

1. Executive Summary

In June, 2009, a vehicle emissions study was conducted and constrained to only evaluate the differences in fuel usage, emissions and travel time between the parallel facilities of US 183 and the 183A Toll Road. The study area was bounded to the south by RM 620 and FM 1431 to the north. The vehicle emission study process consisted of a series of trial runs using two test vehicles under actual traffic conditions; including both AM and PM peak periods. The test vehicles consisted of a standard sedan and an SUV. Each vehicle was equipped with special emissions testing equipment.

Based on data obtained from the vehicle emissions study, current traffic counts and previous time travel analysis, the following observations are noted and conclusions can be made for motorists traveling the 183A Toll Road as compared to traveling on US 183:

- Average travel time was reduced by approximately 6-7 minutes
- Compared to US 183 prior to construction of 183A Toll Road, average time travel was reduced by approximately 15 minutes; a time reduction of over 75%
- All emissions were reduced for both peak and off-peak hours
- Fuel consumption was reduced for both peak and off-peak hours
- Estimated annual fuel savings per vehicle of 108 gallons with an annual cost savings of \$281
- Total estimated annual fuel savings of 664,723 gallons with cost savings of \$1,728,280
- Data indicates that for every vehicle that uses the 183A Toll Road, there is significant reduction in overall emissions within the study area when compared to all vehicles using US 183 only
- Although the total life cycle analysis of the carbon footprint was not evaluated as part of this study, the study demonstrates a reduction of vehicle carbon footprint for the 183A Toll Road through a reduction of vehicle emissions as seen in the CO₂ and CO calculated annual reductions
- Annual reduction in emissions and fuel consumption was calculated to be:
 - Carbon Dioxide (CO₂) emissions reduced by 28% (7,231.9 Tons/Yr)
 - Carbon Monoxide (CO) emissions reduced by 47% (21.8 Tons/Yr)
 - Nitrogen Oxides (NO_x) reduced by 56%
 - Total Hydrocarbon (THC) emissions reduced by 37%
 - Fuel consumption reduced by 26%

Location Map

