

## Municipal Storm Water Treatment

A city in Western Canada has a series of storm water retention ponds used to improve storm water quality, preserve the natural hydrology and mitigate the impacts of urban development. These ponds also function as the centerpieces to the development of the area providing aesthetic qualities to the town as well as irrigation services.

### Issue

Due to the physiochemical properties of storm water runoff, it is common to have water quality issues when this water is put into a basin with a large retention time such as in this case. These water quality issues include cyanobacteria blooms, high oxygen demand and suspended solids build-up.

### Treatment

Seven retention ponds were treated using [Bacterius C](#) and [Bacterius N](#). Each retention pond received four doses of the bacteria for one month. Bacteria dosage depended on pond size and volume. Water samples were collected before and after treatment and tested using an independent lab.

### Results

The results of the treatment showed a large decrease in chlorophyll-a, total nitrogen, and turbidity. Out of the seven ponds, only one did not meet the targets set by the city although there was a noticeable improvement in the pond that did not pass.

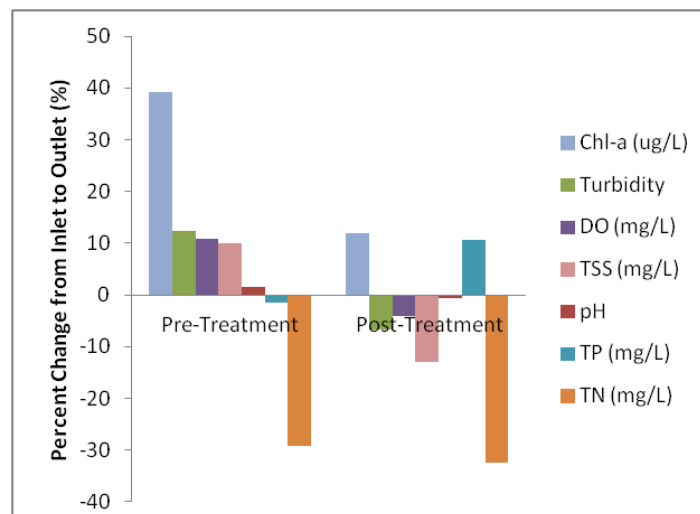


Figure 1. Pre and Post Treatment changes in water parameters from inlet to outlet. Values are the average of all treated storm retention ponds of this case study.

### Recommendations

In order to increase treatment efficiencies, it is recommended that [bottom aerators](#) should be used. This will could increase nitrification, bacterial efficiency and increase dissolved oxygen.