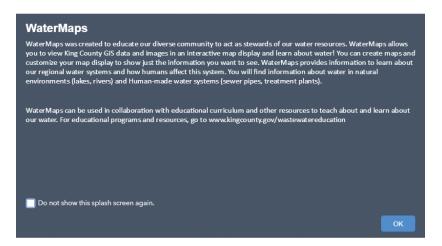
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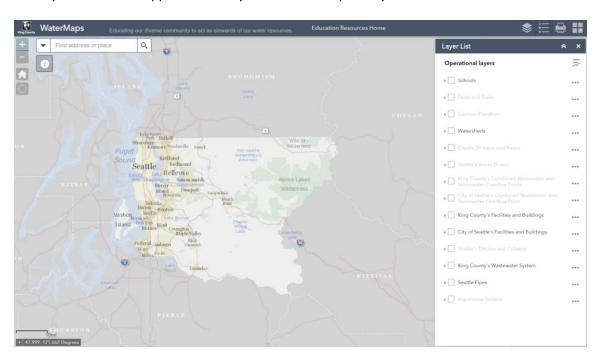
## **Guide to Using WaterMaps**

The <u>King County WaterMaps</u> application can be a useful tool in visualizing where your school's stormwater ends up. This guide will get you familiar with the different functions of WaterMaps and offer some tips to figure out where the stormwater in your area goes. Some areas are much more difficult to interpret and you may come up with a different explanation than the one we have determined. We would love your assistance in keeping our information updated. Keep in mind that the watershed boundaries represent historical flows of water and do not take the pipe system into account. Therefore, the watershed your school falls into may not be the same as where the stormwater goes.

Upon opening WaterMaps you will be given an overview of the WaterMaps application. You can choose not to see this screen again and click "OK".



Initially there will not appear to be any data on the map until you zoom in further.



1 Updated: 4/4/2018

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The buttons in the top right allow you to navigate and change the layers (data) that you are looking at. The most useful ones to know include:



**Basemap Gallery**: Allows you to change the background map you see behind your data. You cannot interact with or click on anything in the basemap but certain basemaps can be useful to determine the topography (King County Hillshade) or land covering (KC Aerial 2015) of the area you wish to understand.

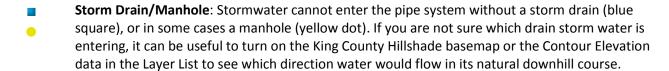


**Layer List**: Checking an "Operational Layer" will add this layer's data to your map. For example, if you would like to see the direction wastewater is flowing in a pipe, check the box beside "Flow Direction of Treatment Plant Pipes" and arrows will appear on the red treatment plant pipes.



**Legend**: This layer describes the symbols that are currently being shown on the map.

Search for your school by name in the search bar. As you zoom closer to your school, by scrolling or using the zoom arrows on the left of the screen, you will begin to see different layers of pipe data appear. Some of the most important layers to look for include:





**Stormwater Pipes**: Storm drains often connect directly to a smaller stormwater pipe (the thinner green lines on the map) before joining with another system. This could be a larger stormwater pipe (thicker green lines with inset arrows), a combined wastewater and stormwater pipe (orange lines with inset arrows), or a ditch or culvert (dashed purple or blue lines).



Combined Wastewater and Stormwater Pipes: In some areas of the city, stormwater is combined with sewage in these combined pipes. Normally, this combination makes its way to a treatment facility via a Treatment Plant Pipe (pink lines with inset black arrow) before being released into Puget Sound. In extreme storm events, excess water that stormwater pipes cannot handle will be either partially treated, removing only the solid waste, or be released untreated into a water body at an overflow point (yellow or orange circle with a black dot in the middle).



**Ditch or Culvert**: Often carries stormwater into streams or creeks.



**Treatment Plant Pipes:** These pipes take water and sewage to be treated before being expelled into a water body. There are a number of different colors for these pipes depending on which treatment plant they arrive at, but all are pastel lines. The most common color for Seattle Public Schools is a light pink going to West Point Sewage Treatment Plant.



**Impervious Surface:** This layer shows what sections of the city are covered in non-porous surfaces like asphalt or concrete. It can be interesting to see where water is able to soak in.

The yellow lines are exclusively wastewater (sewage) pipes and do not contain stormwater unless they connect with an orange Combined Wastewater and Stormwater Pipe.

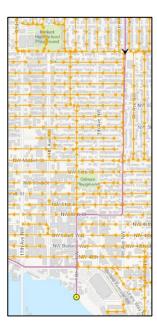
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Once you feel comfortable with the different data layers available, check the box next to "Seattle's Storm Drains", "Seattle Pipes", and *Neighborhood Stormwater* and *Neighborhood Wastewater and Stormwater* within the "Seattle Pipes" layer. Zoom in to your school until you can see these features. You may need to add more detail (i.e. *House/Building Stormwater*) or take away features like stormdrains to understand what is happening to stormwater at your location.

For example, at Ballard High School you can see a series of storm drains on the building's roof that connect to a southbound stormwater pipe (green line) which eventually leads to Salmon Bay at 14<sup>th</sup> Ave NW. There are also stormdrains surrounding the school which carry combined wastewater and stormwater (orange lines) into the pink West Point treatment plant pipe if you follow them south on the map. In the event of extreme storm events, excess stormwater and sewage will be released into Salmon Bay at 11<sup>th</sup> Ave NW.







Not all schools are this easy to interpret. Should you be having trouble deciphering the stormwater flow around your school, there are a number of things you can try:

- Change the basemap: Looking at the King County Hillshade can help you figure out water flow before it enters the pipe system. Alternatively, using the KC Aerials 2015 basemap can help you locate streams or physical features which may be interacting with the flow of pipes.
- Add the Contour Elevation layer: This can also help determine topography and water flow if the King County Hillshade basemap does not have enough information. The higher the number on the contour line, the higher it is in elevation.
- Adjust the zoom: Being zoomed out too far in or out will remove certain information from the map. If it seems like something should be there, try zooming in or out or adding more layers.
- Similarly, if your pipes just seem to stop, zoom in/out or change the basemap to see if there is a nearby stream they are entering.

If you are still having difficulty deciphering where the stormwater in your area goes, or feel free to contact us at Urban School Programs through the <u>Community Waters</u> website.

3 Updated: 4/4/2018