



# Buffalo, Queen City of the Lakes, Decreasing Energy Burden from 2013 to 2018

A Series Highlighting Most Improved Cities

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**2022**

Prepared by Greenlink Analytics



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Across the United States, households in low-income, Black, Indigenous, Hispanic/Latine, and other disadvantaged communities\* all face higher energy burdens than the average household across the US and disproportionately bear the impacts of climate change, despite contributing to it the least.<sup>1</sup> Energy burden is the percentage of a household's annual income spent on utility bills, and is an important measure and indicator used to analyze economic equity in metropolitan areas. An energy burden of 6% or more is considered high, while a burden of 10% or more is considered severe.<sup>2</sup>

These communities simultaneously experience other systemic inequities correlated with energy burden such as higher rates of eviction and are also experiencing higher rates of incidence and mortality related to the COVID-19 pandemic.<sup>3,4</sup> As a result, sustainability organizations, policymakers, and utility companies have increased efforts to find ways to mitigate the outsized burden faced by these communities.

According to a recent Greenlink Equity Map (GEM) report, *A Nationwide Review of Energy Burden*, the 50 most populated metropolitan areas all reduced their average energy burden between 2013 and 2018.<sup>5</sup> Among those metro areas, the City of Buffalo was one of the most improved cities in energy burden. Buffalo is the second largest city in the state of New York and sits at the eastern end of Lake Erie. By 2018, the city saw a decrease in energy burden from 5.5% to 4.5%, an 18.2% reduction, and simultaneously found a way to buck the trend of increasing energy bills, instead lowering them.

This report highlights the successful efforts by the City of Buffalo, New York, to address high energy burdens through energy efficiency leadership over time.

The data found in this report also provides useful guidance in the creation of the appropriate policies and programs needed to dismantle energy injustices; the same analysis is possible for advocates and decision-makers alike using GEM.

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\*Throughout this report, when we refer to communities as disadvantaged, we mean: Black, Indigenous, Latine/Hispanic, senior citizens, people facing homelessness, people with disabilities, and other historically marginalized communities.

The Greenlink Equity Map (GEM) was used to gain insight on energy burden changes from 2013 to 2018 based upon the census tracts.

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## 3<sup>rd</sup>

Of the 50 metro areas surveyed in Greenlink Analytics's report, *A Nationwide Review of Energy Burden*, the City of Buffalo ranked 3<sup>rd</sup> for experiencing the largest absolute reductions in average energy burden and is making progress in reducing energy bills in disadvantaged communities.

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## +11.7%

Median income for the City of Buffalo increased by 11.7% between 2013 and 2018, compared to the national median income increase of 13.9% over the same time period.

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## -7.3%

Average energy bills for the City of Buffalo decreased by 7.3% from 2013 to 2018, while the national average energy bill increased by 0.2%.

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## -18.2%

Energy burden for the City of Buffalo decreased from 5.5% to 4.5%, an 18.2% reduction between 2013 and 2018, while the national average energy burden decreased from 4.8% to 4.3%, a 10.4% reduction.

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## GEM

Energy burden for the City of Buffalo decreased from 5.5% to 4.5%, an 18.2% reduction between 2013 and 2018, while the national average energy burden decreased from 4.8% to 4.3%, a 10.4% reduction.



# Economic growth and trends in the City of Buffalo

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## Median Income, Average Energy Bill, and Energy Burden

Greenlink Analytics' Nationwide Review of Energy Burden found that the City of Buffalo saw consistent annual growth between 2013 and 2018 in part due to an increase in private sector jobs. Between 2013 and 2018, the City's average energy bills dropped from \$2,430 to \$2,250 and median income increased from \$54,000 to \$60,000, though still below the nation's median income of \$63,179 in 2018.<sup>6</sup> Combined, these metrics indicate that the City of Buffalo's average energy burden decreased from 5.5% in 2013 to 4.5% in 2018.

## Changes in Energy Burden by Census Tract

A city's median energy burden does not reflect the distributional discrepancy between the absolute highest and lowest income households. A change in median energy burden can have a disproportionate impact on marginal neighborhoods.

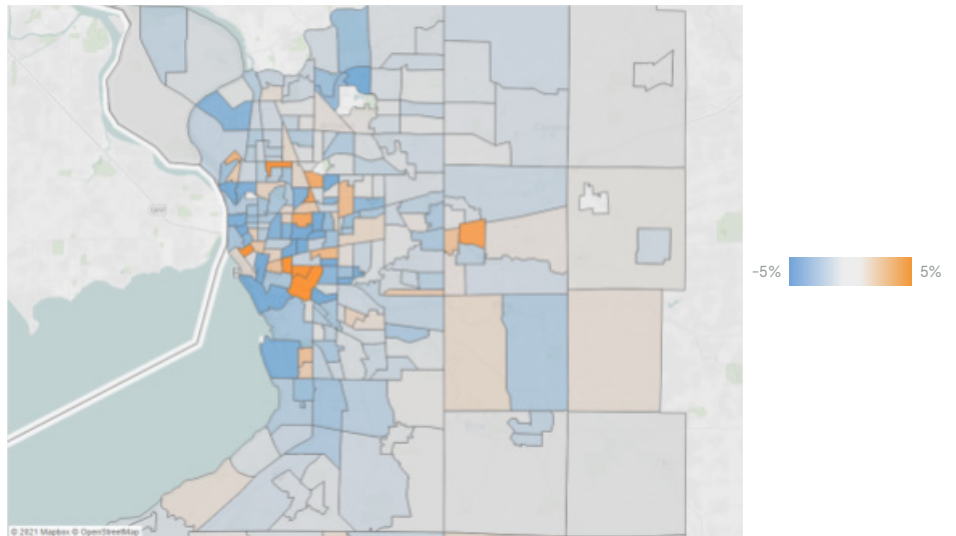
The county-level GEM map shown in Figure 1 illustrates the changing city-wide energy burden for the City of Buffalo and the surrounding areas. Despite the overall jurisdictional decrease of energy burden from 2013 to 2018, several neighborhoods and communities experienced an increase in energy burden over the same period.

From 2013–2018, Buffalo saw significant changes in energy burden in its downtown area. Of the city's 237 census tracts, 71% of them experienced a decrease in energy burden. Of the 60 communities where energy burdens increased, 12 were predominantly BIPOC neighborhoods and there are 64 census tracts in Erie county that are identified as predominantly BIPOC. BIPOC neighborhoods are defined as those where more than 50% of residents identify as racial minorities. This reveals a roughly similar trend of decreasing energy burden to increasing energy burden for Erie County as a whole, regardless of race.

In the predominantly Black census tracts in the east and northwest parts of the city, the residents have lower median incomes than the majority White neighborhoods in the central, north, and south city tracts, a finding others

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<sup>6</sup> Author's calculations based on data from the GEM database.



**Figure 1. Difference in Energy Burden in Buffalo, NY 2013–2018\***

have also recently observed. (Table 1).<sup>7</sup> This racialized trend is also evident in the majority Hispanic/Latine neighborhoods in West Buffalo. Disadvantaged neighborhood level census tracts based on predominant race had average household incomes between \$18,300–\$31,400, while primarily White neighborhoods averaged around \$65,400.

As illustrated in Table 1, energy burden decreased for predominantly Black and White neighborhoods, while predominantly Hispanic/Latine neighborhoods witnessed an overall increase in energy burden between 2013 – 2018. GEM data demonstrates that disadvantaged neighborhoods saw a higher energy burden (7-13%) while White neighborhoods experienced a significantly lower energy burden (4-5%) between 2013-2018.

**Table 1. Average Energy Burden, Median Income, and Annual Energy Bills by Predominant Race Census Tracts (2013 & 2018)**

PREDOMINANT RACE	2013			2018		
	Energy Burden	Income	Annual Energy Bill	Energy Burden	Income	Annual Energy Bill
American Indian & Alaska Native	7%	\$43,200	\$2,800	3%	\$31,400	\$2,300
Asian	-		-	8%	\$18,600	\$1,600
Black or African American	11%	\$27,200	\$2,700	9%	\$28,800	\$2,500
Hispanic or Latino	11%	\$19,800	\$2,300	13%	\$24,900	\$2,800
White	5%	\$62,600	\$2,600	4%	\$65,400	\$2,200

While Buffalo has narrowed the energy burden gap, historically marginalized or disadvantaged communities continue to bear a substantially greater burden than their White counterparts. In 2013, energy burden in Black and Hispanic/Latine communities was more than double than what was experienced in White neighborhoods, primarily because income levels were significantly lower in these neighborhoods. Energy burdens slightly decreased for both Black and White neighborhoods in 2018 while Hispanic/Latine and American Indian/Alaska Native (AIAN) communities experienced either the same or increased energy burdens.

To dive deeper into these trends, we compared the percentage of census tract population in Erie County with a Bachelor’s degree between 2013 and 2018. The educational data from The American Community Survey (ACS), showed the tracts that experienced an increase in median income also seemed to see a corresponding increase in percentage of population with a Bachelor’s degree. Seventy-four percent of all tracts in Erie County increased in median income between 2013 and 2018 and educational attainment increased by 2% for the general population mostly made up of Black and White neighborhoods in Erie County between 2013 and 2018.<sup>8</sup>

Incorporating the percentage of population with a Bachelor’s degree’ alongside income and energy burden as an approximation for gentrification, we don’t observe significant differences between Black neighborhoods and White neighborhoods. While this is an imperfect means of observing gentrification, it appears that the improvement in energy burden was not especially driven by displacement and gentrification effects, suggesting it could have been driven by localized community and economic development successes.

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\*Communities where energy burden increased (orange) and decreased (blue) on a scale from -5 to 5%



# Five Cities Energy Plan

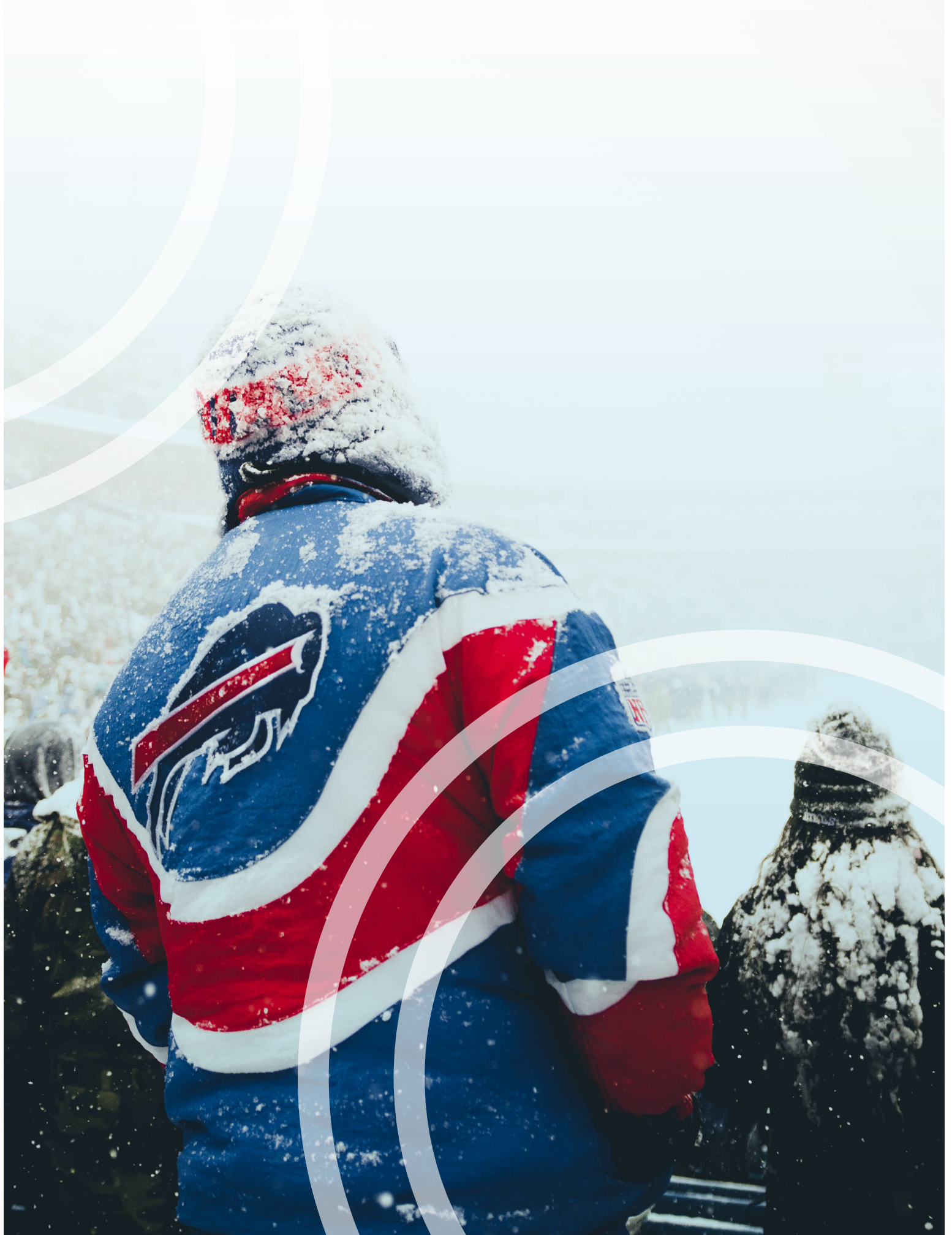
To better understand the metro-level changes in energy bills, household income, and energy burden observed in our previous report, Greenlink Analytics was interested in learning more about why the City of Buffalo's energy burden has decreased so significantly over time.

The state of New York has a long history of energy efficiency leadership and innovation, due in part to former Governor Cuomo's BuildSmart NY program aimed at improving the energy efficiency of New York state buildings using a strategic and data-driven process.<sup>9</sup> The Five Cities Energy Plan Initiative is an expansion of BuildSmart NY—a partnership between the New York Power Authority (NYPA) and the cities of Albany, Buffalo, Rochester, Syracuse, and Yonkers. This initiative has allowed each of these cities to adopt a grassroots approach to energy planning, priority mapping, and strategy development.

Using this data-driven approach, the five major goals of the Five Cities Energy Plans Initiative are to:

- 1 *Reduce energy consumption*
- 2 *Strengthen reliability and resiliency of the cities' energy infrastructure*
- 3 *Catalyze clean energy investment and economic development*
- 4 *Contribute to a cleaner environment*
- 5 *Enhance quality of life*

These five cities are pursuing innovative programs and initiatives to reduce energy consumption. Buffalo, for example, has initiated the Green Code, updating the city's 60-year old zoning code. It includes a Land Use Plan framework for the city's development which places an emphasis on walkable, transit-supportive neighborhoods. The planned goals from the Five Cities Initiative build on this and other ongoing projects to invest in clean energy for the city and its residents.



# A Way Forward

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The City of Buffalo is striving to improve energy efficiency across its buildings and infrastructure but there are opportunities for growth and improvement. Equitable access to these benefits and strong grassroots programs across communities of different demographics and income levels will ultimately lead to local job creation, reductions in air pollution, better public health, and improved equity outcomes.

Buffalo's energy efficiency initiatives are a hopeful opportunity for ensuring equitable access to the benefits resulting in decreasing rising energy burdens across every community. Engaging low-income and disadvantaged residents in strategic project planning allows for the development of more equitable policies and better outcomes for all. Best practices for accomplishing collaborations and shared lived experiences between communities and government are available in the GEM Process Guide.<sup>10</sup>

The Greenlink Equity Map (GEM) platform was launched in October 2020 and is used by over 400 city, community, and non-profit leaders. The purpose of GEM is to guide individuals and organizations toward understanding how burdens are spread across communities in order to make more informed, data driven decisions. The GEM platform provides detailed data on different communities' exposures to a variety of health, environmental, and demographic metrics in order to move beyond anecdotal evidence and create equity-advancing interventions.

The creation of this tool and these reports would not have been possible without the support of Greenlink Analytics' generous funders, the Kresge Foundation, Bloomberg Philanthropies, and the Energy Foundation. These reports serve to highlight different equity and energy issues found in cities across the United States, as well as to highlight cities where improvements have been made.





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