

Reducing Idling Times of Vehicles Along a Busy Corridor – A Case Study (City of Burnaby)

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Agenda

- Problem with Idling Vehicles
- Goal
- Solution
- Hastings Project - Analysis
- Hastings Project - Results/GHG reduction
- Questions

Problem with Idling Vehicles

- Idling Vehicles = Air Pollution
- 1L gasoline = 2.3 kg of CO₂
- Stop & Go Traffic



Goal

- Reduce the number of stops of vehicles
- Reduce the time vehicles are idling

Solution

- Adjust timings in the traffic controllers
- Create a “green band” to eliminate stops



Intersection 1



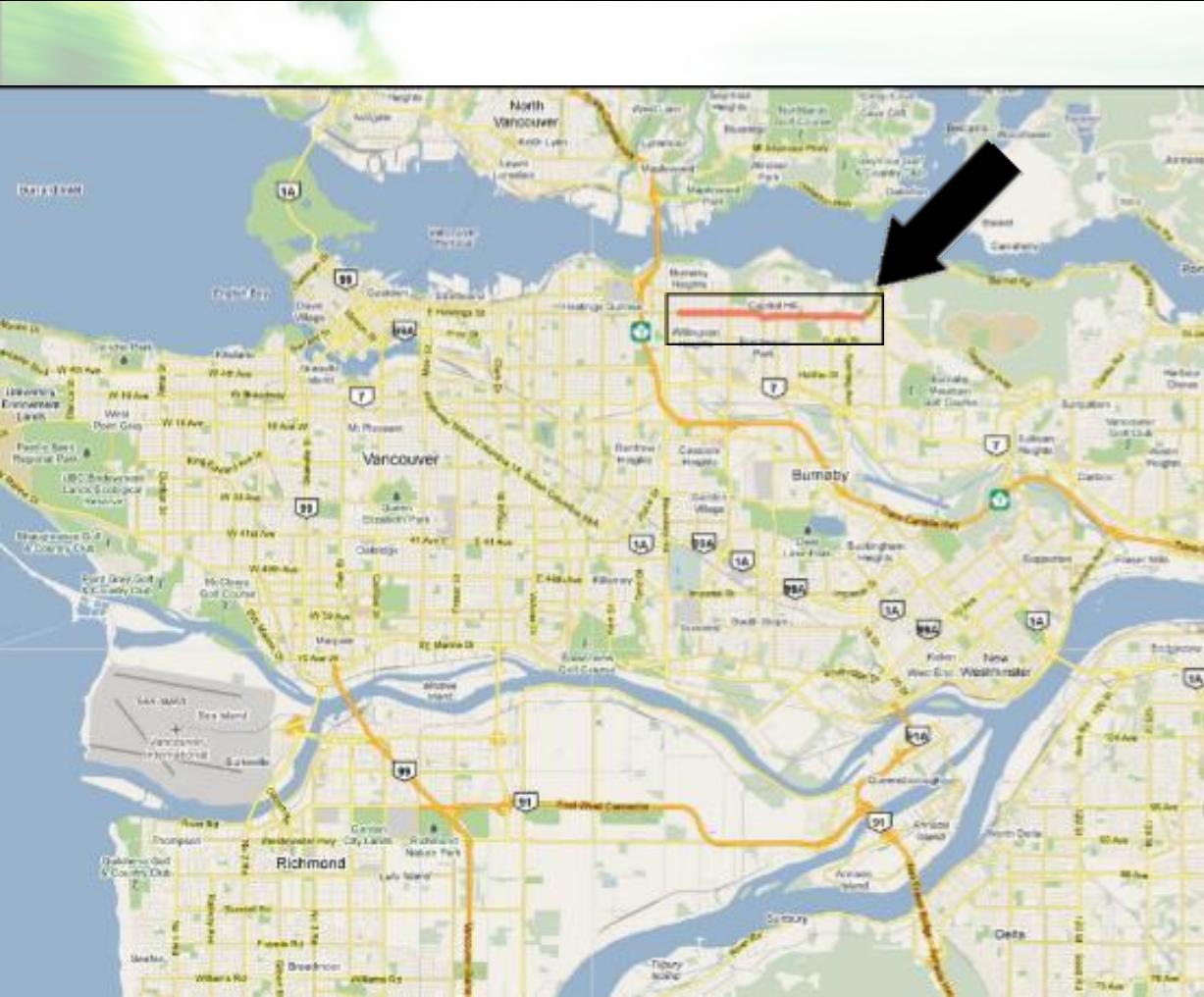
Intersection 2



Intersection 3



Hastings Street – Analysis



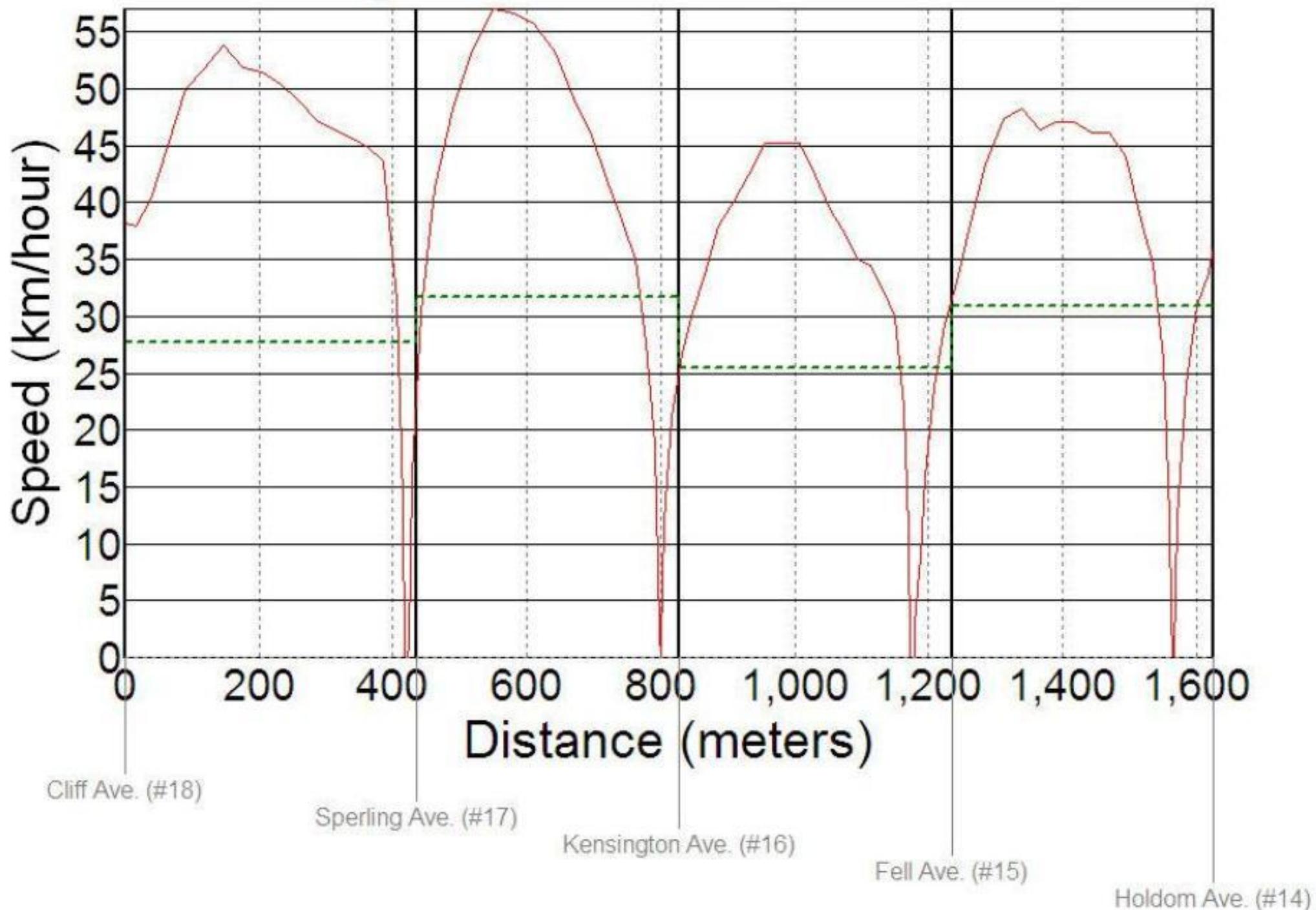
- From Ingleton Ave. to Cliff Ave.
- 18 Intersections
- 11 Pedestrian Signals
- 4.4 km long

Hastings Street – Analysis

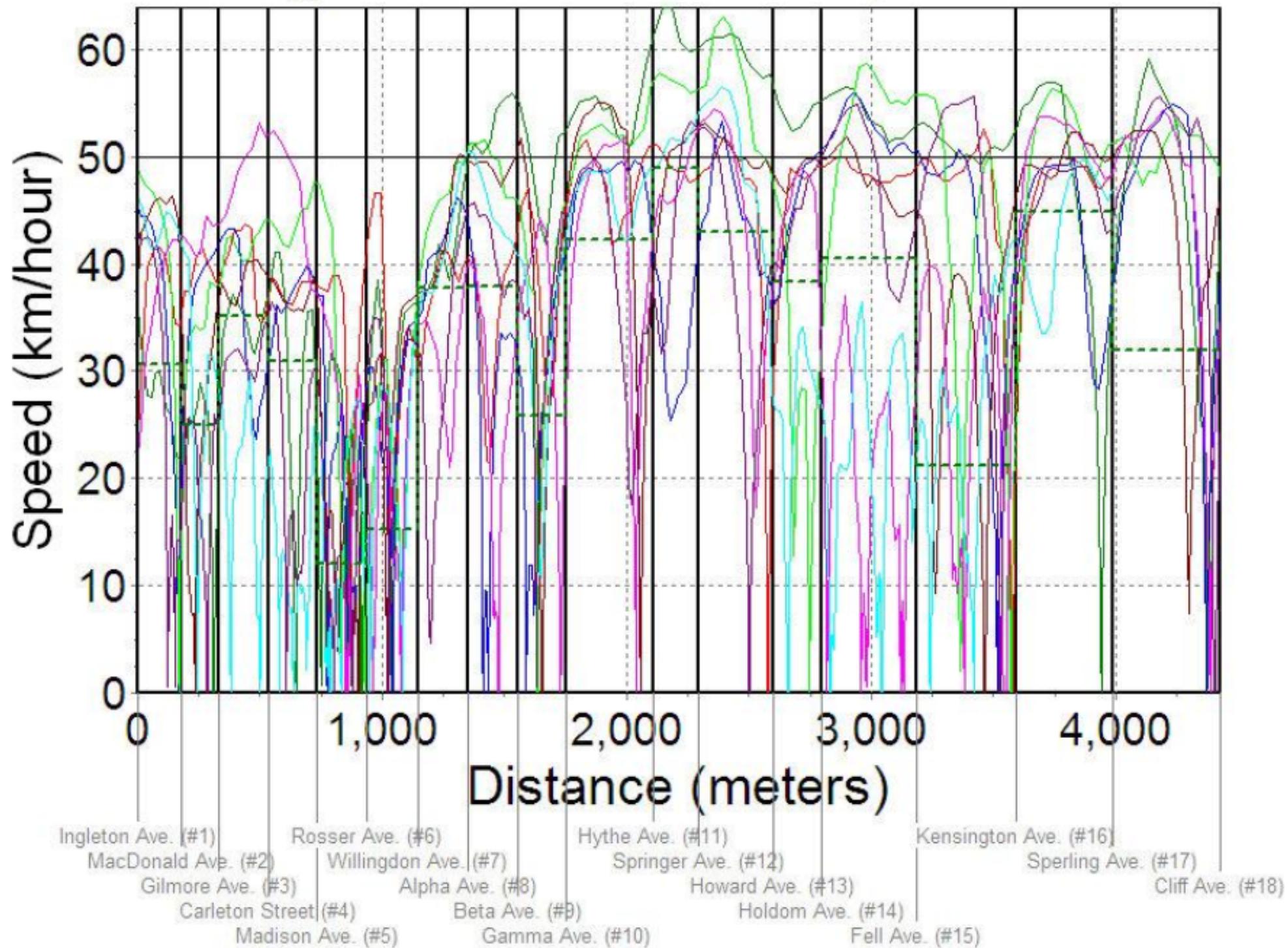
- Tracked position & speed with a GPS receiver
- Captured real-time data
- Measured corridor performance



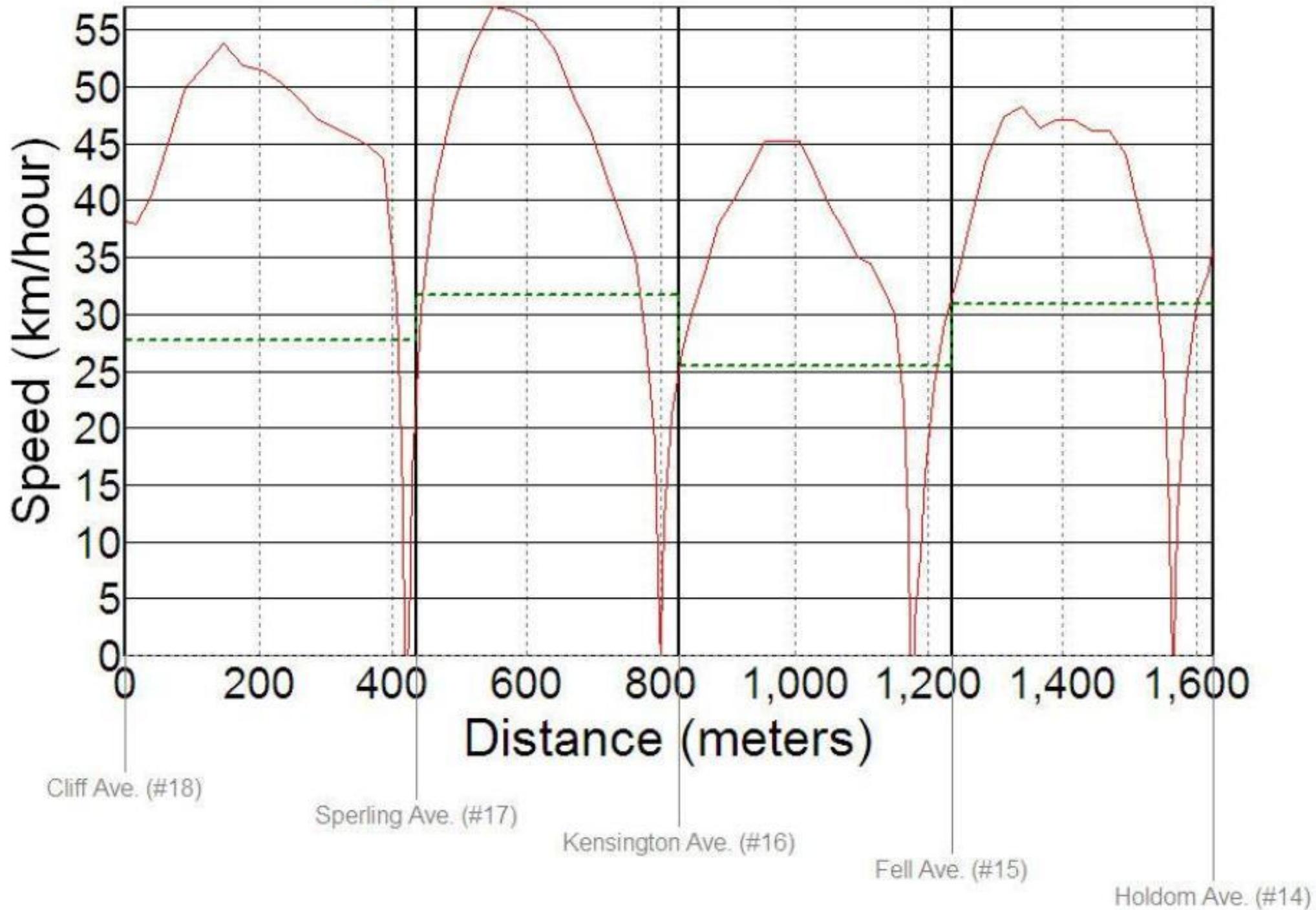
Hastings Street - Before - 1 Run



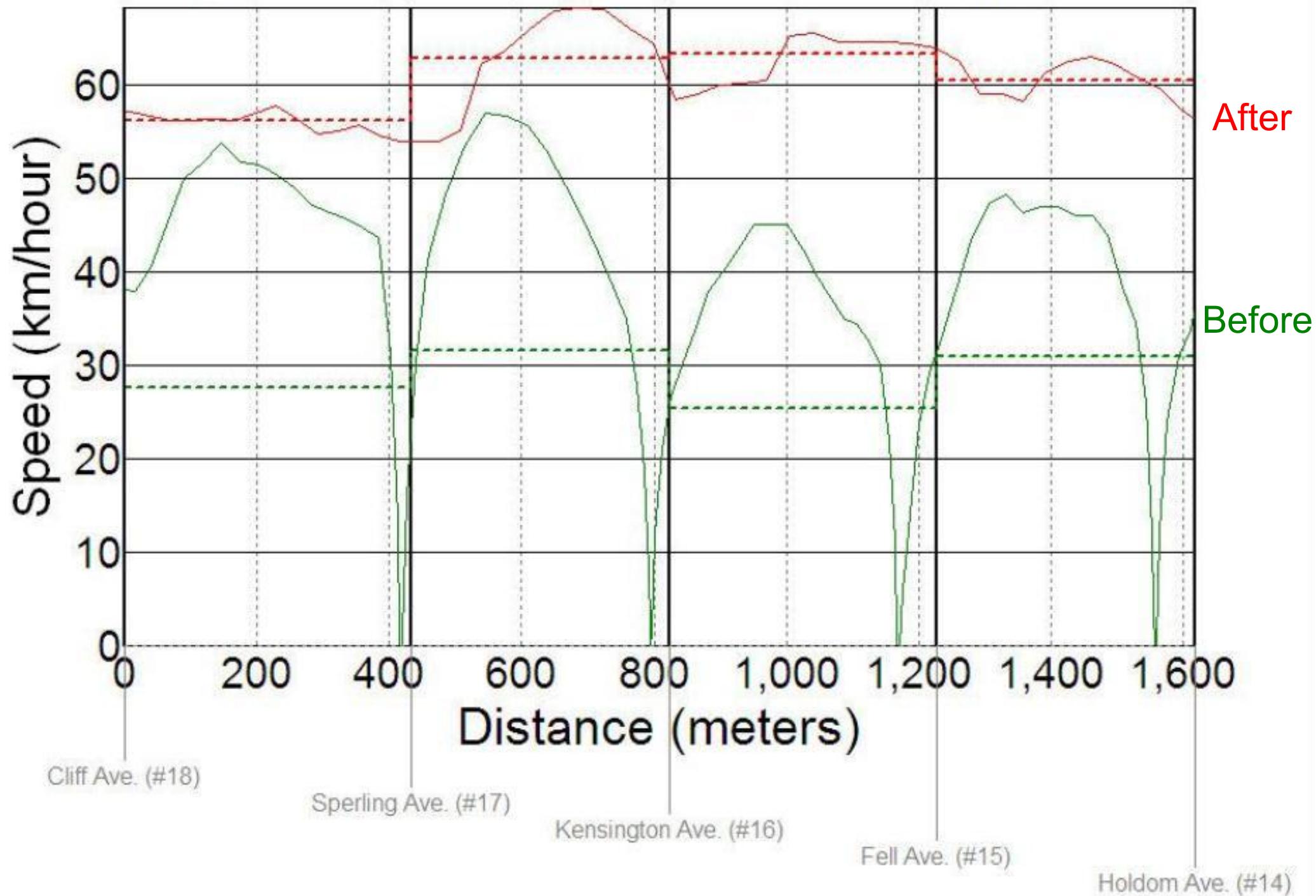
Hastings Street - Before - Multiple Runs



Hastings Street - Before - 1 Run



Hastings Street - Before Vs. After Comparison

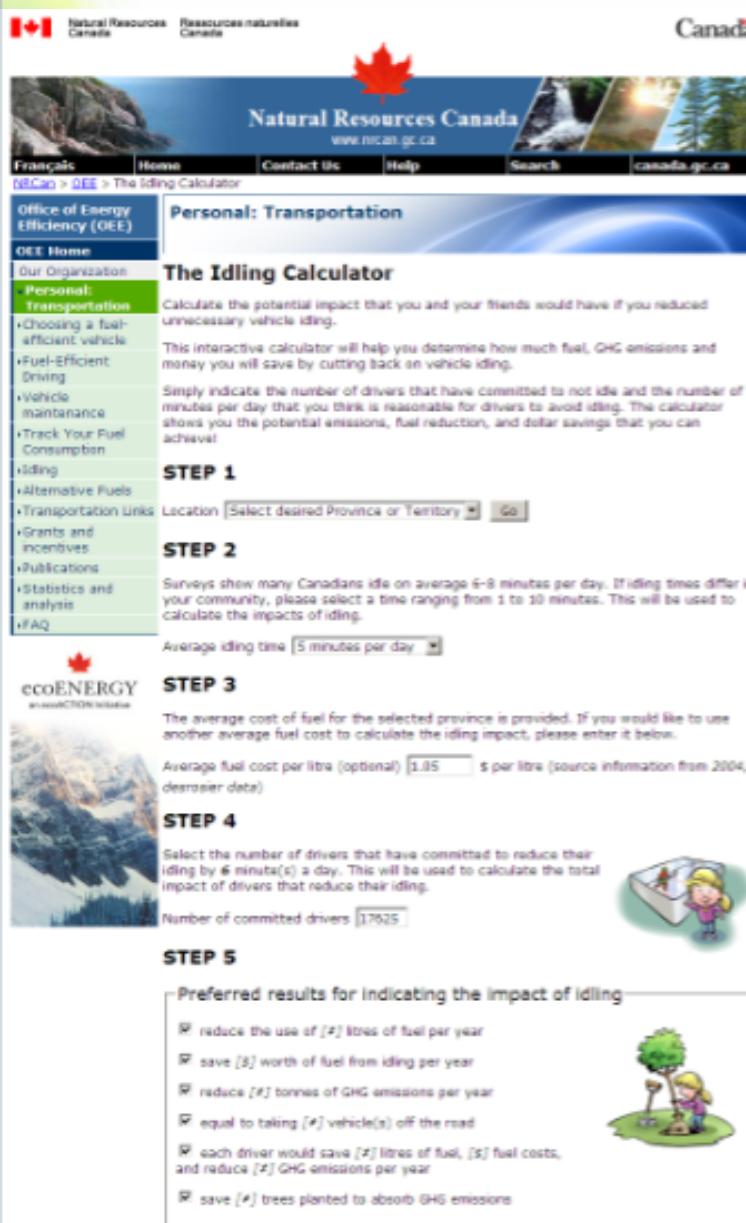


Results

- Driving time reduced by 5 minutes
- 27% reduction in travel time
- Improved pedestrian intersection re-service time



Natural Resources Canada's (NRC) Idling Calculator



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NRCan > OEE > The Idling Calculator

Office of Energy Efficiency (OEE)

OEE Home Our Organization

Personal: Transportation

The Idling Calculator

Calculate the potential impact that you and your friends would have if you reduced unnecessary vehicle idling.

This interactive calculator will help you determine how much fuel, GHG emissions and money you will save by cutting back on vehicle idling.

Simply indicate the number of drivers that have committed to not idle and the number of minutes per day that you think is reasonable for drivers to avoid idling. The calculator shows you the potential emissions, fuel reduction, and dollar savings that you can achieve!

STEP 1

Location Go

STEP 2

Surveys show many Canadians idle on average 6-8 minutes per day. If idling times differ in your community, please select a time ranging from 1 to 10 minutes. This will be used to calculate the impacts of idling.

Average idling time

STEP 3

The average cost of fuel for the selected province is provided. If you would like to use another average fuel cost to calculate the idling impact, please enter it below.

Average fuel cost per litre (optional) \$ per litre (source information from 2004, descriptive data)

STEP 4

Select the number of drivers that have committed to reduce their idling by minute(s) a day. This will be used to calculate the total impact of drivers that reduce their idling.

Number of committed drivers

STEP 5

Preferred results for indicating the impact of idling

reduce the use of litres of fuel per year
 save worth of fuel from idling per year
 reduce tonnes of GHG emissions per year
 equal to taking vehicle(s) off the road
 each driver would save litres of fuel, fuel costs, and reduce GHG emissions per year
 save trees planted to absorb GHG emissions

- Province = BC
- AM+PM = 309 sec saved = 5 min
- Price of gas = 1.05 \$/L
- Approx. 2350 vehicles/hr

AM: 6:00am-9:30am = 3.5 hrs

PM: 2:30pm-6:30am = 4 hrs

Approx. 17625 vehicles

- NRC gives results!

Hastings Street Corridor Results

Annual Environmental Benefits

- Fuel consumption reduced by **746,329 litres**
- Savings of approx. **\$783,645** (\$44.46 per driver)
- GHG emissions reduced by approx 1.8M kg
- Equal to taking **1,295** vehicles off the road
- Equal to planting **10,883** trees to absorb GHG emissions



Questions?

(That hopefully I can answer)