

Fresno County

FAST DISASTER
CASE STUDY



ENVIRONMENTAL
INJUSTICE

Summer 2021

GROUP NO. 4

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ABOUT

This case study report was developed by students at the University of California Irvine for the undergraduate class, “Environmental Injustice,” taught by Kim Fortun and Kaitlyn Rabach for the Department of Anthropology, Summer 2021. The University of California Irvine is on the ancestral homelands of the Tongva and Acjachemen nations.

Cover Image:

source:



<https://thebusinessjournal.com/feds-reach-407k-settlement-with-fresno-winery/>

<https://www.gallo.com/>

(Screenshotted by Rayomand Kapadia on 06/30/2021)

Description:

Top picture shows the actual E&J Wine Refinery in Fresno County, California. The bottom picture is one of the only images of E&J Winery property that is showcased on their website.

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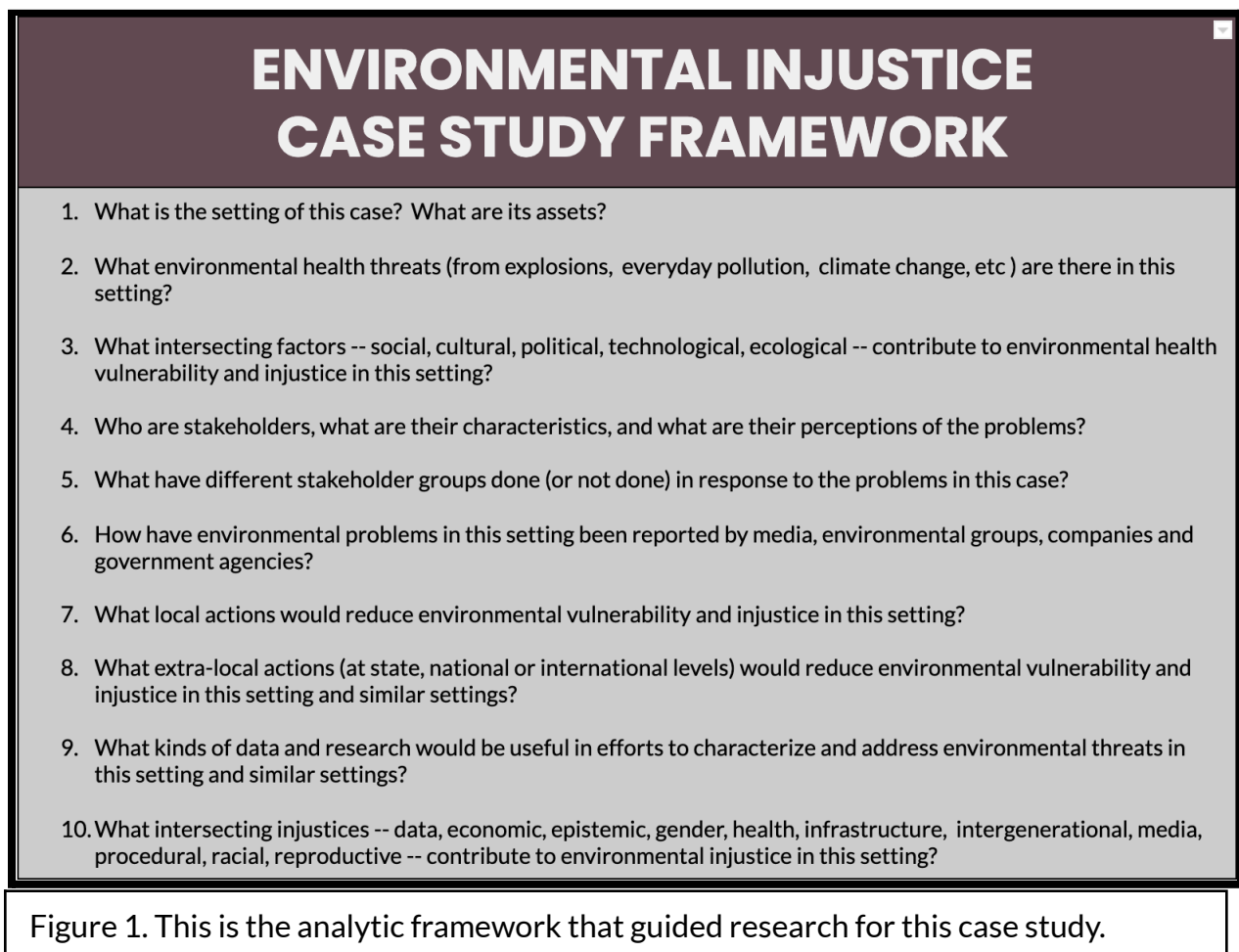


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INTRODUCTION

This case study report focuses on “worst case” scenarios for release of toxic chemicals in Fresno County. The report addresses a series of ten questions (Fig. 1) that draw out local details in a manner that encourages comparison with other places. The research has been done quickly (within the constraints of a quarter-long undergraduate class) so is limited to and points to the need for further research and community engagement. The goal is to help build both a body of research on environmental injustice and a network of researchers ready to help conceptualize and implement next-generation environmental protections.



In environmental policy, a “worst case scenario” refers to the potential for catastrophic, fast, often explosive disaster at industrial facilities that handle more than a certain (“threshold”) amount of extremely hazardous substances. Provisions of the US Clean Air Act require companies to submit worst case scenarios for their facilities to the Environmental Protection Agency (EPA). The information provided isn’t fully online because of concerns that it could be useful to terrorists. This makes it particularly important that researchers, residents, workers, media, local officials and emergency managers work together to ensure that risks are understood, managed and continually reduced.

In this research, “worse case scenarios” are considered “fast disasters” to contrast them with the “slow disaster” of everyday pollution. It needs to be emphasized however, that even though fast disasters erupt in a dramatic way – often with an explosion or gas cloud that requires an emergency response -- this doesn’t mean that fast disasters occur suddenly. Investigations have shown that all fast disasters have a deep backstory: they were years in the making. These backstories need to be documented to understand where things went wrong and where changes could prevent future disasters.

A 2014 report by the Center for Effective Government mapped the proximity of high-risk chemical facilities in California to schools and found that 49 percent of P-12 students attend a school within the vulnerability zone of a high risk chemical facility (Center for Effective Government 2014).

This report focuses on Fresno County, the native homelands of the Big Sandy Rancheria: (Western Mono Indians, Monache) and the Yokuts.

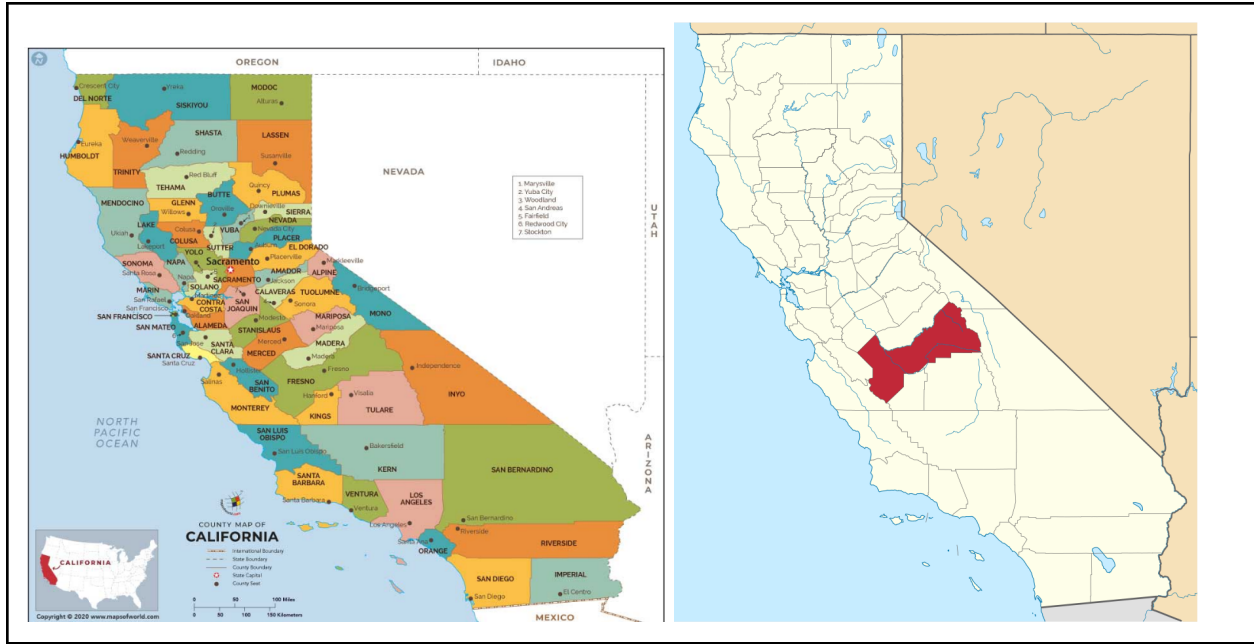


Figure 2.

Caption:

Fresno County is an inland county located in the middle of California, known for being having a major Agricultural industry and being one of the most polluted counties to live in the USA.

Image source:

<https://www.mapsofworld.com/usa/states/california/california-county-map.html>

https://en.wikipedia.org/wiki/Fresno_County,_California

(Screenshots by Rayomand Kapadia, June 29th, .2021)

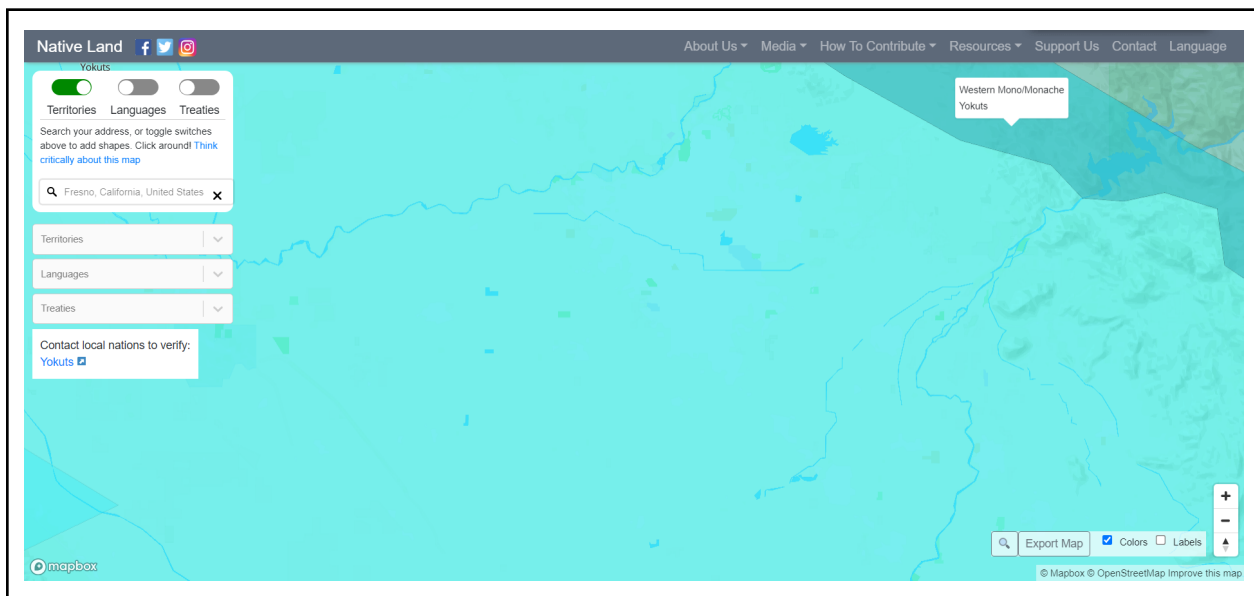


Figure 3.

Native Lands' digital maps show Fresno County's area showing the Yokut and the Western Mono Indians homelands.

Source: <https://native-land.ca/>

(Screenshots by Rayomand Kapadia, June 30th, 2021)

1. COMMUNITY ASSETS & SETTING

The Killer County

Rayomand Kapadia

Fresno County is an interesting and vastly diverse county that is nestled in the San Joaquin Valley in Central California. Fresno County based on the US Census Bureau Fresno County holds 999,101 people in 2019. The county is unique in that the majority of people (53.8%) are Hispanic or Latinx. However, this does not mean that the county is a haven of equality but simply seeing the median household income shows you otherwise, being under the federal average at \$53,969. The percent in poverty is almost double the national percent at 20.5%. (U.S. Census Bureau QuickFacts, 2021) Take the average area within Fresno County, zip code 93706, The race break down is set out at majority 60.81% Hispanic, African American 15.64%, White 10.8%, Asian 10.09%, and rest other races. This shows that the race breakdown of the area is by far minorities with Hispanic making the plurality. However, the Public-School Profile shows that the test score performance of the public schools serving the area are below average. Furthermore, the percentage of students eligible for free or reduced lunch, an indicator of family living near or below poverty levels, is at 86.3%. The percentage of Public Schools with Title 1 Status, meaning the schools serve underserved populations, is at 95.0%. ("Zip Code 93706 Map and Profile., 2020) All this shows that the social problems in the region are very dire with the combined information telling us that the majority of the region is minorities who are near or below poverty line earners and that is affecting their children and the school system

they go to.

Things only worsen when you take a look at the health of the citizens of Fresno County. The county has consistently been labeled as, “at the top of a U.S. ranking for being the most polluted American cities, according to an annual report... by the American Lung Association.” (Walker, 2020) Furthermore the population lives with chronic conditions of asthma and diabetes with asthma being directly linked with the constant massive forest fires that occur in the area.

However, Fresno County does have assets fighting against these problems and supporting the citizens of Fresno County. The Fresno Metro Ministry is a multi-faith, multicultural organization that works toward social and economic justice. They collaborate with the citizens of an area to create ground up advocacy projects for marginalized communities and increase consciousness about the terrible air quality in the area. (Kaye, 2013) The abc30 news network is the major news network for Fresno city and surrounding areas It has the highest news broadcast time out of all Fresno news channels, Broadcasting News 39 and a half hours of locally produced news stories a week. It has also historically broadcast information relating to forest fires to help citizens avoid health hazards from the fast disaster.



Figure 4. This is a photograph of the Clarence Freitas' Farm, near Fresno. The drought has made the soil dry and unsuitable for farming.

Source:

<https://www.theguardian.com/us-news/2015/mar/07/california-drought-farmers-drilling-groundwater-environment>

(Screenshots by Jimmy Duong , June 30th, 2021)

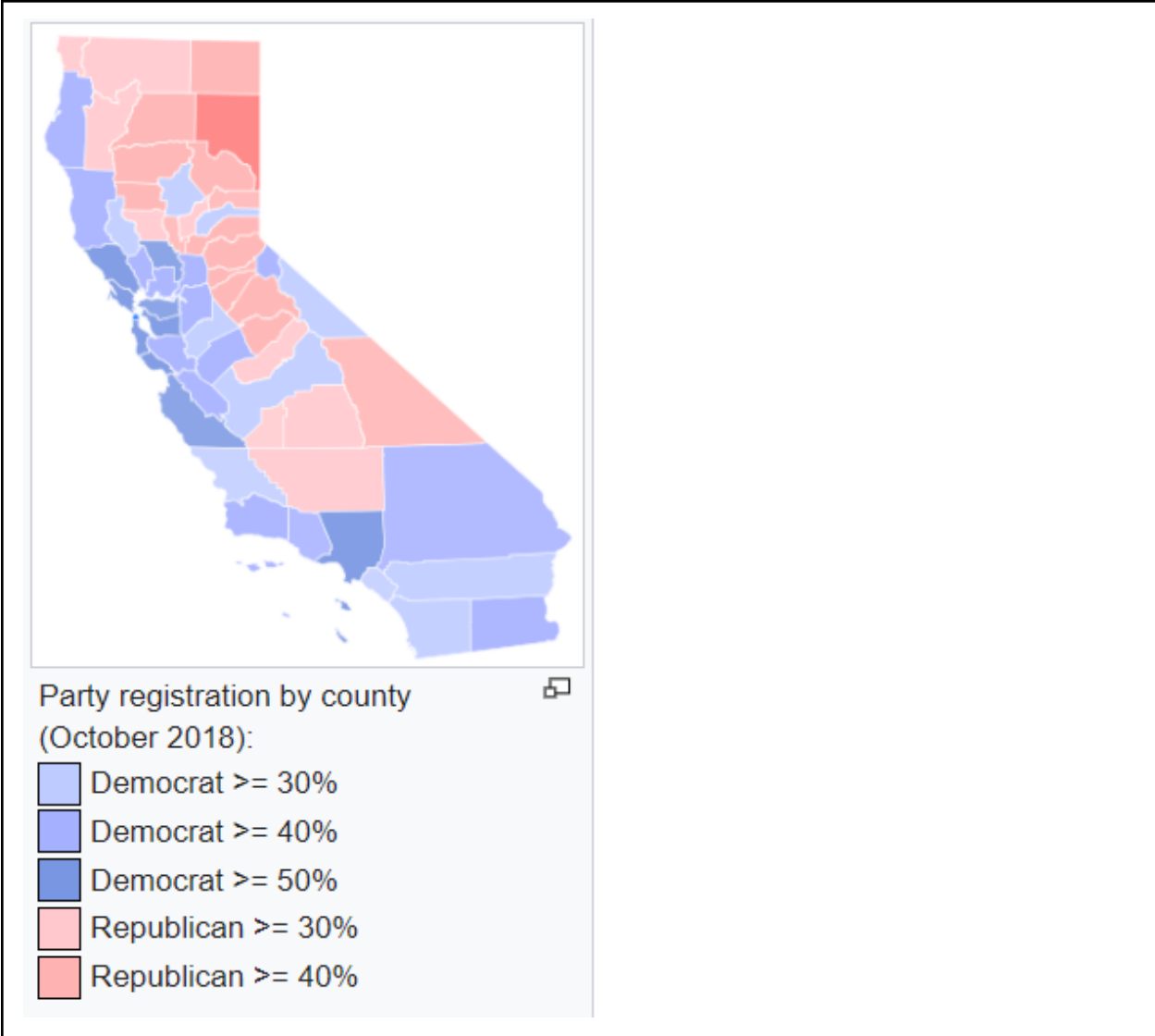


Figure 5.
image source:
https://en.wikipedia.org/wiki/California_locations_by_voter_registration#Counties
(Screenshot by Pengxuan Wu, June 29, 2021)

Caption: Voter registration by county in CA.
Fresno County has a higher ratio of democratic voter registrations. Given the strict policies from Trump's environmental policies(Republican Party), the Democratic majority in Fresno might've had less voice in local environmental issues for the recent past 4 years.

2.FAST DISASTER & OTHER ENVIRONMENTAL THREATS

Roots of Problems

Pengxuan Wu

The Central Valley, in which Fresno County is located, is renowned for its agricultural capabilities and crop outputs. Every year, almost one-fourth of the United States' food and forty percent of the country's fruits, vegetables, and nuts originate from the region (Perez 2019). As one of the major counties in the Central Valley, people would expect Fresno to be a healthy, productive, and vibrant community. However, it suffers from multiple environmental and fast-disaster threats.

RMP facilities: There are a total of 108 RMP facilities in Fresno County. They are mostly factories that process pesticides, fertilizers, meat & poultry products, and chemical gas power plants, and oil power plants & terminals. All of these facilities have the potential to cause catastrophic impact(deaths, injuries, public infrastructure damages) on the nearby communities in the worst case scenarios. For example, in pesticide and fertilizer facilities, gas/liquid leaks of chemical substances like ammonia, glyphosate, atrazine, and neonicotinoids can influence several miles of or even the whole vulnerability zone (Britannica, T. Editors 2020). Incidents may include chemical storage failure, liquid

chemicals leaking into local water supplies, and explosions of gaseous chemicals. Some of these facilities, like the local Foster Farms Belgravia Plant and Britz Fertilizers Inc, have had few of these incidents in minor scales of anhydrous ammonia leak & evaporation due to equipment failures. Another two facilities, Simplot Grower Solutions and Empire East, had caused evacuations of nearby residents and some property damages from chemical gas leaks due to lack of equipment maintenance (The Right-to-Know Network 2018). For natural gas and petroleum power plants/facilities, explosions are usually the main fast-disasters that severely damage the fence line zone. As of 2018, there had been 14 minor incidents of failed regulation of chemical substances, 54 injuries due to these incidents, 100 evacuations, and property damage of \$12,000 (The Right-to-Know Network 2018). Fortunately, none of these are worst-case scenarios, but the residents in vulnerability zones and local authorities definitely should keep their guards up in emergency situations.

Wildfires, droughts, and failing public infrastructure: wildfires in drought seasons can also be fast-disasters with worst-case scenarios that cause countless injuries/death and communal damages. Even though there is no clear, direct link between wildfires and human-caused environmental threats like the RMP facilities, climate change, deforestation, overexploitation, and failed public infrastructure like water canals had correlated to the frequency of wildfires in Fresno (Warszawski 2020).

Smoke & air pollution: These are usually not fast-disasters, but these environmental threats are definitely present and exacerbating in Fresno County: “more than 40% of Americans—more than 135 million people— are living in places with unhealthy levels of ozone or particle pollution. As usual, Fresno County gets very low marks for air quality” (Jakobs 2021).

Figure 6: RMP Facilities in the County

RMP FACILITIES IN FRESNO COUNTY			
FOCUS ON Fresno City			
Facility (with link)	City	Zip	Schools and hospitals within a mile-radius
Rich Products Corporation - Fresno Facility	Fresno	93721	<ul style="list-style-type: none"> • Kepler Neighborhood School • Yokomi Elementary School • Fresno Unified School District • Correctional Healthcare Co.
Pactiv - Fresno	Fresno	93727	<ul style="list-style-type: none"> • Fresno Adventist <u>Academ</u> • Bakman Elementary School Author: Jimmy Duong
E & J Gallo Winery - Fresno	Fresno	93727	<ul style="list-style-type: none"> • Fresno Adventist <u>Academ</u>
Snowden Enterprises - Fresno	Fresno	93725	N/A Author: Jimmy Duong
Empire East	Fresno	93721	<ul style="list-style-type: none"> • Kirk Elementary School

Figure 6. The image shows five of the 108 RMP facilities in Fresno County. Four of these facilities are in close proximity to vulnerable public buildings like schools and hospitals. One of these 5 RMPs has already encountered a minor gas leak incident that caused one injury and \$12,000 worth of damage ([RMP site](#)). In worst case scenarios of fast disasters, many of these facilities will cause catastrophic impact to the nearby communities.

Image Source: [The Right-To-Know Site](#)

Figure 7:

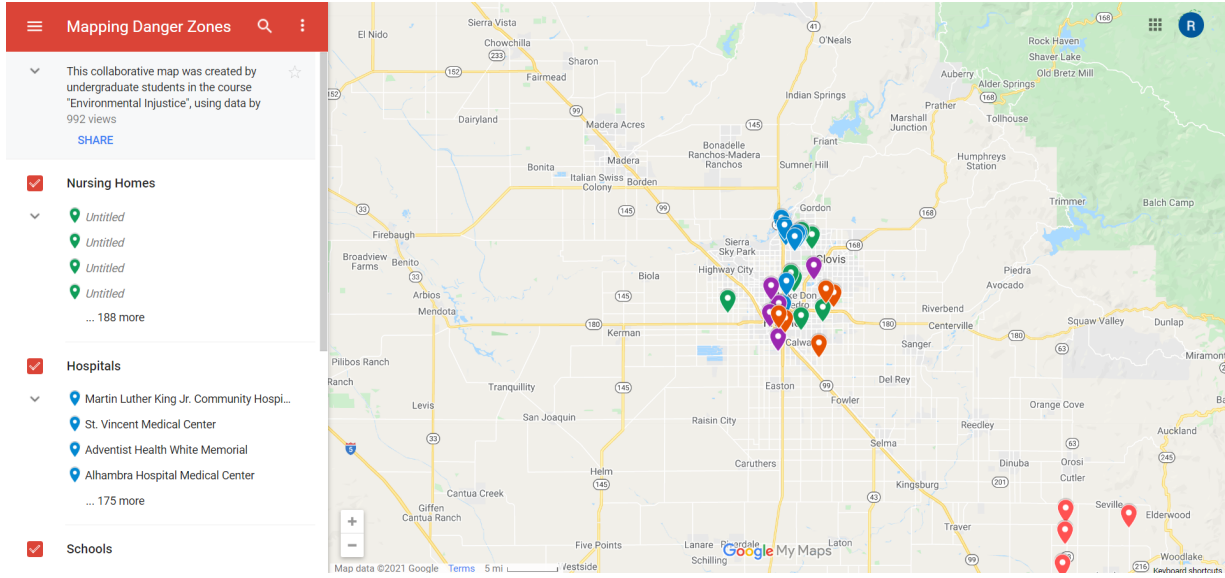


Figure 7b:

Hazardous Facility Fenceline Zones, Schools, and Race in Fresno County

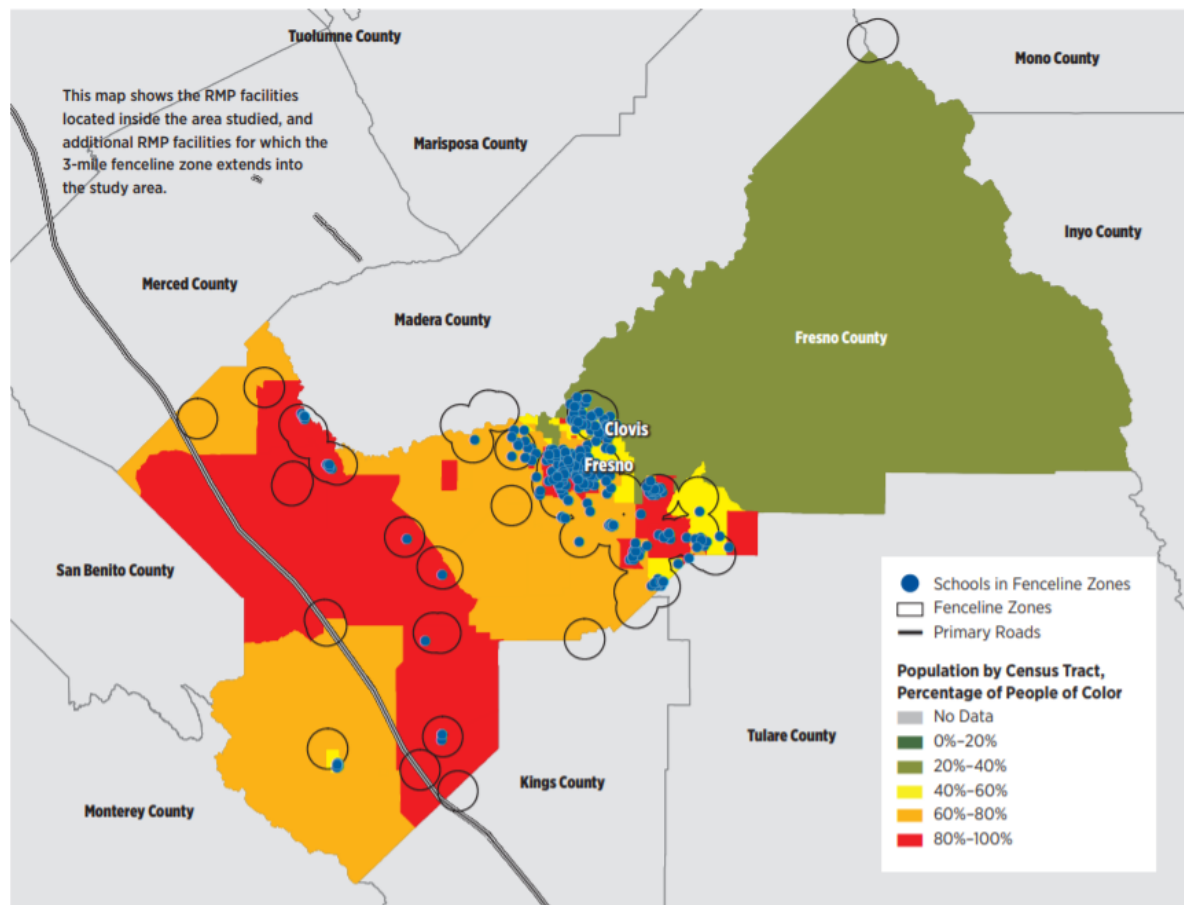


Figure 7: RMP facilities in highly populated areas & cities in Fresno County with public buildings identified: Schools (Purple Dots), Nursing Homes (Green Dots), and Hospitals (Blue Dots)

Image Source:

<https://www.google.com/maps/d/u/0/viewer?ll=36.785632763204504%2C-119.79456145&z=10&mid=1I9X9gp22fKfyjfRzIz96jKceaSAz33kM>

Figure 7b: RMP facilities in especially vulnerable communities (near schools, hospitals)

Image Source:

<https://ej4all.org/assets/media/documents/Fresno%20Life%20at%20the%20Fenceline%20FINAL%20English.pdf>

Figure 8:

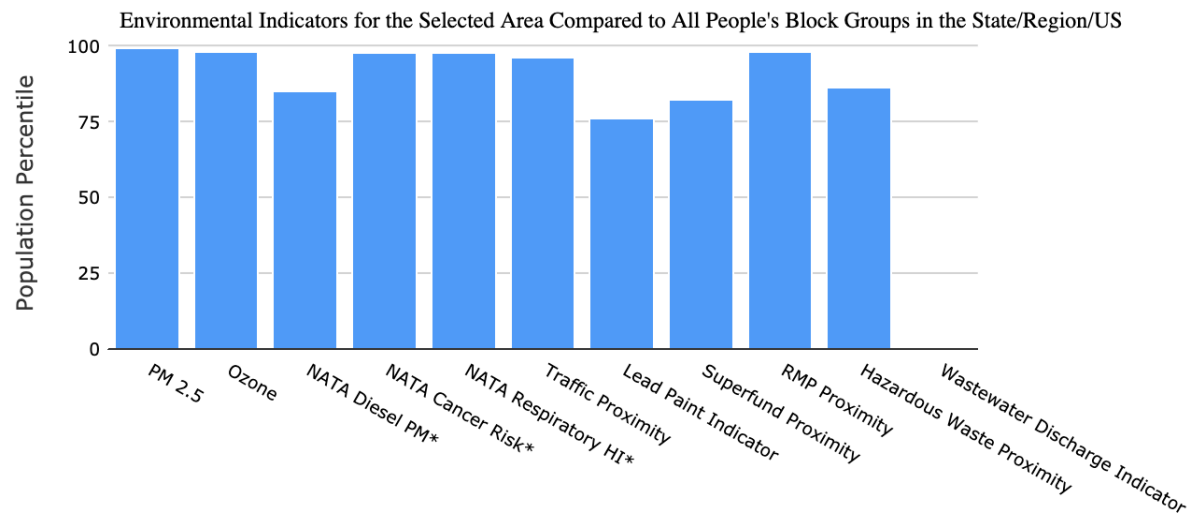


Figure 8. The chart shows that residents of Fresno, California have greater exposure to PM 2.5 and are in closer proximity to RMP facilities than 98% of residents in the country.

Source: <https://ejscreen.epa.gov/mapper/>

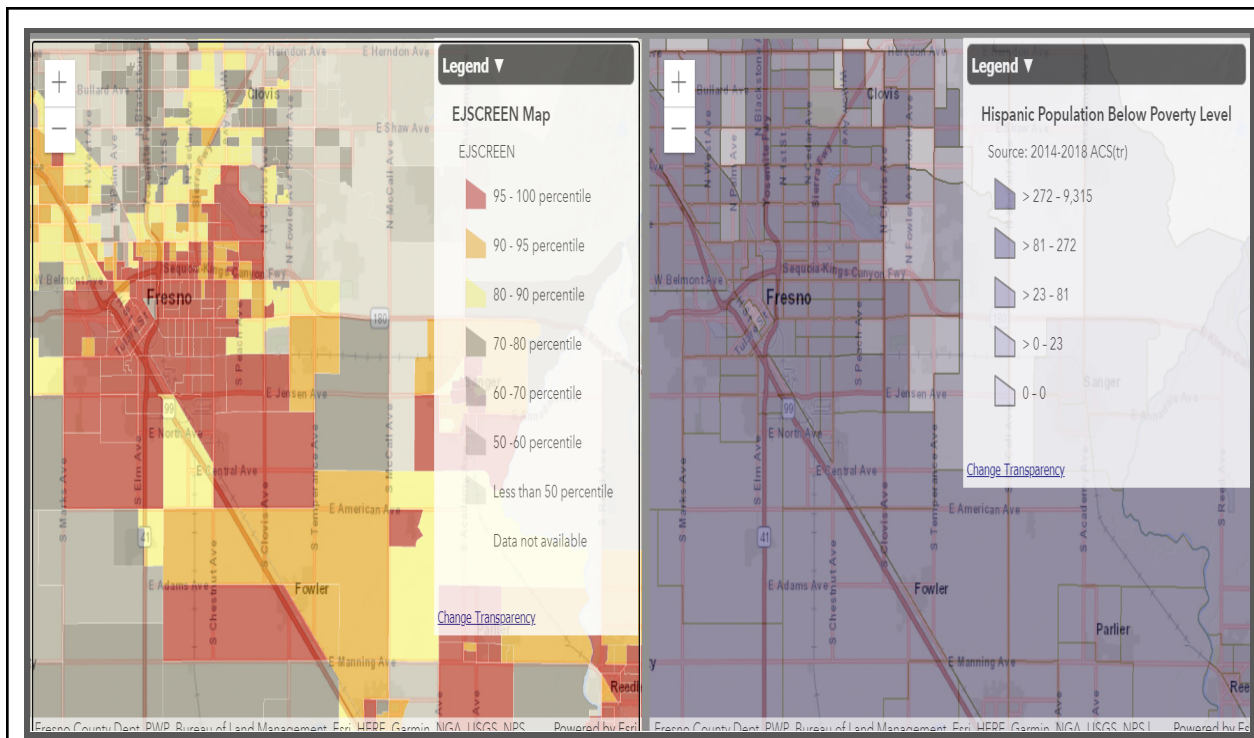


Figure 9. This visualization uses two EJScreen maps for Fresno, CA to compare, RMP proximity (left) and Hispanic population below poverty level (right). The comparison indicates that many poor Hispanic households are located close to RMP facilities.

Image source:

<https://ejscreen.epa.gov/mapper/comparemapper.html> Screenshot by Veena Naveen, June 2021. EPA EJScreen, retrieved June 29, 2020



Figure 10.

Rich Products Corporation - Fresno Facility RMP ID:1000077702

RPC-FNO, a.k.a., the Site, is located at 320 O Street in the City of Fresno, Fresno County, California and is situated in a heavy industrial portion of the downtown area. The Site occupies an approximately 85,000-square-foot structure that includes office, laboratory, manufacturing, maintenance shop, and warehouse space. The Site was built in early 1900 and several additions have been made since then. The Site operates normally 5 to 7 days per week, 24 hours per day. The Site produces doughs, which are frozen for shipment. As part of the refrigeration system to freeze the doughs for shipment, the Site handles quantities of anhydrous ammonia,

IMAGE SOURCE: [Google Maps](#)

(Screenshot by Cristian Handaric - June 30, 2021)



Figure 11.

Snowden Enterprises - Fresno (RMP ID:1000049613)

Snowden Enterprises is a family owned / operated business that provides sulfur dioxide to the various farming industries throughout the central valley of California. Snowden Enterprises has prided itself in ensuring a safe operation at both locations dating back to the startup of the company in 1936.

Image Source: [Google Maps](#)

(Screenshot by Cristian Handaric - June 30, 2021)

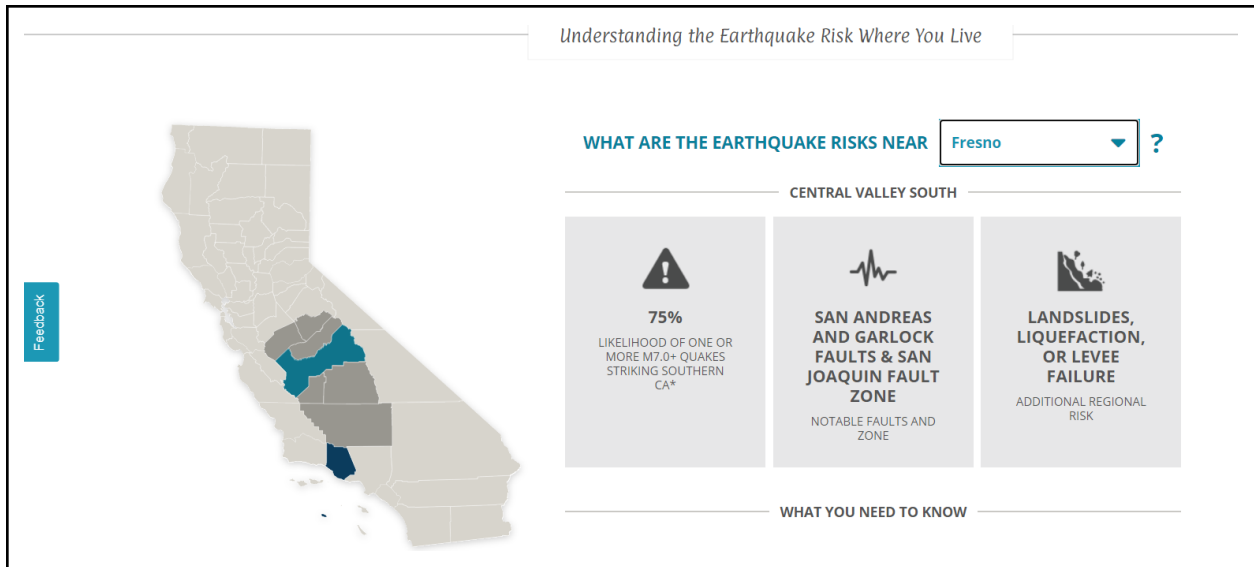


Figure 12.

Fresno County is a highly earthquake prone area with a 75% likelihood of a 7.0+ earthquake. This is especially concerning as one of the major agricultural productions of the USA such as 99% of raisins come from Fresno County.

Image source:

<https://www.earthquakeauthority.com/California-Earthquake-Risk/Faults-By-County>
(Screenshot by: Rayomand Kapadia on June 29th, 2021)

3. COMPOUND VULNERABILITIES

Community Stressors

Jimmy Duong

There are various community stress indicators that contribute to the environmental health vulnerability and injustice in Fresno County. One of the many stressors is the high poverty rate within this county. Fresno county has a particularly high poverty rate at about 20.5%. Not only this, but it also has an unemployment rate of 8.7% (QuickFacts). This area has a high COVID-19 rate at about 10%, or 102,000 cases in a population of about 999,000. As a result of all of these cases, there have been 1,725 deaths (Lopez). In regards to health, children have a high rate in asthma, with 1 in every 6 children suffering from the disease. This is two times higher than the United States average. (Kaye).

Within Fresno County, there is a huge concentration of Latino and Spanish-speaking people. In fact it is one of the highest within California. A breakdown of some statistics regarding language: 44% of the population is Latino, 41% of the population speak a language other than English at home, and 77% of the population speaks Spanish (Fresno County: Spanish-Speaking Model). The population of Latinx citizens in Fresno County face discriminatory practices from the police. As a result of this, there have been high police killings within this county towards Latinx individuals (Fresno to Pay Over \$9M in Fatal Police Shootings Lawsuit).

Public-School Profile shows that the test score performance of the public schools serving the area are below average. Furthermore, the percentage of students eligible for free or reduced lunch, an indicator of families living near or below poverty levels, is at 86.3%. The percentage of Public Schools with Title 1 Status, meaning the schools serve underserved populations, is at 95.0%. (Zip Code 93706 Map and Profile). Fresno has a social vulnerability index score of 0.97, which is relatively high since a score of 1 shows high vulnerability. "Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health" (County Drought Information).

There are many issues of racial disparities within this county. Native Americans and Alaskan native groups are denied at twice the rate than Whites for mortgage rates. African American residents have the lowest rate of health insurance. Latinx and African American groups in Fresno receive subprime loans twice as much as any other group (County Overview). The employment rate as officials or managers for every race is 36.4 people per 1,000 people. However, Whites have 66.3 people per 1,000, while others are around 30 per 1,000. This shows an exceptionally high employment rate as officials or managers in White. (County Overview).

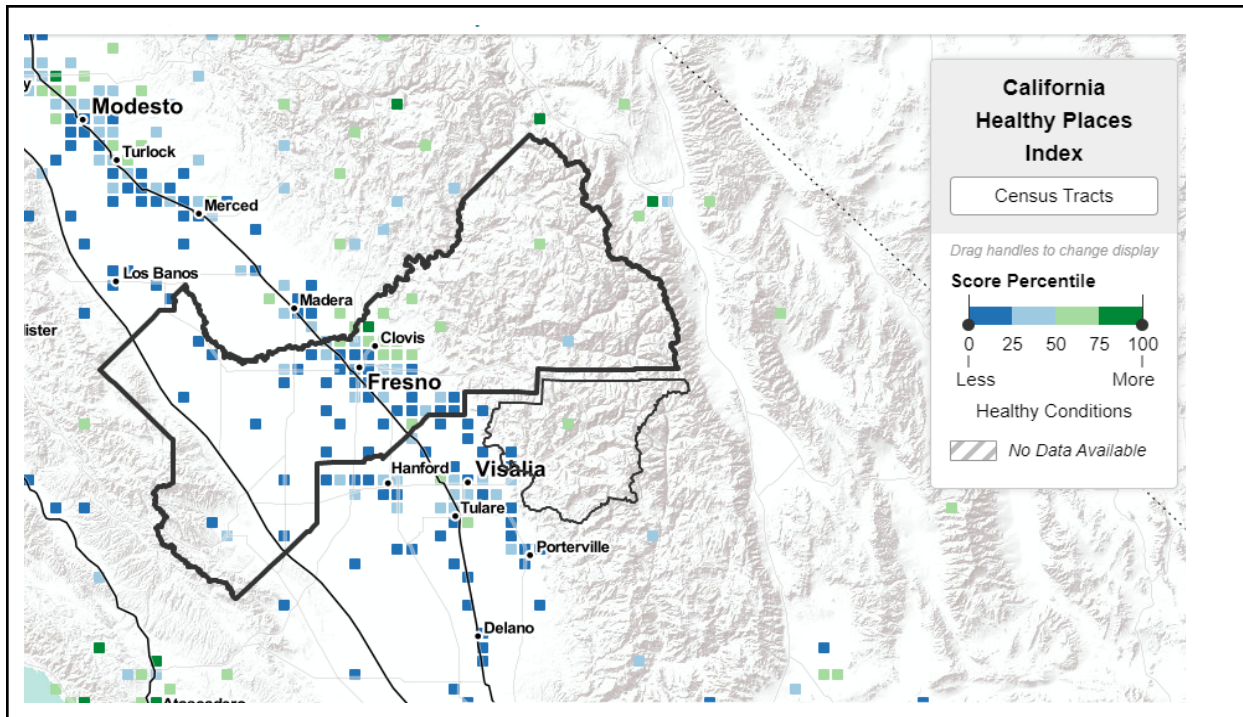


Figure 13.
 Image source: <https://map.healthyplacesindex.org/>
 Caption: California Healthy Places Index

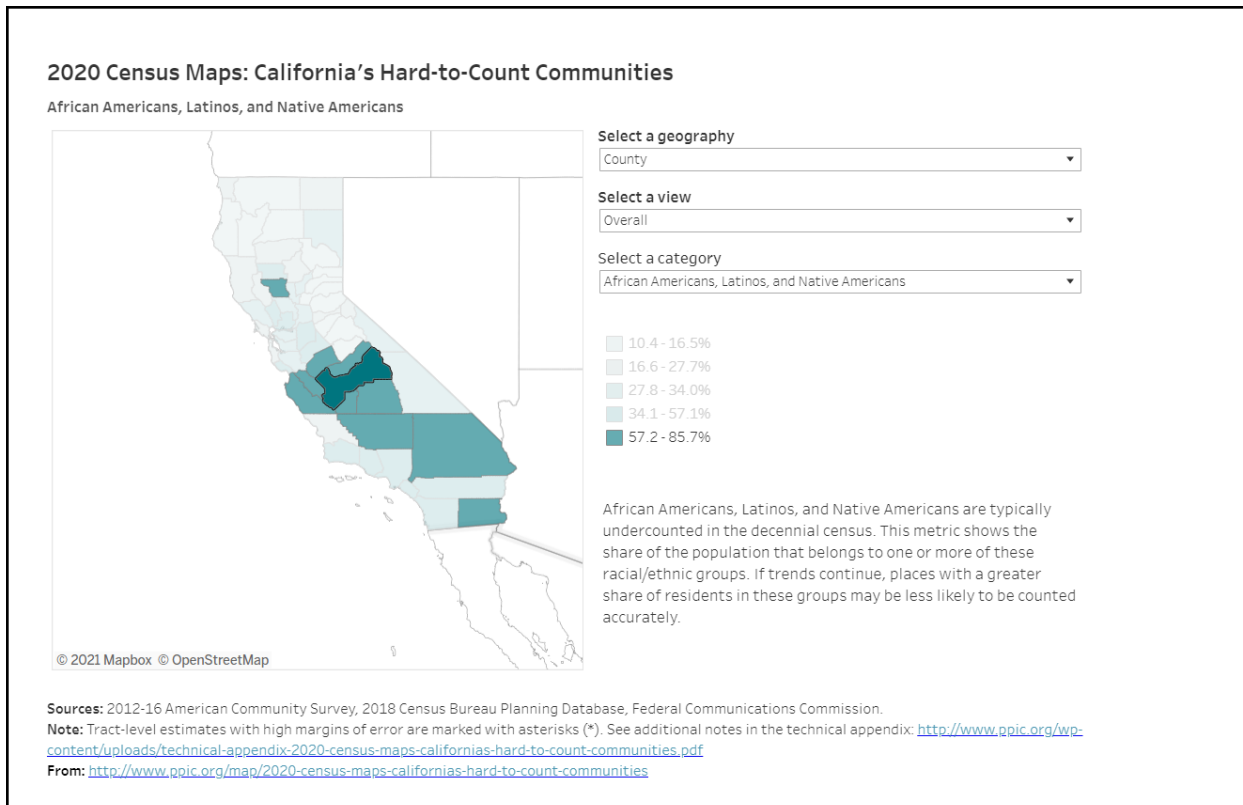


Figure 14.

This data visualization shows the percentage of people in Californian counties that are African American, Latino and Native American. Research has shown that “residents of chemical facility ‘vulnerability zones’ are disproportionately African American or Latino, have higher rates of poverty than the U.S. as a whole, and have lower housing values, incomes, and education levels than the national average. The disproportionate or unequal danger is sharply magnified in the ‘fenceline’ areas nearest the facilities. (Environmental Justice and Health Alliance for Chemical Policy Reform 2014). A very high percentage of Fresno’s population is Latino, African American, and Native American (57.2-85.7%)

<https://www.ppic.org/interactive/2020-census-maps-californias-hard-to-count-communities/> (Screenshot taken by Cristian Handaric 6/29/2021)

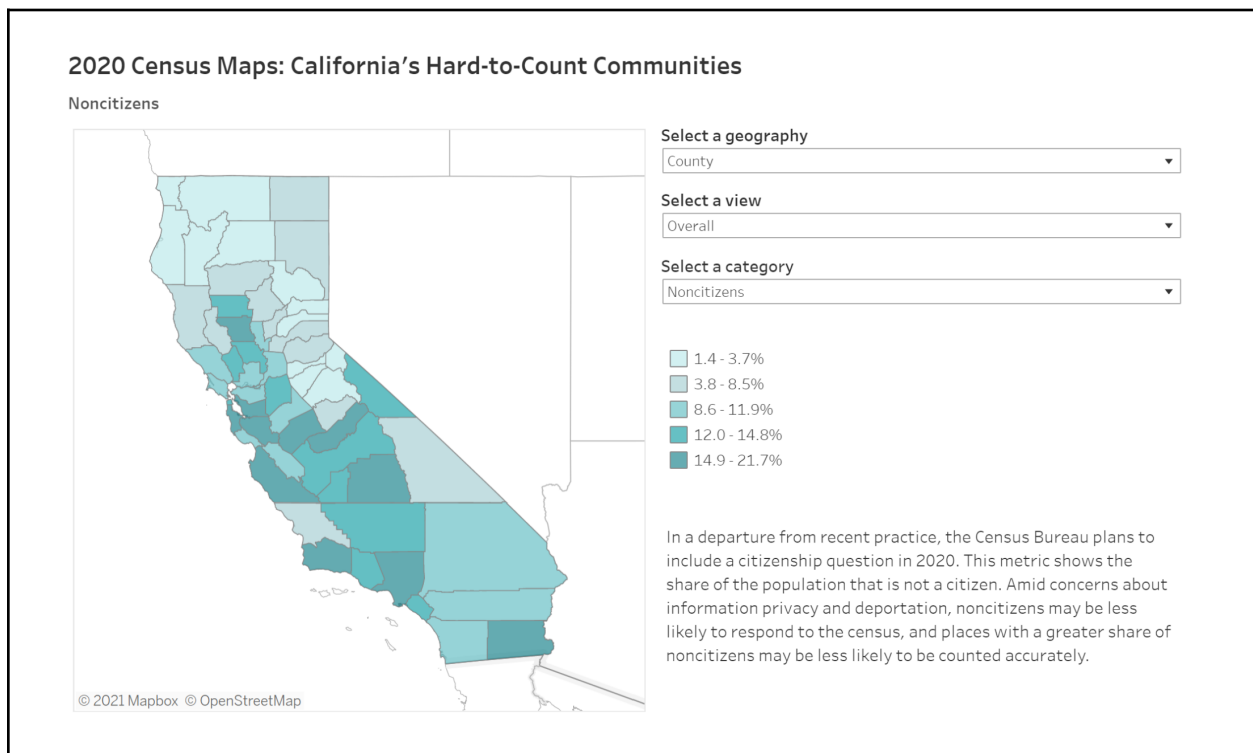


Figure 15.

This map shows the percentage of residents in California counties that are non-citizens. Fresno in particular is 13.3% non-citizen. Non-citizens are especially vulnerable to disasters due to sociocultural isolation, as well as avoidance of government officials and law enforcement.

Image source:

<https://www.ppic.org/interactive/2020-census-maps-californias-hard-to-count-communities/> (Screenshot by Ginghei Mao June.26.2021)

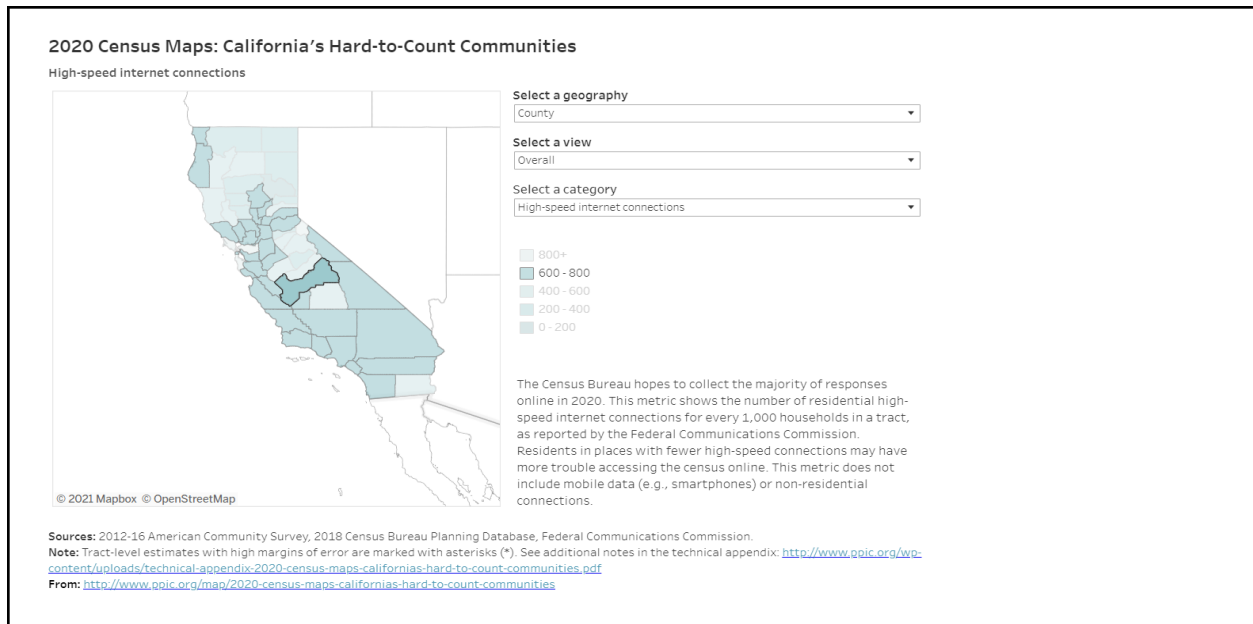


Figure 16.

This map shows the percentage of people in Californian counties without high speed Internet connections according to the US Federal Communications Commission. The data and visualization does not account for mobile data or non-residential connections. Without good Internet connections people will have limited access to chemical disaster risk information both before and during a disaster, undermining both safety and possibilities for citizen activism to reduce risks. In Fresno County, there is a moderate level of Internet connectivity: 600-800 per 1,000 households.

<https://www.ppic.org/interactive/2020-census-maps-californias-hard-to-count-communities/> (Screenshot by Cristian Handaric 6/29/2021)

4. STAKEHOLDER ANALYSIS

Everybody holds some stake!

Individuals, people, and organizations with a stake in a problem or project are referred to as stakeholders. They are any group that is implicated in the issue or initiative, who hold different stakes whose outcomes can affect them in a multitude of ways. For example, within a community there are workers, residents, and companies that hold stakes in local issues. Alternatively, there are representatives, administrations, and governments that can be identified as non-local stakeholders. They can also be both internal or external. These are just a few examples of stakeholders, as there are a great deal.

To name a few just within Fresno County, there is the Coalition of community organizations (Concerned Citizens of West Fresno, Fresno Metro Ministry, California Legal Rural Assistance (CLRA), Communities for a new California), there is also the Family Farm Alliance. Each of these groups hold stakes in the Fresno community and contribute to the economy and livelihood for the residents in the county. Their perceptions for some of the issues in Fresno include a lack of recognition and environmental justice for the farming community that is currently going through a drought, "Next month, farmers will have to pump water from their underground wells to keep their crops going. "A lot of folks will have to obviously rely on groundwater,..." (Abc30) As mentioned in this article, farmers are forced to pump water from underground wells, and it is not clear how sustainable this practice is.

The stakeholders in this situation are attempting to make the best out of an unprecedented environmental hazard. Moreover, further perceptions include the concerned citizens of Fresno who came together to form coalitions to fight against a factory that contributes to pollution and respiratory issues because they wanted to fight for the health and well-being of their community members. "Because of strong support from the city, our legal team and the greater community, the closing of Darling will bring

much needed relief for many families who suffer multiple health problems, including asthma and other respiratory issues...The entire community will be the beneficiary of the closure of one of our community's most notorious nuisances." (Fresnobee) This article emphasizes an excellent example of the power that stakeholders have when they organize.

Wealth disparity and the environment

Veena Naveen

The main stakeholders in Fresno are its residents, plant owners, and government bodies. Residents include people working in agriculture, an important sector that contributes significantly to Fresno's economy. However, agricultural activities, along with emissions from motor vehicles, are the main sources of air pollution. Low-income farmers cannot afford to buy cutting-edge environment-friendly agricultural equipment (Leon, 2013). However, some have taken steps towards minimizing their negative impacts on the environment by switching their crops from water-demanding types to water-intensive types. Additionally, many low-income farmers are disempowered and lack representation. In contrast, high-income farmers and ranchers (who are less impacted by environmental issues due to the vast wealth disparity) are represented by organizations like the Family Farm Alliance that advocate for their irrigation needs, after they have been facing cuts to their irrigation supply (Family Farm Alliance). Fresno residents believe that powerful members of the agricultural sector should do more to help solve air pollution problems, especially since air pollution affects crop yield (Leon, 2013). Residents have also formed community organizations such as the Fresno Metro Ministry to bring their concerns to local government bodies. They have also staged protests to bring attention to their problems (Los Angeles Times, 2014). However, most residents do not participate directly in policymaking. Poor residents lack access to information about air pollution and do not have the means to buy electric vehicles.

Owners of plants generally do not take residents' concerns into consideration when setting up their businesses. Since the local government receives tax revenue from factories and plants in Fresno, they do not actively address issues of environmental justice (Fresnobee). Over the years, many infrastructure, housing, and other development projects were approved in close proximity to the plants. However, residents are often vocal about these issues which results in these companies having to shut down or move to less populated areas in Fresno. In 2011, a coalition of community organizations presented their concerns at the Fresno City Council about the environmental and health hazards posed by Darling International Inc.'s plant. In 2018, the Council voted to relocate the plant (Taub, 2018). Action taken by extra-local government bodies include Senate Bill 559, which has provisions for increasing water supply to municipal wells in Fresno but it does not account for the unequal water usage between wealthy and poor farmers (Cahill, 2019).

5. STAKEHOLDER ACTIONS

“With great power comes great responsibility”

Ginghei Mao, Pengxuan Wu, Rayomand Kapadia

In Fresno, the stakeholders in problems dealing in environmental injustice can be boiled down to three groups: residents (victims), corporations (the accused), and the government (the judge).

Along with heavily polluted air and water, the residents of Fresno are faced with rampant poverty. As a result, very few of those who suffer from environmental injustice can afford to delegate mental bandwidth to voicing their complaints. Among those that can is Mary Curry, who leads “A vocal group of residents” that “maintain a strong public outcry” about the stench exuding from a meat processing plant. (Marcum.) But the reality for most, as stated by Jim Aldredge, is that “Pollution data is the farthest thing from your mind when you’re looking for your next meal” (qtd. in Marcum). The vast majority of the stakeholders in Fresno’s environmental issues are the residents, but the residents are also the group with the least freedom to express themselves and the smallest audience who listens.

The factory/plant owners seem to be economically motivated with no real care for the citizens of Fresno County. An example of this is the meat processing plant, Darling Ingredients, that would not take into consideration the surrounding residents' concerns regarding its pollution it was spewing out that was negatively affecting the surrounding residents. Instead of hearing the complaints and maybe making the plant more

environmentally friendly the company simply decided that it would move its location to somewhere else where the surrounding residents wouldn't complain so much or at least that location's residents' complaints wouldn't affect the plant. This was not a victory for the plant though as the closure of the plant would lead to significant job loss for the residents where the plant was located currently as they couldn't travel to the new plant location in the far-flung rurals of Fresno County. In the end though the plant was forced to permanently close down as it was not able to move to the new location. This money hungry behavior is not the exception but rather the norm for factory/plant owners in Fresno County.

The federal government under the Biden administration has been responsive to the fire hazards, droughts, and issues surrounding water scarcity in the Central Valley, CA: "Under Senate Bill 559, the authority will improve the water canal's carrying capacity, help with groundwater recharge and improve the water quality of nearby municipal wells." (Warszawski 2020). There are also state-level monetary assistance for Fresno County to combat the fast-disasters of wildfires: "The California Governor's Office of Emergency Services (Cal OES) has secured a Fire Management Assistance Grant (FMAG) from the Federal Emergency Management Agency (FEMA) to help ensure the availability of vital resources to suppress the Creek Fire burning in Fresno and Madera Counties" ("California Secures Federal Assistance..." 2020). These short-term actions from the federal and state governments can solve the immediate emergencies, but long-term plans haven't been clearly proposed to systematically address & solve the issues of environmental injustices in Fresno.

6. ROLE OF MEDIA AND BIG ENVIRONMENTAL ORGANIZATIONS

Teamwork!

Pengxuan Wu & Rayomand Kapadia

Media attention and organizational exposure are important for environmental issues to be made aware to the larger public. In Fresno, environmental reports were made by several news outlets and media groups. Environmental organizations also contributed to real-life projects that aim to reduce Fresno's air pollution and incorporate more renewable sources in the county.

The Los Angeles Times has made several talks and news reports on the worsening air quality in Fresno cities. As one of the news articles stated that many regions & cities are in the "top 10% most-polluted census tracts in California"(Marcum 2014). Also, The LA Times explored the racial & political injustices in many Fresno communities, which ultimately contributed to environmental injustices: "It's home to a Latino community – the children and grandchildren of migrant workers; to Hmong and Cambodian farmers; and to a minority African American community that includes those desperate to leave"(Marcum 2014). With these fundamental issues discussed, the general public would be aware of the political disempowerment in the minorities and social segregations in

different communities.

Another organization that seems to be focused on keeping the people of Fresno County involved and helping set up ground up advocacy groups is the Central California Environmental Justice Network. They work in and around the Central Valley which among other counties in California, includes Fresno County. In 2014, they reported in the matter of Friant Ranch, which was a case that went to the Supreme Court of the United States regarding a development of a Friant Facility near a residential area without compiling an environmental impact report (EIR). (“Air Quality Victory in Fresno! – Central California Environmental Justice Network” 2014) They also were a part that advocated for the people to bring a ban on RoundUp pesticide use in Fresno Unified District Schools in 2018. However, though these advocacy actions and newspaper articles may act like it is showing the shallow water of a deep lake it is actually just showing the actual shallowness of the lake. That is to say that the overall reporting and advocacy for Fresno County is frighteningly low and as we will see later on that leads to major inequalities for the citizens of Fresno County.

7. RECOMMENDED LOCAL ACTIONS

Take local action for a future of clean air & water

Cristian Handaric

Being centered between three national parks, with Yosemite, Kings Canyon and Sequoia at a short distance from Fresno and Clovis, Fresno County plays an important role in the movement for environmental justice.

One action that can be taken at the local level is to implement programs that educate the population on the health risks of exposure to pollutants and ways to limit the destructive effects on their bodies and environment. One of the main causes for Fresno's air pollution is the presence of reactive organic gases coming from petroleum transfer and storage(arb.ca.gov), and carbon monoxide that comes from motor vehicles, and fuel combustion from stationary sources. By being educated in this area, the local community will benefit and will be more likely to improve the existing environmental issues.

According to the Central California Children's Institute, the "rates of asthma are highest among children who live in Fresno, where over 20% of children ages 0-17 have been diagnosed with asthma, compared with 15.8% Valley-wide"(fresnostate.edu). Some examples of such health protective programs are the Real-time Air Quality Network (RAAN) and the Air Quality Flag Program(wikipedia.org), which provide the public with tools to make daily decisions about air quality. By possessing this knowledge, the population will be able to make better decisions when it comes to voting their local representatives, and will keep them accountable with regards to the injustices mentioned above, through an active involvement in the local-life through peaceful protests and pro-justice manifestations.

Other actions include regulations towards mitigating any increase in emissions resulting from new or already existing point sources in the District, and the development of control measures in the transportation system, which can be achieved through partnerships with local transportation agencies. Since "Fresno county is home to 1.88 million acres of the world's most productive farmland" according to (visitfresnocounty.org), one of the highest concerns for the local community is the contamination of water from chemical fertilizers or waste. The chemical releases in Fresno are among the 50th percentile for cancer and non-cancer toxins found in the water (Wikipedia.org). These levels could be lowered through the implementation of strict regulations of the chemical fertilizers and the limitation of their use.

By combining the local actions previously mentioned, Fresno County could enjoy lower air pollution, clean and fertilizer-free water, organic agriculture, and a next generation better prepared to tackle the environmental issues of their community due to the health and environmental education they received.

8. RECOMMENDED EXTRA-LOCAL ACTIONS

The Structural and Political Solution to Environmental Injustice in Disadvantaged Areas

Nishtha Mistry

In 1983, the GAO examined the siting of four hazardous waste landfills located in EPA region IV comprising eight southeastern states. The agency found that three out of four landfills were located in majority-black communities and at least 26% of the population in all four communities fell below the poverty line (Bisgaeir and Pollan). When looking at the core reason for the building of these landfills, as well as the lack of representation in city councils and state governments provides a clear reality of how they are built. Minorities have been systematically pushed into poverty, and this poverty leads to a lack of participation in politics. Many have called this state, national and international political involvement a "rich man's game" and money anxiety resulting from politics helps to explain why (Stevens). When people are worried about how they will pay for dinner or feed their children, the idea of participating in city councils and local governments is far from priority. Therefore, council members in wealthy areas can easily place these landfills in poor areas because there will be less to no pushback from the residents. By increasing representation in the governments through educational campaigns, the fight against these injustices can be put into play.

There is a nationwide lack of knowledge when it comes to environmental injustice, as people believe pollution impacts the population in the same way. It is important that affected communities are educated about the disproportionate environmental risk they face in comparison to the rest of the population. The most important step would be to bring more awareness to heavily impacted areas and recognizing the detrimental outcomes of west Fresno's pollution. This will result in residents to be more involved in politics and represent their views at a statewide/national level. In addition will prevent situations like Fresno's from occurring in future areas impacted by a history of discrimination and liberate communities currently struggling with similar environmental hazards. In order to reduce environmental vulnerability in poor communities, the government can stop correlating property tax rates with school budgets. When this occurs, poorer areas that pay less property tax will receive worse schooling with lower budgets, which feeds into the cycle of poverty (Semuels).

By pushing this cycle of poverty, these residents are forced into staying in areas without means to leave. This furthers the effects of the plants and landfills on their physical health as they will be generationally trapped in poverty. When considering the location of landfills, there should be a diverse panel of council members who choose where to place. This will prevent influence from implicit racial biases. In addition, a quantifiable percent distance should be made between a neighborhood and a landfill in order to prevent residents from suffering the injustices faced when being in close proximity to them. Carbon emission credits should be set up in order to decrease the emission of pollutants that are emitted by factories. Those factories that disproportionately affect minorities will push out less emissions due to this policy and impact these targeted populations less (Mountford and McGregor).

9. RECOMMENDATIONS FOR FUTURE RESEARCH

Find and Inform

Yeseong Kim

Fresno County is endangered by several environmental threats. However, residents in Fresno County are not properly informed of the sources and effects of those pollutants. Data provided by the government or organizations are sometimes not organized well and other data are not even provided. Properly informing the residents will be the first step to manage the pollutants in Fresno County because residents' actions are crucial. Creating a unified online map including information about environmental threats in that area will help inform the residents in Fresno County. For example, the map can include data of risk factors and their effects near the fenceline zone of 108 RMP facilities in Fresno County (The Right-to-Know Network). Also, environmental hazards such as earthquakes, fires, and drought can be included in the map like the government websites (Fresno County Conditions). Residents in Fresno County will be able to easily access research data through this online map.

In addition to informing the residents in Fresno County, scientists should further research the correlation between exposure to hazards and disease. For example, 1 in 6 children in Fresno County suffers from asthma, which is twice the average rate of the United States

(Kaye 2013). Researchers should set their goal to find out pollutants that affect children in Fresno County resulting in an exceptionally high asthma rate. It is important to research the cause-and-effect of the pollutants because it can support further government actions such as regulations in the usage of such pollutants in RMP facilities.

10. INJUSTICE ANALYSIS

**“When sorrows come, they come not single spies,
but in battalions” - William Shakespeare, Hamlet Act
IV Scene V**

Ginghei Mao

It is undeniable that Fresno county, specifically West Fresno, suffers from intense environmental injustice; “one of the most impoverished communities in the City of Fresno, CA–West Fresno–is a magnet for environmentally dangerous facilities” (Diggs). The environmental hazards residents of Fresno face conspire with and are exacerbated by data injustice, epistemic injustice, gender injustice, health injustice, infrastructure injustice, intergenerational injustice, media injustice, procedural injustice, racial injustice, and reproductive injustice.

Those affected have inadequate access to the data required to understand and respond to environmental hazards, and the little information available is often intentionally written to be confusing and misleading, leading to epistemic injustice. Even when a victim manages to obtain an understanding of the situation sufficient for trying to voice complaints or raise awareness, they are often ignored due to their race, gender, or low political value. As their struggles go unheard, the county’s environmental hazards cause a plethora of health and reproductive problems, which in turn, increases susceptibility to environmental hazards. A thorough discussion of every form of intersecting and intertwining injustice Fresno faces would never end. However, the conversation could be summarized through a quick analysis of a simpler atrocity: economic injustice. Every form of injustice contributing to and collaborating with environmental injustice is nothing more

than the visible expressions of economic injustice (which itself is a symptom of several forms of discrimination, which is a product of capitalism, which is a topic for another case study).

As stated by Jim Aldredge, a resident of Fresno, "Pollution data is the farthest thing from your mind when you're looking for your next meal" (qtd. In Marcum). A region with rampant poverty has no hope of defeating environmental injustice when the prerequisite to having the time and resources necessary for enacting social change is wealth. Access to data requires wealth. Access to the education needed for deciphering data requires wealth. Access to politicians to present your data supported case requires wealth. Access to healthcare for treatment of the effects of environmental hazards requires wealth. Every step away from environmental injustice requires wealth, but environmental injustice is a perfect machine for preventing its victims from obtaining wealth. The road forward is uncertain; any solution would require cooperation from the very companies producing environmental hazards, as they dominate the monetary landscape.

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