

EXHIBIT C

Annual Impact of Increase Delay Calculations

Total travel time cost

Total annual travel time cost = $[TRP * (TDA - TDB) / 3600 * OCCP * D * WP] + [TRT * (TDA - TDB) / 3600 * OCCT * D * WT]$

TR = PM peak hour traffic volume = 5166 vehicle per hour

Truck traffic = 5%

TRP = PM peak hour passenger volume = 4908 vehicle / hour

TRT = PM peak hour truck volume = 258 truck per hour

TDB = Existing total Delay per vehicle = 80.6 second/vehicle

TDA = Total Delay per vehicle with westbound advanced left turn phase = 91.1 second/vehicle

OCCP = average person occupancy rate for passenger vehicle = 1.2

OCCT = average person occupancy rate for passenger truck = 1

WP = Passenger car average hourly wage = \$13.71 (50% of full time wages for passenger cars)

WT = Truck average hourly wage = \$23.62 (100% of full time wages for trucks)

D = Number of weekdays during a year = 260 days

Total Travel Time Cost = $[4908 * (91.1 - 80.6) / 3600 * 1.2 * 260 * 13.71] + [258 * (91.1 - 80.6) / 3600 * 1 * 260 * 23.62]$
= \$65,854

Fuel Consumption

Annual Fuel Consumption = (Fuel used After – Fuel used Before) * 260 day/year

Fuel used before pilot project = 232.4 litres (from Simtraffic)

Fuel used after pilot project = 264.4 litres (from Simtraffic)

Annual Fuel consumption = $(264.4 - 232.4) * 260$
= 8,320 Litres

Vehicle Emissions

1 Litre of gasoline burned creates 2,348 grams of CO₂ (United States Environmental Protection Agency)

Annual CO₂ emissions = $(8,320 * 2,348) / 1,000,000$
= 19.5 tonnes