

# STUDENT IMPACT PROJECT IDEAS

## Sustainability Ambassadors

*Rapidly advancing a more sustainable future*



## STORMWATER MANAGEMENT PROJECTS

Take action at home, at school or in the community. Communicate your impact to peers, stakeholders, and policy makers to urge collective action. Post your actions [on the map](#).

**TOP TEN:** If you are especially proud of the impact of your project, and it meets our criteria, we invite you to submit your work to our Annual Top Ten Impact Projects.

### 1. Essential background learning...

- a. Learn about polluted stormwater runoff. [King County Infographic](#).
  - b. Watch the Nature Conservancy video [Solving Stormwater](#) with local biologist Jenifer McIntyre explaining how polluted runoff is so deadly to salmon and actions we can take to solve it.
  - c. Learn about the science of stormwater and get answers to common questions like: What is it? Where does it come from? How is it polluted? What are the pollutants of concern? How is the pollution controlled? What are stormwater facilities? [Science of Stormwater](#).
  - d. Puget Sound Starts Here [facts about stormwater](#).
  - e. Puget Sound Vital Signs is a set of indicators developed by many teams of local scientists to assess our progress toward improving the health of the Puget Sound ecosystem. See the vital sign for [Freshwater Quality](#)
2. Find out the most [important things you can do](#) at home to reduce stormwater pollution.
  3. Become an expert on **rain gardens** using the [Rain Garden Manual for Western Washington](#) and then build one (or recommend one) at home, at school or in your community. Also [Rain Gardens 101](#)
  4. Help everybody who has a rain garden in your community **register** theirs on the [Sound Impacts Map](#). Or use the map to zoom in on your neighborhood and advocate that your city stormwater staff and city council incentivize more rain gardens wherever possible.
  5. Lead a neighborhood campaign for everyone to use [natural yard and lawn care](#) strategies.
  6. Lead a carrot mob (mass purchase which is opposite of a boycott) of **bagged compost** at the local hardware store and rake it into the lawns of participating neighbors. Create a video and promote through social media. [Benefits of compost in your yard or garden](#).

7. Work with your city to **plant more trees** to increase the urban tree canopy. The [benefits of trees](#) include not only stormwater retention but carbon sequestration as well.
8. Lead a pledge drive for parents and neighbors to **test for and fix car oil leaks**. [Don't Drip and Drive](#). The familiar sight of a rainbow-colored puddle or trickling stream in parking lots, driveways, and street gutters is a reminder of the presence of oils and greases in stormwater runoff. Oil and grease are known to be toxic to aquatic organisms at relatively low concentrations; they can coat fish gills, prevent oxygen from entering the water, and clog drainage facilities leading to increased maintenance costs and potential flooding problems.
9. Create a kit to **test for oil leaks under cars in your school parking** then support car owners with coupons for fixing their leaks at a local auto shop.
10. Lead a campaign to get neighbors and school groups to use a [commercial car wash](#). When a car is washed on a paved surface, like in a driveway or in a parking lot, the soap, detergent, automotive fluids, oil, and roadway dirt that gets rinsed from the vehicle goes straight into nearby storm drains. These storm drains lead directly to lakes, streams, and bodies of water in the Puget Sound area. This contaminated runoff, even runoff containing biodegradable soap, can cause significant harm to aquatic plant life, fish, and other animals. In short, something as seemingly harmless as a car wash can cause serious damage to local water quality.
11. **Scoop the poop**. [Why is pet waste a problem?](#) In just the city of Seattle there are more than 125,000 dogs and 60,000 outdoor cats in Seattle! That amounts to about 50,000 lbs. of pet waste every day. Left on streets, curb strips and in yards and parks, pet waste can be carried by rainwater to storm drains and into our creeks, lakes and Puget Sound without treatment. It is one of the leading causes of bacterial contamination in our streams and causes other water quality problems just like livestock manure and fertilizer. Check out [Dog Doogity Dance Video](#)
12. Work with your neighbors and local parks to install posts with [dog-poop baggy dispensers](#).
13. **Redirect gutter downspouts** from stormwater pipes to your lawn or garden. Let it soak in.
14. Design a system for **harvesting rainwater** from the roof of your home, multifamily complex, or school and repurposing it to increase water use efficiency, especially for toilet flushing and irrigation outside. This will help reduce stormwater events as well. Instead of more runoff when it rains a lot, why not capture and use it? To support the water supply needs of a typical house you would need a cistern that can hold 5,000-10,000 gallons. [Rainwater Harvesting 101](#) Here are some general guidelines for calculating rooftop area for rainwater collection.
  - The catchment area is equal to the length times width of the guttered area.
  - One inch of rain falling on one square foot of rooftop will produce 0.6233 gallons of water or approximately 600 gallons per 1,000 square feet of roof.
  - 35-40 inches of rain per year in greater King County.

- Assume that the system will lose 10-25 percent of the total rainfall due to evaporation, initial wetting of the collection material, and inefficiencies in the collection process.
  - Precipitation loss is the least with metal roof surfaces. Loss is less with asphalt composition shingles, and greatest with wood shakes.
15. Deliver a neighborhood workshop on the top 5-10 Best Management Practices (BMPs) that every homeowner can do. [BMP check list](#)
  16. Create a set of architectural and engineering drawings for a new home or school that uses a mix of green infrastructure strategies to capture and infiltrate all of its stormwater on site. See EPA's [What is Green Infrastructure?](#)
  17. Design a system for capturing, filtering and infiltrating 100% of the stormwater that falls on your property or the school campus. Prove in your design that the water cycle (especially infiltration of rainwater) will function the same way it would if your school campus was still a forest. [Storm Smart Schools](#)
  18. Design a green infrastructure plan for your city in the year 2030.
  19. Write a series of letters to the editor on your chosen action, pledge drive, or campaign. Describe the problem, state your goal and provide data.
  20. Report your actions to the city council, using data and a clear association with the City's own policies on reducing polluted stormwater runoff.
  21. Analyze stormwater job descriptions and career pathways and list the college skills and you would need.