

2D Polling Diagrams: User Guide

URI VOTES



Engineering for Democracy

Recommendations that will lead to future sustainable practices and tools utilized to overcome new and future obstacles in voting and election processes.

The idea of democracy is simple.
Execution is complicated.

Tool: 2D Polling Setup Diagrams

Purpose of Tool:

This tool creates accurate to-scale floor plans of polling locations to assist polling setup teams. These floor plans display necessary information, such as the location of voting equipment and electrical outlets, as well as any special requirements specific to the polling location. These 2D floor plans may be used to prepare voter locations for upcoming elections and include rendered images of what the finished voter area should look like.

Required Inputs:

This tool requires specific jurisdiction information (e.g., jurisdiction number, city/town name, polling place address, etc.), physical dimensions of the room in which voting will take place, the location of entrances, and the locations of electrical outlets. Optionally, historic information regarding past polling place adjustments can be included to inform setup teams of potential areas that need attention. To generate the rendered images of the location, 3D models of the polling place must be made prior to the construction of the 2D floor plans.

Each marker within the 3D model must be grouped within its own layer. For example, all electrical markers, such as outlets and extension cord markers, must be placed within the “Electrical” layer. This helps the user toggle markers on and off as needed without having to re-input the information (for help, refer to the 3D Model User Guideline). Objects within the 2D floor plan cannot be moved within the Layout program. If an object is misplaced, the user must re-open the 3D model file, change its location and resave it. Then to update the existing floor plan, right-click the image in the Layout program and select “Update Model Reference”.

Instructions for Use:

To input information into this tool, Sketchup and Sketchup Layout must both be installed onto the computer. The 2D layout file will have its own unique extension titled “.layout,” differentiating it from the 3D model file, which has the extension “.skp”.

To create the polling diagram, first:

- Open the 3D model file of the voter environment.
- Under the styles tab in Sketchup, select “Construction Documentation Style”.
- Position the model in four different orientations and click the “+” button under the “scenes” tab to take images of the voter area.
- Save the file, then select the “Send to LayOut” button located under the file tab on the top left side of the screen.
- This will open a new window. Select the provided template titled “Polling Diagram Template” (see linked video).
- To correctly align the image: under the “Sketchup Model” tab on the right side of the window, select the button “Ortho.” For the “Standard Views” option select “Top.”
- To adjust the scale, first, rotate the image 90 degrees clockwise or counterclockwise depending on the desired orientation.

- Second, align the left side of the image with the left border, then use the arrows on the right of the blue box to expand the image until it reaches the right side of the border. If the image is still misaligned it can be manually adjusted by left-clicking, holding on the image, and moving it within the borders. The arrow keys on the keyboard may also be used for precise adjustments of the image.
- Enter the necessary information regarding the jurisdiction into the provided information boxes by double-clicking on the box. Input asset markers into the diagram (circles or lines). To format them, locate the layers tab on the right side of the window. The “default” layer will initially be selected. To change it, click on the desired layer (a pencil marker will appear on the selected layer).
- Start by right-clicking on the floor plan, and under the “Move to Layer” option select “Voter Area”.
- Select the “Electrical” layer and place red circle markers indicating all the electrical outlets in the floorplan. Extension cord markers must also be placed using the line tool and connected to essential components such as the ballot scanner.
- Select the “Voter Path” layer, indicate the intended voter path using the line tool, and label the entrance/exit doors by using the text box tool and clicking on the desired location of the text.
- Select the “Staff” layer, and indicate and label the positions of the staff within the area using the text box tool.
- To provide 3D images of the voter environment on the diagram, select the “Duplicate” button under the “Pages” tab.
- On the Duplicate page, move the current image into the “3D View” layer. To provide different images of the completed area, right-click on the floor plan and select the desired scene under the “Scenes” option. More images of scenes can be added by copying and pasting the current image and changing it to another scene. These images may be laid out in any desired format.
- Once the diagram has been completed, save the file. Under the “File” tab, click “export to PDF” to convert the diagram into an easily shareable PDF document. The diagram template is formatted to be printed onto legal-size paper (8.5 by 14 inches).

Definition and Explanations of Outputs:

These tools create accurate, to-scale 2D floor plans of voter areas. Utilizing the LayOut program, they can be exported into multiple document types. Templates can also be easily updated without any change to the floor plan itself. This results in an easily shareable floor plan that can be used to understand the layout of a polling location. By providing poll setup teams with clear and accurate representations of voter areas, showing essential assets such as voting equipment, poll setup will be more efficient.

Feedback Section:

Please contact uri.sis.lab@gmail.com with any questions, concerns, or feedback. We will respond as quickly as possible to help resolve any problems.