

PLET Student Guide

STEP 1 - Set up an account

- Access the login page, click on Non-EPA Employee Login, and Create an Account:
<https://ordspub.epa.gov/ords/grts/f?p=112:5500>

The screenshot shows the 'Pollutant Load Estimation Tool (PLET) - Login' page. On the left, there is a logo for the United States Environmental Protection Agency and two buttons: 'EPA Employee Login' and 'Non-EPA Employee Login'. Below these buttons is a note: 'NOTE: Non-EPA users MUST register with LOGIN.GOV. For existing non-EPA users, to retrieve previously created models you MUST use the same email address in LOGIN.GOV as was used to register for PLET.' At the bottom left are links for 'Login Help', 'Contact PLET Helpdesk', and 'Forgot LOGIN.GOV Password'. On the right, the 'Create an account for new users' section is visible. It includes a text input field for 'Enter your email address', a section for 'Select your email language preference' with radio buttons for 'English (default)', 'Español', 'Français', and '中文 (简体)', and a checkbox for 'I read and accept the Login.gov Rules of Use'. A blue 'Submit' button is at the bottom right of this section.

- You'll need to check your email to confirm your address and finalize creating your account.
- You'll also need to set up a means to verify your account. A list of options are available including text messaging a code or using an authentication app.

STEP 2 - Create your model

- Access the PLET model interface and click the Create a New Model blue button in the upper right hand corner.
- In the Title box type "Storm Patrol" and select Hawai'i as the State in the drop down.
- A Primary Watershed drop down will appear.
 - Select from the list or use the Select HUC12 to use a map to find and select the watershed you want to work with.
 - For the example activity that follows, we will be using the "200600000403 Waikele Stream" watershed.
- Click the blue Create Model button.

STEP 3 - Add your campus/project site as a watershed

- Click the grey Add/ Edit Watersheds button in the upper left hand corner.
- Specify the area to be modeled by manually creating a watershed using the [Custom Watershed].

- Click on the field where “Custom Watershed” appears in the Watershed column and rename the model “Storm Patrol - (School Initials or other site identifier)” (example: Storm Patrol - HTA or Storm Patrol - WHS)
- In the field under the Urban column for your row with your custom watershed, double click and add in the acres for your site. For our example activity enter 25.
- For the Rainfall, Rain Days, and Avg Rain columns, copy the data from your primary watershed that should be in the row below (for example activity this is Waikele Stream). If you have data specific to your site, this is where you can enter the information.
- Click the blue Save/Close button.
- You’ll now see both the primary and custom secondary watersheds in the list of watersheds.
- In Section 9 of the Inputs sheets, change the percentage of urban land use distribution for your custom watershed (Storm Patrol - school initials) to 100% Institutional by double clicking each field and updating the data (0% for all but Institutional).

STEP 4 - Add best management practices (BMPs)

- Navigate to the Urban BMP Tool by clicking on the green button towards the top of the PLET model.
- A new window will open. In the Watershed dropdown, select your custom Storm Patrol watershed.
- In the Landuse section, select Institutional.
- In the Available LID/BMP drop down, select the BMP you want to assess. For the example activity, select Porous Pavement.
- In the BMP Drainage Area field, enter the total drainage area the BMP will treat. For the example activity, enter 3.75 acres.
- Click the blue Apply LID/BMP button.
- Scroll down to Captured Flow Volume and write down the gallons/year your BMP is capturing (it should be in the Institutional column on your custom watershed row)
- Scroll down to the next section, BMP Surface Area and write down the acres of BMP needed to treat your drainage area (recall that the example activity is treating 3.75 acres). Again, this should be in the Institutional column on the custom watershed row.
- Scroll up to the top and click on the grey Exit button.
- Your model will take a minute to refresh as it is calculating your loads with the new BMP applied.

STEP 5 - View the estimates of loads and load reductions in the Total Loads Module.

- Loads and load reductions are automatically generated and appear in the Total Loads Module. Click on the Total Loads tab (in between BMPs and Additional Reference Tables).
- Here you'll find the loads for both the primary and secondary custom watershed with and without the BMP that was applied.

NOTE: When looking at different BMPs using the Urban BMP Tool, be sure to click Reset All Urban BMPs prior to selecting the new BMP. The model will add on each of the BMPs selected until this is done and your load calculations for the individual BMPs will be incorrect.

ADVANCED

Instead of the Urban BMP Tool, try using the BMP Calculator. This more advanced calculator will allow you to set up BMPs in parallel, meaning run besides each other, or in sequence, meaning one can run into the other for additional treatment and potentially enhanced reductions.

To get familiar with how to set up a sequence of BMP, follow this activity:

STEP 1 - Setting up your calculator

In the Watershed drop-down at the top left of BMP Calculator, select your custom watershed.

In the Landuse drop-down menu, select urban.

STEP 2 - Creating and configuring nodes

Nodes are the BMPs and you'll be placing them on your "site" (the gridded area)

- Click the green Create Node button. A square box will appear on the grid.
- Click on the New Node box in the grid area.
- Use the side bar to configure your node:
 - In the Configuration Name, give your BMP set up a name. For an example activity enter BMPs in Sequence.
 - In Node name, enter Rainbarrel.
 - In the BMP Type drop-down, select Urban-LID*/Rain Barrel.
 - In area, enter 7.5.
 - Click the blue Save Node Changes button.

- Repeat the above steps but enter "Concrete Block Sidewalk" as the node name, select Urban - Concrete Grid Pavement from the BMP Type dropdown, and input 1.25 in the Area field.
- Repeat again entering "Porous Pavement" in the node name, selecting Urban-Porous Pavement in the dropdown, and inputting 3.75 in the Area field.
- A final repeat to create a node for an "Infiltration Trench" selecting Urban - Infiltration Trench in the drop down and inputting 5 in the Area field.

STEP 3 - Connect your nodes/BMPs in sequence

- Move your node boxes to be in order left to right.
- On the "Rain Barrel" node box, click and hold on the gray half circle on the right side of the box.
- A line will appear, while holding down the mouse click connect the line to the white half circle on the left side of the "Concrete Block Sidewalk" node box.
- Repeat to connect the "Concrete Block Sidewalk" to the "Porous Pavement and the "Porous Pavement" to the "Infiltration Trench".
- The final node box and a new pop up below the box will appear and be outlined in orange. The box below has the total of the BMP areas and the total reduction efficiencies to be calculated within the model.

STEP 4 - Save the configuration and apply it to your watershed

- Click the blue Save Calculator Configuration button at the top of the BMP Calculator.
- Click on the Configuration List tab at the top left of the calculator.
- Here, you should see the "BMPs in Sequence" listed in the Config Name column.
- Return to the BMP Editor tab and click on the white Exit/Cancel button next to the Create Node button.
- Back in your PLET dashboard, click on the BMPs tab in between the Inputs and Total Loads tabs.
- In the BMPs tab, click on the blue Add BMP button on the top right.
- In the pop up window, select your custom watershed from the dropdown in the Watershed field and User Defined in the dropdown Landuse field.
- Click the blue Add BMP button in the pop up window.
- In the blank field for the custom watershed BMPs column, double click and then select the BMPs in Sequence configuration from the dropdown.
- Double click the "% Area BMP Applied" field and enter 70 (this is the total area we entered into the configuration, 17.5 acres, divided by the total campus area of 25 acres).

STEP 5 - Calculate and review the load reductions of your BMP configuration

- Loads and load reductions are automatically generated and appear in the Total Loads Module. Click on the Total Loads tab (in between BMPs and Additional Reference Tables).
- Here you'll find the loads for both the primary and secondary custom watershed with and without the BMP that was applied.

To calculate the same BMPs in parallel, follow these steps:

STEP 1 - Reconfigure BMPs in the BMP Calculator

- Click on the BMP Calculator.
- Under the Load a Configuration section toward the bottom of the side bar, select BMPs in Sequence from the Config Select drop down menu.
- Select a Node in the graphed area.
- In the Node Connections section of the side bar, select the node from the Select a Connection drop down menu.
- Click the blue Delete Node Connection button.
- Repeat with all the nodes on the graphed area so that they are no longer connected. This creates the parallel configuration.

STEP 2 - Save your new configuration and update the BMPs applied to the watershed

- Change Configuration Name to BMPs in Parallel in the top field of the side bar.
- Click the blue Save Calculator Configuration button.
- Click the Configuration List tab and check that both the BMPs in Sequence and BMPs in Parallel are listed.
- Click the white Exit/Cancel button.
- Click the BMPs tab.
- Click white Delete BMP button.
- In the pop up window, click the trash can icon, OK in the confirmation window, and the blue Close button.
- Click the blue Add BMP button in the BMPs tab.
- In the pop up window, select Storm Patrol - WHS in the Watershed drop down menu, User Defined in the Land use drop down menu, and click the blue Add BMP button.
- In the blank field for the custom watershed BMPs column, double click and then select the BMPs in Parallel configuration from the dropdown.
- Double click the "% Area BMP Applied" field and enter 70 (this is the total area we entered into the configuration, 17.5 acres, divided by the total campus area of 25 acres).

- Repeat STEP 5 above to calculate the new load reductions and compare values with BMPs in sequence.