



# The Disproportionate Burden of Fossil Fuel Air Pollution on Communities of Color in Washington

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## Summary

Washington State is known to have one of the least polluting power sectors in the country, primarily due to the use of hydro power for 65% of our electricity supply. Because of our relatively clean grid, it is often assumed that local air pollution is not a major climate justice issue for our State. However, the data shows communities of color in Washington, like elsewhere, are disproportionately impacted by the burning of fossil fuels which leads to climate change. This report finds that:

- Communities of color and lower-income people are exposed to more fossil fuel related air pollutants than other populations.
- In Washington State, there is a 20 point spread between Whites (57) versus Blacks (81) and Asians on an air pollution exposure index (from 0 -none- to 100).
- The disproportionate exposure to air pollution compounds with existing health and poverty issues more prevalent in communities of color.
- These cumulative impacts contribute to a situation in which White adults in Washington are living an average of 10 years longer than Black adults, 12 years longer than Hispanic adults, and three years longer than Asian/ Pacific Islander adults.

## Communities of color and lower-income people are exposed to more fossil fuel emissions and other pollutants than other populations.

Emissions from fossil fuel combustion, the primary source of global climate change, create local air pollutants such as Nitrogen Oxides (NO<sub>x</sub>), Sulfur Dioxide (SO<sub>2</sub>) Particulate Matter (PM), and mercury. These pollutants have negative impacts, and they disproportionately affect communities of color and low-income communities.<sup>12</sup> For example, people who live closest to emissions from chemical facilities are disproportionately Black or Hispanic and have higher rates of poverty, lower housing values, incomes, and education levels than the than the U.S. as a whole.<sup>3</sup> Mobile sources of fossil fuel emissions, such as the transportation sector, often also disproportionately affect 'frontline' communities.<sup>4</sup>

Research has shown that the main sources of climate change pollutants are not only more likely to be located near communities of color, but those sources are also likely to be more intense.<sup>5</sup> Nearly 70 percent of Blacks in the U.S. live within 30 miles of a coal-powered power plant. The inequitable environmental danger is even more significant in the ‘fenceline’ areas nearest the facilities, with the percentage of Blacks in those areas 75% greater than for the U.S. as a whole and 60% greater than the U.S. average for Hispanics.<sup>6</sup>

“You begin to see a pattern of exposure and an impact on these communities,” said NAACP Environmental and Climate Justice Director Jacqui Patterson.<sup>7</sup> Inequitable exposure is a matter of environmental and social justice because those who are most affected are not responsible for the problem. U.S. Rep. Keith Ellison (D-Minn.), summarized this inequity by stating, “We [Blacks] carry the environmental burden even though we don’t create it. I don’t know any African Americans that own coal plants but we suck in all the lead and mercury. We bear a disproportionate environmental burden but we don’t contribute nearly as much to the problem.”<sup>8</sup>

In addition to point-source greenhouse gas pollution, other carbon generators (such as mobile sources like cars and other forms of transportation) also disproportionately affect communities of color and people with lower incomes. Having access to cleaner air is especially important to vulnerable populations such as children, elderly, pregnant women, and anyone with a diagnosed respiratory or heart condition such as asthma or Chronic Obstructive Pulmonary Disorder. However, financial constraints often influence where a person lives and what kind of heat they can afford. We now know that when someone lives near a major road, heats their home with wood, or both, they are exposed to greater amounts of fine particulate matter and at risk of developing respiratory or heart related health issues.<sup>9</sup>

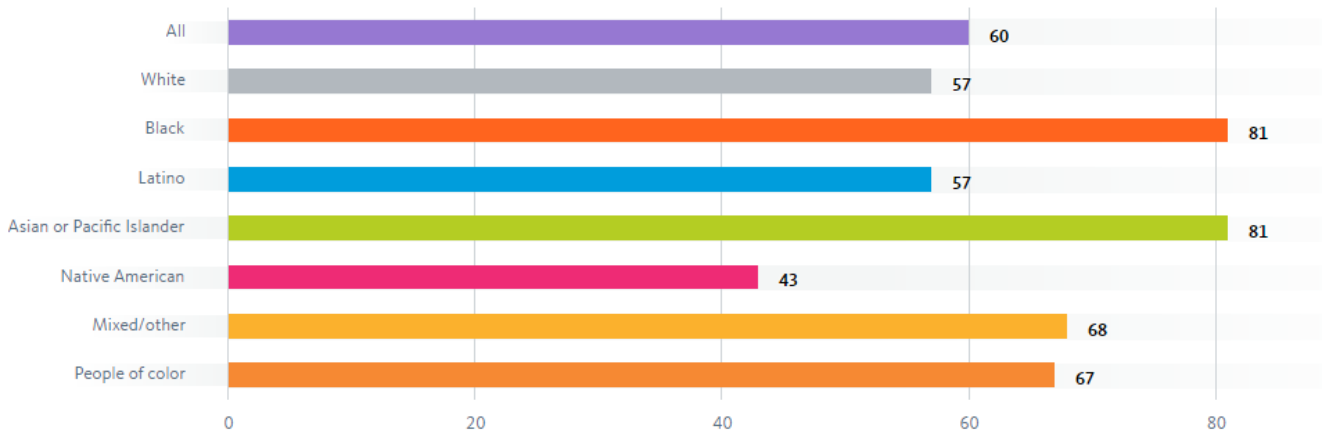
Research, data, and the work of countless environmental justice advocates have shown time and again that low-income communities and communities of color suffer disproportionately from exposure to hazardous air pollutants and other environmental burdens created by fossil fuel combustion. The exposure risks these communities face are often more severe because multiple sources of pollution are more likely to aggregate and concentrate in such communities.<sup>10</sup> Patterns of systemic inequity are apparent when also looking at other avenues of exposure and vulnerability, such as the fact that low-income and minority workers have higher occupational exposures and exposures may result in worse outcomes due to other health stressors in their daily lives and diminished access to quality medical care.<sup>1112</sup>

## **Washington State has similar patterns of disproportionate exposure to harmful environmental toxins.**

National trends of disproportionate exposure to harmful air toxins, many from fossil fuels, also hold true in Washington State. Recent data from the National Equity Atlas, a data source that allows users to examine how resources and opportunities differ by population, shows that air pollution exposure differs significantly by race in Washington State. The Atlas shows air

pollution exposure indexes for different population groups, scoring the exposure from 0 (good) to 100 (bad). According to the Atlas, air pollution data from 2014 shows some populations in Washington suffer a disproportionate burden of exposure. Black and Asian communities had much higher air pollution exposure indexes (81) than any other racial group, and people of color in Washington had a much higher exposure index (67) than white communities (57) in general.<sup>13</sup>

Air pollution exposure index, by race/ethnicity: Washington, 2014



U.S. Environmental Protection Agency (National Air Toxics Assessment); U.S. Census Bureau

*Racial Inequities for Air Pollution Exposure in Washington, 2014. Credit: National Equity Atlas*

Similar trends emerge when examining exposure indexes for metropolitan areas with Washington. Exposure in the Seattle-Tacoma-Bellevue region for people of color is higher (86) than for Whites (78), and Black and Asian communities again face the highest levels of exposure. Looking at data specific to Spokane and Vancouver reveal the same disturbing patterns.

Unfortunately, different sources of air pollution contribute to exposure in Washington with consistent trends. Whether you are looking at on-road mobile sources, off-road mobile sources, major stationary sources, or other sources, Black and Asian Washingtonians have the highest exposure index for each category.

## **The disproportionate burden of air pollution leads to significant consequences to both health and wealth.**

The danger behind this data is not just exposure to air pollution, but that it is one of a host of factors contributing to a disproportionate burden in terms of both health and wealth. The common environmental toxins such as NO<sub>x</sub>, SO<sub>2</sub>, PM, mercury, and other hazardous air pollutants emitted from fossil fuel combustion are associated with significant adverse health outcomes. For example, some of the risks associated with exposure to small particulate matter

(PM<sub>2.5</sub>) include premature death, heart attacks, respiratory and cardiovascular hospitalizations, asthma-related hospitalizations, bronchitis, lower and upper respiratory symptoms, asthma exacerbation, lost school and work days, cardiovascular emergency room visits, stroke and cerebrovascular disease, reproductive and developmental effects, and cancer.<sup>14</sup>

Nationally, the prevalence of asthma among African Americans is 1.3 times that of whites, the hospitalization rate for asthma-related illness is nearly three times higher in the African American community, and the death rate of African Americans from asthma-related causes is more than three times that of whites.<sup>15</sup> These numbers are even more severe when specifically looking at children. Asthma prevalence rates for African American children are twice that of whites, asthma-related hospital admission rates are 4.3 times that of Whites, and the death rate from asthma is 7.1 time that of whites.<sup>16</sup>

## **Washington State has similar patterns of inequity for these negative outcomes.**

In Washington State, White adults are living an average of 10 years longer than Black adults, 12 years longer than Hispanic adults, and three years longer than Asian/ Pacific Islander adults.<sup>17</sup> Patterns in life expectancy data by race indicate that American Indian and Alaska Native, Native Hawaiian and Other Pacific Islanders, and Blacks have the shortest life expectancy: 72, 75, and 77 years, respectively.<sup>18</sup>

Washington already has higher asthma rates than the national average. The 2010 Behavioral Risk Factor Surveillance System (BRFSS) survey showed that about 9.6% of Washington adults had asthma compared to 8.7% nationally. Washington BRFSS data for 2008–2010 combined showed rates of current asthma is highest among American Indians or Alaskan Natives with the Black population suffering the second-highest rate of asthma.<sup>19</sup>

According to Public Health Seattle-King County, life expectancy at birth differs significantly by race. From 2008-2012, the average life expectancy for a Black King County resident was 77.1 years, while White residents had an average life expectancy of 81.5 years.<sup>20</sup> Asthma also has significant inequities by race, with Black (11 percent) and Asian (9 percent) children in King County having higher rates of asthma than any other racial group from 2009-2013.<sup>21</sup>

In Pierce County, there are similar results. According to the Tacoma-Pierce County Health Department's 2015 Health Equity Assessment, the chances of living to 77 years are five times higher in communities with a lower percentage of people of color (10% or less non-white) than in communities with a higher percentage of people of color (20% or higher nonwhite). Communities of color often have higher rates of poverty and significantly lower life expectancies. In terms of asthma, 23.7% of 10th graders in Pierce County reported being told by a health professional they had asthma in 2014, with Black youth reporting 1.5 times greater rates of asthma when compared to White youth.<sup>22</sup>

The Spokane Health Department also did an assessment to determine health inequities in their county and found that on average, White adults are living approximately 10 years longer than Black adults and seven years longer than Hispanic adults in Spokane County. They also found that Black adults have the highest mortality rate for diseases of the heart, diabetes, and cerebrovascular diseases. The mortality rate for diseases of the heart is 1.2 times higher for Black adults compared to White adults, 3.6 times higher for diabetes, and 1.4 times higher for cerebrovascular diseases.<sup>23</sup>

## Conclusion

When looking at exposure to pollution created from fossil fuels and negative health outcomes, it is clear that communities of color in Washington currently face disproportionately poor opportunities in life. As economic development, healthy community design, and climate change reshape our communities in the coming years, it is vital that information such as local cumulative impacts mapping helps target investments and determine policies and practices in Washington. Only then will state and local climate solutions move us toward equity, helping all of us reach a healthier and more just tomorrow.

## Endnotes

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<sup>9</sup> Tacoma-Pierce County Health Department. *2015 Health Equity Assessment*, (2015).

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<sup>10</sup> California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Cumulative Impacts, Building a Scientific Foundation* (2010). <http://oehha.ca.gov/ej/pdf/CIReport123110.pdf>

<sup>11</sup> See Linda Rae Murray, *Sick and Tired of Being Sick and Tired: Scientific Evidence, Methods, and Research Implications for Racial and Ethnic Disparities in Occupational Health*. *93 Am. J. Pub. Health* 221, 222 (2003).

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<sup>19</sup> Washington State Department of Health, Mortality and Life Expectancy, (2013).  
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