



DRAFT



Southway Drive.xls

Calculating Schedule C Benefits

Project #1 Road Resurfacing - mill & overlay

Definitions

- input field
- calculated field (no data entry required)

AADT = Average Annual Daily Traffic
 RCR = Ride Comfort Rating
 MJ = mega joules

Assumptions

- milling of existing asphalt surface full width of pavement to a depth of 90mm
- surfacing with 2 lifts of hot mix asphalt to a depth of 90mm
- base lift of hot mix asphalt contains RAP

Project Description

project length	 800	m
width of pavement	 6.2	m
intersections (and areas not included in above)	 0	m ²
Total Project Area	 4960	m ²
current traffic volume (actual or estimated)	 200	AADT
% light trucks (pickup)	 0	%
% trucks (heavy truck)	 2	%
% trucks (tractor/trailer)	 0	%
% trucks (B trains)	 0	%
pavement smoothness	 4	RCR

Current CO₂ Emissions

Total Current Emissions 32.9 kg/day

NOTE: Based on Natural Resources Canada - 2.36Kg/L CO₂ Gasoline, 2.73kg/L CO₂ Diesel and Transport Canada - Company Average Fuel Consumption 2004



DRAFT



Energy Used For Construction

milling of existing asphalt surface	4900 m ²
trucking of milled asphalt (distance to dump site and return)	0 km
base lift of Hot Mix Asphalt with RAP	50 mm
% RAP	20 %
Surface lift of Hot Mix Asphalt	40 mm
Total MJ of energy required for project	658,271.7 MJ

NOTE: Natural Resources Canada - Road Rehabilitation Energy Reduction Guide for Canadian Road Builders 2005, IVL Swedish Environmental Research Institute - Lifecycle Assessment of Road, March 2001

Benefits

Maintaining this road with a smooth surface condition reduces emissions

pavement smoothness (on the above project length)	10 RCR
Total Emissions (on the above project length if pavement maintained with a smooth riding surface)	31.3 kg/day
Reduction in CO ₂	1.6 kg/day
	583.1 kg/year

Resurfacing at appropriate lifecycle to maintain the road with a smooth surface can reduce the total energy required as the pavement will require less work to rehabilitate. For example: instead of double lift of hot mix asphalt a single lift may be all that is required to maintain a smooth surface

milling of existing asphalt surface	4960 m ²
trucking of milled asphalt (distance to dump site and return)	0 km
Surface lift of Hot Mix Asphalt	40 mm
Total MJ of energy required for single lift resurfacing	331,393.2 MJ
Reduced Energy requirements	326,878.6 MJ