



Hummingbird



Neighborhood Impacts of Health, Housing, and Environmental Burdens

IN ALBUQUERQUE-BERNALILLO COUNTY, NEW MEXICO

For: City of Albuquerque, New Mexico

Report August 2023

Prepared by Greenlink Analytics, Inc.





Table of Contents

Background & Introduction	3
Environmental Justice & Community Petition	4
Quantitative Analysis.....	5
Overview of Intersecting Determinants	5
Racial Disparities.....	6
Top and Bottom 5%	7
Summary	8
About Greenlink Analytics	9

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Background and Introduction

Background

In June 2023, the City of Albuquerque, New Mexico, Hummingbird Firm, and Greenlink Analytics partnered to better understand the cumulative experience of frontline and fenceline communities of Albuquerque-Bernalillo County. Through this alliance, we use data analysis, equity mapping, and community engagement tools informed by an environmental justice lens to understand the intersecting burdens shouldered by local residents. Through this analysis, the City of Albuquerque can deepen relationships with underserved and underrepresented community members directly impacted by the decisions of the Air Quality Control Board through a data-informed and inclusive process. Together, we strive to educate, engage, and evolve community participation in the air quality rulemaking process.

Introduction

Environmental inequities are a byproduct of structural injustices, while human-induced climate change exacerbates systemic fragility these structures uphold. This report details the relationships between multiple socioeconomic structures within the built environment, such as quality of health and access to stable and affordable housing, to uncover how they influence the lived experience of Albuquerque residents.

Aims of this report:

1. Provide baseline data, identify opportunities in the City of Albuquerque and Hummingbird's community engagement efforts, and provide community equity metrics.
2. Establish a data-informed, community driven stakeholder engagement process, ensuring resources are allocated in Albuquerque's most burdened neighborhoods.

Environmental Justice & Community Petition¹

Public health and environmental impacts from air pollution in Albuquerque-Bernalillo County are heavily concentrated in low-income neighborhoods, increasing their risk of chronic diseases and lower life expectancies (about 5 fewer years). A 2012 study² of Albuquerque-Bernalillo County demonstrated the interconnectedness of pollution exposure, poor public health, poverty, and racial disparities, indicating the county's low-income, non-white³ communities were unfairly exposed to more pollutants. This study also found that neighborhoods predominantly inhabited by Latine/x and Immigrant communities facing high levels of poverty were more likely to be concentrated near polluting facilities.

In 2022, the Mountain View Coalition – an alliance between the Mountain View Neighborhood Coalition, Mountain View Community Action, and Friends of Valle de Oro – petitioned and proposed a rule change to the County's Air Quality Control Board, requesting they adopt new regulations to minimize and mitigate air pollution emissions disproportionately harming low-income and non-white communities. The proposed rule change would require that the Albuquerque Environmental Health Department, Air Quality Division consider the health, environmental, and socioeconomic impacts of any new operation under the New Mexico Air Quality Control Act that releases emissions as well as to mitigate its impacts. The Air Quality Control Act provides that the Board may adopt stricter rules than the federal Clean Air Act, provided those rules are more protective of public health and the environment.

1. Albuquerque-Bernalillo County Air Quality Control Board, AQCB Petition No. 2022-3, 2022
2. Place Matters for Health in Bernalillo County: Ensuring Opportunities for Good Health for All, Joint Center for Political and Economic Studies, 2012
3. Non-white is a broad term used to replace BIPOC because "people of color" it's not inclusive of all ethnicities.

Quantitative Analysis

A correlational analysis is a statistical method of identifying whether a relationship exists between two (or more) variables and understanding the magnitude of that relationship. Correlations can reveal patterns within given data sets though they cannot point to the cause of the relationships between those datasets. Each variable or determinant provided below is indicative of a statistically significant (moderate to strong) relationship between two (or more) variables.

Determinants

When evaluating correlations, the closer the correlation coefficient r is to -1.0 or $+1.0$, the stronger the relationship between two variables. The components of the built environment described in this analysis focuses solely on significant relationships between two or more variables with moderate to strong positive or negative relationships with a correlation (r) of at least < -0.5 or > 0.5 .

Total Census Tracts: 147

Racial Demographics (Median)

- 41.4% White
- 1.9% African-American / Black
- 44.7% Latine/x or Hispanic
- 1.7% Asian
- 2.7% American Indian and Alaskan Native (Native American/Indigenous)
- 0.0% Native Hawaiian and other Pacific Islander

Overview of Intersecting Determinants

Albuquerque-Bernalillo County shows significant relationships of the following determinants analyzed:

- Households experiencing energy burden⁴ have a significant relationship with high asthma rates.
- Native American/Indigenous households have a significant relationship with high asthma rates.
- Higher adjusted median income has a significant relationship with the attainment of a higher education (bachelor's degree or higher) and white occupied households.
- Latine/x occupied households have a significant relationship with low educational attainment (high school diploma) and individuals under the age of 18.
- High asthma rates have a significant relationship with utility burden⁵ (electric, gas, and water), energy burden, and Native American households.
- White households have a significant relationship with individuals over the age of 65 and higher adjusted median household incomes. They also have a significant relationship with lower asthma rates.

4. Energy Burden is defined as the neighborhood average of the percent of median yearly income that households pay for energy bills (electricity and/or gas).

5. Utility burden is defined as the neighborhood average of the percent of median yearly income that households pay for all utility bills (electricity, gas, and/or water).

NOTE: Data presented in Quantitative Analysis comes from internal and external data sets from 2019 and 2020

Racial Disparities

Communities facing a cluster of challenges can often be found in certain geographic areas and among certain marginalized identities. It is critical to understand these disparities as they inform effective policies and programs designed for the worst conditions, yet support benefits to all communities.

Below are some of the major racial disparities most prevalent throughout the entire Albuquerque–Bernalillo County. When considering top and bottom percentiles, it is important to understand that there is a range of prevalence for each determinant, which helps identify what is considered high and what is considered low based on the national average. For example, a community experiencing energy burdens of 10% or more, significantly higher than the national average of 4%, will rank in the top 5% of the energy burdens nationwide.

Table 1: Spread of Prevalence

Determinant	National Mean	ABQ-Bernalillo Median	Minimum in ABQ-Bernalillo	Maximum in ABQ-Bernalillo
Utility Burden	4.70%	3.80%	0.00%	17.20%
Median Living Cost as Percentage of Income	27.10%	26.90%	14.90%	47.90%
Asthma	0.70%	9.40%	8.30%	13.30%
Coronary Heart Disease	5.80%	4.90%	1.20%	8.40%
Urban Heat Intensity Index	5.1	6.1	1	10
Unemployment	5.60%	5.30%	0.20%	17.70%
High School Diploma	26.10%	21.20%	6.20%	45.70%
Bachelor's Degree or Higher	25.60%	35.80%	6.20%	72.90%

Top and Bottom 5%

Energy Burden

Top (most burdened): 50% of the most burdened neighborhoods are predominantly inhabited by Latine/x households with energy burdens ranging from 6.6 to 10.6%.

Bottom (least burdened): 37.5% of the least burdened neighborhoods are predominantly inhabited by white households and 25% are predominantly inhabited by Latine/x households with energy burdens ranging from 0.0 to 1.5%.

Median Living Cost as a Percentage of Income

Top (most burdened): 37.5% of the most burdened neighborhoods are predominantly inhabited by Latine/x households with median living costs ranging from 36.5% to 47.9%.

Bottom (least burdened): 37.5% of the least burdened neighborhoods are predominantly inhabited by white and Latine/x households and 12.5% are predominantly inhabited by Native American households with median living costs ranging from 14.9% to 19.8%.

Asthma

Top (most burdened): 14.3% of the most burdened neighborhoods are predominantly inhabited by Native American households and 28.6% by Latine/x households with asthma rates ranging from 11.4% to 13.3%.

Bottom (least burdened): 100% of the least burdened neighborhoods are predominantly inhabited by white households with asthma rates ranging from 8.3% to 8.4%.

Urban Heat Intensity Index

Top (most burdened): 14.3% of the most burdened neighborhoods are predominantly inhabited by Latine/x households and 57.1% by white households with urban heat intensity indexes ranging from 9.7 to 10.

Bottom (least burdened): 14.3% of the most burdened neighborhoods are predominantly inhabited by Latine/x households and 74.4% by white households with urban heat intensity indexes ranging from 1 to 1.3.

Coronary Heart Disease

Top (most burdened): 12.5% of the most burdened households are predominantly inhabited by Native American households, 50% by Latine/x households, and 25% white households with a prevalence ranging from 6.6% to 8.4%.

Bottom (least burdened): 50% of the least burdened neighborhoods are predominantly inhabited by Latine/x households and 12.5% white households with a prevalence ranging from 1.2% to 3.1%.

Unemployment

Top (most burdened): 12.5% of the most burdened neighborhoods are predominantly inhabited by Native American households, 50% by Latine/x households, and 12.5% white households with unemployment rates ranging from 11.5% to 17.7%.

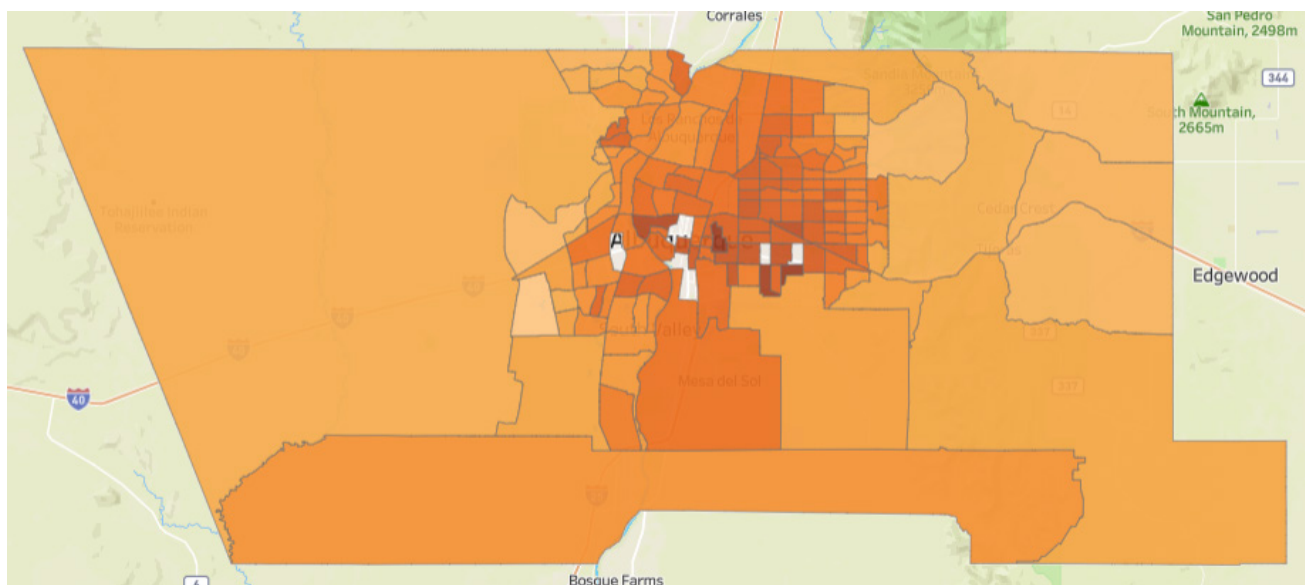
Bottom (least burdened): 75% of the least burdened neighborhoods are predominantly inhabited by white households with unemployment rates ranging from 0.2% to 1.2%.

Educational Attainment

Top - High School Diploma (most burdened): 87.5% of the most burdened neighborhoods are predominantly inhabited by Latine/x households only attaining a high school diploma with rates ranging from 36.9% to 45.7%.

Top - Bachelor's Degree or Higher (least burdened): 100% of the least burdened neighborhoods are predominantly inhabited by white households with more prevalent higher education attainment ranging from 64.0% to 72.9%.

Image 1: Energy Burden vs Urban Heat Intensity





Summary

This analysis reveals the interconnectedness of geography, health, housing, socioeconomic, and environmental inequities. Neighborhoods with higher energy burdens are at risk of experiencing asthma, disproportionately impacting non-white communities. When considering how to mitigate health and housing hazards throughout the Albuquerque-Bernalillo County, understanding the interdependency of the socioeconomic structures prohibiting or enabling a community’s wellbeing over the other is critical for informing systemic policy design. Given the racial and socioeconomic disparities outlined in this analysis, establishing environmental justice policy and air quality targets and adjacent program design is critical to supporting safe and equitable community health and wellbeing .

Table 2: Summary of Census Tracts and Neighborhoods in Top 5%

Census Tract No.	Inequities	Neighborhood(s)
25, 18, 9.01, 9.03	Energy Burden	Los Duranes/Old town ABQ (ABQ aquarium), University of New Mexico, Trumbull Village
18	Urban Heat Intensity Index	Netherwood Park
37.33, 34, 18, 9.01	Asthma	Netherwood Park, Trumbull Village
43, 32.01	Unemployment Rates	Armijo/Five Points, Los Griegos



About Greenlink Analytics

Greenlink Analytics is an Atlanta-based 501(c)(3) nonprofit organization working to advance a clean energy transition as fast and fair as possible. Our team combines expert knowledge, data analytics, and machine learning to solve the most pressing climate and social issues, including energy burdens and pollution impacts, with the goal of improving lives and the environment.

We are among the best in the nation at helping people understand the impact of decisions made by and for them at the community, city and state level. We produce highly technical analysis and translate it into understandable formats that enable better decisions for the future. Data allows people to understand where they've come from and charts a course towards where they want to go. Knowledge is power, after all. Ultimately, we help develop the policy and program decisions that address the bedrock issues of climate change and inequitable development in the U.S.