Missouri Housing Development Commission

MHDC

Cost/Benefit Analysis of the Missouri Low-income Housing Tax Credit Program

December 2018

Table of Contents

Figures

Tables

Appendices

Executive Summary

This study was undertaken to update the economic benefits provided by the State of Missouri's Low-Income Housing Tax Credit (LIHTC) program. This study relies extensively on the analysis and methods used in the cost/benefit analysis study completed for MHDC back in June 2007. The study addresses the relative success of its application to further the Missouri Housing Development Commission's (MHDC) mission of providing high quality, low income housing to Missouri residents, and the return on the state's investment in providing tax credits for this purpose.

The federal LIHTC was created in 1986 to encourage private developers to invest in affordable housing through the use of tax credits as economic incentives. In 1992, increased demand for Missouri affordable housing resulted in the enactment of the Missouri low-income housing tax credit. The Missouri LIHTC is awarded based on project need and objectives under Missouri's Qualified Allocation Plan.

Economic Benefits. In analyzing the costs and benefits of the Missouri LIHTC, the study reviewed a sample of 30 projects selected from the 206 projects awarded credits in the years 2011 through 2016. Based on this review, the study's findings include:

- Each dollar of state tax credit awarded generates $10.59 in economic activity.
- Each dollar of state tax credit awarded results in an increase in gross state product of $5.81.
- Credits awarded during the project period will generate almost $3 billion of total economic impact to the state of Missouri and increased gross state product by over $1.62 billion.
- Credits awarded during the project period will generate over 35,600 jobs as a result of increased construction activities and annual operations.
- The efficiency of the state tax credit improved by almost $1 during the period of 2011 through 2016. The economic activity per state tax credit increased compared to the prior study completed in 2007.
- The 206 projects awarded credits will produce 11,761 units of affordable housing of which 5,999 (51.01%) were designated for seniors and the remaining 5,762 (48.99%) were for working families.
- The 206 projects are located throughout the state with 6,861 units being developed in the state's major metropolitan areas of Kansas City and St. Louis, 2,949 units developed in other metropolitan (other metro) areas and 1,951 units developed in rural areas.
- On average, rents would increase 29.2% to absorb the additional debt service needed to replace the equity generated by the LIHTC and break even. Limited sources of alternative funding would make many projects economically unfeasible.
- The value of the state credit increases as much as 20% considering the corporate rate reduction and the state tax deduction limitation for those individuals using itemize deductions on their personal returns.

Trends

The study highlights certain trends currently impacting the Missouri LIHTC or that can be expected to impact it in the future:

- The efficiency of the state low income housing tax credit improved by almost $1 of economic benefit per tax credit allocated when compared to the prior study.
- There is excess demand for the state credit as evidenced by the projects applied for compared to the projects awarded the 9% credits.
- Federal law changes to corporate income tax rate increase the need for state low-income tax credits to fund projects.

Developer Demand for Credits. The demand by developers for an allocation of the Missouri LIHTC exceeded supply for all years under study. The ratio of 9% LIHTCs applied for to the number of credits awarded was over 4.5-to-1 from 2011 to 2016.

As more fully described in the following report, the Missouri LIHTC program provides a tangible benefit to the state in economic terms and to the citizens who utilize the affordable housing program. The economic benefits continue to demonstrate that Missouri's LIHTC program provides quality affordable housing and meets the mission and goals of MHDC.

Introduction

The purpose of this report is to provide the Missouri Housing Development Commission (MHDC) with an updated on the economic benefits provided by the Missouri Low-Income Housing Tax Credit Program. MHDC administers both the federal and state LIHTC programs and is responsible for awarding federal and state tax credits to developers in Missouri for the purpose of constructing affordable workforce housing for families and for providing affordable housing for low-income seniors in the state. Through the federal LIHTC program, the federal government provides tax credits as a means of providing equity for development and construction of affordable housing. Likewise, the state of Missouri provides a similar tax credit program that works to enhance the federal program by providing additional equity to Missouri projects.

Developers receiving an allocation of state LIHTCs utilize the equity raised from the credits to finance new construction or rehabilitation of existing housing. The tax credit is based upon a percentage of qualified development and construction costs and is generally received over a 10-year period. In essence, the state provides tax credits to developers over a 10-year period to finance and make available workforce and senior housing today, leveraging the production of housing for the state. Each year, the developer of or an investor who has acquired an interest in a qualified project receives tax credits that are a dollar for dollar offset against the developer's or investor's state tax liability. In exchange for receiving the state tax credit, the developer or investor makes an investment in the development and that investment is used to pay for constructing the project. Under the Missouri program, each project must be operated in accordance with strict guidelines in terms of tenants who qualify to live in the housing. Each project is subject to yearly financial and operational oversight by MHDC and investors that help ensure quality, affordable housing over the long term. Developers and investors who do not operate their properties within strict federal and state guidelines may be denied the benefit of the tax credits.

The state tax credit not only provides housing for Missourians throughout the state, but also imparts an economic stimulus for the state, creating jobs and expanding the state and local tax base. The program offers housing for a significant workforce in the state, assists with the revitalization of inner-city and downtown areas that in many cases have been dormant for years, and provides needed housing in rural counties where quality affordable housing is scarce.

Analysis of the Missouri LIHTC Program

This study encompasses the Missouri low-income housing tax credits awarded for years 2011 through 2016. During that time period, there were 206 low-income housing projects across the state awarded Missouri LIHTCs. Included in those 206 projects were 11,761 units of affordable housing. Those affordable units were geographically spread out across the state, including a significant number of low-income units produced outside of the Kansas City and St. Louis areas.

Number of Projects Awarded Missouri Low-Income Housing Tax Credits

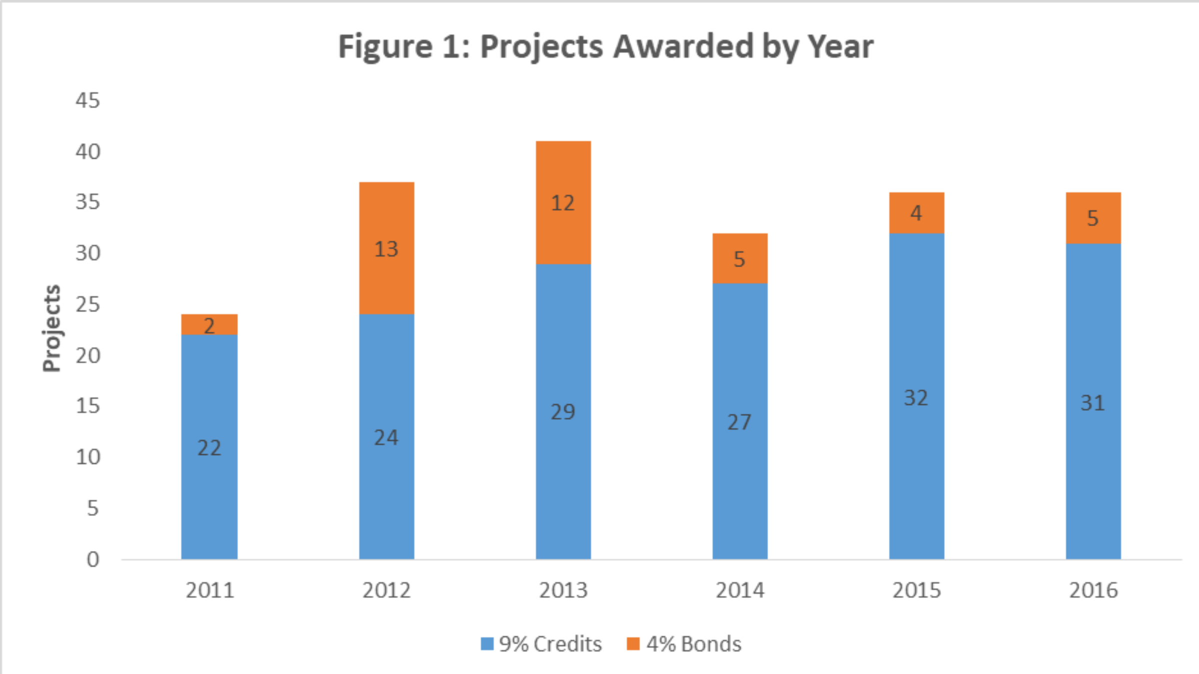


Figure 1 shows the number of projects awarded by year including the number of projects financed utilizing 9% credits and 4% credits. A total of 206 projects were awarded credits over the six-year period. The largest number of projects awarded occurred in 2013 with 41 projects, while the lowest occurred in 2011 with 24 projects awarded. Out of 206 projects, 41 were developed with tax-exempt bonds coupled with 4% credits and only 22% utilized tax-exempt bonds. The state tax credit plays a critical role in the development of projects using tax-exempt bonds coupled with 4% tax credits, with many of these projects not being financially feasible without the state tax credit. Throughout this report references may be made to 4% bonds or 4% credits, and these statements refer to tax-exempt bond projects coupled with 4% credits. Bond volume cap allocation is critical to housing production as it allows for automatic 4% federal LIHTCs, which are not subject to the per capita limitation applied to 9% credits.

Number of Units Awarded Missouri Low-Income Housing Tax Credits

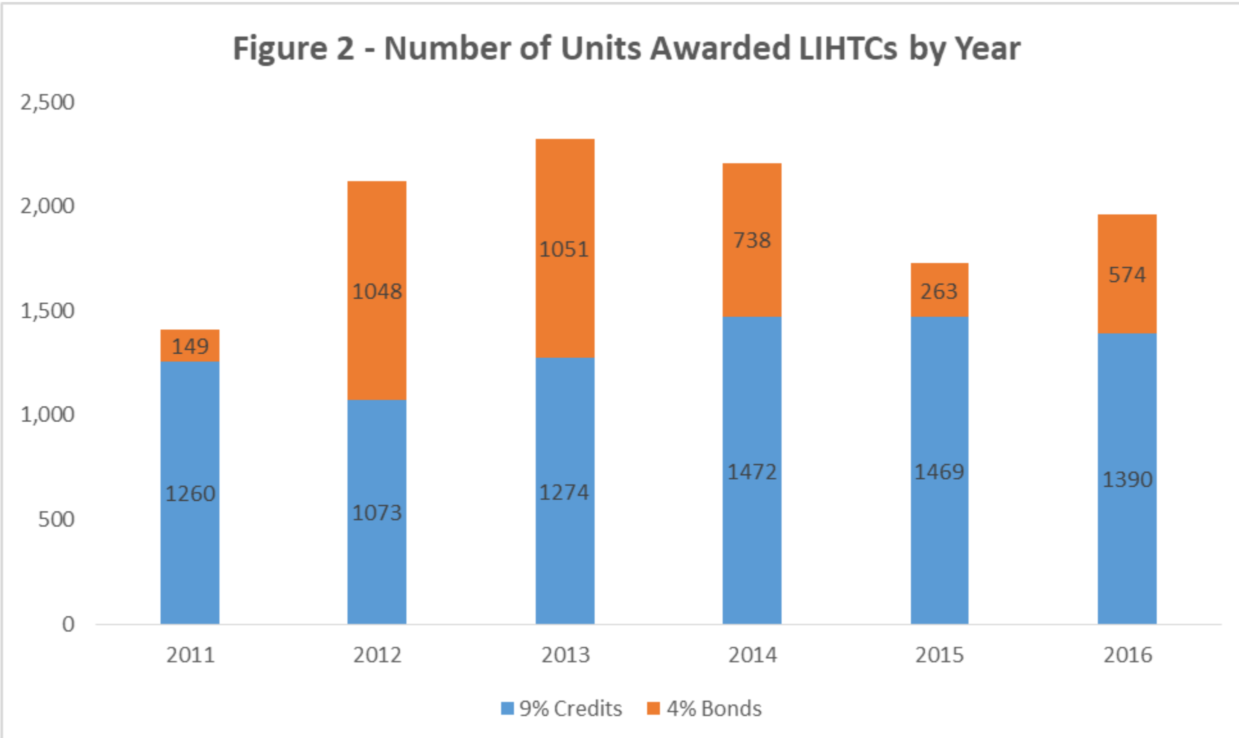


Figure 2 demonstrates the number of units awarded per year differentiating the number of units utilizing 9% credits and 4% credits. Over the six-year period a total of 11,761 units were awarded credits, with less than one third of the units financed with tax-exempt bonds coupled with 4% credits. The number of units served by 9% credits has varied somewhat over the six-year period, ranging from a low of 1,073 units produced in 2012 to a high of 1,472 units produced in 2014.

Location of the Units Awarded Missouri Low-Income Housing Tax Credits

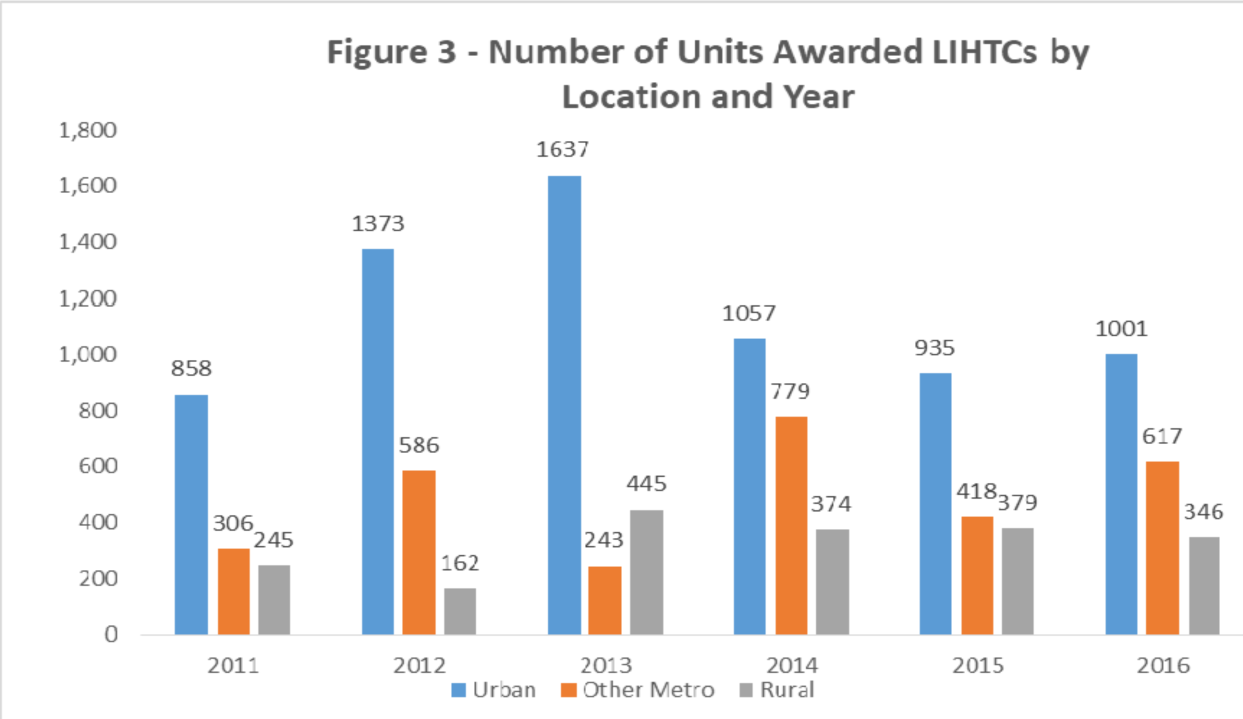


Figure 3 demonstrates that the largest number of units awarded LIHTCs are the Urban areas (Kansas City and St. Louis). Of the 11,761 units produced from 2011 through 2016, 6,861 units (58.34%) were produced in the Urban areas, 2,949 units (25.07%) were produced in the Other Metro areas, and 1,951 units (16.59%) were produced in the Rural markets. Out of the 6,861 units produced in the Urban areas, 2,813 units, or 41.00% were financed with tax-exempt bonds coupled with 4% credits.

Senior and Family Units Awarded Missouri Low-Income Housing Tax Credits

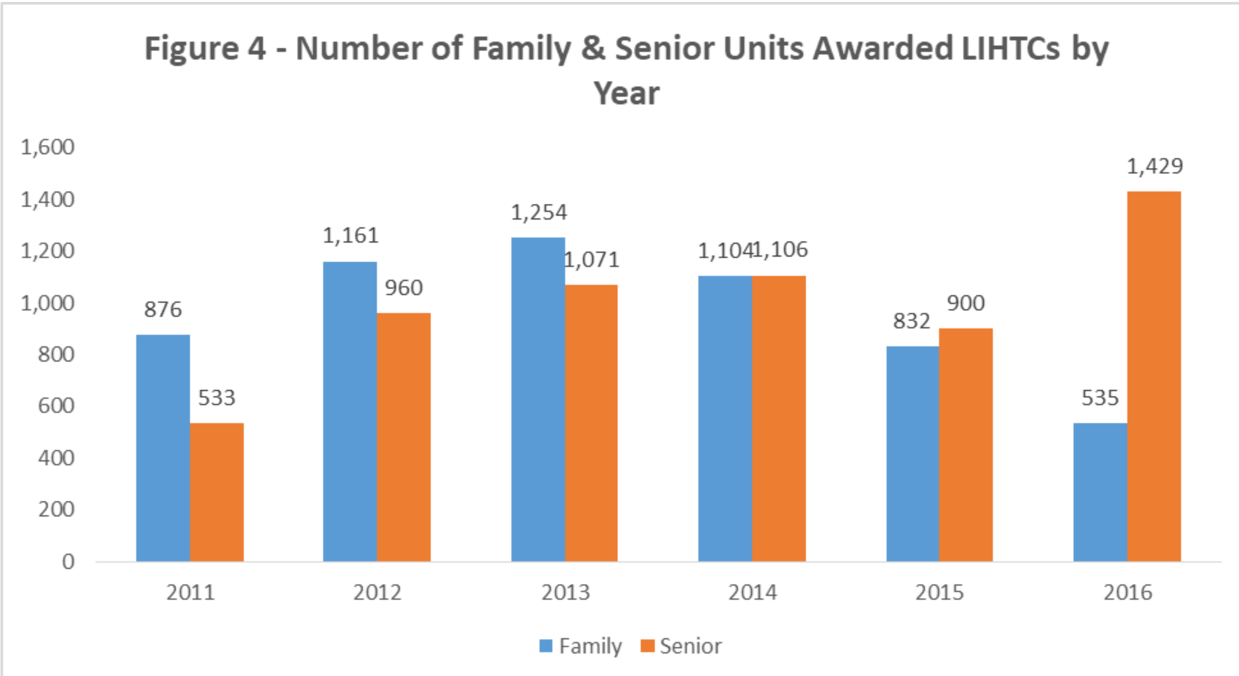


Figure 4 shows the number of senior units awarded per year and the number of family units awarded per year over the six-year period. Of the total of 11,761 units awarded, 5,999 were senior units and 5,762 were family units. Over the six-year period approximately 51.01% of the units produced were senior while 48.99% were family.

Sample Projects

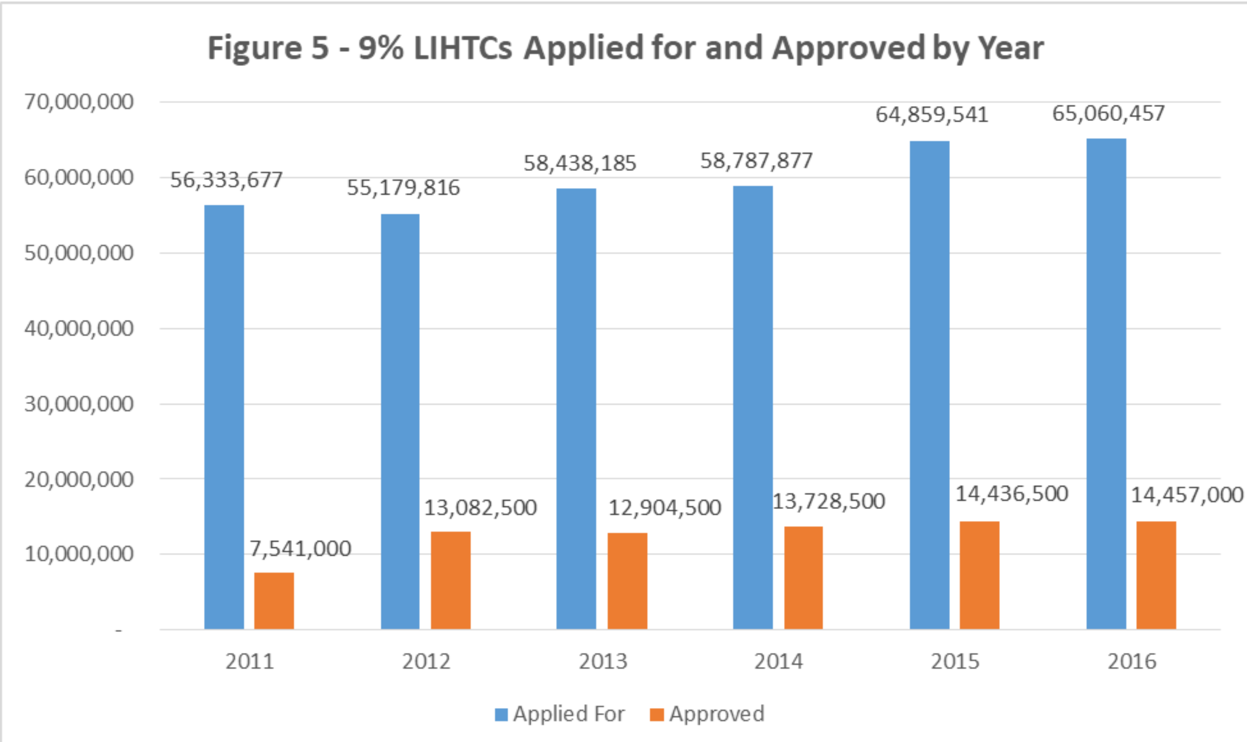
This report's analysis is based upon a sample of 30 projects allocated credits during the six-year period from calendar year 2011 through calendar year 2016. The sample was selected using a sampling methodology that considered such components as physical location of the project (Urban, Other Metro, and Rural), family vs. senior housing, 9% credits vs. 4% credits, number of projects developed per year, and other factors. Projects selected in the study included: new construction, acquisition/rehabilitation, multi-family, single-family, historic rehabilitation combined with LIHTCs, projects with HUD Section 8 rental assistance, and projects located in qualified census tracts. Certain projects were judgmentally selected and added to obtain a sample believed to be representative of the projects developed over the six-year period. The sample includes sixteen projects located in Missouri's major MSAs (Kansas City and St. Louis), nine projects located in Missouri's minor MSAs (Columbia, Joplin, Jefferson City, Springfield, and St. Joseph) and five projects located in regions outside of Missouri's MSAs. Unless specifically referred to otherwise in this report, projects located in Kansas City and St. Louis are referred to collectively as "Urban" projects, projects located in the minor MSAs are referred to collectively as "Other Metro" projects, and projects located outside MSAs are referred to collectively as "Rural" projects. Figure 5 below sets out the location of the projects used for the analysis. Table 1 below provides a listing of the 30 projects.

Table 1: Listing of the 30 LIHTC Projects Selected

Project Area	LIHTC Project	City	Units
Kansas City MSA	Faxon School Apts	Kansas City	45
	Rose Hill Townhomes	Kansas City	33
	Mewdowview I & II	Excelsior Springs	36
	The Gardens at Northgate Village Pase IV	North Kansas City	60
	Phil B. Curls Manor	Kansas City	54
	Harrisonville Villas	Harrisonville	48
	Pendleton Flats	Kansas City	30
St. Louis MSA	St. John Neumann Apartments	Jennings	100
	DeSales Impact 2014	St. Louis	36
	Town Square Apts	Dardenne Prairie	48
	Station Plaza	St. Louis	87
	Hillsdale Homes 2015	Hillsdale	30
	STAR Residences	St Louis	44
	Hillmann Place II	O'Fallon	56
	Dunn Road Manor	Florissant	36
	North Webster Village	Webster Groves	24
Other Metro	Rose Park Estates	Bolivar	76
	Brookdale East Apts	St. Joseph	102
	St. Francis-King Hill	St. Joseph	157
	Oaklawn Estates Phase II	Rogersville	28
	Beacon Village, Phase II	Springfield	32
	Woodfield Park	Springfield	46
	Chapel Hill Commons III	Jefferson City	52
	Bear Creek Apartments	Columbia	76
	The Lane Apartments	Neosho	48
Rural	Winsel Creek Estates (Sullivan Hgts)	Sullivan	48
	Chloe Place Apartments	Hannibal	25
	Pathways Warrensburg Apts	Warrensburg	35
	Saint Street Apts	Branson	24
	Rolla Apartments	Rolla	150
Total			**1,666**
Average			**56**

Demand for the Credit

The strong demand for the Missouri 9% LIHTC is demonstrated by comparing the dollar amount of LIHTCs applied for to the dollar amount of 9% LIHTCs awarded during the six-year period from 2011 to 2016. As shown in Figure 6, the 9% credits applied for exceeded the 9% credits actually awarded by a ratio of approximately 4.5 to 1 from 2011 to 2016. In other words, for every $4.50 of credits applied for only $1 of credit was available. Figure 5 illustrates the 9% demand.



Common Investors in Missouri Credits and Reasons for Investing

The Missouri LIHTC (MO LIHTC) may generally be used as a credit against Missouri's (1) income taxes imposed on individuals and corporations, (2) annual corporation franchise tax, (3) annual tax on gross premium receipts imposed on insurance companies, and (4) certain taxes imposed on banks and other financial institutions. Based upon interviews conducted with developers, investors in the MO LIHTC included large corporations, insurance companies, financial institutions, and high income individuals.

Based upon our discussions with developers and investors, Missouri taxpayers invest in MO LIHTCs in order to manage their tax liability and to earn a reasonable return on their investment. Banks and other financial institutions also invest in MO LIHTCs to fulfill requirements under the Community Reinvestment Act.

Over the past 10 years, many Missouri taxpayers have utilized the MO LIHTC as a method of managing their overall income tax liability and a mature market for the credit has developed. Virtually all of the developers interviewed indicated that if they were allocated more credits they could raise additional equity for the construction of affordable housing.

The method of investment includes direct investment and investment through a tax credit fund. Direct investment typically occurs when the MO LIHTC investor, the taxpayer claiming the credit on its tax return, acquires a partnership interest in a partnership that owns a property qualifying for MO LIHTCs. In exchange for a capital contribution to the partnership, the MO LIHTC investor receives an allocation of the MO LIHTC generated by the property.

Investment through a tax credit fund occurs when the MO LIHTC investor acquires a partnership interest in a pass-through entity (typically a partnership or LLC taxed as a partnership) that has in turn acquired a partnership interest in one or more partnerships owning property qualifying for the MO LIHTC. In exchange for a capital contribution to the partnership or partnerships owning and operating MO LIHTC properties, the fund receives a pass-through share of the MO LIHTCs. The fund then passes through the MO LIHTC to the MO LIHTC investor who then claims the credit on its tax return. The tax credit fund is often used to facilitate efficiency in providing the credits to investors. There are number of variations to this method of investment but most investment methods are based upon this basic model.

Many of the developers interviewed indicated they raised equity through funds with the assistance of a tax credit syndicator. A syndicator may assist the developer in raising equity from the generation of MO LIHTCs and with acquiring an interest in a partnership that allows the credits to pass through to the investor under state law. Tax credit syndicators help provide a predictable market which developers can rely upon to provide equity to their developments. The syndicator may also aid the investment process by bundling credits in sufficient quantity to meet specific investor demands.

Several developers emphasized the important role the syndicator plays in the tax credit market by matching the supply and demand for tax credits. By utilizing the services of a syndicator, the developer's time and energy is focused on developing quality housing.

The developer and syndicator often guarantee the credits for the investor, reducing the investment risk to the investor. The syndicator provides another layer of oversight and due diligence to make sure the project complies with federal and state guidelines and requirements. The syndicator is dedicated to the project not only because of the financial risks associated with the guarantee, but also because their name and reputation are aligned with the developer and the project.

Most syndicators are well versed in the tax credit program and bring additional expertise and knowledge. The syndicator assists with structuring the transaction, communicating with professionals, and responding to technical issues. This increases efficiency in the tax credit market because transactions close faster and credits are transferred to the investor in a timely manner.

Value of Missouri LIHTCs

The value the state tax credit brings to a low-income housing tax credit project is measurable in several different areas. The first one is viability without the credit. As discussed below, if the state tax credit equity was removed from the project and replaced with additional debt service to cover the sources of cash, the rents would rise above the affordable level. The state tax credit equity helps keep rents affordable for even the poorest people in the state. The equity reduces the amount of debt the project must carry and therefore allows rents to remain lower. Additionally, the quality of construction is enhanced by the state tax credit equity. Many low-income housing projects are indistinguishable from market rate housing. Finally, the state tax credit equity allows rural deals with HOME financing to be economically feasible. These projects are for communities where the median income is extremely low and the affordable housing rents are lowered accordingly.

Feasibility of Development ("But For" Benefits)

The feasibility of the 30 projects selected was tested by substituting debt in place of the state LIHTC equity that was made available to the projects to determine the impact on rents and the increase in rents necessary to make the developments operate at break-even cash flow or to preserve their original profit. The information used in this analysis was obtained from the FIN-100 forms submitted with the application (net income or loss excluding depreciation and principal payments). Assuming the state LIHTC equity was replaced with amortizing market rate debt it is estimated that rents would need to be increased 29.2% on average to break even, or 41.9% to reach their current profit margin. When broken down by region, on average, rents would need to increase 26.0% in the Urban areas, 31.6% in the Other Metro areas, and 35.3% in the Rural areas to break even. To preserve their current profit, rents would need to increase 39.9% in the Urban areas, 41.1% in the Other Metro areas, and 49.6% in the Rural areas.

Obtaining such rent increases would be problematic due to federal restrictions on affordable rents and market conditions rendering most projects unfeasible to develop. Without the state LIHTC equity or other substitute funding, it is likely that a substantial number of units simply would not be developed having a negative impact on the availability of quality affordable housing in the state. Even if the state LIHTC equity were replaced with 1% debt (below market interest rate debt) amortized over the term of the existing permanent loan and not subject to bank and commercial lending criteria, rent increases of 14.9% would need to occur, on average, for the projects to have break-even cash flows, or 27.6% for the projects to maintain their current profits.

Change in Federal Corporate Rates

In December 2017, the Tax Cuts and Jobs Act was signed into law. This new law reduced the corporate tax rate to 21% compared to a prior rate of 35%. Corporations are one of the largest investors in federal and state low-income housing tax credit projects. The lower corporate tax rate initially created instability in pricing and delayed structuring of deals. It also lowered the overall demand for federal low-income housing tax credits. The state LIHTC provides stability for project financing as demand remains stable for these state credits.

The lower corporate rates reduce the investor appetite for these types of investments. Lower demand can cause pressure on LIHTC deals. If this is coupled with an economic downturn, vital housing stock may be delayed as deals look for additional capital funding sources. The state credit equity provides a stable source of equity for LIHTC projects and helps to diminish the effects of the lower corporate rate and corresponding changes to federal investor demand.

The decrease in the federal rate also impacted the state credit value. The upfront benefit of the state credit increased in value around 20% as a result of the law change.

The state credit demand will also increase as a result of the limit on individual state income tax deductions under the late 2017 federal law change. The state credit value will likely increase as the state credit is more valuable to individuals.

Cost/Benefit Analysis of Missouri LIHTC

Economic Analysis

The Missouri LIHTC program has a sizeable impact on the state economy. The construction and operation of housing projects that were developed from 2011 to 2016 will increase the gross state product of the economy by over 1.62 billion dollars, will generate economic activity of over 2.95 billion dollars, and will create over 35,618 jobs. For every $1 of state tax credit awarded the state will see, on average and based in present value terms, an increase in gross state product of $5.81 with that same $1 generating $10.59 in economic activity.

The purpose of this economic analysis is to identify and quantify the size and nature of economic impacts in terms of economic stimulus to the state's economy, jobs creation, and impact of state tax revenue. The state LIHTC is awarded to private developers, in a manner similar to the federal LIHTC, for the purpose of providing developers a financing source for the development and construction of housing targeted for residents who generally earn less than 60% of the median income in the area in which they live and who cannot afford to pay market rate rents. The state LIHTC represents a dollar-for-dollar reduction of the developer's state income tax liability over 10 years. This tax savings may be used by the developer to provide equity to the project that would otherwise be financed with debt. By reducing debt, equity from the tax credits allows the developer to lower the monthly debt service requirements of the project thus reducing monthly rents to a level affordable to low-income families and seniors.

The developer typically does not have a tax liability sufficient to allow the developer to fully utilize either the federal or state LIHTC. Instead, the developer obtains equity by syndicating the credit to outside investors seeking to reduce or manage their tax liability. The syndication process is critical to both the federal and state LIHTC programs as it provides the catalyst for bringing in new sources of private equity for the production of housing. To the extent that outside investors provide new equity dollars that would not otherwise be available for housing, the construction and operation of housing made possible with these new equity dollars produces impacts on the economy that would not otherwise have occurred without the credit.

Table 2 below provides a summary of LIHTC housing units by year and location.

Table 2: LIHTC Housing Units by Year and Location

Award Year	Urban	Other Metro	Rural	Total Units
2011	858	306	245	1,409
2012	1,373	586	162	2,121
2013	1,637	243	445	2,325
2014	1,057	779	374	2,210
2015	935	418	379	1,732
2016	1,001	617	346	1,964
Total Units	**6,861**	**2,949**	**1,951**	**11,761**

Data on the costs of construction and operation for all 30 sample projects were acquired from Tax Credit Cost Certifications (MHDC Form 3340) and audited financial statements provided by MHDC. This data was analyzed using similar methods of the input-output model fully explained in the June 2007 MHDC study.

Results on the sample of individual projects were extrapolated to the population of LIHTC projects allocated credits from 2011 through 2016. Therefore, the results apply only to these projects. Any projects that were built before 2011 which are still in operation are continuing to impose an impact on the economy are not reflected in the figures presented here. It is further assumed that the projects receiving LIHTC allocations from 2011 to 2016 created economic impacts that coincide with those years even though it is possible that certain economic impacts could occur in periods outside the allocation years due to the timing of construction, lease-up and other factors. See Appendix A for the results of the 30 projects that were used in the extrapolation to the entire population of LIHTC projects.

Table 3 delineates the economic effects of constructing the 206 low-income housing projects throughout the four regions of the state. The impacts are divided between construction and annual operations.

Table 3: Statewide Projections of Economic Impacts of the LIHTC Program from 2011 to 2016

	Urban	Other Metro	Rural	Total
Construction				
Output	$ 2,419,371,881	$ 559,865,573	$ 292,364,563	$ 3,271,602,017
Value Added	$ 1,369,230,214	$ 260,226,666	$ 136,214,244	$ 1,765,671,124
Taxes	$ 113,455,800	$ 19,779,207	$ 9,446,833	$ 142,681,840
Employment (Jobs)	24,789.58	5,993.94	3,549.60	34,333.12
Operations				
Output	$ 95,893,110	$ 19,726,061	$ 9,699,790	$ 125,318,961
Value Added	$ 54,854,130	$ 10,766,310	$ 5,102,786	$ 70,723,226
Taxes	$ 4,343,314	$ 831,462	$ 383,002	$ 5,557,778
Employment (Jobs)	935.19	229.58	120.39	1,285.16

Economic Impact

The reader should note a few important points when reading this and other tables presented in this section of the report. The first is the distinction between value added and output. Output generated is a reflection of 'total' output and includes the value of intermediate inputs while value added estimates include only employee compensation, proprietor income, other property income, and indirect business taxes. Value added, not output, is identical to gross state product (GSP), which is the state equivalent of a nation's gross domestic product (GDP).

As shown in Table 3, the total output generated from constructing low-income housing from 2011 through 2016 is projected to be over $3.2 billion. Most of the output produced is from the primary MSAs of Kansas City and St. Louis, shown in the Urban figures. Actual value added, GSP, from construction grew approximately $1.8 billion during the 6 year period. If low-income housing had not been constructed in these years, output and gross state product could have fallen by this amount. We state could have fallen because it is not known what the developers would have done had they not built low-income housing. If rather than producing low-income housing the developers instead built upscale homes, hotels, or other commercial properties, then much of the output and value added attributable to the LIHTC program would not ‘disappear’ from the Missouri economy but would simply appear as other activity. If however, developers would definitely not produce any alternative housing (or other goods and services for that matter), then during the six year period economic activity in Missouri would have decreased by approximately $3.3 billion and the Missouri GSP would have shrunk by approximately $1.8 billion.

Table 3 also shows the statewide projection of economic impacts from the annual operation of the projects. These numbers are in yearly estimates. It should be remembered that these estimates do not include the operations and maintenance of past projects, those completed before 2011, or of projects awarded credits in 2016 and beyond. Output and value added is largest when operating low-income housing in the primary MSAs as opposed to other parts of the state. The operation of the projects increases GSP by over $70 million per year and increases economic activity by $125 million per year. If these projects had not been built, then the economy of Missouri would be smaller by $70 million dollars for each year that the project would have been operated.

Job Creation Impact

Table 3 illustrates that a total of 34,333 jobs were created from the construction of the projects over the six year period. Total jobs creation of 24,790 in the Kansas City and St. Louis MSAs demonstrates the significant impact that affordable housing construction has on these regions of Missouri.

Table 3 also displays statewide projections for both total jobs created by the annual operation of the projects. As with the construction of the projects, the majority of the jobs created from annual operations are in the Kansas City and St. Louis MSAs. Statewide, 1,285 jobs will be needed on a yearly basis to provide for the operation and maintenance of the 206 projects.

Taxes and Fees Impact

Table 3 exhibits the statewide projections for additional taxes that would be collected due to the construction of the 206 LIHTC projects. Over $148 million in additional taxes were collected in state and local taxes from 2011 through 2016. Just over $117 million of these additional taxes came from the Kansas City and St. Louis MSAs.

The operations and maintenance of the project produces economic activity in the form of increased employment and spending, which is taxed and creates revenue for the state. The operation of these projects will generate an estimated $5.5 million in taxes each year they are in service.

Net Benefit

As stated earlier, the economic impacts of constructing housing units between 2011 and 2016 were converted into 2016 dollars and the future flows of net benefits from operations was converted to real dollars (i.e. inflation adjusted) at an estimated annual rate of 2.5%. The real net benefits of the LIHTC program, in terms of increased future value added, output, increased tax revenue from induced economic activity, and the 'cost' of the tax credit in terms of decreased tax revenue per year for the ten year lifespan of the credit, was converted to present value dollars over the next 20 years so that the reader can better understand the true impact of the program on the Missouri economy.

The next set of tables presents the final analysis in terms of value added (GSP) and total output impact on the Missouri economy. Table 4 includes the total effect from the LIHTC program in Missouri. Recall that the total effect looks at the low-income housing that has been built between 2011 and 2016; therefore, it does not include housing built before or after this time frame. The construction and operation of the housing projects that were completed between 2011 and 2016 will grow the Missouri economy by over $2.86 billion. Most of that increase, over $1.74 billion, will happen in the short term and comes about due to the construction of the housing project while the remaining $1.12 billion will be spread out over 20 years and comes about due to operating the projects. Furthermore, state and local governments can expect to collect about $227 million in additional taxes from the construction phase of the housing projects. This positive stream of tax revenue to the state is reduced by the loss of over $582 million in tax revenue to the state during the operations phase of these projects. This was determined by subtracting the present value of the state LIHTCs that are expected to be claimed by investors over the 10 year credit period from the present value of the additional state and local tax revenue that is estimated to be collected from operation of the projects over 20 years. It is important to understand that the additional taxes collected from construction will occur within the first one to two years of the project and prior to the investor actually receiving the tax credits. In the initial two years of the project the state actually realizes and net increase in total state revenue and only after the tax credits are available to investors is there a net decrease in tax revenues. When you add the total net present value of real tax revenue generated to the additional gross state product, we see that the LIHTC program has a positive effect on the state of approximately $2.51 billion.

Table 4: Summation of the Total Present Value of Net Benefits

Value Added

	Urban		Other Metro		Rural		Total	
Value Added								
Construction	$	1,345,911,094	$	233,177,309	$	166,703,486	$	1,745,791,889
Operations		868,348,706		170,432,229		80,777,826		1,119,558,761
Sub-Total		2,214,259,800		403,609,538		247,481,312		2,865,350,650
Increased Taxes								
Construction	$	145,590,298	$	61,469,949	$	20,578,297	$	227,638,544
Operations Net of LIHTC Claimed		(330,108,187)		(136,614,705)		(115,891,196)		(582,614,088)
Sub-Total		(184,517,889)		(75,144,756)		(95,312,899)		(354,975,544)
Total	**$**	**2,029,741,911**	**$**	**328,464,782**	**$**	**152,168,413**	**$**	**2,510,375,106**

We can determine how much 'bang for the buck' the state realizes from the LIHTC program by looking at Table 5. In Table 5, we have examined how much additional value added is produced when the state allocates an additional dollar to the LIHTC program. For example, for every dollar of state tax credit granted, it will increase gross state product in Missouri by an average of $3.54 during the construction phase and will generate an additional $2.27 in gross state product during the operations phase of the project. Therefore, the state's LIHTC dollar is generating $5.81 in additional present value gross state product over the course of the project's 20 year lifetime. Further examination shows that the state's allocation of a LIHTC dollar generates an immediate average increase in tax revenue of 46 cents. As before, this occurs during the construction phase of the project. However, over the next 20 years, the state will lose an average of 98 cents as the amount of tax revenue that is surrendered via the tax credits is larger than the additional tax revenue received from the economic activity generated by operating the housing projects. When examining the present value of this positive and negative stream of tax revenue for the state, we see that the state of Missouri will 'recoup' on average 48 cents ($1.00 - $0.52) of its LIHTC dollar. This is in contrast to the rural and smaller metro areas of the state, where they will only recoup 22 cents for each LIHTC dollar.

Table 5: Impact in Present Value per Total LIHTC Dollar

Value Added

Value Added		Urban		Other Metro		Rural		Weighted Average (By Total Credits)
Construction	$	4.82	$	2.00	$	1.71	$	3.54
Operations		3.11		1.46		0.83		2.27
Sub-Total		7.93		3.46		2.54		5.81
Increased Taxes								
Construction	$	0.52	$	0.53	$	0.21	$	0.46
Operations		(0.98)		(0.98)		(0.99)		(0.98)
Sub-Total		(0.46)		(0.45)		(0.78)		(0.52)
Total	**$**	**7.47**	**$**	**3.01**	**$**	**1.76**	**$**	**5.29**

Table 6 presents a similar analysis to Table 4 except that it is for total output rather than value added. We can see that economic activity increased in the state by over $5.2 billion with most of that increase, approximately $3.2 billion, coming from construction while the remaining 1.1 billion dollars occurs over the span of 20 years. Multipliers (Table 7) derived based on this data have similar conclusions as before. For every dollar of LIHTC that the state distributes, it will generate an average of $10.59 in economic activity. Most of this increased economic activity, approximately $6.57 occurs during the construction phase while the remaining portion occurs during the operations phase of the projects.

Table 6: Summation of the Total Present Value of Net Benefits

Output

Output	Urban	Other Metro	Rural	Total
Construction	$ 2,382,959,171	$ 499,369,498	$ 359,389,678	$ 3,241,718,347
Operations	1,518,001,624	312,266,365	153,549,057	1,983,817,046
Sub-Total	3,900,960,795	811,635,863	512,938,735	5,225,535,393
Increased Taxes				
Construction	$ 145,590,298	$ 61,469,949	$ 20,578,297	$ 227,638,544
Operations Net of LIHTC Claimed	(330,108,187)	(136,614,705)	(115,891,196)	(582,614,088)
Sub-Total	(184,517,889)	(75,144,756)	(95,312,899)	(354,975,544)
Total	**$ 3,716,442,906**	**$ 736,491,107**	**$ 417,625,836**	**$ 4,870,559,849**

Table 7: Impact in Present Value per Total LIHTC Dollar

Output

Output	Urban	Other Metro	Rural	Weighted Average (By Total Credits)
Construction	$ 8.54	$ 4.27	$ 3.69	$ 6.57
Operations	5.44	2.67	1.58	4.02
Sub-Total	13.98	6.94	5.27	10.59
Increased Taxes				
Construction	$ 0.52	$ 0.53	$ 0.21	$ 0.46
Operations	(0.98)	(0.98)	(0.99)	(0.98)
Sub-Total	(0.46)	(0.45)	(0.78)	(0.52)
Total	**$ 13.52**	**$ 6.49**	**$ 4.49**	**$ 10.07**

Appendix A

Table A1:
Direct, Indirect and Induced Impacts - Kansas City Area

IMPACTS FROM CONSTRUCTION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 53,379,816	$ 25,875,907	$ 25,412,866	$ 538
Indirect Impact	$ 16,493,017	$ 9,068,475	$ 6,194,598	$ 157
Induced Impact	$ 24,070,389	$ 14,364,758	$ 8,602,766	$ 233
Total Impact	$ 93,943,222	$ 49,309,140	$ 40,210,230	$ 928
Type 2 Multiplier (D/A)	1.76	1.91	1.58	1.72
State and Local Tax Impact:	$ 10,601,006			

IMPACTS FROM ONE YEAR'S OPERATION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 1,390,894	$ 825,345	$ 594,547	$ 13
Indirect Impact	$ 465,170	$ 273,375	$ 185,976	$ 4
Induced Impact	$ 641,377	$ 382,754	$ 208,932	$ 6
Total Impact	$ 2,497,441	$ 1,481,474	$ 989,455	$ 23
Type 2 Multiplier (D/A)	1.80	1.79	1.66	1.77
State and Local Tax Impact:	$ 320,641			

Table A2:
Direct, Indirect and Induced Impacts - St. Louis Area

IMPACTS FROM CONSTRUCTION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 73,510,834	$ 44,193,894	$ 40,810,511	$ 823
Indirect Impact	$ 18,155,647	$ 10,489,466	$ 7,273,938	$ 179
Induced Impact	$ 38,584,840	$ 22,889,169	$ 13,010,529	$ 367
Total Impact	$ 130,251,321	$ 77,572,529	$ 61,094,978	$ 1,369
Type 2 Multiplier (D/A)	1.77	1.76	1.50	1.66
State and Local Tax Impact:	$ 16,592,350			

IMPACTS FROM ONE YEAR'S OPERATION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 3,447,802	$ 1,900,721	$ 1,314,411	$ 34
Indirect Impact	$ 1,391,572	$ 783,188	$ 551,780	$ 14
Induced Impact	$ 1,549,256	$ 917,752	$ 509,698	$ 15
Total Impact	$ 6,388,630	$ 3,601,661	$ 2,375,889	$ 63
Type 2 Multiplier (D/A)	1.85	1.89	1.81	1.85
State and Local Tax Impact:	$ 783,349			

Table A3:
Direct, Indirect and Induced Impacts - Other Metro Area

IMPACTS FROM CONSTRUCTION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 60,609,609	$ 31,146,708	$ 34,776,631	$ 783
Indirect Impact	$ 15,320,404	$ 8,457,702	$ 6,250,090	$ 177
Induced Impact	$ 40,811,136	$ 14,657,115	$ 9,478,028	$ 290
Total Impact	$ 116,741,149	$ 54,261,525	$ 50,504,749	$ 1,250
Type 2 Multiplier (D/A)	1.93	1.74	1.45	1.60
State and Local Tax Impact:	$ 11,481,357			

IMPACTS FROM ONE YEAR'S OPERATION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 2,603,167	$ 1,378,774	$ 942,150	$ 30
Indirect Impact	$ 653,227	$ 364,493	$ 245,300	$ 8
Induced Impact	$ 856,812	$ 501,686	$ 267,841	$ 10
Total Impact	$ 4,113,206	$ 2,244,953	$ 1,455,291	$ 48
Type 2 Multiplier (D/A)	1.58	1.63	1.54	1.60
State and Local Tax Impact:	$ 475,730			

Table A4:
Direct, Indirect and Induced Impacts – Rural Area

IMPACTS FROM CONSTRUCTION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 28,486,510	$ 12,159,734	$ 9,424,636	$ 338
Indirect Impact	$ 5,898,037	$ 3,021,589	$ 1,662,000	$ 73
Induced Impact	$ 7,192,260	$ 4,189,538	$ 1,736,548	$ 93
Total Impact	$ 41,576,807	$ 19,370,861	$ 12,823,184	$ 504
Type 2 Multiplier (D/A)	1.46	1.59	1.36	1.55
State and Local Tax Impact:	$ 3,843,614			

IMPACTS FROM ONE YEAR'S OPERATION
Economic Indicators

	Total Output	Value Added	Income	Employment
Direct Impact	$ 968,591	$ 498,474	$ 327,822	$ 11
Indirect Impact	$ 201,635	$ 104,845	$ 69,600	$ 3
Induced Impact	$ 209,169	$ 122,342	$ 61,120	$ 3
Total Impact	$ 1,379,395	$ 725,661	$ 458,542	$ 17
Type 2 Multiplier (D/A)	1.42	1.46	1.40	1.49
State and Local Tax Impact:	$ 144,473			