As the clock hit 3:35pm, I shut my laptop and placed it in my backpack. My heart was racing as I grabbed my suitcase and jacket for the drive down. After I heard the loud click from my bedroom door, I walked to my fridge and packed my dinner: leftover fettuccine alfredo from Olive Garden. I hastily said goodbye to my roommate and fumbled my way down the stairs with my suitcase, backpack, purse, and Olive Garden container like a toddler learning to walk for the first time. Once I packed up my car, I put on my seatbelt and began my road trip playlist, consisting of Imagine Dragons, Fall Out Boy, Jonas Brothers, and Adele. As the beat of early 2000s drums filled my car, I began driving away from my apartment and merging onto interstate 17 towards Phoenix.

*I-17 is considered one of the most scenic Interstate highways in the country. Traveling through desert, basin and range, and pine forest while gaining more than a mile in altitude from Phoenix at 1,117 feet to Flagstaff at 7,000 feet. Growing up in Phoenix, all I knew was cacti, poor air quality, and the occasional haboob and flood during monsoon season. I was eager for a change, so choosing to continue my education in Flagstaff was an easy decision.*

It was a windy day as I drove. My car shook with every gust and the pine trees were rustling and waving as if to say goodbye to me, though I’d see them again in a few days. As I swerved, avoiding potholes to the beat of “Where Did the Party Go?” by Fall Out Boy, I glanced down at my dashboard. It was 80 degrees today, in October. This may seem like a nice temperature for Arizona, but in Flagstaff it is well above average. This year has been different from most years in many ways, and I’m not just talking about Coronavirus taking over the world, killing hundreds of thousands of people, and changing the way we as a society function. According to the National Weather Service in Flagstaff, April to September 2020 was the driest
monsoon season on record since 1899, with only 2.91 inches of rain (Figure 1). Additionally, Flagstaff saw 90 days with a high of 80 degrees or greater in 2020, as of October 14. These anomalous warm and dry conditions are not surprising; it is another piece of evidence showing that Arizona may be moving towards a warmer and drier climate. This is concerning for a number of reasons, but as I looked out my window, passing thousands of pine trees at 80 miles per hour, only one came to mind. If the temperature in Flagstaff continues to escalate as it has this year, the largest Ponderosa Pine forest in the nation will begin to die off because the climate is no longer favorable for its survival.

![Figure 1: Bar graph representing the amount of precipitation at Flagstaff in inches from 1899 to 2020. (Flagstaff National Weather Service, 2020)](image)

As I made a curve and began to drive down from the rim of the Colorado Plateau, I glanced to my right and saw the distinctive red rocks of Sedona in the distance. With 1.8 million acres of national forest land, over 300 miles of developed hiking trails, and spiritual energy vortexes, Sedona has been consistently rated one of the most beautiful places to visit in the
country. 26 years ago, my aunt and uncle traveled all the way from Michigan to visit Sedona and got engaged on the steps of the historic Church of the Red Rocks, and my sister and her husband got married at the foot of Cathedral Rock just two years ago. In August of 2020, 20,000 gallons of sewage was spilled into Oak Creek from a sewer replacement project along State Route 179. Although city officials stated the spill was contained and disinfected within hours, it made me think about how it never would have happened had humans not interfered with the pristine and irreplaceable landscape.

Driving down towards Verde Valley is always interesting, because you drive through the transition from forest to basin and range and begin traversing through the White Hills just north of Camp Verde, a town at the heart of the valley. The name Camp Verde suggests a green valley, but this season was anything but green. As I continued driving, with a Jonas Brothers soundtrack guiding me, I dropped over 3,000 feet in elevation just to quickly pass a Starbucks and a McDonalds and head back up 1,000 feet through the Black Hills towards Prescott. White, brown, and yellow dominated the arid landscape, with dry brush surrounding the busy highway. Another color change appeared in the distance: a turbulent dark mass rising thousands of feet into the air like dark plumes of cauliflower. It seemed I wasn’t the only one gawking at the spectacle because the driver next to me suddenly cut me off and almost ran me into the mountain. I slammed on my brakes, praying the driver behind me was also paying attention until I finally regained control and let out a loud and high-pitched honk from my very threatening Kia Soul. As I continued driving up the hills, my subconscious reminded me that I-17 is rated the fourth most deadly highway in the nation. I looked around at the desiccated and withered vegetation in an attempt to distract myself, but this theme of death resonated with me one second too long.
When I reached the crest and passed State Route 169 towards Prescott, my unease from almost becoming a grey Kia sedimentary rock layer in the cliff face turned to contentment as Adele’s “Set Fire to the Rain” began to play. This area was primarily filled with bright green grasslands in between mountain ranges, a textbook definition for basin and range topography. But this summer was filled with a record number of forest fires across the state. According to the Arizona Department of Forestry and Fire Management, approximately 1,600 wildfires have burned more than 700,000 acres in the state since the beginning of 2020; more land burned than in both 2018 and 2019 combined. Additionally, these fires have been larger and more aggressive (Arizona Department of Forestry and Fire Management, 2020). Normally, Arizona’s monsoon season helps mitigate this peril, but the 2020 monsoon season never arrived. Driving through this area down to Black Canyon City, the charred landscape scarred much of the beautiful green grasslands I remembered. And to make matters worse, there was another active fire near Crown King, creating a smoke plume rising thousands of feet into the sky. As I continued to look around at the scorched landscape, Adele, nearing the end of her song, began to sing “let it burn,” and I thought to myself, what else is there left to burn?

I made this drive on October 15, 2020. The fire I saw in the distance was named the Horse Fire, and it forced all citizens of Crown King to evacuate their homes. The fire was finally contained and extinguished on November 5 after burning over 9,537 acres of land. In a statement one week after the fire began, Crown King Fire Chief Ian Dougherty expressed concern because “twelve firefighters working ten to 15 hours a day for those seven days drained our budget” (Dougherty, 2020). The Crown King Fire Department receives just under $100,000 in taxes from the county, and their expenditures are “just about $25,000 a month or $300,000 a year, so a fire like [that] already taxed [their] budget even more” (2020). After hearing of this,
my first thought was, how can anyone ignore this? How can someone say climate change isn’t real or that switching to renewable energy will cost too much money. Climate change is predicted to increase the frequency and intensity of natural disasters such as fires, hurricanes, floods, and tornadoes, which currently cost the country billions of dollars every year as well as loss of life. According to NOAA, “2018 and 2019 each saw 14-billion-dollar weather disasters. Associated losses for 2018 were estimated at $91 billion and for 2019 were $45 billion—for a combined total of $136 billion. In 2019, historic flooding in the Midwest caused $10.8 billion worth of damages throughout millions of acres of land. This was one of the costliest inland U.S. flooding events on record. In 2018, Hurricanes Michael and Florence, and the western wildfires, accounted for about $73 billion of the $91 billion total for the year” (NOAA Office for Coastal Management). I’ve read enough climate literature to know that transitioning to a sustainable society will not ruin jobs, it will create jobs; it will not cost more money, it will save more money; it will not put people’s lives at risk, it will save lives.

As I drove past Sunset Point, a popular rest stop that looks over the Bradshaw Mountains, the sun was setting through the black smoke cloud, turning the sky an eerie blood-red color. I began to turn my car and drive down off the plateau. I said goodbye to the grasslands and welcomed the sight of the first cactus. The drive down from Sunset Point to Black Canyon city is a stressful one, but a beautiful one. Mesas, plateaus, mountains, and cacti spotted the desert as I quickly descended to 1,500 feet in elevation through tight twists and turns in the uninterrupted landscape. The familiar scenery temporarily put my mind at ease as the sky became a kaleidoscope of colors; Arizona sunsets really are the best in the world.

Shortly after I passed Anthem, I finally entered the northern outskirts of Phoenix and traded the serene desert landscape for an industrialized nightmare. Being the fifth largest city in
the country, our air quality is atrocious, and the pollution is visible across the entire valley, so driving at night has always been my preference. I-17 continues into downtown Phoenix and then merges with interstate 10, which travels west and east to either California or New Mexico. However, before you get to the I-10, the I-17 cuts directly through North Phoenix, and I mean literally cuts. Most of the freeway sits below the rest of the city, like someone had built a large rain wash with a three-lane highway inside it. You can imagine the amount of traffic during rush hour with only three lanes each direction. But the thought of traffic and a poorly designed highway was not on my mind while driving. Instead, I was thinking about the amount of infrastructure surrounding my route. For miles I never saw a single tree, just pavement, asphalt, and plenty of buildings.

*Phoenix is already one of the hottest cities in the country. Temperatures frequently reach over 100 degrees through most of the year, and this year Phoenix has had 145 days over 100 degrees, beating the previous records of 143 days in 1989, 129 days in 2003, 128 days in 2018, and 127 days in 2001 (Figure 2). In addition to rising temperatures across the world, Phoenix also has a lower albedo, meaning sunlight gets absorbed due to the amount of industrialization and lack of vegetation in the city more than it is reflected leading to more warming. These two factors combined guarantee that living in Phoenix will become increasingly more dangerous.*
Figure 2: Years with the greatest number of days at or above a specific temperature. (Phoenix National Weather Service, 2020).

After I merged onto the I-10, I took another ramp a few miles west to merge onto the 202 to then drive over the dried-up Salt River. I don’t remember a time when the Salt River was ever truly a running river, but this familiar sunbaked landmark reminded me that there are only twenty minutes left in my journey and I began to think of my parents.

I had originally planned to leave yesterday afternoon, but I received a message from my parents that their air conditioning unit had stopped working and wouldn’t be fixed until the next day. My parents are in their 60’s and getting to the at-risk age group for heat related illnesses. They had spent the night in a house that was over 100 degrees, frantically drinking water and fanning themselves in an attempt to generate enough comfort to sleep, and more importantly, survive. This is the normal for most Phoenix residents.

Air conditioning units are essential to living in Phoenix because the result of not using one is heat stroke and even death. However, it is very common for AC units to break from overuse and need to be fixed annually, which means it is also very common for there to be a long
waitlist to get an AC fixed because so many others are experiencing the same thing at the same time. In the United States, heat-related illnesses claim more lives each year than all other weather-related exposures combined (CDC, 2015). The Arizona Department of Health Services (AZDHS) reported that heat-related illnesses cause over 250 deaths and nearly 3,000 emergency room visits each year, and that number has been steadily increasing (AZDHS, 2018). Additionally, it is expensive to continually run an AC unit throughout the year, but the alternative could be a medical bill to treat heat stroke or a funeral bill to bury a loved one. My thoughts were whirling, what of those who cannot afford to keep their AC on? What of those who cannot afford to get it fixed? What of those who die waiting for their AC to be repaired? Will they just become another statistic? I had so many questions, but no answers.

I drive I-17 often, and each time I do, the landscape changes slightly. Cacti are dying, toppled over and rotting from the heat. Birds are migrating further north than they ever have before, leaving their burrows unoccupied and nests vacant. Soils are scorched black, and sunsets turn red. Rivers dry up and monsoons dissipate or never form in the first place. In August 2020, SRP and APS asked Phoenix residents to conserve power over fear that AC use from the heat wave could blow the power grid (12News, 2020). If one power outage could kill thousands, is it even safe to live here anymore? Is Phoenix the origin of the new climate refugees?

As I exited the freeway my thoughts and concerns began to fade. Once I pulled into my driveway, I saw my parents and gave them a hug. I asked them if they were okay and able to stay cool. I know this will not be the last time I have this conversation, but every time I leave, I hope and pray that the hug I gave them will not be the last.
Annotated Map of I-17 Route with Reference Points
Sources

“APS and SRP Ask Customers to Conserve Power as Heatwave Strains Power Grid.”


“Extreme Heat.” Centers for Disease Control and Prevention, 25 Sept. 2020,

www.cdc.gov/disasters/extremeheat/index.html


“Weather Disasters and Costs”, NOAA Office for Coastal Management, 2020,

cost.noaa.gov/states/fast-facts/weather-disasters.html


The Arizona Republic, Arizona Republic, 17 Aug. 2020,