

Planet in Peril  
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### Cities, Climate, and Solutions: Navigating the Heat of Change

Climate change often elicits apathy despite its far-reaching and dramatic effects. Climate change's consequences are becoming more extreme as the globe gets warmer. Head of the St. Andrew's Science Department Marks McWhorter described the extent to which the planet is warming. "We are moving between 12,000 and 20,000 times faster than what natural events would do," McWhorter said. McWhorter noted that from 1880 to 2017, the planet warmed up one degree, but in the six years since 2017, it has warmed up another half a degree. McWhorter also described the detrimental consequences of the dramatic warming of the planet. "If you think about Miami, Florida, one or two feet of rising water is going to be cutting off 20-30% of the city's infrastructure," McWhorter said. "Those places are going to feel effects to where they eventually have to evacuate."

While Jackson will not face the same fate as Miami or other coastal cities, it is not immune to the repercussions of climate change. "If you think about the drought we are living in right now in Mississippi, this is a historic drought, and the highs we hit each summer are historic," McWhorter said, "so local economies are going to be affected because you are going to have power bills that are three times the [usual] rate."

Climate change does not happen independently, and numerous contributing factors exist. However, greenhouse gases in the atmosphere are among the most important. According to [un.org](#), cities contribute significantly to climate change, as they consume 78% of the planet's energy. They also produce more than 60% of greenhouse gas emissions. Additionally, many cities around the world are victims of a phenomenon called the Urban Heat Island Effect. Heat Islands are created because the concrete (and other materials) that comprise cities' infrastructure absorbs and rereleases the sun's heat. Because of this effect, daytime temperatures in cities can reach up to seven degrees higher than temperatures in outlying areas. Heat islands increase electricity consumption because they increase demand for air conditioning. According to [epa.gov](#), for each 2°F rise in temperature, electrical demand for air conditioning also rose up to

approximately 9%. Most of the companies that answer this demand for air conditioning use fossil fuels, which increases greenhouse gas emissions and air pollutants, thereby making climate change worse.

Still, there are things that can be done to help prevent climate change from getting extreme. McWhorter provided examples of possible solutions. “I do not think cities have the capability to fully mitigate greenhouse gas emissions. I think cities can assist in their infrastructure to promote sustainable efforts that will ease the tension of the people that are living there,” McWhorter said, “like having a grid system that can easily move electricity across state lines and that has diversity to how it gets its electricity.”

McWhorter also provided examples of things cities are doing to combat the urban heat island effect. “A lot of different cities are building internal malls that you can have air conditioning systems,” McWhorter explained, “instead of having a big outdoor mall where you have to worry about heat issues.” McWhorter also provided examples of questions cities are asking themselves in order to prevent the heat island effect. “Are there ways for us to build our skylines to be able to connect to each other? Are there ways to have natural shade from the angles at which we are building buildings?” McWhorter questioned. “Are there ways to pull CO<sub>2</sub> out of the air with things like CO<sub>2</sub> filters?”

Recently, there has been more popularity for green infrastructure in cities that are trying to help decrease their impact on climate change. “California has done a lot of things within cities to promote walking and more urbanization, like closing off sections of the street. Paris has done this too, whether it's wanting to redirect areas to only be walking or bike-friendly,” McWhorter said. “I also think of a lot of European cities like Amsterdam are putting a lot of work into infrastructure that is not just for fossil fuel traffic. There are a lot of cities going that way, and European countries are certainly beating us in that regard with building green infrastructure.”

Junior Rhen Tanaka expressed their fears about climate change. “Climate change really scares me,” Tanaka said. “It has the potential to completely and permanently alter every part of our society, and I know I should probably be doing more about it.” Tanaka also described what they

do in the battle against climate change. “My family recycles, and I use a metal straw,” Tanaka said. “I just do not know what else I, as an individual, can do.”

Junior Celia Lane described her experience regarding the prevention of climate change. “I feel it looming around the corner, and it is terrifying; yet, something about it seems so far away and not like an actual problem,” Lane said. “I do not actively do anything to help prevent climate change, even though I want to, and I know I should.”

Similarly, Junior Mattie Ellis spoke about what she does to prevent climate change. “Before the city of Jackson stopped providing it, my family used to recycle, I use reusable water bottles, and I always try and carpool if I am going somewhere with a group,” Ellis said. “I feel like everything I do, though, is super unproductive and doesn’t actually help stop climate change at all, but I am also not super worried about it anyways.”

On an individual level, McWhorter had few ideas to help prevent climate change. “I think voting is a big thing,” McWhorter said, “and talking to your representatives to make sure they are supporting things that will ultimately push us away from systems that are fossil fuel regulated and towards sustainable efforts.” McWhorter also highlighted the difficulties in preventing climate change. “I think our biggest challenge is lobbying efforts associated with companies and organizations that have a vested interest in fossil fuel and don’t want their bottom line to go away,” McWhorter said. “They have incredible power in Congress, so they are able to stop legislation from happening.”