

Grade 8

Curriculum Links:

Understanding Structures and Mechanisms: Systems in Action

General Information: Human structures have a huge impact on the environment. By learning about these impacts students can have a positive impact on conservation of natural spaces and species at risk. We have included an activity related to the Long Point Causeway project in Ontario. Lots of information on this topic can be found on the internet. The causeway project has its own website at: www.longpointcauseway.com.

Section 3: Understanding basic Concepts

3.9: Identify social factors that influence the evolution of a system.

Example Activity: As a follow-up to the activity sheet presented students could study the history of the Long Point causeway. A long time ago access to the marinas on Long Point was only available by boat. Increasing interest meant that the first causeway was built. This allowed new Model T fords to travel to the beaches of Long Point. As time went on some of the bridges were filled in blocking off water flow to the marsh but allowing more cars to travel the road. Cottages went up, road improvements were made and the whole system evolved. The social changes of attitude towards natural spaces and the value of the marsh itself or uses of the resources found in the marsh through the years has caused the whole access system to evolve into what it is today and also into what it will be in the future as new plans are approved and altered.

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Understanding Structures and Mechanisms: Systems in Action

Section 1: Relating Science and Technology to Society and the Environment

1.2: Assess the impact on individuals, society, and the environment of alternative ways of meeting needs that are currently met by existing systems, taking different points of view into consideration.

Long Point Causeway Improvement Project – Answer Sheet

Further information about the Long Point Causeway Improvement Project can be found on the internet. Specifically: www.longpointcauseway.com has a lot of information. Students could also search newspaper articles from the area. The activity sheet could be used as a starting point for a classroom debate on the issue. Students could research fully the point of view of one of the interest groups involved and debate each side of the issue.

Long Point Causeway Improvement Project

Long Point, Ontario is a long spit of land which extends out into Lake Erie near Port Rowan, Ontario. In the 1920's a causeway was built allowing tourists to access the beaches and marinas on this spit of land. The causeway was built partly along a rise in the land which formed a natural barrier between the outer bay and Big Creek Marsh. In order to build the causeway, bridges were put in at points where the water flowed between the two areas and clay was brought in to widen the path where needed. Over the years the causeway was altered to allow for the changing needs of users. All of the bridges were removed and filled in except for one, and the roadway was widened to allow for our larger cars. The road was also paved as traffic increased and cottagers started moving in.

A lot of wildlife uses the land around Long Point. It is one of the last remaining Carolinian Forest ecosystems in Ontario and is an important migration point for birds. Long Point also includes a significant wetland area for birds, fish, amphibians and reptiles. The causeway was built over an important corridor for fish, amphibians and reptiles to get into the marsh. It quickly became the fourth deadliest road for turtles in both Canada and the United States.

There is currently a push by several conservation groups headed by the Long Point Causeway Improvement Project to change the causeway as a way of reducing road mortality of wildlife along its route while also improving its safety for people and cars and adding new features for cyclists and wildlife viewers.

Read the attached article and answer the following questions. You can also get more information from the internet by searching the Long Point Causeway Improvement Project website at www.longpointcauseway.com, or by doing a general internet search on the topic.

1. There are several groups that are interested in this project, a couple of those are listed below. Choose two of the groups (one on each side of the argument) and write an argument for each group convincing a city planner why your point of view is the best one, remember to include the impact on individuals, society, and the environment in your arguments. More information on these groups and their interests can be found on the internet.

Pro:

Long Point World Biosphere Foundation
Ontario Ministry of Transportation

Some points to get you started:

- The proposal will fix the road shoulders expanding them to the standard 2m width required and making the road safer for all users
- Many species at risk live in the area and are being killed on the current road. Wildlife underpasses have been proven to reduce road mortality of many species
- Some residents, cottagers and visitors are excited about the proposal for a walking trail, improved fishing points, wildlife viewing platforms, and the addition of a bike trail

Con:

Concerned Cottagers and Residents
Some business Owners

Some points to get you started:

- Some cottagers are worried about losing trees along the roadway. Also bike lanes and walking trails will bring people closer to their homes. They are also worried that a larger road in front of their homes may decrease property values
- Some residents are concerned that the cost of the project will mostly be paid by them in taxes
- Some business owners are concerned that extensive ongoing construction would restrict the number of visitors coming during that time

2. If you had to make a decision on this project, what would you do and why?

Source: <http://longpointcauseway.com/article.php/20080222082941712>

What is the Long Point Causeway Improvement Project?

Friday, February 22 2008 @ 08:29 AM EST

The Long Point World Biosphere Reserve Foundation (LPWBRF) is leading a community-based project to revitalize the 3.5 kilometre-long causeway that links the Long Point Peninsula on Lake Erie with mainland southern Ontario. As a first step, the LPWBRF awarded a \$40,000 contract to Ecoplans Limited of Kitchener, Ontario to conduct a feasibility study of potential improvements that would reduce wildlife mortality and restore the hydrological connections between Big Creek Marsh and Long Point Inner Bay. The improved Causeway could also provide ancillary social benefits including improved road safety and enhanced recreational opportunities while maintaining the rural character of the Long Point countryside.

The Long Point Causeway Improvement Project Steering Committee includes representatives from Bird Studies Canada, the Nature Conservancy of Canada, the Ontario Ministry of Natural Resources, the Ontario Ministry of Transportation, Norfolk County, the Norfolk Land Stewardship Council, the Long Point Region Conservation Authority, the Upper Thames River Conservation Authority, the Norfolk Field Naturalists, the Long Point Country Chamber of Commerce, the Long Point Ratepayers Association, the Long Point Anglers Association, the Long Point Waterfowlers' Association, the Toronto Zoo, and the Ruffed Grouse Society.

The study was completed in April 2008 and recommended the following improvements:

1. Design and install a permanent ecopassage system that will provide animals with an alternative to having to cross the road overland. An ecopassage system consists of culverts and bridges to provide wildlife movement under the roadway and a continuous funnel system of wall or fence that directs wildlife toward the passages and prevents wildlife entering the roadway. Twelve ecopassages are recommended for the length of the causeway. This number should increase the likelihood of use by the species concerned and decrease the distance traveled by reptiles that are slow moving. Also, reptiles have relatively small home ranges and are susceptible to predation if they must move long distances. The funnel wall system will need to be made of relatively smooth material to prevent certain species from climbing over the wall. The wall needs to be at least one metre high and be fashioned with a 'lip' or 'cap' to prevent certain animals from scaling the wall. The funnel wall must be durable enough to withstand temperature extremes, erosion, winter road maintenance and ice build up.
2. Improve the existing hydraulic conditions by re-creating openings through the causeway to allow for the exchange of bay water with the marsh. While the causeway reduced the exchange of water with the Inner Bay there were several outlets that maintained circulation within the marsh. By the mid-twentieth century the southern outlets had been closed and water control structures were removed as they fell into disrepair.
3. According to the Norfolk County Lakeshore Special Policy Area Secondary Plan, the causeway is a candidate trail route and is indicated as an on-road cycling route extending from Long Point Provincial Park up the causeway and connecting with a trail system on the Front Road. The road expansion of the causeway necessary to implement the ecopassage system presents an excellent opportunity to consider a multi-use trail system along the west side of the road. The necessary expansion will easily accommodate a multi-use trail safely set back from the roadway as well as landscaping, all within the existing County road allowance.

Much more detail having to do with the proposed plan, additional signage, traffic calming methods, temporary measures and monitoring are included in the Ecoplans proposal. A copy of the proposal is available for downloading on this site and for review at the Port Rowan Public Library as well as the complete causeway map.

Fast facts

- The Causeway was constructed in 1927-8 to provide access to the Long Point beaches from the mainland.
- On average, nearly 2300 car trips are made across the causeway every day between April and October (2005 data). Four times this number of cars crosses the causeway on summer weekends.
- It is estimated that 10,000 animals die on the causeway annually, according to surveys by the Canadian Wildlife Service - Environment Canada (CWS). Most are leopard frogs but 99 other species of frogs, turtles, snakes, birds, and mammals have been run over including rare and endangered species.
- So many turtles are being run over at Long Point that the causeway is now ranked the 5th deadliest road in the world for turtles.
- The Big Creek Marsh acts as a giant natural kidney for the entire watershed. Because the marsh now has only one outlet into Long Point Bay, sediment and pollution-laden water now flows directly into the bay instead of being purified by the marsh