

CSC/MGT/BUS Sustainability Proposal

Group 3  
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## Overview

The sustainability issue we will be focusing on is the dependence of greenhouse gasses emitted by municipalities from vehicle mileage. Our goal is to bring awareness to New Jersey municipalities and their carbon footprints, which contribute to greenhouse gasses via daily activities. The overarching focal point of our analysis is emissions from vehicles. Eighty-eight percent of households in New Jersey have at least one vehicle present at their residence (Daly, 2022). According to the United States Environmental Protection Agency, 27% of U.S. greenhouse gas emissions have been contributed to transportation (*Carbon Pollution from Transportation*). This research is crucial for our analysis because of the negative effects that greenhouse gasses can have on the environment, such as extreme weather and ecosystem disruptions. Stakeholders that can be affected by the greenhouse gas emissions include suppliers of the motor vehicles, as well as the customers that have purchased the motor vehicles; additional investors include the government and non-governmental organizations.

The ethical dilemma is presented when suppliers understand the effects that their products have on the environment but still continue to produce the vehicles. As a company, their vow to stakeholders is to produce a significant amount of profit. However, their vow to the community is to not cause any harm: the moral bare minimum. Motor vehicle companies should understand that this is not solely for the individual's health, but the health of the community as well. Motor vehicle companies have a sole duty to protect the environment and communities, especially when their product is one of the leading reasons for emitting greenhouse gasses.

While some contributions such as electric cars have eliminated some of the pollutants, greenhouse gasses emissions persist due to the majority of cars emitting carbon dioxide from burning fossil fuels such as gasoline and diesel. Our focus for this project is to present the

concerns of greenhouse gasses, find ways to take proactive steps for decreasing our emissions as municipalities, and help create a sustainable New Jersey for future generations.

### Questions to Explore

The overall task of our database is to discover and display a correlation between greenhouse gasses emitted and miles traveled by vehicles in municipalities within New Jersey. More specifically, the database will raise questions regarding miles traveled by municipality per year, greenhouse gasses emitted by vehicles and their miles traveled. Knowing this data will allow us to ask questions regarding sustainability: What municipalities and counties contribute the most to greenhouse gas emissions? What is it about these areas that citizens are so dependent on their vehicles? In what years have these emissions increased significantly? From this, we can explore and answer possible questions about solutions. As stated in the Overview, greenhouse gas emissions are a problem to the environment and lead to many sustainability issues. By identifying the major catalysts of these sustainability issues, we can propose ideas about how to solve them. For instance, if large numbers of personal vehicles are causing large amounts of emissions in a certain municipality, perhaps a push for public transit, walking, or biking could be a suitable proposal for that municipality.

### Data to Analyze

We will be using the data from two datasets in our project: the dataset “Vehicle Miles Traveled (VMT) / On-Road Vehicle GHG Emissions Data” will help us gauge where the most miles traveled are in the state, and the dataset “Community Scale Greenhouse Gas (GHG) Emissions Data” will tell us residential gas levels emitted and the number of vehicles per municipality. For example, Newark City, in Essex County, leads both the state’s residential

natural gas emissions with 322,453 metric tons of carbon dioxide and the state's miles driven with 1.7 billion miles from passenger cars alone. As the number of on-road vehicles decrease, the levels of natural gas emissions and vehicle miles traveled decrease as well. The years in which this information was taken will range from 2015 to 2020. These two datasets will be used to make the connection that the municipalities with the most miles driven are also the municipalities with the highest greenhouse gas emissions. Once used in the database, we will utilize our data to isolate the highest-contributing municipalities and find ways to alleviate their dependence on vehicles.

### Sustainability Issues

As stated in the Overview, our research is aimed to display the correlation between the vehicle miles traveled and the increase of greenhouse gas emissions by vehicles. The data we have gathered shows that the municipalities in New Jersey that have a larger number of miles traveled by vehicle are the same areas where there is a greater amount of greenhouse gasses that are specifically produced by vehicles. There are many contributors who emit greenhouse gasses into the environment, and our database is focusing on the emissions from vehicles. Every day, there are thousands upon thousands of vehicles that are on the roads across New Jersey. Not only do some people own one car, but there are families who own multiple cars, businesses that rely on vehicles to transport their goods, and public transportation that all emit greenhouse gasses. These vehicles are driven by people who most likely do not think twice about how they are hurting the environment every time they turn the ignition on. When we turn a blind eye to the effects of our excessive vehicle usage, we become offenders of the issue. Since we can identify a direct link between areas with more miles driven by vehicles and areas with greater greenhouse gas emissions from these vehicles, we can say that the increase of miles driven is causing an

increase in the release of harmful toxins into our air. These toxins are contributing to air pollution, which negatively impacts our environment and way of life. By becoming more aware of the consequences of our own actions, we can look for different ways of achieving the same goal while also making a change. For instance, people who are able to afford an electric car should invest in one instead of purchasing a car that takes gasoline. There are also alternative options for traveling that do not require unnecessary vehicle usage. For example, people can travel shorter distances by walking, biking, using an electric scooter, or taking public transportation for longer trips. There are many different ways to get from one place to another that are more sustainable than using individual vehicles.

#### User Interactions

1. Program offers a list of NJ counties.

User selects a county.

Program offers a list of municipalities in selected county.

User selects a municipality.

Program displays total vehicle miles traveled and natural gas emissions for the selected municipality based on given years.

2. Program lists NJ counties.

User selects a county.

Program offers a second list of NJ counties.

User selects a second county.

Program compares the two counties by displaying the average total emissions by municipality in selected counties.

### Works Cited

*Carbon Pollution from Transportation*, Environmental Protection Agency,

[https://www.epa.gov/transportation-air-pollution-and-climate-change/carbon-pollution-transportation#:~:text=Transportation%20and%20Climate%20Change,-Burning%20fossil%20fuels&text=%E2%80%8BGreenhouse%20gas%20\(GHG\)%20emissions,contributor%20of%20U.S.%20GHG%20emissions.](https://www.epa.gov/transportation-air-pollution-and-climate-change/carbon-pollution-transportation#:~:text=Transportation%20and%20Climate%20Change,-Burning%20fossil%20fuels&text=%E2%80%8BGreenhouse%20gas%20(GHG)%20emissions,contributor%20of%20U.S.%20GHG%20emissions.)

Daly, Lyle. “How Many Cars Are in the U.S.? Car Ownership Statistics 2022.” *The Motley Fool*,

The Ascent by The Motley Fool, 21 July 2022.

<https://www.fool.com/the-ascent/research/car-ownership-statistics/>