

Decatur Township Data Center Emission Calculat

Input/Data
Calculation

Assumptions

116 generators each generator is: 20 kW (20 cylinder) generators

12,000 gallons diesel stored

On average, a diesel generator produces between 0.6 and 0.8 kg of CO2 per kWh of electricity generated

[How much CO2 emissions per kWh from diesel generator? - JImech](#)

The generators will only be active during extreme weather conditions and testing.

The generators shall operate strictly within the limits of the Indiana Department of Environmental Management ("IDEM") air permit. (This is anticipated to be no more than a 30-minute monthly test and one fully loaded test of up to four hours annually.)

There was one power outage affecting Indiana and at least 50,000 customers in 2023 with an average of 4.8 hours of power outage experienced. (<https://poweroutage.report/in>)

The average freight truck in the US emits 161.8 grams of CO2 per ton-mile.

10 mile trip assumed to focus on localized emissions.

Standard heavy duty truck load average is 22 tons

Generator Emissions

9.3 hrs *Assuming 4.5 hours for testing and 4.8 hours of potential outages

If the 20 kw generators run for time in line above

21,576 kWh *total electricity produced over time for all generators based on assumed run time

17,261 kg *total CO2 emissions assuming 0.8 kg of CO2 per kWh of electricity

1,726 gallons *total gallons of diesel used for assumed run time

1.6 gal/hr full load

([https://www.depco.com/resources/diesel-fuel-consumption-chart/#:~:text=Table_title:%20Estimated%20Diesel%20Fuel%20Consumption%20Chart%20Table_content;1.8%20%7C%20Full%20Load%20\(gal/hr\):%204.8%20%7C](https://www.depco.com/resources/diesel-fuel-consumption-chart/#:~:text=Table_title:%20Estimated%20Diesel%20Fuel%20Consumption%20Chart%20Table_content;1.8%20%7C%20Full%20Load%20(gal/hr):%204.8%20%7C))

Daily Heavy Vehicle Emissions

Proposed Development

[Green Freight Math: How to Calculate Emissions for a Truck Move - EDF+Business](#)

Total daily heavy vehicles= 43

9,460 ton-miles *Calc: total miles * tons of cargo = ton-miles

*avg freight truck in US emits 161.8 grams of CO2 per ton-mile

1,523,060 grams of CO2 *Calc: 161.8*total ton-miles = grams of CO2

*convert total grams to metric tons (1,000,000 grams in a metric ton)

1.5 metric tons

91.8 % decrease from the old development plan

Yearly Heavy Vehicle Emissions

Proposed Development

555.9 metric tons per year

91.8 % decrease from the old development plan

Old Development Plan Previously Approved

Total daily heavy vehicles= 523

115,060 ton-miles *Calc: total miles * tons of cargo = ton-miles

*avg freight truck in US emits 161.8 grams of CO2 per ton-mile

18,524,660 grams of CO2 *Calc: 161.8*total ton-miles = grams of CO2

*convert total grams to metric tons (1,000,000 grams in a metric ton)

18.5 metric tons a day

Old Development Plan Previously Approved

6,761.5 metric tons per year

Information be... m ASI Traffic Study:
DAILY heavy vehicle Trips:
 New Site: 43
 Old Site: 523

Trip Generation based on ITE Trip Generation Manual (12th Edition)

| Building # | ITE Land Use Code | Land Use Description | Size | Independent Variable |
|--------------|-------------------|--|------|----------------------|
| 1 | 110 | General Light Industrial | 229 | KSF |
| 2 | 110 | General Light Industrial | 157 | KSF |
| 3 | 154 | High-Cube Transload and Short-Term Storage Warehouse | 244 | KSF |
| 4 | 154 | High-Cube Transload and Short-Term Storage Warehouse | 282 | KSF |
| 5 | 110 | General Light Industrial | 190 | KSF |
| 6A | 110 | General Light Industrial | 70 | KSF |
| 6B | 110 | General Light Industrial | 70 | KSF |
| | 822 | Strip Retail Plaza (<40k) | 40 | KSF |
| | | <i>Pass-by Trip Reduction</i> | | |
| Total | | | | |

Table 1: Trip Generation Comparison

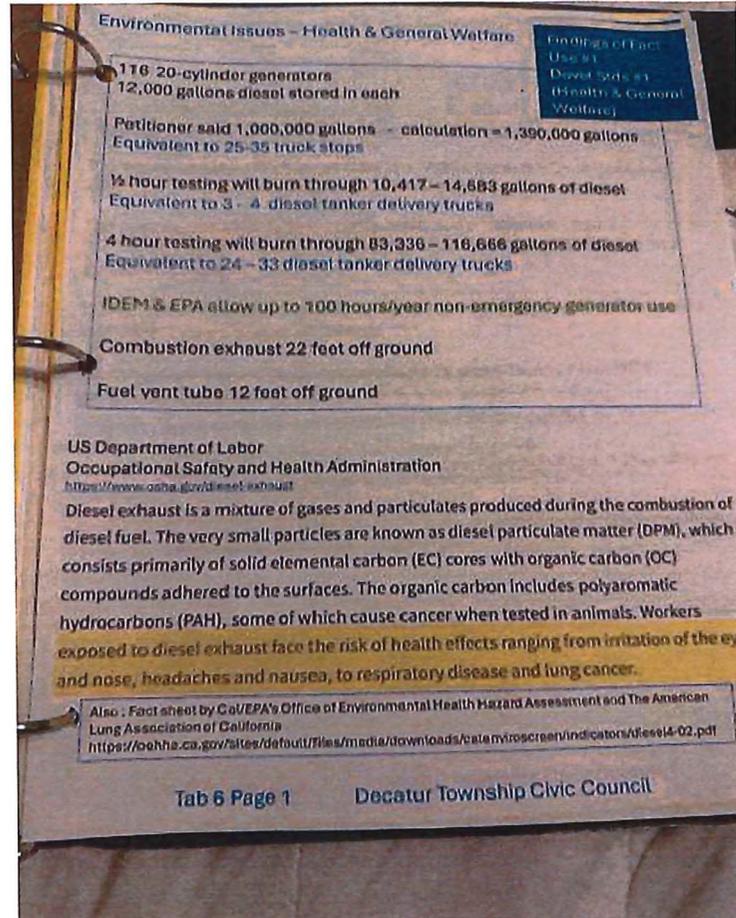
| Description | AM Peak | | | PM Peak | | |
|--|---------|------|-------|---------|------|-------|
| | Enter | Exit | Total | Enter | Exit | Total |
| Total Trips per Old Approved Site Plan (dated November 24, 2020) - OLD | 433 | 125 | 558 | 165 | 389 | 554 |
| Total Trips per Current Site Plan (dated November 4, 2025) - NEW | 80 | 31 | 111 | 20 | 86 | 106 |
| Change In Number of Trips (NEW - OLD) | -353 | -94 | -447 | -145 | -303 | -448 |
| Percent Change in Number of Trips | -82% | -75% | -80% | -88% | -78% | -81% |

Based on the trip generation comparison above, the revised development program is anticipated to generate approximately 447 fewer trips during the AM peak hour and 448 fewer trips during the PM peak hour compared to the old, approved site plan.

Calculation Sources:

- [Greenhouse Gas Equivalencies Calculator - Calculations and References | US EPA](#)
- [How much CO2 emissions per kWh from diesel generator? - JImech](#)
- [Regulations for Greenhouse Gas Emissions from Commercial Trucks & Buses | US EPA](#)
- <https://climateprogramportal.org/wp-content/uploads/2025/02/Fast-Facts-US-Transportation-Sector-GHG-Emissions-1990-2022.pdf>
- [Green Freight Math: How to Calculate Emissions for a Truck Move - EDF+Business](#)

Remonstrator's Comment:



As discussed yesterday afternoon, we completed emission calculations based on several assumptions (outlined in the sheet attached) for the generators and the daily heavy vehicle emissions for the proposed development compared to the old development plan previously approved. Our calculations indicate the proposed generators will only use 1,726 gallons of diesel fuel based on the assumed run time which is much less than the value included in the public comment, so we are not sure how they got that number. We also calculated the daily heavy vehicle emissions for the proposed development to be 1.5 metric tons of CO2 which is much less than the old development plan previously approved which we calculated to be 18.5 metric tons of CO2.

They can use the calculation sheet attached to adjust our assumptions if needed. Please let us know if you have any questions.

Thanks!

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