Lower Columbia Estuary Partnership

School Stormwater Map

Directions: You will create a stormwater map of your school. Follow the steps below. Write your work on the attached map. There is an example provided for you on the back side.

1. Draw the perimeter of your school grounds.
2. Measure the length of each side, and write it down on your map.
3. Figure out the total perimeter of your school.

4. Figure out the total area of your school grounds.

5. Determine the amount of rain that falls on the school grounds each year. See example.

6. Draw and label the different areas of your school grounds:

   _____Buildings
   _____Paved areas: parking lots, sidewalks, and roads
   _____Grass and plants

7. Measure the length of the parts.

8. Determine the perimeter and area of each

	Perimeter	Area
Buildings	_____	_____
Parking lots	_____	_____
Grass and plants	_____	_____

9. Label each area as permeable or impermeable.

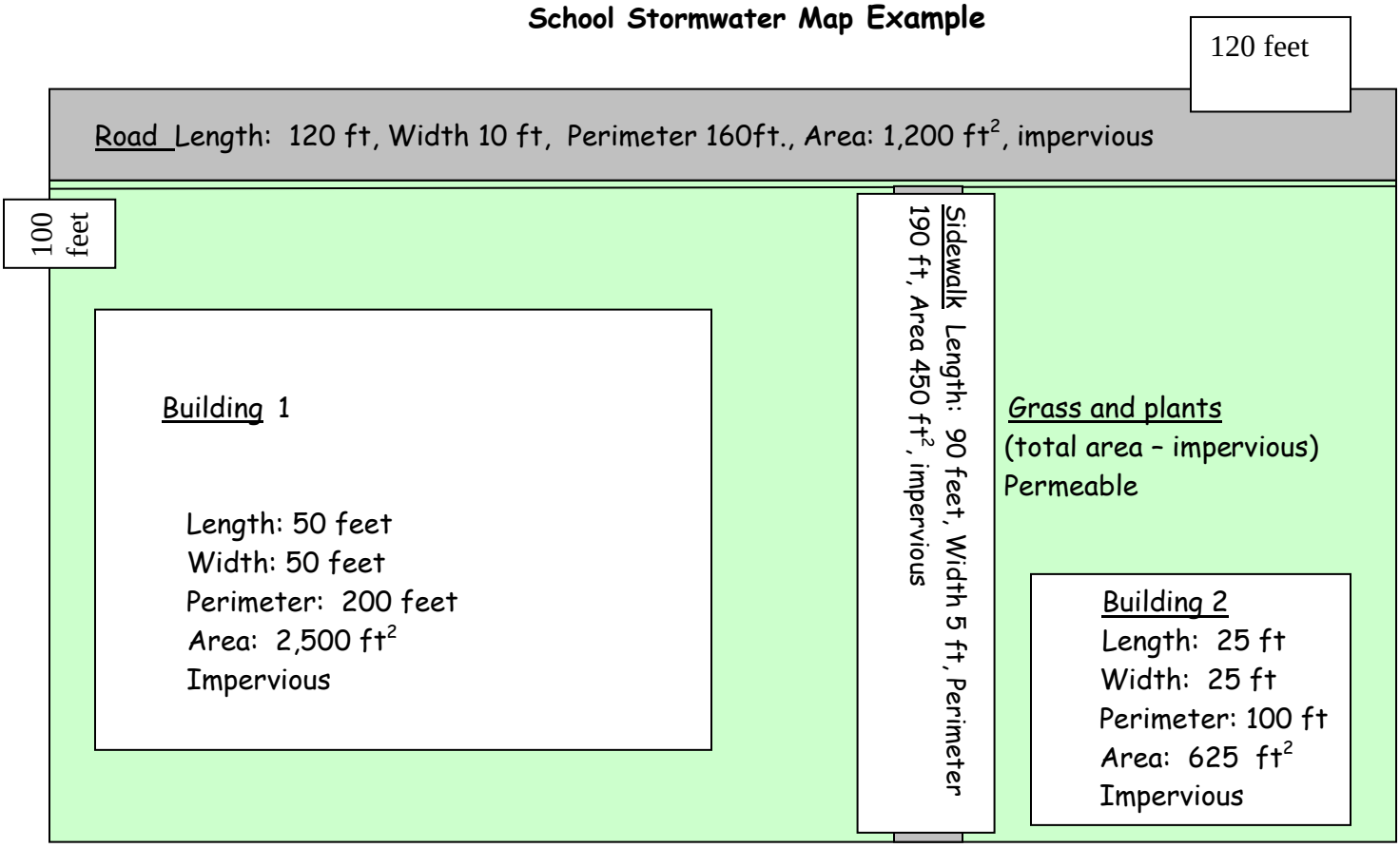
	Permeable	Impervious
Buildings	_____	_____
Parking lots	_____	_____
Roads	_____	_____
Grass and plants	_____	_____

10. Determine the total area of impermeable surface area.

11. Find the percent of impermeable surface.

12. What volume (in cubic feet) of water falls on impervious surfaces at your school per year? Bonus: Convert cubic feet to gallons (1 cubic foot = 7.48 gallons).

School Stormwater Map Example



Total Perimeter: (100+ 120+100+120)= 440 ft

Total Area: (100x120)= 12,000 ft^2
Rainfall: (12,000 square feet X 36 inches or 3 ft)= 36,000 ft^3 of rain per year

Total Impermeable surface:

Area of Building 1	2,500 ft^2
Area of Building 2	625 ft^2
Side Walk	450 ft^2
Road	1,200 ft^2
	4,775 ft^2 Imp. Area

Total Permeable surface:
Total area – impermeable area
12,000 ft^2- 4,775 ft^2 = **7,225 ft^2 Perm. Area**

Percent of impermeable surface:

$\frac{4,775 \times 100}{12,000}$ = 40%

Math Hints

Perimeter: Add all the sides together

Area: Multiple the length by width

Rain Fall: The Portland/Vancouver area receives an average of 36inches a year. Convert inches to feet. Multiple the area of your school by feet of rain per year. This will give you the average volume (in cubic feet) of water your school receives each year. Find and use the actual rainfall totals for your community.

Percent impervious surface:

$\frac{\text{Sum of impermeable areas} \times 100}{\text{Area of school grounds}}$