

Preparation	
When making and using maps for your spray applications it is best to start with a naming structure that you and your spray technicians are familiar with. You can help us by providing the names you use for each of your target spray zones.	
	Fill out the Customer Spray Zone form to help us identify your spray application areas. (See explanation below)
Primary Spray Zones	Every new customer who purchases a Turflux GPS sprayer conversion gets their initial spray maps created by Turflux. This includes your primary spray zones, which are typically Greens, Approaches, Fairways, and Tees
Additional Spray Zones	Based on the topography of your property and the complexity of your spray areas we will typically have time to map an additional 2 or 3 spray zones to fit in with your spray program
Cut-Out Zones	Part of your initial setup includes a Rough Map boundary, created with our map editing software, where the fine turf is cut out as “no spray” zones. We can also map additional cut out zones, like bunkers, pavement, ponds, etc., to cut out of your final Rough Map.
Depending on the Primary and Additional Spray Zones you choose to include in your initial maps, we may also be able to include maps of some Cut-Out Zones. Some customers have chosen to purchase or rent a Handheld Mapping Kit to create very detailed maps in addition to their initial maps. Also, Turflux is also available to do additional mapping, charged on a daily basis.	
Border Accuracy	This is a topic to discuss during our initial map planning when we arrive on site. Our goal is to create your final maps with consistent lines between spray zones. (For example, the border between a fairway and an approach should be shared by the same line). We want to be efficient and accurate in how we map and how we edit those transitions.
If you choose to assist in mapping or plan to rent or purchase a DA2 handheld Kit to do some additional mapping, please review the following Best Practices to help you produce top quality maps and reduce the time and cost of map editing.	

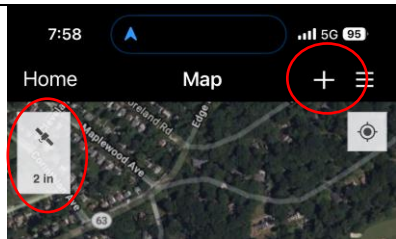
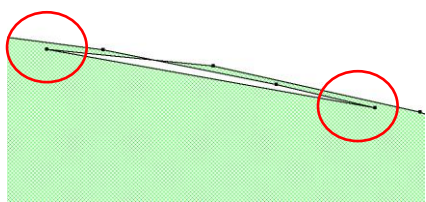
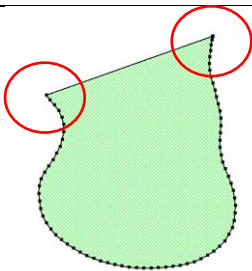
Mapping Best Practices

Consistency	
Hold the DA2 Hand Held level	The handheld DA2 mapping unit is held approximately 3 ft. above the ground while you are mapping. Tilting the angle of the unit may have a slight effect on the position accuracy. It is also best to hold the antenna with a “full view” of the sky to maintain a connection to all available satellites.
Hold the DA2 on the outside of the boundary (based on your walking direction)	It is best to walk in a direction with the DA2 unit on the outside of the area you are mapping. That way you will most likely be able to avoid walking through obstacles. (e.g. walk clockwise if you prefer to hold the DA2 in your left hand)
Hold the DA2 in the same hand every time	This is more of a comfort issue and can help with consistency. The hand you choose will usually depend on which hand is most comfortable for you to hold your phone for data collection. Then use the other hand for the DA2 antenna.
How a DA2 makes polygons (your individual boundaries)	
Think “mapping points”	The standard settings, when you are making a continuous boundary (man walking icon) with your DA2, is making a point every 1 second.
Lines between points	Each time your DA2 makes a point, either with a single point (pin drop icon) or every one second with continuous mapping (man walking icon), it also makes a line between each point.
Mapping curves	It is best to slow down on curves while mapping in continuous mode (man walking icon). This will make more points than going faster, making the curves more rounded. If you are making a point every one second on a circle, it may look more like a Stop Sign if you walk too fast. (see Slowly on Curves example below)
Mapping straight lines	If you are mapping a long straight edge of a boundary, it is best and most accurate to just map a point (pin drop icon) at each end of the long straight edge. It is also better to make the straight line first as your first two points and then map the remaining curved area. Rectangles can be made by just mapping points (pin drop icon)

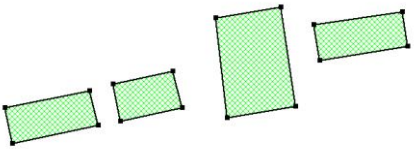
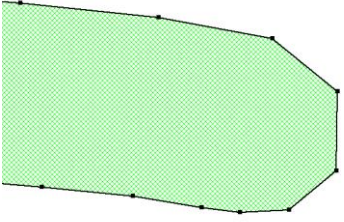
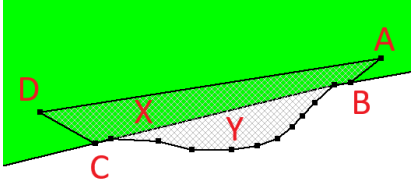
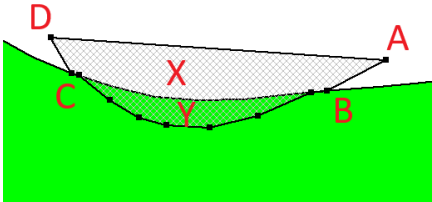
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	on each corner (see Straight Line in examples below)
Mapping modifications	If you are looking to modify an existing boundary, it may be simpler to map an “add-on” or “cut-out” portion for an existing boundary rather than re-map the entire boundary. Turflux can edit your original boundary, using the newly created “add-on” or “cut-out”. See examples below.
While mapping	
Start (recommendations)	It is best to start every new map on or next to a landmark, such as a sprinkler head, tee marker, etc. That way you will recognize where you started as you come around and complete the map zone at the end. (Use a flag if necessary) It is also best, if possible, to start on a straight edge of the area to be mapped. (Because when you complete the mapped area the first and last point will be connected by a straight line)
Start mapping a boundary	It is best to start every new map by making a point (pin drop icon), and Then proceed with continuous mapping (man walking icon)
Finishing a mapping boundary	Stop a little short of getting back to your starting point. This will avoid extra points and lines occurring around your start/stop point. (See Stopping error below)
Steps at the end	When you get back to near your first point: Touch the ‘man walking’ icon to stop continuous mapping. You can move a little closer to your start point and make one more point (pin drop icon), if you prefer Then hit the check mark if you want to complete the polygon and save what you mapped.
Errors while mapping	If you make an error while mapping do not save the map. Discard what you have made and start over. This is important so you don’t save bad maps into your Trimble account and need to delete them later
Between mapping boundary	If you find that the accuracy takes a while to “lock in” each time you start a new boundary, it might help to keep the DA2

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	antenna facing the sky between boundaries, to maintain its connection to the satellites.
Accuracy	
Verify RTK	As part of your Trimble Catalyst and TerraFlex app setup there are instructions for connecting to an RTK correction source. Be sure you do not start mapping until RTK (or RTX) is locked in.
Accuracy notice	Each time you start to map a new boundary there will be an approximate accuracy distance shown on your phone. You may want to wait if the accuracy is showing more than 3 inches to see if you can lock into better accuracy. (See Accuracy example below)
Maintaining accuracy	In some locations, if you keep the DA2 facing the sky while travelling to your next area, you may retain better accuracy for starting the next map. Otherwise, you may need to wait a little bit for your accuracy to improve before starting your next boundary.
Examples	
	Accuracy - Before hitting the plus sign (+) to start a new map, check the distance displayed under the satellite for estimated accuracy. (under 3 inches is best)
	Stopping Error – If you continue past the starting point, before stopping your mapping process, the connection back to your starting point can leave gaps and create inaccuracies.
	Straight Line – When making a straight line, it is best to map one point (pin drop icon) on one end of the line and then go to the other end of the line and make another point (pin drop icon), then proceed with curved border.

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	Rectangles – Some areas, like tees, can be rectangular. If that is the case, it is best to map each corner as a point (pin drop icon) to make the map. (Note: you need to make all 4 corners before completing the boundary)
	Border matching – Based on your priorities we will use the edge of one boundary to cut off the overlap of another boundary during editing. This gives us the most accurate borders between spray areas. Map the edge of the higher priority boundary accurately and then make a slight overlap when mapping the lower priority boundary. (The overlap is important because leaving a gap during mapping becomes more time consuming to edit later.)
	Slowly on curves – Proceed slowly on curves keeping in mind that it makes a point every one second. Mapping quickly on curves will result in choppy borders.
	Mapping an Add-On (area Y) – To map an add-on area, start mapping somewhere inside the original boundary (point A) and cross over into the “add-on” area (point B), taking care to accurately map the new boundary line, between B and C. Cross back into the existing boundary at the end of the add-on area (point C) continuing to map into the original boundary far enough to connect back to your starting point, fully overlapping the original boundary (area X).
	Mapping an Cut-Out (area Y) – To map a cut-out area, start mapping somewhere outside the original boundary (point A) and cross over into the “cut-out” area (point B), taking care to accurately map the new boundary line between B and C. Cross back out of the existing boundary at the end of the cut-out area (point C) continuing to map outside the original boundary far enough to connect back to your starting point, fully overlapping outside the original boundary (area X).

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Terminology	
Spray Zones	Spray Zones are basically an area you would choose to spray in one application, such All Greens or All Fairways. Depending on your system, the manufacturer may refer to these as: Ag Leader – Fields Raven Viper – Scout Groups Trimble – Map Templates
Boundaries	Boundaries are individual mapped areas that make up a spray zone. They can also be referred to as: Polygons