CATHARINE BLAINE

Teacher Guide

CONTENTS

Stormwater in the Schoolyard – Lesson 3

Local Stormwater Systems – Lesson 5

Stormwater in Our Community – Lesson 6

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.

ISLANDWOOD™

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. Courtyard

How does the courtyard help with stormwater, or not? What would be different if it was not there? What types of plants are living here?

****picture was unable to be taken due to construction***

B. 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. Island

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. 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 collect more water? How are these rain barrels helping with stormwater? Where do they collect water from? Where does the water they collect go? What could you do with the water in the barrel?

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? Why might it have been placed in this place? Is the drain working properly? What is in the drain?

F. Playground

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)

G. Roof

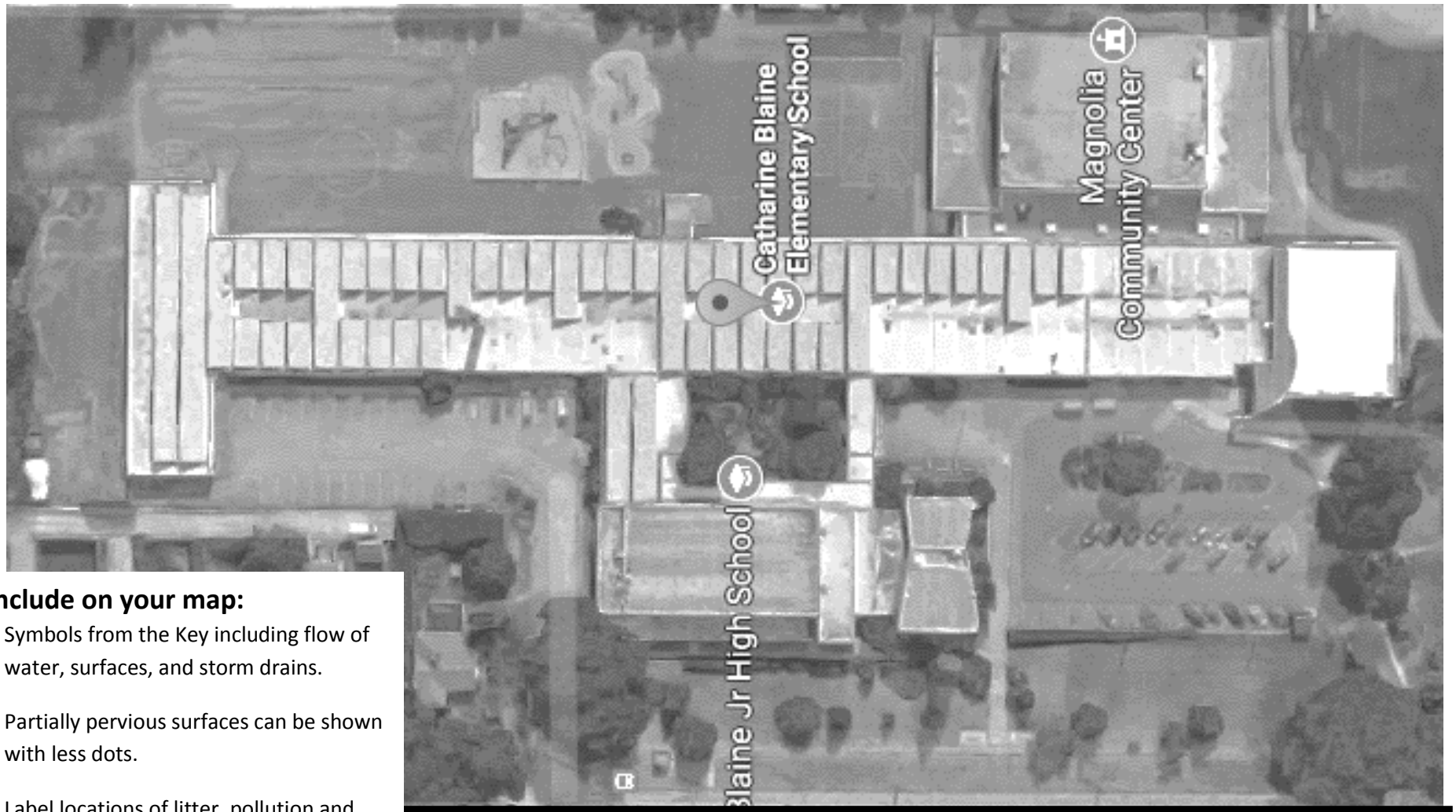
How does the design of this roof affect stormwater? With the triangle shape, more surface area is added to the roof. Is more or less water collected on the roof if it was just flat?

H. Garden

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. Presumably, school gardens have few or no chemicals.

Mapping Your Schoolyard – Catharine Blaine

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.

Map Key

Add your own symbol here!

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?

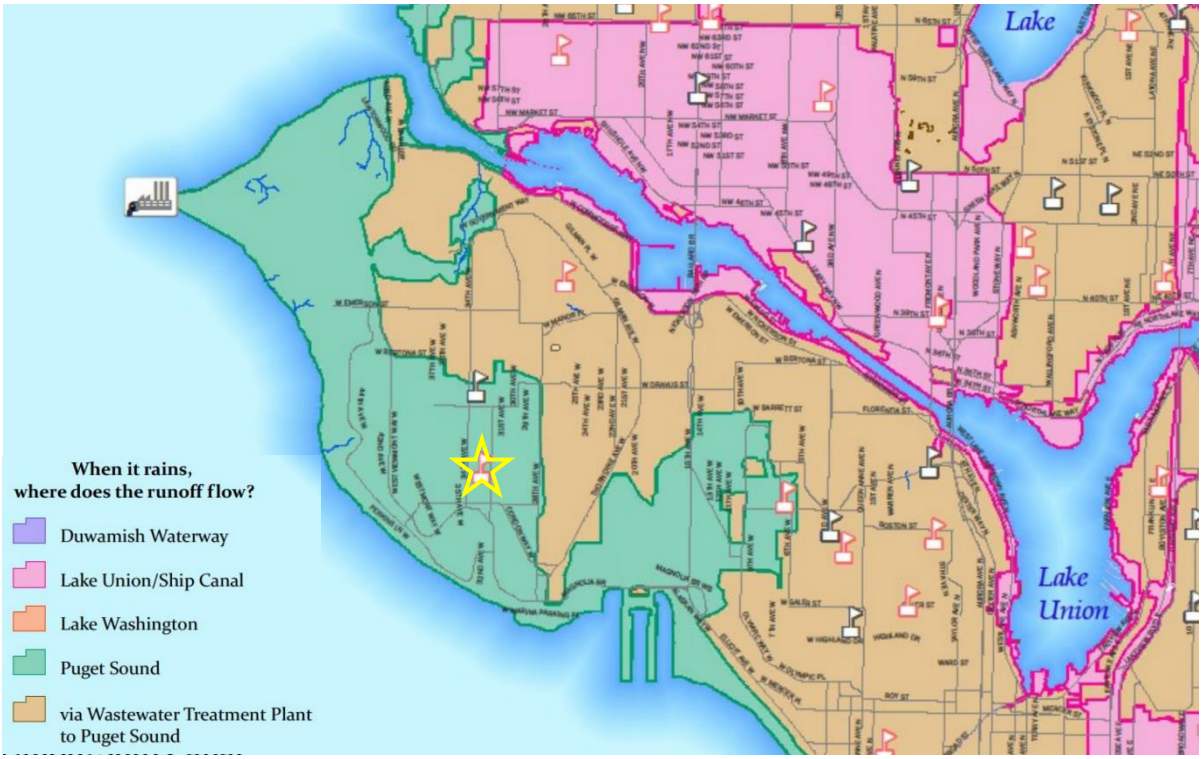
- The storm drains (blue dots) on your schoolyard empty into a stormwater pipe (green line with inset arrows) that runs south along the east side of your school's playground. Thise pipe continues south until the stormwater flows directly into Puget Sound at the Magnolia Park boat launch.
- The map on the next page shows where stormwater runoff that falls on other parts of the city ends up.

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.*

Video: Considering that the stormwater from your community directly enters Puget Sound at Magnolia Park: 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.

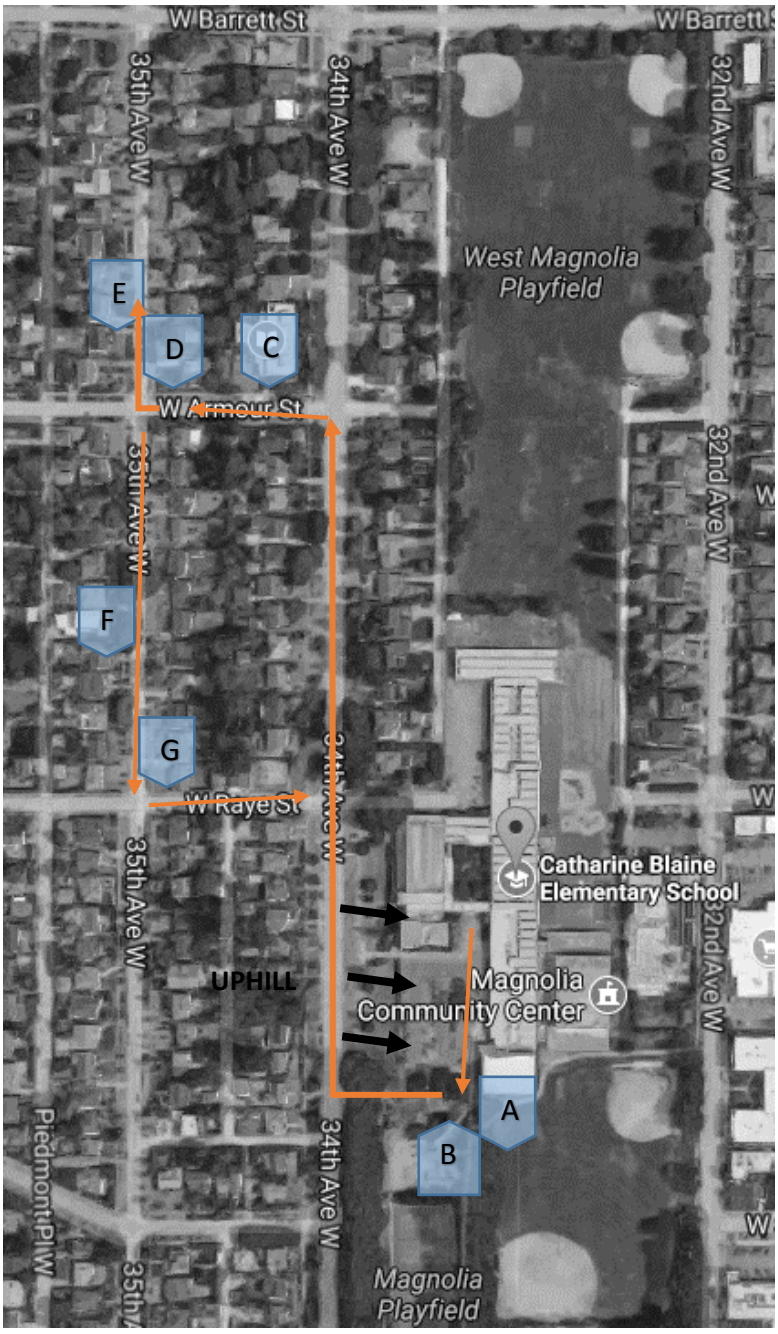
Lesson 5: Stormwater Runoff Destination Map

Catharine Blaine 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: From school entrance walk towards Magnolia Community Center, then head towards W Armour St on 34th. Turn RIGHT at W Armour St, turn RIGHT on 35 Ave W, retrace your steps and head towards W Raye St on 35th Ave W, turn RIGHT on W Ray St, cross 34th Ave W and head back to school

Points of Interest

A. Different 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?

B. Trees

Trees catch some rainwater in their leaves, releasing it more slowly to the ground. Tree roots hold soil in place so that it doesn't get washed away by runoff. Ask the students what they think trees do for stormwater. What would be different in this spot if these trees weren't there? What is around the tree(s)? What kind of ground are they growing in? Consider slope.

C. Rain Chain

Rain chains are alternatives to downspouts. Their purpose is largely decorative, to make a water feature out of the transport of rainwater from the guttering downwards to a drain or to a storage container. Can you find where the water is going to?

D. Lavender Yards

The landscaping of a yard has different effects on stormwater. How do you think this yard compares to others?

E. Rain Garden @ 2819

Rain gardens have a shallow depression to hold water while it soaks in and provides water to the plants in the garden. Rain gardens can slow, filter and absorb runoff. What do you notice about the garden? What happens to water when it goes into the garden? Have students notice where water can enter the rain garden and what happens if it fills up.

F. Rain Garden @ 2629

Compare this possible rain garden to the one down the block. Is there a rain garden here?

F. 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?