

# A triple bottom line of winter maintenance practices

Board of Directors' meeting

October 22, 2021

Bill Thompson, Manager

Watershed Plans and Strategies

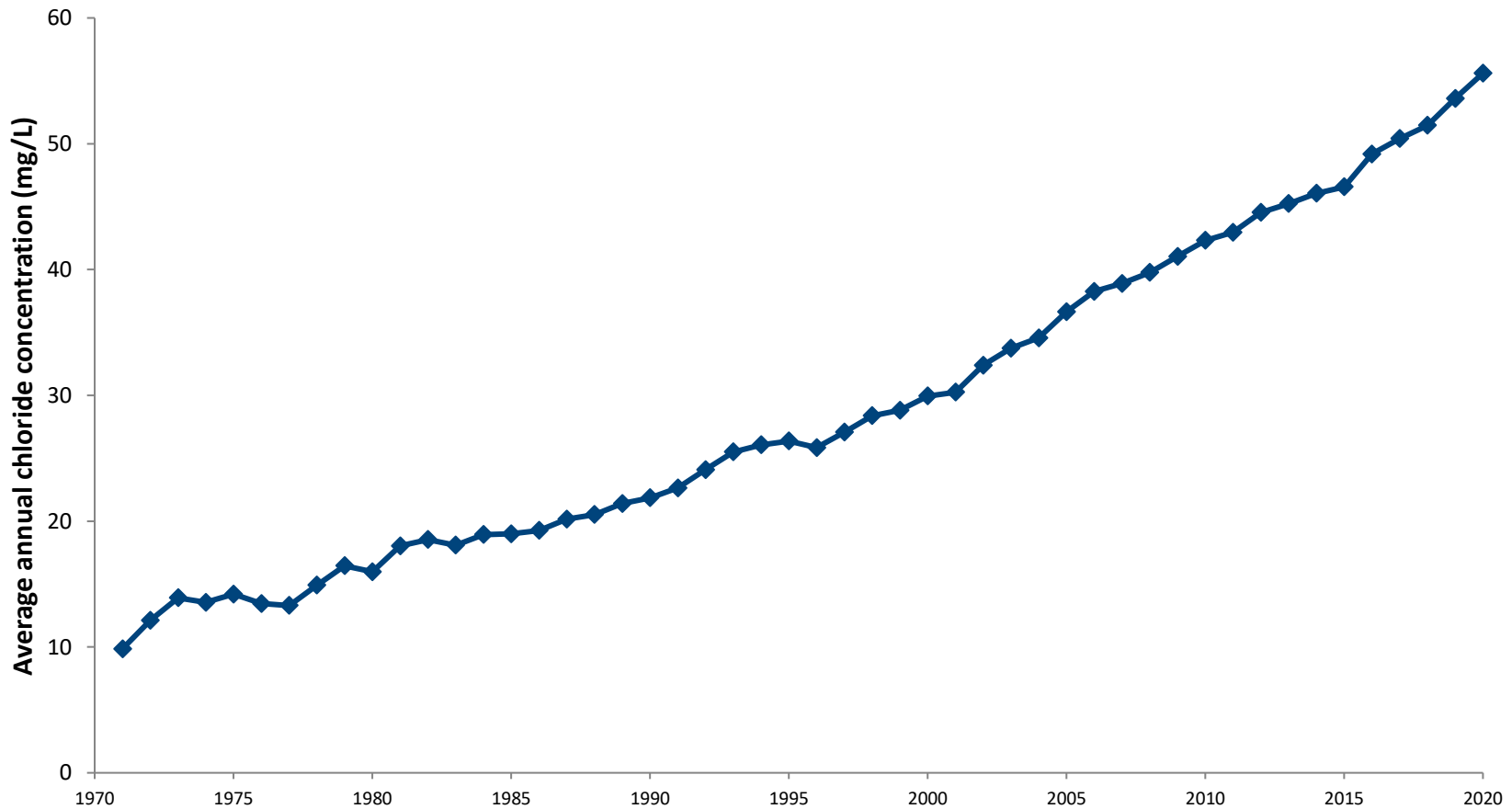


**Lake Simcoe Region**  
conservation authority



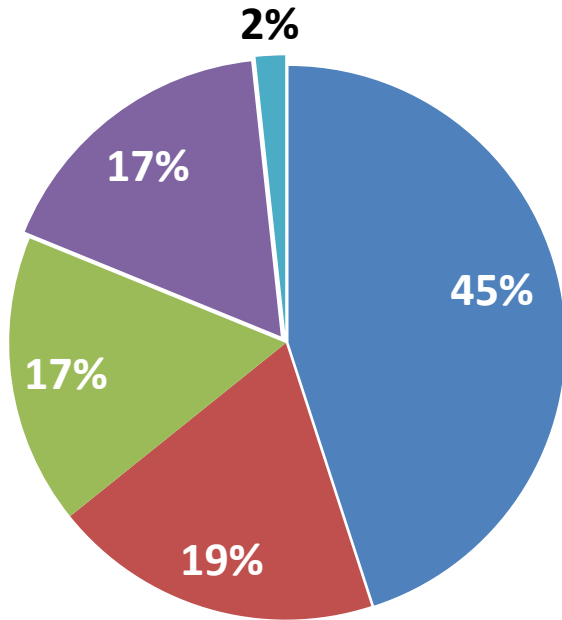
Member of Conservation Ontario

# Lake Simcoe Chloride Trends

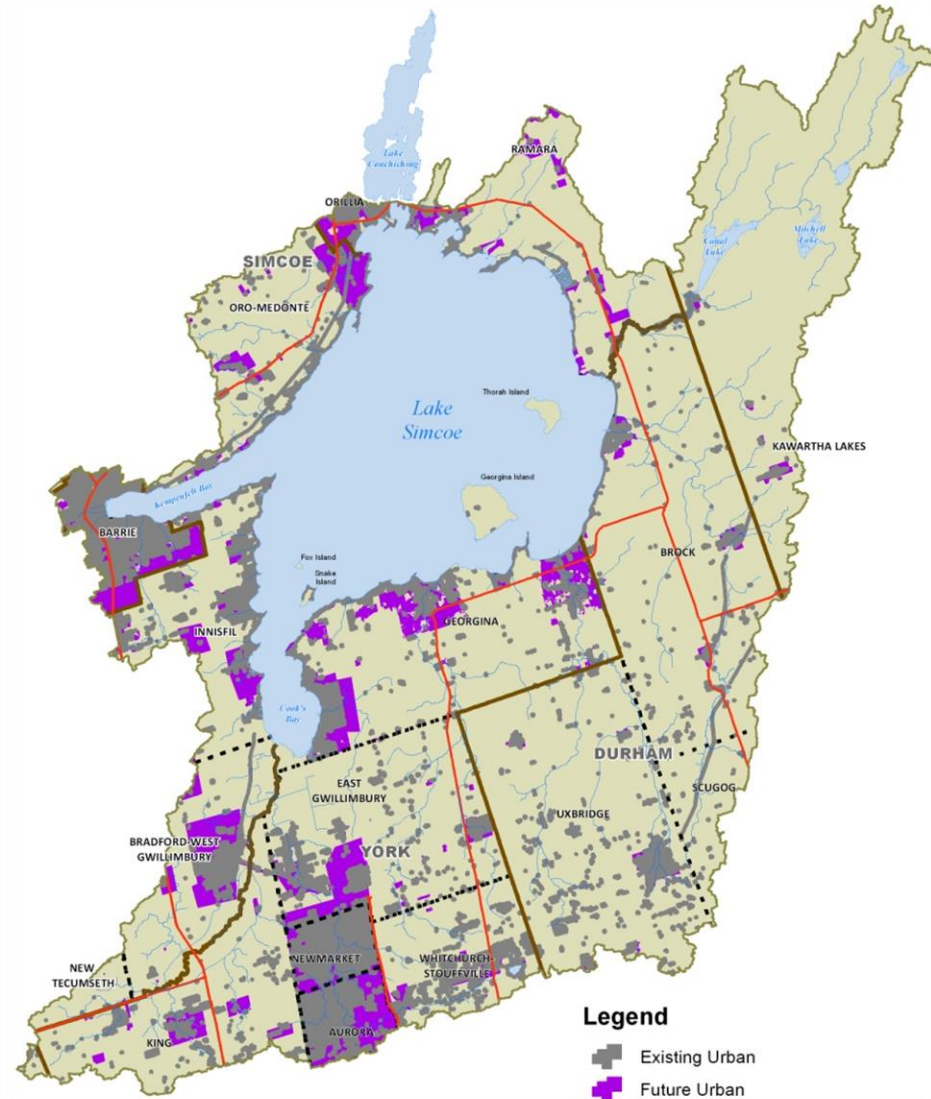


- Concentrations have been increasing at a rate of 0.7mg/l/year (2020 = 55.6 mg/l)
- By 2120 Cl will exceed 120mg/l guideline

# Application in Lake Simcoe Watershed



- Local roads
- Regional roads
- Provincial highways
- Commercial
- Residential

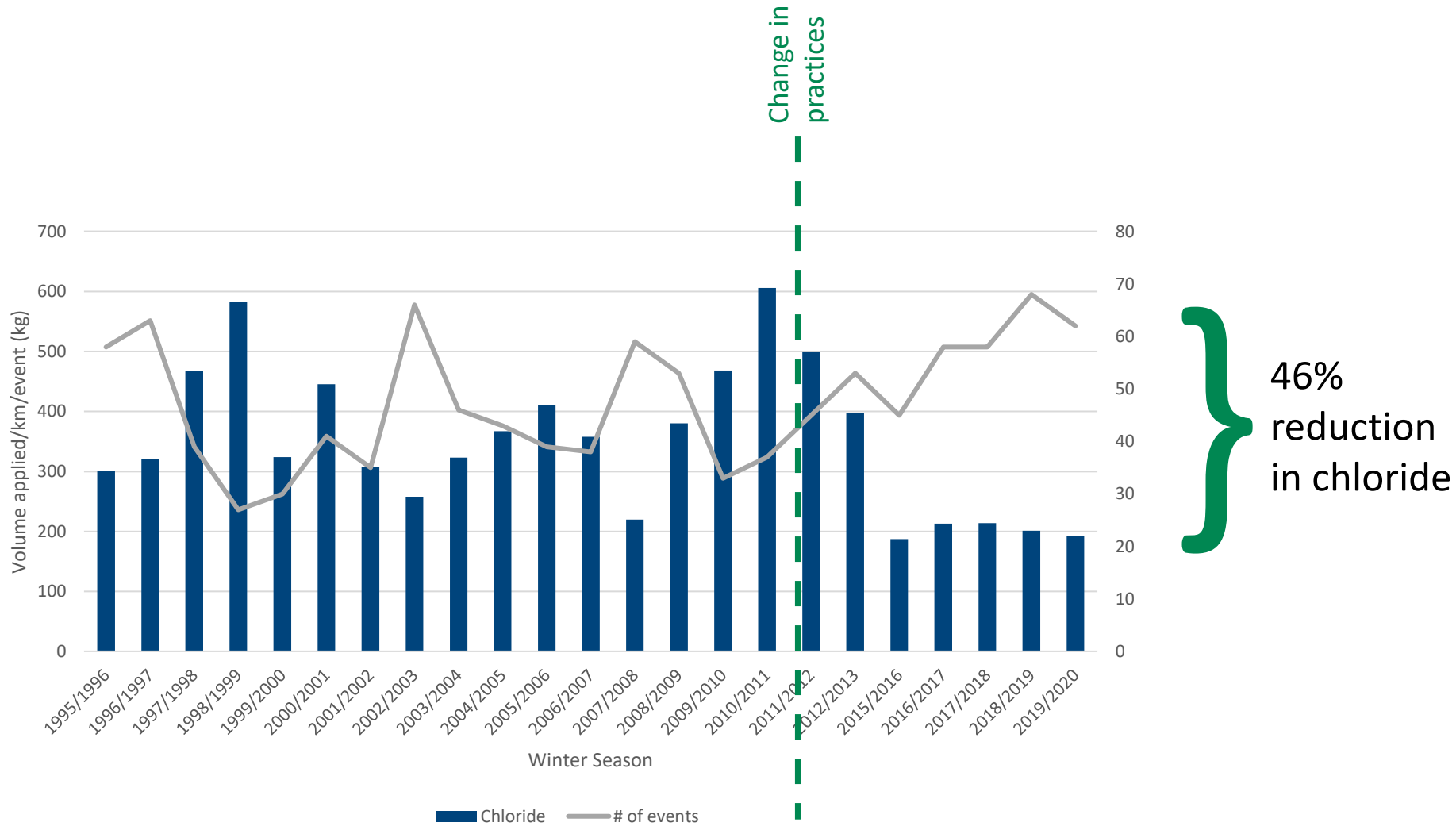


# Case study 1: change in municipal practices

- Town of Newmarket
- Adopted use of treated salt in winter 2015/16, after a one-year pilot
- Replaced use of a salt-sand mix
- Case studies reviews environmental, cost, and public safety implications



# Material use has decreased

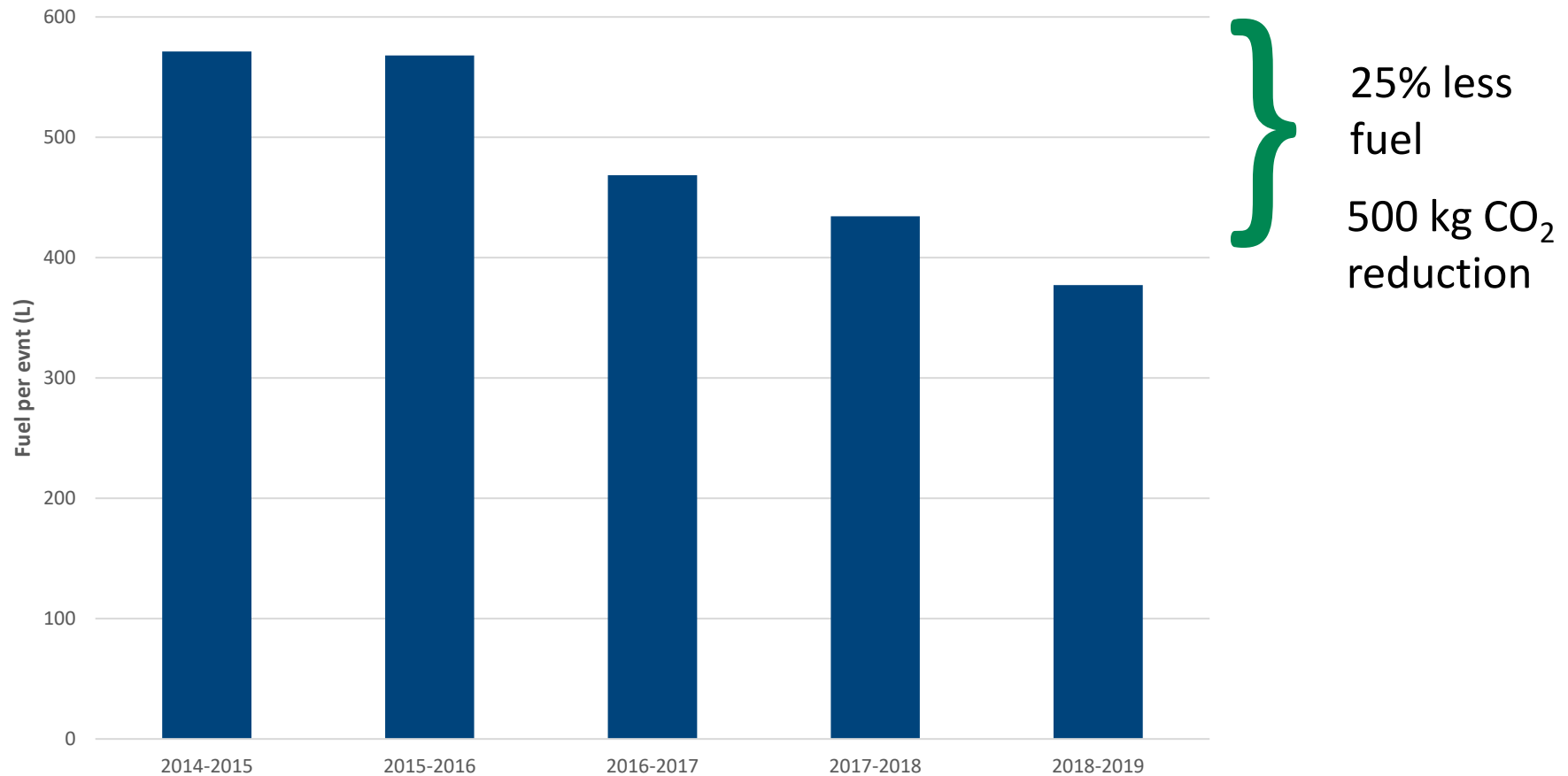


# Material costs have decreased

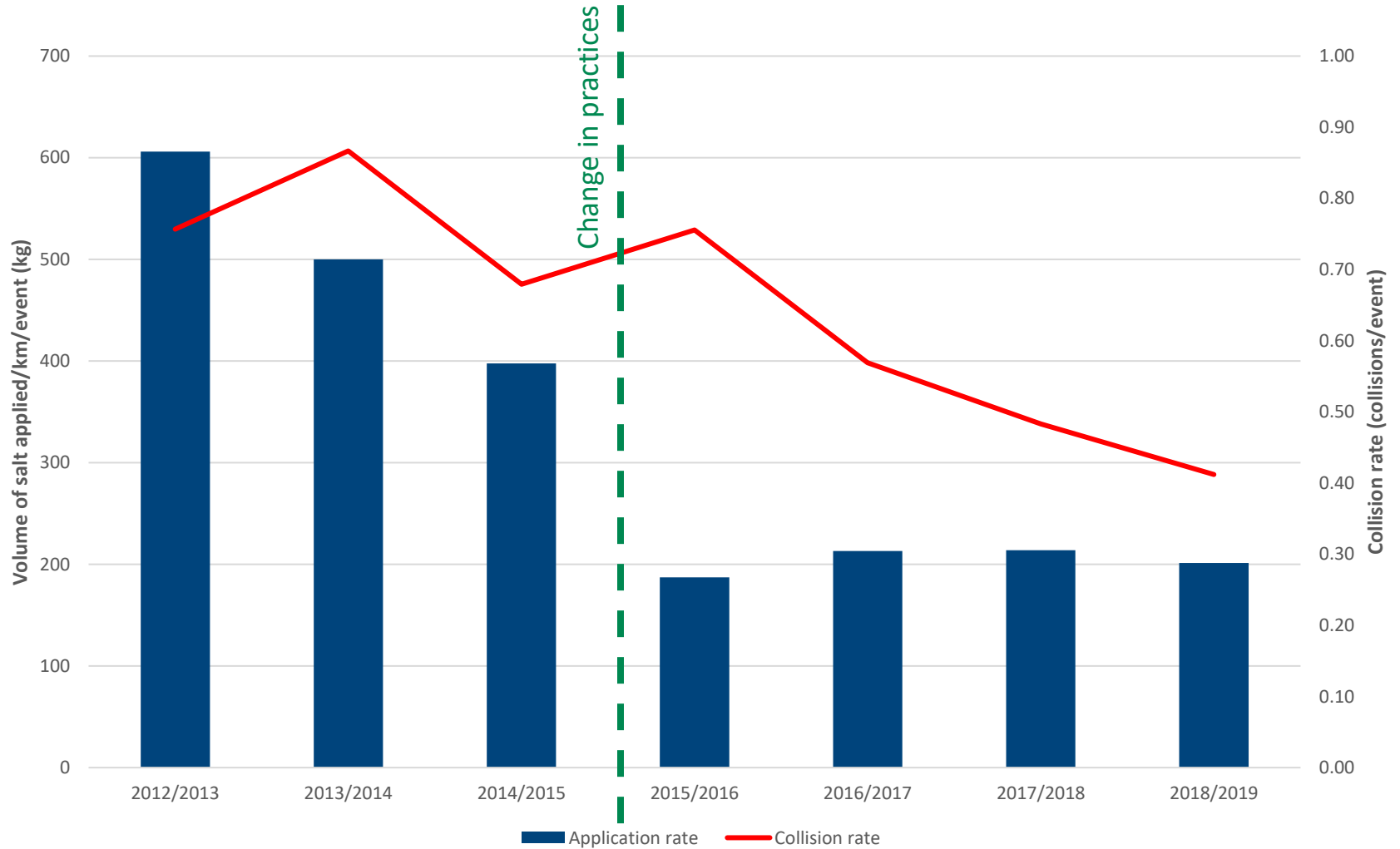
Material	Cost (per tonne)	Volume applied (per km per event)	Cost (per km per event)
Salt	\$100	0.39	\$39
Thawrox	\$125	0.21	\$26.25

} 33% cost savings

# Fuel use has decreased



# Public safety has been maintained





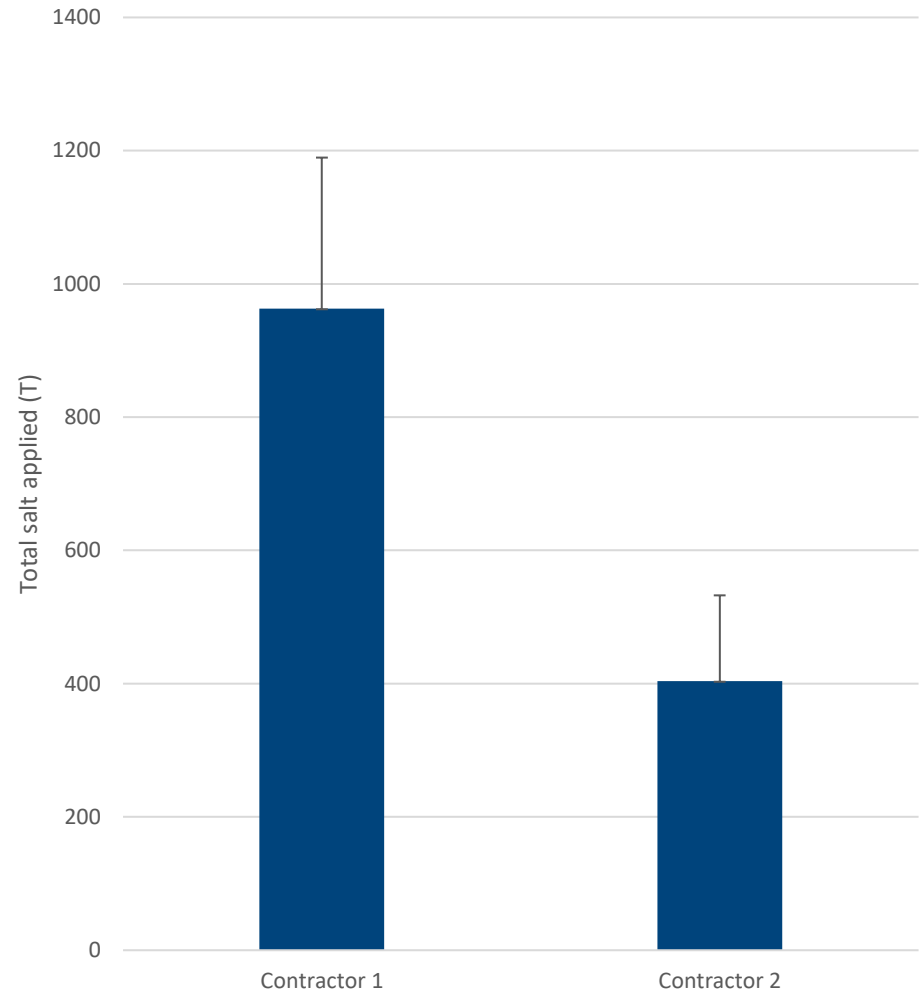
# Case study 2: change in parking lot practices

- Large commercial parking lot
- Monitoring since 2014
- Change in contractors in winter 2018 / 19



# Some preliminary results

- More precise application of salt
- Fewer applications
- Treated salt
- No slips, falls, or complaints



# Final thoughts

- Better winter maintenance practices have economic, safety benefits, not just environmental
- Additional case studies are forthcoming (liquids, beet juice, institutional parking lots)
- These case studies to be shared with industry, municipal staff, decision makers
  
- But ... liability remains the elephant in the room
- And climate change is an unknown

