Goal 2

# Protect the Environment

## Indicator #5—Surface Water Quality (Community Watershed Monitoring)

### Why is this indicator important?

Land use changes within the region's watershed have the potential to diminish the water quality in rivers and streams, which affects aquatic habitat and drinking water sources. Residential, commercial and industrial land uses may alter stream temperature, dissolved oxygen levels, and increase turbidity, leading to impacts on aquatic flora and fauna. The RGS encourages local governments to protect surface and groundwater through strategies that prevent contamination from entering water systems and restore damaged ecosystems. The RGS also encourages local governments to prevent development adjacent to water bodies from causing inappropriate interference with water flows and ecosystem health.

### What does this indicator tell us?

This indicator shows changes in the water quality of representative watersheds in the RDN over time. The indicator reports on if specific water quality parameters for sites on selected streams meet or exceed BC Water Quality Guidelines. These water quality parameters include temperature, dissolved oxygen, and turbidity (see the chart below). The indicator tells us if land use changes are affecting the water quality of streams and rivers in the region. Exceedance of Provincial objectives may be detrimental to watershed health and productivity.

### Where do we want to go?

The goal of the RGS is to "protect and enhance the environment and minimize ecological damage related to growth and development." With regard to fresh water, the RGS encourages local governments to protect the quality and quantity of surface and groundwater from degradation and depletion. The RGS seeks to maintain the long term sustainability of these water resources.

**Target: Improve surface water quality**

### What is included in this indicator?

The Community Watershed Monitoring Network collects water quality samples from 45 sites on 21 streams in the region to measure and track changes in the health of watersheds. This indicator includes the total number of sites that met the BC Water Quality Guidelines for turbidity, temperature, and dissolved oxygen for more than one parameter in multiple monitoring periods out of the total number of streams monitored under this program. The monitoring period for the information used in this indicator is 2011-2014.

| BC Water Quality Guidelines |
|---|
| **Turbidity** |
| October to December: 5 NTU* January to September: 2 NTU |
| **Temperature** |
| Short term, at any location in the river $\leq 17^{o}C$ average weekly temperature. Long term $\leq 15^{o}C$ average weekly temperature |
| **Dissolved Oxygen** |
| 30 day average 8 mg/L Instantaneous minimum 5 mg/L |

* Nephelometric Turbidity Unit

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## Target: Improve surface water quality

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**28 out of 45 sites met the BC Water Quality Guidelines for more than one parameter in multiple monitoring periods** according to RDN Drinking Water and Watershed Protection program (2011 -2014)

**Where are we right now?**

Between 2011 and 2014, the Community Watershed Monitoring Network reported that twenty eight out of forty five sites sampled met the BC Water Quality Guidelines for more than one parameter in multiple monitoring periods. Conversely, seventeen out of forty five sites monitored exceeded more than one parameter in multiple reporting periods. All of these exceedances were observed at sites in more urban areas.

| Monitored Streams that Meet the BC Water Quality Guidelines 2011-2014 | | |
|---|---|---|
| **Turbidity** | **Temperature*** | **Dissolved Oxygen** |
| **32 sites met guidelines out of 45 sites that were monitored** | **16 sites met guidelines out of 45 sites that were monitored** | **32 sites met guidelines out of 45 sites that were monitored** |

## State of Our Streams

To date, the Community Watershed Monitoring Network has collected water quality information from 23 selected streams to assess the health of the region's watersheds. This initiative is coordinated by the RDN Drinking Water and Watershed Protection program. Please see the **State of Our Streams** project for a more detailed summary of each watershed.

* Exceeding the temperature guideline is typical for many east coast Vancouver Island streams where lower portions are wide and shallow (as long as refuges remain with lower temperatures, juvenile fish should be able to retreat to these during periods of elevated temperatures).