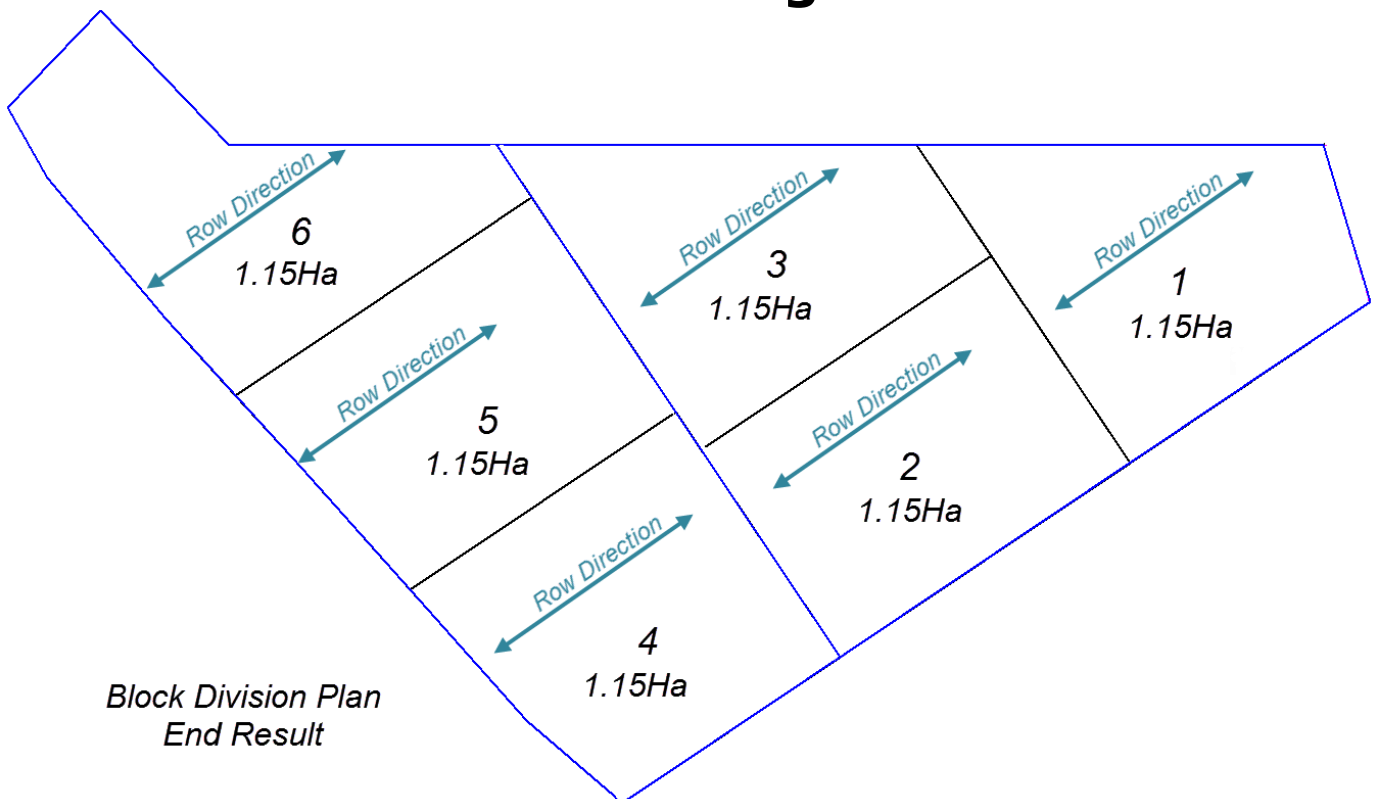


IrriMaker – Step by step – PART 1

More and more people are starting to use this amazingly diverse and powerful package and it has come to that point that I have decided to write some articles that will guide new users (and some experienced) through functions that will hopefully get them to use IrriMaker more efficiently. Here are some of the topics we will cover in the coming months:

1. Planning
2. Block division
3. Database
4. Fill Laterals
5. Design Blocks
6. Place valves (pivots, demand valves etc.)
7. Place Mainline
8. Scheduling/shifts
9. Design Mainline
10. Pivot functions

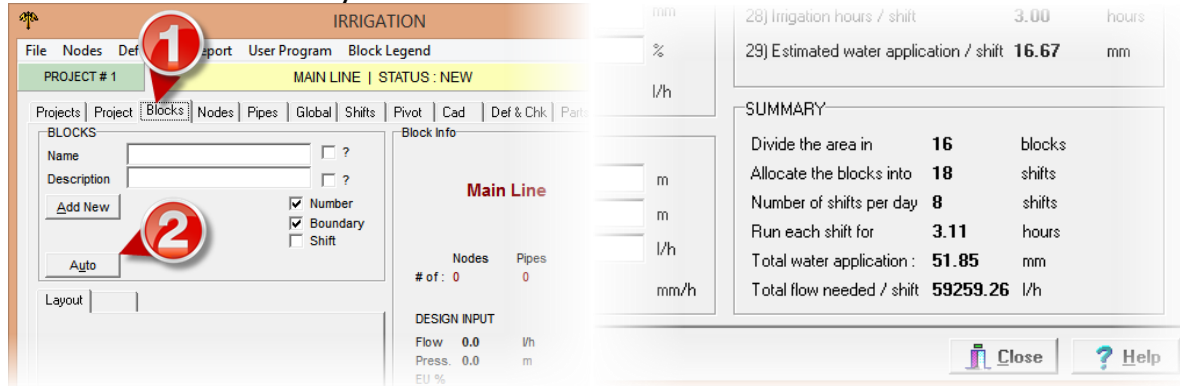
Planning



IrriMaker assumes that the user have some knowledge of irrigation design principals and is therefore only a tool to assist the irrigation designer to perform his or her work. The program do however provide some useful calculators to assist the designer in his work, be it to calculate a simple pipe diameter based on maximum

velocity and flow or to plan your scheduling or number of blocks based on available flow.

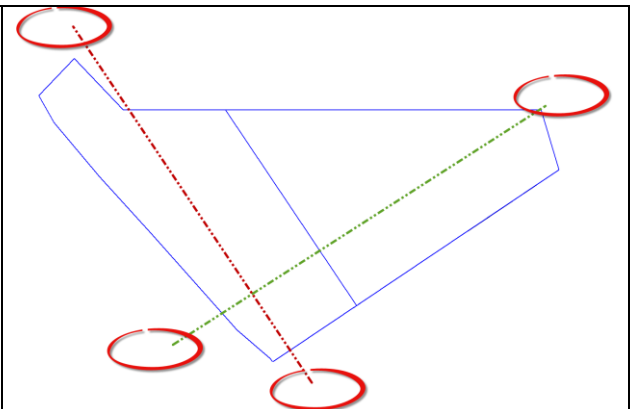
On the **Blocks** page (1), Click on **Auto** (2) look for the page "**General Calculations**". This will provide you with a tool to determine the number of blocks that an area must be divided into, the number of shifts per day, how long each shift should run and finally how much water will be used.



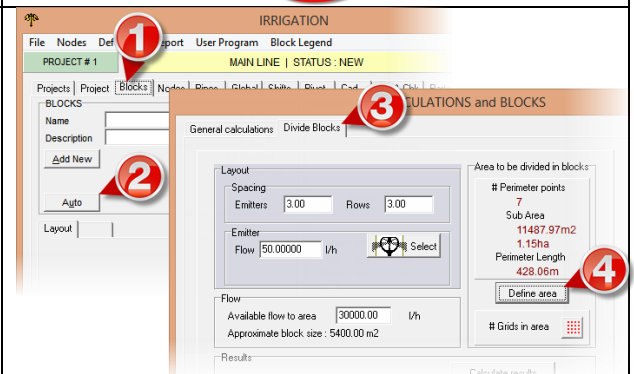
Block Division

Once you have determined the number of blocks that is required, a sensible block division plan may be drawn up. IrriMaker can assist you with this process by subdividing an area into the correct block sizes. Each area to be divided will be unique so this function requires some planning and a lot of common sense.

Step 1: It is advisable to use CAD and draw some lines to indicate the area to be divided. Now draw two CAD lines perpendicular to the proposed division direction. Notice how the two lines are longer than the full extent of the total area to be divided. (use **CAD>Line>Add** on the main screen... to draw the lines)



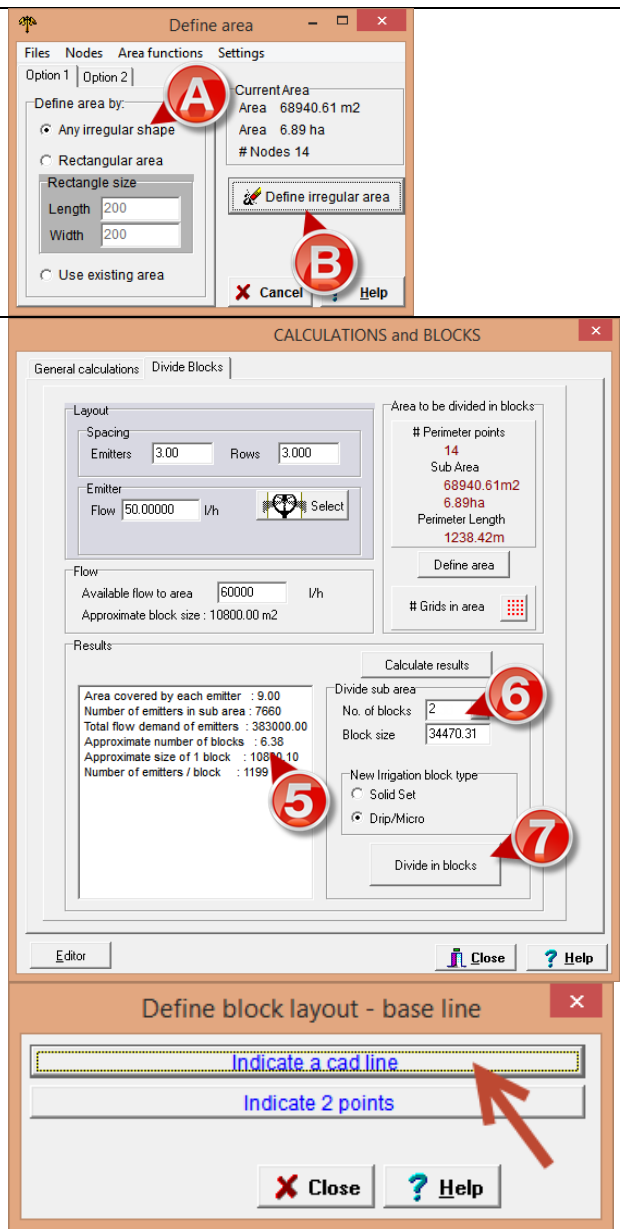
Step 2: We will use IrriMaker to help us further. On **Blocks > Auto > Divide Blocks** (3) use the **Define Area** (4) button to track the outside of the total area to be sub-divided. This will give IrriMaker the area size and location to be divided. Make sure "**Any irregular shape**" (A) is selected then use the "**Define Irregular area**" button (B) to start defining the area (or if you do not see this dialog it is OK simply, start by indicating your area immediately)



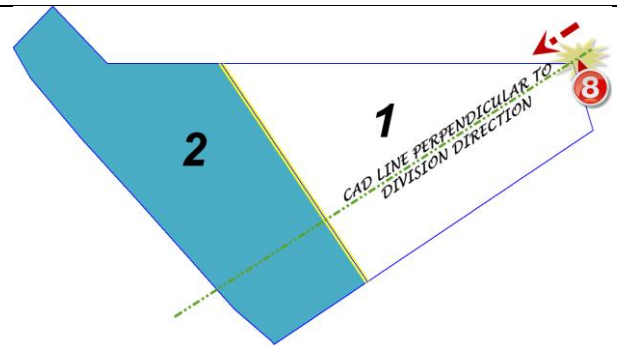
Tip: Use cursor snap modes to draw the area accurately on the indicated CAD. To activate

snap modes, press the **SPACE** bar on your keyboard, select the appropriate snap mode based on the entities available to snap to on screen, then define the area.

Step 3: Once that is done we will do a simple calculation and divide the area into two evenly sized areas which will be subdivided later. This will create **2** irrigation blocks (which we will divide into smaller sizes). When you fill in the emitter & row spacing and required and available flows, the program will calculate how to divide the area into a number (5) of even sized blocks. In this case 6 blocks of +-1.15Ha each. Remember, we are using this step to calculate the first sub-division, so I will override the 6 blocks that are suggested by entering the no of blocks that I want (6) at this stage it is 2 blocks 3.45Ha each. Select **"Divide in blocks"** (7), a dialog will pop up and this is where we will use the CAD lines we added at the start to indicate the division direction.

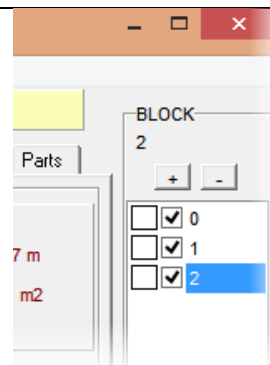


Select the first CAD line (8) at the start of the line. The line you select at this stage is the line that is perpendicular to the division direction. Notice when you click the line how IrriMaker divide the area into two evenly sized blocks (BLOCK 1,2). **Accept** this layout when prompted.

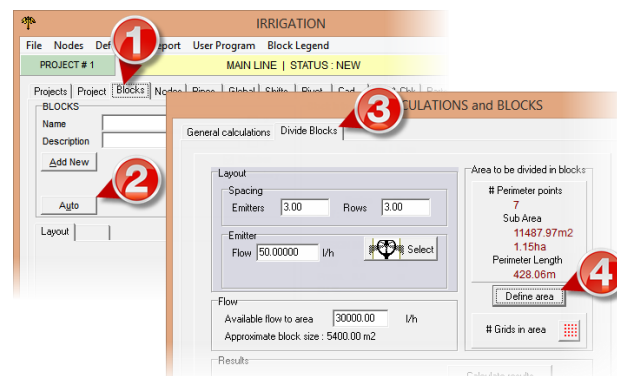


These two blocks will also be temporarily placed into the IrriMaker blocks section of the program as irrigation blocks 1 and 2.

In the following steps we will divide these blocks into smaller sections by repeating most of this step.

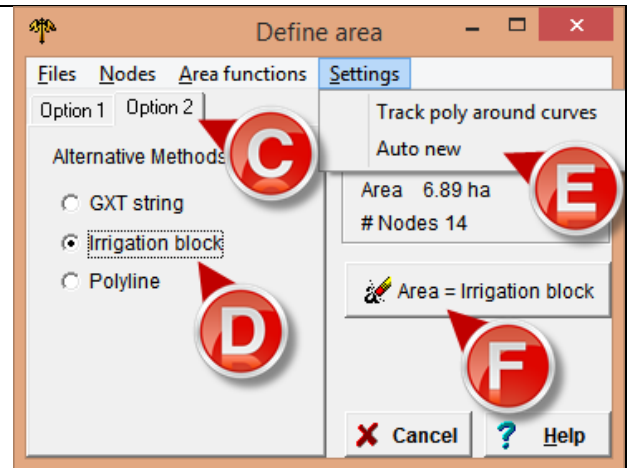


Step 4: In Step 2 we used the “**Define Irregular area**” button. We currently have 2 blocks defined so this time round we will not track the sub area by hand but use an existing block as the sub area selector. This may speed things up a bit especially if the sub area is a complicated shape with lots of bend points. Let’s start: Click **Define Area** (4),



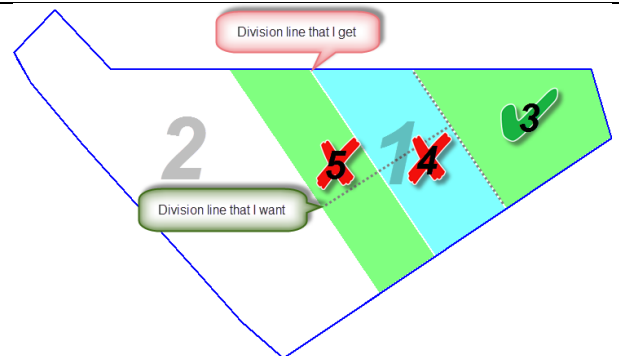
(if you do not see the **Define Area** dialog at this stage, right click once to load it) then select **Option 2** (C), Select the Method: **"Irrigation block"** (D), click **"Area=Irrigation Block"** (F) and click on the first block that you want to subdivide in this case I will choose BLOCK 1.

Tip: To load the **Define Area** dialog every time you define a new area you should disable the **Settings > Auto New** (E) option.

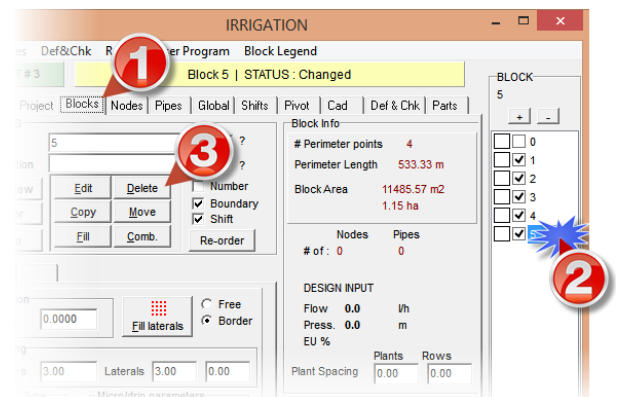


When the block is indicated, accept it. IrriMaker will then display the same dialog as in **Step 3** above **"CALCULATIONS and BLOCKS"**. Complete the dialog by dividing the area into three blocks (BLOCK 3,4,5).

Because of the odd shape of the sub area I will only need the first block (BLOCK 3) based on it's division direction. The second and third blocks (BLOCK 4,5) in this sub-division will be placed incorrect and that is because of the CAD line I use to apply the division. I will delete BLOCK 4 & 5 and re-divide that section using the second CAD line later.

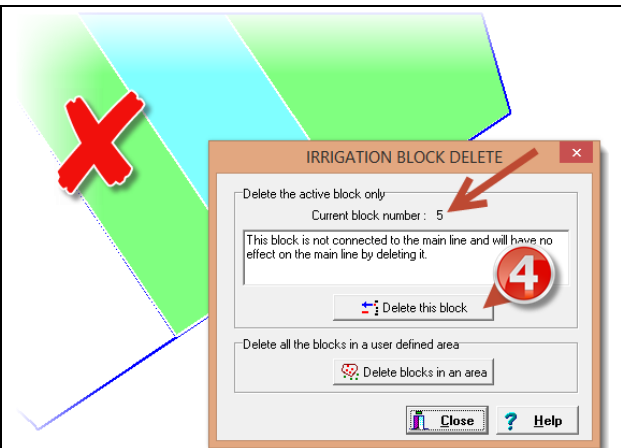


Step 5: To delete unused (incorrect) blocks, in the main IrriMaker page click the **Blocks** tab (1), select the block using the block selector, in this case BLOCK 5 (2) then click the **Delete** (3) button.

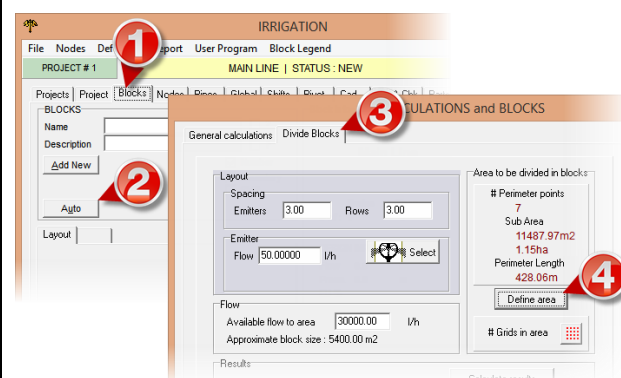


Click “**Delete this block**” (4) and repeat the step for BLOCK 4.

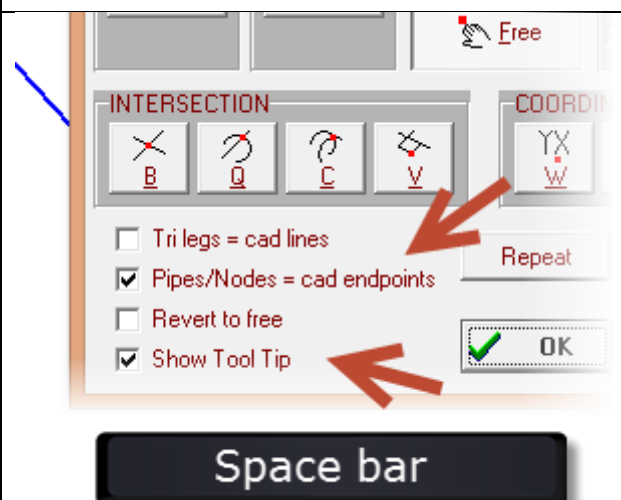
Tip: If you are unsure of which block is which do the following: on screen you can **double click** any block in the block selector (2) to flash it on screen.



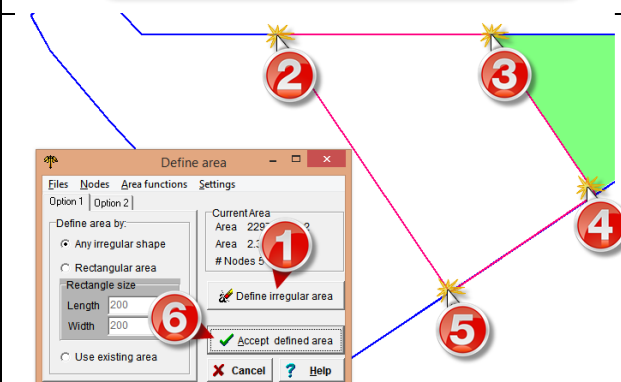
Step 6: Now we can redo BLOCK 4 & 5 by dividing that section using the other CAD line as baseline. On **Blocks > Auto > Divide Blocks** (3) use the **Define Area** (4) button then define the sub area using **Option 1 - “Define Irregular area”** button.



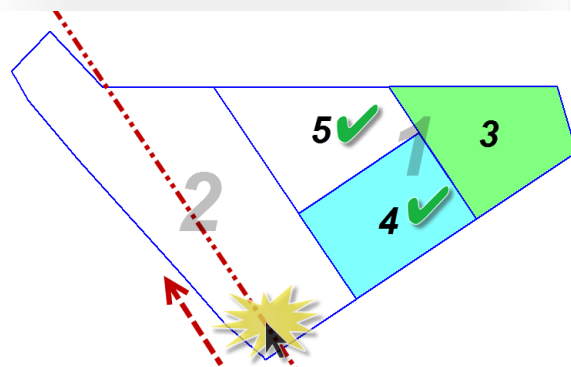
Tip: At this stage I strongly advise you to activate snap modes (press SPACE BAR), in this case the line endpoint snap mode is sufficient, but also activate the “**Show tooltip**” and “**Pipes/Nodes = cad lines**” options for a useful screen tip.



Define the area and accept it

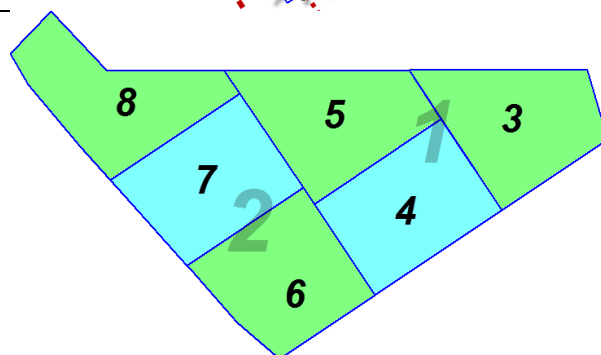


Divide the area into 2 blocks by indicating the second CAD line.



Step 7: Repeat **Step 4**, but this time divide BLOCK 2 into 3 blocks by indicating the division CAD line 2.

Tip: You will notice that the block division sometimes omit the last block and does not add it to the IrriMaker Block selector. If this happen, you need to Add the block manually using **Blocks >Add new** on the main IrriMaker page.



Step 8: In this step we will delete the redundant sub area blocks (BLOCK 1 & 2). Select BLOCK 1 in the blocks selector (1) and delete (2) it. This will re-number all the blocks based on their position in the blocks selector e.g. 2 will become 1, 3 will become 2 etc. When this happens, the **Name** (4) will not necessarily correspond with the IrriMaker block number. You may want to edit the Name in such cases. You may also want to **Re-order** (3) some of the blocks in the blocks selector so that the block numbering make more sense.

