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How to Use This Guide
This guide supports the Community Waters Science Unit Teacher Manual with information, maps, and images specific to your school and neighborhood. It is written for teachers; its goal is to provide a better understanding of what is happening with stormwater in and around your school. The points of interest and walking field trip route are suggestions and should be adapted as desired.

If you have any questions about these maps, accompanying lessons, or stormwater around your school, contact IslandWood staff at communitywaters@IslandWood.org.
Stormwater in the Schoolyard – Lesson 3

This map and points of interest (photos and info) can be used to guide your class’ exploration of the schoolyard. You will find the student worksheet for this lesson following the teacher guide version. Please use the extra space on the pages to add your own notes and questions! 😊

A. Underground stormwater vault

Like a giant stormdrain, with a giant cistern underground – most stormwater vaults are designed to hold onto water during heavy rain and release it later into underground pipes.

B. Storm drain

Storm Drains move water into underground pipes to take it somewhere else. Anything that gets carried into the drain may end up in a local stream, lake, or Puget Sound. Why do you think the drain was built in this location? Where does water come from that goes into this drain? Why might it have been placed in this place? Is the drain working properly? What is in the drain?
C. Pervious ground

Here is a good spot to consider the different types of surfaces used in the schoolyard. How does water move differently on asphalt, woodchips, and the rubber turf?

Woodchips offer a good comparison of permeability. Do woodchips help with stormwater problems or not? (Think about how well stormwater will absorb compared to pavement, but also consider how the woodchips might get washed into the storm drain.

D. Downspout

Some downspouts drain into the ground near houses, while others are attached directly to the buildings sewer or stormwater pipes. Some go to locations where the water can soak in while others drain to the street or sewer systems. These downspouts collect water from this roof, and send the stormwater into the ground. Can students find these themselves? Where do you think the water might go? Where else can you find downspouts? Downspouts have an interesting shape of drain. Why do you think this drain is shaped the way it is? Where does the water come from and where do you think it might go? Also notice the downspout leading straight into the ground. Where is it collecting water from?
E. Sloped ground and storm drain

Stormwater that can't absorb into the ground runs off it. The slope of the ground affects where this water flows and how fast. Consider the slope and surfaces of this area: Where will the water end up? What kind of ground surface is on the slope? How do these surfaces and vegetation affect the stormwater runoff here? How does it compare with the other types of soil that you have seen in other places on the school grounds? The dry, hard-packed soil probably does not hold much water compared to other surfaces like the woodchips and mulch areas. Have students observed stormwater runoff here? How pervious is this surface? Where does the rainwater go? What might be carried with it?

F. Oil on the ground

Oil leaking from cars is left behind as dark stains. When it rains, the runoff carries the oil with it. Oil washed into streams, lakes, and the Puget Sound is very harmful to plants and animals. If it rained right now, where do you think the oil would go? How did the oil get here? What happens to the oil on the ground when it rains? What kinds of animals or people might come in contact with this patch of oil?
Include on your map:

- Symbols from the Key including flow of water, surfaces, and storm drains.

- Partially pervious surfaces can be shown with less dots.

- Label locations of litter, pollution and places where puddles form.

Map Key

- Direction of water flow
- Pervious Surface
- Impervious Surface
- Storm Drain

Add your own symbol here!
Local Stormwater Systems – Lesson 5

Teacher Overview

What happens with the Stormwater Pipes around your school?

- Your neighborhoods stormwater goes into the same pipes as the wastewater (orange with inset arrows on your map). The combined wastewater and stormwater pipes flow south alongside the east and west sides of the school.
- The combined pipes then empty just south of the Burke Gilman Trail into a large pipe (red line on map) that flows to the West Point treatment plant. On a regular day this means your stormwater and wastewater all gets treated at the West Point Treatment Plant. Unfortunately, when there are especially big storms with a lot of stormwater runoff, the combined sewage and wastewater can become too much for the pipes. In this case it empties directly into Lake Union at the end of Latona Ave NE.
- Stormwater that falls on Interstate 5 enters separate stormwater pipes on either side of the highway that drain directly into Lake Union under the Ship Canal Bridge.

Where does your stormwater runoff end up?

- The map on the next page shows where the runoff from different parts of the city ends up.
- Water that is treated at West Point Treatment Plant empties into the Puget Sound west of Discovery Park.
- Combined water that overflows into Lake Union travels through the Chittenden Locks into Puget Sound.

Video: Since the stormwater from your community could end up entering Lake Union we suggest watching the “Drained: Urban Stormwater Pollution” video (OPTION B) from 0:00 to 2:11 during Lesson 5. Point out to your students that the CSO during a big storm would have everything described, PLUS everything from the sewers (including human waste). You can find this video linked on communitywaters.org or at https://vimeo.com/51603152.

Please Note: The pipes information provided here is our best estimate of the stormwater flow in your community based on the information we have currently. If you encounter more information in the course of your investigation please let us know so we can update future versions of this document.
Lesson 5: Stormwater Runoff Destination Map

John Stanford has a yellow star around it on the map.
Stormwater in our Community – Lesson 6

Please use this map and points of interest as suggestions for your walking field trip, recognizing there may be other things of importance to note in other areas. It may be useful to bring the stormwater pipes map with you for reference.

Suggested Route: Leave from the North exit of the school and turn left onto NE 42nd St. Turn right onto Latona Ave NE, right on NE 43rd St, right on 4th Ave NE, and left on NE 42nd St. After the last stop at NE 42nd St and 5th Ave NE, return back to school.

Points of Interest

A. Pervious ground

Here is a good spot to consider the different types of surfaces used. How does water move differently on asphalt, woodchips, dirt?
B. Disconnected Downspout

This downspout has been placed so that the roof water drains into grass instead of into sewer system. How does this help with stormwater runoff problems? How does this downspout differ from the one at school?

C. Stormdrain (x2)

Storm Drains move water into underground pipes to take it somewhere else. Anything that gets carried into the drain may end up in a local stream, lake, or Puget Sound. Why do you think the drain was built in this location? Where does water come from that goes into this drain? Why might it have been placed in this place? Is the drain working properly? What is in the drain?

D. Ground pipe

Why do you think this pipe is here? Where does the water go? Does this help with stormwater?

E. Vegetation

Vegetation slows stormwater by helping it soak into the ground and holding soil in place with its roots. However, anything that is put in the garden or on the plants may be washed off—How do these surfaces and vegetation affect the stormwater runoff in this spot?