

# Gore Road Environmental Assessment

By: Castlebrooke S.S. Grade 11 Environmental Science Students

# Background Information

The population of Peel Region is growing rapidly, and it is important to have a safe environment, especially the roadways. The Gore Road needs to be expanded in order to support the growing population and meet our future transportation needs.

The goal for this project is to make the Gore Road safe, functional, and pleasant for all who use it. Environmental issues must be looked at before any further planning can occur. Studies are starting now so that the road can most likely be ready by 2020 to 2031.

# Environmental Studies Conducted

## Aquatic Ecosystem Study

### What Did We Do?

- We measured water sensitivity, water quality, water flow, and fish habitat sensitivity using a pH meter.
- We measured the temperature in the water to see what fish can or do live there.

### Why Is It Important?

- To identify the species at risk and how to appropriately carry out the expansion of the Gore Road without violating the Endangered Species Act (ESA) and Species at Risk Act (SARA).



# Environmental Studies Conducted

## Terrestrial Ecosystem Study

### What Did We Do?

- We dug up soil with a shovel and an auger to determine the type of soil and what was in each layer.
- We differentiated male trees from female trees and identified the different types of trees in the area.

### Why Is It Important?

- Many animal and plant species live within the Gore Road region, and the expansion of the road(s) might cause extinction to some of these species.
- We need to find out what species live in the area and check how the expansion of the Gore road would harm/ affect this wildlife and the soil.



# Environmental Studies Conducted

## Fluvial Geomorphology Study

What Did We Do?

- We measured the depth of the water and found out the speed of the stream.

Why Is It Important?

- These studies are important so when the structure of a river changes every year we can guess how it will affect the Gore Road.



# Environmental Studies Conducted

## Stormwater Management Study

### What Did We Do?

- Investigated the history of stormwater management in the area and traced the path that stormwater would take to be filtered and cleaned.

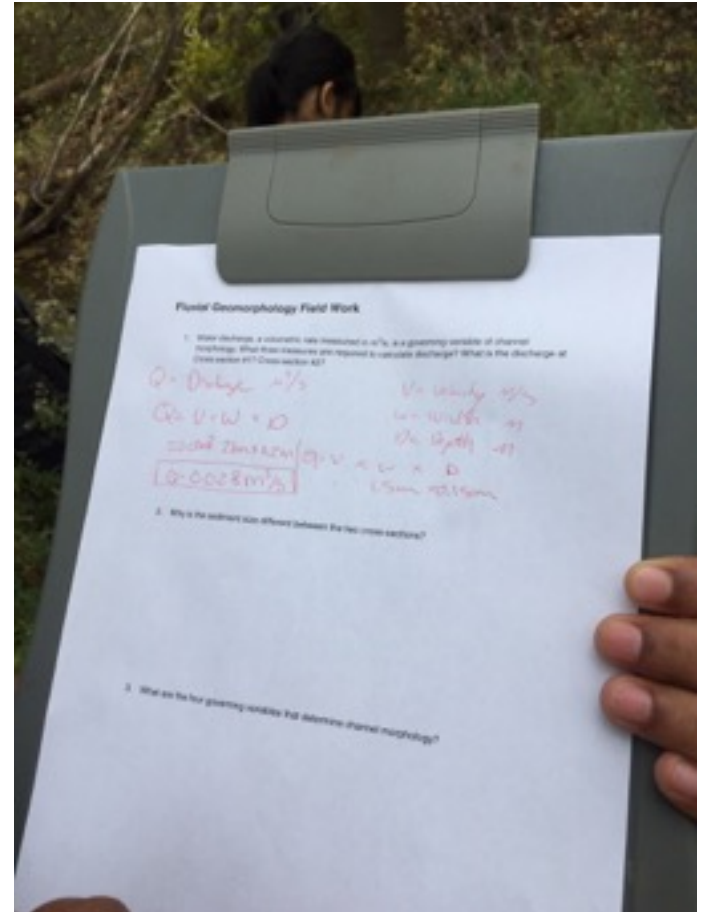
### Why Is It Important?

- These studies are important for us to learn because a lot of people are not aware of how this really impacts our water system, impacts the animals' habitats, and our environment. With more houses being built and being under construction, we have to look at our water system.



# What Did We Learn?

We learned that extending the Gore Road can have some unintended environmental consequences to aquatic and terrestrial ecosystems.



# What Did We Learn?

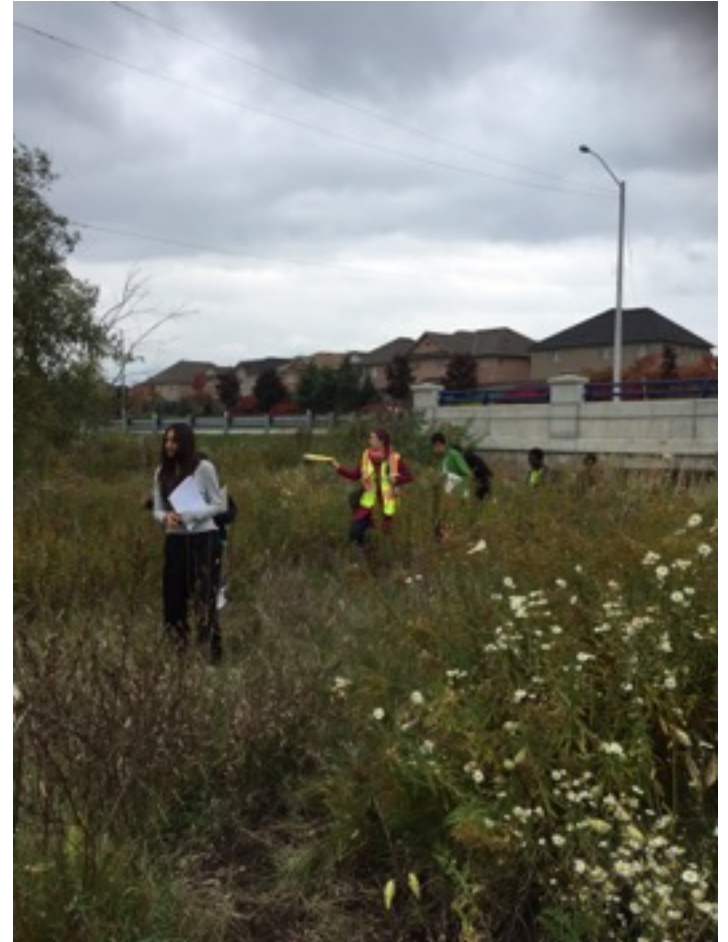
- The fish that can possibly live in the stream are Yellow Perch, Walleye, and Northern Pike. This is because these fish all can live in turbid water with temperatures that are 19-25 degrees celsius.
- The stream has emergent vegetation and submergent vegetation. Emergent vegetation grows beside the stream while submergent vegetation grows in the stream.
- There is a riparian buffer that is a vegetated area beside the stream which protects the stream. The surface water from the road is purified by the soil it passes through to get into the creek. The riparian buffer is usually destroyed during the summer because the water evaporates.





# What Did We Learn?

- Many aspects can change the complexion and flow of a river. When there are higher velocities in a river, larger sediments are formed, resulting in a narrow stream. When the velocities in the river are low, the stream becomes wider because there is not enough strength in the roots of the surrounding vegetation.
- The stormwater management ponds in the area are man made and meant to store storm water and gradually release it into the stream to prevent flooding of nearby houses.
- The pond catches run-off from the Gore Road. Run-off may contain oil, grease and salt from the road and when precipitation occurs, it runs off into the pond. The pond is used to collect dirty water so that it does not ruin natural habitats. The Region cleans the pond of its dirty sediment when necessary



# What Did We Learn?

- There is a very small amount of animals living in the area and they would not be affected very much by the activities taking place.
- There are a few plant species living the area such as crack willow, golden rod and milkweed which monarch butterflies need to survive.



# Implications

- If the Gore Road is expanded, the roots of the surrounding vegetation may be destroyed causing a slow river flow. Therefore the water will struggle to go to the other side of the road and will cause the water in the cross sections to move slowly, creating large sediments that block off the water.
- If we increase the size of the Gore Road, the bridge would have to be extended which can affect the pond beneath. There will be cars on the road and more run-off when it rains. All the toxins from the road will go into the pond, destroying habitat and affecting the animals that live there.
- If the Gore Road is expanded, caution should be taken so none of the milkweed gets destroyed since monarch butterflies need it to survive.

# Our Recommendations

Peel region should expand the Gore Road in order to meet the needs of the growing population. There should also be longer traffic signal lengths, double left turn lanes and wide stage medians for two stage pedestrian crossing. Since the population is growing, the expansion of the Gore road will be beneficial. It will be much more convenient for people to travel and there will be less congestion during peak times. Adding one lane in each direction will make it easier for buses to stop and will also eliminate midblock left turns which are extremely dangerous. Bus bays will also make busing much more convenient.

However, our environmental assessment can help for proper planning to try to prevent environmental impacts.



# Thank You!

Thank you to the Region of Peel and AECOM for involving us in this project. It was an excellent opportunity for authentic learning right in our community.

We appreciate you taking the time to give us the opportunity to learn more about where we live and how we need to treat it.

