The Economic Impact of the Housing Authority of Baltimore City

2018 - 2023

Date: February 4, 2025
Submitted to the Housing Authority of Baltimore City



ESI ECONSULT SOLUTIONS INC.
economics | strategy | insight

1435 WALNUT STREET, 4TH FLOOR | PHILADELPHIA, PA 19102
215-717-2777 | ECONSULTSOLUTIONS.COM

The Economic Impact of the Housing Authority of Baltimore City: 2018-2023
February 4, 2025

Table of Contents

1 Introduction 6
1.1 Report Purpose 6
1.2 About the Housing Authority of Baltimore City 7
1.3 The Impact of Affordable Housing for Communities and Households 7
1.4 Methodology 9
1.5 Report Organization 10
2 The Affordable Housing Landscape in Baltimore 11
2.1 Existing Demand Factors 11
2.2 Supply Dynamics 15
2.3 Broader Economic Factors 20
2.4 HABC's Role in Baltimore's Affordable Housing Landscape 21
3 HABC's Work in Baltimore 23
3.1 Public Housing 23
3.2 Housing Choice Voucher Program (HCVP) 24
3.3 Rental Assistance Demonstration (RAD) Program 26
3.4 Resident Services Program 28
3.5 Priority Initiatives 30
4 The Economic Impact of HABC's Operations and Housing Assistance Payments 32
4.1 Operating Budget 32
4.2 Annual Economic Impact of HABC's Operations 33
4.3 Industry Distribution of Employment from HABC's Operations 35
4.4 Tax Revenue Impact from HABC's Operations and HAP 36
5 The Economic Impact of HABC's Capital Investments 37
5.1 Capital Investments 37
5.2 Economic Impact of HABC's Capital Investments 37
5.3 Industry Distribution of Employment from HABC's Capital Investments 39
5.4 Tax Revenue Impact of HABC's Capital Investments 39
6 The Economic Impact of Providing Affordable Housing to Baltimore Residents 41
6.1 HABC's Low-Income Public Housing and Mortgage Assistance 41

6.2 Economic Impact from Increased Household Savings 42
6.3 Industry Distribution of Employment from Increased Household Savings 43
6.4 Tax Revenue Impact from Increased Household Savings 44
7 Conclusion 45
7.1 Aggregate Economic Impact 45
7.2 Aggregate Tax Revenue Impact 46
7.3 HABC: Strengthening Baltimore Households and Communities 47
8 Appendix 48
8.1 Input-Output Methodology 48
8.2 About Econsult Solutions, Inc. 51

1 Introduction

1.1 Report Purpose

Econsult Solutions, Inc. (ESI) was engaged by the Housing Authority of Baltimore City (HABC) to conduct an economic impact analysis of its housing assistance programs, operations, and construction activities for the years 2018 through 2023. The following report explores the importance of affordable housing and evaluates the economic impact of HABC within Baltimore and the state of Maryland.

HABC is a large public housing authority which administers public and affordable housing programs to income-eligible families in Baltimore. As a recipient of funding from the United States Department of Housing and Urban Development (HUD), HABC owns and operates:

- approximately 6,000 public housing units, inclusive of approximately 1,000 scattered site units, and 570 privately managed sites, as of December 2023.
- more than 14,000 housing choice voucher recipients, as of December 2023.

Operationally, HABC has more than 650 employees. In addition to this, HABC has a development instrumentality called Baltimore Affordable Housing Development, Inc. (BAHD). Considered together with its housing portfolio, HABC holds a significant economic and geographic footprint across Baltimore.[1]

Affordable housing – and its affiliated supporting infrastructure – generates numerous economic impacts within local and state economies. Within this report, ESI employs industry-standard modeling techniques via IMPLAN to estimate the direct, indirect, and induced economic impact supported by HABC. This includes the economic impact of:

- HABC's operations stimulate the Baltimore and Maryland economies through local procurement and by the local spending completed by its employees in those economies.
- HABC's capital investments maintain their housing stock while supporting the local construction industry due to the construction and regular maintenance and rehab of its housing portfolio.
- HABC's portfolio of affordable housing and resident programs support the broader Baltimore housing market, while benefitting eligible households with additional household income and increased lifetime savings.

[1] All data points presented in this section, and received from HABC, are as of December 31, 2023.

1.2 About the Housing Authority of Baltimore City

HABC was established in 1937 to provide federally funded public housing programs and related services for low-income residents in Baltimore. The fifth largest public housing authority in the country, HABC is Baltimore's largest provider of deeply affordable housing, currently serving more than 20,000 resident households through public housing and Housing Choice Voucher Programs (HCVP).[2] Since 2017, HABC has been led by President and Chief Executive Officer Janet Abrahams, and she has taken steps during her tenure to reposition HABC into a self-sustaining entity that can support the affordable housing needs of Baltimore, such as increasing the affordable housing production capacity of BAHD.

Over the last two decades, HUD has introduced several programs to support and modernize the country's public housing policy infrastructure – each of which HABC has been an active participant. In 2008, HABC was named one of the initial public housing authorities in HUD's Moving to Work Demonstration. The Moving to Work (MTW) designation provides HABC the flexibility to use federal dollars to finance innovative, locally designed strategies to increase self-sufficiency and improve housing choice for low-income families, while further providing exemptions from many existing public housing and voucher rules.[3] Since 2015, HABC has also converted several of its public housing sites through HUD's Rental Assistance Demonstration (RAD). Through RAD conversions, a property moves from its original public housing subsidy platform to a project-based Section 8 voucher platform – providing developments with consistent and stable rental assistance payments and long-term affordability for residents.[4]

1.3 The Impact of Affordable Housing for Communities and Households

Studies have shown that safe, decent, affordable housing offers tangible household-level benefits for its residents and positive effects for surrounding neighbors. Critically, affordable housing is a central determinant to improved household outcomes in economic mobility, development, and health. Communities with affordable housing further benefit from the associated spillover effects of these household effects in the form of community investment and preservation. As such, public housing and vouchers play a crucial role in ensuring that a community's low-income residents have the opportunity and stability to reach these benefits. While some of the impacts related to affordable housing are immeasurable, affordable housing has proven to be a critical investment and policy intervention for

2 Deeply affordable housing refers to housing that is affordable to households earning up to 30 percent of the area median income.
3 "Moving To Work (MTW)" U.S. Department of Housing and Urban Development. 8 August 2024: Retrieved from https://www.hud.gov/mtw8 August 2024: Retrieved from https://www.hud.gov/mtw
4 "RAD Overview." U.S. Department of Housing and Urban Development. 7 June 2021: Retrieved from https://www.hud.gov/sites/dfiles/Housing/documents/RAD_Overview_06072021.pdfhttps://www.hud.gov/sites/dfiles/Housing/documents/RAD_Overview_06072021.pdf

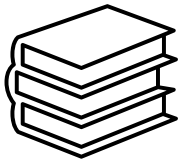
communities seeking to support the long-term economic and social outcomes of their most vulnerable residents.

Figure 1.1: The Impact of Affordable Housing for Communities and Households



ECONOMIC MOBILITY

Affordable housing – at its below market cost to renters – helps increase household discretionary income for low-income families that can be used for current needs or future savings. Research completed by the MacArthur Foundation found that youth who spent their teenage years in public or voucher-assisted housing earned up to $700 more per year and faced less risk for incarceration, compared to their siblings who spent less time in public or voucher-assisted housing.[5]



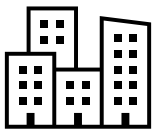
DEVELOPMENT & EDUCATION

Housing instability caused by lack of affordability can jeopardize in-school performance and development, with long-lasting achievement gaps between those with and without stable affordable housing. Hyper-mobility – or frequent residential moves – can have a detrimental impact on both the moving and non-moving students.[6]



HEALTH

Higher housing costs and instability have negative impacts on child and adult health, as housing costs eat into available household healthcare savings. A study by Children's Healthwatch found that those in subsidized housing were less likely to be seriously underweight; less likely to face food insecurity; and were more well overall when compared to families on subsidized housing waitlists.[7]



COMMUNITY INVESTMENT & PRESERVATION

Affordable housing is associated with increases in neighborhood quality and property values. Several national and regional studies have found that investments in affordable housing have a neutral or positive effect on surrounding property values.[8] Another study found that local purchasing power increased in areas of clustered affordable housing – increasing local retail spending.[9]

5 Andersson, Fredrik, et al. 2016. "Public Housing and Better Economic Outcomes." MacArthur Foundation. Retrieved from URL: https://www.macfound.org/media/files/hhm_brief-_public_housing_better_economic_outcomes.pdf
6 Brennan, Maya. 2011. "The Impacts of Affordable Housing on Education: A Research Summary" Center for Housing Policy. Retrieved from URL: https://nchh.org/resource-library/cfhp_insights_impacts-of-affordable-housing-on-education.pdf
7 March, Elizabeth L, et al. 2009. "Rx for Hunger: Affordable Housing" Children's Healthwatch. Retrieved from URL: https://childrenshealthwatch.org/wp-content/uploads/rxforhunger_report_dec09-1.pdf
8 Voith, Richard, et al. 2022. "Effects of concentrated LIHTC development on surrounding house prices" Journal of Housing Economics. Retrieved from URL: https://doi.org/10.1016/j.jhe.2022.101838.
9 Walker, Chris. 2010. "Affordable Housing for Families and Neighborhoods" Furman Center for Real Estate and Urban Policy. Retrieved from URL: https://www.lisc.org/media/filer_public/81/84/8184dd3f-ea67-40f2-82fb-6f8d7687df8f/052417_report_affordable_housing_families_neighborhoods_enterprise.pdf

1.4 Methodology

Within this report, ESI employs industry-standard modeling techniques using IMPLAN to estimate the direct, indirect, and induced economic activity supported by HABC in Baltimore and Maryland.[10] IMPLAN is an input/output modeling software that can be used for assessing the economic impact of industry activity and other economic events that can change an economy. IMPLAN translates an initial amount of direct economic activity into the total amount of economic activity that it supports, which includes multiple waves of spillover impacts generated by spending within the local supply chain and the spending of labor income by employees.

- The **indirect effect** reflects that local purchases of goods and services support local vendors. For instance, when HABC purchases supplies or professional services, direct spending initiates the indirect economic activity associated with the production of those supplies or services.
- The **induced effect** reflects that the salaries of HABC employees are circulated back into the economy when those employees spend their earnings locally – further stimulating the economy.

Figure 1.2: Economic Impact in Context



IMPLAN also estimates the number of jobs that are supported by the indirect and induced impacts. For ease of comprehension, ESI converts these jobs into Full-Time Equivalent (FTE) jobs – as such, all jobs expressed in this report are FTE jobs.

[10] The economic impact figures throughout the report are represented in 2024 dollars.

Inputs and Geographies of Interest

IMPLAN multipliers are defined by geography and industry. ESI's models for this analysis calculates economic impacts for the following geographies:

- The City of Baltimore
- The State of Maryland

The impact of HABC will be greatest at the state level, as that geography is inclusive of Baltimore - where HABC's direct expenses occur locally. The operations and capital spending of HABC generates economic activity beyond the borders of the city and stretches out to other places in the state. Therefore, ESI modeled the amount of indirect and induced activity that takes place in the state due to the direct spending in Baltimore. The economic impacts that occur within the state are inclusive of the economic impacts in the city and are not additive.

In completing this analysis, ESI worked closely with HABC to review budget, program, and portfolio data from 2018 to 2023 – meeting with senior HABC staff to better understand the nuances of complex public housing agency information. ESI used this information to establish direct annual inputs for HABC's operations, capital investments, and household savings for Baltimore residents – resulting in total economic output figures for Baltimore and Maryland.

1.5 Report Organization

The report is organized as follows:

- **Chapter 2: The Affordable Housing Landscape in Baltimore** includes an analysis of the local housing market and the state of affordable housing in Baltimore.
- **Chapter 3: HABC's Work in Baltimore** includes an analysis of HABC's affordable housing portfolio in Baltimore, along with an overview of HABC's resident services programs.
- **Chapter 4: The Economic Impact of HABC's Operations** analyzes HABC's budget information from 2018 to 2023 to better understand HABC's annual economic impact from its operation as a large local employer and procurer of goods and services.
- **Chapter 5: The Economic Impact of HABC's Capital Investments** analyzes the economic impact of HABC's capital investments from 2018 to 2023 made through its subsidiary development arm, BAHD.
- **Chapter 6: The Economic Impact of HABC's Affordable Housing Portfolio** analyzes the economic impact of the saved household income associated with HABC's portfolio of public housing and mortgage assistance.
- **Chapter 7: Conclusion** includes an overview of HABC's total economic impact in Baltimore and Maryland from 2018 to 2023 – placing HABC's work and affordable housing mission in the broader context of economically strengthening Baltimore's residents.

2 The Affordable Housing Landscape in Baltimore

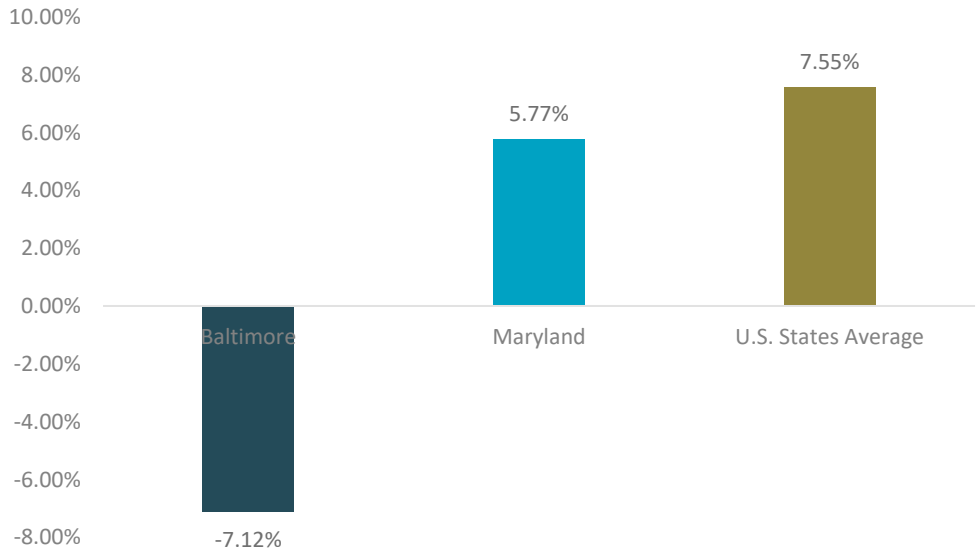
Affordable housing is an important component to supporting economically vibrant communities. Baltimore – like other cities across the country – currently faces a significant demand for affordable housing, but a shortage in the supply of available affordable housing – especially for those at the lower end of Baltimore's income distribution. This section aims to explore the current economic trends impacting these dynamics and the broader affordable housing landscape in Baltimore.

2.1 Existing Demand Factors

Population

Baltimore's population has been steadily declining over the last decade, reaching 577,190 in 2023.[11] This is a decrease of seven percent since 2013 and six percent since 2018. Generally, this trend suggests out-migration from Baltimore. Notably, Maryland's population has grown by six percent since 2013 and three percent since 2018, although Maryland's population growth is below the national average. The slower growth in Maryland's population since 2018 may also indicate that people are migrating out of the state. While there are many factors that contribute to migration patterns, housing affordability – or the lack thereof – can be a principal motivation for some households seeking less expensive places to live.

Figure 2.1: Population Changes in Baltimore, Maryland, and U.S. States, 2013-2023



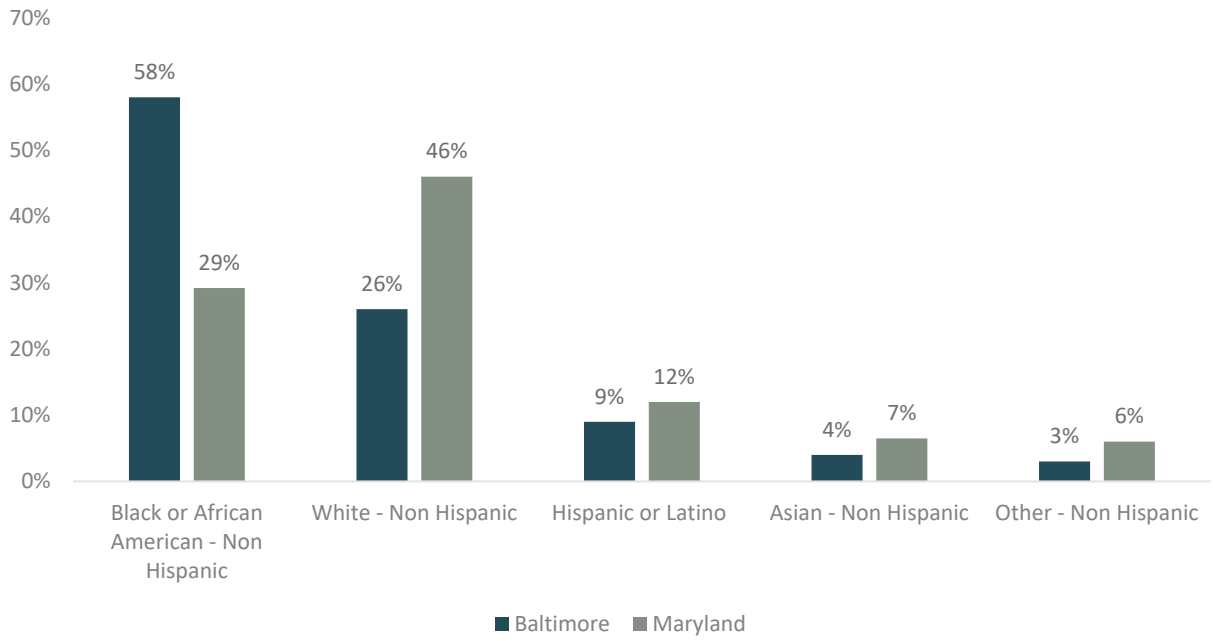
Source: U.S Census ACS 5-Year Estimates

[11] Table DP04, ACS Demographic and Housing Estimates, 2023 ACS 5-Year Estimates Data Profiles.

Race & Ethnicity

Baltimore's population is characterized by a predominantly Black population, which accounts for 58 percent of the resident population. Baltimore is more diverse than the rest of Maryland, with Black and Hispanic residents making up 67 percent of the city's population compared to Maryland (see Figure 2.2). Baltimore's diversity – particularly it's concentration in Black or African American households – has consistently held for approximately four decades.[12]

Figure 2.2: Population by Race and Ethnicity, 2023



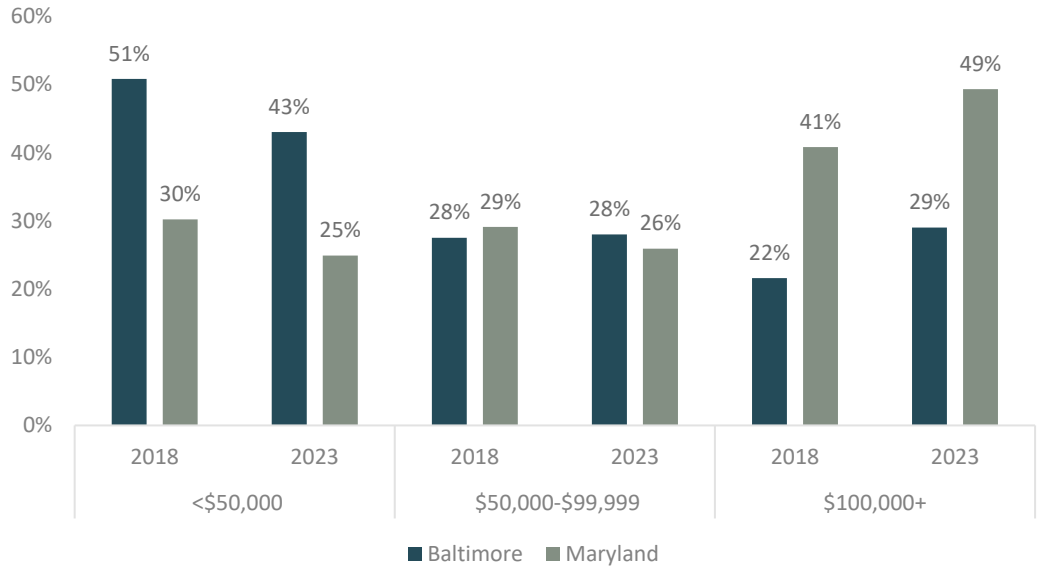
Source: U.S. Census ACS 5-Year Estimates

Household Income Distribution

As of 2023, there were approximately 250,600 households within Baltimore. Seventy-one percent of these households earn below $100,000 annually, compared to 51 percent in Maryland. Median household income was approximately $59,600 in the city in 2023.[13] Relative to 2018, the number of households with income less than $50,000 decreased by eight percent larger than the decrease Maryland experienced of only five percent (see Figure 2.3).

[12] "Census 1980, 1990 and 2000 Profile of General Demographic Characteristics." Maryland Department of Planning, Maryland State Data Center.
[13] Listed in 2023 dollars.

Figure 2.3: Households by Income in Baltimore and Maryland, 2018 and 2023



Source: U.S. Census ACS 5-Year Estimates

The increase is slightly lower than the increase in median household income across the rest of the state (see Figure 2.4). Further, a significant proportion of Baltimore's population remain in the lower income brackets when compared against Maryland's household income distribution – highlighting the specific need and continued demand for deeply affordable housing options for those in the lower income brackets.

Figure 2.4: Median Household Income ($2023), 2018 and 2023

	2018	2023	Growth
Baltimore	$56,869	$59,600	4.8%
Maryland	$95,405	$101,652	6.5%

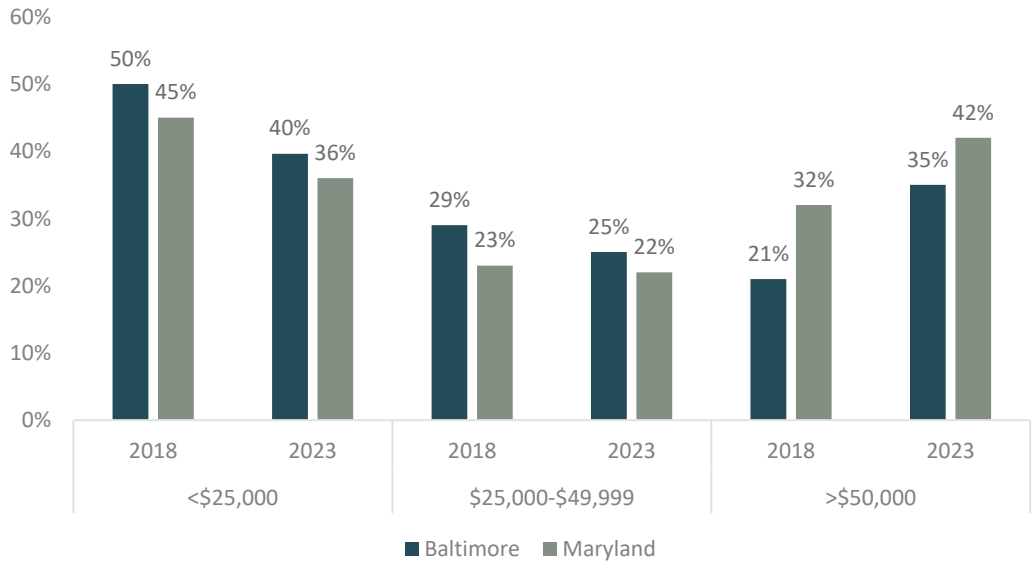
Source: U.S. Census ACS 5-Year Estimates

Share of Population with Disabilities

The share of the population with disabilities is helpful in estimating the need for affordable and accessible housing and resident services. Comparing Baltimore against Maryland, a disproportionate share of Baltimore disabled-identified population is represented in the lowest income bracket. This showcases a need for affordable housing that accommodates this population, which has a diversity of housing-related accessibility needs – ranging from hearing, vision, cognitive, ambulatory, self-care, and independent living difficulties.

In Baltimore, as of 2023, approximately 17 percent of the population had one or more disabilities, compared to 11 percent of the population in Maryland. However, it is only a one percent increase since 2018 at both the city and state levels. However, the share of the population with disabilities that earn less than $25,000 annually (in 2023 dollars), has decreased by 10 percent since 2018 – higher than the state decrease of nine percent (see Figure 2.5).

Figure 2.5: Share of Population with Disabilities, by Income (in $2023), 2018 and 2023



Source: U.S. Census ACS 5-Year Estimates[14]

[14] Table S1810, Disability Characteristics, U.S. Census ACS 5-year estimates (2018, 2023).

2.2 Supply Dynamics

As of the most recent Census estimates in 2023, Baltimore had 250,600 occupied housing units, of which 52 percent were owner-occupied, and 48 percent were renter-occupied – a split that has long been maintained within occupancy tenure within the city.

Since 2018, the total number of housing units in Baltimore has remained stable, with a slight decrease of only 0.3 percent from 2018 to 2023. In 2023, there were 293,631 housing units, most were three-bedroom units, at 38 percent, while 26 percent were two-bedroom units. One-bedroom units were 18 percent of the total (see Figure 2.6).

Figure 2.6: Number of Housing Units by Bedrooms in Baltimore, 2018 and 2023

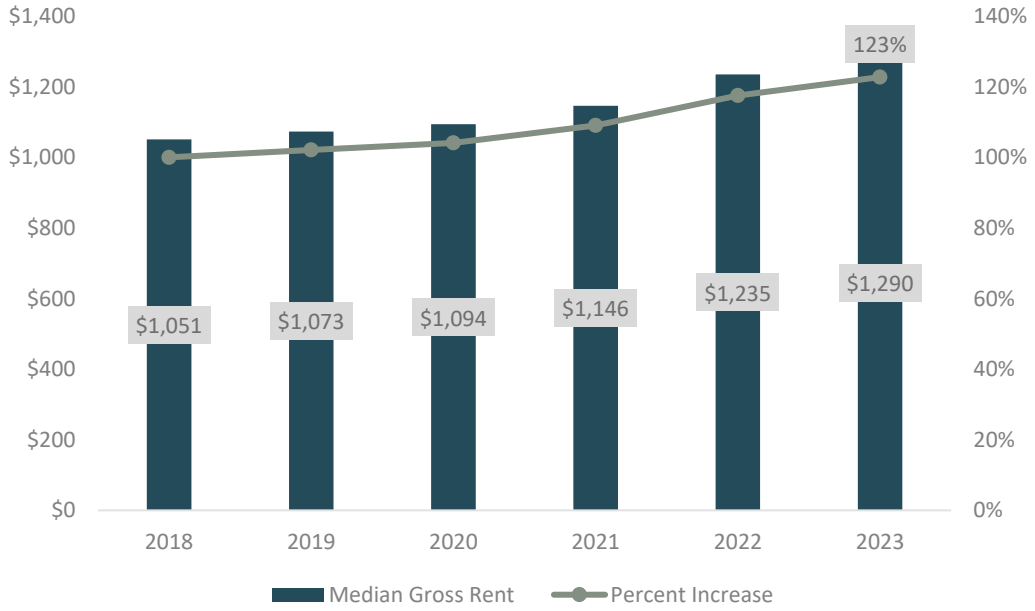
Housing Units	2018		2023	
	Count	Percentage	Count	Percentage
Total	**294,522**	**100%**	**293,631**	**100%**
Studio (No bedrooms)	10,018	3%	12,295	4%
1 bedroom	50,947	17%	53,018	18%
2 bedrooms	78,759	27%	77,672	26%
3 bedrooms	116,609	40%	112,455	38%
4 bedrooms	27,940	9%	27,593	9%
5+ bedrooms	10,249	3%	10,598	4%

Source: U.S. Census Bureau ACS 5-Year estimates (2023)

Rental Market

The median rental rate in the Baltimore market increased 23 percent from 2018 to 2023. This increase is just below the 24 percent inflation for rent calculated in the Consumer Price Index (CPI) by the U.S. Bureau of Labor Statistics (see Figure 2.7).

Figure 2.7: Percent Increase in Median Gross Rent in Baltimore, 2018 - 2023



Source: U.S. Bureau of Labor Statistics, U.S. Census Bureau ACS 5-Year estimates (2023)

This growth was variable depending on the number of bedrooms of the units. In 2023, rent for studio units have seen a more significant increase of 38 percent since 2018, followed by the one- and two-bedroom units, with 25 and 23 percent increase respectively. Units with five or more bedrooms have seen a decrease of 12 percent in their rates throughout this period (see Figure 2.8).

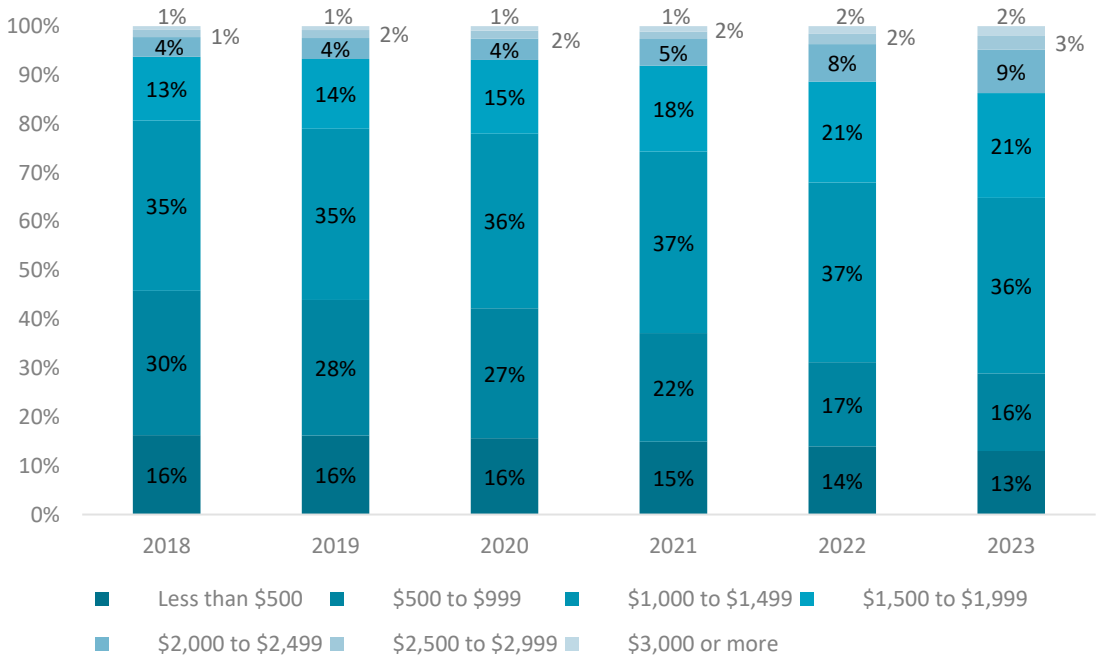
Figure 2.8: Median Gross Rent by Bedrooms in Baltimore, 2018 - 2023

Median Gross Rent	2018	2019	2020	2021	2022	2023
Total	**$1,051**	**$1,073**	**$1,094**	**$1,146**	**$1,235**	**$1,290**
Studio (No bedrooms)	$763	$807	$826	$889	$947	$1,050
1 bedroom	$860	$884	$907	$970	$1,045	$1,073
2 bedrooms	$1,096	$1,122	$1,151	$1,208	$1,308	$1,353
3 bedrooms	$1,287	$1,317	$1,326	$1,387	$1,496	$1,555
4 bedrooms	$1,403	$1,433	$1,465	$1,456	$1,565	$1,608
5 or more bedrooms	$1,380	$1,447	$1,036	$1,185	$1,223	$1,214

Source: U.S. Census Bureau ACS 5-Year estimates (2023)

During the six-year period from 2018 to 2023, units with gross rents below $500 decreased by 3 percent, and units between $500 and $999 decreased by 14 percent. In 2023, 36 percent of the units had rents between $1,000 and $1,499, and 21 percent of the units had rents between $1,500 and $1,999 – with growth focused in units with rents between $1,500 and $1,999 (see Figure 2.9).

Figure 2.9: Housing Units by Rental Rates in Baltimore, 2018 - 2023



Source: U.S. Census Bureau ACS 5-Year estimates (2023)

Homeownership Market

On the homeownership side, median home value for owner-occupied homes was $241,900 in 2023 – an increase of 55 percent since 2018, when the median value of those units was $156,400. In 2023, 21 percent of owner-occupied units in Baltimore were less than $150,000, an 11 percent decrease since 2022 (see Figure 2.10).

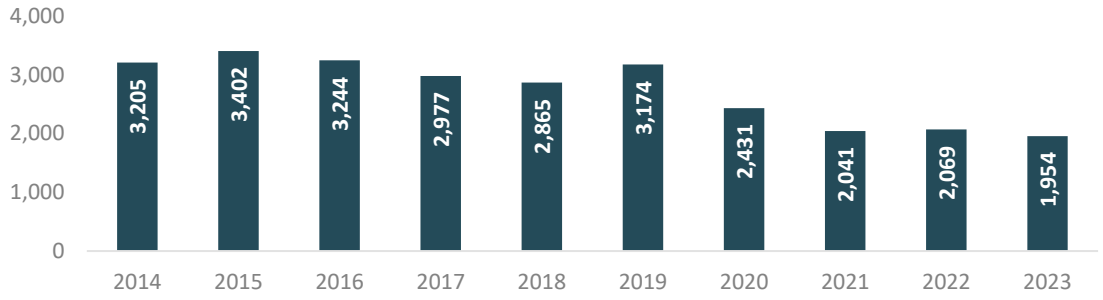
Figure 2.10: Median Value of Owner-Occupied Units in Baltimore, 2018 - 2023

Owner-occupied	2018	2019	2020	2021	2022	2023
Median Value	**$156,400**	**$160,100**	**$167,300**	**$175,300**	**$202,900**	**$241,900**
Less than $50,000	7%	7%	7%	7%	6%	5%
$50,000 to $99,999	19%	18%	16%	15%	11%	8%
$100,000 to $149,999	21%	21%	19%	18%	15%	8%
$150,000 to $199,999	17%	18%	17%	18%	17%	14%
$200,000 to $299,999	18%	18%	20%	21%	24%	32%
$300,000 to $499,999	12%	12%	13%	15%	18%	24%
$500,000 to $999,999	5%	5%	6%	6%	7%	7%
$1,000,000 or more	1%	1%	1%	1%	1%	2%

Source: U.S. Census Bureau ACS 5-Year estimates (2023)

A comparison of inventory of for-sale homes listed on the market in 2023 shows a monthly average of available for-sale properties that is 34 percent lower than the 2019 average of 3,174 properties (see Figure 2.11). Generally, this follows national trends in for-sale inventory which have trended towards historical lows as mortgage interest rates have remained relatively high.

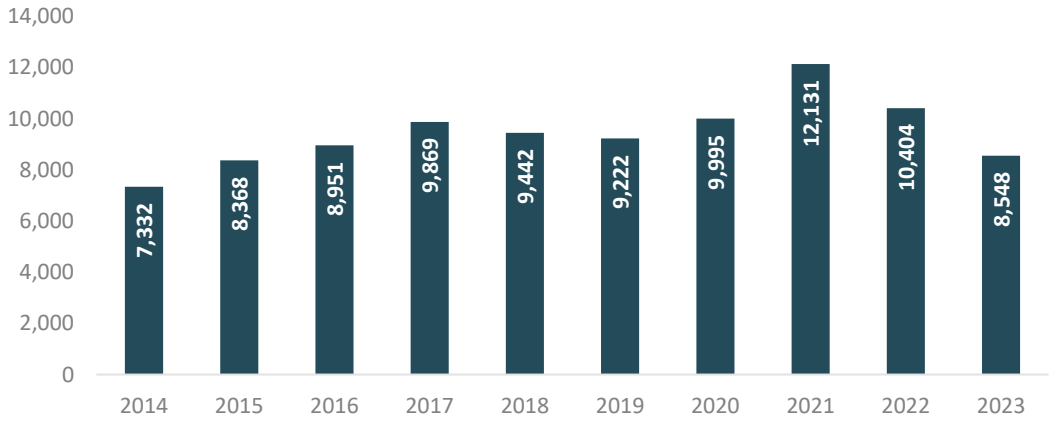
Figure 2.11: Average Monthly For-Sale Inventory in Baltimore, 2014 - 2023



Source: Redfin (2024)

The dip in inventory for sale impacts the number of homes that are sold, and as available inventory drops, the price of for sale homes increase. Sales steadily increased until 2017, until leveling out. Like other housing markets, Baltimore experienced a peak in sales activity in 2021 during the COVID-19 pandemic, as prices fluctuated on homes in urban markets and mortgage interest rates hit historical lows. Since then, the number of sales has decreased in 2022 and 2023 – a response to both higher interest rates and increased for-sale prices due to limited inventory (see Figure 2.12).

Figure 2.12: Amount of Home Sales in Baltimore, 2014 - 2023

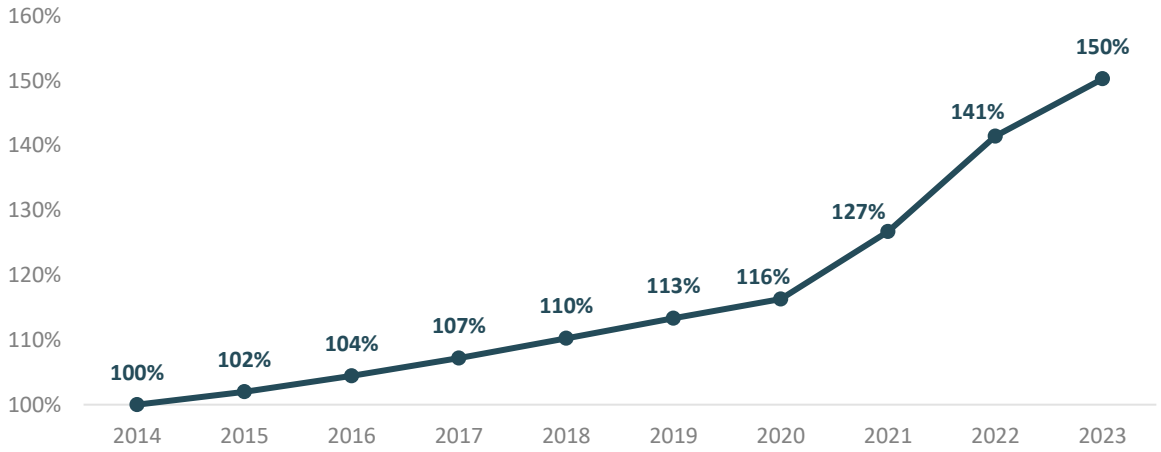


Source: Redfin (2024)

The Home Price Index for Baltimore shows that single-family homes prices have increased by 50 percent since 2014. The median sale price in Baltimore has been trending upward for seven years, from 2015 to

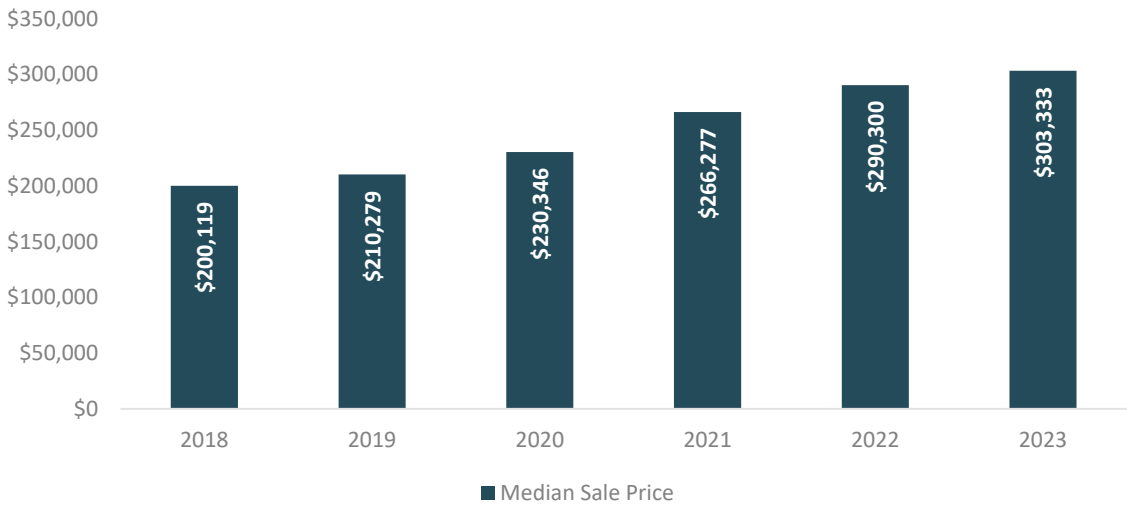
2023. Following the national trend during this period, the combination of limited supply and low interest rates during the peak of the pandemic had a likely impact on the increase of home prices during this period – an economic boost for Baltimore homeowners, and a significant hurdle for those seeking to purchase a home in Baltimore during this period.

Figure 2.13: All-Transactions House Price Index for Baltimore County, 2014 - 2023



Source: U.S. Federal Housing Finance Agency, FRED (2024)

Figure 2.14: Median Sale Price in Baltimore, 2018 - 2023[15]



Source: Redfin (2024)

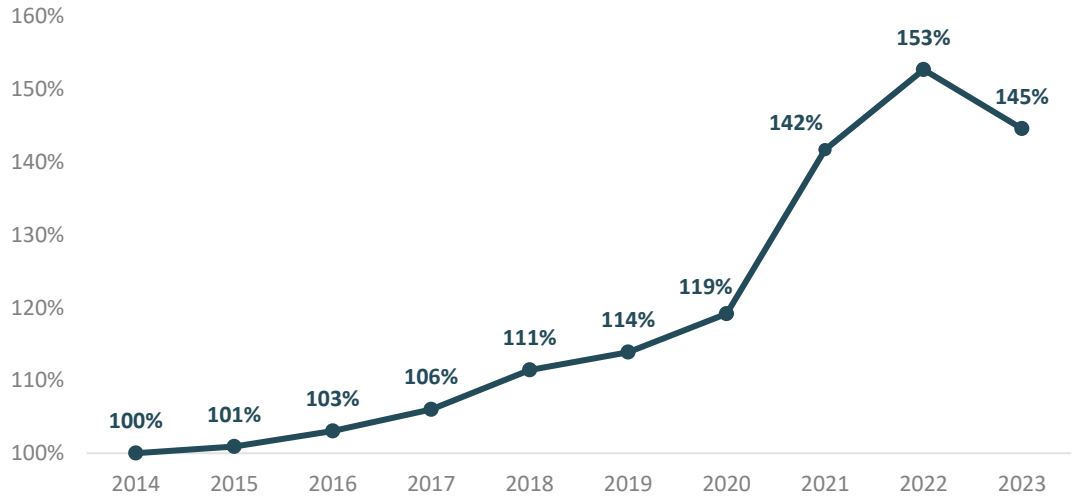
[15] Analysis includes the average of the monthly median sale price of single-family residences in Baltimore over the six-year study period and excludes property types such as condos and townhouses.

2.3 Broader Economic Factors

In addition to supply and demand dynamics, the cost of housing in a local market is a function of several other broader economic factors – including interest rates, construction costs and permitting.

Construction costs affect the number and price of housing units going online within the Baltimore market. The price index for single-family residential construction peaked in 2022, reaching more than 66 percent more costs than in 2014. After the peak in 2022, the index has seen a decline in 2023, reducing eight percentage points (see Figure 2.15).[16] Generally, higher costs in housing construction are passed on to renters in the form of higher rents.

Figure 2.15: CPI for Single-Family Residential Construction, U.S. Annual Average, 2014 - 2023

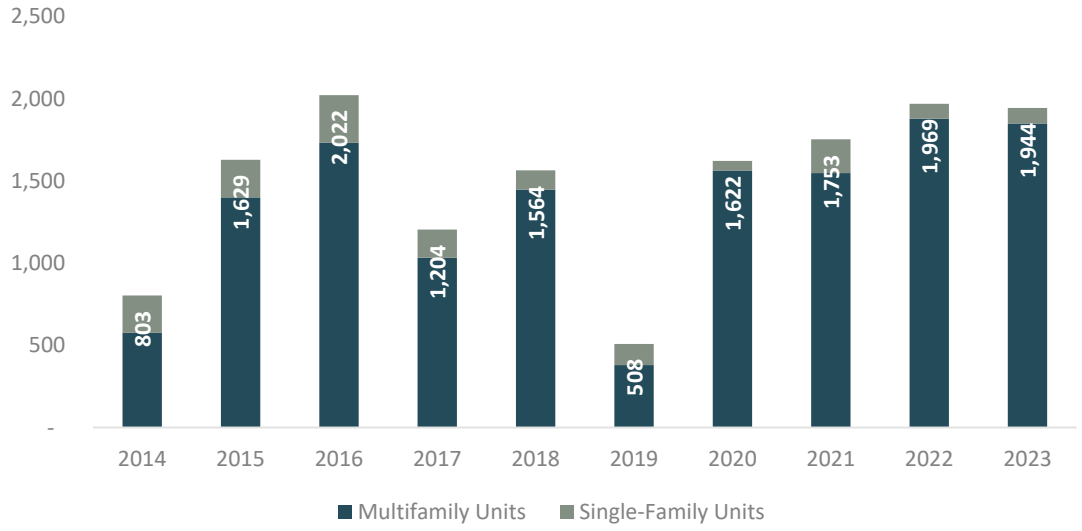


Source: U.S. Bureau of Labor Statistics, FRED (2024)

Similarly, slower residential permitting can lead to increases in development costs for both single- and multifamily construction. In 2023, Baltimore issued 1,849 permits for multifamily units and 95 single-family units in 2023. Generally, Baltimore's residential permits have remained stable after a low issuance count in 2019, with continued pipeline growth for multifamily units (see Figure 2.16).

[16] "Producer Price Index by Commodity: Inputs to Industries: Net Inputs to Single Family Residential Construction, Services" Federal Reserve Bank of St. Louis. 13 August 2024: Retrieved from https://fred.stlouisfed.org/series/WPUIP2311102

Figure 2.16: Residential Building Permits for Baltimore, Multifamily and Single-Family Units, 2014 - 2023



Source: Baltimore Metropolitan Council (2024)

Interest rates also play a significant role in the cost of both rental and owner-occupied housing. The 30-year fixed rate mortgage average in the US has reached 6.8 percent in 2023 – the highest it has been since 2001.[17] High mortgage rates typically reduce home prices by reducing demand; however, this has not been the trend in this cycle, which has seen an increase in home prices as well due to the historic low in for-sale inventory. The high interest rates and high prices make housing less affordable – driving up monthly costs for those homeowners paying a mortgage at higher rates.[18] Similarly, higher interest rates drive up the cost of debt-financed construction in the multifamily sector – pushing up rents on newly constructed market-rate units, while making the construction of new affordable housing developments less financially feasible.

2.4 HABC's Role in Baltimore's Affordable Housing Landscape

Considering the factors above, Baltimore – like many other cities across the country – faces a growing affordability crisis within its housing market. This is especially true for those households on the lower end of the income bracket. As of 2023, 51 percent of rental units in Baltimore were affordable to households making $50,000 or less, while only 20 percent of rental units in Baltimore were affordable to households making $30,000 or less.[19] At the same time, more than 50 percent of renters in Baltimore are cost burdened.[20] Knowing this, HABC plays a critical role in providing Baltimore residents with deeply

[17] "30-Year Fixed Rate Mortgage Average in the United States (Freddie Mac)" Federal Reserve Bank of St. Louis. 24 July 2024: Retrieved from https://fred.stlouisfed.org/series/https://fred.stlouisfed.org/series/MORTGAGE30US
[18] Bachaud, Nicole. 2022. "Housing Affordability Hits 15-Year Low as Prices, Mortgage Rates Rise" Zillow Research. Retrieved from URL: https://www.zillow.com/research/may-2022-market-report-31157/41
[19] Table B19001 and Table B25063, American Community Survey 2022 5-Year Sample. Affordable rent is considered 30% of household income.
[20] Housing cost burden is defined as paying 30 percent or more of monthly take-home pay on housing payments, including rents or mortgage payments.

affordable housing options across the city – supporting households and strengthening local communities. Comparing HABC's public housing portfolio against Baltimore's rental housing market, HABC's public housing units represent approximately 30 percent of Baltimore's rental housing units available for less than $500.

Figure 2.17: Housing Cost Burden, 2018-2023

	2018	2019	2020	2021	2022	2023
Homeowners With a Mortgage						
Less than 30%	66%	69%	69%	69%	69%	70%
30% or more	34%	31%	31%	31%	31%	31%
Homeowners Without a Mortgage						
Less than 30%	81%	81%	82%	82%	81%	78%
30% or more	19%	19%	18%	18%	19%	24%
Renters						
Less than 30%	48%	49%	50%	48%	48%	48%
30% or more	52%	51%	50%	52%	52%	59%

Source: U.S. Census ACS 5-Year Estimates

3 HABC's Work in Baltimore

To help Baltimore residents meet their affordable housing needs, HABC offers various programs and services including its Public Housing program, project- and tenant-based Housing Choice Voucher programs, and a variety of resident services programs. HABC's Office of Resident Services further enhances quality of life through their resident services, which are sometimes in partnership with local, state, and national organizations. These services aim to promote economic growth and self-sufficiency, while providing safe and quality affordable housing in the city. Further, HABC's on-going initiatives continue to expand benefits to Baltimore households and communities, beyond those it has already impacted. HABC's housing programs – as discussed in the following sections of the report – generate significant economic and fiscal impacts within Baltimore and Maryland.[21]

3.1 Public Housing

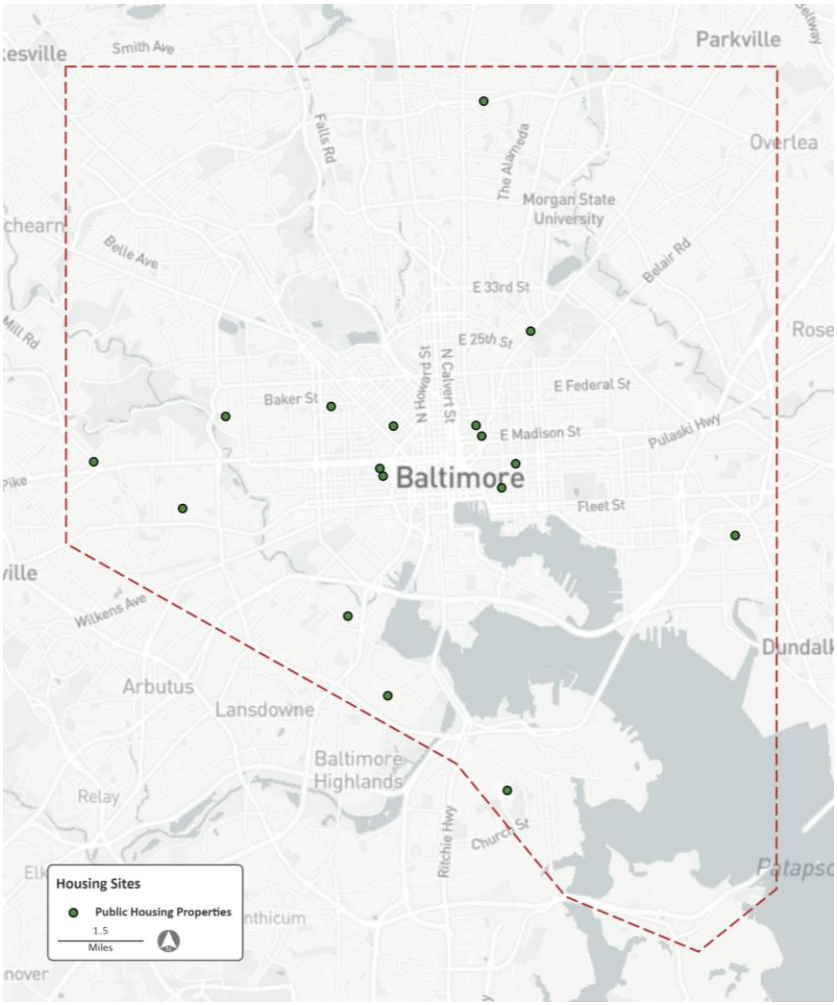
HABC's Public Housing program provides safe, decent and affordable housing to low-income families and individuals. HABC owns and manages approximately 6,000 public housing units across Baltimore. HABC provides a variety of housing options for public housing residents, including low-rise walk-up buildings, and scattered sites, most of which are single-family homes. Rental rates for public housing are based on residents' monthly income and other expenses, such as childcare. The rate is estimated at 30 percent of the resident's monthly adjusted income.

HABC's public housing program serves 11,100 participants, of which 98 percent are Black/African American, two percent White, and the rest are Native Hawaiian/Other Pacific Islander, American Indian/Alaska Native, or Asian. The participants' age groups are distributed as 47 percent adults, 43 percent preschool and school age, and 10 percent seniors. Twenty-four percent of participants have a disability. The average gross annual income is $18,530.

Currently, 40 percent of families have been in a public housing unit for less than five years, 40 percent have stayed between six years and 20 years. The last 20 percent have remained for more than 21 years.

[21] All data points presented in this section, and received from HABC are as of December 31, 2023.

Figure 3.1: Public Housing Sites in Baltimore



Source: ArcGIS Pro, HABC

3.2 Housing Choice Voucher Program (HCVP)

HABC provides subsidized housing units through the Housing Choice Voucher Program (HCVP), which is a rental assistance initiative funded by the federal government and managed locally. It supports low-income families, the elderly, and individuals with disabilities in securing safe and decent housing in the private market. Voucher recipients can select any type of housing that meets their family's needs, provided it complies with the program's requirements.

HABC's HCVP program serves 32,100 participants distributed in 14,400 households. Thirty percent of participants have a disability. The participants' age groups are distributed as 50 percent adults, 34 percent school age, and 16 percent seniors. The average gross annual income is $17,430. The participants of the HCVP program are 96 percent Black/African American, three percent White, and one percent Native Hawaiian/Other Pacific Islander, American Indian/Alaska Native, or Asian. Hispanic or Latino participants represent one percent of the total participant population.

Tenant-Based Voucher Program

The Section 8 tenant-based voucher program allows residents to choose from any qualifying apartment and transfer the voucher to a new apartment when moving. HABC's Tenant-Based Voucher Program, administered by its Housing Choice Voucher Program (HCVP), helps very low-income families to rent decent and affordable homes in the private market.

- Very low-income families are those with incomes below 50 percent of area median income (AMI).
- Tenants residing in voucher units pay 30 percent of their income for rent and utilities.
- Housing subsidies are paid directly to the landlord on the participants' behalf.

Project-Based Voucher Program

Unlike tenant-based vouchers, the Section 8 project-based vouchers are not transferable, and the rental assistance is tied to specific apartments. HABC's Project-Based Voucher program subsidizes privately owned units throughout Baltimore. Participants residing in project-based units pay 30 percent of their income for rent and utilities. The balance of their housing costs is paid by the program. Participants receive assistance as long as they reside in the unit and remain eligible for the program.

Special Voucher Programs

In addition to tenant-based and project-based vouchers, HABC manages several additional housing voucher programs.

Family Unification Program (FUP) – Special HUD Funding

In FY2021, the Housing Authority of Baltimore City (HABC) received 74 additional Family Unification Program (FUP) vouchers, bringing the total to 174. These vouchers, funded by HUD, provide rental assistance to families at risk of losing custody of their children due to inadequate housing and to young adults aging out of foster care.

Veterans Affairs Supportive Housing (VASH) – Special HUD Funding

Since FY2018, HABC has been awarded 60 Veterans Affairs Supportive Housing (VASH) vouchers through HUD to help homeless veterans and their immediate families secure housing. These veterans are referred to HABC by the local VA Medical Center, which also offers intensive case management to support the veterans' transition to stable housing.

Non-Elderly Disabled (NEDS) Category II Vouchers – Special HUD Funding

Through a HUD grant, HABC has received 40 vouchers aimed at providing rental assistance to non-elderly individuals with disabilities who are transitioning from nursing homes or other healthcare institutions to community living.

Mainstream Vouchers – Special HUD Funding

Since 2018, HABC has been awarded 116 Mainstream Vouchers, funded through a competitive HUD process. These vouchers help non-elderly people with disabilities (NEDs) who are either transitioning out of institutional or segregated settings, at risk of institutionalization, homelessness, or at risk of homelessness.

Emergency Housing Vouchers (EHVs) – Special HUD Funding

In FY2021, HABC was awarded 278 Emergency Housing Vouchers (EHVs), with an additional 10 awarded in FY2024, bringing the total to 288. These vouchers assist individuals and families who are homeless, at risk of homelessness, fleeing domestic violence, or experiencing housing instability.

The Baltimore Regional Housing Program (Thompson)/Mobility Vouchers

The Baltimore Regional Housing Program – run by the Baltimore Regional Housing Partnership – was established through the Thompson v. HUD lawsuit. This program offers Housing Choice Vouchers to eligible families, allowing them to rent homes in opportunity areas throughout the Baltimore region, including Anne Arundel, Baltimore, Carroll, Harford, and Howard counties, as well as Baltimore City.

Since 2003, over 3,000 families have benefited from this program, receiving vouchers and mobility counseling to ease their transition into opportunity-rich communities. Opportunity areas are characterized by high-quality schools, low crime rates, low poverty, and access to jobs. The program's counselors and outreach team support families by connecting them with essential resources such as education, healthcare, transportation, and housing options.

RAD Housing Choice Mobility Vouchers

RAD Housing Choice Mobility Vouchers offer tenants at RAD properties the chance to request tenant-based vouchers after one or two years of residency. These vouchers enable tenants to move to the private rental market while continuing to receive rental assistance, offering them greater flexibility in choosing where to live.

Set-Aside Vouchers for Families with Disabilities

HABC has allocated 500 Housing Choice Project-Based Vouchers specifically for non-elderly people with disabilities (NEDs) under the Bailey Consent Decree. These vouchers are awarded to property owners and developers who commit to creating project-based units for NEDs, ensuring long-term housing stability for this vulnerable population. Eligible NEDs on the HABC project-based waiting list are prioritized for these vouchers.

Bailey Long-Term Affordable Housing Units

Under the Bailey Long-Term Affordable Project-Based Voucher (Bailey LTA PBV) Program, HABC uses project-based vouchers to create long-term affordable housing for non-elderly people with disabilities in compliance with the Bailey Consent Decree.

3.3 Rental Assistance Demonstration (RAD) Program

HABC has converted several of its public housing sites under the U.S. Department of Housing & Urban Development's Rental Assistance Demonstration (RAD) program since 2015. One advantage of the RAD program is that it enables significant renovations of older buildings through private investment, helping to maintain affordable housing and enhance the quality of life for low-income residents.[22]

[22] RAD conversions themselves have a considerable economic impact. Given their funding mechanism, RAD-associated dollars – and their consequent impact – are included within the modeled dollars featured in the HABC Operations and Housing Assistance Payments section.

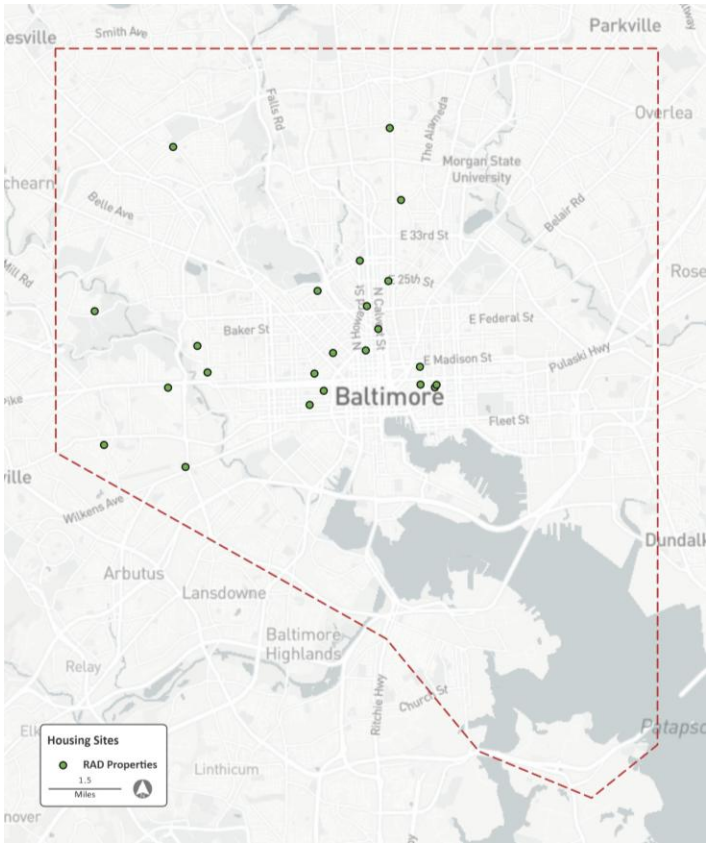
Since 2017, HABC has completed the conversion of 28 sites into RAD, which covers nearly 4,046 units. Currently, there are 10 more sites planned for RAD conversion, covering 1,247 units (See Figure 3.2 for completed and planned RAD conversions).

Figure 3.2: RAD Sites Completed and Planned in Baltimore

Year Completed	RAD Units Completed	Development Cost ($M)
2017	1,873	$306.82
2018	683	$154.35
2019	350	$67.05
2020	578	$133.22
2021	297	$88.74
2022	57	$20.02
2023	82	$94.28
2024	126	$84.84
Pipeline	1,247	TBD
Total	**5,293**	**$949.30**

Source: HABC (2024)

Figure 3.3: RAD Sites in Baltimore



Source: ArcGIS Pro, HABC, ESI (2024)

3.4 Resident Services Program

HABC, through its Office of Resident Services (ORS), has offered a variety of programs and services from 2018 to 2023 that prioritize educational development, senior support, youth development, personal empowerment, and economic and social mobility attained through family self-sufficiency, and affordable homeownership. This section provides an overview of these programs and services.

SERVICES TO RESIDENTS

- From 2018 to 2023, HABC's **Our House Early Head Start Program** provided educational development for children six weeks to 36 months old to families residing in the Cherry Hill Community. Throughout these six years, the program served approximately 100 families.

SENIOR SUPPORT SERVICES

- The **Congregate Housing Services Program** provided daily living services to support the continuation of independent living for people 62 years and older. From FY2018 to FY 2023, HABC helped serve approximately 150 senior residents through the program.

YOUTH PROGRAMS

- The **Rising Star Scholarship Program**, a partnership between Resident Services, Inc. and the Resident Advisory Board, provides need- and merit-based scholarships to students who are current residents of HABC's public housing units or housing choice voucher programs and have been accepted to accredited higher learning institutions. From 2018 to 2023, scholarships were provided to 29 students, totaling $148,000.
- **Bedtime in a Box** provides Bedtime Readiness Boxes for children aged zero to six years, that support early development in children of low-income households. Between 2021 and 2024, the program served more than 1,400 residents.
- HABC has partnered with the Dolly Parton Imagination Library to provide custom books to kids under six years. From 2021 to 2024, more than 500 children living in HABC residences received books through this program.
- The **Family Engagement Motivates Everyone (F.E.M.E.) program** served 550 public housing and housing choice voucher program residents and other Baltimore residents in 2023 and 2024, providing family and community services in partnership with local organizations.
- The **Youth Leadership Conference** held in 2022 and 2023 provided financial literacy coaching, public speaking coaching and sexual education courses to 25 residents.

- **Grants Received:** FY2018 to FY2024, ORS received more than 134,000 state and local grants that helped serve another 900-plus youth residents through various programs.

PERSONAL EMPOWERMENT

- The **Thome Aging Well Program** aims to avoid premature institutionalization and allow residents to age-in-place in a community setting. Services include a one-time decluttering and/or cleaning service as well as case management services. Between 2022 and 2024, the program served 156 seniors 55 years and older, and younger people with disabilities.
- The **RSI ROSS Service Coordinator and HABC Ross Coordinator programs** link residents to resources, services, and programs to obtain and maintain self-sufficiency and personal empowerment. From 2016 to 2024, the program served over 7,300 low-income households.

FAMILY SELF-SUFFICIENCY PROGRAM

- The **Family Self-Sufficiency** program helps families establish and achieve economic independence and self-sufficiency. Residents receive training and services and gain access to necessary public and private resources to help establish career goals, receive training, and secure employment. From 2018 to 2023, more than 1,800 residents were served.

HOMEOWNERSHIP PROGRAM

- In 2023, HABC launched its **Homeowner Readiness Training program** that helps residents eliminate obstacles to homeownership including mortgage assistance, and debt reduction assistance. The program currently has 150 families enrolled, with an average household income of $28,700. Ninety-eight percent of the participating households are predominantly Black or African American, with 93 percent of the households headed by women. The program further holds 49 residents who are interested in homeownership across HABC's scattered sites homeownership program. These 49 households are predominantly Black or African American, with 96 percent of the households headed by women. In addition, HABC has helped 86 homeowners with more than $834,000 in mortgage assistance through their housing choice voucher homeownership program (HCVHP), the impact of which will is detailed in Section 6 of this report.

3.5 Priority Initiatives

HABC is leading several on-going priority Initiatives aimed at fostering community development, enhancing housing options, and expanding economic opportunities for residents. These efforts include large-scale redevelopment projects, expanding housing choice, advancing economic self-sufficiency, and increasing access to homeownership. Collectively, these initiatives reflect HABC's on-going commitment to improving the quality of life for its residents and the broader Baltimore community.

REDEVELOPMENT EFFORTS

PSO TRANSFORMATION PLAN

HABC and the City of Baltimore, were awarded a $30 million Choice Neighborhoods Implementation grant from the U.S. HUD in 2018 and another $10 million grant in 2024 to implement the different phases of the Perkins Somerset Oldtown Transformation (PSO) Plan. The Plan includes demolishing 629 obsolete public housing units and replacing them with 1,353 mixed-income housing units. The PSO Plan also includes the construction of a new City Springs School, creating of North and South-Central Parks, the renovation of the Chick Webb recreation center and a new grocery store. Supportive services such as counseling, financial management, education and job training are available to PSO residents. Further, Oldtown, a site of a historic pedestrian mall, will be renovated into approximately 298 new mixed-income residential rental units, approximately 100,000 square feet of new office/retail space, a 120-key hotel and 210-space parking garage. The PSO Plan, in aggregate, is expected to generate over $1 billion in investment to the surrounding communities in Baltimore.

TRANSFORM POE

Transform Poe also received a $1.3 million Choice Neighborhoods Planning grant from HUD. The two-year community planning process resulted in a mixed-income housing plan that includes the demolition and replacement of the 288 public housing units on the 7-acre site at Poe Homes and the construction of 578 new mixed-income units. HABC received $950,000 to complete action activities, which consist of some capital improvement projects in areas near Poe Homes. These include facade and aging-in-place improvements for existing homeowners, improved vendor stalls at Hollins Market, grocery store equipment, outdoor lighting improvements and a new splash pad at the local neighborhood pool.

O'DONNELL HEIGHTS/ KEYS POINTE

Keys Pointe is a new four-phased revitalization plan for the area for the former O'Donnell Heights Public Housing development. O'Donnell Heights, constructed in 1942, originally included 900 public housing units. Of those, 670 have been demolished and 230 units remain. The plan for the community includes approximately 925 residential rental and possible homeownership units, infrastructure improvements and a new park as well as other green and open spaces. Phases 1A and 1B have already been completed and consist of 144 rental units.

BALTIMORE AFFORDABLE HOUSING DEVELOPMENT (BAHD)

BAHD – an instrumentality of HABC – was created to undertake development projects and expand housing options to expand the PHA's reach to more families in opportunity areas. BAHD has been a co-developer in each of HABC's RAD conversions resulting in $23.8 million in developer fees. BAHD has also acquired general and limited partnership interests in five development projects (425 units total) that have ended their tax credit compliance period and is co-developer in five other projects (437 units) that are under construction. The goal is for BAHD to be a sole developer on projects and to increase its capacity to acquire assets and maintain long-term affordability for the units within its portfolio.

EXPANDING HOUSING CHOICE

HOUSING CHOICE VOUCHERS

HCVP helps participants find suitable housing in the private market. To address challenges facing applicants, HABC newly implemented policies extended the search period from 60 to 90 days and introduced new leasing incentives in 2023 to expand landlord participation. The incentive would benefit new landlords and newly constructed, accessible, or rehabilitated units. Through this initiative, HCVP has gained 135 new landlord participants and 133 units in opportunity areas.

ECONOMIC MOBILITY

GET READY FOR OPPORTUNITIES TO WORK (GROW)

HABC is launching a new program - GROW - in 2025 aimed at increasing household income and employment and supporting families in achieving economic mobility. Residents who are unemployed and able to work are required to work at least 20 hours per week or enroll in an education or job training course. The ORS will provide GROW participants with career counseling, service navigation and other assistance to support residents in this program.

4 The Economic Impact of HABC's Operations and Housing Assistance Payments

HABC's operations involve managing and maintaining its property portfolio, which includes the regular maintenance and management of its properties, providing services to its residents, and administering its voucher programs. HABC's operational spending directly benefits the Baltimore economy and further generates indirect and induced economic impacts within the city and the state economies. This section details HABC's operations and its associated economic impacts within Baltimore and Maryland.

4.1 Operating Budget

HABC's overall operating budget has increased by over 29 percent, from $363 million in 2018 to $461 million in 2023 (see Figure 4.1). HABC also provided its total employment and total salaries paid from 2018 to 2023, which was converted into employee compensation using IMPLAN.[23]

Figure 4.1: HABC's Operating Budget, 2018-2023

Expenditure	Modeled	2018	2019	2020	2021	2022	2023
Budgeted HAP ($M)		$208.7	$227.3	$233.9	$229.8	$258.3	$261.1
Housing Mortgage Assistance ($M)	No	($0.8)	($0.8)	($0.8)	($0.8)	($0.8)	($0.8)
Net HAP ($M)	Yes	$207.9	$226.5	$233.1	$228.9	$257.5	$260.3
Share of Total Budget		57%	60%	61%	60%	62%	56%
Operating Expenses ($M)	Yes	$157.9	$156.0	$154.6	$154.3	$163.9	$203.5
Debt/ Transfer Payments ($M)[24]	No	($3.0)	($3.0)	($3.0)	($3.0)	($3.0)	($3.0)
Total Modeled		**$362.8**	**$379.5**	**$384.7**	**$380.2**	**$418.4**	**$460.8**
Employment	Yes	678	668	669	637	642	657
Employee Compensation ($M)	Yes	$47.1	$45.7	$44.0	$42.7	$44.3	$45.1

Source: HABC (2024), Econsult Solutions (2024)

Housing Assistance Payments (HAP)

HABC's housing assistance payments are direct payments to the owners of units occupied by a Housing Choice Voucher Program (HCVP) participant. HAP – as a contractual direct expense to property management – are considered as a part of its operational budget.[25]

From 2018 to 2023, the average amount of HAP was 59 percent of HABC's total operating budget each year. The payments totaled $260 million in 2023, a 25 percent increase from 2018. HABC had over

[23] All data points presented in this section, and received from HABC are as of December 31, 2023.
[24] HABC provided that the operating budget includes approximately $3 million dollar in debt or other transfer payments. Such transfer payments are usually not modeled under IMPLAN to estimate economic impact since they do not create economic benefits to the immediate region in which these transactions originate.
[25] The HAP dedicated to mortgage assistance is modeled in section 6 as a household income change model and has been removed from the HAP operations discussed here to avoid double counting.

12,500 tenant-based vouchers in use in 2023, an increase from 11,100 in 2018, and over 2,100 project-based vouchers in 2023, an increase from approximately 1,800 in 2018 (see figure 4.2).

Figure 4.2: HABC Housing Vouchers in Use 2018-2023

Year	Tenant Based Vouchers	Project Based Vouchers	HAP ($M)
2018	11,135	1,825	$207.9
2019	11,054	2,015	$226.5
2020	11,637	2,017	$233.1
2021	11,722	2,104	$228.9
2022	11,541	2,155	$257.5
2023	12,512	2,177	$260.3

Source: HABC (2024)

4.2 Annual Economic Impact of HABC's Operations

HABC's general operating expenses and HAP are modeled separately to estimate their individual impacts on the city and state economies. General operating expenses generated $318 million in total economic output, supporting 1,040 full-time jobs and $76 million in employee compensation in 2023, a 28 percent increase from 2018. HAP generated $271 million in aggregate economic output, supporting 480 full-time jobs and $16 million in employee compensation in 2023.

The aggregate economic impact from HABC's operating expenses and housing assistance payments generated $589 million in 2023 within Baltimore (see Figure 4.3 below).

Figure 4.3: Estimated Annual Economic Impact in Baltimore from HABC's Operations and HAP, 2018-2023[26]

	Economic Impact in Baltimore					
Impact Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Total Economic Impact	**$465.6**	**$481.7**	**$486.2**	**$481.1**	**$525.8**	**$588.9**
Operating Expenses						
Direct Impact ($M)	$157.9	$155.9	$154.6	$154.3	$163.9	$203.5
Indirect and Induced Impacts ($M)	$91.0	$89.7	$88.7	$88.2	$93.5	$114.1
Total Impact ($M)	**$248.9**	**$245.6**	**$243.3**	**$242.5**	**$257.4**	**$317.6**
Total Employment (FTE)	**980**	**960**	**960**	**920**	**950**	**1,040**
Direct Employment (FTE)	620	610	610	580	590	600
Indirect and Induced Employment (FTE)	360	350	350	340	360	440
Employee Compensation ($M)	$71.5	$69.7	$67.8	$66.3	$69.3	$75.5
Household Assistance Payments (HAP)						
Direct HAP	$207.9	$226.5	$233.1	$228.9	$257.5	$260.3
Indirect and Induced Impact ($M)	$8.8	$9.6	$9.9	$9.7	$10.9	$11.0
Total Impact ($M)	**$216.7**	**$236.1**	**$242.9**	**$238.6**	**$268.4**	**$271.3**
Total Employment (FTE)	**380**	**420**	**430**	**430**	**470**	**480**
Direct Employment (FTE)	350	380	390	390	430	440
Indirect and Induced Employment (FTE)	30	40	40	40	40	40
Employee Compensation ($M)	$12.6	$13.7	$14.1	$13.9	$15.6	$15.8

Source: IMPLAN (2022), Econsult Solutions (2024)

The aggregate economic impact from HABC's operating expenses and housing assistance payments generated $662 million in 2023 within Maryland (see Figure 4.4 below). General operating expenses generated $379 million in total economic output, supporting 1,310 full-time jobs and $91 million in employee compensation in 2023. HAP generated $284 million in aggregate economic output, supporting 540 full-time jobs and $20 million in employee compensation in 2023.

[26] Within the model, HABC's operational expenses were modeled under IMPLAN Industry Code 447 (Other Real Estate), and HAP was modeled under IMPLAN Industry Code 448 (Tenant-Occupied Housing).

Figure 4.4: Estimated Annual Economic Impact in Maryland from HABC's Operations and HAP, 2018-2023[27]

	Economic Impact in Baltimore					
Impact Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Total Economic Impact	**$523.1**	**$539.4**	**$543.8**	**$538.4**	**$587.3**	**$662.1**
Operating Expenses						
Direct Impact ($M)	$157.9	$155.9	$154.6	$154.3	$163.9	$203.5
Indirect and Induced Impacts ($M)	$138.7	$136.8	$135.3	$134.8	$142.9	$175.1
Total Impact ($M)	**$296.6**	**$292.7**	**$289.9**	**$289.0**	**$306.8**	**$378.6**
Total Employment (FTE)	**1,180**	**1,160**	**1,160**	**1,130**	**1,170**	**1,310**
Direct Employment (FTE)	620	610	610	580	590	600
Indirect and Induced Employment (FTE)	560	550	550	550	580	710
Employee Compensation ($M)	$83.5	$81.6	$79.6	$78.1	$81.8	$90.9
Household Assistance Payments (HAP)						
Direct HAP	$207.9	$226.5	$233.1	$228.9	$257.5	$260.3
Indirect and Induced Impact ($M)	$18.6	$20.2	$20.8	$20.5	$23.0	$23.3
Total Impact ($M)	**$226.5**	**$246.7**	**$253.9**	**$249.4**	**$280.5**	**$283.5**
Total Employment (FTE)	**430**	**470**	**480**	**480**	**530**	**540**
Direct Employment (FTE)	350	380	390	390	430	440
Indirect and Induced Employment (FTE)	80	90	90	90	100	100
Employee Compensation ($M)	$15.7	$17.1	$17.6	$17.3	$19.5	$19.7

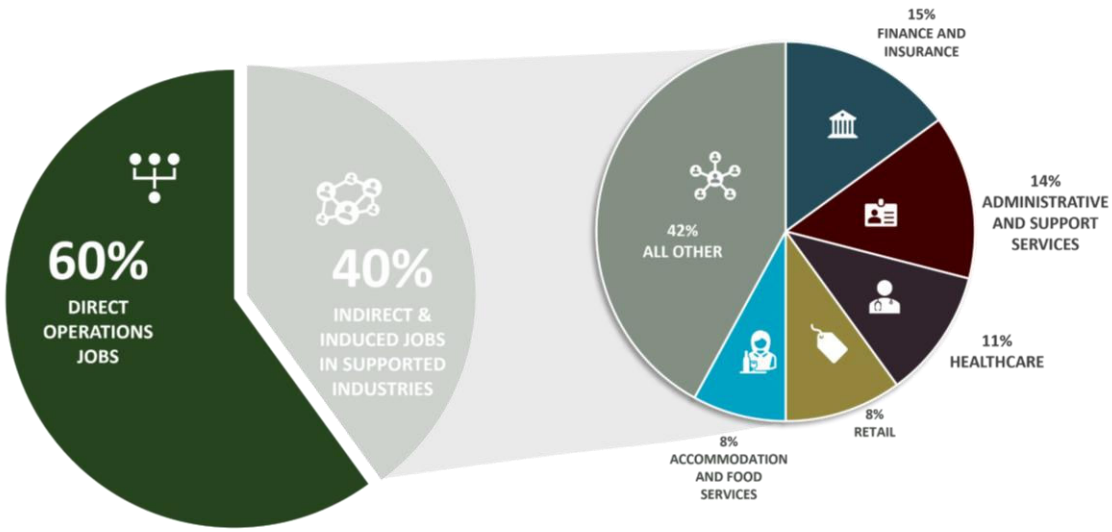
Source: IMPLAN (2022), Econsult Solutions (2024)

4.3 Industry Distribution of Employment from HABC's Operations

HABC's operations support the creation of direct, indirect, and induced full-time employment within the city and state economies. Approximately 40 percent of the employment supported by HABC's annual operating expenses and housing assistance payments are in industries other than real estate. Industries benefiting from the indirect and induced impacts of HABC's operations and HAP include finance, retail, health care, administrative services, and accommodation and food services (see Figure 4.5).

[27] Economic impacts at the state level are inclusive of the economic impacts at the city level.

Figure 4.5: Industry Distribution of Employment in Maryland, from HABC's Operations and Housing Assistance Payments, 2018-2023



Source: IMPAN (2022), Econsult Solutions (2024)

4.4 Tax Revenue Impact from HABC's Operations and HAP

HABC's operations and housing assistance payments support different tax revenues, generating tax revenue to Baltimore and the State of Maryland. Figure 4.6 and Figure 4.7 present the annual tax revenue impact to Baltimore and Maryland, respectively.

Figure 4.6: Estimated Annual Tax Revenue Impact to Baltimore, 2018-2023

	Tax Revenue Impact in Baltimore					
Tax Type	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Income Tax ($M)	$0.84	$1.02	$0.88	$0.90	$0.98	$1.05
Total Tax ($M)	**$0.84**	**$1.02**	**$0.88**	**$0.90**	**$0.98**	**$1.05**

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 4.7: Estimated Annual Tax Revenue Impact to Maryland, 2018-2023

	Tax Revenue Impact in Maryland					
Tax Type	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Income Tax ($M)	$2.01	$2.06	$2.03	$1.94	$1.92	$2.52
Sales Tax ($M)	$4.62	$4.86	$5.03	$5.08	$6.32	$6.52
Business Tax ($M)	$2.15	$2.24	$2.93	$3.92	$7.49	$3.46
Total Tax ($M)	**$8.78**	**$9.16**	**$9.99**	**$10.94**	**$15.73**	**$12.50**

Source: IMPLAN (2022), Econsult Solutions (2024)

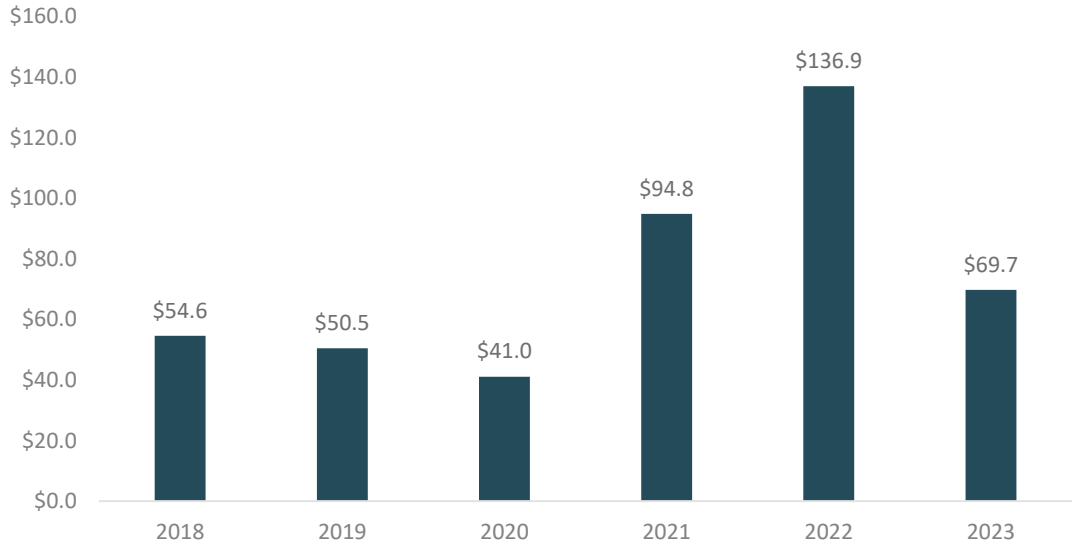
5 The Economic Impact of HABC's Capital Investments

Beyond operational costs and ordinary maintenance costs accounted for in HABC's operating expenses each year, the authority's development arm – Baltimore Affordable Housing Development, Inc. (BAHD) – makes considerable capital investments in acquiring and preserving affordable housing across the city. These investments generate direct, indirect, and induced economic impacts to Baltimore and Maryland economies and support job creation. This section describes HABC's capital investments and associated economic impacts to city and state economies.

5.1 Capital Investments

Between 2018 and 2023, BAHD acquired and developed 1,560 public housing units. Its capital investments have increased from over $54 million in 2018 to approximately $137 million in 2022 and $69 million in 2023 (see Figure 5.1).[28]

Figure 5.1: BAHD Development Costs ($M), 2019-2022



Source: HABC (2024)

5.2 Economic Impact of HABC's Capital Investments

Investments in construction and development generate direct spending at the city level, an important source of employment and wages, and generate tax revenues to the City and State governments. HABC's capital investments through BAHD, over the 6-year period, have created continuous economic

[28] All data points presented in this section, and received from HABC are as of December 31, 2023.

impacts. These investments also generate indirect and induced economic impacts, which support additional jobs and earnings in the city and state.

To estimate economic impact from HABC's capital investments, annual development costs provided by the PHA from 2018 to 2023 were modeled through IMPLAN, for each year. Within Baltimore, capital investments generated over $575 million in aggregate economic impact from 2018 to 2023, increasing. At the state level, HABC's capital investments have generated over $708 million in aggregate economic impact from 2018 to 2023 (see Figure 5.2 and Figure 5.3).

Figure 5.2: Estimated Economic Impact in Baltimore, from Capital Investments, 2018-2023

	Economic Impact in Baltimore					
Impact Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Direct Impact ($M)	$54.6	$50.5	$41.0	$94.8	$136.9	$69.7
Indirect and Induced Impacts ($M)	$15.6	$14.4	$11.7	$27.1	$39.2	$19.9
Total Impact ($M)	**$70.2**	**$64.9**	**$52.8**	**$121.9**	**$176.1**	**$89.6**
Total Employment (FTE)	**216**	**171**	**139**	**320**	**463**	**236**
Direct Employment (FTE)	141	131	106	246	355	181
Indirect and Induced Employment (FTE)	74	40	32	75	108	55
Employee Compensation ($M)	$14.2	$13.2	$10.7	$24.7	$35.7	$18.2

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 5.3: Estimated Economic Impact in Maryland, from Capital Investments, 2018-2023[29]

	Economic Impact in Maryland					
Impact Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Direct Impact ($M)	$54.6	$50.5	$41.0	$94.8	$136.9	$69.7
Indirect and Induced Impacts ($M)	$31.8	$29.4	$23.9	$55.3	$79.9	$40.7
Total Impact ($M)	**$86.4**	**$79.9**	**$65.0**	**$150.1**	**$216.8**	**$110.4**
Total Employment (FTE)	**216**	**199**	**162**	**375**	**541**	**276**
Direct Employment (FTE)	141	131	106	246	355	181
Indirect and Induced Employment (FTE)	74	69	56	129	186	95
Employee Compensation ($M)	$18.4	$17.0	$13.8	$32.0	$46.2	$23.5

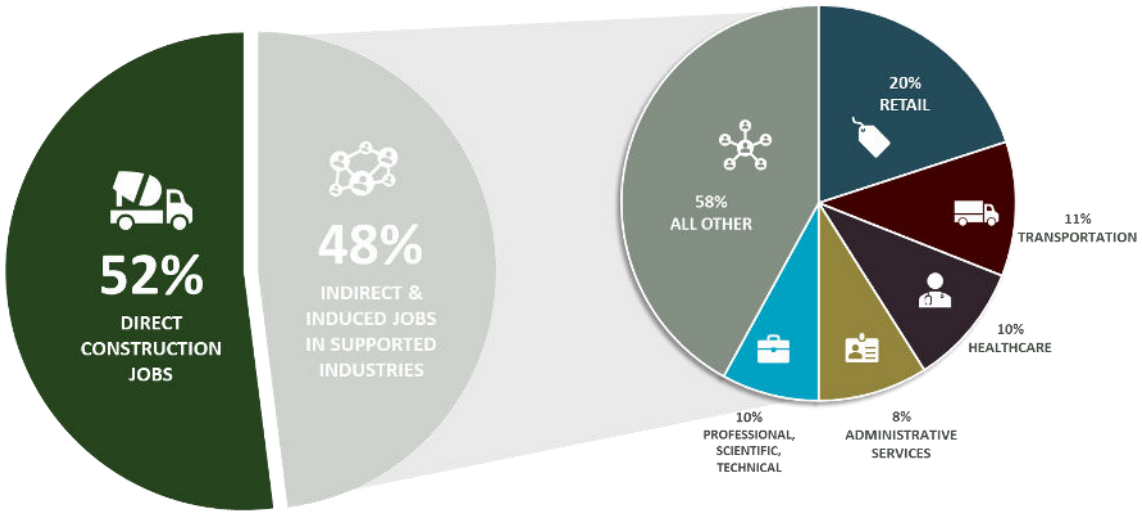
Source: IMPLAN (2022), Econsult Solutions (2024)

[29] Economic impacts at the state level are inclusive of the economic impacts at the city level.

5.3 Industry Distribution of Employment from HABC's Capital Investments

Besides generating direct construction jobs within Baltimore and Maryland, construction and development of affordable housing units generates additional, indirect and induced jobs, within industries such as retail trade, transportation and warehousing, health care, and real estate (see Figure 5.4).

Figure 5.4: Industry Distribution of Employment in Maryland, from Capital Investments, 2018-2023



Source: IMPLAN (2022), Econsult Solutions (2024)

5.4 Tax Revenue Impact of HABC's Capital Investments

Capital investments from HABC's development activity generate annual tax revenues to the state of Maryland. The fiscal impacts include income tax at the city level, and sales and business taxes at the state level. In the four-year period from 2019 to 2022, HABC's capital investments generated an estimated $400,000 in total tax revenues to Baltimore, and $2 million in tax revenues to Maryland from direct, indirect, and induced economic activity (see Figure 5.5 and Figure 5.6).

Figure 5.5: Estimated Annual Tax Revenue Impact to Baltimore, 2018-2023

	Tax Revenue Impact in Baltimore					
Tax Type	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Income Tax ($M)	$0.14	$0.16	$0.11	$0.27	$0.40	$0.21
Total Tax ($M)	**$0.14**	**$0.16**	**$0.11**	**$0.27**	**$0.40**	**$0.21**

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 5.6: Estimated Annual Tax Revenue Impact to Maryland, 2018-2023

Tax Revenue Impact in Maryland (in 2024 Dollars)						
Impact Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Income Tax ($M)	$0.36	$0.35	$0.28	$0.64	$0.86	$0.53
Sales Tax ($M)	$0.50	$0.54	$0.39	$0.92	$1.51	$0.73
Business Tax ($M)	$0.23	$0.25	$0.23	$0.71	$1.79	$0.39
Total Tax	**$1.09**	**$1.14**	**$0.90**	**$2.27**	**$4.15**	**$1.64**

Source: IMPLAN (2022), Econsult Solutions (2024)

6 The Economic Impact of Providing Affordable Housing to Baltimore Residents

HABC's public housing portfolio offers housing units to low-income families with rents that reach approximately 30 percent of the families' monthly adjusted income.[30] These public housing units range from zero to seven-bedroom units. From 2018 to 2023, there were approximately 6,000 public housing units in use annually, with monthly rents varying from zero dollars for some units to over $3,000, assessed based on residents' household incomes.

HABC also assists Baltimore homeowners with housing mortgage through its housing choice voucher homeownership program (HCVHP), scattered sites homeownership program, and through the Baltimore Regional Housing Partnership (BRHP).[31] The scattered sites homeownership program has 49 active participants, as of December 2023. From 2018 to 2023, HCVHP and BRHP had over 650 active participants, with $4.9 million in housing assistance.

With HABC's assistance, renters and homeowners pay below market rents and mortgages and thus save a higher proportion of their monthly income to spend on other needs. Residents' spending generates an economic impact and induces job growth in various sectors, which are captured in an income-change model through IMPLAN. This section describes the economic impact from increased household spending activity within Baltimore and Maryland economies.

6.1 HABC's Low-Income Public Housing and Mortgage Assistance

HABC provided data on affordable rents paid by residents for its public housing units. To estimate the annual household savings for a renter of public housing, we compared the affordable rents provided by HABC to the median rent in Baltimore by unit size.[32] The difference between the median rents and the affordable rents for all public housing units were estimated as the annual household savings for renters. HABC also provided data on direct mortgage assistance to homeowners, averaging $0.83 million from 2018 to 2023, which translates as the amount that homeowners saved in each year during the study period.

Total annual resident household savings are estimated as the sum of estimated savings to renters and mortgage assistance to homeowners, for each year. In 2018, this amounted to $69.5 million and decreased slightly to $68.1 million in 2023 (see Figure 6.1).[33] The decrease in units and slight decrease in household savings during this period coincides with the reduction of HABC's public housing inventory as more developments have entered RAD conversions.[34]

[30] "Public Housing and RAD" Housing Authority of Baltimore City. 8 August 2024. Retrieved from: https://www.habc.org/habc-information/programs-departments/public-housing-and-rad/.
[31] The Baltimore Regional Housing Partnership (BRHP) previously offered a Homeownership Program, but it is no longer accepting new applicants. Although new enrollments have been discontinued since 2013, BRHP continues to support initial participants through payment assistance, counseling, and referrals. https://brhp.org/homeownership/.
[32] Table B25031, U.S. Census ACS 5-Year Estimates, 2018-2022
[33] All data points presented in this section, and received from HABC are as of December 31, 2023.
[34] As noted earlier, the dollars associated with RAD units fall under HABC Operations and Housing Assistance payments.

Figure 6.1: Estimated Annual Residents' Household Savings ($M), 2018-2023

Year	Number of Public Housing Units	Median Market Rent	Affordable Rent Collected	Annual Household Savings to Renters	Annual Mortgage Assistance to Homeowners	Total Annual Resident Household Savings
2018	6,896	$90.95	$22.32	$68.64	$0.82	$69.45
2019	6,421	$87.63	$21.12	$66.52	$0.85	$67.37
2020	6,009	$83.62	$19.85	$63.77	$0.85	$64.62
2021	5,886	$86.13	$19.96	$66.17	$0.83	$67.00
2022	5,785	$91.15	$20.08	$71.07	$0.82	$71.90
2023	5,597	$88.06	$20.73	$67.33	$0.81	$68.14

Source: HABC (2024), U.S. Census ACS 5-Year Estimates, Econsult Solutions (2024)

6.2 Economic Impact from Increased Household Savings

The aggregate household savings are considered the direct economic impact on the community. The change in household incomes also generates an induced economic impact within the city and state economies. The aggregate economic impact (direct impact plus induced impact) amounted to $123.5 million in 2023, supporting 280 full-time jobs and $17.6 million in employee compensation within Baltimore (see Figure 6.2).

The aggregate impact within Maryland amounted to $131.7 million in 2023, supporting 320 full-time jobs and $19.9 million in employee compensation (see Figure 6.3).

Figure 6.2: Estimated Annual Economic Impact in Baltimore from HABC's Affordable Housing Program, 2018-2023

	Economic Impact in Baltimore					
Impact Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Direct Impact ($M)	$69.5	$67.4	$64.6	$67.0	$71.9	$68.1
Induced Impact ($M)	$56.4	$54.7	$52.5	$54.4	$58.4	$55.4
Total Impact ($M)	**$125.9**	**$122.1**	**$117.1**	**$121.4**	**$130.3**	**$123.5**
Total Employment (FTE)	**280**	**270**	**260**	**270**	**290**	**280**
Direct Employment (FTE)	0	0	0	0	0	0
Indirect and Induced Employment (FTE)	280	270	260	270	290	280
Employee Compensation ($M)	$18.0	$17.4	$16.7	$17.4	$18.6	$17.6

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 6.3: Estimated Annual Economic Impact in Maryland from HABC's Affordable Housing Program, 2018-2023[35]

	Economic Impact in Maryland					
Impact Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Direct Impact ($M)	$69.5	$67.4	$64.6	$67.0	$71.9	$68.1
Induced Impact ($M)	$64.8	$62.9	$60.3	$62.5	$67.1	$63.6
Total Impact ($M)	**$134.2**	**$130.2**	**$124.9**	**$129.5**	**$139.0**	**$131.7**
Total Employment (FTE)	**330**	**320**	**310**	**320**	**340**	**320**
Direct Employment (FTE)	0	0	0	0	0	0
Indirect and Induced Employment (FTE)	330	320	310	320	340	320
Employee Compensation ($M)	$20.3	$19.7	$18.9	$19.6	$21.0	$19.9

Source: IMPLAN (2022), Econsult Solutions (2024)

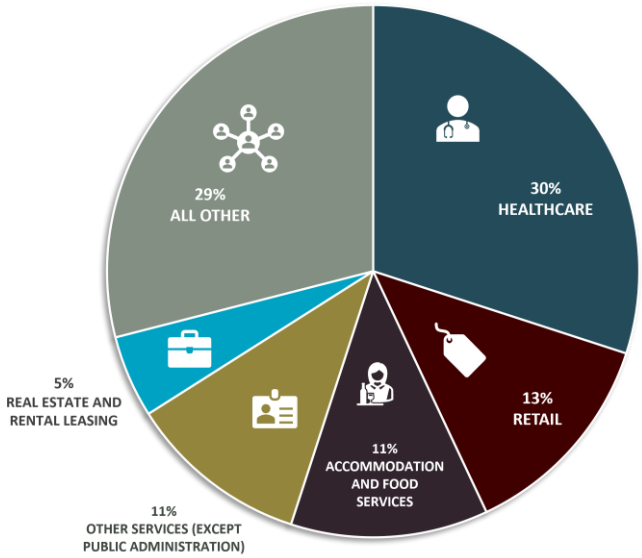
6.3 Industry Distribution of Employment from Increased Household Savings

Increased household savings support the local economy by enabling residents to spend more on essential services. With affordable rent provisions, people can spend more of their income on healthcare, retail, and other daily essential services. The induced economic activity supports local businesses, creating jobs in these sectors.

Within Maryland, HABC's housing assistance through the six-year period supported the creation of 1,940 full-time equivalent jobs. Thirty percent of these full-time jobs were in the healthcare sector, 13 percent in retail, and 11 percent in accommodation and food services (see Figure 6.4).

[35] Economic impacts at the state level are inclusive of the economic impacts at the city level.

Figure 6.4: Industry Distribution of Employment in Maryland from HABC's Affordable Housing Program, 2018-2023



Source: IMPLAN (2022), Econsult Solutions (2024)

6.4 Tax Revenue Impact from Increased Household Savings

An increase in residents' annual household savings increases the City and State's tax revenues. Figure 6.5 and Figure 6.6 show the annual tax revenue impact to Baltimore and Maryland, respectively.

Figure 6.5: Annual Tax Revenue Impact to Baltimore, 2018-2023

	Tax Revenue Impact in Baltimore					
Tax Type	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Income Tax ($M)	$0.17	$0.21	$0.18	$0.19	$0.21	$0.20
Total Tax ($M)	**$0.17**	**$0.21**	**$0.18**	**$0.19**	**$0.21**	**$0.20**

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 6.6: Annual Tax Revenue Impact to Maryland, 2018-2023

	Tax Revenue Impact in Maryland					
Tax Type	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Income Tax ($M)	$0.40	$0.40	$0.38	$0.39	$0.39	$0.44
Sales Tax ($M)	$0.48	$0.48	$0.47	$0.50	$0.61	$0.55
Business Tax ($M)	$0.23	$0.22	$0.27	$0.38	$0.72	$0.29
Total Tax ($M)	**$1.11**	**$1.09**	**$1.12**	**$1.27**	**$1.71**	**$1.28**

Source: IMPLAN (2022), Econsult Solutions (2024)

7 Conclusion

7.1 Aggregate Economic Impact

The Housing Authority of Baltimore City (HABC) has had a substantial economic impact on Baltimore and Maryland from 2018 to 2023. Through its operations, capital investments, and affordable housing programs and services, HABC has supported local economies and improved the quality of life for Baltimore residents.

Within Maryland, in 2023, HABC's activities generated $904.2 million in aggregate economic impact, supporting 2,450 jobs. Within Baltimore, total economic impact amounted to $802.0 million, supporting 2,040 jobs (Figure 7.1 to Figure 7.4).

Figure 7.1: Aggregate Economic Impact in Baltimore

	2018	2019	2020	2021	2022	2023
from Operations ($M)	$465.6	$481.7	$486.2	$481.1	$525.8	$588.9
from Capital Investments ($M)	$70.2	$64.9	$52.8	$121.9	$176.1	$89.6
from Affordable Housing Programs ($M)	$125.9	$122.1	$117.1	$121.4	$130.3	$123.5
Total ($M)	**$661.6**	**$668.7**	**$656.1**	**$724.5**	**$832.2**	**$802.0**

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 7.2: Aggregate Economic Impact in Maryland

	2018	2019	2020	2021	2022	2023
from Operations ($M)	$523.1	$539.4	$543.8	$538.4	$587.3	$662.1
from Capital Investments ($M)	$86.4	$79.9	$65.0	$150.1	$216.8	$110.4
from Affordable Housing Programs ($M)	$134.2	$130.2	$124.9	$129.5	$139.0	$131.7
Total ($M)	**$743.7**	**$749.6**	**$733.7**	**$818.1**	**$943.1**	**$904.2**

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 7.3: Aggregate Job Creation in Baltimore

	2018	2019	2020	2021	2022	2023
From Operations (FTE)	1,360	1,380	1,390	1,350	1,420	1,520
From Capital Investments (FTE)	220	170	140	320	460	240
From Increased Household Savings (FTE)	280	270	260	270	290	280
Total (FTE)	**1,860**	**1,820**	**1,790**	**1,940**	**2,170**	**2,040**

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 7.4: Aggregate Job Creation in Maryland

	2018	2019	2020	2021	2022	2023
From Operations (FTE)	1,610	1,630	1,640	1,610	1,700	1,850
From Capital Investments (FTE)	220	200	160	370	540	280
From Increased Household Savings (FTE)	330	320	310	320	340	320
Total (FTE)	**2,160**	**2,150**	**2,110**	**2,300**	**2,580**	**2,450**

Source: IMPLAN (2022), Econsult Solutions (2024)

7.2 Aggregate Tax Revenue Impact

These economic impacts additionally produced tax revenues for various government jurisdictions, contributing to the funding of essential public services from 2018 to 2023. HABC produced a significant amount of tax revenues for the State of Maryland government resulting from its annual operations, capital investments, and the increased household savings enjoyed by its residents. Across the three economic impact categories analyzed in this report, it is estimated that HABC's operations and activities in 2023, generated $15.42 million in aggregate incomes, sales, and business tax revenues for the State and $1.45 million in annual income tax revenues for Baltimore (Figure 7.5 and Figure 7.6).

Figure 7.5: Aggregate Income Tax Revenue in Baltimore

	2018	2019	2020	2021	2022	2023
from Operations ($M)	$0.84	$1.02	$0.88	$0.90	$0.98	$1.05
from Capital Investments ($M)	$0.14	$0.16	$0.11	$0.27	$0.40	$0.21
from Affordable Housing Programs ($M)	$0.17	$0.21	$0.18	$0.19	$0.21	$0.20
Total ($M)	**$1.15**	**$1.39**	**$1.17**	**$1.35**	**$1.59**	**$1.45**

Source: IMPLAN (2022), Econsult Solutions (2024)

Figure 7.6: Aggregate Income, Sales, and Business Tax Revenue in Maryland

	2018	2019	2020	2021	2022	2023
from Operations ($M)	$8.78	$9.16	$9.99	$10.94	$15.73	$12.50
from Capital Investments ($M)	$1.09	$1.14	$0.90	$2.27	$4.15	$1.64
from Affordable Housing Programs ($M)	$1.11	$1.09	$1.12	$1.27	$1.71	$1.28
Total ($M)	**$10.98**	**$11.40**	**$12.01**	**$14.47**	**$21.59**	**$15.42**

Source: IMPLAN (2022), Econsult Solutions (2024)

7.3 HABC: Strengthening Baltimore Households and Communities

As one of the country's largest public housing authorities, HABC plays a critical role in supporting the local economy and providing low-income households with the affordable housing they need to support their families and local communities. Research continues to find that affordable housing provides several positive impacts on health, education, income and economic opportunity for its residents and surrounding community. Beyond that, housing authorities support economic impacts that ripple through their communities, cities and states. HABC's economic impact strengthens Baltimore's economy through both its operations, investments, and the catalytic household savings it creates through its portfolio of deeply affordable housing. As HABC continues to fulfill the affordable housing needs of the city's most vulnerable renters – whether it be through investing in affordable housing preservation, encouraging affordable homeownership opportunities, or providing quality resident services – the authority will continue to make both an immediate and lasting impact for Baltimore and its residents.

8 Appendix

8.1 Input-Output Methodology

In an inter-connected economy, every direct dollar generates two spillover impacts:

- First, some amount of the proportion of that expenditure that goes to the purchase of goods and services gets circulated back into an economy when those goods and services are purchased from local vendors. This represents what is known as the **indirect effect** and reflects the fact that local purchases of goods and services support local vendors, who in turn require additional purchasing with their own set of vendors.
- Second, some amount of the proportion of that expenditure that goes to labor income gets circulated back into an economy when those employees spend some of their earnings on various goods and services. This represents what is known as the **induced effect** and reflects the fact that some of those goods and services will be purchased from local vendors, further stimulating the economy.

To model the impacts resulting from the direct expenditures of the University of Denver, ESI developed a customized economic impact model using IMPLAN's input/output modeling system. Utilizing an industry standard approach, IMPLAN's input/output modeling system allows users to assess the economic and job creation impacts of industry-based events and public policy changes within a county or its surrounding area. IMPLAN has developed a social accounting matrix (SAM) that accounts for the flow of commodities through economics. From this matrix, IMPLAN also determines the regional purchase coefficient (RPC), or the proportion of local supply that satisfies local demand. These values not only establish the types of goods and services supported by an industry or institution, but also the high level at which they are acquired locally. This assessment determines the multiplier basis for the local and regional models created in the IMPLAN modeling system. IMPLAN takes these multipliers and divides them into 546 industry categories in accordance with the North American Industrial Classification System (NAICS) codes.

Explanation of Multipliers[36]

The use and application of multipliers are intuitive. Multipliers, in their most basic form, are the result of an algebraic analysis expressing how two inputs are interconnected in the production of an output. The result of the equation generates a multiplier that is broken down into direct, indirect, and induced effects. In a generalized example: if the multiplier for good "X" to good "Y" is 3, then the direct effect of good "X" on "Y" is 1, with indirect and induced effects of 2. Essentially, every unit of good "X" supports 2 units of good "Y".

When implemented on a large complex scale, such as that of the US economy or any subsection of it, multiplier effects across industries can be complicated. However, the same general concept comes into

[36] Lahr, Michael. "Input-Output Analysis: Technical Description and Application." Rutgers University Edward J. Bloustein School of Planning and Public Policy.

play. Each industry has largely different and varied inputs into other industries. The quantity of the output is largely decided by the scale and efficiency of the industries involved. As a result, the sum of those inputs equates to an output product plus a value added/component. By arranging these inputs and outputs by industry in a matrix and performing some algebra to find the Leontief inverse matrix, each industry's effect on final demand can be estimated. Additionally, the direct, indirect, and induced effects can also be determined. Direct effects include direct purchases for production, indirect effects include expenses during production, and induced effects concern the expenditures of employees directly involved with production. Using building construction as an example, the direct effects would include materials, brick, steel, and mortar, the indirect effects would involve the steel fabrication and concrete mixing, and the induced effects would consider purchases by construction workers using their wages. While impacts vary in size, each industry has rippling effects throughout the economy. By using an input-output model, these effects can be more accurately quantified and explained.

IMPLAN is one of several popular choices for regional input-output modeling. Each system has its own nuances in establishing proper location coefficients. IMPLAN uses a location quotient to determine its regional purchase coefficient (RPC). This represents the proportion of demand for a good that is filled locally; this assessment helps determine the multiplier for the localized region. Additionally, IMPLAN also accounts for inter-institutional transfers (e.g., firms to households, households to the government, etc.) through its social account matrix (SAM) multipliers. IMPLAN takes the multipliers and divides them into industry categories in accordance with the North American Industrial Classification System (NAICS) codes, allowing a comprehensive breakdown of a region's multipliers by industry to be shown.

Despite the usefulness of input/output modeling, there are some shortcomings to the system. Notably, input-output models ignore economies of scale. Input-output models assume that costs and inputs remain proportionate through different levels of production. Further, multipliers are not generally updated on a timely basis; most multipliers are prone to be outdated with the current economy. If the multipliers are sourced from a year of a recession economy, the multipliers may not accurately represent the flows from an economic boom period. Additionally, multipliers may not capture sudden legal or technological changes which may improve or decrease efficiency in the production process.

Glossary of Terms for Input/Output Models

Multiplier Effect– the notion that initial outlays have a ripple effect on a local economy, to the extent that direct output leads to indirect and induced output.

Economic Impacts– total expenditures, employment, and labor income generated.

Tax Revenue Impacts– local and/or state tax revenues generated.

Direct Output– initial outlays usually associated with the project or activity being modeled; examples: one-time upfront construction and related expenditures associated with a new or renovated facility, annual expenditures associated with ongoing facility maintenance and/or operating activity.

Direct Employment– the number of annual jobs associated with direct output (including full and part-time employment)

Direct Labor Income– the salaries and wages earned by employees, contractors, and proprietors as part of the direct output.

Indirect Output– indirect and induced outlays resulting from the direct output; examples: vendors increasing production to meet new demand associated with the direct output, workers spending direct labor income on various purchases within the local economy.

Indirect/Induced Employment– the number of annual jobs associated with indirect/induced output (including full and part-time employment)

Indirect Labor Income– the salaries and wages earned by employees, contractors, and proprietors as part of the indirect output.

Total Output– the sum of direct output and indirect output.

Total Employment– the sum of direct employment and indirect employment.

Total Labor income– the sum of direct labor income and indirect labor income.

Source: Econsult Solutions, Inc. (2023)

8.2 About Econsult Solutions, Inc.

This report was produced by Econsult Solutions, Inc. (ESI). ESI provides businesses and public policy makers with consulting and thought leadership services in urban economics, real estate, transportation, public infrastructure, economic development, public policy and finance, strategic planning, as well as expert witness services for litigation support.

ESI combines robust quantitative analysis with trusted expert insights to create sustainable solutions. The firm works collaboratively with its clients, and draws in expertise, when necessary, from our network of experts and partners across industries, regions, and management practices. Based in Philadelphia, the firm supports clients nationwide.

ESI ECONSULT SOLUTIONS INC.

economics | strategy | insight

1435 WALNUT STREET, 4TH FLOOR, PHILADELPHIA, PA 19102

ECONSULTSOLUTIONS.COM | 215-717-2777