
Appendix E

Energy Assessment Calculations

Construction

| Source | Percent | Total MTCO2 | Gallons | |
|----------------------------------|---------------|--------------|----------------|---------------|
| | | | Diesel | Gasoline |
| 2024 | | | | |
| Off-road | 35.9% | 306 | 30,017 | |
| Electricity | 0.0% | 0 | | |
| Worker | 11.0% | 94 | | 10,695 |
| Vendor | 23.0% | 196 | 19,231 | |
| Hauling | 30.1% | 257 | 25,167 | |
| Onsite Truck | 0.0% | 0 | 0 | |
| <i>Total</i> | <i>100.0%</i> | <i>854</i> | <i>74,414</i> | <i>10,695</i> |
| 2025 | | | | |
| Off-road | 33.5% | 841 | 82,335 | |
| Electricity | 0.0% | 0 | | |
| Worker | 19.0% | 477 | | 54,303 |
| Vendor | 44.5% | 1,117 | 109,370 | |
| Hauling | 3.0% | 75 | 7,373 | |
| Onsite Truck | 0.0% | 0 | 0 | |
| <i>Total</i> | <i>100.0%</i> | <i>2,509</i> | <i>199,078</i> | <i>54,303</i> |
| Total Construction Period | | | | |
| Off-road | 34.1% | 1,147 | 112,351 | 0 |
| Electricity | 0.0% | 0 | 0 | 0 |
| Worker | 17.0% | 571 | 0 | 64,998 |
| Vendor | 39.0% | 1,313 | 128,601 | 0 |
| Hauling | 9.9% | 332 | 32,540 | 0 |
| Onsite Truck | 0.0% | 0 | 0 | 0 |
| Total | 100.0% | 3,363 | 273,492 | 64,998 |

338,490

Operation

| Source | Percent | 15 | | |
|----------------------|---------------|---------------|------------------|----------------|
| | | Total MTCO2 | Gallons | |
| | | | Diesel | Gasoline |
| Mobile Exhaust | 71.1% | 31,722.57 | 2,020,968 | 218,755 |
| Landscape Equipment | 0.0% | 17.85 | 1,748 | |
| Electricity | 6.2% | 2,766.24 | | |
| Natural Gas Energy | 4.2% | 1,873.91 | | |
| Water and Wastewater | 0.0% | 17.85 | | |
| Solid Waste | 0.3% | 133.85 | | |
| Emergency Generators | 0.1% | 44.62 | 4,370 | |
| Offroad Equipment | 18.1% | 8,075.65 | 790,955 | |
| Total | 100.1% | 44,617 | 2,818,040 | 218,755 |
| Type | Total | Units | | 3,036,795 |
| Petroleum | 3,036,795 | gallons/year | | |
| Electricity | 8,694,565 | kWh/year | | |
| Electricity-offroad | 8,781,645 | kWh/year | 17,476,210 | |
| Natural Gas | 35,384,458 | kBTU/year | | |
| | | | | 792,703 |

| Total by Vehicle Classification | | % |
|---------------------------------|-------|-----|
| Passenger Vehicles | 2,546 | 69% |
| Trucks | 1,123 | 31% |
| Total Trip Generation (Non-PCE) | 3,669 | |

| Constants | | |
|-----------|--------------------------|---------------|
| Fuel | KgCO ₂ /Gallo | 1000 Kg in MT |
| Gasoline | 8.78 | |
| Diesel | 10.21 | |

Source: [The Climate Registry 2023](#)

(June 2023)

Table 2.1 U.S. Default Factors for Calculating CO₂ Emissions from Combustion of Transport Fuels

| Fuel Type | Carbon Content (Per Unit Energy) | Heat Content | Fraction Oxidized | CO ₂ Emission Factor (Per Unit Volume) |
|----------------------------------|----------------------------------|-----------------------|-------------------|---|
| Fuels Measured in Gallons | kg C / MMBtu | MMBtu / gallon | | kg CO₂ / gallon |
| Gasoline | 19.2 | 0.125 | 1 | 8.78 |
| Diesel Fuel | 20.2 | 0.138 | 1 | 10.21 |

| Off-Road Equipment | TOG | ROG | NO _x | CO | SO ₂ | PM10E | PM2.5E | PM10D | PM2.5D | BCO ₂ | CO ₂ | CH ₄ |
|--------------------|-----|-----|-----------------|----|-----------------|-------|--------|-------|--------|------------------|-----------------|-----------------|
| N/A | | | | | | | | | | | 1,379 | 0.131 |

