Appendix O

N_2O Mobile Emissions Worksheet

Greenhouse Gas Emission Worksheet

N20 Mobile Emissions Mitigated Riverside Exchange

From CalEEMod Vehicle Fleet Mix Output:

Annual VMT: 23,605,082

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	54.6%	0.04	0.0218211	0.04	0.021821
Light Truck < 3750 lbs	3.7%	0.05	0.0018428	0.06	0.002211
Light Truck 3751-5750 lbs	18.6%	0.05	0.0093016	0.06	0.011162
Med Truck 5751-8500 lbs	11.5%	0.12	0.0138406	0.2	0.023068
Lite-Heavy Truck 8501-10,000 lbs	1.5%	0.12	0.0018266	0.2	0.003044
Lite-Heavy Truck 10,001-14,000 lbs	0.5%	0.09	0.0004473	0.125	0.000621
Med-Heavy Truck 14,001-33,000 lbs	1.8%	0.06	0.0010515	0.05	0.000876
Heavy-Heavy Truck 33,001-60,000 lbs	7.0%	0.06	0.0041717	0.05	0.003476
Other Bus	0.1%	0.06	8.382E-05	0.05	6.99E-05
Urban Bus	0.1%	0.06	0.0000696	0.05	0.000058
Motorcycle	0.5%	0.09	0.0004092	0.01	4.55E-05
School Bus	0.1%	0.06	5.592E-05	0.05	4.66E-05
Motor Home	0.1%	0.09	8.685E-05	0.125	0.000121
Total	**100.0%**		**0.0550086**		**0.066621**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4	21	GWP
N2O	310	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	1.5726	metric tons N2O	**487.50**	metric tons CO2e
		Project Total:	***487.50***	***metric tons CO2e***

References

* from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
Assume Model year 2000-present, gasoline fueled.

** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.

Greenhouse Gas Emission Worksheet

N20 Mobile Emissions Unmitigated Riverside Exchange

From CalEEMod Vehicle Fleet Mix Output:

Annual VMT: 24,847,455

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	54.6%	0.04	0.0218211	0.04	0.021821
Light Truck < 3750 lbs	3.7%	0.05	0.0018428	0.06	0.002211
Light Truck 3751-5750 lbs	18.6%	0.05	0.0093016	0.06	0.011162
Med Truck 5751-8500 lbs	11.5%	0.12	0.0138406	0.2	0.023068
Lite-Heavy Truck 8501-10,000 lbs	1.5%	0.12	0.0018266	0.2	0.003044
Lite-Heavy Truck 10,001-14,000 lbs	0.5%	0.09	0.0004473	0.125	0.000621
Med-Heavy Truck 14,001-33,000 lbs	1.8%	0.06	0.0010515	0.05	0.000876
Heavy-Heavy Truck 33,001-60,000 lbs	7.0%	0.06	0.0041717	0.05	0.003476
Other Bus	0.1%	0.06	8.382E-05	0.05	6.99E-05
Urban Bus	0.1%	0.06	0.0000696	0.05	0.000058
Motorcycle	0.5%	0.09	0.0004092	0.01	4.55E-05
School Bus	0.1%	0.06	5.592E-05	0.05	4.66E-05
Motor Home	0.1%	0.09	8.685E-05	0.125	0.000121
Total	**100.0%**		**0.0550086**		**0.066621**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4	21	GWP
N2O	310	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions: