

# CITY OF LYNNWOOD & EDMONDS SCHOOL DISTRICT



**Challenge closes: May 1st**  
**All projects are due**

This is an exciting opportunity to use STEM and the Arts to partner with the City of Lynnwood to explore and propose solutions to authentic issues in the community. Edmonds school district students in Grades 4-12 are invited tackle these challenges.

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For information, visit: [www.cte/edmonds.wednet.edu](http://www.cte/edmonds.wednet.edu)

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***Will you accept the challenge to eternal glory?***



City of Lynnwood  
19100 44th Ave W  
Lynnwood WA 98036  
425.670.5400

Edmonds School District  
20420 68th Ave. W  
Lynnwood WA 98036  
425.431.7000 Español: 425.431.1304



### Let's get started:

These challenges are open to teams or whole classes 4th - 12th grade. Each project has city mentors assigned to help guide and provide information you may need. Projects will be displayed at city hall. Selected projects will be recognized at a City Council and a School Board meeting.

1. Select the project(s) you wish to enter and identify your team members.
2. Email your project selection to: Derek Fada, [dfada@lynnwoodwa.gov](mailto:dfada@lynnwoodwa.gov).  
He is the Environmental & Surface Water Supervisor (also a project mentor), and will help connect you to your mentors.

### How to submit:

Submission style to best showcase the research and results will be determined by the students. There is no requirement to have a display board. Make sure the team name (including student names), school and grade level are attached to your submission.

**Final project submissions will be due at City Hall (19100 44th Ave W. Lynnwood) by May 1st.**

**Good luck Challengers!**

## *The Challenges*

### **Stormwater Outreach and/or Impervious Surface Study**

Challenge open to: 4th -12th grade

Mentors: Kayla Grattan, Storm water Technician; Rus Kroshko, Public Works Street Supervisor

**Issue:** As rain falls on our city, it flows to our storm water system over impervious surfaces, collecting pollutants along the way. This leads to a polluted stream of water that enters our local waterways.

**Project Description:** Stormwater is the most prevalent pollutant in Puget Sound, putting important local species like salmon and orcas at risk. Many people are not aware of this problem, or solutions for reducing storm water pollution. How can we educate others about this problem, or eliminate impervious surfaces in our city to keep polluted water out of the storm water system?

#### **Potential Deliverables:**

- Narrative or illustrative educational signage, posters, pamphlets, etc.
- Community pledges
- Impervious surface study at your school or a City facility
- Stormwater reduction project
- Awareness events

# The Challenges

## Sewer Outreach

Challenge open to: 4th -12th grade

Mentors: Jared Bond, Public Works Deputy Director; Kris Olsen, Utility Supervisor

**Issue:** Lynnwood's sewers are polluted with products that wreak havoc on our sanitary sewer system, such as "flushable wet wipes", and FOGs (fats, oils, greases). Wipes clog pipes, get tangled in pumps, do not break down at any point in the water reclamation process. FOGs accumulate into "fat-bergs" (This one is definitely worth a Google search). How should we communicate this message to the public to get them to change their behavior?

**Project Description:** Students will need to construct an outreach program designed to educate the public about what materials are appropriate to be disposed of in our sewer systems.

**Potential Deliverables:**

- Sewer system educational outreach commercial, advertisement, etc.
- Source control/elimination techniques to keep "unflushable" materials out of our sewer system

## Walking, Biking, & Accessibility Mapping

Challenge open to: 4th -12th grade

Mentors: Matt Tenold, GIS Administrator; Kayla Grattan, Surface Water Technician; Amie Hanson, Project Manager

**Issue:** Many American cities, especially on the West coast, are highly dependent on cars for transportation. However, not everyone traveling around the City of Lynnwood has a car, and more cars on our streets means more traffic, accidents, and pollution.

**Project Description:** We would like to expand our knowledge and available community resources on carless options for getting around Lynnwood. We are asking students for help to map out Lynnwood's multi-modal infrastructure. Students could determine whether they want to comprehensively map out, for example, all bike lanes or all sidewalks, trails, and pathways in the City. Or perhaps they may want to identify effective walking, rolling, or biking routes to various points of interest. This could be particularly useful for those traveling to Lynnwood via the Transit Center. Additionally, some facilities (such as sidewalks) could use infrastructure improvements to meet current ADA accessibility standards.

**Potential Deliverables:**

- Map (and mileage) of bicycle lanes in Lynnwood
- Map (and mileage) of sidewalks, trails, and pathways in Lynnwood
- Multi-modal guide presenting bike paths, walkable streets, and bus routes in Lynnwood
- Recommended routes for multi-modal travel from/to popular destinations in Lynnwood.
- Identify sites along recommended routes/travel ways that do not meet ADA PROWAG requirements



# Hall Lake and Hall Creek Habitat Restoration

Challenge open to: 7th - 12th grade

Mentors: Derek Fada, Environmental & Surface Water Supervisor;  
Kayla Grattan, Surface Water Technician

**Issue:** Hall Creek has become an unideal run for salmon spawning

**Project Description:** Salmon have been raised and released in Hall Lake for more than 30 years. From the 80's to the late 90's, lakeside residents had observed salmon spawning in beginning runs of Hall Creek (outlet of Hall Lake). Over time, sedimentation and development have changed the conditions of the upper reaches of Hall Creek. These new conditions are not conducive to salmon spawning habitat. Lake residents have expressed their desire to see salmon spawning in the upper reaches of Hall Creek once again and the City believes that a Salmon Habitat Restoration Plan for the upper reaches of Hall Creek will help to achieve this goal.

**Potential Deliverables:**

- Narrative/Mapped conditions of the Lynnwood portion of Hall Creek
- Habitat Restoration research, report, and proposed solutions

# Snow Response Challenge #2: Policy and Protocol

Challenge open to: 7th - 12th grade

Mentors: Rus Kroshko, Public Works Street Supervisor  
Jared Bond, Public Works Deputy Director

**Issue:** The City of Lynnwood is interested in implementing a new snow and ice removal/prevention policy. This is an overhaul of our current methods, practices, and policy.

**Project Description:** In recent years, The City of Lynnwood has received several powerful winter snow and ice storms. As our climate continues to change, and snow events like these become more common in Western Washington, we would like to make sure our teams and community members are prepared for the worst of winter weather. Students are invited to share their recommendations for equipment, road clearing methods, and weather-related communications to the public.

**Potential Deliverables:**

- A new Snow Response Policy which includes various chemical or physical methods used to clear the roads



# Snow Response Challenge #1: Salt Brine Applicator Build

Challenge open to: 9th - 12th grade

Mentors: Rus Kroshko, Public Works Street Supervisor; Jared Bond, Public Works Deputy Director

**Issue:** Lynnwood is starting a new (to us) anti-icing and snow removal program using salt brine to keep the roads safe during snow events and sub-zero temperatures. However, we need help creating an applicator to do this.

**Project Description:** Students, with assistance from Lynnwood's Public Works Streets Department, will evaluate optimal brine solution, application rates, and optimal equipment. Considerations should be given for weather conditions and temperature, vehicle speed, pumping equipment, valves, etc. As this is a new program for us, we need to make sure our equipment is compatible and calibrated, and the application rate is optimal for the weather conditions.

**Potential Deliverables:**

- A design of a cost-effective salt brine applicator that can be built by staff or students.
- \*\* Students can come and look at our current salt brine applicator for ideas towards their project.



# VHF Radio / Cell Service Mapping

Challenge open to: 9th - 12th grade

Mentors: Paul Coffelt, Traffic & ITS Engineer; Matt Tenold, GIS Administrator

**Issue:** The City of Lynnwood would like to identify areas of improvement for emergency communication: specifically VHF radio and cellular device service strength.

**Project Description:**

VHF: When an earthquake or weather related storm damages infrastructure or cuts communication power, the City of Lynnwood depends upon mobile hand-held radios to coordinate emergency response. This year's challenge is an extension of a previous Mayor's Challenge where students devised methods and identified areas in the city where emergency radio-repeater signal were either blocked, not present, or too weak. At the time of this previous study, the operational strength of the system was 10 watts. Since this study and the feedback received from Mayor's Challenge participants, the City has adjusted the strength to 15 watts in hopes to extend strength to previously unreachable areas of the city. Is the current operational strength enough power for us to depend on in an emergency event, or do we still have "dark" areas in need of coverage? Cell Signal: In our cell phone driven world, connectivity is important, especially in the event of an emergency. Are there populated areas in Lynnwood where cell service is insufficient?

**Potential Deliverables:**

- An updated 2022-2023 map of the City of Lynnwood showing where hand-held emergency communications radios cannot hear or be heard.
- An updated 2022-2023 map of the City of Lynnwood showing where cellular service is insufficient for emergency phone usage.