



*Marshes are the most productive biological community in Canada.*

The project is located in an area of a highly active community development, and the existing road could not meet the needs of the growing population. In response to proposed development, the Class Environmental Assessment identified that additional roadway capacity was needed.

One of the primary goals of the Class EA was to:

*Ensure that any recommended road design incorporates natural environmental design features to avoid or mitigate the effects of the undertaking and, to the extent feasible, to make recommendations to enhance important wetland functions and attributes.*



*Marshes have characteristic plants which grow in distinct zones or layers. The high canopy of emergent plants like cattails and phragmites occupies the tallest layer.*

The road profile in the vicinity of the McKenzie Marsh area did not meet design standards and had to be raised up to 2.5 metres to meet the standards. The Environmental Study Report proposed retaining walls on one side of the road only, with an earth embankment on the other side, within the McKenzie Marsh area. However, the Design Team proposed retaining walls on both sides of the road, to further reduce the amount of encroachment into the marsh lands.



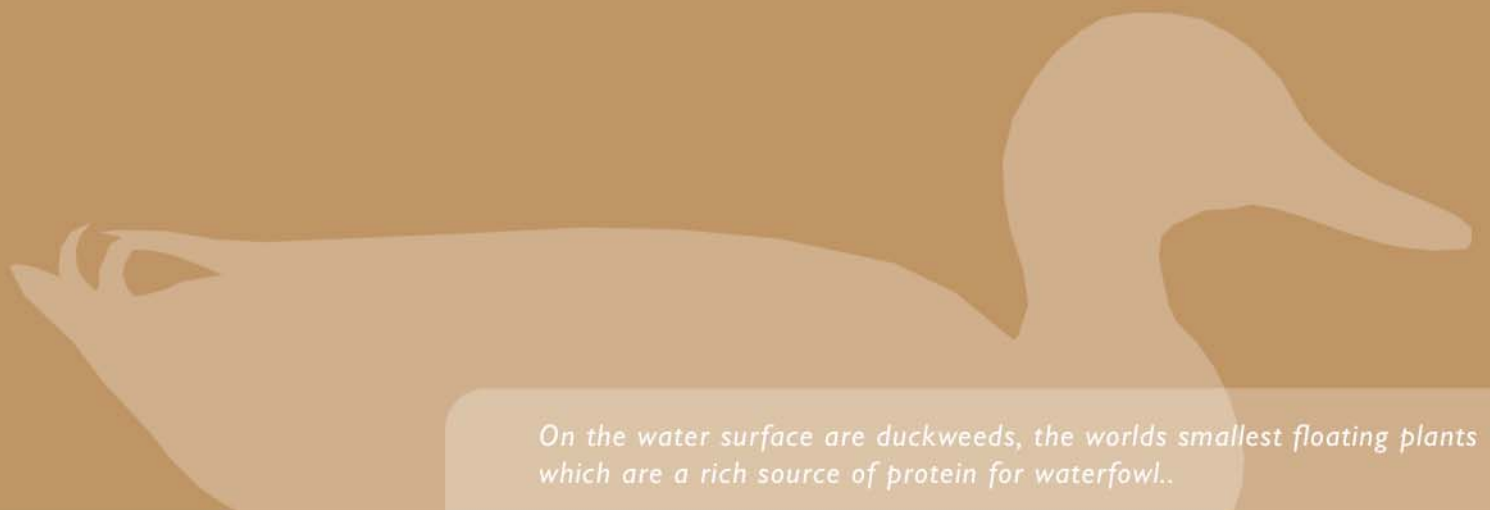
*Birds are most numerous in spring and fall during migration.*

St. John's Sideroad traverses the McKenzie Marsh, a highly sensitive environmental area. Protection and enhancement of the McKenzie Marsh ecosystem has been incorporated into the design of the road.



*In the short growing season at this latitude, marsh vegetation is more efficient at energy capture and storage than any other plant community.*

Public Consultation – In addition to the public consultation that was performed during the Class Environmental Assessment, there was a conscious decision on this project to do more than just the minimum level of public consultation. Three additional public consultation centres were arranged to present the project to the public.



*On the water surface are duckweeds, the worlds smallest floating plants which are a rich source of protein for waterfowl..*

The McKenzie Marsh posed several operational constraints that required the design improvements to be carefully planned in a manner for the sequencing and duration of the various activities to meet the project's interim and final completion dates. Several important activities, both within and outside of the contractor's control, had to be undertaken in an area that posed challenges to the project.



*Around the world, marshes are second only to tropical rainforests in productivity.*

Various forms of construction, with some being unique that are not normally typical of most road construction projects characterize the St. John's Sideroad project. The project not only included roadworks, sewers, watermain and electrical, but it also involved construction of sheet-pile retaining walls, horizontal directional drilling, tunneling, railway crossing improvements, landscaping and work in water.