Getting Started Guide to SMART

Welcome to SMART! This app is designed to help you avoid no-manure areas while you are in the field. It can also help you keep track of your manure applications. You can also upload these recorded applications to SnapMaps for further reference on the maps and to produce a list of applications that can be imported into SnapPlus. This guide will walk you through how to use all of SMART's features.

SMART is a product of the UW-Madison Soil Science Department. Partial support for this project was provided by the **Wisconsin Dairy Innovation Hub**.


Download the app for Apple users:

SMART is a free download in the App Store. Search for "SnapPlus Manure Tracker".

## Download the app to an Android device:

SMART is a free download in the Google Play Apps store. Search for "SMART UW madison manure snapplus".

Now that you've downloaded the app, let's go over the set-up process:

Upon opening the app for the first time, you should see a message asking for access to your location. You should choose "Allow While Using App" for the app to be able to access location at any time for optimum performance. (Android users may not see this until they go to the map screen for the first time)
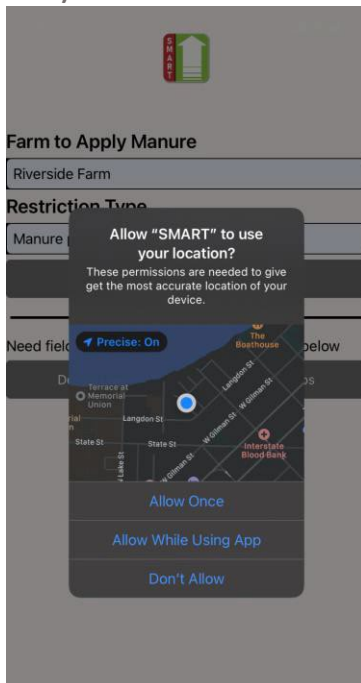
Every time you open SMART, there will be a Location Disclosure statement that will inform you under what circumstances the app will be using location services. You must select OK to use SMART.
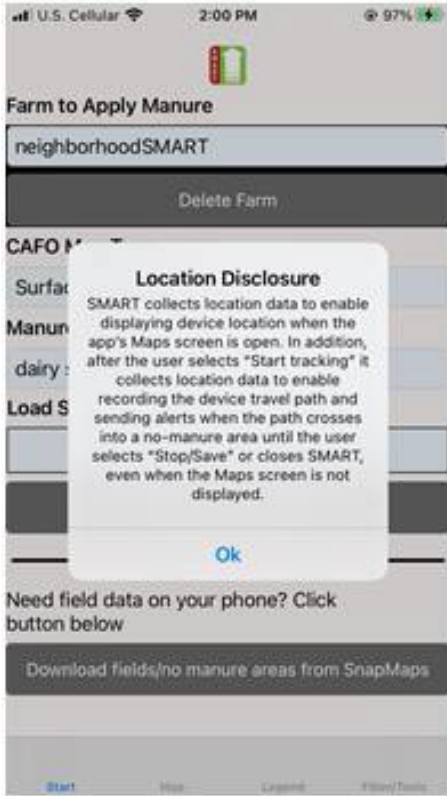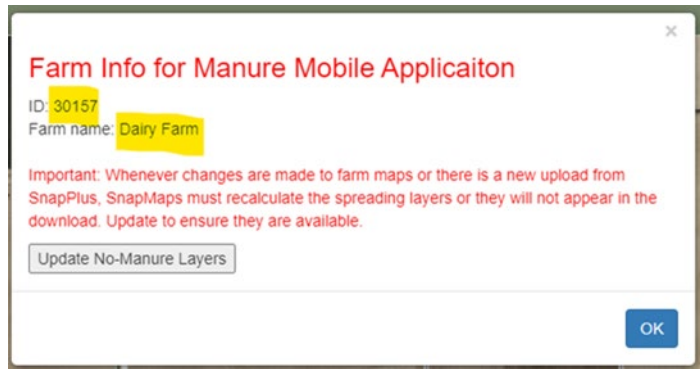

Before you go into the field
To use the App, you will need to download the SnapMaps field boundaries and no-manure areas for a farm before you go into the field.

Step 1. **Get Farm ID and Farm Name from SnapMaps.**
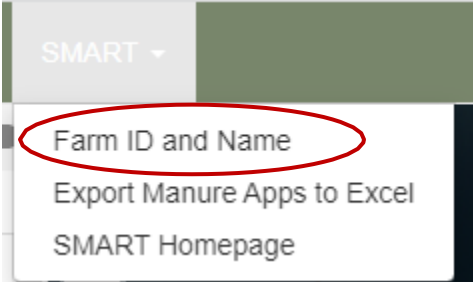
Open the farm in SnapPlus and use the SnapMaps tab to go to the SnapMaps website.

Farm ID and Name can be found under SMART in the menu bar along the top.

The needed information is the **ID** and the **Farm name**.

While this box is open, it's a good idea to select the **Update No-Manure Layers** button. Whenever there is an upload or edit to a farm in SnapMaps, the no manure layers need to be recalculated to be displayed. Pushing this button ensures they will be downloaded correctly. Note that the update can take some time for very large farms.

Step. 2. Download field boundaries and no-manure areas.

You will need to have your mobile device connected to the internet.

Click on **Download field/restrictions from SnapMaps**

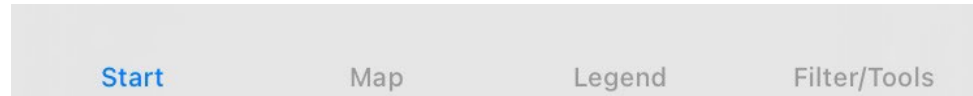Enter the **Farm ID** and **Farm Name** in the text boxes and select **Download**.

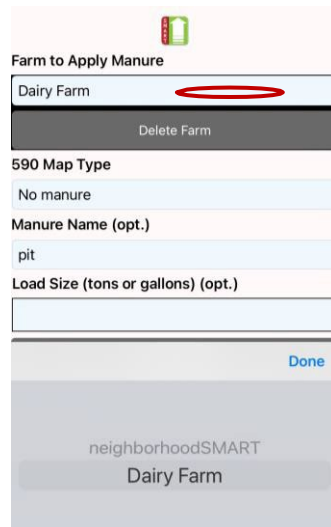When you get the Alert that download is complete, click **OK**

Using SMART

You can navigate between the four SMART screens using the legend across the bottom of the screens.

Start   Map   Legend   Filter/Tools
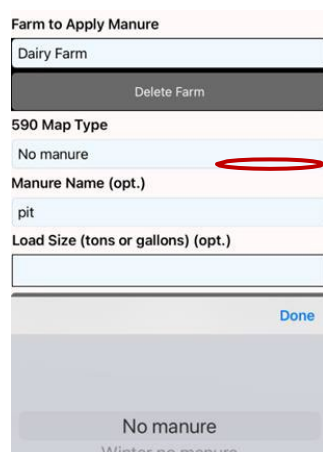
Starting off in the field with the START screen

Before you start applying, you will need to make sure the correct farm and map type are selected on the Start screen.

You can choose the farm by clicking in the in the **Farm to Apply Manure** box.

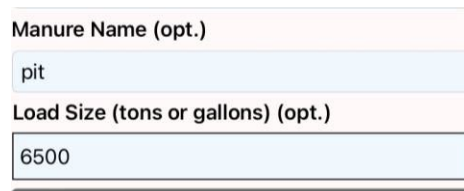The list of farms downloaded to this device will then be displayed in the lower part of the screen.

Select the one you want and click **Done**.

Click in the **Map Type** box to get the list of map types for the farm to display in the lower part of the screen.

If the farm is a permitted **CAFO,** the map layers will **be Surface (100 ft waterway buffer)**, **Incorporated/Inj. (25 ft waterway buffer),** and **Winter**. Select the Surface layer if manure is unincorporated and the Incorporated/Injected layer if manure is not left on the surface. The Winter layer is for use when applying solid manure to frozen and snow-covered soils during the months when this is allowed (not February or March).

For non-CAFO farms (i.e. **590 Farms**), the types of maps will be **No Manure** and **Winter no manure**.

Optional information: When the field boundaries and no-manure areas are brought in from SnapMaps, the names of all manures used in the SnapPlus nutrient management plan for the current SnapMaps year are also downloaded. If no manures are planned for the current year, this cell will be blank. If you want to use SMART for keeping application records for later use in SnapPlus, select the appropriate manure type from the **Manure Name** list and type in the **Load Size**, which is the amount of manure applied in one load.

Now SMART is ready to track applications on the **Map screen**.

In the field with the MAP screen
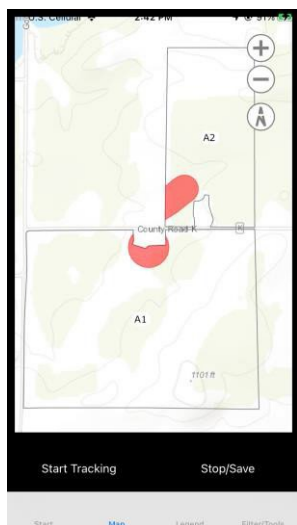
The Map screen will show the field boundaries and no-manure areas for all fields on the farm.

Areas where manure should not be spread will be red on the map*. Trouble-shooting: If you see that there are no red areas, even for the No winter manure map, it likely means that the maps were not updated at the time you downloaded. See above - Step. 1 under **Before you go into the field**.*

If you are in a location where your device can get data, the fields will be displayed with a background map as shown here. If you are outside of your device's data range, the field boundaries and no-manure areas will appear on your screen without a background map, though the application tracking features In SMART will continue to work.
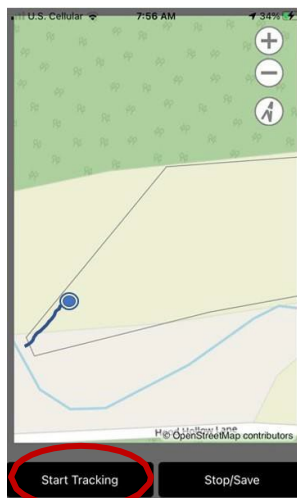
When you are in the field and ready to go, the map should open with a blue dot indication your location. Zoom and pan with your fingers to find the correct field on the map if it's not already shown on the screen.

Click on **Start Tracking** as you begin applying. The blue dot will move and a blue line will form to trace the path where you have already spread. When a load application is complete, select **Stop/Save**. Select Start Tracking again when you begin to apply the next load.

If you will be using SMART for record keeping, be careful not to cross field boundaries without stopping and then restarting again in the new field. If a partial load is applied in a field, the Load Size, if used, will need to be adjusted later in the records to account for the lower amount spread.

If you spread into a no-manure area, a red band will appear around the screen and the device will vibrate (If the vibration function is turned on). The red band and vibration will stop when you leave the no-manure area.

One thing to note is that moving your device up and down (as you would happen if you put it in and out of your shirt pocket) will make the spread pattern line be wigglier.

When you select **Stop/Save,** the blue application line turns green to let you know it has been saved. These application paths will continue to be displayed on the Map screen until you filter them out or delete them on the **Filter/Tools** screen.

# Managing application records on the Filter/Tools screen
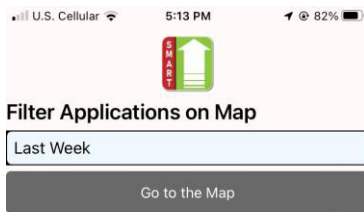
You can remove applications from the map without deleting them altogether by clicking in the text box under **Filter Applications on Map**.
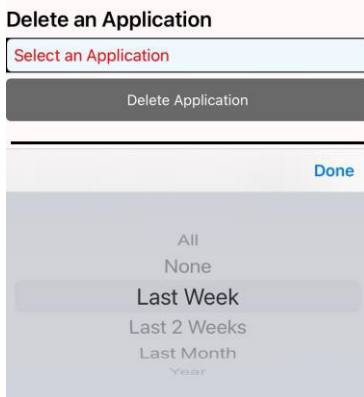
This will bring up a list in the lower part of the screen for selecting the group of applications to display. You can choose to show applications from **Last week**, **Last 2 Weeks**, **Last month**, the last **Year**, **All**, or None. Click **Done** when you have made your selection.

You can now **Go to the Map** to see the filtered applications.
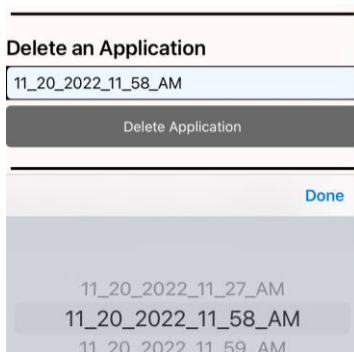
Permanently remove an application record from your device by clicking on the textbox under **Delete an Application**. A list of applications identified by date and time will appear in the lower part of the screen. Select the one you want to delete, click **Done**, and then **Delete Application**.

An alert will appear to verify that you want to delete the application. Select **Continue** to delete.
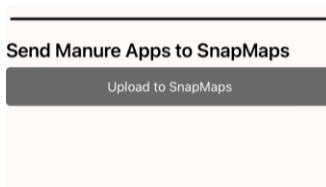
Optional: Click on **Upload to SnapMaps** to upload all the applications saved for this farm to SnapMaps. An alert notice will tell you when the upload is complete. Do this f you want to see manure applications in SnapMaps or create a manure records import sheet for SnapPlus.

Using application records In Snap Maps

To see the application records in SnapMaps, open the SnapMaps website for the farm and make sure "Manure Application" is checked in the legend.
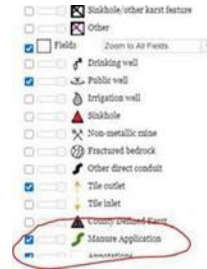
The uploaded applications should look something like this.

Manure applications can be deleted from SnapMaps using **Drawing tools> Delete features>Manure application.** With this tool, you can delete applications one-by-one or remove all of them at once by drawing a box around the farm on the map.

Additional manure application mapping features: You can add labels to your applications using the annotation feature under Drawing Tools > Draw a feature > Annotation . Or you can export your manure application data to a shapefile by going to Drawing Tools > Export to Shapefile > Manure Applications. The shapefile will include the application path, date, manure type, spreader width, and manure amount.

Creating a Manure Records Import Sheet for SnapPlus

The manure application information SMART sends to SnapMaps can be used to create a manure-application records import spreadsheet for SnapPlus.
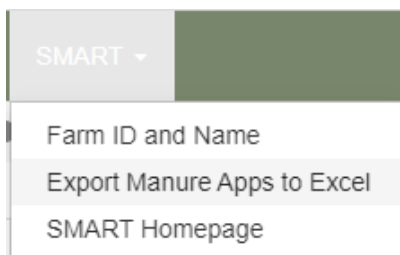
The first step is to go the **SMART** menu and select **Export Manure Apps to Excel.**

Then a box will pop up to allow you to select the range of application dates you want to include in the records.

Once you have entered the start and end dates and selected Done, SnapMaps will generate a spreadsheet that lists all the applications during that time.

Application Date	Driver	Field ID	Acres Applied	Manure/Process Wastewater Source	Spreader Volume	Loads	Spreader Rate (units/ac	Soil Conditio ns*	Weather ** During Applicati	Applicati on (Inject/In
12/18/2022		3		dairy slurry	5000	1				
12/18/2022		3		dairy slurry	5000	1				

If you entered the spreader Manure Name and Load size before starting tracking in the field, these will be in the resulting records. If not, the spreadsheet will contain the date and field id for each load. This spreadsheet can be imported into the SnapPlus Records/Daily Log if additional information is added.

Editing the spreadsheet for SnapPlus import.
- We recommend first combining all loads with the same date of application, manure type and load size into one row.
- For farms that aren't CAFOs, the only information needed to be added for the import to records to what is in the spreadsheet shown above is Acres Applied. This can be the Cropping acres for the field if the whole field was covered or it can be part of the field.
- For CAFOs, all the cells in every row in the spreadsheet need to contain some information before it can be imported. An alternative to importing is to use the spreadsheet as a reference and entering the applications directly on the Daily Logs screen.

For more information on using application records to update SnapPlus, refer to How to Use the Daily Log/Records Screen (wisc.edu)