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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 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. Slopes / surfaces*

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 (grass, bushes, dirt, gravel, concrete?) How do these surfaces and vegetation affect the stormwater runoff here? Think about the soil comparisons you studied in the models in class. Which does this type of soil most resemble? Hint: 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?
B. Rain barrel/Cistern*

Rain barrels collect water that flows off the roof of a building. A cistern is a larger version of a rain barrel, and can hold hundreds or even thousands of gallons of water. Usually, they are connected to downspouts to collect the water coming off of the roof. Are the students aware of this rain barrel and its purpose? How are these rain barrels helping with stormwater? Where do they collect water from? What kind of building is it attached to? Who might have put it there? Is there anything that directs water into them, or do they simply catch the water that falls on them? Where does the water they collect go? (What could you do with the water in the barrel?)

C. Wood chips / mulch

Woodchips also 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. 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? Is the drain working properly? What is in the drain?
E. Paved/ground surfaces*

Observe all of the surfaces in this area. Asphalt and most other paved surfaces are impervious. This means that no water soaks into them. Instead, it flows off the pavement into drains and onto soil, carrying whatever substances are on the pavement. Some newer surfaces are designed to pervious (let the water in). What happens when water hits this surface? Where does the water go? What do you see that slows down stormwater? What speeds it up? In particular compare the perviousness of the rubber to that of the ground around it, and the paved surfaces (notice the drain holes on the south border of the rubber play area). Which do you think creates more or less stormwater problems? Why is this part of the ground paved? What would happen if it weren’t?

F. 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? Is the drain working properly? What is in the drain?

Notice the manhole cover next to the storm drain. Can you hear water moving underground?

G. Gardens

How do the gardens help with stormwater, or not? What would be different if they were not there? Consider that 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—including chemicals or fertilizers, if they are used.
Mapping Your Schoolyard – Hawthorne

Name: _______________ Date: __________

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.

• Sketch any specific stormwater problems you see or are aware of.

• Sketch larger plants and bushes.

Map Key

[Diagram showing map symbols: Direction of water flow, Pervious Surface, Impervious Surface, Storm Drain]
Local Stormwater Systems – Lesson 5

Teacher Overview

What happens with the Stormwater Pipes around your school?

- The storm drains at your school connect with a stormwater pipe south of the school (green lines with inset arrows)
- That pipe then heads east on South Genesee Street and then north on 43rd Ave South alongside Genesee Park before emptying into Lake Washington at Stan Sayres Memorial Park.
- Stormwater entering other storm drains around your neighborhood end up in the same location.

Where does your stormwater runoff end up?

- The map on the next page shows where the runoff from different parts of the city goes.
- Once your stormwater goes into Lake Washington it flows through the Montlake Cut into Lake Union, then through the Chittenden Locks before entering Puget Sound.

Video: Since the stormwater from your community enters Lake Washington, we suggest watching the “Drained: Urban Stormwater Pollution” video (OPTION B) from 0:00 to 2:11 during Lesson 5. 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

Hawthorne 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. Questions posed are intended to be posed to students as desired.

**Suggested Route:** Cross Cascadia Ave and walk EAST along South Dakota St; RIGHT on 41st Ave; RIGHT on S Genesee St; RIGHT on 39th Ave; RIGHT on South Dakota St and back to school.
Points of Interest

A. Slopes / surfaces*

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 (grass, bushes, dirt, gravel, concrete?) How do these surfaces and vegetation affect the stormwater runoff here? Pour some water and compare sidewalk, stones, gravel, and grass.

B. Terraces @ 4129 41st Ave

Can students recall what happens to steep slopes in heavy rain (erosion)? How might these rock walls impact erosion in this yard? What do you see that will help slow and sink stormwater? What might speed it up?

C. Paved/ground surfaces*

Observe all of the surfaces in this area. Asphalt and most other paved surfaces are impervious. This means that no water soaks into them. Instead, it flows off the pavement into drains and onto soil, carrying whatever substances are on the pavement. Some newer surfaces are designed to pervious (let the water in) What happens when water hits this surface? Where does the water go? What do
D. Sloped driveways (4149 41st has a storm drain at the bottom)

Notice several driveways along this street slope down toward the houses. What issues could this cause for the people who live there? What have you seen in the area that might help with these problems, and what might make them worse?

E. 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? Is the drain working properly? What is in the drain? Can you hear water moving underground?

F. Rain barrel*

Rain barrels collect water that flows off the roof of a building. Usually, they are connected to downspouts to collect the water coming off of the roof. Are the students aware of this rain barrel and its purpose? Do they know if it is working or how it could be more effective (collect more water?) How are these rain barrels helping with stormwater? Where do they collect water from? What kind of building is it attached to? Who might have put it there? Is there anything that directs water into them, or do they simply catch the water that falls on them? Where does the water they collect go? (Notice the hose AND an overflow tube)