# **Racism in Environment and Infrastructure**

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# I. Introduction

CHAPTER 7

The legacy of slavery, legal segregation, and government policies known as redlining have created environmental impacts that have harmed and continue to harm African Americans. First, government policies forced African Americans to live in poor-quality housing, exposing them to disproportionate amounts of lead poisoning<sup>1</sup> and increasing their risks of disease,<sup>2</sup> including COVID-19.<sup>3</sup> Outside of their homes, African Americans are also exposed to far more pollutants than white Americans, partially because redlining explicitly grouped African Americans and other "inharmonious racial groups" with polluting sources.<sup>4</sup> Second, government actors developed infrastructure projects, like highways and parks, in ways that destroyed and segregated African American communities, and also failed to provide or repair public services like sewage lines and water pipes.<sup>5</sup> Finally, African Americans and their homes are more vulnerable than white Americans to the dangerous effects of extreme weather patterns like heat waves, disparities which are made worse by climate change.<sup>6</sup>

Section III of this chapter addresses the substandard housing and overcrowding problems faced by African Americans throughout American history caused by government practices including redlining. Section IV of this chapter addresses discusses the environmental pollutants to which African Americans are exposed as result of similar and related government practices, which disproportionately continues to subject African Americans to hazardous waste management, oil and gas production, automobile and diesel fumes. Section V addresses the discriminatory choices made by government actors in implementing infrastructure development and related public services, which consistently have disadvantaged African Americans. Section VI addresses the discriminatory impacts of climate change, which are experienced disproportionately by African Americans as a result of government actions and policies that have imposed those harms on them.



# II. Substandard Housing and Overcrowding

Throughout American history and to this day, African Americans have lived in housing of worse quality than white Americans, and paid more to live in it.<sup>7</sup>

# **AMERICANS LIVING IN SUBSTANDARD HOUSING**



## Nationally

Starting in the early 20th century, as African Americans primarily rented housing in urban areas, they were consistently charged higher rents than white people.<sup>8</sup> Before the federal Fair Housing Act made housing discrimination based on race illegal, landlords would freely admit that they needed to charge African American renters higher rent because white renters did not want to share an apartment building with African Americans.<sup>9</sup> To pay for the higher rents, African American families often took in lodgers or shared apartments, which created additional overcrowding.<sup>10</sup>

As of 2010, about 2.6 million (7.5 percent) non-Hispanic African American people and 5.9 million white people (2.8 percent) live in substandard housing in America, which is defined largely in relation to the housing's susceptibility to waterborne and airborne communicable diseases.<sup>11</sup> African American households are almost twice as likely as white households to lack indoor plumbing nationwide.<sup>12</sup> African American households are more poorly ventilated than white households in general, leading to excess moisture that supports the growth of mold and vermin, which can lead to or exacerbate asthma and other breathing issues.<sup>13</sup>

African American families also still experience overcrowded housing-generally defined as either having more than 1.5 or more than two persons per room living in a household-at three times the rates of white Americans.<sup>14</sup> Overcrowded housing is linked with physical and mental health problems, including higher rates of exposure to household lead poisoning.<sup>15</sup> This association may be correlative rather than causative, since overcrowded housing is more likely to be older housing, and also more likely to house low-income workers in heavy industries that may cause them to bring lead dust and other contaminants into the household.<sup>16</sup> Overcrowding has similarly shown to increase the risk of spread of infectious diseases, such as tuberculosis, diarrhea, and infectious respiratory illnesses.<sup>17</sup> At least one recent study demonstrated that overcrowding and other poor housing conditions correlated with greater rates of COVID-19 infections across the country, as well as increased mortality from COVID-19.<sup>18</sup>

Overcrowded housing also is linked with various mental health issues, including psychological distress, alcohol abuse, depression, and sleep disorders.<sup>19</sup> Living in overcrowded housing is also associated with social withdrawal and feelings of helplessness,<sup>20</sup> as well as an increase in hostility among household residents due to the lack of privacy and time to oneself.<sup>21</sup>

Overcrowded housing also harms school performance for children, which has lasting impact on their educational attainment.<sup>22</sup> Living in a house with too many people makes it difficult to find a quiet place to study,<sup>23</sup> and even a quiet place to sleep.<sup>24</sup> Children in crowded houses are more likely to catch infectious diseases from others in their household, making it more likely for the child to stay home from school.<sup>25</sup> Children from overcrowded homes are more likely to be held back a grade,<sup>26</sup> they show reduced math and reading test scores,<sup>27</sup> and they demonstrate higher rates of disruptive behaviors according to teachers.28 Moreover, some international research has found that children and adolescents in overcrowded housing are more likely to engage in violent behavior in the home,<sup>29</sup> as well as to be victims of sexual abuse.<sup>30</sup>

# Compared to white households, African American households are



## California

California displays the same racial disparities regarding overcrowded housing as the rest of America. The most recent data provided by the California Department of Public Health reveals that African American Californians are approximately 2.5 times more likely to live in housing considered "overcrowded," and 2.8 times more likely to live in housing considered "severely overcrowded," compared to white Californians.<sup>31</sup> AfricanAmericanCalifornianshave also been forced to live in substandard housing, sometimes as a direct result of government action. One historical example is the federal government's building of public housing in Richmond to accommodate ship workers during World War II, which was officially and explicitly segregated.<sup>32</sup> As part of those efforts, the federal government put programs in place that enabled white workers to access permanent, residential housing, but offered African American workers no permanent housing.<sup>33</sup> While some African American workers were able to find low-quality, long-term housing in areas of the East Bay, others lived in barns, minimal shelter like tents or cardboard shacks, or even without any shelter in open fields.<sup>34</sup>

In California specifically, the problem of overcrowded housing has been linked to the rapid spread of COVID-19 in neighborhoods with a higher number of African American residents, such as South Los Angeles.<sup>35</sup> Neighborhoods with overcrowded housing in California had rates of COVID-19 that were 3.7 times higher than neighborhoods without overcrowded housing.<sup>36</sup>

# **III. Environmental Pollutants**

U.S. government policies, as discussed in Chapter 5,, Housing Segregation, penned African Americans into poorer neighborhoods with polluting industries, garbage dumps, and other sources of toxic health harms.<sup>37</sup> Local governments zoned African American neighborhoods as industrial instead of residential specifically to segregate African American residents from white res-

idents.<sup>38</sup> White neighborhoods frequently were zoned by local entities to explicitly ensure that few industrial or polluting business could locate within them, again pushing environmental pollution into African American neighborhoods.<sup>39</sup> Redlined and segregated African American neighborhoods were cheaper for polluting industries to build on.<sup>40</sup> This became a downward spiral: the more garbage

dumps and sewer treatment plants a neighborhood had, the cheaper the land was, and the more likely that other polluting industries would move in.<sup>41</sup> Without access to the mortgages and loans available to white Americans, African American homeowners also had less money to maintain and improve their homes, which made housing conditions worse and prevented African Americans from moving away from polluting sources.<sup>42</sup>

African American communities across the country still experience higher rates of pollution and the negative health outcomes caused by exposure to pollutants.<sup>43</sup>

African Americans are exposed to greater pollution from virtually every polluting source when compared to white Americans, including hazardous waste, heavy industry, vehicle traffic, and construction—all of which can be partially attributed to redlining and other historical discrimination.<sup>44</sup>

#### **Hazardous Waste**

One source of pollution that has been continuously prevalent in African American communities is hazardous waste sites. This pollution has been shown to correlate with increased rates of asthma, cancer, lung disease, and heart disease.<sup>45</sup> For example, in 2020, the *New York Times Magazine* profiled the story of Kilynn

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Johnson, an African American resident of Philadelphia, who developed asthma as a child and eventually developed gallbladder cancer after growing up in a largely African American neighborhood proximate to hazardous waste facilities and oil refineries.<sup>46</sup> After recovering from surgery and chemotherapy, Johnson and a neighbor documented over two dozen close relatives who were diagnosed with some form of cancer, many rare, and many at unusually young ages.<sup>47</sup>

African Americans have long been disproportionately exposed to these harms. As of 1983, approximately three out of every four communities in which hazardous waste landfills were found were predominantly African American.<sup>48</sup> In 1991, the federal Environmental Protection Agency (EPA) acknowledged that a disproportionate number of toxic waste facilities were found in African American neighborhoods throughout the country.<sup>49</sup> More recently, a study in 2007 analyzed 38 states and found that African Americans disproportionately live in neighborhoods that host hazardous waste facilities and are twice as likely to live near a hazardous waste facility.<sup>50</sup> As of 2020, African Americans are still 75 percent more likely to live near facilities that handle hazardous waste.<sup>51</sup>

Moreover, studies have shown that that the EPA's handling of toxic waste clean-up sites—i.e., so-called "Superfund" sites, or former industrial sites polluted with dangerous levels of hazardous waste—has consistently favored white communities over minority communities, and an external audit of the handling of discrimination complaints by the EPA determined that the agency failed to adequately respond to those complaints.<sup>52</sup> From 1985 to 1991, fines assessed by the EPA against polluters in minority zip codes were approximately 46 percent lower than in white zip codes.<sup>53</sup> The EPA also took longer to address hazardous sites in minority communities than in white ones, and polluters were required to undertake more stringent cleanup measures in white communities.<sup>54</sup>

#### **Oil and Gas Pollution**

The oil and gas industry, as permitted by governmental entities, has also imposed disproportionate environmental harms on African Americans. Oil and gas extraction is associated with various carcinogenic pollutants, including benzene.<sup>55</sup> Studies have shown that living near these sources elevates one's risk of cancer.<sup>56</sup> Over one million African Americans live within half a mile of oil and gas extraction and refining facilities.<sup>57</sup> African Americans are also more likely to live near fracking facilities, which create similar pollution to more traditional oil and gas facilities.<sup>58</sup> The natural gas produced via fracking contains various toxins and carcinogens, including hexane, benzene, and hydrogen sulfide.<sup>59</sup> These dangerous, cancer-causing chemicals are emitted at the initial facilities that gather natural gas, at points along the systems that move the from those facilities, and at the destination plants at which they are processed, all of which occur disproportionately in African American neighborhoods.<sup>60</sup> Moreover, as African Americans have grown increasingly involved in the fight against oil and gas pollution in their communities, fossil fuel companies have pushed back by arguing that the fight for environmental justice would particularly harm African American communities by robbing them of oil and gas-related jobs, including through a false report that the National Association for the Advancement of Colored People was opposed to a clean energy plan.<sup>61</sup>

## **Automobile Traffic**

Although not specific to one particular industry, African Americans are also subject to disproportionate environmental harms as a result of automobile traffic. Some African Americans live in areas with more than double the traffic density of white neighborhoods, and experience the highest traffic density of any racial or ethnic group.<sup>62</sup> As a result, many African Americans are exposed to more on-road sources of carcinogenic pollution than other racial or ethnic groups.<sup>63</sup>



Auto pollution includes, among other things, exposure to nitrogen dioxide (NO2), which contributes to asthma and other respiratory ailments.<sup>64</sup> While exposure to NO2 is decreasing across all races in the United States, the percentage of increased exposure experienced by African Americans as compared to white Americans has changed little.<sup>65</sup> Moreover, among all pollution sources nationwide, African Americans are more disproportionately exposed to air pollution attributable to construction than as to any other air pollution source.<sup>66</sup>

## **Lead Poisoning**

Also not specific to any industry, lead pollution is disproportionately high in African American communities that were officially segregated through federal redlining.<sup>67</sup> Although this has been known for decades, commentators have noted that "surprisingly little research" has examined the extent of the problem.<sup>68</sup> This toxic lead exposure comes from myriad sources that are found in greater amounts in African American neighborhoods, including toxic industrial sites near to residences.<sup>69</sup> Exposure to lead from outside the home can be through lead water pipes, gasoline exhaust, and nearby smelting plants.<sup>70</sup> Even though most smelting plants that created lead pollution have been closed since the 1960s, soil pollution surrounding these facilities remains an active problem.<sup>71</sup> Nationally, African American children are three times as likely to have elevated blood rates of lead, and these patterns have persisted even as lead exposure rates have decreased for children of other races and ethnicities.<sup>72</sup> These disparities are even more dramatic in some areas with older housing stock. For example, a 2004 report found that in Chicago, African American children were five to 12 times more likely to exhibit lead poisoning than white children.<sup>73</sup> This is partially because African American Chicagoans are disproportionately located in older housing stock with deteriorating lead-based paint.74

All of these forms of environmental pollution have serious health consequences, resulting in chronic illnesses like diabetes, asthma, and heart disease, and affecting maternal health and educational outcomes.<sup>75</sup> African Americans suffer disproportionately from these health problems.<sup>76</sup> Moreover, these health consequences persist long after exposure, with at least one study showing substantial central nervous system deficits 11 years after childhood exposure.<sup>77</sup> For further discussion of disparities in health outcomes not specific to environmental pollution, see Chapter 12, Mental and Physical Harm and Neglect.

## California

Historically, federal public housing was explicitly created to segregate African American Californians into areas with greater pollution burdens due to immediately adjacent polluting sources. For example, when the federal government built public housing in Richmond to accommodate ship workers, as discussed above, it placed the temporary housing for African American workers by the railroad tracks and shipbuilding areas, subjecting them to particulate matter (e.g., small cancer-causing particles associated with diesel exhaust) and industrial pollution, but built higher quality housing for white workers further inland.<sup>78</sup>

Many areas within California still demonstrate racial disparities traceable to state and federal government action. Studies throughout the 1990s have found that largely African American and Latino people in Los Angeles are the most heavily impacted by pollution and toxic waste sites.<sup>79</sup> Neighborhoods that were explicitly redlined by federal agencies in the 1930s—ranging from South Stockton to West Oakland to Wilmington in Los Angeles—continue to have some of the highest average pollution levels in the state.<sup>80</sup>

# African American children are



to have elevated lead levels in their blood

The historically African American area of Bayview-Hunters Point in San Francisco has a long history of environmental racism, with African American residents subjected to myriad environmental harms, including radioactive contamination from a nearby shipyard, not experienced by whiter, wealthier areas within San Francisco.<sup>81</sup> Moreover, recent environmental remediation efforts have come hand-in-hand with a substantial decline in the percentage of African American residents.<sup>82</sup> Starting in the 20th century, African American residents of the neighborhood were displaced by Latino and Asian-American residents.<sup>83</sup> Although this has largely been attributed to the "dot com" boom and rising housing prices across San Francisco, scholars have offered a variety of discriminatory factors that drove African American residents out.<sup>84</sup> These include the San Francisco Housing Authority's demolition of public housing, the San Francisco Police Department's enforcement of gang injunctions, and the issuance of subprime mortgage loans.<sup>85</sup> As one long-time African American resident described it, the formerly-polluted community in which she had long lived is now dramatically cleaner, but is no longer meant for "her or for her grandchildren."<sup>86</sup>

Similarly, the divisions between the wealthier, white "hills" of Oakland, California and the poorer, African American "flats" that were first established by federal redlining have remained today, with African American residents of the low-lying areas still subject to far greater environmental pollutants.<sup>87</sup> In Oakland's earlier days, redlining placed Black Californians in these "flats" adjacent to various heavy industries and manufacturing centers, acknowledging that the housing available was of low quality and subject to noticeable industrial "odors."<sup>88</sup> From the 1950s through the 1980s, substantial freeway construction projects placed substantial pollution burdens on all of the low-lying areas in Oakland, including in the few parks and other green space available to them.<sup>89</sup> Residents of these areas continue to experience quantifiably greater health consequences, such as emergency room visits due to asthma.90

These patterns exist across California with respect to facilities that handle hazardous waste. Los Angeles has 1.2 million people living near facilities that handle hazardous waste, and *91 percent* of them are people of color.<sup>91</sup> African Americans live near hazardous waste facilities at rates higher than other people of color as a whole.<sup>92</sup> This is true elsewhere in California, leading to increased lifetime cancer risks for African American Californians that correlate with exposure to outdoor air toxins.<sup>93</sup>

As is the case nationwide, the oil and gas industry disproportionately affects African American Californians. More than two million Californians live within 2,500 feet of an unplugged oil or gas well, with greater percentages of African Americans living near these sources of pollution than the California population as a whole.<sup>94</sup> Aside from the exposure to carcinogenic chemicals involved with oil and gas production, toxic residues brought up by subterranean drilling can contaminate local aquifers that supply drinking water.<sup>95</sup> In the greater Los Angeles Area, notable oil production exists in Inglewood and Baldwin Hills areas

which have a greater African American population than Los Angeles generally.<sup>96</sup> Similar patterns exist in the San Francisco Bay Area, with major oil production facilities in Richmond and Martinez, areas that are disproportionately African American when compared to the broader Bay Area.<sup>97</sup> Moreover, advocates have argued that public officials are more responsive to oil and gas-related health concerns from residents of whiter, wealthier neighborhoods, noting that the methane leak in the wealthy Porter Ranch neighborhood of Los Angeles elicited a massive, statewide response while hundreds of significant health complaints related to the AllenCo drilling site in the largely African American neighborhood Jefferson Park were ignored for years.<sup>98</sup>

Even for industries that do not inherently involve toxic or carcinogenic materials, increased rates of truck traffic and general industrial activity also lead to higher rates of heavy metal contamination of local soils.<sup>99</sup> Those soils are disproportionately found in the backyards, playgrounds, and urban gardens of African American Californians.<sup>100</sup> This heavy metal contamination poses

# Residents of Los Angeles who live near a hazardous waste facility are **1 1 1 1 1 1 1 1 1 1 91%** people of color

# Compared to white Californians, African American Californians are exposed to



a wide array of serious health consequences, including increased susceptibility to asthma, inflammation, pregnancy complications, high blood pressure, osteoporosis, kidney damage, and even Parkinson's disease.<sup>101</sup> It also can prevent safe urban gardening in neighborhoods that would desperately benefit from it.<sup>102</sup> On average, African American Californians breathe in about 40 percent more particulate matter from cars, trucks, and buses than white Californians.<sup>103</sup> African American Californians are exposed to a higher amount of PM 2.5-fine particles emitted by diesel engines-at a rate of 43 percent higher than white Californians, the highest rate of any racial or ethnic group.<sup>104</sup> African American Californians also are exposed to disproportionately high levels of air pollution from other infrastructure-related non-mobile sources, such as shipyards, factories, warehouses, and aviation.<sup>105</sup> These sources of air pollution are a primary reason that African Americans have the highest rates of asthma among all groups in California,<sup>106</sup> leading to asthma-related deaths at a rate of two to three times higher than any other racial or ethnic group.<sup>107</sup> Exposure to small particulate matter from cars, trucks, and buses is also tied to increased risk of heart and lung disease.<sup>108</sup>

# **IV. Climate Change**

Research on the concrete and worsening effects of climate change has made clear that harmful health and environment-related effects of climate change will be experienced by all Americans.<sup>109</sup> These effects include increased range and incidence of infectious disease vectors like ticks, mosquitos, and avian-borne pathogens and decreased food quality and security.<sup>110</sup> Rising sea levels will damage coastal communities and reduce water quality and availability.<sup>111</sup> Extreme weather events, like floods, storms, fires, and extreme heat waves are projected to occur more frequently and more severely.<sup>112</sup> All Americans will be at risk of these harms, but not all will face that risk equally. Communities that are already socially and economically struggling, including the urban poor, communities of color, the elderly and children, agricultural workers, and rural communities will shoulder a disproportionate burden of these hazards.<sup>113</sup>

## Nationally

Nationally, formerly redlined areas consistently show hotter temperatures than other areas.<sup>114</sup> Therefore, climate change is certain to exacerbate existing, historically-codified disparities that track existing housing-related harms experienced by African Americans.<sup>115</sup> In particular, so-called "heat islands," which will worsen due to climate change, exist where built-up urban areas have few trees, vegetation, or parks that serve to dissipate or reflect heat, and instead have pavement and building materials that absorb and retain it.<sup>116</sup> Federal Environmental Protection Agency studies have found that the heat island effect can cause urban areas to be up to seven degrees hotter than outlying areas during the day and up to five degrees hotter at night.<sup>117</sup> African Americans disproportionately live in such heat islands, experiencing higher temperatures on extreme heat days

due to a lack of adequate tree cover.<sup>118</sup> In a study of 108 urban areas nationwide, including several in California, the formerly-redlined neighborhoods of nearly every city studied were hotter than the non-redlined neighborhoods, some by nearly 13 degrees.<sup>119</sup> Aside from tree cover, other features of the urban landscape in African American neighborhoods—most notably, roadways and large building complexes—also absorb and slowly release heat, which also exacerbate heat islands and their effects as discussed above.<sup>120</sup>

The greater presence of trees in a community has been shown to correlate with lower asthma rates, fewer hos-

disparities often being the most vulnerable members of a community.<sup>124</sup>

The association between parks and green space with wealthier, whiter neighborhoods is so strong that even modern efforts to add green space to largely African American neighborhoods sometimes involve racist narratives, with local efforts portraying green revitalization plans as benefiting primarily white residents even in African American neighborhoods.<sup>125</sup> Such revitalization plans can also lead to the backlash and suffering of African American residents in these gentrifying neighborhoods. For example, they can be treated as suspicious

pital visits during heat waves, and improved mental health for the community's residents.<sup>121</sup> There are a variety of reasons for this, but the most significant is the prevalence of shade that trees create, lowering temperatures and providing a less oppressive environment during particularly hot days.<sup>122</sup> Conversely, the heightened temperatures in "heat islands" has led to higher

rates of heat-related adverse pregnancy consequences for Black women, including premature births and still births.<sup>123</sup> Elected officials have recognized that the issue of shade and heat islands is connected to social justice, with those facing the greatest risk as a result of these

COURTESY OF HOFFMAN, JEREMY S., VIVEK SHANDAS, AND NICHOLAS PENDLETON. 2020. "THE EFFECTS OF HISTORICAL HOLISING POLICIES ON RESIDENT EXPOSIBLE TO INTRA-LIRBAN HEAT: A STUDY OF IOR IS LIRBAN AREAS" (LIMATE & NO. 1-12



Map of San Diego depicting average temperature rises, tree coverage, percentage of impervious surfaces and percentage of minority population affected through color coded map. (2020)

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> by local government and new residents when they take advantage of newly-constructed parks and other green space.<sup>126</sup> African American residents of areas without tree cover have also faced gentrification and unaffordability as a consequence, intentional or inadvertent, of local government efforts to add green space.<sup>127</sup>

### California

African American Californians experience these disproportionate harms in many ways, many attributable to the decisions of state and local governments. As is the case nationally, redlining had the effect of clustering African American Californians in urban centers that often constitute heat islands and the worsening heat waves caused by climate change will impose disproportionate health burdens on African American Californians.<sup>128</sup> A 2009 report published by the University of Southern California, "The Climate Gap," found that African American residents of Los Angeles are already almost twice as likely to die during a heat wave as other residents because of the "heat islands" attributable to a history of redlining and segregation.<sup>129</sup>

According to the California Department of Public Health, African American Californians are 52 percent more likely than white Californians to live in areas where more than half the ground is covered by impervious surfaces like asphalt and concrete, and where more than half the population lacks tree canopy—by Black residents of Los Angeles were already almost twice as likely to die during a heat wave as other residents because of the "heat islands" attributable to a history of redlining and segregation.

definition, the characteristics of a heat island.<sup>130</sup> This disparity is particularly pronounced in the Greater Los Angeles Area, where wealthier white areas have triple the amount of tree cover compared to poorer African American neighborhoods.<sup>131</sup> This may be directly attributable to government action, since the City of Los Angeles intentionally kept tree growth to a minimum in African American communities where police officers expressed a concern—realistic or not—that trees could serve as places to hide drugs or weapons.<sup>132</sup>

The California Department of Public Health has warned that, as heat waves begin earlier in the season and last longer, heat-related deaths are growing disproportionately more common for certain racial or ethnic groups, particularly African American Californians.<sup>133</sup> Exacerbating these harms, African American Californians are less likely to have air conditioning, a car to access cooler areas, government-sponsored cooling stations, and are more likely to have one or more chronic health conditions.<sup>134</sup> For example, in South Los Angeles, a disproportionately African American meighborhood, nearly three-fifths of households did

not have air conditioning in 2020, a number which has not substantially changed over the past decade even as heat waves worsened.<sup>135</sup> These patterns have been seen across the state during heat waves, in which African American Californians consistently experi-

ence heightened rates of emergency medical visits and hospitalizations compared to white Californians.<sup>136</sup>

COURTESY OF HOFFMAN, JEREMY S., VIVEK SHANDAS, AND NICHOLAS PENDLETON. 2020. "THE EFFECTS OF HISTORICAL



Map of Los Angeles depicting average temperature rises, tree coverage, percentage of impervious surfaces and percentage of minority population affected through color coded map. (2020)

# V. Infrastructure and Public Services

Nationally and within California, African Americans have suffered disproportionate harms—both environmental and otherwise—as a result of governmental investment and neglect relating to infrastructure and public services.

## **Neglected Water Systems**

While African American communities across the U.S. face these infrastructure disparities daily, the crisis of water quality and lead poisoning in Flint, Michigan, is an example of governmental neglect that led to the poisoning of an African American community.<sup>137</sup>

Flint, Michigan, in Genesee County, which is now a majority African American city, was originally populated largely by white workers for the General Motors (GM) corporation, which recruited workers in the 1920s and 30s through housing it built itself and then sold subject to restrictive covenants preventing sale to nonwhite persons.<sup>138</sup> Private discrimination was cemented and continued through federal redlining in the 1940s, as GM also discriminated in the jobs it offered to the few African American residents of Flint, who generally worked as janitorial staff.<sup>139</sup> However, starting in the 1960s, as a larger African American population arrived, pockets of Flint experienced "white flight," which accelerated dramatically across Flint through the 1970s as the automotive industry suffered.<sup>140</sup>

In 2014, the entire city of Flint decided to switch its drinking water source from Detroit's system to the Flint River to save money.<sup>141</sup> Residents thereafter complained for months that their water both smelled and appeared worse, but city and state officials continued to maintain the water was safe for human consumption, even as they explicitly chose not to test the water's safety.<sup>142</sup> After a leaked internal memo from the U.S. Environmental

Protection Agency reported high levels of lead due to the corrosivity of the Flint River water, state officials continued to falsely maintain the levels were safe and called the federal report an "outlier."143 By the time Flint switched back to Detroit's water system, children were exposed to massive amounts of lead with potentially irreversible health consequences for both young children and those exposed in utero through their mothers.<sup>144</sup> Those consequences include learning disabilities, intellectual disabilities, and behavioral problems.<sup>145</sup> Again, because Flint had become a majority African American city at the time of the crisis, these impacts were experienced by African American Michiganders far more so than other groups: even in 2017, after years of attention and remediation, Flint's water still had higher rates of lead than 98 percent of the rest of the state.<sup>146</sup>

Studies showed that the amount of children in Flint with lead pollution in their blood almost doubled as a result of the crisis, while both state officials and Michigan Governor Rick Snyder continued to downplay the issue.<sup>147</sup> The Michigan State Attorney General has attributed responsibility for the crisis to all levels of state and local government, filing

criminal charges against various state and local officials including former Governor Snyder.<sup>148</sup> The charges range from perjury, related to actions designed to cover up malfeasance, to manslaughter.<sup>149</sup>

#### Inadequate Sewage Systems

Historically, African Americans were subjected to environmental and health consequences as a result of failure to equitably construct sewer and other waste management systems. Originally, U.S. cities relied on private waterworks.<sup>150</sup> By the mid-19th century, cities across America began substantial investment in constructing modern, sanitary sewer and garbage removal systems.<sup>151</sup>

However, African American neighborhoods were not provided with such systems as early—or at all—as compared to white neighborhoods.<sup>152</sup> In fact, the impetus for provision of such services to African American neighborhoods was sometimes to prevent diseases that resulted from the *lack* of such services from crossing from African American neighborhoods into white ones.<sup>153</sup>

Rates of illness and death resulting from poor sewage disposal dramatically diverged for African American and white Americans as the latter gained access to effective sewage systems while the former did not.<sup>154</sup> For example, in early 20th century New York, African American

residents were forced to live in lowland areas near drainage pools for sewage while white residents lived on higher ground with better drainage.<sup>155</sup> As a result, African American people died from malaria at much higher rates than white people and experienced higher rates of diseases like dysentery and typhoid.<sup>156</sup> Similar patterns existed across the South as well.<sup>157</sup>

Across the nation, as residential segregation increased throughout the 20th century, African American neighborhoods actually *lost* access to water and sewer municipal services, since it enabled municipalities to more easily prioritize white over African American neighborhoods for better services.<sup>158</sup> These disparities continue today. As recently as 2019, New York City acknowledged its responsibility for a massive leak caused

In the 19th century, as cities built sewer and garbage systems, they ignored or built them slower for Black neighborhoods. In the 20th century, Black neighborhoods lost access to water and sewage services as cities prioritized white neighborhoods.

by a collapsed pipe in a largely African American neighborhood of Queens, which flooded 127 homes with raw sewage.<sup>159</sup> Many of these houses were destroyed or severely damaged, losses that were not covered by basic homeowners or rental insurance.<sup>160</sup>

## **Energy Burdens**

African Americans nationally are subject to disproportionately-higher costs and disproportionately-poorer service with respect to the electrical grid. African American households in America spend more on residential energy bills than white households, even when controlling for income, household size, and other possibly-relevant factors.<sup>161</sup> Across the country, African Americans shoulder energy burdens that are disproportionately larger than any other racial group, meaning they spend a larger portion of their income on energy.<sup>162</sup> This is true in major California cities as well, such as Los Angeles and San Francisco.<sup>163</sup> These disproportionate costs are partially attributable to African Americans living in older, energy-inefficient homes as a result of the legacy of redlining and other discriminatory housing policies.<sup>164</sup> Low-income African Americans are also twice as likely to have their utility service shut off as similarly-low-income white Americans,  $^{\rm 165}$  which advocates have argued are the result of inflexible shut-off regulations and disproportionate energy burdens.<sup>166</sup>

Because of lower rates of home ownership in the African American community, African Americans also often cannot take advantage of programs aimed at lessening energy burdens that require home ownership to utilize, such as home solar panels<sup>167</sup> or installation of free charging stations for electric vehicles.<sup>168</sup> As discussed in more detail above, African Americans also suffer disproportionate burdens related to the production of energy, as power plants—including those fired by coal—continue to be disproportionately located in their neighborhoods, producing particulate matter emissions that cause damage to the heart, lungs, and brain.<sup>169</sup>

#### **Racist Transportation Systems**

Federal, state, and local governments have consistently failed to offer equitable transit options for African American communities throughout American history. The earliest form of transportation discrimination was the trafficking of Black Africans in slave ships, discussed more fully in Chapter 2 Enslavement. The federal government allowed and regulated this form of human trafficking until 1808, when the importation of enslaved people was outlawed.<sup>170</sup> By the late 1700s, the Underground Railroad, an organized effort of safe houses and activists, helped transport enslaved people to freedom.<sup>171</sup> Between 1810 and 1850, the Underground Railroad freed an estimated 100,000 enslaved persons.<sup>172</sup>

Around the same time, both the South and the North segregated travelers by race. Frederick Douglass "was often dragged out of [his] seat, beaten, and severely bruised, by conductors and brakemen" when he refused to ride in the Jim Crow car as he rode trains in New England.<sup>173</sup> The federal government supported these segregation efforts, even as some states attempted to desegregate. For example, in 1877, the U.S. Supreme Court struck down a Louisiana civil rights law requiring the desegregation of transport as unconstitutional.<sup>174</sup> Decuir, an African American woman, bought a first class ticket on a steamboat, but was sent to the second class cabin because first class was for whites only.<sup>175</sup> The Court overturned a decision from the Louisiana Supreme Court to award legal damages to Decuir based on a state law requiring desegregated transport, holding that Louisiana had no authority to regulate such transport.<sup>176</sup> In 1896, in contrast, the United States Supreme Court explicitly permitted segregation in public transit when it upheld Louisiana's law *requiring* transportation segregation.<sup>177</sup> This history of government segregation set the stage for unequal transportation for African Americans that continues to the present.

At the turn of the century, subsidized by government funds, private companies constructed mass transit systems in America's cities.<sup>178</sup> Until around the 1950s, nearly all transit was built and operated by private companies.<sup>179</sup> Many transit companies struggled to remain profitable in the 1920s, especially after the Depression.<sup>180</sup> The widespread adoption of the automobile combined with white Americans' move to the suburbs, as described in Chapter 5, Housing Segregation, resulted in the companies' financial failure.<sup>181</sup> Public transit systems cut back services as masses of white riders left the system, and never expanded to the suburbs.<sup>182</sup> As government and private actors erected barriers to prevent African Americans from moving to the suburbs, poorer African American workers without cars were left with few public transportation options.183 When manufacturing and industrial jobs moved from urban centers to suburban or rural areas, urban African American workers were often unable to follow due to lack of transportation options.<sup>184</sup>

In 1968, Dr. Martin Luther King, Jr., described how city planning decisions result in transportation systems that failed African American communities: "Urban transit systems in most American cities . . . have become a genuine civil rights issue—and a valid one—because the layout of rapid-transit systems determines the accessibility of jobs to the black community. If transportation systems in American cities could be laid out so as to provide an opportunity for poor people to get meaningful employment, then they could begin to move into the mainstream of American life."<sup>185</sup>

The federal government has been aware of this failure to support transportation for the African American urban workforce, but has not provided a remedy. In 1968, the report of the National Advisory Commission on Civil Disorders, also known as the Kerner Commission report, studied the causes and effects of riots in U.S. cities.<sup>186</sup> In order to enhance employment opportunities for central-city residents, the report recommended the creation of improved transportation links between African American urban neighborhoods and new job locations in the suburbs.<sup>187</sup>

In the 1960s and 70s, the federal government began providing funding for public transit, and many municipalities took control of transit operations.<sup>188</sup> However, scholars argue that these revitalized agencies built a segregated system.<sup>189</sup> The municipal transit agencies that were created throughout the 70s and into the 80s were designed to be responsive to the demands of the local communities, demands which had often grown "re-segregationist" as a backlash to the Civil Rights Movement.<sup>190</sup> This created transit systems that were unequal by design. Municipal agencies did not cater to urban riders who relied exclusively on public transit, instead channeling greater resources to entice mostly white suburban commuters who could also choose to drive.<sup>191</sup> This translated to less comfortable seats, unshaded waiting areas, and bumpier, more unpleasant rides for African American users of public transit.<sup>192</sup>

This system continues to operate today. African Americans still rely on public transit to get to work at much higher rates than white workers. African American workers commute by public transit at nearly four times the rate of white workers.<sup>193</sup> Moreover, African American workers on average experience higher commute times than white workers, both nationally and in California.<sup>194</sup> Finally, since most fares are usually flat, low income people pay a higher share of their monthly salary on transit, which is more likely to impact African Americans and other people of color.<sup>195</sup> Due to these government actions, workers relying on public transit, who are more often African American than white, often pay comparatively more money and commute for a longer amount of time if they are able to use transit to get to jobs at all.<sup>196</sup>

In addition to discrimination in the public transit system, as discussed in Chapter 5, our country's highway system destroyed African American neighborhoods and intensified residential segregation by separating African American neighborhoods from white neighborhoods.

#### **Disparities in Telecom**

African Americans also face disproportionate burdens with respect to the national telecommunications network. From 1960 through 2010, African Americans have had significantly lower rates of telephone access than white Americans, though this gap has reduced over time as telephone use became more ubiquitous.<sup>197</sup> More recently, fewer African Americans have access to broadband internet access than white Americans. This lack of telecommunications impacts economic and educational opportunities. African American teens are almost twice as likely to report that they cannot complete all their homework due to lack of access to a computer or reliable internet access.<sup>199</sup>

In addition to difficulty accessing the internet, African Americans are disadvantaged by racist structures within it. Dr. Yeshimabeit Milner testified before the California Task Force to Study and Develop Reparation Proposals for African Americans that search algorithms, machine learning, automated resource allocation systems, and even credit reporting agencies are all built by software engineers that are overwhelmingly white.<sup>200</sup> As a result, the implicit biases of these human software engineers have been built into seemingly neutral algorithms and artificial intelligence, with discriminatory effects.<sup>201</sup> For example, in 2016, when Amazon Prime same day-delivery services were introduced in Atlanta, Georgia, virtually 100 percent of white residents were given access to the service but less than half of African American residents did.<sup>202</sup> Similar patterns existed for African American residents of Boston and Chicago.<sup>203</sup>

## California

California authorized segregated public transportation at least until 1864.<sup>204</sup> The governments of California and its municipalities have chosen infrastructure projects that have harmed African American communities. While California and federal law require state and municipal agencies to consider racially disparate impacts of infrastructure projects today, the historical damage caused by highways in particular has contributed to higher exposure to air pollution among communities of color as discussed above.

As with the federal government, California's government historically neglected water infrastructure as it applied to African American Californians. One example

> is California's treatment of African American families fleeing the dust bowl. These families left the prairie states and came to farmland across California starting in the 1930s, experiencing widespread infrastructure discrimination from state and local governments.<sup>205</sup> For example, African American Californians in the San Joaquin Valley were excluded from most urban areas with

The town of Lanare, founded by Black families fleeing the Dust Bowl, had no running water until the 1970s. After wells were drilled, the water contained dangerous levels of arsenic. The town's residents had no access to clean drinking water until 2019.

A 2021 study in Indiana revealed that 56.2 percent of African American residents lacked reliable access to internet service and/or a computer, compared to 34.8 percent of white residents.<sup>198</sup> access to clean water as a result of explicit redlining policies, racially-restrictive housing covenants, and even racially-motivated violence.<sup>206</sup> In Tulare county, the largely African American community of Teviston had no access to sewer and water infrastructure, while the adjacent white community of Pixley did.<sup>207</sup> Again, this discrimination continued until recently: the town of Lanare, also formed by African American families fleeing the Dust Bowl, had no running water at all until the 1970s, and was subjected to dangerous levels of arsenic in the water even after wells and pipes were drilled.<sup>208</sup> The town's residents did not get access to clean drinking until 2019.<sup>209</sup>

At times, government entities were explicit in weaponizing infrastructure against African American Californians. For example, in the 1950s, a developer in Milpitas, a town north of San Jose, sought to build a large housing development open to both white and African American homebuyers.<sup>210</sup> He managed to overcome several zoning related obstacles only to discover that the Milpitas City Council had increased the sewer connection fee more than tenfold explicitly to thwart the development.<sup>211</sup>

African American neighborhoods in California still suffer extremely high rates of water pollution in the water provided through government infrastructure. In 2019, the *New York Times* reported that as many as 1,000 community water systems in California may be at high risk of failing to deliver potable water, with a disproportionate number of these systems located in low-income areas that tend to be disproportionately African American.<sup>212</sup> California's Environmental Protection Agency has also acknowledged that contamination of water sources disproportionately impacts communities of color.<sup>213</sup>

A UCLA report in 2021 identified 29 failing water systems in Los Angeles County, and these systems largely service communities of color.<sup>214</sup> For example, in 2019, authorities dissolved the Sativa Los Angeles county Water District for servicing brown water for decades to its customers in Willowbrook and the historically African American neighborhood of Compton.<sup>215</sup> In Oakland, the majority African American McClymonds High School has had a history of serious water contamination issues in recent years, from lead pollution to dangerously high levels of chemical solvent groundwater pollution that led to the school's temporary closure in 2020.<sup>216</sup>

Transportation discrimination impacts African American Californians as well. In 1965, the California Governor created the McCone Commission to examine causes of

COURTESY OF "NOT EVEN PAST: SOCIAL VULNERABILITY AND THE LEGACY OF REDLINING"/ HTTPS://DSL.RICHMOND.EDU/SOCIALVULNERABILITY



The image on the left shows a redlining map of Los Angeles, CA made by the Home Owners Loan Corporation during the 1930s. The red portions are non-white neighborhoods deemed by the federal agency to be a credit risk. The map on the right shows the Center for Disease Control's Social Vulnerability Index scores for census tracts today. The Social Vulnerability Index is widely used to assess a community's capacity to prepare for, respond to, and recover from human and natural disasters. The red portion indicates the highest level of vulnerability to disasters.

civil unrest in Los Angeles in 1965, identifying "inadequate and costly" transportation as contributing to high rates of unemployment among the African American urban population. California has not designed its transportation system to address this need, often favoring rail options catering to suburbs rather than bus lines used by urban areas with greater African American populations.<sup>217</sup> These choices have led to several high-profile lawsuits, including in Los Angeles and San Francisco in the 1990s and 2000s.<sup>218</sup>

Nevertheless, design of public transit by major municipalities in the state often catered to the largely white suburban residents because they were seen as needing better options in order to "choose" public transit.

For example, Oakland's San Antonio neighborhood, the most racially diverse in the city and one of the densest parts of the Bay Area, sees the Bay Area Rapid Transit (BART) train travel for nearly three miles without stopping.<sup>219</sup> By contrast, in suburban Walnut Creek and Pleasant Hill, which are less than half as dense, BART stations are only 1¾ miles apart.<sup>220</sup> In the late 1960s, BART was "literally designed" to hurry white suburban commuters past African American inner-city neighborhoods and residents.<sup>221</sup> This purposeful decision by the government left African American residents without the same transit options to reach jobs, and limited economic mobility and opportunity.<sup>222</sup>

In Oakland, a \$484 million elevated "people mover," which connects BART to the airport, lost federal funding because it was found to have a discriminatory impact; its construction led to the elimination of a bus route in the minority neighborhoods it bypasses.<sup>223</sup> But, though the project lost federal funding, it still went ahead, and the Oakland neighborhood still lost its bus line.<sup>224</sup>

Finally, although the disparities between African American and white residents in terms of raw internet



COURTESY OF BETTMANN VIA GETTY IMAGES

Afton, NC– Black and white protesters march against a toxic waste dump in Warren County. The site was chosen because most of its residents were Black and poor. (1982)

*access* in California is much smaller than nationally,<sup>225</sup> research has shown that African American neighborhoods in both Los Angeles and Oakland had the least investment in broadband internet in those cities.<sup>226</sup>

# **VI.** Conclusion

The various forms of environment and infrastructure-related discrimination suffered by African Americans in this country are rooted in the badges and incidents of slavery that have never been eliminated in this country. African American enslaved persons were released from bondage and forced into unhealthy, dangerous, and overcrowded housing, located in the most toxic areas in our cities, which also lacked proper water and sewage services. Residential segregation and government decisions regarding modern infrastructure development reinforced these patterns throughout the 20<sup>th</sup> century. African Americans have been denied equal access to telecommunication services, and are increasingly subjected to "algorithms" and other forms of computerized decision making with racist underpinnings and outcomes. These racist systems have harmed and will continue to harm African Americans.

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<sup>18</sup>Ahmad et al., <u>Association of Poor Housing</u> <u>Conditions with COVID-19 Incidence</u> <u>and Mortality Across US Counties</u> (2020) 15 PLoS ONE 11.

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 <sup>123</sup> Flavelle, <u>Climate Change Tied to</u> <u>Pregnancy Risks, Affecting Black</u> <u>Mothers Most</u> (June 18, 2020) N.Y. Times (as of Apr. 26, 2022).

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<sup>125</sup> C.N.E. Corbin, *Rendering Gentrification and Erasing Race: Sustainable Development & The (Re)visioning of Oakland, California as a Green City*, p. 17 (unpublished draft manuscript provided by author) (noting that city documents portraying green revitalization plans for West Oakland "display a different and more affluent whiter population and a greener landscape, thus a depiction of green gentrification expressed in these municipal images").

 $\frac{126}{2}$  Id. at 8 (noting that "Black and Brown bodies [] can and have also been rendered as trespassers, criminalized, and met by state violence historically and currently when in parks.").

<sup>127</sup>Kang, *supra* at pp. 31-34. One displaced resident put it follows: "When you sit [in] a room full of poor folks on one side and homeowners on the other side, who are trying to bring all of this... 'greening' into our areas... And I'm saying, Good Lord! We're black, we're not stupid." *Id.* at 34.

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<sup>130</sup>Off. of Health Equity, Cal. Dept. of Public Health, *Climate Change & Health Equity: Issue Brief* (May 2019) Cal. Dept. of Public Health (as of June 17, 2021) p. 2.

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<sup>133</sup>Off. of Health Equity, *Climate Change Issue Brief, supra* at p. 2.

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<sup>136</sup>Knowlton et al., <u>The 2006 California</u>
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 <sup>137</sup> Tamar Meshel, <u>Environmental Justice in</u> the United States: The Human Right to <u>Water</u> (2018) 8 Wash. J. Env ironmental L. & Policy 264, pp. 270-72.

<sup>138</sup> Mich. Civil Rights Commission, <u>The</u> <u>Flint Water Crisis:</u> <u>Systemic Racism Through</u> <u>the Lens of Flint</u> (Feb. 17, 2017) Michigan Civil Rights Commission, pp. 26-27.

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<sup>140</sup>*Id.* at pp. 56-57, 68-69.

<sup>141</sup> Denchak, *Flint Water Crisis: Everything* <u>You Need to Know</u> (Nov. 8, 2018) Natural Resources Defense Council (as of Apr. 27, 2022). <sup>142</sup> Merrit Kennedy, <u>Lead-Laced Water In</u> <u>Flint: A Step-By-Step Look at the</u> <u>Makings of A Crisis</u> (Apr. 20, 2016) NPR (as of Apr. 22, 2022).

 <sup>143</sup> Ibid.; see also Del Toral, <u>High Lead Levels</u> in Flint, Michigan – Interim Report (June 24, 2015) U.S. Environmental Protection Agency (as of Apr. 27, 2022).

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<sup>146</sup>Kennedy, *supra*; Fonger, *Flint Water Has More Lead than 98 Percent of State, Despite Snyder's Claim* (Mar. 31, 2017) MLive The Flint Journal (as of Apr. 27, 2022).

<sup>147</sup>Kennedy, *supra*.

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