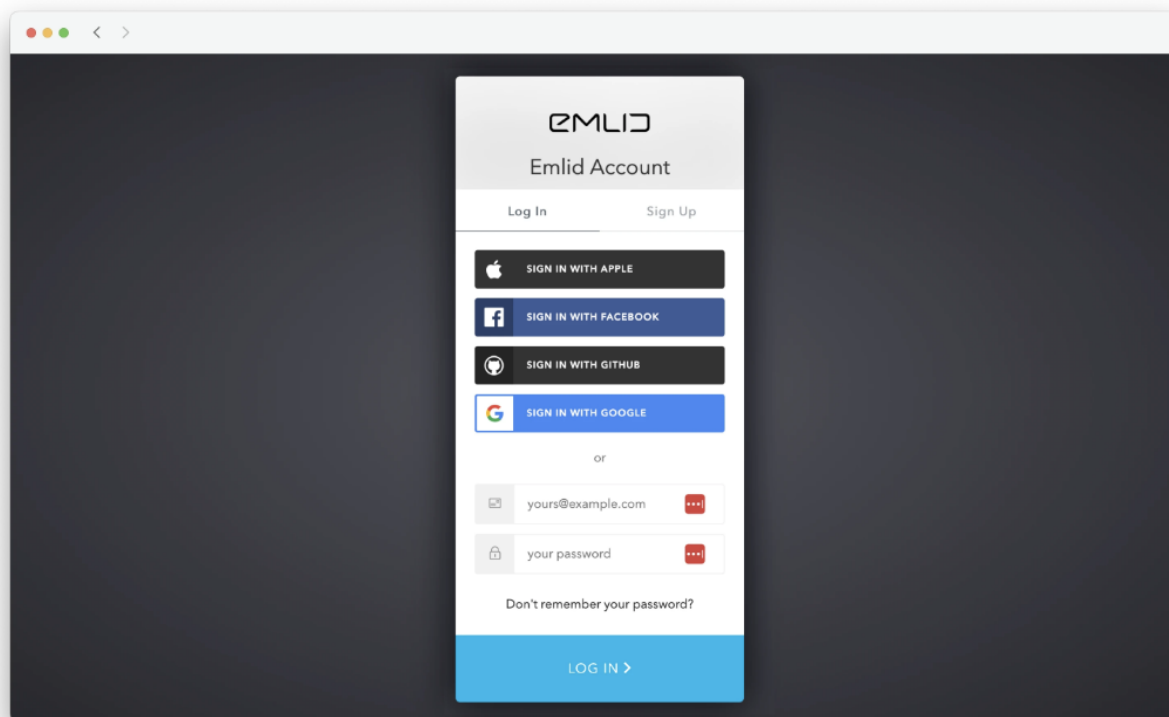
Once you upgrade to the Survey subscription, you can start using the featured professional survey tools both in Emlid Flow and Emlid Flow 360.

### 8.2.3 Cancel Survey subscription

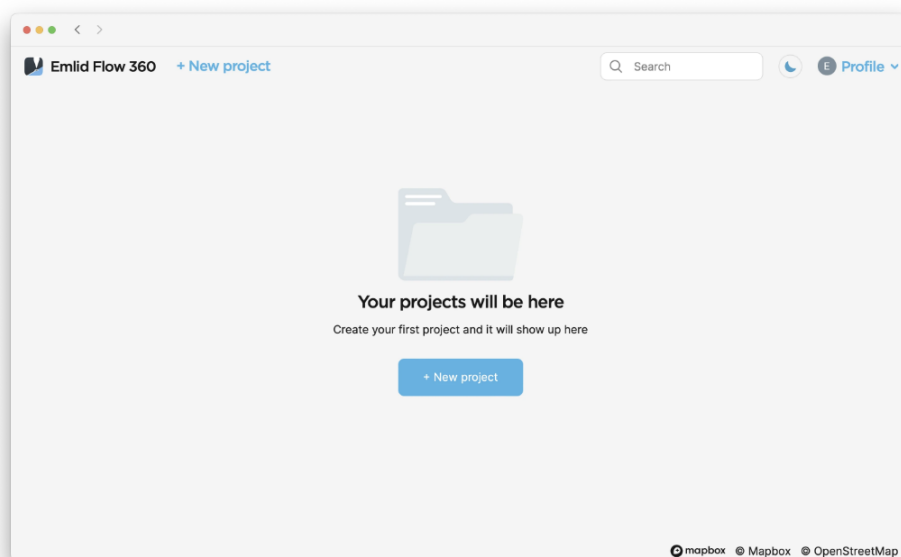
**Note:** You can unsubscribe only on the platform you started the subscription.

To cancel the Survey subscription, complete the following:

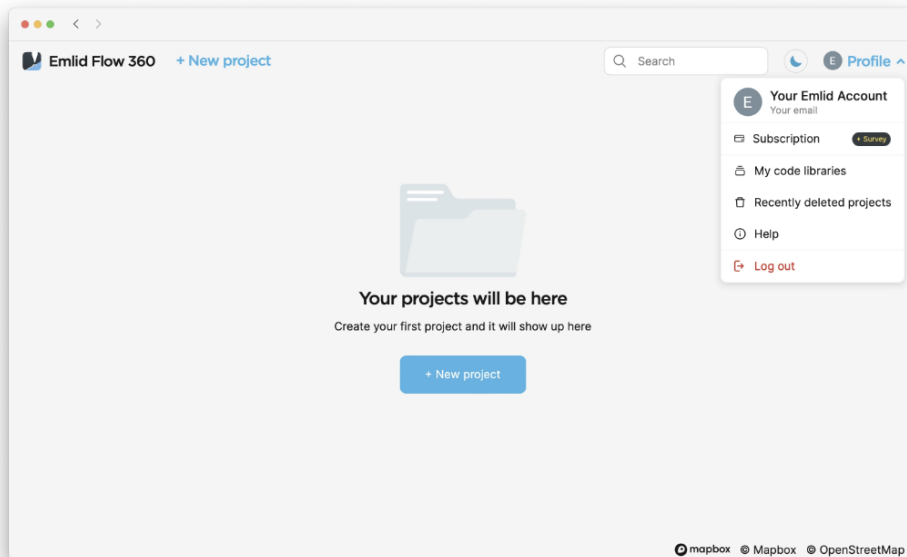
1. Go to [flow360.emlid.com](https://flow360.emlid.com).
2. Log in to your account.



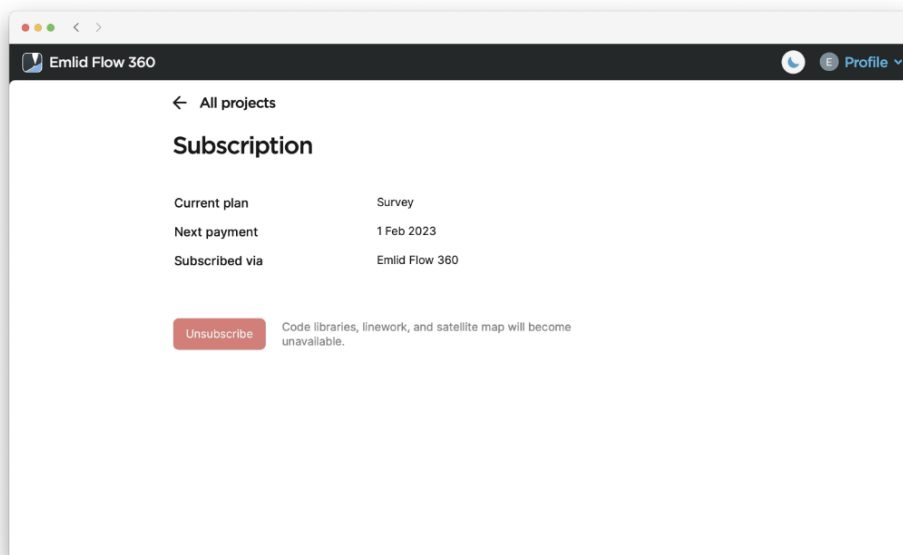
3. Click *Profile*.



4. Click *Subscription*.



5. Click *Unsubscribe* and confirm it.



Once you unsubscribe, code libraries, linework, and a satellite map will become unavailable for use. However, you still will be able to view created using the subscription projects with linework and codes and export them in any format.

If you need help, contact the Support team at [support@emlid.com](mailto:support@emlid.com).

#### 8.2.4 Restart Survey subscription

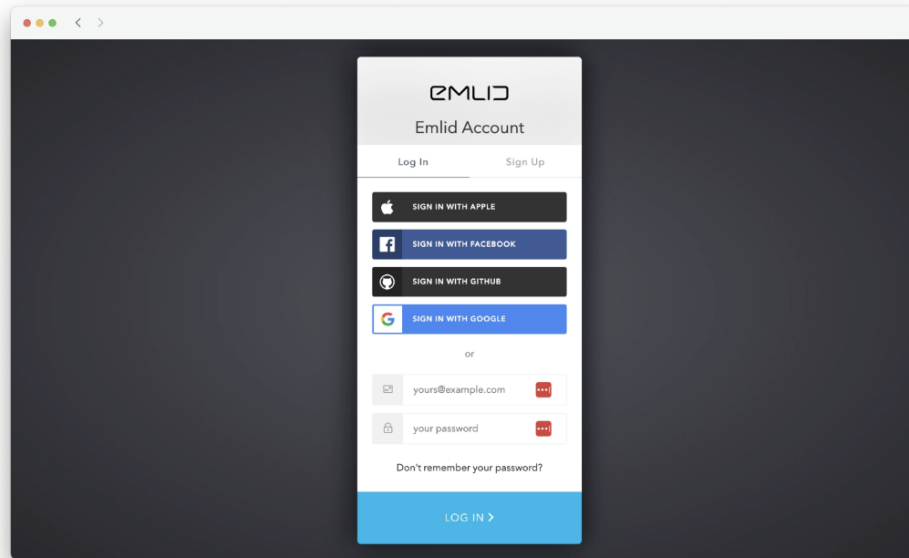
**Note:** If you want to restart the subscription with active days left, you should go to the platform where it was activated at first.

If you cancelled the subscription and want to restart it, you can easily do it both in Emlid Flow and Emlid Flow 360 anytime you want.

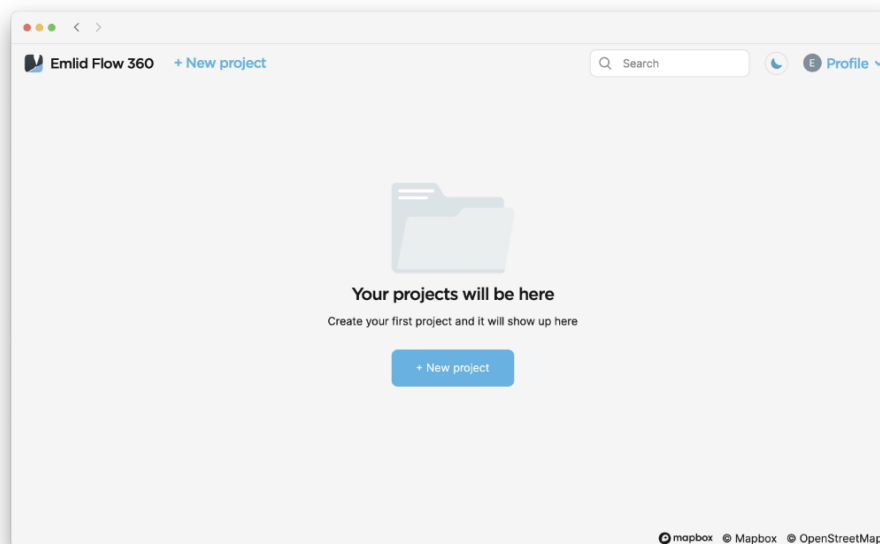
To restart the subscription, follow the recommendations below:

**Note:** If you have days left on the active subscription, you can restart the subscription only when they are over.

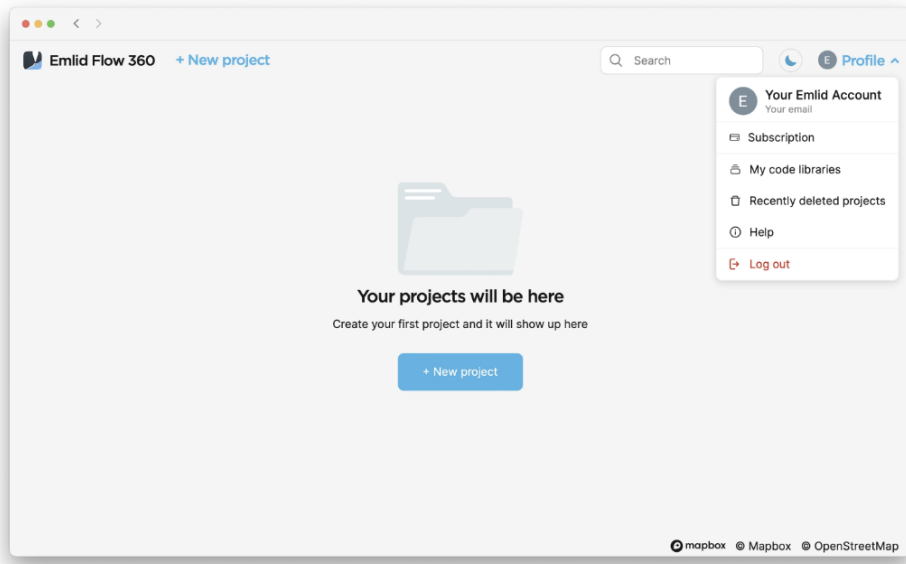
1. Go to [flow360.emlid.com](https://flow360.emlid.com).
2. Log in to your Emlid Account.



3. Click *Profile*.



4. Click *Subscription*.



5. Fill in your details. Tap *Continue*.

6. Fill in the payment details and subscribe. You'll be automatically redirected to the main screen.

Once you restart your subscription, code libraries, linework, and a satellite map will be again available for use.

If you need help, contact the Support team at [support@emlid.com](mailto:support@emlid.com).