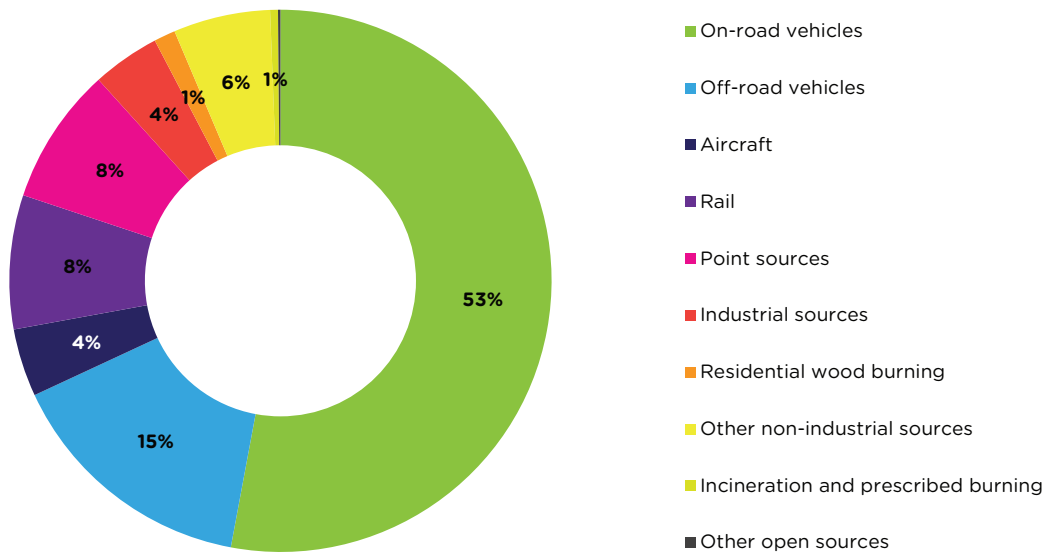


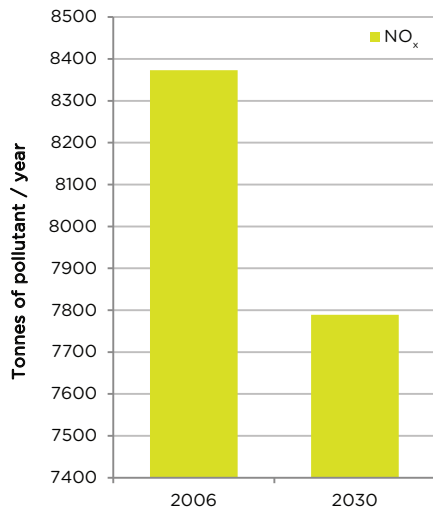
## WHAT IS NITROGEN DIOXIDE?

Nitrogen dioxide (NO<sub>2</sub>) belongs to a group of nitrogen-containing substances called nitrogen oxides (NO<sub>x</sub>). NO<sub>x</sub> are released into the atmosphere from high-temperature combustion processes such as car engines, power plants and industrial processes. Although primarily emitted as nitric oxide (NO), NO<sub>2</sub> is rapidly formed when NO reacts with ozone (O<sub>3</sub>) and volatile organic compounds (VOCs). The major sources of NO<sub>2</sub> in Canada are on-road and off-road vehicles, the oil and gas industry, and the use of fuel for electricity generation and heating. It is a precursor to fine particulate matter (PM<sub>2.5</sub>), and contributes to acid rain.

### SOURCES OF NO<sub>x</sub> IN THE CENTRAL OKANAGAN AIRSHED



### NITROGEN OXIDE FORECAST FOR THE CENTRAL OKANAGAN



**SOURCES**

<http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=C8BF3F2-1>  
<http://www.epa.gov/airtrends/aqtrnd95/no2.html>

### HEALTH AND ENVIRONMENTAL EFFECTS

Nitrogen dioxide can irritate the lungs and lower resistance to respiratory infections such as influenza, and increase susceptibility to allergens for people with asthma. The effects of short-term exposure are still unclear, but continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children. EPA's health-based national air quality standard for NO<sub>2</sub> is 0.053 ppm (measured as an annual arithmetic mean concentration). Nitrogen oxides contribute to ozone formation and can have adverse effects on both terrestrial and aquatic ecosystems. Nitrogen oxides in the air can significantly contribute to a number of environmental effects such as acid rain and eutrophication in coastal waters like the Chesapeake Bay. Eutrophication occurs when a body of water suffers an increase in nutrients that leads to a reduction in the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

