



# Water Conservation and Pollution Prevention Best Practices Guide for Schools

**Table of Contents**

- Overview of King County Green Schools Program..... 2**
  - Recognition..... 2
- Green Teams..... 3**
- Education, outreach, and advocacy for systems change..... 4**
  - Activities and resources for students and staff..... 4
  - Water conservation signs and other materials..... 8
- Student and staff best practices at school..... 8**
- Best practices for school buildings..... 9**
  - Tracking water use..... 9
  - Indoor water use ..... 9
  - Outdoor water use ..... 10
- Green building resources..... 10**
- Other resources - audits, education, grants, rebates ..... 11**

August 2022

## Overview of King County Green Schools Program

King County Green Schools Program serves K-12 public and private schools and school districts throughout King County (except in the City of Seattle). The program's vision is that schools and districts will engage their students and staff in learning about sustainability and practicing resource conservation in their schools, homes, and communities.

### Benefits for participating schools

- **Assistance.** The King County Green Schools Program provides [assistance and guidance](#).
- **Resources.** The program provides information, tools, indoor recycling bins, and signs.
- **Student learning and leadership.** The program offers guidance to student teams engaged in sustainability education and action. Students learn about resource conservation and develop leadership skills as they take action in their schools, homes, and communities. Action-oriented environmental education engages students, offers meaningful community service experience, and can improve learning and test scores.
- **Cost savings.** Conservation practices can save money in addition to protecting the environment and engaging your school community in learning and action.
- **Recognition.** Strengthen student, staff, and community ownership and pride. School and district [recognition](#). Student teams: [Elementary school Green Team recognition](#) and [Secondary school Green Team recognition](#).

### Use this Best Practices Guide to:

- Learn about best practices for water conservation and pollution prevention.
- Find resources and tools, including ready-to-go templates for education and action.
- Learn how to achieve *Level Three – Water Conservation and Pollution Prevention* recognition.

### The King County Green Schools Program can help *with*:

- Student and employee education.
- Project planning, including guidance for student teams.
- Resources and tools, including signs.
- Connecting to district staff who track water use or work on water conservation strategies.
- Achieving recognition.

**Participating schools:** Email [GreenSchools@kingcounty.gov](mailto:GreenSchools@kingcounty.gov) to request assistance.

## Recognition

Your school can achieve Level Three recognition for maintaining its waste reduction and recycling education and actions, and educating students and staff about water conservation and pollution prevention while taking steps to conserve water. Those actions can happen during one school year or over multiple school years. Actions your school has taken in the past or before participating in the program count toward recognition. *To receive program assistance, your school does not need to work toward recognition, and your school may focus on any resource conservation area.*

Level One recognition must be achieved before Level Two or Level Three recognition. However, if desired, your school may work toward and receive *Level Three - Water Conservation and Pollution Prevention* recognition before Level Two.

To be recognized as a Level Three Green School, fill out the recognition form linked on [this page](#). Level Three Green Schools receive a “Level 3” sticker for their Green Schools banner, an electronic icon for websites and newsletters, and an updated school success story on the program website.

**Level Three recognition requires your school to:**

- Start or maintain a school Green Team. Include at least one staff member. Student members or student teams are strongly encouraged, but not required for recognition.
- Tell your school community that your school is participating in the Green Schools Program.
- Maintain education and practices from prior program levels, including waste reduction/recycling and energy conservation. *(See Waste Reduction and Recycling - Best Practices Guide for Schools on [this page](#) and Energy Conservation - Best Practices Guide for Schools on [this page](#).)*
- Educate students, staff, and other school community members about water conservation and pollution prevention. *(See pages 4 – 8 for options and resources. )*
- Complete a water conservation or pollution prevention activity or project involving students or led by students with adult advisor(s). The activity or project can include education, outreach, advocacy, or practices or policies in your school, district, or a community beyond your school. *(See pages 4 – 10 for options and resources.)*
- Follow water conservation and pollution prevention best practices at school, selected from options listed in this guide.
- Share your successes with your school community.

## Green Teams

A Green Team is a group of school community members who work together on education and action for sustainability. Green Teams may include students, teachers, custodians, administrators, family, or community volunteers. The team can be any size, and can be a stand-alone group or class, or a part of another club or organization such as the Associated Student Body (ASB).

If your school is participating in the Green Schools Program, your student team is eligible to receive program help with project planning, trainings, and resources. Student teams can earn recognition: See [Elementary school Green Team recognition](#) and [Secondary school Green Team recognition](#).

Key tools and resources	
<a href="#">Green Team Guide: Strategies for Success</a>	Tips on starting and maintaining student teams.
<a href="#">Elementary school Green Teams</a> <a href="#">Secondary school Green Teams</a>	Assistance, workshops, project guides, resources, and recognition from the program for elementary school student teams or middle and high school student teams.

## Education, outreach, and advocacy for systems change

Education and outreach are keys to water conservation and pollution prevention. Students at every grade level can learn about sustainability and conservation of natural resources, gain volunteer and leadership experience, and take action in their schools, districts, homes, and communities.

Students also have opportunities to: (1) influence systems change (focused on the whole and not only the parts) by partnering with others to understand and address the causes of a problem and by advocating for changes to policies, practices, laws, institutions, and social norms; and (2) help build the transition to a more equitable and low-carbon circular economy where materials and resources are conserved, greenhouse gas emissions are reduced, and green jobs are created.

Key tools and resources	
<a href="#">King County educational programs</a>	Educational resources, including free classroom workshops for grades 1 – 12.
<a href="#">Water conservation announcements</a>	Use or modify these announcements to either kick-off or maintain water conservation practices.
<a href="#">Water conservation facts</a>	Use in announcements, newsletters, website, and social media, and at lunch and assemblies to educate students, staff, and families.
<a href="#">Fact vs Fiction – water conservation and pollution prevention PowerPoint presentation</a>	Use this presentation to educate students and staff.

## Activities and resources for students and staff

Education, outreach, advocacy, and actions can be carried out in student teams, classrooms, school-wide, district-wide, and beyond your school or district. Scroll through these options to find an activity or resource for your school or team!

- Water conservation and pollution prevention: Facts and tips.** Learn why water conservation and pollution prevention matter - and what we can do to conserve water and keep waterways clean. Share what you learn in classrooms, morning announcements, assemblies, staff meetings, school newsletter, school website, or social media. **Resources:** [Water conservation facts](#); [Water conservation announcements](#); [Fact vs Fiction – water conservation and pollution prevention PowerPoint presentation](#); [Water - The Recycling Connection](#); and [We Need Water - Cascade Water Alliance campaign](#)
- Lessons, field trips, and guest speakers.** **Resources:** [Teacher and student learning resources](#) from Cascade Water Alliance; [Free water conservation programs for schools](#) from Saving Water Partnership; [Learn about clean water with King County Wastewater Treatment Division](#); [Wastewater treatment plant tours](#); [Education resources](#) - curriculum, video tours, and virtual lessons from King County Wastewater Treatment Division; King County [Wheels to Water](#) - free field trip bus transportation for qualifying King County schools for wastewater-related field programs; [Puget Sound Starts Here classroom tools for educators](#); and [Project Wet resources](#) including water education books, guides, maps, and posters

- **In-service training on water conservation.** Offer a training for teachers, other staff, or PTSA members about saving water and preventing water pollution. **Resource:** [Project Wet eLearning](#)
- **Climate change connections.** Educate students and staff about how conserving water helps curb climate change. It takes energy to pump, heat, and treat the water we use, so the less we use, the fewer greenhouse gases we produce. The energy needed to move, treat, and use water in the U.S. produces nearly 290 million metric tons of CO<sub>2</sub> annually. The less water we use, the more resilient we will be in preparing for climate change impacts such as reduced snowpack, lower stream flows, and less available water for agriculture. These impacts are not felt equally by all communities or ecosystems. Climate change also impacts watersheds. How are river flows changing, and how do those changes affect the ecosystem and our water supply? **Resources:** Water and Climate in the [Pacific Northwest](#); [Water Supplies and Climate Change](#); [King County Wastewater educational resources](#); and [Doing our part to fight climate change](#)
- **Calculate water footprint.** Students can calculate their water footprints or explore the water footprint of products. Help your school community connect their water use with daily choices. **Resources:** [The Water Footprint Network](#); [Water footprint calculator](#) with teaching resources; [Personal water footprint calculator](#); and [Water footprint of products](#)
- **Promote water saving practices.** Post signs about water conservation practices above or next to bathroom, classroom, laboratory, and kitchen sinks. Encourage the practice of keeping water off while soaping hands. **Resource:** See page 8 for signs provided by the Green Schools Program
- **Slogan or logo competition.** Hold a competition for student-created slogans or logos that encourage water conservation or pollution prevention practices. Post slogans or designs in the school, on the school website, and on social media. Recognize the winners.
- **Student-created media.** Students can create videos, posters, or social media posts about why water conservation and pollution prevention matter and the actions we can take to conserve water and reduce water pollution.
- **Pledge campaign or social media campaign.** Encourage students and staff to take steps to conserve water and reduce water pollution. Use *Puget Sound Starts Here* resources to inform classes, staff, PTSA, families, and other community members about actions they can take to reduce storm water pollution. **Resources:** [Cascade Water Efficiency Overview](#); [Stormwater Matters video: Pet Waste and Water Pollution](#); [Take Action: Puget Sound Starts Here](#); and see [this page](#) for a link to a sample pledge
- **Encourage reusable bottles.** Hold a pledge campaign, social media campaign, or other call to action to stop buying bottled water and instead use durable, reusable water bottles. This practice reduces use of single-use plastic bottles, saves money, and conserves the water from another watershed somewhere in the world. **Resources:** [Plastic Bottle Reduction Campaign](#) and [The Truth about Tap](#)
- **Source of drinking water.** Find out where your school's drinking water comes from, where it ends up after it goes down the drain, and the location of the school in your watershed. Share this information with your school community. Compare the school's drinking water source and water drainage with schools from other parts of King County and analyze the differences. **Resources:** [King County watersheds](#); [EPA Water Sense](#); and [NOAA: Games for Educators](#)

- **Water sources and use in different parts of the world.** Explore water sources and consumption in other countries and then share what you learn with your school community. **Resources:** [Water 1st International](#); [Water Aid](#); [World Toilet Day](#); and [Clean and Conserve - Project Wet](#)
- **Careers.** Students can research careers in water conservation and pollution prevention, then share the information with other students. Invite speakers who work in these fields to present virtually or in-person to classrooms or student clubs. **Resources:** Ask your district resource conservation manager to present and answer questions; and [Careers for Clean Water Professionals](#)
- **Surface water quality.** Students can view real-time data for U.S. surface water quality and discuss key questions: What do scientists measure to analyze water quality? How does our region compare to others? **Resources:** [Resources for teaching about surface water issues - King County](#); [Real-time water quality \(usgs.gov\)](#); [Surface water management in King County](#); and [King County Surface Water Management fee school discount](#) - learn how school districts in King County's unincorporated service area may apply for a waiver when they document educational activities about surface water management and complete maintenance corrections.
- **Water quality, access to clean water, and disproportionate impacts to communities.** Students can find water quality reports about their local drinking water from their city or water district, and/or research which U.S. communities are impacted by drinking water contaminants such as lead. Students can share what they learn and advocate for change. **Resources:** [Turning on the Tap in America | NRDC](#); [Interactive Map from the Drinking Water Alliance](#); and [Public Health-Seattle & King County-Lead in drinking water](#)
- **Don't Flush Trouble campaign.** Educate students, teachers, and other school community members about what they should not flush down the toilet – and why. To avoid clogging pipes and sewer systems, ask staff and students to not pour fats, oils, or grease (F.O.G.) down sink drains or into sewer lines at school or at home. **Resources:** King County [This is Flushing Awesome video](#); [Don't flush trash - King County](#); and [Keep Water Clean](#) from King County Wastewater Education Program
- **Impervious and pervious surface areas.** Students can use math skills to calculate the ratio of impervious to pervious surface area on their school grounds. Find out what stormwater permit fees your school pays per square foot of impervious surface. Share this information with your school community, discuss solutions, and make recommendations to reduce impervious surfaces and increase pervious surfaces. **Resource:** [Calculating percent impervious surface](#) - Add the total of all impervious surface areas and divide by the total area, then multiply by 100.
- **Wastewater treatment plant leaks.** Students can find out how these leaks affect the environment, then share information in their school communities about steps we can take to reduce leaks in our region. **Resource:** [Environmental Monitoring Data](#)
- **Storm drains.** Identify storm drains on your school campus or community. Keep storm drains clear of litter. Use a stencil to mark each storm drain with *The Puget Sound Starts Here*. Ask your city if it provides storm drain stencils or other resources. **Resource:** [Puget Sound Starts Here](#)
- **Hands-on water quality testing and pollution prevention.** Include this activity in curriculum. **Resource:** [Community Science - Classroom and field program series](#) (grades 3-12)

- **Protect the local watershed.** Organize a class, student team, or school project to protect the local watershed by conserving and protecting water sources. **Resources:** [Watershed stewardship project series](#) (grades K-12) [King County watersheds](#); [King County watershed volunteer opportunities](#); and [King Conservation District](#)
- **School water use.** Find out how much water your school uses. Share the data with students, staff, and other school community members. Also share why water conservation is important - and what we can do to conserve water. **Resource:** Track Water Use and Costs on page 9.
- **Student advocacy.** Students can advocate for water conservation and pollution prevention policies and practices they want to see at the school, school district, city, county, state, or national level. Consider partnering with a community group or nonprofit organization. For school or district advocacy: Students can present their recommendation(s) to their local school board after identifying and researching a school or district water conservation or pollution prevention policy or practice. **Resource:** Best practices on pages 8 - 10
- **School district plan.** Students can advocate for a written school district plan to conserve water, reduce water pollution, and initiate or strengthen other sustainable practices and policies. After researching model district plans, students could present recommendations to their local school board. **Resource:** [Berkeley Public School Sustainability Plan](#) - this model district plan includes student learning, water, energy, transportation, green building, health and wellness, waste reduction, recycling, and composting
- **Water wise garden.** Start a schoolyard or community garden designed to conserve water. Include signs about the environmental benefits. **Resource:** [Gardening Resources for Schools](#)
- **Rain garden.** Start a rain garden on school grounds or in your community. Rain gardens slow, filter, and absorb stormwater to keep local waterways clean. Host a school or neighborhood workshop: A class or student team can partner with experts to share how to reduce storm water pollution. **Resources:** [Rain Garden handbook](#); [Stewardship Partners](#); and [12000 rain gardens in Puget Sound](#) (see grant program for eligible residential landowners)
- **Use rain water to irrigate.** Set up a barrel, tank, or cistern to collect rainwater at school or home - and use the water to irrigate gardens. **Resources:** [Cascade Water Alliance](#) and [King County rain barrel information](#)
- **Reduce stormwater pollution.** Learn about stormwater pollution. Partner with your city or a nonprofit organization to reduce stormwater runoff on school grounds or in your community. *Examples:* Install a bio-swale at one end of a parking lot to infiltrate storm water; replace a strip of parking lot asphalt with pavers to infiltrate motor oil drips from parked cars. **Resource:** [Stormwater services and information – How does stormwater impact us?](#)
- **Green car washing.** If your school or club holds a car washing fundraiser, use a professional facility because they use less water and they prevent oils, detergent, petroleum, and wax from entering nearby storm drains and polluting streams, rivers, lakes, and other waterways. Soaps with phosphates can cause excess algae to grow in waterways. It is illegal to discharge anything other than clean water into Washington State waters. Share this information with your school community. **Resources:** [Charity Car Wash Program](#); [How it works – Charity car wash](#); and [Wash your car the right way](#)

## Water conservation signs and other materials

To request the materials listed below, email [GreenSchools@kingcounty.gov](mailto:GreenSchools@kingcounty.gov).

- “Turn off faucet when soaping hands. Report leaks” sign: [4 signs per page](#) or [6 signs per page](#)
- Water flow bags. Students can use these bags to measure water flow from school faucets. If the flow is heavier than the standard flow, students can ask their district or school to install faucet aerators to conserve water.

## Student and staff best practices at school

Below are water conservation best practices for students and staff to follow at school. *Some practices below may not apply to your school building, depending on the building’s age and type of equipment.*

- **Keep water off when soaping hands.** Turn water on to rinse.
- **Measure faucet water flow.** Assess water flow from classroom and other school faucets. Share results with the appropriate school or district staff. If needed, request faucet aerators to save water. Ask the King County Green School Program for water flow bags.
- **Water-efficient cleaning.** Instead of washing items under continually running water in classroom, laboratory, kitchen, or maintenance areas, fill containers with water, then use sponges or brushes to wash tools and equipment.
- **Report dripping faucets, continuously running or leaking toilets, and standing water when and where it should not be.** When students and staff notice such problems, immediately inform the appropriate school or district employee(s) and submit work orders so problems can be repaired.
- **Check for leaks on school grounds.** In dry weather, when it has not rained for several days, check school grounds for wet spots which might indicate a water leak. Report observations to the appropriate school or district staff.
- **Only run clothes washing machines with full loads.** This decreases the number of loads that need to be run and saves both water and energy.

## Best practices for school buildings

Which best practices on pages 9 and 10 are followed in your school or district? Ask school administrators and custodians and/or your district resource conservation manager or district operations and maintenance staff. *Some best practices below may not apply to your school building, depending on the building's age and type of equipment.*

Share what you learn with your school community. Students in some schools have planned and led a [Green School building tour](#) to share all the green practices in place in their schools.

Students can advocate for new and improved practices by communicating with school administrators, district staff, or the school board. This can count as your education, outreach, or systems change activity or project for Level Three recognition.

### Track water use and costs

- **Monitor school water use and costs regularly.** This practice will alert your school or district to leaks, other water inefficiencies, or billing problems. Water costs include both indoor and outdoor water use.
- **Track sewer charges.** These charges are directly related to water use.

Students can analyze the school's water use and costs to help understand impacts of daily practices and of school or district water conservation strategies. This data can influence school administrators, district staff, or school boards decisions about water conservation policies, practices, and purchases of water-efficient fixtures and equipment.

#### **To obtain school water use and cost data:**

- **Public schools** - Ask your district resource conservation manager or operations and maintenance staff, or ask the Green Schools Program to connect you with district staff.
- **Private schools** - Ask your administrative or maintenance staff for utility bills.

### Indoor water use: *Best practices for school buildings*

- **When using faucets that turn-off automatically, make sure they are timed appropriately.**
- **Turn off circulation pumps during extended school breaks.**
- **Purchasing.** Set a policy to support purchase of water-efficient fixtures and equipment. Select the most water-efficient products when replacing old fixtures and equipment.

#### Water-efficient fixtures and equipment:

- Faucets: Faucet aerators; faucet motion sensors; low-flow faucets and shower heads
- Ice machines: Air-cooled ice machines (instead of water-cooled machines)
- Kitchen equipment: Water-efficient dishwashers; boiler-less steamers which use less water; high-efficiency, pre-rinse spray heads for kitchen wash stations
- Toilets: Dual-flush toilets; low-flow toilets and urinals; waterless urinals

## **Outdoor water use: Best practices on school grounds**

- **Mulch.** Annually apply two to three inches of mulch. Mulch naturally holds onto moisture and helps topsoil from drying out.
- **Limit lawn areas.** Other than sports fields, the amount of lawn or turf should be limited to conserve water. Replace non-field lawns with drought-tolerant shrubs or native plants.
- **Make sure sprinklers water only intended areas such as gardens which need water.** Avoid watering sidewalks, driveways, and gutters.
- **Water at the right times.** Schedule irrigation before 7 a.m. or after 10 p.m. when evaporation is lowest. At least once each month, use an irrigation calculator to adjust watering schedules.  
**Resources:** [Irrigation calculators](#) and [Irrigation in the Pacific Northwest](#)
- **Inspect and repair.** If your school has an irrigation system, inspect the system at least once per year for broken heads, obstruction, etc., and make repairs as needed.
- **Water-saving irrigation systems.** To conserve water, use drip irrigation, soaker hoses, soil moisture overrides, sprinkler system timers, or other irrigation systems.
- **Automatic or smart conservation controllers.** These controllers save water and money by automatically adjusting irrigation schedules and allowing the operator to change the watering schedule by a percentage to reflect plant watering needs.
- **Drought-tolerant plants and coniferous trees.** When adding plants, choose only drought-tolerant plants. When adding trees, select coniferous trees since they hold 50% more water than deciduous trees and absorb high amounts of carbon dioxide.
- **Permeable pavement.** Replace impermeable pavement with permeable pavement. To reduce surface runoff and filter pollutants which contribute to water pollution, permeable pavement is porous and allows rain to move through the pavement to layers of soil and gravel underneath.

## **Green building resources**

- Design, build, and renovate school buildings which use less water and energy, protect natural resources, and use non-toxic and sustainable building materials. **Resources:** [King County Green Schools Best Practices Guide for Green Buildings](#); and [Green Building Resources](#)
- Build or renovate school building(s) to meet a green building standard. **Resources:** [Washington Sustainable Schools Protocol \(WSSP\)](#); [Green Building Initiation – Green Globes certification](#); [Living Building Challenge](#); and [U.S. Green Building Council – LEED certification](#)

## Other resources - audits, education, grants, rebates

Learn about additional assistance, audits, educational programs, grants, and rebates offered by King County, Cascade Water Alliance, and Saving Water Partnership.

Water is provided in King County by a mix of public utilities and city governments. To ask about your school's water provider:

- Public schools: Contact your district resource conservation manager or district maintenance and operations staff.
- Private schools: Contact administrative or operations and maintenance staff.

Key tools and resources	
King County WaterWorks grants: <a href="#">eligible activities</a> ; <a href="#">eligible applicants</a> ; <a href="#">eligible locations</a> ; <a href="#">project ideas</a>	Grants for demonstration projects, education, outreach, on-the-ground projects, habitat restoration in riparian areas, and water quality assessment and monitoring.
<a href="#">King County Surface Water Management fee school discount</a>	Find out how school districts in King County's unincorporated service area may apply for a waiver of the annual Surface Water Management fee if they document educational activities about surface water management and complete maintenance corrections.
<a href="#">Cascade Water Alliance</a> <a href="#">Teacher and student learning resources</a>	Water conservation recommendations, classroom workshops, irrigation audits, rebates, faucet aerators, rain barrels, cisterns.  <i>Service area:</i> Bellevue, Issaquah, Kirkland, Redmond, Sammamish, Skyway, and Tukwila
<a href="#">Saving Water Partnership</a> <a href="#">Free water conservation programs for schools</a>	Water conservation trainings, workshops, audits, and rebates. Water conservation programs for K-8 classrooms in the Saving Water Partnership service area.  <i>Service area:</i> Bothell, Burien, Duvall, Mercer Island, North Bend, Renton, Seattle, Woodinville, and <a href="#">other regions</a> such as Highline Water District and Cedar River Water and Sewer District