



LESSON 4

GSI CIVICS: Stormwater Policy Making

Problem Statement: How can I apply the practices of engineering design to recommend the best green stormwater infrastructure (GSI) applications for a high priority site in my neighborhood?

Subject: Human Geography, Science, Engineering, Math, Civics, Common Core

Grade Level: Middle School or High Schools

DESCRIPTION

Work with a small team of your classroom colleagues in role as either city staff or city council to administer the Stormwater Management Plan. What's your budget? How will you prioritize?

BACKGROUND

Every city is required by the [State Department of Ecology](#) to have a **Stormwater Management Plan**. Sometimes this is called a Surface Water Management Plan. Either way, it is often abbreviated **SWMP**.

In this plan there is a standard set of BMPs or “best management practices” that each city is required to show progress on. For example, cities are designing ways to promote compact development, reduce impervious surfaces, increase natural areas, plant more trees, protect and restore riparian buffers, and improve water detention and infiltration through green infrastructure strategies like rain gardens, bioswales, and pervious pavement. Cities have to control stormwater runoff so that it does not pollute downstream waters.

A city's **SWMP** is reviewed by the State Department of Ecology and, if it is approved, then a permit is granted. Ecology is given authority to issue permits based on the federal [Clean Water Act](#). The permit is called the National Pollution Discharge Elimination System or [NPDES](#). It requires cities and counties to submit an annual report that includes progress updates on each of these categories:

- Comprehensive stormwater planning
- **Public education and outreach** (*This is you!*) [Learn what the law actually says.](#)
- Public involvement and participation
- Mapping and documentation
- Illicit discharge detection and elimination

- Runoff control from new development, redevelopment and construction sites
- Operations and maintenance
- Source Control Program

YOUR TASK

Let's say you are playing one of these two roles for your city.

1. **CITY STAFF:** You are responsible for implementing the Stormwater Management Plan that has been officially permitted by the State Department of Ecology.
2. **CITY COUNCIL MEMBER:** You are responsible for approving policies and voting on a budget to guide and implement the work of the staff.

KNOW YOUR POLICY

Work with a small team of your colleagues either on city staff or city council to divide up these resources. Study the history and purpose of the policies you are responsible for. Scan for key points and be able to talk with some depth of understanding so that you can make the best possible decisions for your city.

1. **History of the Clean Water Act - EPA:** The USA's federal control of pollution began in 1948, paving the way for a series of policies and programs designed to ensure clean water across the country. See the EPA's [Summary](#) and [full website](#) for more info. This landmark legislation was a fundamental turning point in the protection of all freshwater in the United States. The Clean Water Act's stated goal was to make all water fishable and swimmable. This law is the source of all modern day water protection. [Watch VIDEO](#) [5:18]
2. **Loving Puget Sound to Death:** This news article from The Nation speaks to the impact and policy choices behind stormwater runoff in the Puget Sound. In 1972, under the Clean Water Act, states were given more power to oppose industry contaminants in their rivers, lakes, and wetlands. However, as one policy director pointed out, "Storm water is destructive in a less obvious way." [Get the Article](#)
3. **All You Need to Know About Stormwater Runoff:** This is an example of excellent journalism, using news to make stories to make people wake up and take action. [See Article](#). The article is part of a series called [Curbing Toxic Runoff](#) by Sightline investigative reporter, Lisa Stiffler.

KNOW WHAT'S REQUIRED IN YOUR SWMP

Compare the required Stormwater Management Plans of some of our region's major cities like the ones that are listed below. Of course, you could look up your own city as well. Work with your team to respond to some or all of these inquiries:

1. How is the webpage organized?
2. Are the basic required components as listed on page one of this lesson easy to find?
3. Is there a link to the actual plan, perhaps even a list of plans from each previous year?
4. Does the city happen to be in a phase where they are seeking input from the community on a plan update? How does this work?
5. Are there other useful links, like actions you can take, or helpful tips?
6. What are some of the differences between requirements for homeowners and requirements for commercial businesses?

Okay, skim through any number of these examples and see what the main ideas are.

- [City of Seattle Stormwater Management Plan](#)
- [City of Tacoma Stormwater Management Plan](#)
- [City of Bellevue Stormwater Management Plan](#)
- [City of Kent Stormwater Management Plan](#)
- [City of Kirkland Stormwater Management Plan](#)
- [City of Redmond Stormwater Management Plan](#)
- [City of Issaquah Stormwater Management Plan](#)
- [City of Everett Stormwater Management Plan](#)
- [Auburn Stormwater Management Plan](#)
- [Tukwila Stormwater Management Plan](#)
- [Burien Stormwater Management Plan](#)
- Google: (Name of my city) Stormwater Management Plan

HOW DOES MY CITY PAY FOR REQUIRED STORMWATER ACTIONS?

As a city, you are required by law to manage polluted stormwater runoff. It's a really big challenge and it takes a lot of money. Where does this money come from?

Some questions to ask the staff person in your city responsible for stormwater management:

1. What are the highest priority needs for implementing our SWMP? Where are the biggest problems and how do we fix them?

2. How old is our stormwater infrastructure? What does it cost to just maintain it versus design and build improvements?
3. What are some of the new technology or engineering designs that are the most promising and cost effective?
4. Can we scale these innovations?
5. Beyond building better infrastructure, what can we get our local residents to do? What kinds of volunteer behaviors are the easiest to encourage that would also have the greatest impact on reducing polluted stormwater runoff?
6. Do we have enough staff to maintain our existing infrastructure? Would we need more staff or contractors to build the new infrastructure we desire?
7. How many staff can we dedicate to outreach and education?
8. Do we have enough money to pay for all of these needs, materials, and people, within our standard two-year budget cycle?
9. What is the current stormwater fee that we charge each property owner? Can we charge more without making folks stretched financially or angry? How do we balance all of this and not get voted out of office?
10. When is the next official SWMP report due to the Department of Ecology?
11. Do we know if the stormwater permit requirements are set in stone, or will the Department of Ecology require stricter ones in phases ?

Use the example (below) of the Storm Water Management Fee system that the City of Kirkland employs. See if you can find out what the fee structure is in your own city.

EXAMPLE - STORMWATER MANAGEMENT FEE

CITY OF KIRKLAND

For a great **Youth-Voiced** video on this topic, see: [Stormwater Management Fees](#) [6:00]

The following is excerpted from the City of Kirkland's [Stormwater Policies and Regulations](#).

The Kirkland Storm & Surface Water Division is funded by the Surface Water Management Fee charged to property owners. This fee appears on the property tax statements of developed parcels in Kirkland. The fee funds activities required under the City's [Municipal Stormwater Permit](#). Activities include water quality monitoring, pollution prevention, and the maintenance of Kirkland's stormwater system.

Fee Structure

Surface water utility rates are based on "Equivalent Service Units" (ESUs). One ESU is equal to approximately 2,600 square feet. This is the average impervious

area on a single-family parcel in Kirkland. The surface water utility rate is \$19.75/month per “Equivalent Service Unit” (ESU).

Single Family Residence Fee Structure

Single-family residential properties are charged a flat rate per year for one ESU. Surface Water Management Fee = \$19.75/month (flat rate) plus 7.5% utility tax = \$254.78/year.

Commercial and Multi-Family Property Fee Structure

Commercial properties are assessed a charge based on the actual amount of impervious surface area they contain (buildings, parking lots, etc.). \$19.75/month per “Equivalent Service Unit” (ESU). One ESU is equal to 2,600 square feet (ft²) of impervious surface.

Surface Water Management Fee = # ESU x \$19.75/month plus 7.5% utility tax

If an apartment complex has 10,000 ft² of impervious surface (parking lots, walkways, rooftops, etc.). The surface water management fee would be:

10,000 ft² / 2600 ft² = 3.85 ESU

3.85 ESU X \$19.75 per month per ESU =

\$76.04 per month + 7.5% utility tax = \$980.89/year

Fee Discounts

1. Undeveloped properties. Undeveloped properties are not charged a surface water management fee.
2. Low-income senior exemption. If you are a low-income senior as determined by the King County Assessor and you own your personal residence, you may be exempt from the surface water management fee. Only residential properties are eligible. Call the King County Assessor’s Office at 206-296-3920 to verify your eligibility.
3. Discounts are also available for new or remodeled commercial buildings that install a qualified rainwater harvesting system.

Drainage fees do not appear on your Kirkland utility bill but are collected with your King County property taxes. The fee is shown on your tax bill as SWM (Surface Water Management) or Drainage. You can view your drainage fee by entering your property tax ID in the [King County Property Tax Information System](#).

BUDGET PRIORITIES and POLICY GOALS

Given the legally binding need to manage polluted stormwater runoff as effectively as possible, how will you as a city staff or city council spend the money you get from stormwater management fees to prioritize the most important actions this year?

WHAT CAN WE DO?

1. Help plant [3 Million Trees](#)
2. Switch to these strategies for [Natural Yard Care](#) (in 15 different languages!)
3. Take personal action at [Puget Sound Starts Here](#)
4. Don't Feed the Tox-Ick Monster - [7 Simple Actions](#)
5. See playlist of 20 King County informational videos on [Yard Talk](#)
6. Build a Rain Garden at [12,000 Rain Gardens](#)
7. Advocate for [Green Stormwater Infrastructure](#) around your school neighborhood
8. Follow the indicators that scientists track on the dashboard [Puget Sound Vital Signs](#)

HELP IMPROVE THIS LESSON

1. What advice do you have for making this lesson better?
2. How would you teach parts of this lesson to younger students?
3. Are there broken links that we need to know about?
4. Did you find even better links in your research?
5. Would you like to share examples of your work so that other classrooms can learn by your example?

CONTACT: info@sustainabilityambassadors.org

FUNDER & PARTNER ACKNOWLEDGEMENT



Learn More about Sustainability Ambassadors
www.sustainabilityambassadors.org/