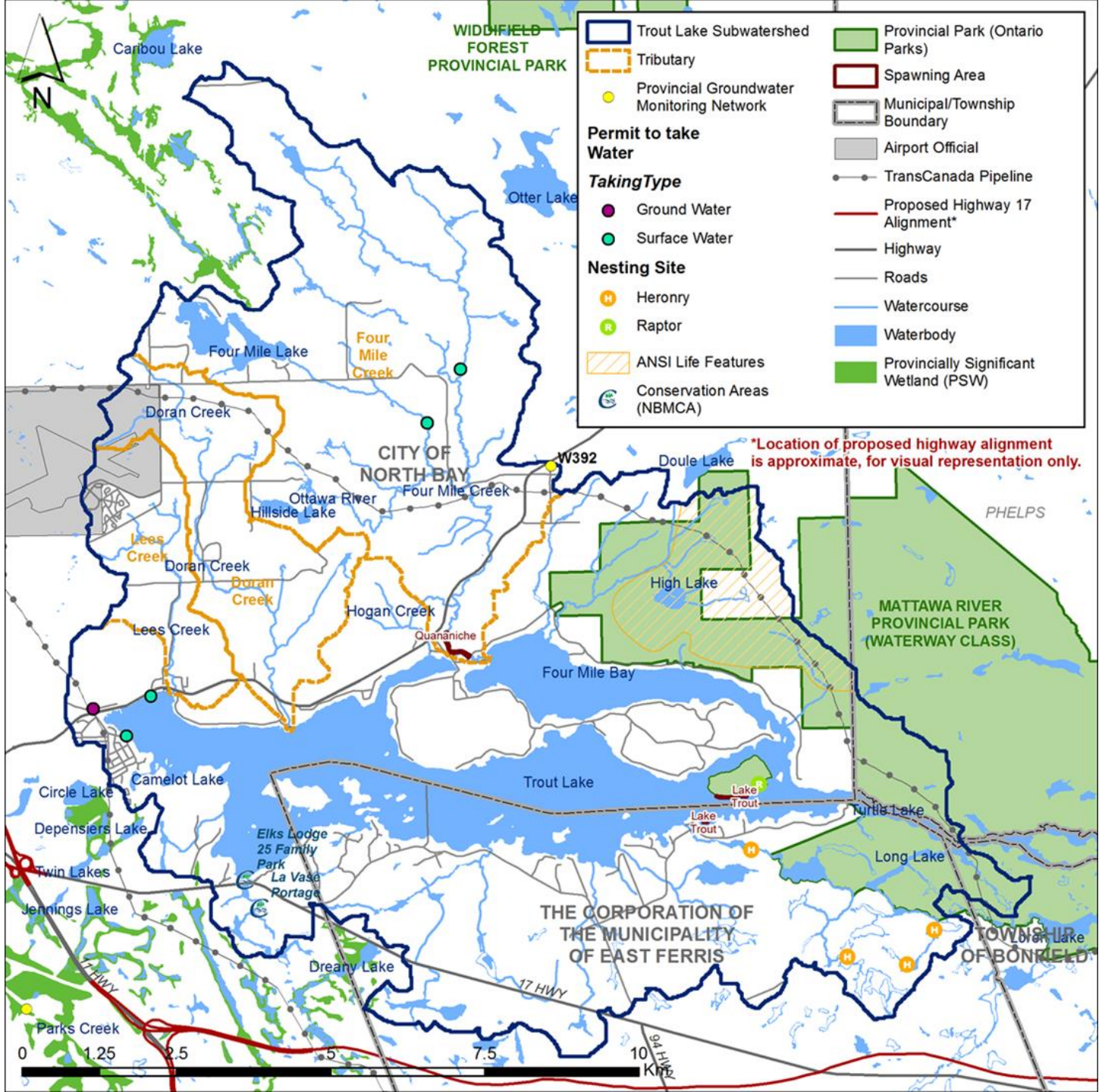
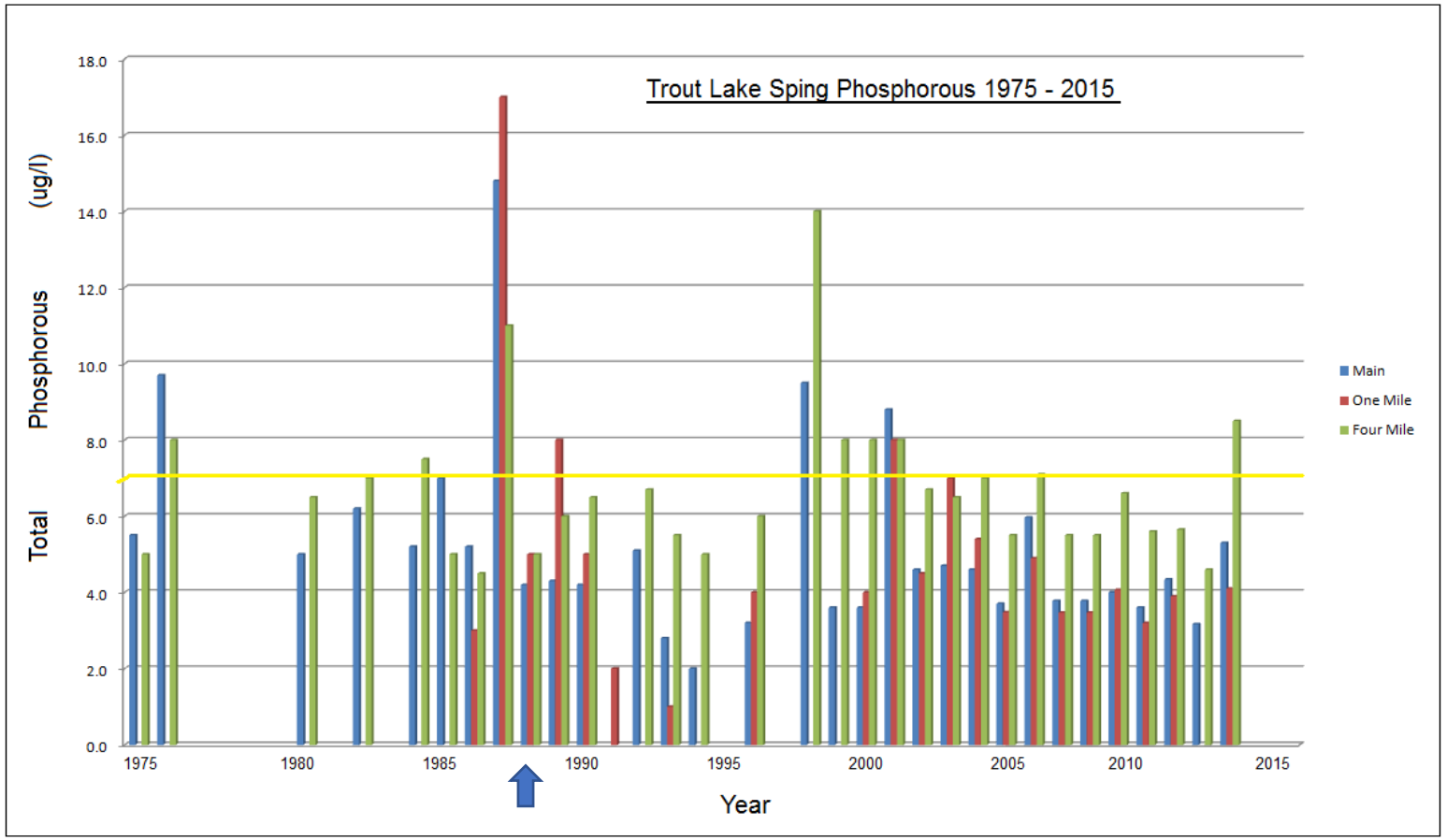
Trout Lake Conservation Association

Presentation to North Bay and East Ferris Municipal Councils Regarding The Trout Lake Study (Aug 2022)

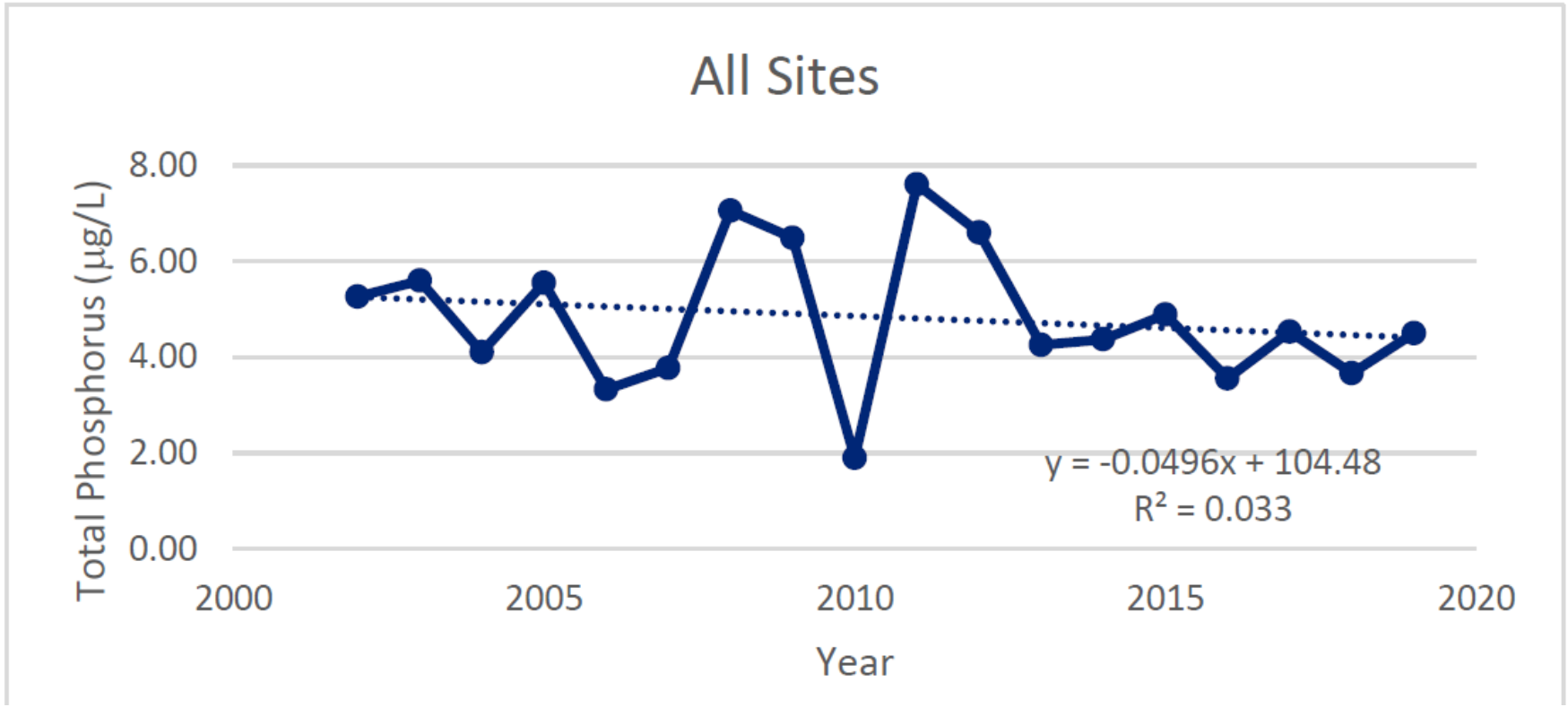
As an important stakeholder in the management of Trout Lake, the TLCA is not in agreement with the consultants recommendations. Allowing unlimited development <u>will</u> have an *adverse affect* on water quality!





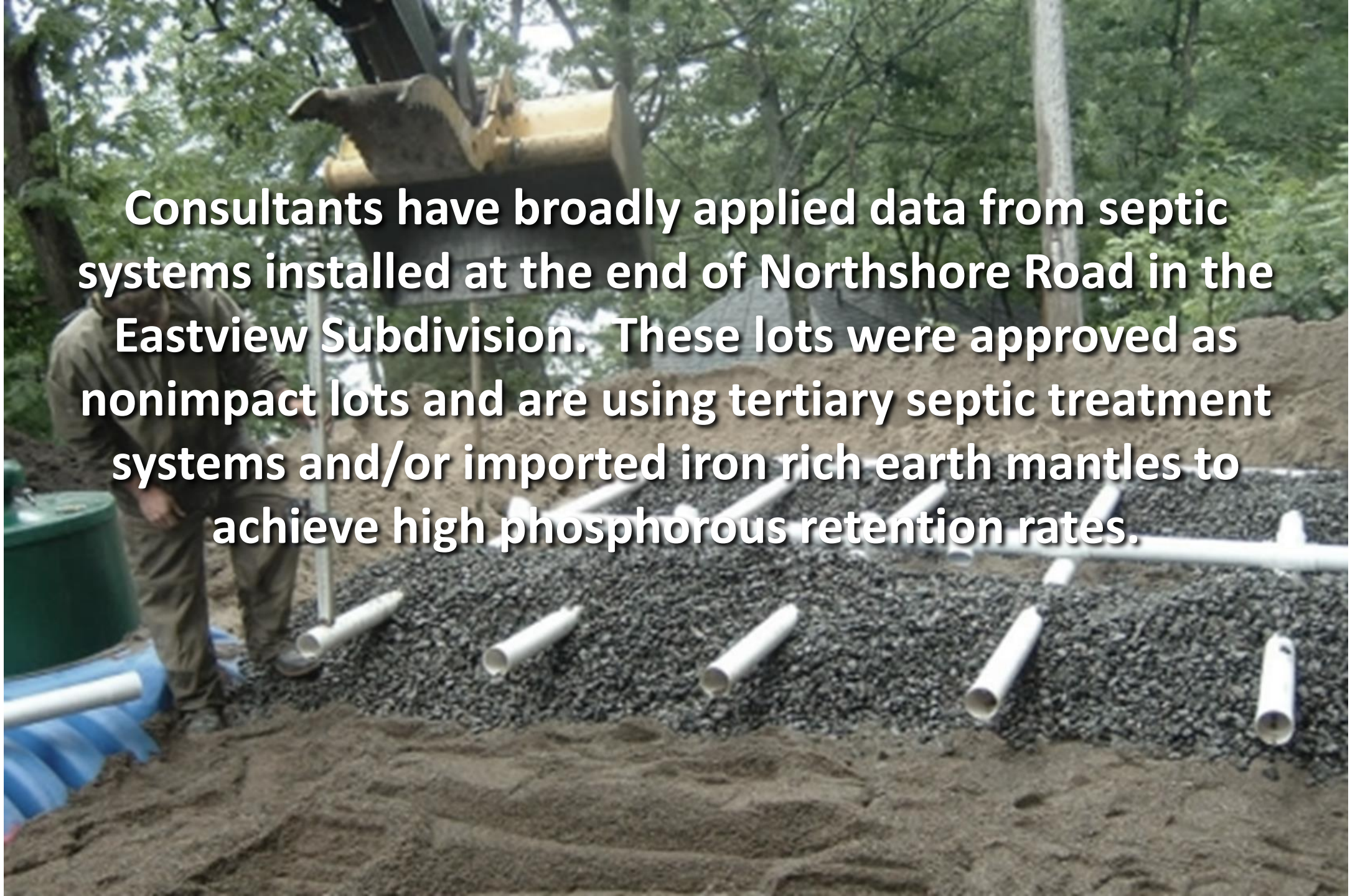
In 1988 when existing Official Plan policies where first drafted the main body of Trout Lake and Four Mile Bay were averaging 7.1 milligrams/L and 7.2 milligrams/L of total phosphorus respectively. The objective to maintain water quality, thus, was established at

7.0 milligrams/L



Today *ice-free seasonal average phosphorus* levels are trending several milligrams/litre lower than historic data suggested was the case, which in part indicates existing policies are working

The consultants have not assigned any significance to the plethora of management efforts being expended in the watershed and have, instead, stated that declining agriculture inputs and extremely high natural soil attenuation are protecting the lake from phosphorous loading.


Consultants have broadly applied data from septic systems installed at the end of Northshore Road in the Eastview Subdivision. These lots were approved as nonimpact lots and are using tertiary septic treatment systems and/or imported iron rich earth mantles to achieve high phosphorous retention rates.

- Other parts of the lake – not using such technologies – do not achieve such high retention rates and thus modelling is skewed to show that development has no impact.
- Water quality trends *are* being influenced by changing external and internal inputs.
- Development impacts *are* being minimized by strict development controls and limits on new lot creation.
- Consultants' work must be peer reviewed by a reputable third party that has no conflict of interest.

The province has stated the Lakeshore Capacity Model cannot be used on Trout Lake because measured and modelled total phosphorous levels are too divergent. We believe their assessment is still valid. It appears that consultants have attempted to force the model to work by making erroneous assumptions which are not scientifically valid.

LAKE CAPACITY ASSESSMENT: TROUT LAKE

Introduction

Trout Lake

Trout Lake is located on the Precambrian Shield in the District of Nipissing. The lake has an area of 1,887 hectares and is comprised of two basins: Four Mile Bay (north) is 27 meters in depth and Trout Lake (Main Basin – south) is 63 meters in depth (**Figure 1**). The catchment is primarily forested with many wetlands and streams. The lake provides drinking water to the City of North Bay, situated on the western shoreline. Both lake basins have experienced extensive permanent and seasonal shoreline development within the 300 meter buffer due to its close proximity to the City. The remaining shoreline property is Crown owned (**Figure 2**).

Trout Lake lies within the Upper Ottawa – Kipawa watershed. The Jocko, Mattawa, and Amable du Fond Rivers flow through the watershed to Lac La Cave. Four Mile Lake is the main inflow into Trout Lake, flowing into Four Mile Bay which is connected to Trout Lake (Main Basin). Many small streams and wetlands also feed both basins of the lake. Trout Lake's outflow is the Mattawa River which flows southeast to Turtle Lake.

Both basins of Trout Lake support a naturally reproducing Lake Trout population and the lake is designated as a Natural Lake Trout Lake by the Ministry of Natural Resources and Forestry (MNRF) (OMNRF 2015). The lake's fish community is diverse with many cold and warm water species such as Lake Trout, Rainbow Trout, Walleye, Brook Trout, Largemouth Bass, Smallmouth Bass, Muskellunge, White Sucker, and Rock Bass (OMNR 2012).

The Official Plans for both the City of North Bay and the Township of East Ferris include water quality objectives for Trout Lake. Both Official Plans also have policies limiting the number of new shoreline lots. These development restrictions effectively impose a development freeze on the lake (City of North Bay 2012, Township of East Ferris 1999).

Development and Lake Trout

Lake Trout typically occupy deep, cold, well oxygenated lakes. As the thermocline deepens during the summer months, Lake Trout will generally move to deeper waters, making use of warmer, shallower areas during nocturnal foraging. Studies have shown that the survival, growth and reproduction of Lake Trout are impaired in lakes where the dissolved oxygen concentration drops below 7 mg/L (Evans 2005, Evans 2007).

The amount of dissolved oxygen in the water column is influenced by many factors including: temperature, wind, ice conditions, lake morphometry, photosynthetic production, respiratory consumption, and photo-oxidation of dissolved organic carbon (DOC). Dissolved oxygen concentrations typically decrease with depth through the hypolimnion. This is because, with thermal stratification, the hypolimnion is effectively isolated from atmospheric and epilimnetic oxygen supplies. The isolation persists from the time that stratification is established in the spring and summer until the fall turnover

We ask that both North Bay and East Ferris continue to pursue planning objectives that *maintain or improve* water quality. Municipal Water Quality Objectives for measured total phosphorous must be reset to reflect recent measured phosphorous data. We propose that the new municipal objective be set at **5 ug/L**. The existing management regime suggests that this quality objective is manageable and reflects the wishes of the public.