

AN ASSESSMENT OF THE POTENTIAL IMPACTS OF A MONTANA LOW-INCOME HOUSING TAX CREDIT.

DECEMBER 2022

Prepared by:
Derek Sheehan, Economist



**BUREAU OF BUSINESS AND
ECONOMIC RESEARCH**
UNIVERSITY OF MONTANA

Acknowledgments

This report was funded in part by a grant from the Montana Healthcare Foundation. BBER is solely responsible for statements and conclusions included in this report. BBER would like to thank the various individuals that donated their time and expertise to this research. In particular, BBER thanks Michael O'Neil, Tracy Menezes, Andrea Davis, Jim Morton, Sheila Rice, and Lou Bosso.

Executive Summary

Montana's housing affordability issue at its core reveals the extent of the state's underbuilding, but particularly urgent is the increasing shortage of rental units for low-income households. The most prominent tool for building or preserving affordable housing has been the federal Low-Income Housing Tax Credit program (LIHTC). This report first reviews LIHTC's central role in creating affordable housing units and gives a brief overview of the even greater need for affordable housing throughout the state.

The second half of this report estimates the "but-for" fiscal, economic and social impacts of adding a supplemental state-level LIHTC program on the state's federal LIHTC utilization. This report assesses the direct effects on LIHTC development from other states who have passed similar programs. We then apply those estimates to establish the direct and broader economic impacts of a state-level LIHTC program in Montana from 2024 to 2036.

Key Findings

Federal LIHTC in Montana

- The federal LIHTC program awarded \$827 million in federal tax credits funding the construction of over 9,000 rent-restricted units across the state since 1987.
- Federal LIHTCs account for over half of all rent-restricted or cost-subsidized units for affordable housing in Montana and 26 percent of units accepting Housing Choice Vouchers.
- Montana's Board of Housing has awarded nearly all of its federal allocation of 9 percent credits, about \$29 million each year, and in recent years received applications for at least double that.
- The federal 4 percent LIHTC credits have not resulted in a substantial number of LIHTC projects in Montana due to the lower federal subsidy level and Montana lacking state funds as other states do to effectively leverage these federal funds and related private investment into developments. The Montana 4% federal LIHTC allocation is only limited by the state of Montana's tax exempt bond cap.
- No 4 percent LIHTC projects have been funded within Federal American Indian Reservations or under tribal ownership

Affordable Rental Housing Need

- Montana has an estimated 53,567 renter households who spend more than 30 percent of their income on housing, and 26,678 spend more than half of their income on housing.
- Montana's single-member households, disabled, elderly, single mothers, large families, and Alaskan and Indian Native households are statistically more likely to experience cost burdens than renters overall.
- Montana's heads of households in occupations such as cashiers, waiters and waitresses, and nursing assistants experience cost burdens at higher rates than overall renters.
- There are about 28 units with active rent restrictions or subsidies for every 100 cost-burdened renter households. Federal LIHTCs funded about half of those 28 units.

Estimated Direct Impacts of a Montana Workforce Housing Tax Credit Program

- For every \$1 in lost revenue, a state credit program is estimated to leverage \$2.69 in public and private residential investment spending in the broader state economy.
- A supplemental state-level LIHTC program implemented over six years is expected to increase the utilization of federal 4 percent LIHTCs by \$96.1 million and total residential investment spending by \$143 million.
- A state credit program could also be used with the competitive 9% program, thereby extending the number of units produced
- A state LIHTC program would be expected to increase overall LIHTC units produced across the state by 40.8 percent or 122 per affordable units per year. Over six years, this results in 730 additional affordable rental units.
- These additional units would be expected to increase Montana's number of units accepting Housing Choice Vouchers by 124 units resulting in an additional \$38.1 million in federal voucher expenditures in the state over ten years.
- The addition of a state-level LIHTC program is expected to particularly spur LIHTC affordable housing development in areas of the state that have historically not seen much, if any, LIHTC development to date; increasing the geographic distribution of these resources across the state.
- The proposed 6-year supplemental state-level LIHTC program would on average directly reduce state of Montana tax revenues \$5.36 million annually from claimed state tax credits utilized over a ten-year period. The expected net positive impacts from the additional economic impact activity stimulated by expanded affordable housing development in the state would reduce the net annual average fiscal impact to \$3.88 million.

Economic and Fiscal Impact of a Montana Workforce Housing Tax Credit

Using measurable direct impacts and BBER's policy analysis model, this report can address the question: what would enacting a state-level LIHTC program in Montana have on the broader state economy – in terms of jobs, income, and revenues? The table below summarizes the hypothetical net economic impact resulting from the state revenue loss, construction activity, and ongoing operations from such a program. These results do not include many of the longer-term or indirect social benefits others have found in the literature, summarized in Section 7.

This report finds expected net positive impacts from the additional economic activity stimulated by expanding affordable housing development in the state. This report separated the impacts into two phases, the construction phase and the ongoing operations phase. The construction phase impacts represent the temporary impact during the building of LIHTC units leveraged by state credits. The ongoing operations impact represents the more stable growth in the economy as long as these units are in operation.

Summary of Annual Economic Impacts During Construction and Ongoing Operations

<i>Category</i>	<i>Construction Impact (2024-2029)</i>	<i>Ongoing Impact (2030-2036)</i>	
<i>Total Employment</i>	271	19	Jobs
<i>Personal Income</i>	\$13.7	\$3.0	Millions (2020\$)
<i>Disposable Personal Income</i>	\$11.7	\$2.7	Millions (2020\$)
<i>Output</i>	\$38.5	\$5.2	Millions (2020\$)
<i>Population</i>	210	46	People

This report also assessed the expected state revenue received by state government both directly and indirectly from the higher population, spending, and business revenue in the state economy. The results of the REMI fiscal impacts across the construction and operation of LIHTC units are summarized below. The results suggest a net budgetary loss of -\$38.78 million over 12 years.

Net Measurable Fiscal Impact from 2024 to 2036

<i>\$ millions (2020\$)</i>	<i>Annual Average Impact</i>	<i>Total Impact</i>
<i>Fiscal Benefits Montana LIHTC</i>	\$1.48	\$14.77
<i>Claimed State Tax Credits</i>	-\$5.36	-\$53.55
<i>Net Fiscal Impacts</i>	<i>-\$3.88</i>	<i>-\$38.78</i>

Additional Examples of Expected Benefits of a Montana Workforce Housing Tax Credit

Many benefits of affordable housing programs are not as easily estimated as the fiscal, construction investment, and ongoing economic activity of LIHTC units. However, expanding the supply of safe and stable housing for Montana’s workforce, children, elderly and disabled has public benefits beyond the households in them. The body of research that does exist suggests households in subsidized or rent-restricted units:

- lowers state and local healthcare spending (Doran, Misa, and Shah 2013).
- reduces health risks from inadequate heating, running water, pests, and toxic chemical exposures (Sharfstein et al. 2001).
- lowers the incidence of lead-based paint exposures (Cox et al. 2021).
- have lower rates of severely underweight children (Children’s Healthwatch 2009).
- are more likely to have health insurance and less likely to have un-met healthcare needs (Simon et al. 2017).
- increases educational outcomes for children in stable housing (Derby 2021).
- are less likely to be frequent movers or live in crowded units (HUD 2021).

Montana's subsidized households are:

- more likely to have longer tenures in their homes (HUD 2021).
- less likely to be cost-burdened (Figure 21).
- more likely to have an elderly or disabled member in their household (HUD 2019).

Studies of the Federal LIHTC programs suggest LIHTC units:

- lower county-level homelessness (Jackson and Kawano 2015).
- reduce the rate of intimate partner violence-related homicides (Austin et al. 2022).
- does not reduce the performance of nearby schools (Di and Murdoch 2013).
- improves the probability children will obtain higher education and earn more in their lifetime (Derby 2021).
- may reduce cases of child abuse and neglect (Ports et al. 2018).

Using the expected increase in Federal LIHTC units, this report estimates additional expected benefits from a state program in Montana to be:

- an overall reduction in the number of cost-burdened households by 386.
- an average qualified household will have an additional \$4,806 a year to spend on other living expenses. Statewide this results in \$1.86 million annually in savings for low-income households.
- an additional 124 units statewide accepting Housing Choice Vouchers.
- expected reductions in the number of overall cost-burdened, essential workforce, elderly, disabled, single-member, minority, and other households with incomes below 60% of median (Fernando and Hearne 2017).
- lower lead exposure risks, improving children's future earnings by \$1.2 million and other state and local government benefits by about \$147,000 annually.
- a reduction in intimate partner violence-related homicide by about 1 to 2 a year statewide.

Table of Contents

1	Introduction	9
1.1	Overview of Federal Low-Income Housing Tax Credits	9
1.2	How the Federal LIHTC Program Builds Low-income Units	11
	Federal Allocation and Regulations to State HFAs.....	12
	State HFAs to Developers/Investors	12
2	Federal LIHTC in Montana.....	14
2.1	LIHTCs' Leading Role in Multi-family Affordable Housing.....	14
2.2	Location of LIHTC units in Montana.....	15
2.3	LIHTCs Awarded	16
2.4	Current Demand for Federal 9 Percent Credits	17
2.5	Opportunities for 4 Percent Credits.....	18
2.6	LIHTC Projects in Federal American Indian Reservations	21
3	Affordable Rental Housing Need	22
3.1	Renter Incomes	22
3.2	Renter Cost Burdens	23
3.3	Cost Burdens by Household Characteristics	24
3.4	Workforce Cost Burdens.....	25
3.5	Summary of Need	26
4	“But-for” Analysis of State Low-Income Housing Tax Credit Programs.....	27
4.1	Other State Low-Income Housing Tax Credit Programs	27
4.2	Do State-level LIHTC programs impact the low-income housing supply?	28
4.3	Data.....	29
4.4	Results.....	30
	State Credit Program (Yes or No).....	30
	State Credits (\$ millions of credits).....	31
5	“But for” Direct Impacts of a Montana Workforce Housing Tax Credit.	32
5.1	Direct Fiscal Impact.....	33
5.2	Direct State Low-Income Housing Impact	33
5.3	Direct Residential Construction Investment.....	35
5.4	Direct Housing Choice Vouchers Acceptance Impact	36
6	Economic Impact of Montana Workforce Housing Tax Credit	37
6.1	Model Overview.....	37

6.2	Summary of Direct Impacts.....	39
6.3	Construction Phase Economic Impacts 2024 to 2029.....	39
6.4	Ongoing Economic Impacts 2030 to 2036	42
6.5	Overall Net Fiscal Impacts.....	44
7	Additional Expected Benefits of Montana Workforce Housing Tax Credits.....	45
	Housing Quality	45
	Housing Stability	47
	Housing Affordability	48
	Workforce Impacts.....	50
8	Conclusion.....	51
9	References	52
10	Appendix	55
	10.1 Methods.....	55
	10.2 Full Fixed Effects Results.....	56
	10.3 Per-unit Costs of LIHTC Units	57
	10.4 State LIHTC Program Summaries	59

Figures and Tables

Figure 1:	LIHTC Program Flow Chart.....	11
Figure 2:	Price Paid by Investors for LIHTCs in Montana, 2013-2022.....	13
Figure 3:	Location and Density of Federal LIHTC Units.....	15
Figure 4:	Total Credits Awarded (10-year amount) by Type and Year 1991-2022.	16
Figure 5:	Federal 9 Percent Credits Requested vs. Awarded, 2019-2023.	17
Figure 6:	Units and Expected Units Placed in Service by LIHTC Credit Type.....	19
Figure 7:	Federal 4% Credit Units by County	20
Figure 8:	Renter Households Cost Burdened by Income Category.....	23
Figure 9:	Cost Burdened Renters by Vulnerable Household Member(s).....	24
Figure 10:	Cost Burdened Rate and Number by Head of Household Occupation.....	25
Figure 11:	Low-income Renters and Cost-Burdened Renters vs. Federally Subsidized Units 2021.	26
Figure 12:	States with State Low-Income Housing Tax Credits 2022	27
Figure 13:	Estimating a Treatment Effect With a Fixed-effects Model.....	28
Figure 14:	Expected Increase in Federal LIHTC Units from a State LIHTC Program.....	30
Figure 15:	Expected Increase in Federal LIHTC Units from Increasing State-credits by \$1 Million.	31
Figure 16:	Average Annual LIHTC Units by County	34
Figure 17:	Policy Analysis with the REMI Model.....	37
Figure 18:	Schematic Model of REMI.....	38
Figure 19:	Median Year Built for Renter-occupied Structures.....	46
Figure 20:	Cost Burdened Rate by When Moved.....	47

Figure 21: Percent of All Renters vs. LIHTC Residents by Cost Burden Rate 49
 Figure 22: Above Average Cost Burdened Renter Rates by Head of Household Occupation. 50

Table 1: Assisted Units by Federal Affordable Housing Programs 2022..... 14
 Table 2: LIHTC Units with Other Attached Federal Housing Subsidies 14
 Table 3: Montana’s Total PAB Cap and Issuance from 2011 - 2020 18
 Table 4: LIHTC Units by Federal American Indian Reservations 21
 Table 5: LIHTC Funded Units by Ownership..... 21
 Table 6: Montana’s Renter Households by Income Category 22
 Table 7: Renter Households by Cost Burden 23
 Table 8: Expected Montana Workforce Housing Tax Credit Redemptions and Total by Year 33
 Table 9: Low-income Units Baseline and Expected 2024-2029. 34
 Table 10: Expected Increase in Residential Construction Spending 2024-2027..... 35
 Table 11: Expected Increase in LIHTC units and LIHTCs 2024-2027 35
 Table 12: Summary of Direct Impacts from 2024 to 2036..... 39
 Table 13: Annual Construction Phase Economic Summary 39
 Table 14: Annual Construction Phase Employment Impacts..... 40
 Table 15: Wages Compensation and Earnings Impacts 41
 Table 16: Annual Construction Phase Annual Ongoing Output Impacts 41
 Table 17: Annual Ongoing Economic Impact Summary..... 42
 Table 18: Annual Ongoing Employment Impacts..... 43
 Table 19: Annual Ongoing Wages, Compensation, and Earnings Impacts 43
 Table 20: Annual Ongoing Output Impacts..... 44
 Table 21: Net Fiscal Impact of Montana Workforce Housing Tax Credit 2024 to 2036. 44

1 Introduction

For the third time, Montana’s state government will decide on a bill to establish a state-level LIHTC program titled the “Montana Housing Tax Credit.” Last legislative session, a similar bill (*HB 397 2021*) was approved by both houses of the state legislator but vetoed due to concerns related to the being matched with the federal credits. This report analyzes a modified version of the bill not tied to federal awards regarding its fiscal, economic and social impact on the state.

First, this report summarizes the federal LITHC program that a state-level LIHTC program would expand, describing LIHTC’s background, how it works, and what role it has played in creating affordable units within Montana—followed by an empirical analysis of states that have passed State LIHTC programs and the expected impacts of a similar program in Montana.

1.1 Overview of Federal Low-Income Housing Tax Credits

Low-income housing tax credits (LIHTC) are nonrefundable and transferable Federal income tax credits subsidizing the construction and rehabilitation of low-income housing units. Passed in 1986 as part of the Tax Reform Act, these credits have funded over 3 million housing units costing about \$8 billion in foregone federal revenue each year (“Low-Income Housing Tax Credit (LIHTC)” 2022).

Two types of credits are allocated to developers, competitive 9% credits and non-competitive 4% credits. Competitive 9% credits are capped by the IRS and awarded based on the priorities of state housing financing agencies (HFAs) outlined in a state’s Qualified Allocation Plan (QAP). Non-competitive 4% credits are not capped and are often used to acquire and rehabilitate existing housing units. These credits are less generous but awarded automatically with awards of Tax-Exempt Revenue Bonds financing. Other construction subsidies – such as HUD’s HOME subsidy or a State LITHC- are often paired to make these projects economically feasible.

The credit rates for these two types of credits vary over time but generate subsidies of at least 30 percent for 4 percent credits or 70 percent for 9 percent credits. These credits are also called 30 and 70 percent present value housing credits. The IRS sets the actual credit rates based on federal interest rates. For example, in December 2022, the annual percentage determined by the IRS for 9 percent credits was 8 percent and for 4% credits was 3.43 percent (IRS 2022). Since the current percentages are less than the minimum, 9 and 4 percent credits are set to precisely 9 and 4 percent.

The amount of tax credits available to a project is set by three primary factors, the eligible basis, the applicable fraction, and the type of credit. The eligible basis is the total project cost less land costs, interest payments, and insurance costs. This value is multiplied by the **applicable fraction**—the lesser fraction of either units or floor area devoted to low-income units. This determines the qualified basis.

$$\text{Eligible Basis} = \text{Project Costs} - (\text{Land, financing, insurance costs})$$

$$\text{Qualified Basis} = \text{Eligible Basis} * \text{Applicable Fraction}$$

Total credits differ substantially by the type of credit awarded to a project. For example, a project awarded 9% credits with a qualified basis of \$1 million would be expected to have at least \$700,000 of the qualified basis covered by the 10-year stream of tax credits.

Qualified Basis = \$1 million

*\$1 million * 9% = \$90,000 per year*

Present Value of \$90,000 stream over 10 years = \$700,000

The present value of \$90,000 over ten years, given the appropriate interest rates, must equal \$700,000, or 70% of the qualified basis of 1 million. A project receiving 4 % credits would instead receive a \$40,000 stream of credits over ten years with a present value of \$300,000.

Qualified Basis = \$1 million

*\$1 million * 4% = \$40,000 per year*

Present Value of \$40,000 stream over 10 years = \$300,000

The less generous 4 % credits often require a “capital stack,” a combination of several federal or state subsidies and mortgage debt to make them economical. Under current law, 50% or more of a project must be financed by tax-exempt bond financing to access 4 percent credits. This necessitates a large enough cash flow to service debt, often requiring large-scale projects. For this reason, most 4 percent credit projects occur in more urban areas.

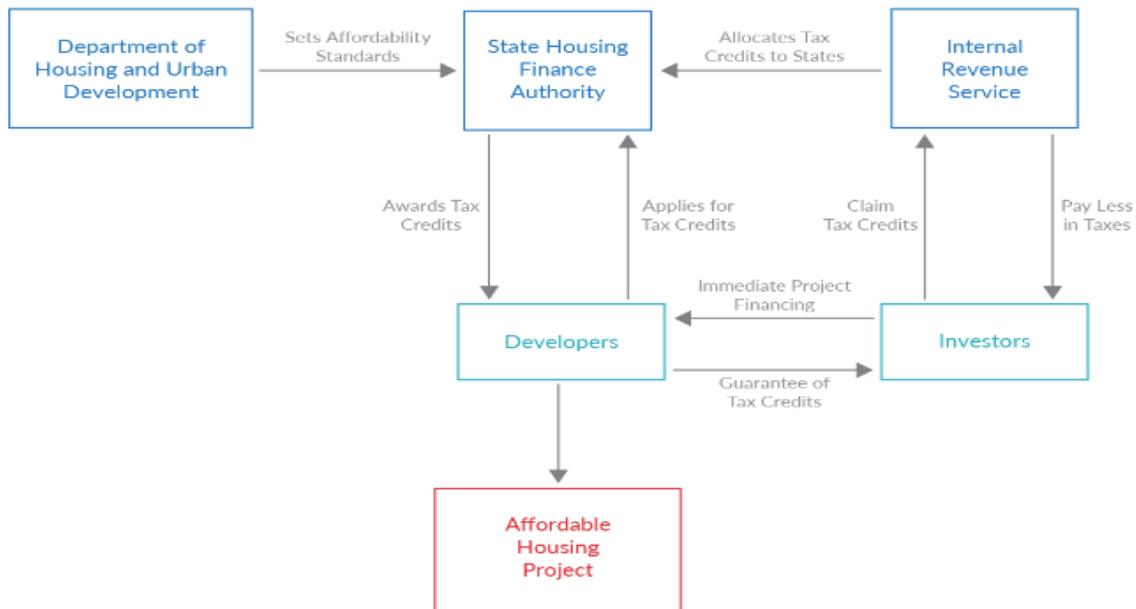
1.2 How the Federal LIHTC Program Builds Low-income Units

LIHTC is an established program with several players, including the U.S. Dept of Housing and Urban Development (HUD), the Internal Revenue Service (IRS), state housing authorities (HFAs), private developers, and investors. The IRS and HUD set the allocation of credits and affordability standards. HFAs receive the allocation and award credits based on the priorities in the state's Qualified Allocation Plan (QAP) to developers. Since the tax credits are transferable, developers often sell credits to investors in exchange for equity in the project, as depicted in Figure 1 and described in the discussion below.

Figure 1: LIHTC Program Flow Chart.

Low-Income Housing Tax Credit Involves Multiple Public and Private Actors

Structure of Low-Income Housing Tax Credit



Source: Tax Foundation

Federal Allocation and Regulations to State HFAs

Each year, the IRS sets the allocation cap for 9% credits based on population or small state minimum. In addition, non-competitive 4% credits are automatically awarded to low-income projects receiving tax-exempt bonds, also known as Private Activity Bonds (PABs). The federal allocation of these bonds is also set by population or a small state minimum.

HUD defines affordability standards for each community by estimating the Area Median Income (AMI) for Metropolitan Statistical Areas and Counties. LIHTC maximum rents must not exceed 30% of AMI minus an imputed utility allowance.

LIHTC projects must have at least 20% of the project devoted to low-income households to receive funding. All projects must pass either the 20-50 test or the 40-60 test.

1. **20-50 test** – A minimum of **20%** of units set aside for households whose incomes do not exceed **50 percent** of HUD's Area Median Income (AMI) for MSAs and counties not in MSAs.
2. **40-60 test** – A minimum of **40%** of units set aside for households whose incomes do not exceed **60 percent** of Area Median Income (AMI).

LIHTC units must be rented to low-income households for a 30-year period of affordability following their placed-in-service date. For the first 15-year "compliance period," credits can be re-captured if the property fails to comply with affordability regulations. For the following 16 to 30 years, owners can leave the program through a regulatory relief process. However, research suggests that most LIHTC units remain affordable for at least 30 years, often longer, due to additional LIHTC credits for rehabilitation, another subsidy program's rent restrictions, or market rates remain affordable (Khadduri et al. 2012).

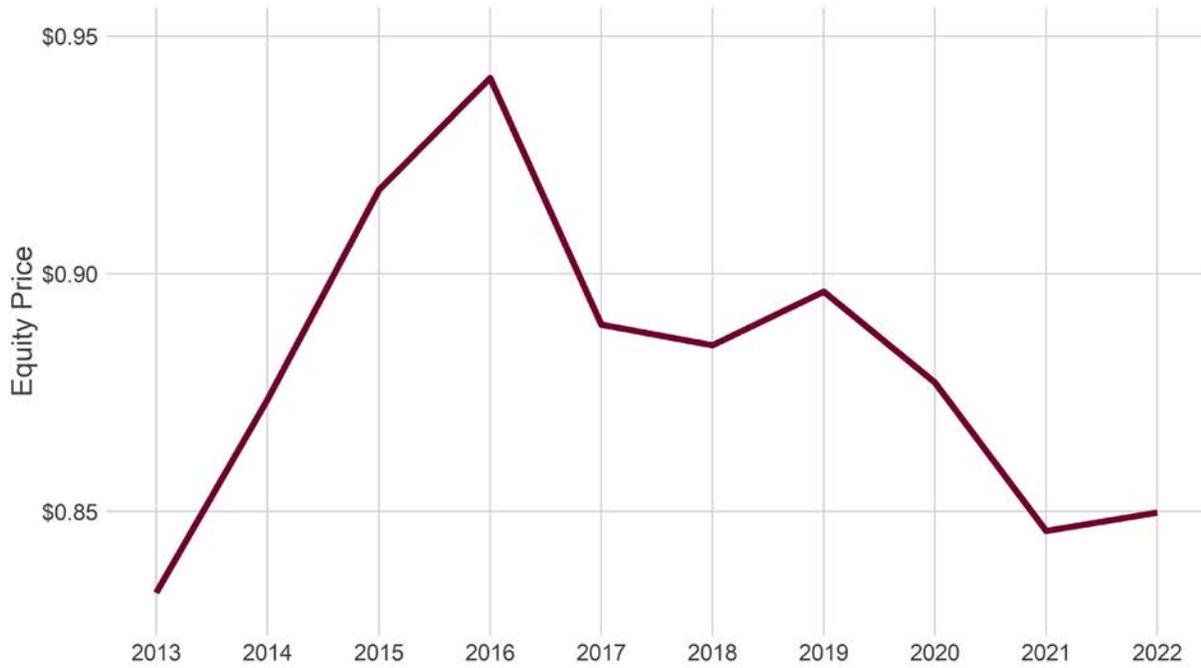
States can require additional periods of affordability and for Montana's tax credit program they must commit 50 years to meet threshold requirements to be funded. Also, Montana has updated their Land Use Restriction Agreement or Declaration of Restrictive Covenants that requires developers/owners to forego the "qualified contract" provision – a way for properties to be taken out of the affordability pool and an increasing concern across the country.

State HFAs to Developers/Investors

States award their federal housing tax credits to developers based on their Qualified allocation plans (QAPs) priorities. These plans are subject to HUD's affordability standards, but each state can set different allocation priorities.

LIHTCs are transferable credits, meaning developers can sell credits to investors for up-front financing (equity) in the project. Investors buy tax credits from developers and apply those credits to their federal tax liability once the project is in service. Investors arrive at an equity price by weighing their current tax liability, the value of ownership, other tax benefits, and the anticipated operating cash flow of a completed LIHTC project.

Figure 2: Price Paid by Investors for LIHTCs in Montana, 2013-2022



Source: Montana Department of Commerce (Montana Housing 2022a)

Figure 2 shows the overall reduction in the price for equity in Montana since its peak in 2016. This decline is partially a result of the changing federal corporate tax liability in 2017. An investor purchasing tax credits in 2022 paid an average of 85 cents per dollar of tax credits.

2 Federal LIHTC in Montana

2.1 LIHTCs' Leading Role in Multi-family Affordable Housing

Since 1987 Montana has awarded \$827 million (2020\$) in federal tax credits to developers funding the construction of over 9,000 low-income units across the state, 7,312 of which are currently in their affordability compliance period. LIHTC continues to be the largest source of low-income housing in the state and accounts for over half of the units that received at least one federal subsidy for affordability or are otherwise rent-restricted, the last row in Table 1.

Table 1: Assisted Units by Federal Affordable Housing Programs 2022.

<i>Program</i>	<i>Active Assisted Units</i>
<i>LIHTC</i>	7,312
<i>HUD Insured</i>	5,944
<i>Housing Choice Vouchers*</i>	4,821
<i>Rural Housing Subsidy</i>	2,018
<i>HOME Grants</i>	1,629
<i>Public Housing</i>	1,552
<i>Rural Housing Loan</i>	177
<i>Project Based Vouchers</i>	33
<i>Total Units (1 or more subsidies)</i>	14,236

Source: National Housing Preservation Database, Montana Department of Commerce, BBER tabulation.

Note: "Inconclusive" units were considered to be inactive. *Units accepting vouchers, not the number of vouchers.

LIHTC has the largest footprint and has proven to be resilient to the loss of affordability over time. Many units receive a new award of tax-credits or are attached to other federal housing subsidies extending their affordability requirements. Table 2 considers only low-income units funded with LIHTC credits subsidized by other federal programs. Therefore, LIHTC-funded units account for 56.4 percent of all subsidized or federally regulated units for affordability in Montana.

Table 2: LIHTC Units with Other Attached Federal Housing Subsidies

<i>Program</i>	<i>LIHTC Funded Units</i>	<i>Active LIHTC Units</i>
<i>LIHTC</i>	8,039	7,312
<i>HUD Insured</i>	1,670	1,539
<i>Housing Choice Voucher</i>	1,260	1,260
<i>Rural Housing Subsidy</i>	772	637
<i>HOME Grants</i>	690	532
<i>Rural Housing Loan</i>	131	131
<i>Public Housing</i>	48	48
<i>Project Based Vouchers</i>	15	15

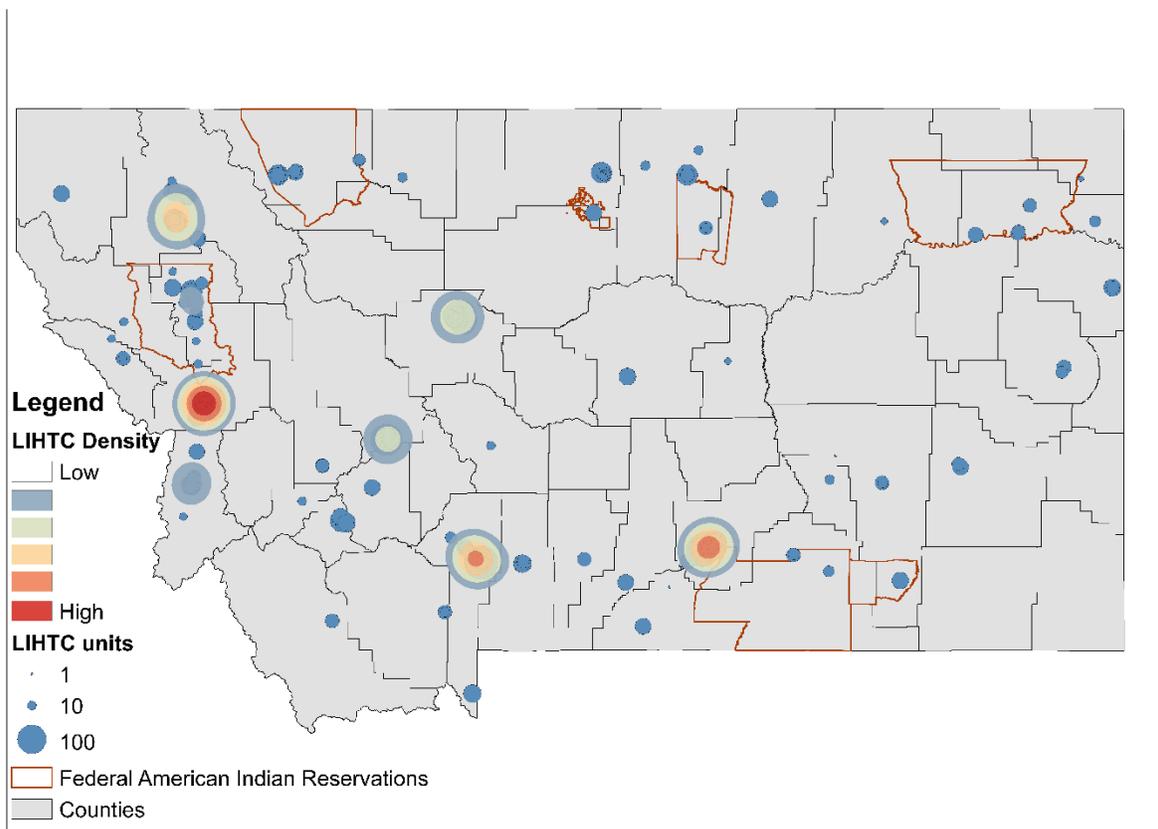
Source: National Housing Preservation Database, Montana Department of Commerce, BBER tabulation.

In addition to creating below-market rental units, regulations require LIHTC properties not to discriminate against HUD Housing Choice Vouchers holders. Private landlords are under no obligation to accept housing vouchers, and they often require substantial effort from owners. Therefore, many states, including Montana, have more residents that qualify for vouchers than units accepting vouchers. Households that apply for vouchers in the state are put on waitlists with over 3,000 other households and can expect to wait years to move into units. In Montana, LIHTC-funded units account for about 26 percent of units accepting vouchers. Therefore, increasing the number of LIHTC units is expected to expand the number of units receiving HCVs in Montana.

2.2 Location of LIHTC units in Montana

Montana has built LIHTC properties across most of the state, with 41 of 56 counties having at least one project, mapped in Figure 3. Overall the greatest number LIHTC units tend to be available to residents near urban areas. Many non-urban regions of the state see little to no LIHTC development despite not being immune to affordability issues.

Figure 3: Location and Density of Federal LIHTC Units.



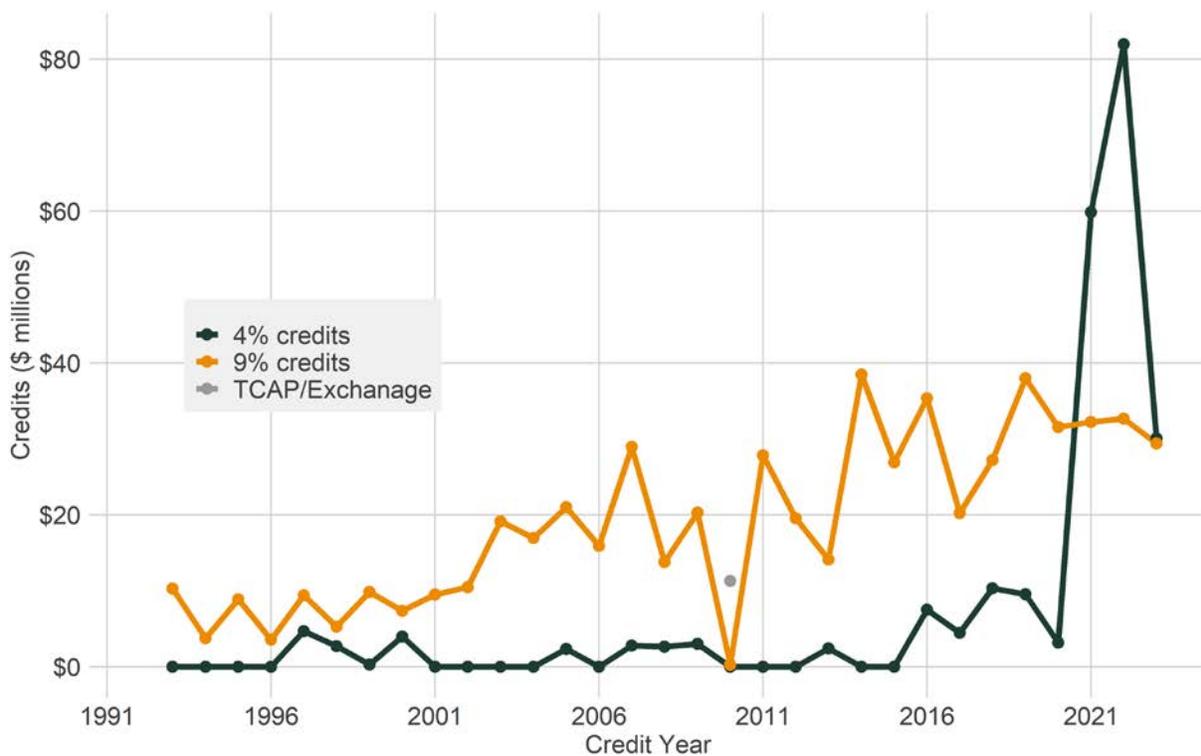
Source: U.S. Department of Housing and Urban Development, ArcREST Server

2.3 LIHTCs Awarded

Montana’s LIHTC allocation remains the small state minimum of \$2.975 million per year or about \$29.75 million over ten years. This allocation cap does not apply to 4 percent credits automatically paired with tax-exempt bond financing. LIHTC credits, particularly the less generous 4 percent credits, are often combined with other funding tools to make the project economically feasible, such as HUD’s HOME program, grants, and state tax credits.

Figure 4 shows that Montana has historically used most of its Federal allocation of 9 percent credits and historically not utilized 4 percent credits. From 1991 to 2016, 4 percent credits awarded was less than \$10,000 a year. Recently, large new construction and rehabilitation projects in Butte, Bozeman, and Missoula used 4 percent credits resulting in much larger awards than are possible with 9% credits alone.

Figure 4: Total Credits Awarded (10-year amount) by Type and Year 1991-2022.

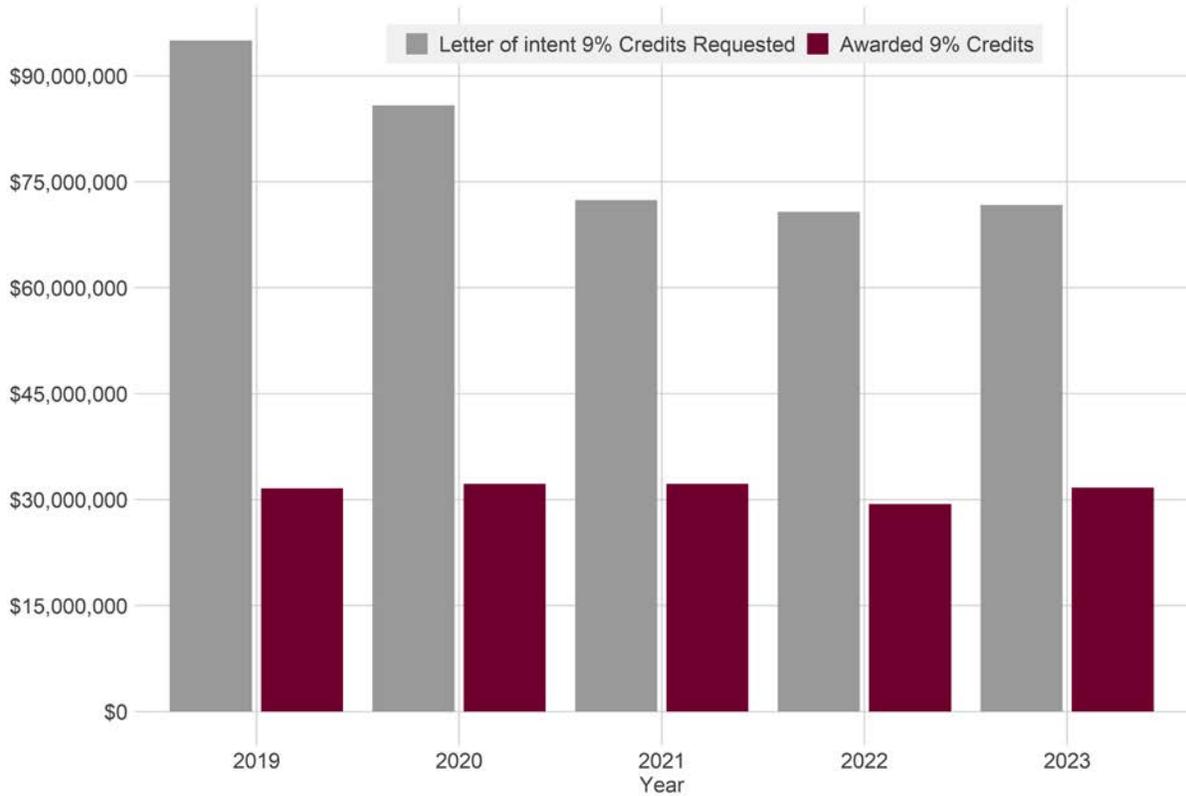


Source: Montana Department of Commerce

2.4 Current Demand for Federal 9 Percent Credits

The demand in Montana for 9 credits is far greater than its federal allocation. Over the last five years, Montana’s Board of Housing has awarded nearly all of its federal allocation and receives applications for more than double that. For example, in 2022, \$72 million in credits were requested, and only \$32 million were awarded, compared in Figure 5.

Figure 5: Federal 9 Percent Credits Requested vs. Awarded, 2019-2023.



Source: Montana Department of Commerce

2.5 Opportunities for 4 Percent Credits

Montana historically has not shown strong demand for 4 percent credits, likely due to a lack of additional sources of capital to make projects feasible. For many states, 4% tax credits awards come from their automatic pairing with tax-exempt bonds. The interest paid on these bonds is tax-exempt and transferable. As a result, developers can finance projects at about 2% lower rates than conventional loans and receive upfront equity by selling tax credits. This combined financing tool can be a substantial source of low-income housing, especially for states with high 9 percent credit usage and low tax-exempt bond usage (Biber 2007).

The availability of tax-exempt bond financing is subject to a state's federal cap on Private Activity Bonds (PABs). PABs must compete for alternate public uses such as airports, waste disposal, and hospital facilities. Montana currently receives the small state minimum PAB volume cap of \$335.115 million annually.

Montana's 4 percent credit awards for much of the last decade have not been limited by the availability of (PABs). From 2011 to 2020, Montana used an average of 6.9 percent of its total PAB capacity (new capacity + carryover) for any use. Multi-family housing comprised only about 1.5 percent of the state's bond capacity and only 21 percent of its issuance. Table 3 Table 4 additionally shows that \$1.940 billion in state PAB capacity expired from 2011 to 2020.

Table 3: Montana's Total PAB Cap and Issuance from 2011 - 2020

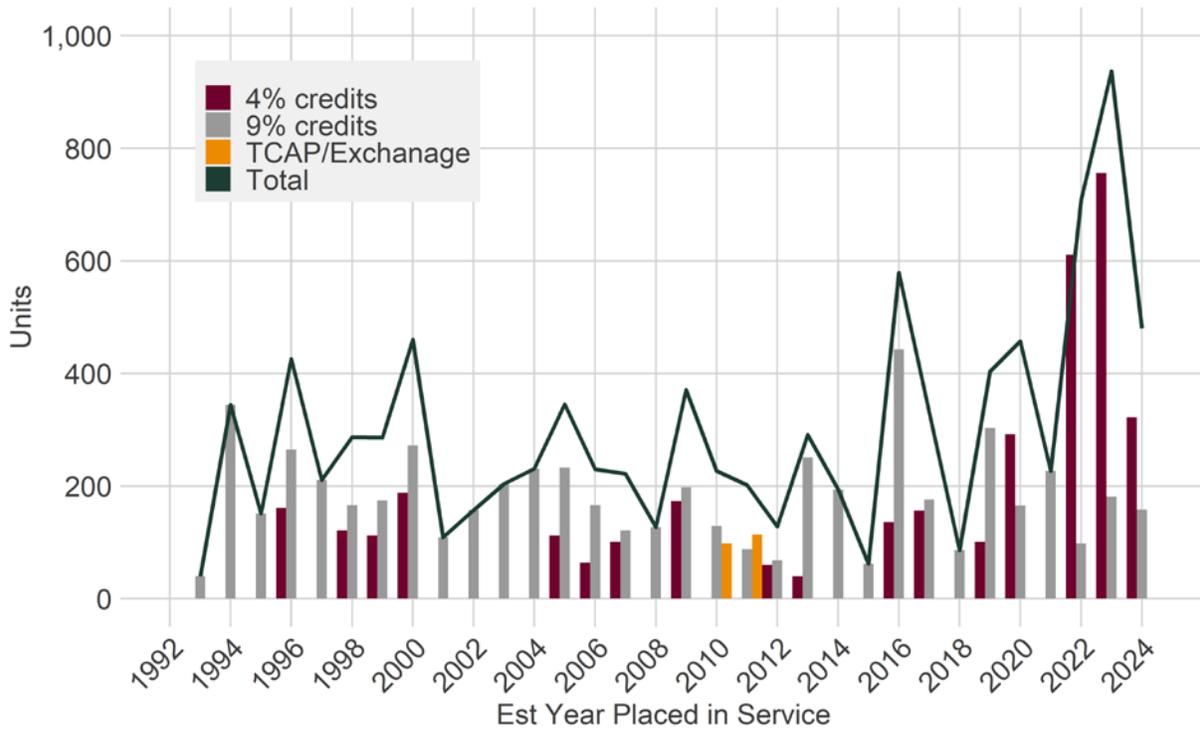
	<i>Total (\$ million)</i>	<i>Percent of Capacity</i>
<i>New Capacity</i>	\$3,010	26.1%
<i>Total Carryover</i>	\$10,493	74.2%
<i>Total Capacity</i>	\$11,526	100.0%
<i>Multi-family Housing Issuance</i>	\$174	1.5%
<i>Mortgage Revenue Bonds</i>	\$624	5.4%
<i>Total Issuance</i>	\$798	6.9%
<i>Expired Carryover</i>	<i>-\$1,940</i>	<i>-</i>

Source: Council of Development Finance Agencies - Volume Cap Resource Center

In Montana, a strong case exists that 4 percent credits are underutilized. Over the past few years, the demand for 9% has been at least double the state's allocation, and Montana has historically used very little of its PAB volume cap.

Recently, the utilization of 4% credits has picked up. Over the past three years, large new construction projects underway in Missoula, Billings, Bozeman, and Kalispell and a series of rehabilitation projects in Butte have greatly exceeded the production or preservation of affordable housing units. Figure 6 highlights the opportunity in 4 percent credits to significantly expand the capacity of low-income construction in the state.

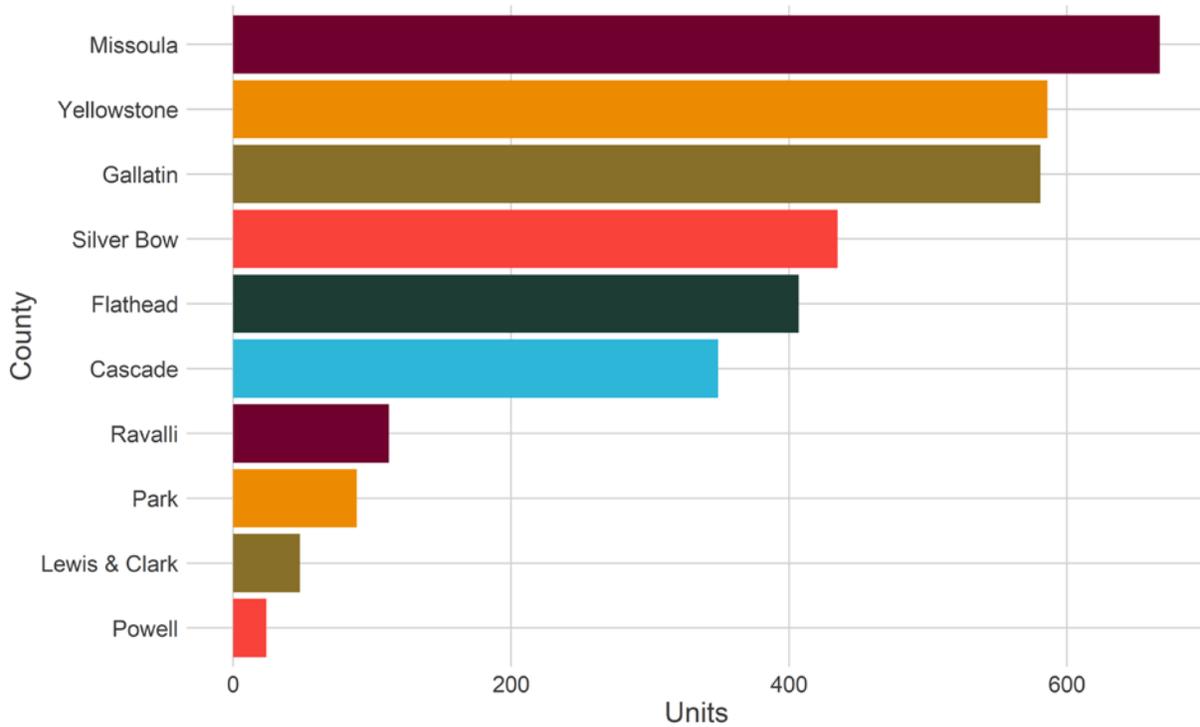
Figure 6: Units and Expected Units Placed in Service by LIHTC Credit Type



Source: Montana Department of Commerce

While only about 17% of LIHTC units were built using 4 percent credits, this financing tool has proven to be an opportunity to extend LIHTC development. However, under current LIHTC regulations, more than half of a project must be financed by tax-exempt debt to access 4 percent credits. This necessitates a large enough operating cash flow to service mortgage debt or additional construction subsidies to make projects feasible, often a larger-scale project in a more urban community.

Figure 7: Federal 4% Credit Units by County



Source: Montana Department of Commerce

The usage of 4% credits while expanding the number of units financed has not expanded geographically. So far, the pairing of tax-exempt bonds and 4% credits funded projects in only ten counties since 1987, Figure 7. Over half of these projects are in the urban counties of Missoula, Yellowstone, and Gallatin Counties, suggesting that tax-exempt bonds and 4% credits alone are insufficient to make these projects feasible in rural or tribal areas in Montana.

A State LIHTC program designed to leverage these credits is expected to expand the amount of and geographic distribution of low-income housing units, shown in the “But-for” analysis in this report. The additional private equity from state credits decreases the operating cash flow a project would need to service debt, thereby increasing the potential for 4 percent credits to be used in rural areas.

2.6 LIHTC Projects in Federal American Indian Reservations

Montana’s LIHTC development within reservations or under tribal ownership were funded exclusively by 9% credits. Lower household incomes and unemployment rates make debt financing much more difficult without the higher equity created by 9 percent credits (Freddie Mac 2018). As a result, nationally, LIHTC development on native lands occurs at lower rates than in similarly rural areas (Immonen and Wiley 2019).

Despite the challenges of rural low-income development overall, most of Montana’s Federal American Indian Reservations have LIHTC developments within their borders. There are 32 LIHTC properties with 720 low-income units developed on native land, broken down by reservation in Table 4.

Table 4: LIHTC Units by Federal American Indian Reservations

<i>Reservation</i>	<i>Projects</i>	<i>Units</i>	<i>% Units</i>
<i>Flathead</i>	17	324	45%
<i>Blackfeet</i>	6	184	26%
<i>Fort Peck Reservation</i>	4	95	13%
<i>Fort Belknap</i>	2	35	5%
<i>Northern Cheyenne</i>	1	34	5%
<i>Rocky Boy's</i>	1	33	5%
<i>Crow Reservation</i>	1	15	2%
<i>Nez Perce</i>	0	0	0%
<i>Turtle Mountain</i>	0	0	0%
Total	32	720	100%

Source: U.S. Department of Housing and Urban Development, ArcREST Server

Tribal housing authorities are frequently owners of these projects. However, awards to tribal housing authorities since 1996 build less than a project yearly, resulting in about 20 low-income units a year. Table 3 shows the percentage of projects by type of ownership, showing only 504 units, or about 6% of LIHTC-funded units, are currently under tribal ownership.

Table 5: LIHTC Funded Units by Ownership

<i>Owners</i>	<i>Units</i>	<i>Projects</i>	<i>% Units</i>	<i>% Projects</i>
<i>Non-profit</i>	3,164	75	36%	32%
<i>For-profit</i>	2,602	74	30%	32%
<i>General</i>	2,352	54	27%	23%
<i>Tribal</i>	504	20	6%	9%
<i>Small project</i>	171	10	2%	4%
<i>Unknown</i>	558	14	6%	6%
Total	8,793	247	100%	100%

Source: Montana Department of Commerce

Montana’s LIHTC development targeted to native households has thus far not been funded with 4% credits, as is often the case nationally (Freddie Mac 2018). As a result, compared to other rural areas, LIHTC development on native land makes up a lower fraction of rental housing stock despite higher needs (Immonen and Wiley 2019).

3 Affordable Rental Housing Need

This section seeks to provide an overview of the size of the state’s rental affordability issue by highlighting the populations most burdened by the rising cost of housing. For much of the past decade, communities have seen rising rents without equivalent increases in income, forcing many households to live in substandard housing, overspend on housing, or leave local markets. In the most extreme cases, some of Montana’s households are being priced entirely out of housing, resulting in hardships of homelessness.

3.1 Renter Incomes

Montana’s median renter household earns about \$32,000 less than the median owner household. While housing costs are rising in both markets, affordability efforts often focus on the most vulnerable households. HUD focuses many of its subsidy programs on those earning between “very low” and “extremely low” incomes, defined as 50 and 30 percent of Area Median Income (AMI). Table 6 shows that in Montana, 41 percent of renter households fall into these categories, and most have low incomes.

Table 6: Montana’s Renter Households by Income Category

<i>Income Category</i>	<i>% AMI</i>	<i>Renters</i>	<i>% of Renters</i>	<i>% AMI</i>	<i>Cumulative %</i>
<i>Extremely Low</i>	> 0 to 30% AMI	33,098	24%	0 to 30%	24%
<i>Very Low</i>	> 30 to 50% AMI	22,931	17%	0 to 50%	41%
<i>Low</i>	> 50 to 80% AMI	29,728	22%	0 to 80%	62%
<i>Middle</i>	> 80 to 100% AMI	15,024	11%	0 to 100%	73%
<i>Middle to High</i>	> AMI	36,587	27%	> AMI	100%
<i>Total</i>	--	<i>137,368</i>	<i>100%</i>		--

Source: U.S. Census' American Community Survey 2021 5-year PUMS, BBER tabulations

3.2 Renter Cost Burdens

Housing cost burdens affect many of Montana’s renters. Households experiencing these burdens likely cannot find housing within their limited budget and must “overspend” on housing. Overspending on housing limits the ability of a household to cover other vital needs such as food, medical care, child care, and transportation. HUD defines a household as “cost burdened” if rent and utilities make up more than 30 percent of a household’s income, and a household spending more than half of their income is defined as “severely cost burdened.” Of Montana’s renter households, 39 percent are cost-burdened, and 19 percent are severely cost-burdened, as shown in **Table 7**.

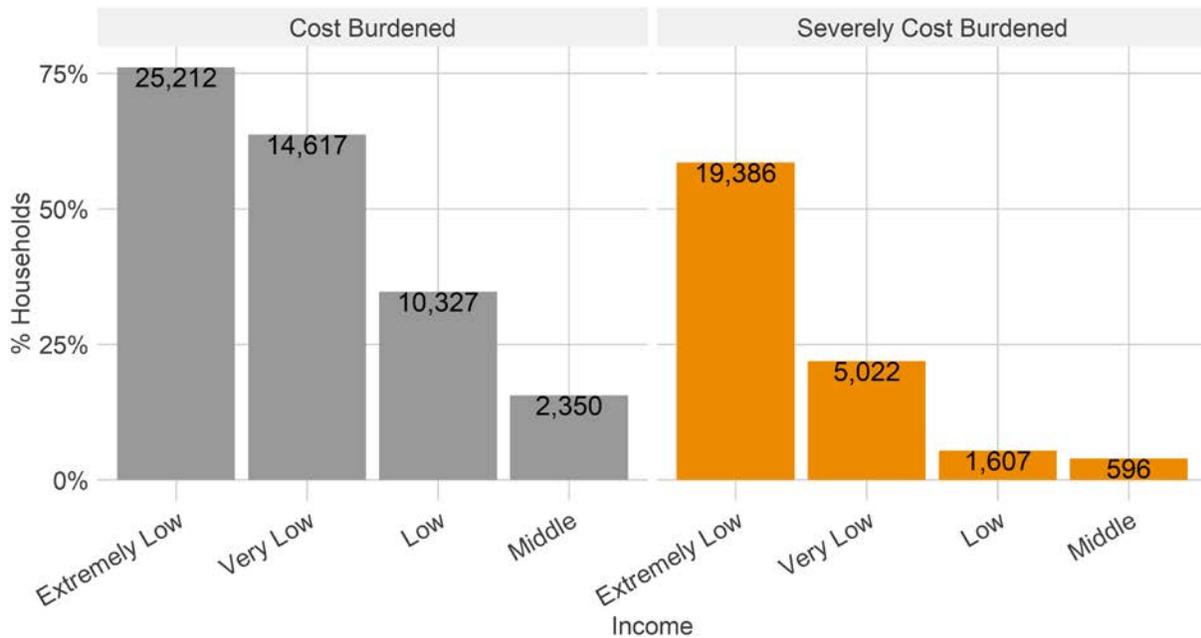
Table 7: Renter Households by Cost Burden

	Renter households	%
Severely Burdened (>50% income)	26,678	19%
Cost Burdened (>30% income)	53,576	39%
Not Cost Burdened	83,792	61%
<i>Total</i>	<i>137,368</i>	<i>100%</i>

Source: U.S. Census' American Community Survey 2021 5-year PUMS, BBER tabulations

The most vulnerable households face cost burdens at much higher rates than low to middle-income households. The cost burden by income category breakdown in Figure 8 shows this disparity: 3 out of 4 extremely low-income renters are cost-burdened, and 64 percent of those households are severely cost-burdened.

Figure 8: Renter Households Cost Burdened by Income Category



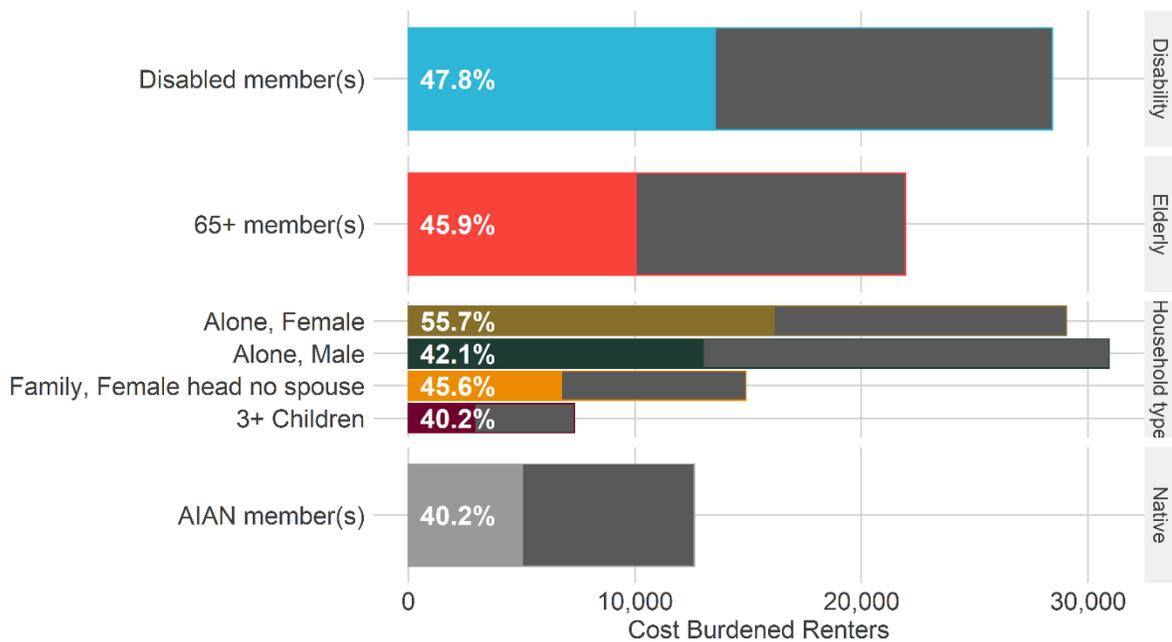
Source: U.S. Census' American Community Survey 2021 5-year PUMS, BBER tabulations (all renters)

These low-income households are also much more likely to face cost burdens from other necessities such as food, child care, medical costs, and transportation. For example, a severely cost-burdened household earning an extremely low income of \$20,000 a year would have at most \$10,000 to spread across all necessities and household members. On average, severely cost-burdened households spend about 60 percent less on food and 75 percent less on healthcare than similar low-income renters (JCHS 2017).

3.3 Cost Burdens by Household Characteristics

Certain types of renter households experience cost burdens at significantly higher rates than overall renters, 39 percent. Figure 9 highlights some of these households. While not mutually exclusive, two categories show that Montana has over 10,000 cost-burdened homes with at least one member with a disability or aged over 65. Montana also has a substantial number of cost-burdened one-person households. The rates of cost-burdened renters are also statistically above average for single mothers, families with three or more children, and homes with an American Indian or Alaskan Native member.

Figure 9: Cost Burdened Renters by Vulnerable Household Member(s)



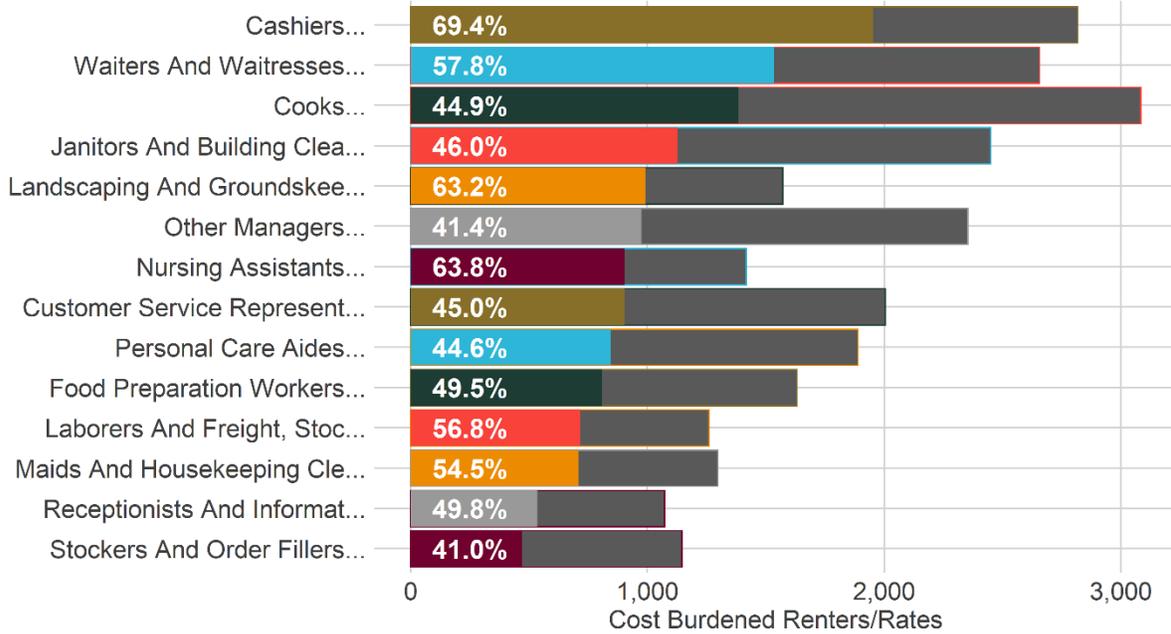
Source: U.S. Census' American Community Survey 2021 5-year PUMS, BBER tabulations

Montana's Qualified Action Plan (QAP) targets some of these populations when awarding LIHTCs. According to Montana's 2022 QAP, LIHTC allocations target households with disabilities, elderly members, veterans, victims of domestic violence, and large families. Currently, no priority is placed on LIHTC projects targeted to American Indian and Alaskan Native member households (Montana Housing 2022c).

3.4 Workforce Cost Burdens

Particular heads of household occupations also see statistically higher rates of cost burdens. Figure 10 depicts the cost burdens of renters representing more than 1,000 renter households by their number and rate of cost-burdened households. These occupations make up a good portion of the state's workforce and are currently vulnerable to rising housing costs. In addition, many of these occupations were considered “essential workers” during the COVID pandemic (M.T. Legislature H. 2020).

Figure 10: Cost Burdened Rate and Number by Head of Household Occupation

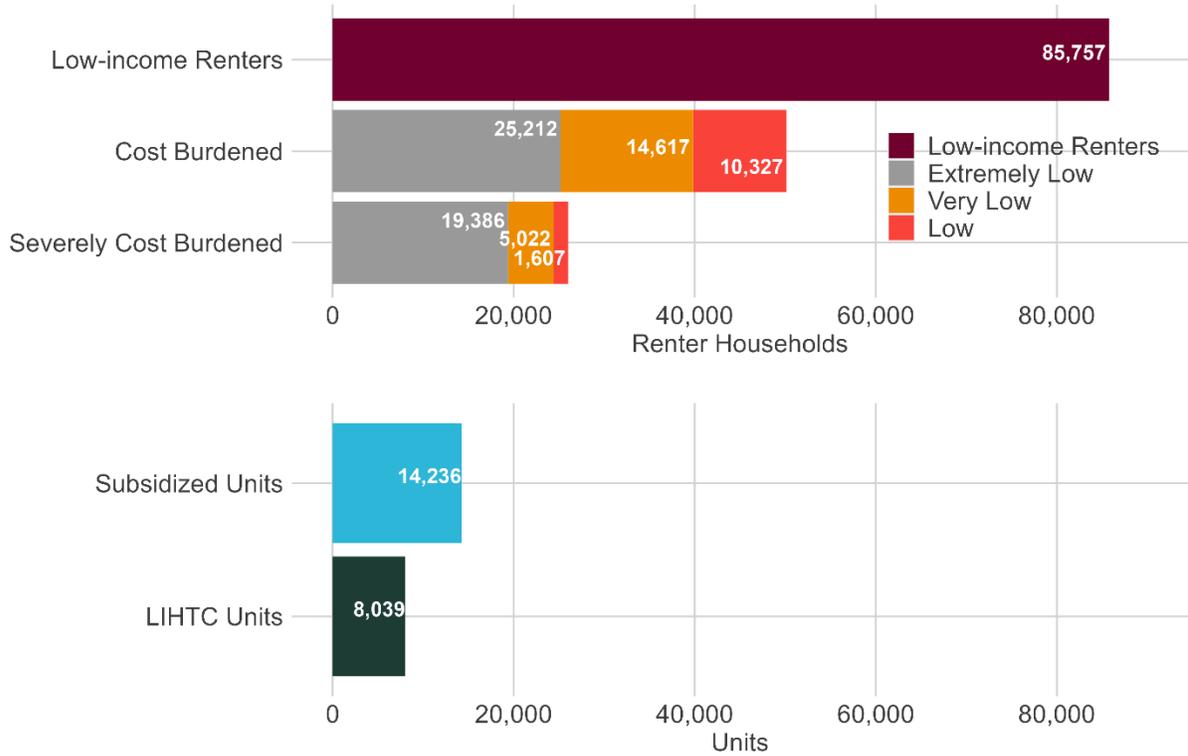


Source: U.S. Census' American Community Survey 2021 5-year PUMS, BBER tabulations

3.5 Summary of Need

Figure 11 provides a snapshot of the size of the affordable rental shortage by comparing the number of renter households by income category and cost burdens versus the number of units either rent restricted or cost subsidized to make homes affordable to low-income household. Montana currently has 50,156 cost-burdened renter households and 26,015 severely cost-burdened renter households. There are only 28 units with at least one rent restriction or cost subsidy per 100 cost-burdened renter households. The LIHTC program alone accounts for more than half of those units.

Figure 11: Low-income Renters and Cost-Burdened Renters vs. Federally Subsidized Units 2021.



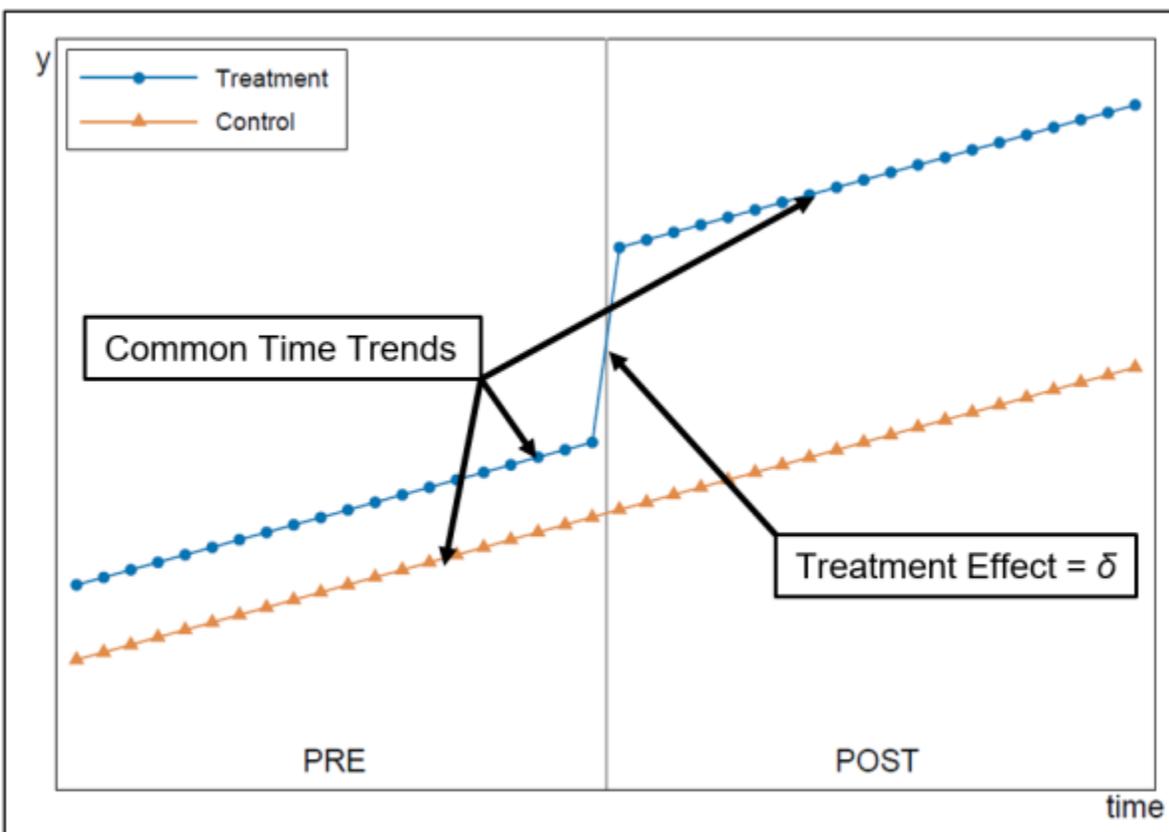
Source: U.S. Census' American Community Survey 2021 5-year PUMS, BBER tabulations

4.2 Do State-level LIHTC programs impact the low-income housing supply?

To answer the question: Do State-level LIHTC programs impact the low-income housing supply? This report establishes a baseline level of Federal LIHTC building that would have occurred if states had **not** passed a state LIHTC program, called the control or counterfactual estimate.

Here we model the control by only comparing the changes **within** each state before and after the passing of a state program using a fixed effects model. A fixed-effects model subtracts out overall levels of LIHTC building and estimates the **changes** in low-income units from **changes** in the status of a state credit program. Additional control estimate includes nationwide time trends in LIHTC building, known as year fixed-effects. This report also includes changes in state-level poverty rates, household incomes, and single-family building activity to establish a baseline for each state, shown as the bottom line in Figure 13.

Figure 13: Estimating a Treatment Effect With a Fixed-effects Model



The actual state-by-year observations of federal LIHTC units for states with State LIHTC programs are depicted in the top line in Figure 13. These observations are then subtracted from the control estimate to isolate the impact of a State LIHTC program. Only states that passed at State LIHTC program between 1989 and 2019 factor into the estimation of a treatment effect. States that did not pass a state LIHTC program over the period improve the control estimation, bottom line in Figure 13. For this reason, the analysis excludes California and Texas since they always had or never had a state LIHTC program; excluding these large population states allowed for better estimation of standard errors without significantly impacting point estimates.

First, this section answers the question. Do state tax credit programs impact low-income housing supply? This report also assesses if these impacts are more pronounced in non-metro areas with the least amount of LIHTC projects.

We also test two treatment variables. One tests the effects of having a state LIHTC program in any form, and the second is the total of state credits available each year. Available state credits were either assumed to be the state credit cap or estimated from historical data.

4.3 Data

A state-by-year panel was created for 48 states from 1989 to 2019 to analyze the impact of State LIHTC programs on the construction of Federal LIHTC units. The analysis included the following variables:

Response Variable (LIHTC Units)

The response variable is state-by-year observations of LIHTC units from HUD's Low-Income Housing Tax Credit Database (HUD 2022).

Treatment variable (State LIHTC programs)

The year enacted and the level of state credits available allow us to test the effect of two treatments, having a state credit program or not [1,0], and the marginal impact of an additional \$1 million in available state credits. Data for the year enacted and available credits were obtained from previous research and updated with enacting legislation documents (NOVOGRADAC 2022; Buschman et al. 2022). Summaries of State LIHTC programs are located in Table A- 4 of the Appendix.

Building Activity

Single-family permits were obtained from the U.S. Census's Building Permits survey and serve as a control for changes in building activity for each state and year (U.S. Census Bureau 2022b).

Socioeconomic Variables

Socioeconomic control variables for changes in statewide poverty rates and median household income were obtained from the U.S. Census's Small Area Income and Poverty Estimates (U.S. Census Bureau 2022a).

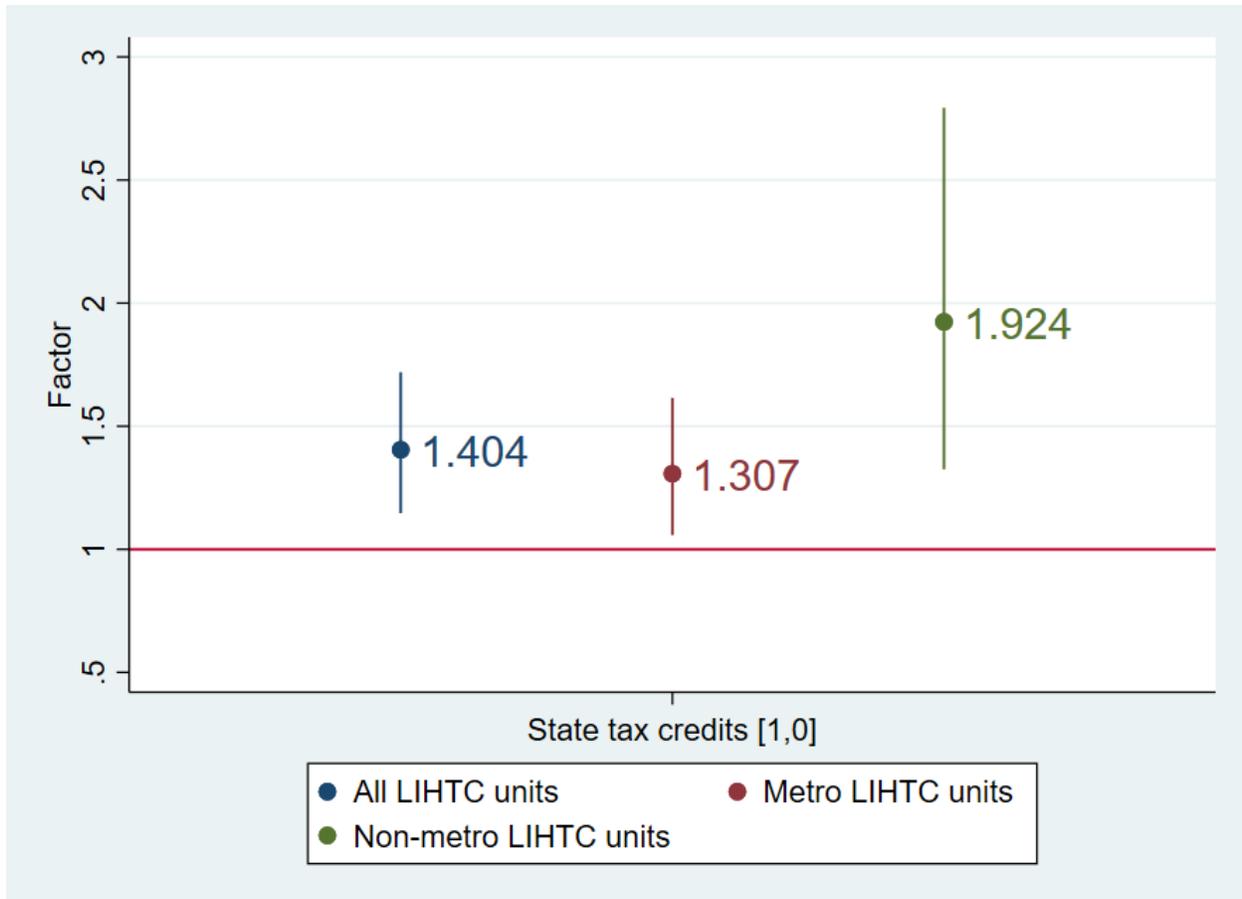
A more complete discussion of the model and specification used in this analysis are included in Section 10.1 in the Appendix.

4.4 Results

State Credit Program (Yes or No)

The estimated treatment effect of a State LIHTC program is expected to differ in metro or non-metro areas. All results show strong statistical evidence that State LIHTC programs increase the number of federally funded LIHTC units, summarized in Figure 14. A factor equal to one represents no effect, and a factor increase greater than one represents a positive effect. Full regression results are found in Table A-1 in the Appendix.

Figure 14: Expected Increase in Federal LIHTC Units from a State LIHTC Program.



Note: Exponentiated coefficients; 95% confidence intervals in brackets

t-statistics estimated with state cluster-robust standard errors

The expected increase in Federal LIHTC units from enacting a State LIHTC program after holding all other factors in the model constant is 40.4%, +30.7% for units located in metro areas, and 92.4% for units in non-metro areas.

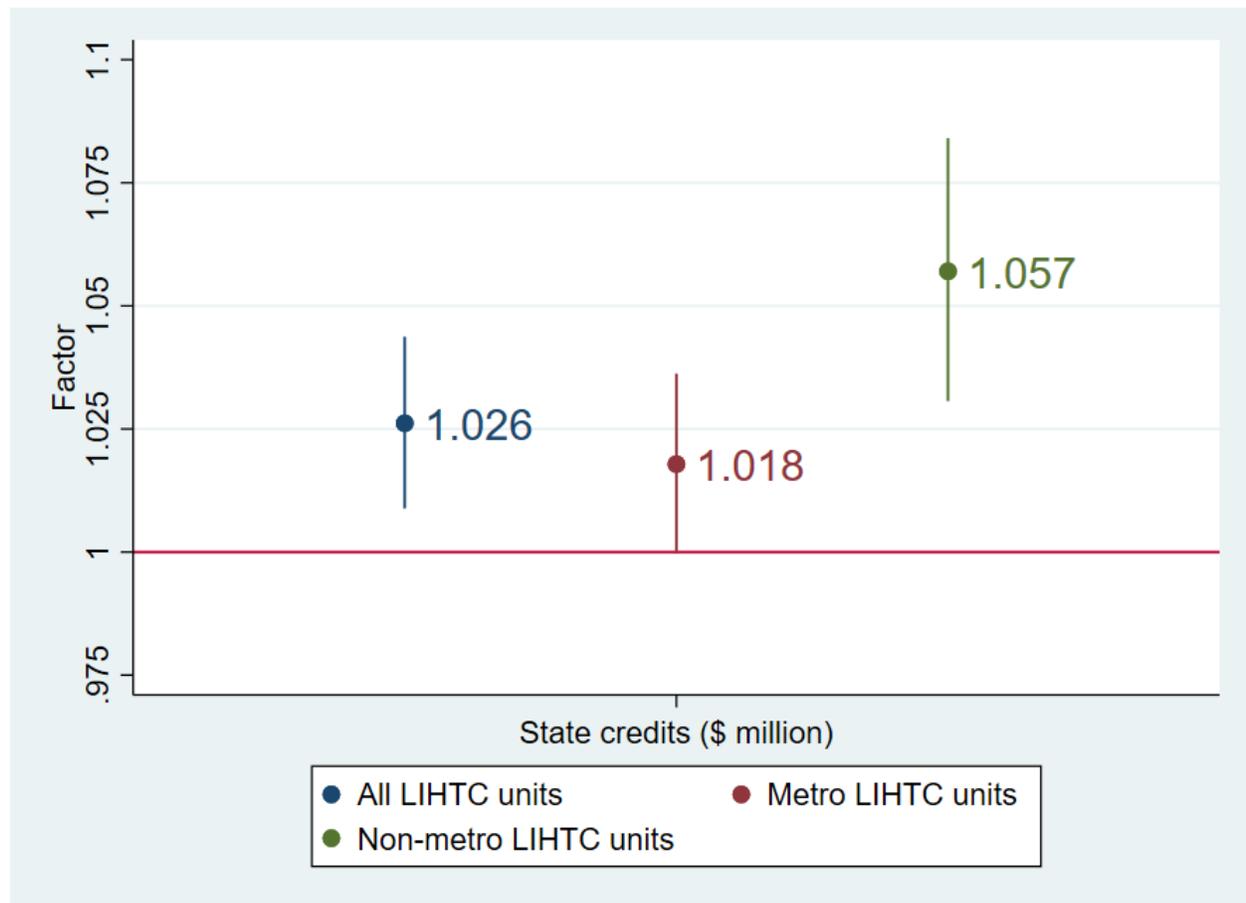
While the results provide high confidence that a State LIHTC program increases the number of LIHTC units built, they give only moderate evidence that non-metro areas see larger impacts than metro areas, as found in the previous analysis (Sweaney and Dorfman 2006). The lower bound 95% confidence

interval for units in non-metro areas overlaps substantially with the upper bound 95% confidence interval for metro units.

State Credits (\$ millions of credits)

The estimated treatment effect of increasing state credits is also expected to differ in metro or non-metro areas. A factor equal to one represents no effect, and a factor increase greater than one represents a positive effect. All results show strong statistical evidence that increasing state credits increase the number of Federally funded LIHTC units, summarized in Figure 15. Full results are reported in Table A- 2 in the Appendix.

Figure 15: Expected Increase in Federal LIHTC Units from Increasing State-credits by \$1 Million.



Note: Exponentiated coefficients; 95% confidence intervals in brackets

t-statistics estimated with state cluster-robust standard errors

We have high confidence that increasing the availability of state credits increases the number of LIHTC units. These impacts also provide evidence that increasing the amount of state credits has a larger effect for non-metro areas—in percentage terms.

The expected increase in Federal LIHTC units from increasing State credits by \$1 million after holding all other factors in the model constant is 2.6%, +1.8% for units located in metro areas, and 5.7% for units in non-metro areas.

5 “But for” Direct Impacts of a Montana Workforce Housing Tax Credit.

The following section builds on the previous one and evaluates the expected direct impacts of Montana's state-level tax credit program. This report considers a modified version of (*HB 397 2021*) passed by the 2021 Montana Legislature but vetoed due to being tied to federal awards. The proposed bill seeks to establish a state tax credit program for a sunset period of six years beginning in 2024. State credits are meant to “piggy back” on Federal LIHTC to help fill gaps in development costs, primarily for underutilized 4 percent tax credits.

Montana’s Workforce Housing Tax Credit is assumed to be capped at \$1.4875 million in credits per year, resulting in \$8.925 million per allocation cycle. This will create about \$6.4 million in equity per allocation cycle. The analysis assumes additional equity improves the economic feasibility of federal 4 percent projects.

The following section seeks to answer the following research questions:

- 1) What will the passage of a state tax credit program have directly on the state budget?
- 2) Using the experience of other states, what would the expected direct impact of a state credit program be on low-income housing development, residential construction investment, and ongoing operations of LIHTC units in Montana?

This proceeding section will present the REMI results of a state-level tax credit program on the Montana economy. In addition, the last section will summarize the more challenging to assess the expected social benefits of an increase in the affordable housing supply from a state LIHTC program in Montana from the literature.

5.1 Direct Fiscal Impact

This report makes some assumptions about the size and when the redemption of state credits will occur. First, we assume annual awards equal a state cap of \$1.4875. This number was derived from the 2021 HB 397 –50 percent of the federal 9 percent credit annual allocation(*HB 397 2021*). We also assume investors or developers begin to claim credits after a project is placed in service approximately two years after they are issued, starting in 2026. Credit cannot be claimed until projects are completed and occupied by an income-qualified household. The 10-year annual redemptions and their cumulative total is shown in Table 8.

Table 8: Expected Montana Workforce Housing Tax Credit Redemptions and Total by Year

Year	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Redemptions	\$1.49	\$2.98	\$4.46	\$5.95	\$7.44	\$8.93	\$7.44	\$5.95	\$4.46	\$2.98	\$1.49
Cumulative	\$1.49	\$4.46	\$8.93	\$14.88	\$22.31	\$31.24	\$38.68	\$44.63	\$49.09	\$52.06	\$53.55

5.2 Direct State Low-Income Housing Impact

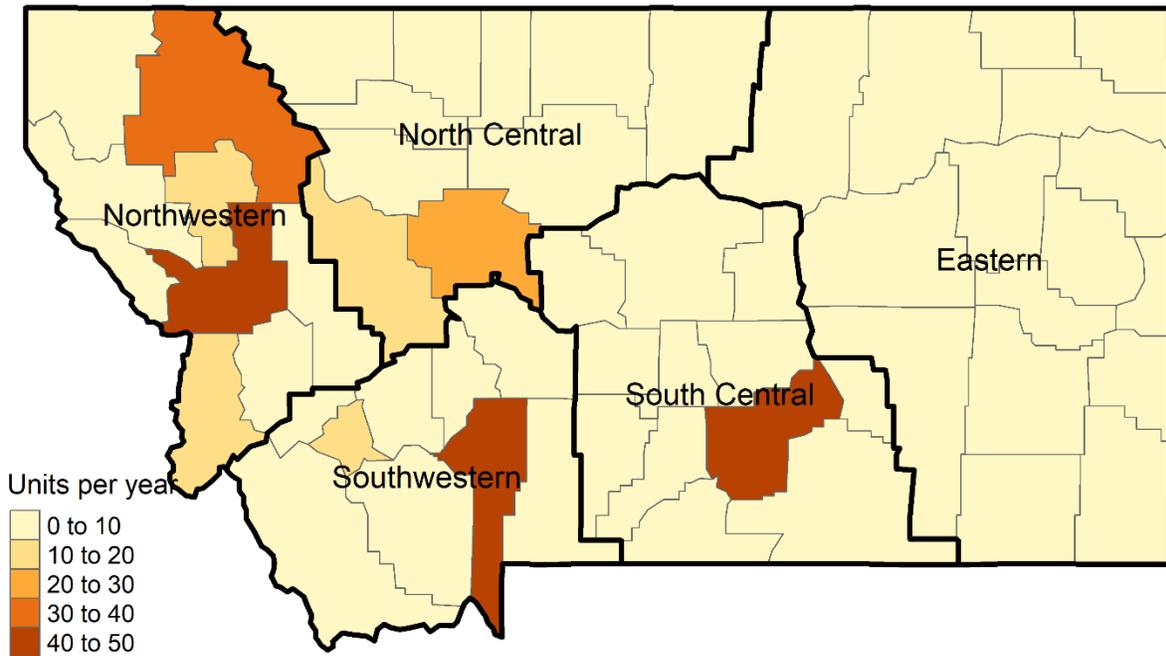
Using the “but for” analysis results in section 5, we estimate the impact of a state credit program capped at \$1.4875 million annually over six years on federally funded LIHTC units. A six-year stream would result in about \$8.925 million in state credits. Evaluating the following equations from the previous analysis shows an expected increase in LIHTC units of 17.1 percent in metro areas and a 64 percent increase in non-metro counties.

$$Expected\ effect_{metro} = e^{\beta_1 * 8.925} = +17.1\ \% LIHTC\ units$$

$$Expected\ effect_{nonmetro} = e^{\beta_1 * 8.925} = +64.0\ \% LIHTC\ units$$

These increases are then applied to Montana’s past usage and trends in Federal LIHTC. Over the history of the federal LIHTC program, Montana has produced an average of about 298 units a year without a state program. Figure 16 highlights this annual average by county and region.

Figure 16: Average Annual LIHTC Units by County



County-level estimated impacts are estimated based on historical LIHTC development and the status of the area as a metropolitan statistical area (MSA). Gallatin County was considered an MSA despite not yet receiving this designation. We then aggregated estimates to the regions used in the BBER’s economic policy model (REMI).

Table 9 summarizes the regional impacts of the proposed legislation over the six-year sunset period. The “baseline total units” column represents the status quo LIHTC development in Montana without a State LIHTC program. The expected increase column represents the additional units expected if Montana enacts a state-level LIHTC program in 2024. Most of the predicted increase will occur in Northwestern and North Central Montana, 253 and 217 units, respectively. The largest percentage change is expected to occur in the Eastern and North Central regions, in communities where the least development has emerged. Statewide this results in an increase in federally funded LIHTC units of 40.8 percent that would not exist “but for” as a state tax credit program.

Table 9: Low-income Units Baseline and Expected 2024-2029.

<i>Region</i>	<i>Baseline Total Units</i>	<i>Expected Increase</i>	<i>% Change</i>
<i>Northwestern</i>	600	253	42.2%
<i>North Central</i>	438	217	49.5%
<i>Southwestern</i>	402	145	36.3%
<i>South Central</i>	282	72	25.6%
<i>Eastern</i>	66	43	64.2%
<i>All Regions</i>	1788	730	40.8%

Combining these units with historical LIHTC construction costs enables the estimation of residential construction investment for each region by considering the inflation-adjusted per-unit costs of 4 percent projects in the state (Montana Housing 2022b). Inflation adjustments were made using the producer price index for net inputs to residential construction in 2020 dollars (U.S. Bureau of Labor Statistics 2022). It is important to note that since 2005 the cost of LIHTC units in Montana has not risen substantially beyond that of all residential construction, Figure A- 2. These results include county-level adjustments for construction costs. Figure A- 1 shows the median cost-per-unit by county used.

5.3 Direct Residential Construction Investment

One direct impact of a state-level LIHTC program will be the change in private residential investment spending. A state credit program in Montana is expected to increase total residential investment spending by \$143 million from 2024 to 2025, summarized by region in Table 10.

Table 10: Expected Increase in Residential Construction Spending 2024-2027

<i>Region</i>	<i>Units</i>	<i>Costs per unit (2020\$)</i>	<i>Residential Investment (million 2020\$)</i>
<i>Northwestern</i>	253	\$184,700	\$47.52
<i>North Central</i>	217	\$202,200	\$43.92
<i>Southwestern</i>	145	\$227,000	\$28.76
<i>Central and South Central</i>	72	\$187,900	\$13.25
<i>Eastern</i>	43	\$198,900	\$9.79
<i>All Regions</i>	730		\$143.25

The increase in federal tax credits is estimated from historical county-level federal LIHTC units built multiplied by inflation-adjusted credits per-unit for 4 percent projects, as they are most likely to be paired with state tax credits. The resulting increase in federal 4 percent credits is broken down in Table 11.

Table 11: Expected Increase in LIHTC units and LIHTCs 2024-2027

<i>Region</i>	<i>Units</i>	<i>Federal 4 % Credits (million 2020\$)</i>
<i>Central and South Central</i>	72	\$9.12
<i>North Central</i>	217	\$32.40
<i>Eastern</i>	43	\$7.20
<i>Northwestern</i>	253	\$35.58
<i>Southwestern</i>	145	\$15.30
<i>All Regions</i>	730	\$99.60

The amount of federal LIHTCs expected to be leveraged by \$53.55 million in Montana Workforce Housing Tax Credits over six years is \$99.60 million. For every \$1 in lost revenue due to state credits, an additional \$1.85 of federal LIHTCs is expected to enter the Montana economy through residential investment spending.

5.4 Direct Housing Choice Vouchers Acceptance Impact

An additional increase in federal expenditures will enter the state via an increase in the number of housing units accepting Housing Choice Vouchers (HCVs). In Montana, 65 percent of LIHTC tenants receive some form of rental assistance, and an estimated 17 percent of LIHTC-funded units receive HCVs, likely due to the federal prohibition of LIHTC owner discrimination against voucher holders in funded units.

A local shortage of rental housing makes it easier for owners of qualifying units to rent to unsubsidized households instead of accepting vouchers. For many markets in Montana, this creates a shortage of units receiving vouchers and long waitlists for those who qualify. The average time on the HCV waitlist in 2021 was 29 months, a 4-month increase from 2020, indicating that this shortage is growing (HUD 2021). Past research confirms that increasing the number of LIHTC units in areas with low HCV acceptance increases their acceptance locally (Khadduri and Rodda 2004).

The expected increase in HCV acceptance from a Montana Workforce Housing Tax Credit was estimated using county-level LIHTC vacancy rates, HCV expenditures per household (HUD 2021), and the proportion of HCVs currently used in Montana's LIHTC-funded housing. An overall increase of 730 LIHTC units due to a state tax credit, assuming no improvement in the usage of HCVs in LIHTC units, results in the following:

- An additional 124 LIHTC units accepting HCVs and
- an additional \$38.1 million in vouchers claimed from 2026 to 2036.

Increasing Montana's HCV acceptance increases the spending power of low-income residents, allowing voucher holders to live in units they previously could not afford or reducing their housing cost burden. In addition, from the Montana economy's perspective, a rent subsidy enters the state similarly to a federal transfer payment.

The following section presents the "but-for" economic impacts of just a few of the most easily measured large-scale impacts from a state LIHTC program. The direct impacts are outlined in Table 12 and represent a significant subset but do not fully capture the distributional and complex interactions between affordable housing and the broader economy. Additional expected benefits follow in the proceeding section.

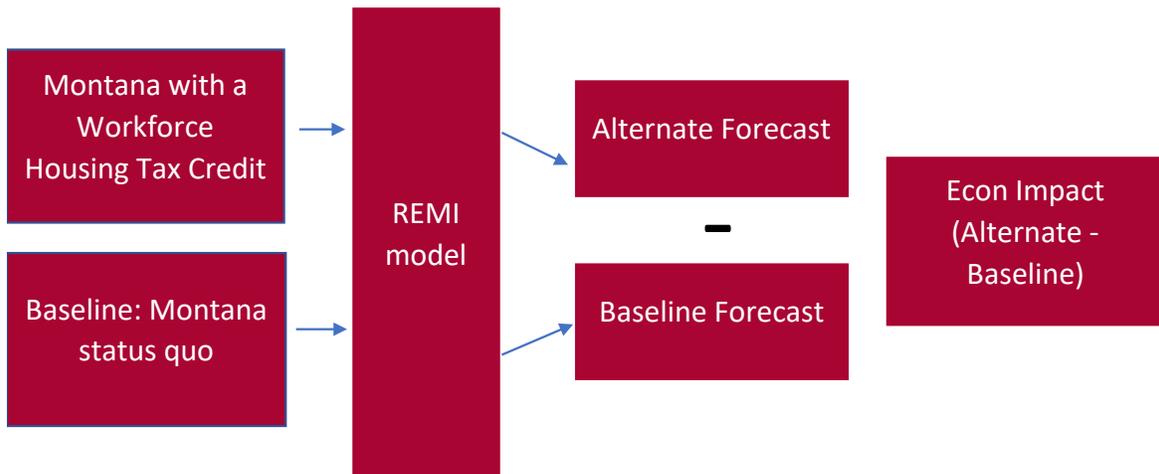
6 Economic Impact of Montana Workforce Housing Tax Credit

Passing a Montana Workforce Housing Tax Credit will have a measurable impact on the state economy. This section seeks to use the direct impacts from the previous section to answer the question: What would Montana’s economy look like if a state tax credit bill were passed? The economic impact estimates include only the likely impact “but-for” a state tax credit program in Montana, not the ongoing impact of the entire Federal LIHTC program.

6.1 Model Overview

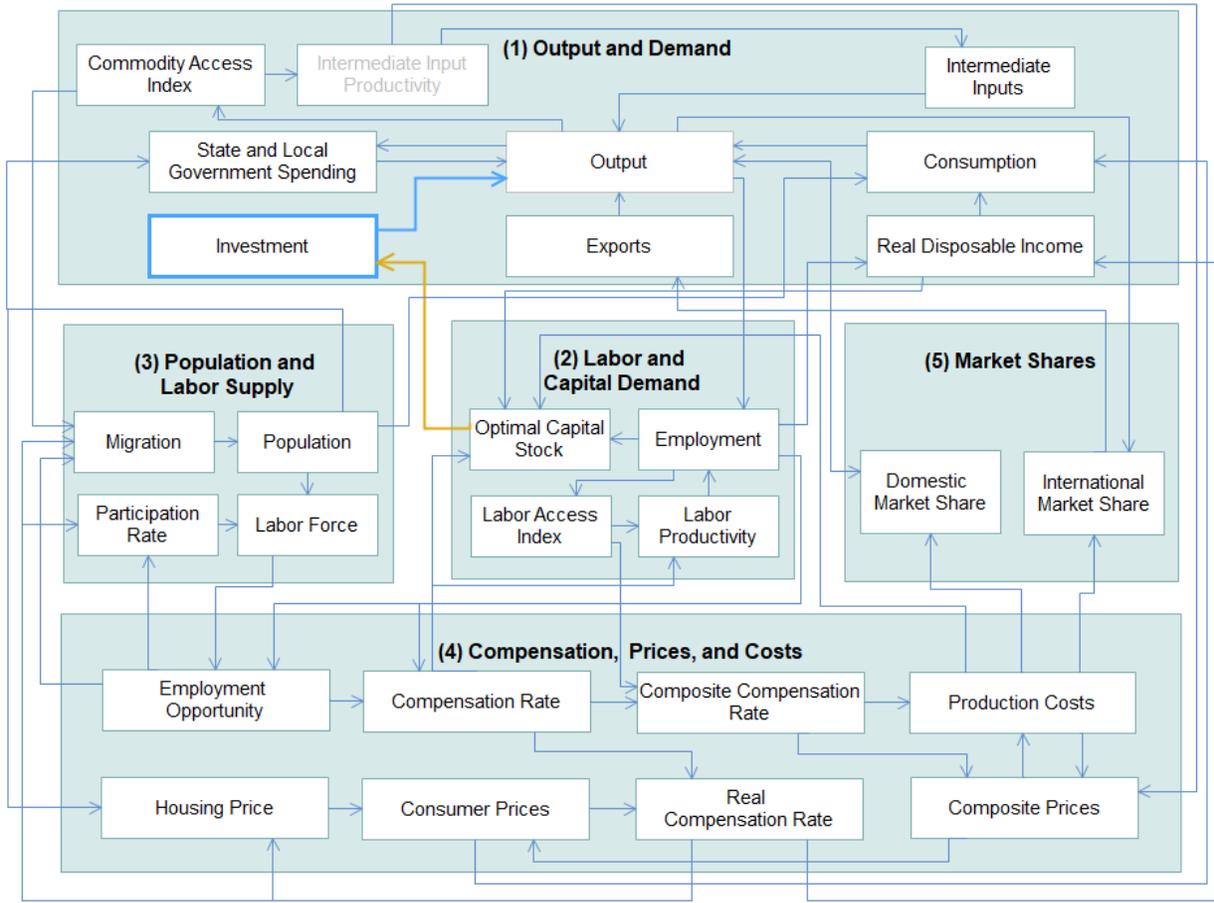
To capture the added impact of enacting a State LIHTC program in Montana and the rest of the state economy, we use an economic policy model calibrated with Montana economic data and designed for this purpose. The REMI model is a well-established tool that has been thoroughly documented and used in dozens of peer-reviewed studies (Treyz 1993). As shown graphically in Figure 17, the model consists of a status quo forecast of the Montana economy and an alternate forecast of the Montana economy with a Montana Workforce Housing Tax Credit.

Figure 17: Policy Analysis with the REMI Model



The REMI model utilizes historical data on production, prices, trade flows, migration, and technological advances to calibrate the relationship between five basic blocks of the Montana economy: 1) Output and Demand; 2) Labor and Capital Demand; 3) Population and Labor Supply; 4) Compensation, Prices and Costs; and 5) Market Shares. These linkages are shown in Figure 18.

Figure 18: Schematic Model of REMI



6.2 Summary of Direct Impacts

The direct impacts used in the economic impact modeling include the direct loss of state tax revenue due to claimed credits, the increase in construction spending, the ongoing operation of LIHTC units, and the rise in Housing Choice Voucher usage expected from the proposed legislation. The total direct impacts used in the REMI analysis are outlined in Table 12.

Table 12: Summary of Direct Impacts from 2024 to 2036

<i>Model Inputs</i>	<i>Time period</i>	<i>Years</i>	<i>Total amount (2020\$)</i>
<i>Lost Revenue from State Credits</i>	2026 to 2036	10	-\$53.3 million
<i>Federal 4% Credits</i>	2024 to 2029	6	\$96.1 million
<i>Private Construction Spending</i>	2024 to 2029	6	\$43.7 million
<i>Rental Operations and Maintenance</i>	2026 to 2036	10	\$60.3 million
<i>Housing Choice Vouchers</i>	2026 to 2036	10	\$32.4 million

The economic Impacts of the proposed legislation will vary based on the activity and when these impacts will occur. For simplicity, the following economic impacts are presented as two phases the “construction phase” and “ongoing operations.” The construction phase occurs during the six-year sunset period in which developers are awarded credits from 2024 to 2028. The ongoing operations phase occurs following six years of building, ending after all state credits are claimed from 2029 to 2036.

6.3 Construction Phase Economic Impacts 2024 to 2029

A majority of the economic impacts of residential construction spending are temporary and occur during the construction of LIHTC properties through the purchases of construction inputs. Other indirect impacts occur through the spending of earnings supported by the new construction or rehabilitation projects.

Economic Summary

Table 13 summarizes the REMI estimates of the annual economic impacts for the years in which construction is likely to occur. This also includes the first \$14.88 million in lost revenue from claimed state tax credits from 2026 to 2030.

Table 13: Annual Construction Phase Economic Summary

<i>Category</i>	<i>Impact</i>	<i>Units</i>
<i>Total Employment</i>	271	Jobs
<i>Personal Income</i>	\$13.7	Millions (2020\$)
<i>Disposable Personal Income</i>	\$11.7	Millions (2020\$)
<i>Output</i>	\$38.5	Millions (2020\$)
<i>Population</i>	210	People

The primary finding for the direct impacts during the construction phase of a Montana Housing Tax Credit will make a considerable economic contribution to the Montana economy from 2024 to 2030.

This report finds:

- There will be an average of 271 more jobs in the economy each year.
- Montana households will receive \$13.7 million in personal income, of which \$11.7 million will be after-tax income available for investment and consumption.
- Montana establishments will receive an additional \$38.5 million in gross receipts each year of the construction phase.

Employment Impacts

The breakdown of employment by industry in Table 14 reveals how a state tax credit for low-income housing leads to higher employment levels outside the construction and real estate industries. Significant employment in retail trade, accommodation and food services, health care and social assistance is induced in the broader economy. In total, 93 jobs would be supported each year in industries outside those related to real estate development. For every job lost to the state government, an additional 272 net new jobs are expected in the broader economy. These estimates reflect the total of full-time, year-round, part-time, and temporary positions by industry sector.

Table 14: Annual Construction Phase Employment Impacts

<i>Industry</i>	<i>Annual Jobs</i>
<i>Construction</i>	157
<i>Retail trade</i>	21
<i>Real estate</i>	21
<i>Accommodation and Food Services</i>	13
<i>Health Care and Social Assistance</i>	13
<i>Professional, scientific, and technical services</i>	12
<i>Other Services, except Public Administration</i>	8
<i>Administrative and Waste Services</i>	6
<i>Manufacturing</i>	6
<i>Wholesale trade</i>	4
<i>Government</i>	-1
<i>Other</i>	11
<i>Total</i>	271

Wages, Compensation, and Earnings

During construction, an additional \$13.8 million in earnings will be paid to Montana workers yearly for an average annual earnings per new job of \$50,800.

Table 15: Wages Compensation and Earnings Impacts

<i>Category</i>	<i>Impact</i>	<i>Units</i>
<i>Wages and Salaries</i>	8.7	\$ Millions (2020\$)
<i>Compensation</i>	10.5	\$ Millions (2020\$)
<i>Earnings by Place of Work</i>	13.8	\$ Millions (2020\$)
<i>Earnings per New Job</i>	\$50,800	(2020\$)

Output Impacts

The economic activity during the construction phase results in a larger economy. That is, the expected impacts of a state LIHTC program propagate throughout the broader economy, increasing the overall size of the economy.

Economic output is one measure of this growth, defined as the gross receipts to businesses and non-business organizations. Output reflects the expected impact on the annual sales for Montana businesses. Overall the construction phase results in a net of 38.5 million a year in output. The net loss of output to the state government from the \$14.88 million claimed over the six years results in about \$100,000 less output for Montana’s state government each year.

Table 16: Annual Construction Phase Annual Ongoing Output Impacts

<i>Industry</i>	<i>Output</i>
<i>Construction</i>	20.3
<i>Real estate</i>	6.6
<i>Retail trade</i>	2.2
<i>Health care and social assistance</i>	1.7
<i>Professional, scientific, and technical services</i>	1.6
<i>Manufacturing</i>	1.4
<i>Wholesale trade</i>	1.2
<i>Accommodation and food services</i>	0.9
<i>Administrative and waste services</i>	0.6
<i>Other services, except public administration</i>	0.5
<i>State Government</i>	-0.1
<i>Other</i>	1.6
<i>Total</i>	38.5

6.4 Ongoing Economic Impacts 2030 to 2036

Ongoing impacts of LIHTC properties include the operating costs and rental revenue generated once the construction phase ends and these properties are placed in service. These results also include the impacts of increased Housing Choice Voucher utilization and the remaining \$38.67 million in lost revenue from claimed state tax credits from 2030 to 2036.

Economic Summary

Table 17 summarizes the REMI estimates of the annual economic impacts for the years following the end of construction, beginning in 2030 and ending in 2036. While smaller in magnitude, ongoing economic impacts endure as long as the property remains in service.

Table 17: Annual Ongoing Economic Impact Summary

<i>Category</i>	<i>Impact</i>	<i>Units</i>
<i>Total Employment</i>	19	Jobs
<i>Personal Income</i>	\$3.0	Millions (2020\$)
<i>Disposable Personal Income</i>	\$2.7	Millions (2020\$)
<i>Output</i>	\$5.2	Millions (2020\$)
<i>Population</i>	46	People

The primary finding for the ongoing direct impacts of a Montana Workforce Housing tax credit will continue to contribute to the Montana economy from 2030 to 2036.

This report finds:

- There will be an expected 19 more jobs in the economy each year.
- Montana households will receive \$3 million in personal income, of which \$2.7 million will be after-tax income available for investment and consumption in the broader state economy.
- Montana establishments will receive an additional \$5.2 million in gross receipts each year the units are in operation.

Employment Impacts

The breakdown of employment by industry in Table 18 reveals how a state tax credit for low-income housing leads to higher employment levels outside the construction and real estate industries. Employment in accommodation and food services, retail trade, and health care and social assistance is also induced in the broader economy. An additional 5 jobs are supported each year in industries outside those related to real estate development. For every job lost to the state government, 5.75 more jobs would be realized in the broader economy.

Table 18: Annual Ongoing Employment Impacts

<i>Industry</i>	<i>Annual Jobs</i>
<i>Construction</i>	9
<i>Real estate</i>	5
<i>Accommodation and food services</i>	2
<i>Retail trade</i>	2
<i>Health care and social Assistance</i>	2
<i>Professional, scientific, and technical services</i>	1
<i>Other services, except public administration</i>	1
<i>Administrative and waste services</i>	1
<i>Manufacturing</i>	0
<i>Arts, entertainment, and recreation</i>	0
<i>State Government</i>	-4
<i>Other</i>	0
<i>Total</i>	19

Wages, Compensation, and Earnings Impacts

During the ongoing operation of LIHTC units, an additional \$734,000 in wages will be paid to Montana workers each year for an average annual earnings per new job of \$58,014.

Table 19: Annual Ongoing Wages, Compensation, and Earnings Impacts

<i>Category</i>	<i>Impact</i>	<i>Units</i>
<i>Wages and Salaries</i>	\$734,000	(2020\$)
<i>Compensation</i>	\$946,000	(2020\$)
<i>Earnings</i>	\$1.1	Millions (2020\$)
<i>Earnings per New Job</i>	\$58,014	(2020\$)

Output Impacts

Output reflects the expected impact on the annual sales of Montana businesses. Overall the ongoing operations of LIHTC units result in a net of \$5.2 million a year in output. The net loss of output to the state government from the remaining \$38.67 million in claimed credits results in an average of \$300,000 less output for the Montana state government each year.

Table 20: Annual Ongoing Output Impacts

<i>Industry</i>	<i>Output</i>
<i>Real estate</i>	1.9
<i>Construction</i>	1.6
<i>Retail trade</i>	0.5
<i>Health care and social assistance</i>	0.4
<i>Professional, scientific, and technical services</i>	0.3
<i>Wholesale trade</i>	0.2
<i>Accommodation and food services</i>	0.2
<i>Manufacturing</i>	0.1
<i>Administrative and waste services</i>	0.1
<i>Other services, except public administration</i>	0.1
<i>State Government</i>	-0.3
<i>Other</i>	0.1
<i>Total</i>	<i>5.2</i>

6.5 Overall Net Fiscal Impacts

Net Fiscal impacts of LIHTC properties include the average and total revenue impacts from construction, ongoing operations, and revenue loss. This report assumes a balanced state budget. Therefore, any lost revenue will result in an equivalent loss in state spending. Fiscal benefits exclude property tax impacts as rental housing for lower-income tenants is tax-exempt (*Tax-Exempt Property 2021*). Table 21 summarizes the REMI estimates for the net fiscal costs of a Montana Workforce Housing Tax Credit.

Table 21: Net Fiscal Impact of Montana Workforce Housing Tax Credit 2024 to 2036.

<i>Impact (2024-2035)</i> <i>\$ millions (2020\$)</i>	<i>Annual Average Impact</i>	<i>Total Impact</i>
<i>Fiscal Benefits Montana LIHTC</i>	\$1.48	\$14.77
<i>Claimed State Tax Credits</i>	-\$5.36	-\$53.55
<i>Net Fiscal Impacts</i>	<i>-\$3.88</i>	<i>-\$38.78</i>

7 Additional Expected Benefits of Montana Workforce Housing Tax Credits.

Many benefits of affordable housing programs are not as easily captured as those collected and analyzed for economic impacts. However, expanding the supply of safe and stable housing for Montana’s workforce, children, elderly and disabled has public benefits beyond the households in them. Benefits accrued are less direct such as lower state and local healthcare spending (Doran, Misa, and Shah 2013), increased educational outcomes and earnings from children in safe and stable housing (Derby 2021), and lower county-level homelessness (Jackson and Kawano 2015).

This section highlights a few pressing issues of affordable housing in Montana and reviews some of the literature on the additional benefits of increasing the availability of quality, stable, and affordable units from LIHTC and other federal programs. When able, these sections will estimate the impact of expanding LIHTC with a Montana Housing Tax Credit.

Housing Quality

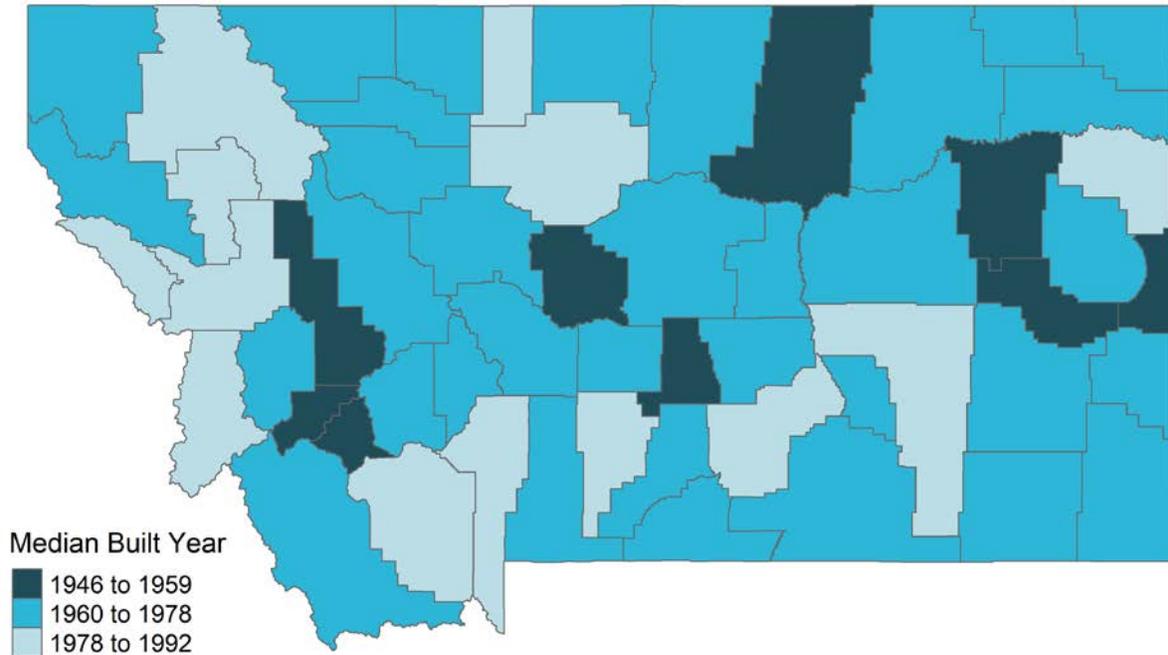
Low-income households, instead of overspending, may be forced to live in substandard housing. While more “affordable,” these housing options place households at greater risks to their health and well-being. Examples of risks from substandard housing include lack of reliable heating, absence of running water, presence of pests, and toxic chemical exposures. In these examples, government-assisted units have lower rates of these risk factors (Sharfstein et al. 2001; Cox et al. 2021).

Example: Lead Exposure

Lead paint exposure is one clear example of how poor housing quality impacts its residents' health and disproportionately impacts child development and health. Montana’s relatively old housing stock means many residents live in properties with lead paint. The federal government banned lead paint in residential structures in 1978. An estimated 46.5 percent of housing units built before 1978 homes require lead paint remediation in the western U.S. (Cox et al. 2021). The risk of lead paint disproportionately impacts Montana’s renters since they are more likely to live in structures built before the federal ban.

The “median built year” represents the year in which half of the area’s units were built before that year. Statewide the median built year for an occupied rental unit is 1977. Figure 19 highlights that only thirteen counties have at least half of the renter-occupied units constructed after the federal ban on lead paint.

Figure 19: Median Year Built for Renter-occupied Structures



Source: U.S. Census' American Community Survey 2021 5-year, BBER tabulations

The combination of subsidies often found in Montana's LIHTCs (Table 1) would require adherence to HUD's lead paint regulations despite no explicit lead remediation policy in Montana's 2023 QAP. Nationally federally assisted units have 44 percent lower incidences of lead-based paint hazards. In addition, public health research has shown that children in federally assisted units have 0.35 $\mu\text{g}/\text{dL}$, lower average blood lead levels than similar households in non-federally assisted units (Ahrens et al. 2016).

A national study predicted a decrease in blood lead levels from lead paint remediation of 0.48 $\mu\text{g}/\text{dL}$ per child would increase a low-income child's future earnings by about \$6,218 a year, provide health and education savings of \$298, and have quality-adjusted life benefits of \$274 a year, for a total benefit of \$6,790 annually. In addition, state and local government spending was also expected to decrease by about \$771 per child (Health Impact Project 2017).

About a quarter of Montana's LIHTC units have children under 18. A 0.48 $\mu\text{g}/\text{dL}$ reduction was achieved for just 100 households, with Montana's average of 1.91 children per qualified family. The effect of moving 100 households into new or rehabilitated LIHTC units would:

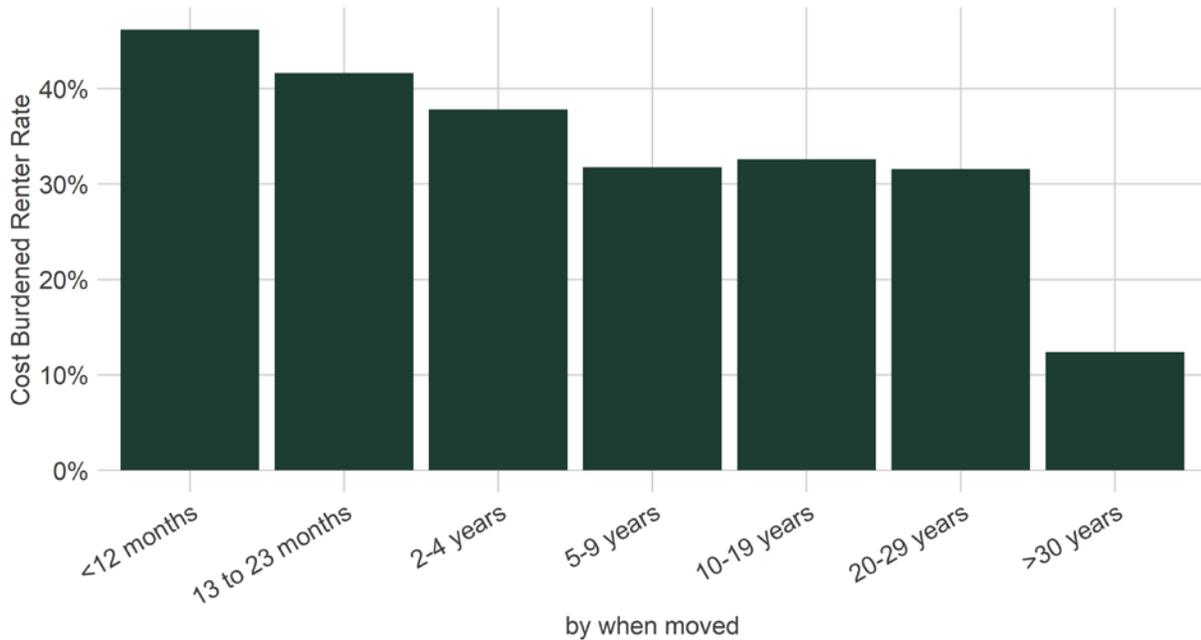
- Improve the future earnings of children by \$1.2 million annually.
- Result in state and local government benefits of about \$1.472 million over ten years.

Housing Stability

As rent continues to rise beyond the reach of low-income households, many renters find themselves in unstable housing situations forcing moves into crowded units, evictions, and homelessness. For the households that avoid experiencing homelessness, this instability results in frequent moves or longer tenures in unsafe environments.

Figure 20 highlights the negative association between the length of time a Montana renter household has lived in their current residence and cost burdened rates. Households who have spent the least time in their homes are the least likely to afford rent and other expenses.

Figure 20: Cost Burdened Rate by When Moved



Source: U.S. Census' American Community Survey 2021 5-year PUMS, BBER tabulations

Households who experience multiple moves are more likely to have children change schools, miss classes, have lower math test scores, and live in food-insecure households compared to similar, more stable households (Cutts et al. 2011; Voight, Shinn, and Nation 2012; Gubits et al. 2016).

Subsidized housing provides some of this stability. Subsidized renters are less likely to be frequent movers than similarly qualified renter households. For subsidized households in Montana, the percentage of households that moved into their current residence within the past year was 15 percent (HUD 2021), and the average for Montana's qualified renters was 32 percent (U.S. Census Bureau 2021).

LIHTC units are also shown to provide stability. Nationally for every additional year spent in a LIHTC unit, children had between 4 and 5 percent greater probability of enrolling in or obtaining higher education and make between 3 and 5 percent more in future earnings. Moreover, even after controlling for higher education, children in LIHTC units still had a significant 1.7 percent increase in future earnings (Derby 2021).

Another form of housing stability is leaving unsafe housing, such as a crowded housing unit or an abusive partner, for a more stable long-term housing situation. Affordable rental options may facilitate a household member to leave a dangerous household.

Example: LIHTC and Domestic Violence

Montana's LIHTC award criteria explicitly target victims of domestic violence (Montana Housing 2022c). A recent national study highlighted the wisdom of this preference. Researchers analyzing violent death statistics from 13 states across more than a decade found that increasing the availability of LIHTC units reduced the rate of intimate partner violence (IPV) related homicides. The study provided additional evidence that this protective impact occurred by offering options for households leaving abusive relationships and alleviating the stress caused by evictions (Austin et al. 2022).

States building more than 30 LIHTC units per 100,000 residents were shown to have a 12% lower rate of IPV-related homicides. This report estimates a statewide increase in LIHTC units to 33 per 100,000 residents. The increased availability of low-income housing units from a Montana Workforce Housing Tax Credit is associated with reducing IPV homicides from 1.3 per 100,000 to 1.1, about 1 to 2 fewer IPV homicides a year statewide (CDC 2019; M.T. Department of Justice 2019).

Housing Affordability

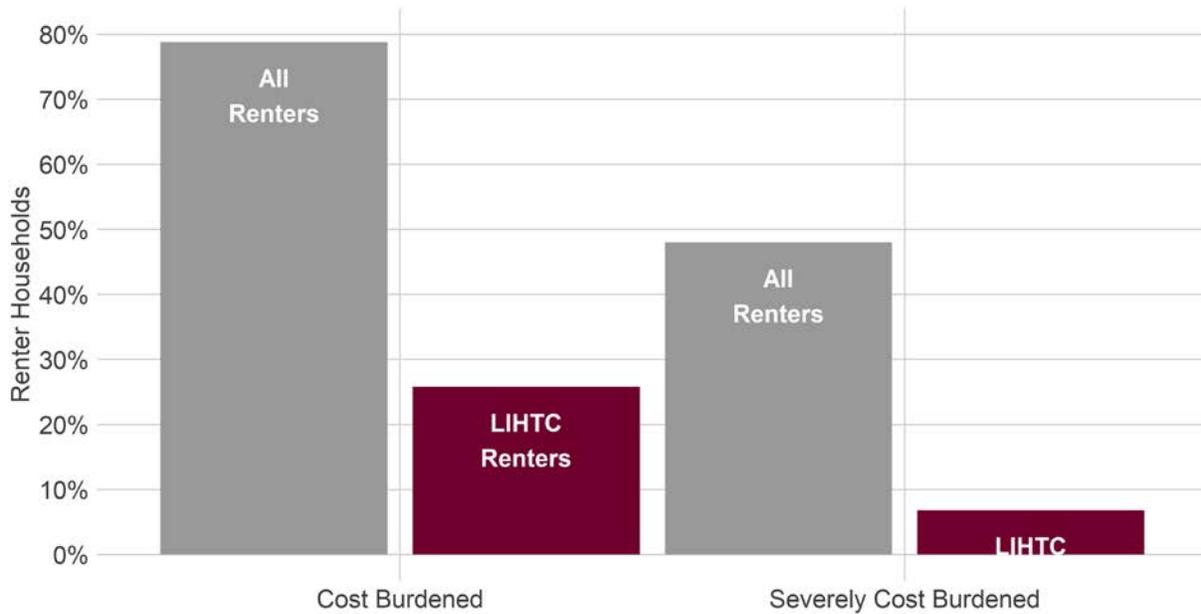
The most heavily studied impact of affordable housing options is the impact that lower rents have on the ability of a household to afford food and healthcare. Households with severe cost burdens spend about 60 percent less on food and 75 percent less on healthcare than low-income renters (JCHS 2017). Housing cost burdens are shown to be the most potent risk factor for poor health (Meltzer and Schwartz 2016).

Households utilizing Housing Choice Vouchers realize the benefits of a reduction in cost burdens. Households receiving HCVs compared to households on waitlists have half the rates of seriously underweight children (Children's Healthwatch 2009), are 15 percent more likely to have health insurance, and are 21 percent less likely to have unmet healthcare needs (Simon et al. 2017).

Example: Montana’s LIHTC Households by Cost Burdens

The probability a renter is cost-burdened is substantially lower for LIHTC residents in Montana. LIHTC renters have a 32.7 percent lower likelihood of being cost-burdened than a qualified renter household (<60% AMI). These lower rates are shown in Figure 21. Notably, only 6.7% of LIHTC tenants experience severe cost burdens.

Figure 21: Percent of All Renters vs. LIHTC Residents by Cost Burden Rate



Source: HUD - LIHTC tenant tables, U.S. Census American Community Survey 2021 5-year PUMS, BBER tabulations

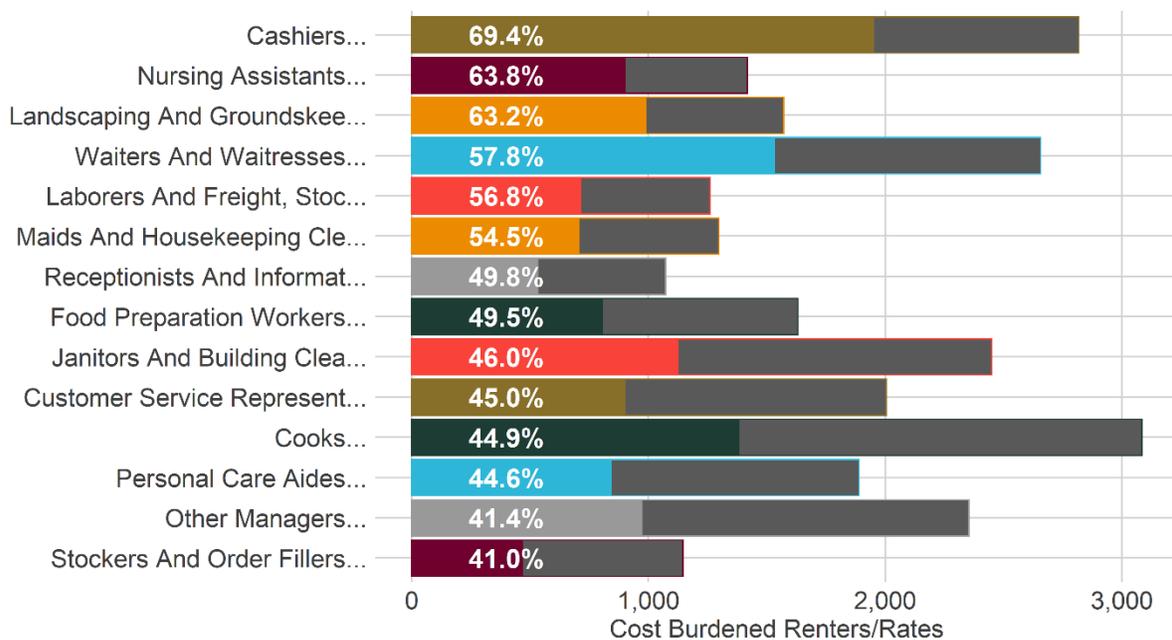
Across the state, this represents a substantial annual saving for qualified low-income households. Given the transition of 730 qualified households into LIHTC units, we can expect 389 households to no longer be cost-burdened. This would result in average eligible household savings of \$4,806 a year. A state tax credit program would result in estimated statewide savings of about \$1.86 million annually to eligible households to spend on other necessary expenses.

Workforce Impacts

Connections between local employment growth currently exist more in economic theory than in empirical research. Economic theory would expect rising housing prices will increase the income that residents require to live in a local market. If businesses cannot keep up with rising housing costs, the local market is less appealing to employers who would like cheaper labor to be profitable. A recent survey of Montana’s bioscience industry showed 17.9 % of respondents rated the cost of housing as their firm’s most significant impediment to growth despite providing higher-than-average wages (BBER 2022).

The local market could also become less appealing for households who cannot spend more on housing, such as the cost-burdened households shown in Figure 22. Since these occupations make up a substantial amount of the essential workforce (M.T. Legislature H. 2020), a healthy housing market would be expected to provide housing at price points affordable for these households. If housing is absent for these workers, the local economy is expected to slow down as an area loses its workforce and employers to more affordable parts of the country.

Figure 22: Above Average Cost Burdened Renter Rates by Head of Household Occupation.



Source: U.S. Census American Community Survey 2021 5-year PUMS, BBER tabulations

A working paper by the Federal Reserve Bank of Boston has provided some empirical evidence that unaffordability does slow local employment growth. A one-unit increase in an affordability index—housing becoming less affordable—leads to a 10 to 14 percentage point reduction in employment over ten years (Chakrabarti and Zhang 2015). Authors argue this finding supports efforts to increase housing supply by reducing local regulations and associated development costs rather than providing demand subsidies to preserve employment growth.

8 Conclusion

This report summarized the scale of the relative size of the federal LIHTC program in the state and assessed the potential benefits and costs of a supplemental state program to leverage these credits. The results presented here analyze national state-level observations to determine how much federal LIHTC development could reasonably be attributed to similar state programs. Using these estimates and the BBER policy analysis model (REMI), we can estimate how the overall economy would be impacted if Montana were to pass a similar program.

This report finds net economic benefits to the broader Montana economy from a supplemental state-level tax credit program. However, these impacts come at a net cost to Montana's state budget of about \$3.88 a year. A loss in revenue will result in opportunity costs for other state government services, absent any change in state revenue sources or state tax rates.

Overall this report finds expected annual **net** economic benefits of a supplemental state credit program in Montana would be:

- An expected 271 new jobs will be created during the construction phase and an additional 19 jobs per year after construction ends.
- Montana businesses and non-business organizations will receive \$13.8 million more in annual personal income during construction and \$1.1 million in sustained annual earnings after construction ends.
- Montana organizations will realize an additional \$38.5 million yearly during construction and \$5.2 million yearly in ongoing gross receipts.

The scope of this report was unable to fully capture all of the long-term and indirect benefits of expanding the supply of affordable housing. This report reviewed some of the existing literature finding evidence that increasing the supply of subsidized housing improves other social and economic outcomes. Notably, improving the safety and stability of housing for low-income households with children has a delayed but considerable impact on educational attainment and earning potential for Montana's future workforce. Therefore, any improvement in the availability of LIHTC units will likely represent significant benefits to the overall economy and state fiscal budgets, above and beyond the short-term economic benefits in this report.

While the federal program has been the most extensive single program for providing affordable housing over the past few years, a supplemental state program is not the only tool for expanding affordable housing development. Other supply-side programs include the federal HOME Program, Housing Trust Fund Community Development Block Grants, and state-level programs such as the Coal Trust Multifamily Homes and the Housing Montana Fund. All of which could supplement the development of affordable housing in the state.

9 References

- Ahrens, Katherine A., Barbara A. Haley, Lauren M. Rossen, Patricia C. Lloyd, and Yutaka Aoki. 2016. "Housing Assistance and Blood Lead Levels: Children in the United States, 2005–2012." *American Journal of Public Health* 106 (11): 2049–56. <https://doi.org/10.2105/AJPH.2016.303432>.
- Austin, Anna E., Christine Piette Durrance, Carol W. Runyan, Desmond K. Runyan, Sandra L. Martin, Jeremy Mercer, and Meghan E. Shanahan. 2022. "Affordable Housing through the Low-Income Housing Tax Credit Program and Intimate Partner Violence-Related Homicide." *Preventive Medicine* 155 (February): 106950. <https://doi.org/10.1016/j.ypmed.2021.106950>.
- BBER. 2022. "The Economic Impact and Profile of Montana Bioscience Firms." University of Montana: Bureau of Business and Economic Research. <https://montanabio.org/wp-content/uploads/2022/05/Economic-Impact-and-Profile-of-Montana-Bioscience-Firms-2022.pdf>.
- Biber, Joseph. 2007. "Financing Supportive Housing with Tax-Exempt Bonds and 4% Low-Income Housing Tax Credits." Corporation for Supportive Housing (CSH).
- Buschman, Robert D, Peter S Bluestone, Jonatas Teixeira Prates, Kshitiz Shrestha, and Nicholas I Warner. 2022. "Tax Incentive Evaluation: Georgia Low-Income Housing Tax Credit." *Andrew Young School Fiscal Research Center*, June.
- CDC. 2019. "National Violent Death Reporting System (NVDRS)." 2019. <https://wisqars.cdc.gov/nvdrs/>.
- Children's Healthwatch. 2009. "Rx for Hunger." Boston: Children's Healthwatch Medical-Legal Partnership.
- Correia, Sergio, Paulo Guimarães, and Thomas Zylkin. 2020. "Ppmlhdfc: Fast Poisson Estimation with High-Dimensional Fixed Effects." *The Stata Journal: Promoting Communications on Statistics and Stata* 20 (1): 95–115. <https://doi.org/10.1177/1536867X20909691>.
- Cox, David C., Gary Dewalt, Robert O'Harver, and Jonathan Bielli. 2021. "American Healthy Homes Survey II Lead Findings (HUD)." II. https://www.hud.gov/sites/dfiles/HH/documents/AHHS_II_Lead_Findings_Report_Final_29oct21.pdf.
- Cutts, Diana Becker, Alan F. Meyers, Maureen M. Black, Patrick H. Casey, Mariana Chilton, John T. Cook, Joni Geppert, et al. 2011. "US Housing Insecurity and the Health of Very Young Children." *American Journal of Public Health* 101 (8): 1508–14. <https://doi.org/10.2105/AJPH.2011.300139>.
- Derby, Elena. 2021. "Does Growing Up in Tax-Subsidized Housing Lead to Higher Earnings and Educational Attainment?" *SSRN Electronic Journal*, February. <https://doi.org/10.2139/ssrn.3491787>.
- Di, Wenhua, and James C. Murdoch. 2013. "The Impact of the Low Income Housing Tax Credit Program on Local Schools." *Journal of Housing Economics* 22 (4): 308–20. <https://doi.org/10.1016/j.jhe.2013.10.002>.
- Doran, Kelly M., Elizabeth J. Misa, and Nirav R. Shah. 2013. "Housing as Health Care — New York's Boundary-Crossing Experiment." *New England Journal of Medicine* 369 (25): 2374–77. <https://doi.org/10.1056/NEJMp1310121>.
- Fernando, Felix, and Robert Hearne. 2017. "Housing for Essential Service Workers during an Oil Boom: Opportunities and Policy Implications." *Journal of Housing and the Built Environment* 32 (December). <https://doi.org/10.1007/s10901-016-9539-9>.
- Freddie Mac. 2018. "LIHTC in Indian Areas." Spotlight on Underserved Markets. Freddie Mac Multifamily. https://mf.freddiemac.com/docs/LIHTC_in_Indian_Areas.pdf.
- Gubits, Daniel, Marybeth Shinn, Michelle Wood, Stephen Bell, Samuel Dastrup, Claudia D Solari, Scott R Brown, Debi McInnis, Tom McCall, and Utsav Kattel. 2016. "Family Options Study: 3-Year

- Impacts of Housing and Services Interventions for Homeless Families.” *SSRN Electronic Journal*.
<https://doi.org/10.2139/ssrn.3055295>.
- HB 397. 2021. https://leg.mt.gov/bills/2021/HB0399/HB0397_X.pdf.
- Health Impact Project. 2017. “10 Policies to Prevent and Respond to Childhood Lead Exposure.” Health Impact Project.
https://www.pewtrusts.org/~media/assets/2017/08/hip_childhood_lead_poisoning_report.pdf
- HUD. 2019. “Low-Income Housing Tax Credit (LIHTC): Tenant Level Data | HUD USER.” 2019.
<https://www.huduser.gov/portal/datasets/lihtc/tenant.html>.
- . 2021. “Picture of Subsidized Households.” 2021.
<https://www.huduser.gov/portal/datasets/assthsq.html>.
- . 2022. “LIHTC Database Access.” 2022. <https://lihtc.huduser.gov/>.
- Immonen, Evelyn, and Keith Wiley. 2019. “Low Income Housing Tax Credits in Indian Country,” June.
- IRS. 2022. “Applicable Federal Rates (AFRs).” Internal Revenue Service. <https://www.irs.gov/pub/irs-drop/rr-22-22.pdf>.
- Jackson, Osborne, and Laura Kawano. 2015. “Do Increases in Subsidized Housing Reduce the Incidence of Homelessness?: Evidence from the Low-Income Housing Tax Credit.” SSRN Scholarly Paper. Rochester, NY. <https://papers.ssrn.com/abstract=2675694>.
- JCHS. 2017. “The State of the Nations Housing.” Harvard University: Joint Center for Housing Studies.
- Khadduri, Jill, Carissa Climaco, Kimberly Burnett, Laurie Gould, and Louise Elving. 2012. “What Happens to Low-Income Housing Tax Credit Properties at Year 15 and Beyond?” *SSRN Electronic Journal*.
<https://doi.org/10.2139/ssrn.2169370>.
- “Low-Income Housing Tax Credit (LIHTC).” 2022. December 2022.
<https://www.huduser.gov/portal/datasets/lihtc.html>.
- Lubell, Jeffrey, and Sarah Wolff. 2018. “Variation in Development Costs for LIHTC Projects.” ABT Associates.
- Meltzer, Rachel, and Alex Schwartz. 2016. “Housing Affordability and Health: Evidence From New York City.” *Housing Policy Debate* 26 (1): 80–104. <https://doi.org/10.1080/10511482.2015.1020321>.
- Montana Housing. 2022a. “Housing Preservation Resources.” 2022. <https://housing.mt.gov/Multifamily-Development/Housing-Preservation-Resources>.
- . 2022b. “Multifamily Housing Credits.” 2022. <https://housing.mt.gov/Multifamily-Development/Housing-Credit/>.
- . 2022c. “2023 Qualified Allocation Plan.”
https://housing.mt.gov/_shared/Multifamily/docs/2022QAP.pdf.
- MT Department of Justice. 2019. “Montana Domestic Violence Fatality Review Commissions.” Report to the Legislature. Office of Consumer Protection and Victim Services. <https://dojmt.gov/wp-content/uploads/2019-MDVFR-Report.pdf>.
- MT Legislature H. 2020. *House Resolution 1*. <https://leg.mt.gov/bills/2021/billpdf/HR0001.pdf>.
- NOVOGRADAC. 2022. “State LIHTC Program Descriptions.” 2022. <https://www.novoco.com/resource-centers/affordable-housing-tax-credits/application-allocation/state-lihtc-program-descriptions>.
- Ports, Katie A., Whitney L. Rostad, Feijun Luo, Michelle Putnam, and Elizabeth Zurick. 2018. “The Impact of the Low-Income Housing Tax Credit on Children’s Health and Wellbeing in Georgia.” *Children and Youth Services Review* 93 (October): 390–96.
<https://doi.org/10.1016/j.chilyouth.2018.08.012>.
- Sharfstein, Joshua, Megan Sandel, Robert Kahn, and Howard Bauchner. 2001. “Is Child Health at Risk While Families Wait for Housing Vouchers?” *American Journal of Public Health* 91 (8): 1191–92.
<https://doi.org/10.2105/AJPH.91.8.1191>.

- Simon, Alan E., Andrew Fenelon, Veronica Helms, Patricia C. Lloyd, and Lauren M. Rossen. 2017. "HUD Housing Assistance Associated With Lower Uninsurance Rates And Unmet Medical Need." *Health Affairs* 36 (6): 1016–23. <https://doi.org/10.1377/hlthaff.2016.1152>.
- Sweaney, Anne, and Jeffrey H Dorfman. 2006. "The Economic Impact of Low-Income Housing Tax Credits in Georgia."
- Tax-Exempt Property*. 2021. *Exemption For Rental Housing Providing Affordable Housing To Lower-Income Tenants*. https://leg.mt.gov/bills/mca/title_0150/chapter_0060/part_0020/section_0210/0150-0060-0020-0210.html.
- Treyz, George I. 1993. *Regional Economic Modeling: A Systematic Approach to Economic Forecasting and Policy Analysis*. <https://link.springer.com/book/10.1007/978-94-017-2874-4>.
- U.S. Bureau of Labor Statistics. 2022. "Producer Price Indexes." 2022. <https://www.bls.gov/ppi/databases/>.
- US Census Bureau. 2022a. "Small Area Income and Poverty Estimates (SAIPE) Program." 2022. <https://www.census.gov/programs-surveys/saipe.html>.
- . 2022b. "Building Permits Survey (BPS)." December 2022. <https://www.census.gov/construction/bps/index.html>.
- Voight, Adam, Marybeth Shinn, and Maury Nation. 2012. "The Longitudinal Effects of Residential Mobility on the Academic Achievement of Urban Elementary and Middle School Students." *Educational Researcher* 41 (9): 385–92. <https://doi.org/10.3102/0013189X12442239>.
- Wooldridge, Jeffrey M. 2010. *Econometric Analysis of Cross Section and Panel Data*. 2nd ed. Cambridge, Mass: MIT Press.

10 Appendix

10.1 Methods

The following equation represents the fixed effects model used to estimate the treatment effect of state tax credit programs on federal LIHTC units, represented as β_1 . The estimate of β_1 represents the expected size of an effect. Confidence intervals are estimated with robust standard errors to measure if there is statistical evidence of a state tax credit program's impact on federal LIHTC building activity.

$$\text{Units}_{it} = \beta_0 + \beta_1 \text{StateCredit}_{it} + \beta_2 \text{SfPermits}_{it} + \beta_3 \ln(\text{MHI}_{it}) + \beta_4 \text{PovertyRate}_{it} + u_i + v_t + e_{it}$$

where $\text{Units}_{it} \sim \text{Poisson}$

Units_{it} is the count of Federal LIHTC units for each state (i) and year (t). This variable is assumed to approximate a Poisson distribution used to estimate the expected value of count data. Count data must take on non-negative integer value and is therefore not modeled accurately with normal distribution assumptions (Wooldridge 2010, chapter 18; Correia et al. 2020).

StateCredit_{it} is either a dummy variable [0,1] or a measure of the state credits available to the state and year (\$ millions).

ln(mhi_{it}) is the natural logarithm of median household income for each state and year.

povertyrate_{it} is the percent of the population in each state living below the poverty line for each state and year.

u_i is the state fixed-effect (unique to the state and doesn't change over time); this estimate isolates changes **within** states, not between states.

v_t is the year-fixed effect (unique to year and doesn't vary by state) controlling for time trends such as national construction activity, changes in overall construction costs, and recessions.

e_{it} is the error term.

10.2 Full Fixed Effects Results

Table A- 1: Expected Increase in Federal LIHTC Units from a State LIHTC Program.

	(1) All LIHTC Units	(2) Metro LIHTC Units	(3) Non-metro LIHTC Units
State tax credits [1,0]	1.404** [1.15,1.72]	1.307* [1.06,1.62]	1.924*** [1.32,2.79]
Single-family permits (10,000 permits)	1.052*** [1.02,1.08]	1.049*** [1.02,1.08]	1.086* [1.01,1.16]
ln(median household income)	96.63*** [20.31,459.80]	77.44*** [14.25,420.80]	4.858 [0.23,103.20]
Poverty rate	1.047 [0.97,1.13]	1.028 [0.95,1.11]	1.003 [0.89,1.13]
State Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	1488	1488	1440

Table A- 2: Expected Increase in Federal LIHTC Units from Increasing State-credits by \$1 Million.

	(1) All LIHTC Units	(2) Metro LIHTC Units	(3) Non-metro LIHTC Units
State credits (\$ million)	1.026** [1.01,1.04]	1.018 [1.00,1.04]	1.057*** [1.03,1.08]
Single-family permits (10,000 permits)	1.054*** [1.03,1.08]	1.050*** [1.02,1.08]	1.089* [1.02,1.17]
ln(median household income)	97.28*** [20.29,466.43]	79.14*** [14.44,433.57]	4.523 [0.22,93.27]
Poverty rate	1.043 [0.97,1.12]	1.024 [0.95,1.11]	0.995 [0.89,1.12]
State Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	1488	1488	1440

10.3 Per-unit Costs of LIHTC Units

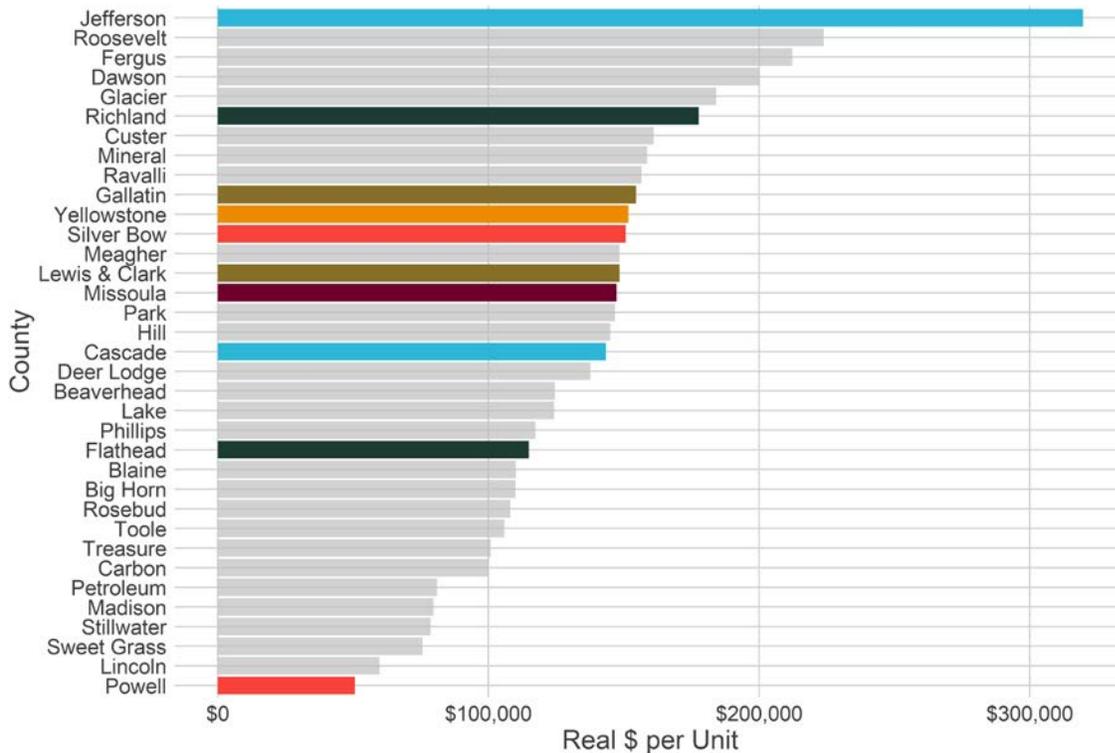
Project cost per unit depends primarily on the type of construction, location, and overall construction input costs. Table 4 highlights the first of these factors showing the cost of a new building to be about \$26,000 more per unit than the acquisition and rehabilitation of existing housing units in real 2020 dollars.

Table A- 3: Median project costs per unit by construction type.

Type	Real 2020\$ per unit
New Const	\$162,934
Acq/Rehab	\$136,633
Rehab	\$135,286

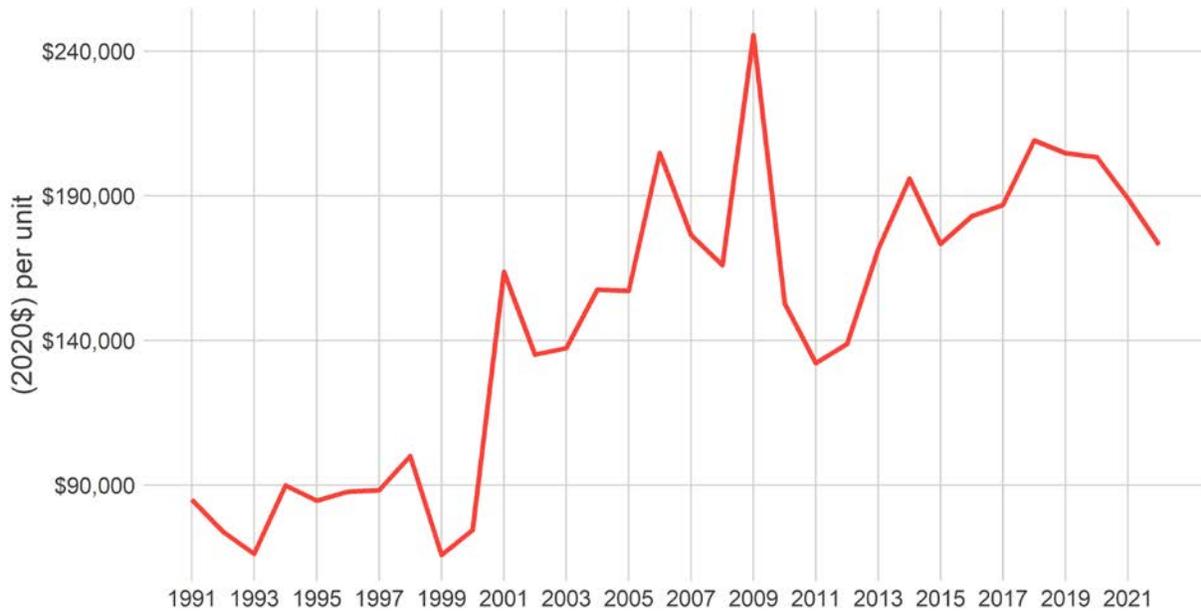
The next important driver of project costs is where construction occurs. Figure A- 1 shows that more rural counties spend substantially more per unit on LIHTC construction. Most of the more urban counties fall in the upper middle of the distribution.

Figure A- 1: Median per unit costs by county, 1991 to 2022



The cost of a LIHTC property in Montana has risen since the program's inception but has stayed relatively stable since about 2005. Figure A- 2 shows that after adjusting for the cost of construction, the per-unit costs of a LIHTC unit have not continued to rise substantially in real terms. This also appears to be the case nationally (Lubell and Wolff 2018).

Figure A- 2: Median LIHTC Project Cost Per Unit in Montana, 1991 to 2022



10.4 State LIHTC Program Summaries

Table A- 4: State LIHTC Program Summaries Enacted 1987 - 2019

<i>State</i>	<i>Year</i>	<i>Credit Description/Terms</i>	<i>Annual Cap</i>
<i>California</i>	1987	30% of eligible basis (9-percent credit) 13% of eligible basis (4-percent credit)	\$500M
<i>Connecticut</i>	1988	Non-profits developing qualified projects can receive up to \$500k in credits that can be sold to fund the projects.	\$10M
<i>Missouri</i>	1990-2017, 2020	70% of federal credit (9-percent); discretionary amounts per project (4-percent). Suspended 2017-20	\$3M (bond-financed 4%)
<i>Utah</i>	1994	A fraction of the federal credit varies by year and project qualities (9- and 4-percent credit). NOT TRANSFERABLE	None
<i>Arkansas</i>	1997	20% of the federal 9-percent credit	\$250,000
<i>Massachusetts</i>	1999	\$400k for 40 or fewer, \$700k for 41-60, \$1M for 60-100, and \$1.5M for greater than 100 units	\$40M
<i>Georgia</i>	2000	100% of the federal credit (9- and 4-percent credit)	Match
<i>New York</i>	2000	Discretionary, up to \$125k per unit	None
<i>Vermont</i>	2000	Discretionary	\$400k
<i>Illinois</i>	2001	50% of donations to qualified non-profit sponsors developing affordable housing projects	None
<i>North Carolina</i>	2002 - 2015	No credit was allowed for a development that uses tax-exempt bond financing	
<i>New Mexico</i>	2006	Up to 50% on donations to qualified projects approved by N.M. Mortgage Finance Auth. or to N.M. Charitable Trust	~\$4.5M
<i>Hawaii</i>	2011	50% of federal credit (9- and 4-percent credit)	None
<i>Colorado</i>	2014	30% of qualified basis (9-and 4-percent credit)	\$10M
<i>District of Columbia</i>	2014	Up to 25% of federal credit (9-and 4-percent credit)	None
<i>Oklahoma</i>	2014	100% of federal credit (9- and 4-percent credit)	\$4M
<i>Nebraska</i>	2016	100% of federal credit (9- and 4-percent credit)	Match
<i>Wisconsin</i>	2018	3-percent credit for 6 years on federal 4-percent projects	\$42M
<i>Nevada</i>	2019	Discretionary amounts per project (9- and 4-percent)	\$10M

Source:(Buschman et al. 2022; NOVOGRADAC 2022)

Table A- 5: New and proposed programs 2020 - present

<i>State</i>	<i>Year</i>	<i>Credit Description/Terms</i>	<i>Annual</i>
<i>Maine</i>	2020	100% of federal credit for qualifying new units and 4- percent projects; 50% of qualified basis for other projects	\$10M
<i>Pennsylvania</i>	2020	100% of federal credit (9- and 4-percent credit)	\$10M
<i>South Carolina</i>	2020	100% of federal credit (9- and 4-percent credit)	Match
<i>New Jersey</i>	2021	Federal 4-percent credit projects eligible for N.J. Aspire program credits	~\$167M
<i>Virginia</i>	2021	100% of federal credit (9- and 4-percent credit)	\$60M
<i>Arizona</i>	2022	50% of federal credit	\$4M
<i>Indiana</i>	2022	40% to 100% of federal allocation amount of 4% LIHTC.	\$30M
<i>Kansas</i>	2022	Credit equal to the federal LIHTC allocated or allowed by the KHRC.	Match
<i>Proposed Programs</i>			
<i>Iowa</i>	2023	4% credit for not more than 30% of qualified basis of development.	\$15M
<i>Kentucky</i>	2023	To be claimed over 10 years against income tax or insurance premium tax.	\$12.5M
<i>North Carolina</i>	2023	Properties that receive federal LIHTCs are eligible. Following are present-day value of credits for different developments.	Unknown
<i>Ohio</i>	2023	Properties that receive a federal LIHTC are eligible for the state credit in an amount not to exceed the amount necessary, when combined with the federal LIHTC, to ensure the financial feasibility of the project.	\$500M
<i>Montana</i>	2023	Likely paired with 4 percent credits, to improve the financial feasibility projects.	\$8M

Source:(Buschman et al. 2022; NOVOGRADAC 2022)