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## The Economic Impact of Housing in Massachusetts

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# **The Economic Impact of Housing**

Zenia Kotval and John Mullin

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## **Introduction**

Home building generates substantial local economic activity, including income, jobs, and revenue for state and local governments. These far exceed the school costs-to-property-tax ratios. Furthermore, balanced growth, the availability of homes that match the character of the jobs, plays a significant role in attracting sustainable economic development.

For the purposes of this study, these factors were evaluated by means of a quantitative assessment of data from a Local Impact of Homebuilding model, as well as a qualitative assessment of literature and policy analyses. The conclusions reveal the considerable effect of housing on a local economy.

The economic impact of housing involves a multitude of factors, from the monetary effects of the construction process to the impact of personal incomes on the local economy. In addition, it takes into consideration the significance of housing cost and availability in business location decisions.

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### **I. Measuring the Economic Impacts of the Housing Industry**

Too often, the impacts of new homes in a community are assessed in simple terms of school costs and property tax revenues. Given that average annual school costs range from \$6,000 to \$8,000 per student, and property tax revenues, from an average home in Massachusetts, range between \$1,600 and \$2,500 per year, it is little wonder that new home construction is perceived as costing communities money. The purpose of this assessment is to show that the housing industry has several other direct and indirect impacts on a local economy. In order to estimate these, the National Association of Home Builders ran an econometric model to assess the actual local impact of homebuilding activity. What follows is an explanation of the model and a summary of the results.

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### **The Local Economy**

A local economy is an area within which people live, work, shop, and seek entertainment, regardless of political boundaries. The model produced for this study uses 62 industries that represent goods and services generally produced and purchased locally. These are based on the detailed six-digit standard industry classification (SIC) codes used by the BEA. Commodities in the SIC system are similar to the industrial classifications, except for construction, which has many commodities. Therefore, the local economy subset consists of

62 industries (including the construction industry) and 90 commodities (61+29, as the construction industry has 29 commodities).

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## The "Local Impact of Homebuilding" Model

Home building generates substantial local economic activity, including income, jobs, and revenue for state and local governments. The Local Impact of Homebuilding model from the National Association of Home Builders captures the effect of the construction activity itself, the impact that occurs when construction incomes are spent, and the impact of a home's new occupants paying taxes and spending their incomes. All three phases of the local impact model are based on input-output tables produced by the Bureau of Economic Analysis (BEA) in the U.S. Department of Commerce. Phases I and II are one-time effects that occur as the result of construction activity. Phase III is an ongoing, annual effect that includes property tax payments and the result of the completed unit being occupied.

- **Phase I: Construction** The jobs, wages, and state and local taxes and fees generated by the actual development, construction, and sale of the home. These jobs include on-site and off-site construction work as well as retail and wholesale sales of components, transportation to the site, and all of the professional services required to build and sell a new home.
- **Phase II: Ripple Effect** A share of the wages and profits earned during the construction period are spent by workers and business owners on goods and services produced within the state. The continuing effects from recycling income back into the state economy produces more jobs, wages and taxes in the state.
- **Phase III: Ongoing Annual Impact**, A new home generates a continuing stream of property tax revenue for political jurisdictions within the state. In addition, when the home is occupied, a substantial portion of the occupant's income is spent on items produced by businesses in the state. In turn, that spending causes its own ripple effect as businesses and workers buy from other state businesses. The addition of a new household thus causes a permanent increase in the level of economic activity, jobs, wages, and state and local tax receipts.

Calculating the impact of Phase I involves several steps:

- *Determining the average value of new single family and multifamily housing units built in the state, and the associated average raw land costs.* Because raw land has an economic and tax value that is not a result of construction activity, it is important to keep track of this and exclude it from the analysis.

- *Defining a typical state economy.* This is accomplished by selecting a subset of industries and commodities from the benchmark input-output tables produced by the U.S. Bureau of Economic Analysis -- in particular, those representing commodities that would typically be produced, sold, and consumed within the same state. Laundry services, for example, are included, but automobile manufacturing is not. The model takes a fairly conservative approach and retains only 62 of the nearly 500 industries available in the input-output tables, and 90 of the over 500 commodities.
- *Determining the total output required from each state industry to produce each of the 62 commodities.*
- *Converting the value of an average new housing unit, excluding its raw land cost, into the output of various state industries.*
- *Converting the output of state industries required to build an average housing unit into state business owners' income.*
- *Converting the output of industries required to build an average new housing unit into state wages, salaries, and jobs.*
- *Computing how much of the additional personal income would be collected by the state, and by local governments within the state, as personal taxes or fees.*
- *Computing the amount of permit, impact, and other fees local governments within the state would collect in the process of developing the land and constructing the average new housing unit.*
- *Computing how much the additional business activity would generate in business fees and taxes for state and local governments beyond the initial permit and impact fees.*

The workers and businesses who earn income in Phase I will obviously spend some of the income, and, just as obviously, some of this spending will escape the state economy. The purchase of a new car, for example, will result in increased wages for autoworkers, and increased profits for stockholders of an automobile manufacturing company, all of whom are likely to live and spend their incomes elsewhere. Some of the spending activity, however, will take place within the state's boundaries. The car in this example is likely to be purchased from a dealer in the state and generate income for a salesperson who lives in the area, as well as supporting the wages of workers who clean, maintain, and perform accounting functions for the dealership, and who live in the same state. Consumers also purchase many services -- laundry, auto repair, groceries, etc. -- without traveling outside the state. They also pay taxes and fees to state and local governments.

Phase II takes the income and taxes generated in Phase I as its starting point and then calculates the subsequent ripples of economic activity within the state, a process that incorporates the following steps:

- *Identifying how much of their incomes households on average spend on the various commodities produced within the state.* Most of the information used to accomplish this comes from the Consumer Expenditure Survey (CES), produced by the U.S. Bureau of Labor Statistics. Using the detailed expenditure files of the CES we are able to identify average spending as a fraction of income for 46 commodities produced within the state (the remainder of the 90 commodities produced within a given state correspond to items typically purchased by businesses rather than consumers).
- *Tracking the effect of increased state and local taxes and fees.* Just as consumers spend their incomes, state and local governments spend the revenue they collect through fees and taxes. We assume that this revenue is spent entirely on a state and local government commodity identifiable in the input-output tables. Adding this to the 46 commodities identified in the previous calculation gives a total of 47 commodities produced within the state on which consumers spend money -- either directly, or indirectly through taxes paid to state and local governments.
- *Using the average consumer spending patterns to convert state income and state and local taxes into dollars spent on each of the 47 commodities.*
- *Translating the spending on the 47 commodities into business owners' income, wages, salaries, and fees and taxes collected by state and local governments from individuals and businesses.* This is essentially the same procedure described in Phase I -- except that here, instead of applying it only to construction and a few ancillary services, we apply it simultaneously to 47 commodities.
- *Computing the limit of the ripple effect.* As we have seen, the income generated within a state in Phase I leads to additional spending within the state. But this in turn results in additional income for state residents, which will lead to more spending, resulting in more state income, leading to still more spending, and so on. Because the amount of income and spending generated in each round is smaller than in the previous one (only a fraction of income is spent within the state, and only a fraction of this eventually becomes income for state residents), there is a limit to the sum of these spending rounds. It is a straightforward exercise in mathematics to compute this limit, which measures the final effect of

the additional spending after all the subsequent economic ripples have damped out.

Like Phase II, Phase III calculates the limit of successive waves of economic activity. In Phase I, however, these waves are set in motion not by the actual construction of a housing unit, but by a household occupying the completed unit and participating in the state economy. This does not necessarily mean that all new homes will be occupied by households that move in from outside the state. It may be that an average new-home household moves into the newly constructed unit from elsewhere in the same state, while an average existing-home household moves in from outside to occupy the unit vacated by the first household. Or, it may be that the new home provides an opportunity for the state to retain an average new home-buying household that would otherwise move out of the area for lack of suitable housing.

In any event, Phase III treats the construction of one average new housing unit as a net gain to the state economy of one average new-home household. This is the same reasoning that is often used, even if unconsciously, when considering the cost side of the equation. For instance, it is often assumed that a new home will be occupied by a household with certain average characteristics -- such as an average number of school-age children who will consume education at the public's expense.

The calculation of Phase III involves the following steps:

- *Determining U.S. average income of households that occupy new single family, as well as new multifamily housing units.*
- *Adjusting these averages to account for economic conditions peculiar to a given state, especially income levels and house prices.*
- *Identifying how much of their incomes households that occupy new units spend on each of the 47 commodities produced within the state.*
- *Repeating the steps outlined in Phase II to calculate the limit of economic ripples induced by the initial spending on various commodities.*

Although the model incorporates information from many sources, a large share of the information about national average economic activity comes from the input-output tables and National Income and Product Accounts produced by the Bureau of Economic Analysis. In order to customize the model to a specific state, NAHB uses state and local government accounting information from the Census of Governments, produced by the U.S. Census Bureau, as well as information collected directly from governments or people doing business in the state.

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## Input Requirements

The basic model produces results for an average local economy in the United States, but it can be customized for a specific area. As localities differ in complex and important ways, especially when it comes to taxes and fees, inputs for specific areas are required. For this study, basic input requirements fall into two categories: general market conditions and conditions specific to single family home construction.

Urban Communities	Suburban Communities	Rural Communities
Springfield	Framingham	Hancock
Worcester	Franklin	Pelham
Lowell	Lynnfield	Royalston
Taunton	Grafton	Mattapoisett
Leominster	Longmeadow	Eastham

General market conditions:

- Local area where the construction takes place (We used three prototype areas: urban, suburban and rural communities in Massachusetts. See Figure 1.)
- Proportion of total property taxes collected from residences, businesses, and agricultural property
- Rate of local personal and/or business income tax

Conditions specific to single-family home construction:

- Number of single-family homes to be analyzed
- Average market price of a home
- Average permit, impact, and other fees (including property transfer tax) paid to local governments per single-family home
- Average property tax per dollar of market value for the new single-family homes (Total property tax on an average unit is acceptable as well.)

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## Data Limitations

As this study aims to assess the impact of housing on a statewide basis, there are limitations to the accuracy of local input data. Each community in Massachusetts has its own tax rate for residential development and calculates permit and other fees differently. The state shows wide variations in terms of land and housing costs. As such, one average figure for the entire state would be rather meaningless. Our study explored three iterations of the Local Impact of Homebuilding model to assess the statewide impact of 100 single family homes in a typical urban community, a typical suburban community, and a typical rural community.

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## Data Inputs

In order to provide data on prototypical urban, suburban and rural communities, we chose five communities in each of the three sectors, compiled actual data on each of these communities, and averaged the data (excluding outliers) for each sector. We chose the communities based on location, development potential, and socioeconomic factors. (see Figure 1).

The average value of land is estimated by buildable parcel, not by cost per acre. Zoning regulations allow higher densities in urban areas (two to three homes per acre) than in suburban areas (one to two homes per acre) and rural areas (often two acres per home). NAHB converted these to costs for "raw" land: land without infrastructure, clearing, or grading. Estimates were used for raw land value, as such land is difficult to find in urban or suburban communities. Raw land values for single-family homes in each type of area were estimated by NAHB's Housing Policy Department from data in their Builder Cost Survey (November 1995). Raw land costs in Massachusetts were estimated from the U.S. ratio of raw land to developable parcels, less fees. The same ratios were then applied to the buildable parcel values (less fees) in each category. (See Figure 2).

	Average Value of Homes Built	Average Value of Raw Land Per Home	Impact, Permit, and Other Fees	Property Tax
Urban Areas	\$130,000	\$14,706	\$1,349	\$2,041
Suburban Areas	\$190,000	\$24,426	\$2,412	\$2,646
Rural Areas	\$140,000	\$9,817	\$873	\$1,610

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## II. Evaluating Economic Impacts

Estimates of the statewide economic impacts of building 100 single family homes in urban, suburban, and rural Massachusetts locations are presented below. The inputs for the NAHB model were computed separately for each sector. The model also shows the effect on income and employment in 16 industries and the (non-federal) government sector, as well as detailed information about taxes and other types of state and local government revenue.

Short-Term Economic Impacts of Construction			
	Income	Taxes/Fees	Jobs
Urban	\$8,249,000	\$993,000	159
Suburban	\$11,892,000	\$1,479,000	230
Rural	\$9,286,000	\$1,093,000	217

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### Homes Built in Urban Areas

The estimated one-year statewide impacts of building 100 single-family homes in urban locations within Massachusetts include over \$8.2 million in income for Massachusetts residents, \$993,000 in revenue for state and local governments, and 159 jobs generated in the state.

These are statewide impacts, representing income and jobs for residents of Massachusetts, and taxes (along with other sources of government revenue, such as permit fees) for the state government and all local jurisdictions that lie within the borders of Massachusetts. They are also one-year impacts that include both direct and indirect effects of the construction activity itself, and the impact of Massachusetts residents who earn money from the construction activity and spend at least a portion of their earnings within the state.

The additional, recurring impacts of building 100 single-family homes in urban locations within Massachusetts include over \$2.7 million in income for Massachusetts residents, \$969,000 in revenue for state and local governments, and 66 jobs in the state.

Long-Term Economic Impacts of Construction			
	Income	Taxes/Fees	Jobs
Urban	\$2,766,000	\$969,000	66
Suburban	\$3,340,000	\$1,185,000	80
Rural	\$2,744,000	\$939,000	79

These are ongoing, annual statewide impacts that result from the new homes becoming occupied, and the occupants contributing to the Massachusetts economy by paying taxes and spending money in the state year after year.

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### **Homes Built in Suburban Areas**

The estimated one-year statewide impacts of building 100 single-family homes in suburban locations within Massachusetts include approximately \$11.9 million in income for Massachusetts residents, over \$1.4 million in revenue for state and local governments, and 230 jobs generated in the state.

The ongoing, annual statewide impacts of building 100 single-family homes in suburban locations within Massachusetts include more than \$3.3 million in income for Massachusetts residents, nearly \$1.2 million in revenue for state and local governments, and 80 jobs in the state.

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### **Homes Built in Rural Areas**

The estimated one-year statewide impacts of building 100 single-family homes in rural locations within Massachusetts include over \$9.2 million in income for Massachusetts residents, just under \$1.1 million in revenue for state and local governments, and 217 jobs generated in the state.

The ongoing, annual, statewide impacts of building 100 single-family homes in rural locations within Massachusetts include more than \$2.7 million in income for Massachusetts residents, \$939,000 in revenue for state and local governments, and 79 jobs in the state.

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## **III. The Significance of Available Housing as a Factor in Business Location Decisions**

The significance of available housing can be studied in a number of ways. This study looks at the impacts in two related areas. The first considers the policy implications of the jobs-to-housing balance within any given region. Many urbanized regions across the country suffer from a geographic mismatch between the location of jobs and the availability of housing. There is little definitive literature on the remedies or even the need to seek solutions to this phenomenon. The second considers whether housing availability (or lack thereof) will have a significant impact on a business decision to locate in a community.

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## **The Jobs-to-Housing Balance**

The jobs-to-housing balance in a community is often expressed in the form of a ratio, which is the number of employees to the number of housing units. However, as most households are supported by two or more workers, and allowing for housing vacancies, an acceptable ratio in a community would be approximately 1.4 to 1.6 jobs for every housing unit. This ratio doesn't necessarily paint an accurate picture of the jobs to housing balance. Perhaps a better measure of balance is the match between the earnings of local workers and the cost of local housing. In other words: Do local jobs support the local housing market?

There are tangible benefits from achieving a balance. An obvious example is the effect on transportation: reduced traffic congestion, an increase in walking or biking, less need for parking, plus energy conservation and decreased emissions. Equally important are the implications for social equity. Providing affordable housing closer to job centers would expand residential and job opportunities for low-income people.

The problems associated with a jobs-to-housing imbalance, such as traffic congestion and pollution, transcend community boundaries and need to be addressed on an inter-jurisdictional basis. The jobs-to-housing balance is about increasing choices and opportunities for both employers and employees. Employers and businesses are starting to take a closer look at this issue when making location and expansion choices.

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## **Housing as a Factor in Business Location Decisions**

Traditional factors, such as location, costs and access to qualified labor, continue to play an important role in business relocation. Increasingly, though, quality of life issues have emerged as a critical element in the site selection process. These issues include, among other things, good school systems, available affordable housing, opportunities for recreation, and low crime rates.

Employers are starting to be concerned with where their employees want to live and work. As such, site selection is increasingly revolving around the workforce and the optimal locations that will attract and retain the best and brightest workers. Technological advances have made it easier to determine the best locations for businesses. Private firms that specialize in relocation strategies, such as Fluor Daniel Consulting and PPH Fantus Consulting, often perform a quality-of-life appraisal as a part of the comprehensive analysis of any geographic site under consideration.

In 1994, when Area Development Magazine (a site-selection trade publication) asked its readers to rate the importance of housing availability in the site selection process, 75 percent said it was either "important" or "very important." Slightly more readers - 76.8 percent - said that an area's public school ratings were of top concern when they considered moving employees, particularly key management personnel, to a new location.

According to the Wadley-Donovan Group, a site selection firm, companies typically look for a wide variety of homes on the market in the cities they consider for relocation. Nationally, companies like to see a minimum of 10 homes available in the \$40,000 to \$100,000 range for every transferee. And if they're moving executive talent to the new location, companies look for a wide variety of homes in the \$100,000 to \$150,000 range located within a 30-minute drive of the new office. A smart company undertaking a move looks for apartment vacancy rates above 10 percent and garden or new units that rent for about \$1,000 a month.

PHH Fantus Consulting lists the most critical site location needs of a typical business project as:

- Large management/technical pool
- Communications opportunities
- Clerical talent pool at competitive costs
- Commercial air services
- Good transportation access
- Office parks/space
- High quality of life
- Good housing mix (in terms of availability, affordability and type of housing)

Thus the availability and affordability of housing do impact the economic growth potential for a community. While rarely driving the site selection process, the quality-of-life factors offering the best "fit" to a relocating company often gain a competitive advantage for a particular community.

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#### **IV. In Conclusion**

The commonwealth's housing industry provides jobs and incomes for residents and a tax base for communities. It brings in substantial direct revenue, aids balanced growth, and plays a significant role in attracting sustainable economic development to the state.

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## ADDITIONAL TABLES

### IMPACT OF 100 SINGLE FAMILY HOMES IN AN URBAN AREA IN MASSACHUSETTS

#### Phase I -- Direct and Indirect Impact of Construction Activity

##### A. Income and Jobs by Industry

Industry	Income	Business Owners' Income	Wages and Salaries	Wages and Salaries per Full-time Job	Number of Jobs Supported
Construction	\$4,225,000	\$1,435,000	\$2,790,000	\$40,000	69
Manufacturing	\$4,000	\$0	\$4,000	\$45,000	0
Transportation	\$68,000	\$10,000	\$57,000	\$38,000	1
Communications	\$22,000	\$3,000	\$19,000	\$64,000	0
Utilities	\$11,000	\$2,000	\$8,000	\$64,000	0
Wholesale and Retail Trade	\$334,000	\$40,000	\$294,000	\$30,000	10
Finance and Insurance	\$77,000	\$4,000	\$73,000	\$45,000	2
Real Estate	\$44,000	\$19,000	\$25,000	\$38,000	1
Personal & Repair Services	\$60,000	\$27,000	\$33,000	\$35,000	1
Services to dwellings / bldgs	\$5,000	\$1,000	\$4,000	\$33,000	0
Business & Professional Services	\$586,000	\$128,000	\$458,000	\$55,000	8
Eating and drinking places	\$21,000	\$3,000	\$18,000	\$38,000	0
Automobile Repair & Service	\$52,000	\$24,000	\$28,000	\$31,000	1
Entertainment Services	\$1,000	\$0	\$1,000	\$34,000	0
Health, Educ. & Social Services	\$0	\$0	\$0	\$44,000	0

State and Local Government	\$6,000	\$0	\$6,000	\$43,000	0
Other	\$67,000	\$8,000	\$59,000	\$32,000	2
<b>Total</b>	<b>\$5,584,000</b>	<b>\$1,707,000</b>	<b>\$3,877,000</b>	<b>\$40,000</b>	<b>96</b>

Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.

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## B. State and Local Government General Revenue by Type

TAXES:		USER FEES AND CHARGES:	
Business Property Taxes	\$22,000	Residential Permit / Impact Fees	\$135,000
Residential Property Taxes	\$0	Sewerage & Solid Waste Chgs.	\$12,000
General Sales Taxes	\$25,000	Hospital	\$22,000
Specific Excise Taxes	\$15,000	Transportation Charges	\$6,000
Personal and Corporate Income Taxes	\$220,000	Education Charges	\$33,000
License Taxes	\$11,000	Other Fees and Charges	\$49,000
Other Taxes	\$12,000	Total Fees & Charges	\$258,000
<b>Total Taxes</b>	<b>\$305,000</b>	<b>Total General Revenue</b>	<b>\$563,000</b>

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## Phase II -- Induced Effect of Spending Income and Tax Revenue from Phase I

### A. Income and Jobs by Industry

Industry	Income	Business Owners' Income	Wages and Salaries	Wages and Salaries per Full-time Job	Number of Jobs Supported
Construction	\$181,000	\$61,000	\$119,000	\$40,000	3
Manufacturing	\$13,000	\$1,000	\$12,000	\$45,000	0
Transportation	\$29,000	\$4,000	\$25,000	\$33,000	1
Communications	\$96,000	\$13,000	\$83,000	\$61,000	1
Utilities	\$59,000	\$15,000	\$44,000	\$64,000	1
Wholesale and	\$582,000	\$70,000	\$512,000	\$25,000	21

Retail Trade					
Finance and Insurance	\$199,000	\$12,000	\$187,000	\$46,000	4
Real Estate	\$120,000	\$51,000	\$68,000	\$38,000	2
Personal & Repair Services	\$102,000	\$29,000	\$73,000	\$25,000	3
Services to dwellings / buildings	\$16,000	\$3,000	\$13,000	\$33,000	0
Business & Professional Services	\$175,000	\$46,000	\$130,000	\$45,000	3
Eating and drinking places	\$128,000	\$20,000	\$109,000	\$38,000	3
Automobile Repair & Service	\$118,000	\$55,000	\$63,000	\$31,000	2
Entertainment Services	\$48,000	\$13,000	\$35,000	\$36,000	1
Health, Education, & Social Services	\$226,000	\$42,000	\$184,000	\$38,000	5
State and Local Government	\$549,000	\$0	\$549,000	\$43,000	13
Other	\$24,000	\$1,000	\$22,000	\$26,000	1
<b>Total</b>	<b>\$2,665,000</b>	<b>\$436,000</b>	<b>\$2,229,000</b>	<b>\$35,000</b>	<b>63</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$60,000	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$0	Sewerage & Solid Waste Charges	\$12,000
General Sales Taxes	\$69,000	Hospital	\$11,000
Specific Excise Taxes	\$41,000	Transportation Charges	\$10,000
Personal and Corporate Income Taxes	\$127,000	Education Charges	\$16,000
License Taxes	\$11,000	Other Fees and Charges	\$64,000
Other Taxes	\$10,000	Total Fees and Charges	\$113,000
<b>Total Taxes</b>	<b>\$317,000</b>	<b>Total General Revenue</b>	<b>\$430,000</b>

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**Phase III -- Ongoing, Annual Effect that Occurs As New Homes are Occupied**

**A. Income and Jobs by Industry**

Industry	Income	Business Owners' Income	Wages and Salaries	Wages and Salaries per Full-time Job	Number of Jobs Supported
Construction	\$143,000	\$48,000	\$94,000	\$40,000	2
Manufacturing	\$13,000	\$1,000	\$12,000	\$45,000	0
Transportation	\$28,000	\$4,000	\$24,000	\$35,000	1
Communications	\$94,000	\$13,000	\$81,000	\$61,000	1
Utilities	\$64,000	\$17,000	\$47,000	\$64,000	1
Wholesale and Retail Trade	\$575,000	\$69,000	\$506,000	\$25,000	20
Finance and Insurance	\$323,000	\$20,000	\$303,000	\$45,000	7
Real Estate	\$75,000	\$32,000	\$43,000	\$38,000	1
Personal & Repair Services	\$100,000	\$29,000	\$71,000	\$25,000	3
Services to dwellings / bldgs.	\$14,000	\$2,000	\$12,000	\$33,000	0
Business & Professional Svcs.	\$207,000	\$54,000	\$153,000	\$44,000	3
Eating and drinking places	\$124,000	\$19,000	\$105,000	\$38,000	3
Automobile Repair & Service	\$132,000	\$61,000	\$71,000	\$31,000	2
Entertainment Services	\$60,000	\$16,000	\$44,000	\$36,000	1
Health, Education, & Social Services	\$242,000	\$50,000	\$192,000	\$35,000	5
State and Local Government	\$542,000	\$0	\$542,000	\$43,000	13
Other	\$29,000	\$2,000	\$28,000	\$26,000	1
<b>Total</b>	<b>\$2,766,000</b>	<b>\$438,000</b>	<b>\$2,328,000</b>	<b>\$35,000</b>	<b>66</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$55,000	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$204,000	Sewerage & Solid Waste Charges	\$22,000
General Sales Taxes	\$63,000	Hospital	\$35,000
Specific Excise Taxes	\$37,000	Transportation Charges	\$12,000
Personal and Corporate Income Taxes	\$354,000	Education Charges	\$52,000
License Taxes	\$20,000	Other Fees and Charges	\$94,000
Other Taxes	\$21,000	Total Fees and Charges	\$216,000
<b>Total Taxes</b>	<b>\$753,000</b>	<b>Total General Revenues</b>	<b>\$969,000</b>

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## THE ECONOMIC IMPACT OF BUILDING 100 SINGLE FAMILY HOMES IN A SUBURBAN AREA IN MASSACHUSETTS:

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### *Phase I*-- Direct and Indirect Impact of Construction Activity

#### A. Income and Jobs by Industry

Industry	Income	Business Owners' Income	Wages and Salaries	Wages and Salaries per Full-time Job	Number of Jobs Supported
Construction	\$6,067,000	\$2,060,000	\$4,007,000	\$40,000	99
Manufacturing	\$6,000	\$0	\$6,000	\$45,000	0
Transportation	\$97,000	\$15,000	\$82,000	\$38,000	2
Communications	\$32,000	\$5,000	\$27,000	\$64,000	0
Utilities	\$15,000	\$4,000	\$12,000	\$64,000	0
Wholesale and Retail Trade	\$480,000	\$57,000	\$422,000	\$30,000	14
Finance and Insurance	\$112,000	\$6,000	\$105,000	\$45,000	2

Real Estate	\$63,000	\$27,000	\$36,000	\$38,000	1
Personal & Repair Services	\$86,000	\$39,000	\$47,000	\$35,000	1
Services to dwellings / bldgs.	\$7,000	\$1,000	\$6,000	\$33,000	0
Business & Professional Services	\$843,000	\$184,000	\$659,000	\$55,000	12
Eating and drinking places	\$30,000	\$5,000	\$26,000	\$38,000	1
Automobile Repair & Service	\$74,000	\$35,000	\$40,000	\$31,000	1
Entertainment Services	\$2,000	\$1,000	\$1,000	\$34,000	0
Health, Educ. & Social Services	\$0	\$0	\$0	\$44,000	0
State and Local Government	\$8,000	\$0	\$8,000	\$43,000	0
Other	\$97,000	\$12,000	\$85,000	\$32,000	3
<b>Total</b>	<b>\$8,021,000</b>	<b>\$2,451,000</b>	<b>\$5,569,000</b>	<b>\$40,000</b>	<b>138</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

TAXES:		USER FEES AND CHARGES:	
Business Property Taxes	\$31,000	Residential Permit / Impact Fees	\$241,000
Residential Property Taxes	\$0	Sewerage & Solid Waste Charges	\$17,000
General Sales Taxes	\$36,000	Hospital	\$32,000
Specific Excise Taxes	\$21,000	Transportation Charges	\$9,000
Personal and Corporate Income Taxes	\$316,000	Education Charges	\$48,000
License Taxes	\$16,000	Other Fees and Charges	\$71,000
Other Taxes	\$17,000	Total Fees and Charges	\$418,000
<b>Total Taxes</b>	<b>\$438,000</b>	<b>Total General Revenue</b>	<b>\$856,000</b>

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**Phase II -- Induced Effect of Spending Income and Tax Revenue from Phase I**

**A. Income and Jobs by Industry**

Industry	Income	Business Owners' Income	Wages And Salaries	Wages and Salaries per Full-time Job	Number of Jobs Supported
Construction	\$263,000	\$89,000	\$174,000	\$40,000	4
Manufacturing	\$19,000	\$1,000	\$18,000	\$45,000	0
Transportation	\$41,000	\$6,000	\$36,000	\$33,000	1
Communications	\$139,000	\$19,000	\$120,000	\$61,000	2
Utilities	\$85,000	\$22,000	\$63,000	\$64,000	1
Wholesale and Retail Trade	\$839,000	\$101,000	\$738,000	\$25,000	30
Finance and Insurance	\$287,000	\$17,000	\$270,000	\$46,000	6
Real Estate	\$173,000	\$74,000	\$98,000	\$38,000	3
Personal & Repair Services	\$148,000	\$42,000	\$106,000	\$25,000	4
Services to dwellings / buildings	\$23,000	\$4,000	\$19,000	\$33,000	1
Business & Professional Services	\$254,000	\$66,000	\$188,000	\$45,000	4
Eating and drinking places	\$185,000	\$28,000	\$157,000	\$38,000	4
Automobile Repair & Service	\$170,000	\$79,000	\$91,000	\$31,000	3
Entertainment Services	\$69,000	\$18,000	\$51,000	\$36,000	1
Health, Education, & Social Services	\$326,000	\$61,000	\$265,000	\$38,000	7
State and Local Government	\$815,000	\$0	\$815,000	\$43,000	19
Other	\$34,000	\$2,000	\$32,000	\$26,000	1
<b>Total</b>	<b>\$3,871,000</b>	<b>\$630,000</b>	<b>\$3,241,000</b>	<b>\$35,000</b>	<b>92</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$87,000	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$0	Sewerage & Solid Waste Charges	\$18,000
General Sales Taxes	\$99,000	Hospital	\$16,000
Specific Excise Taxes	\$59,000	Transportation Charges	\$14,000
Personal And Corporate Income Taxes	\$184,000	Education Charges	\$23,000
License Taxes	\$16,000	Other Fees And Charges	\$93,000
Other Taxes	\$14,000	Total Fees & Charges	\$164,000
<b>Total Taxes</b>	<b>\$459,000</b>	<b>Total General Revenue</b>	<b>\$623,000</b>

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## Phase III -- Ongoing, Annual Effect that Occurs As New Homes are Occupied

### A. Income and Jobs by Industry

Industry	Income	Business Owners' Income	Wages and Salaries	Wages & Salaries per Full-time Job	Number of Jobs Supported
Construction	\$173,000	\$59,000	\$114,000	\$40,000	3
Manufacturing	\$15,000	\$1,000	\$14,000	\$45,000	0
Transportation	\$34,000	\$5,000	\$29,000	\$35,000	1
Communications	\$113,000	\$16,000	\$98,000	\$61,000	2
Utilities	\$77,000	\$20,000	\$57,000	\$64,000	1
Wholesale and Retail Trade	\$692,000	\$83,000	\$609,000	\$25,000	25
Finance and Insurance	\$388,000	\$23,000	\$365,000	\$45,000	8
Real Estate	\$90,000	\$39,000	\$51,000	\$38,000	1
Personal & Repair Services	\$121,000	\$35,000	\$85,000	\$25,000	3
Services to dwellings / buildings	\$17,000	\$3,000	\$14,000	\$33,000	0
Business & Professional Services	\$250,000	\$66,000	\$185,000	\$44,000	4

Eating and drinking places	\$150,000	\$23,000	\$127,000	\$38,000	3
Automobile Repair & Service	\$159,000	\$73,000	\$86,000	\$31,000	3
Entertainment Services	\$72,000	\$20,000	\$53,000	\$36,000	1
Health, Education, & Social Services	\$292,000	\$61,000	\$231,000	\$35,000	7
State and Local Government	\$662,000	\$0	\$662,000	\$43,000	16
Other	\$35,000	\$2,000	\$34,000	\$26,000	1
<b>Total</b>	<b>\$3,340,000</b>	<b>\$528,000</b>	<b>\$2,813,000</b>	<b>\$35,000</b>	<b>80</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

<b>TAXES:</b>		<b>USER FEES &amp; CHARGES:</b>	
Business Property Taxes	\$66,000	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$265,000	Sewerage & Solid Waste Charges	\$26,000
General Sales Taxes	\$76,000	Hospital	\$42,000
Specific Excise Taxes	\$45,000	Transportation Charges	\$15,000
Personal And Corporate Income Taxes	\$426,000	Education Charges	\$63,000
License Taxes	\$24,000	Other Fees And Charges	\$113,000
Other Taxes	\$25,000	Total Fees & Charges	\$259,000
<b>Total Taxes</b>	<b>\$926,000</b>	<b>Total General Revenue</b>	<b>\$1,185,000</b>

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## THE ECONOMIC IMPACT OF BUILDING 100 SINGLE FAMILY HOMES IN A RURAL AREA IN MASSACHUSETTS:

### *Phase I* -- Direct and Indirect Impact of Construction Activity

## A. Income and Jobs by Industry

Industry	Income	Business Owners' Income	Wages and Salaries	Wages & Salaries per Full-time Job	Number of Jobs Supported
Construction	\$4,770,000	\$1,620,000	\$3,150,000	\$33,000	95
Manufacturing	\$5,000	\$0	\$4,000	\$37,000	0
Transportation	\$76,000	\$12,000	\$65,000	\$32,000	2
Communications	\$25,000	\$4,000	\$21,000	\$53,000	0
Utilities	\$12,000	\$3,000	\$9,000	\$53,000	0
Wholesale and Retail Trade	\$377,000	\$45,000	\$332,000	\$25,000	13
Finance and Insurance	\$86,000	\$5,000	\$82,000	\$37,000	2
Real Estate	\$50,000	\$21,000	\$28,000	\$31,000	1
Personal & Repair Services	\$68,000	\$31,000	\$37,000	\$29,000	1
Services to dwellings / bldgs.	\$6,000	\$1,000	\$5,000	\$28,000	0
Business & Professional Services	\$661,000	\$144,000	\$517,000	\$45,000	11
Eating and drinking places	\$24,000	\$4,000	\$20,000	\$31,000	1
Automobile Repair & Service	\$59,000	\$27,000	\$31,000	\$25,000	1
Entertainment Services	\$2,000	\$0	\$1,000	\$28,000	0
Health, Educ. & Social Services	\$0	\$0	\$0	\$36,000	0
State and Local Government	\$6,000	\$0	\$6,000	\$35,000	0
Other	\$76,000	\$9,000	\$67,000	\$26,000	3
<b>Total</b>	<b>\$6,303,000</b>	<b>\$1,927,000</b>	<b>\$4,376,000</b>	<b>\$33,000</b>	<b>131</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

<b>TAXES:</b>		<b>USER FEES &amp; CHARGES:</b>	
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Business Property Taxes	\$23,000	Residential Permit / Impact Fees	\$87,000
Residential Property Taxes	\$0	Sewerage & Solid Waste Charges	\$14,000
General Sales Taxes	\$31,000	Hospital	\$16,000
Specific Excise Taxes	\$19,000	Transportation Charges	\$10,000
Personal And Corporate Income Taxes	\$250,000	Education Charges	\$43,000
License Taxes	\$13,000	Other Fees And Charges	\$66,000
Other Taxes	\$15,000	Total Fees & Charges	\$237,000
<b>Total Taxes</b>	<b>\$350,000</b>	<b>Total General Revenue</b>	<b>\$587,000</b>

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## Phase II -- Induced Effect of Spending Income and Tax Revenue from Phase I

### A. Income and Jobs by Industry

Industry	Income	Business Owners' Income	Wages and Salaries	Wages & Salaries per Full-time Job	Number of Jobs Supported
Construction	\$202,000	\$68,000	\$133,000	\$33,000	4
Manufacturing	\$15,000	\$1,000	\$14,000	\$37,000	0
Transportation	\$32,000	\$4,000	\$28,000	\$27,000	1
Communications	\$108,000	\$15,000	\$93,000	\$51,000	2
Utilities	\$66,000	\$17,000	\$49,000	\$53,000	1
Wholesale and Retail Trade	\$655,000	\$79,000	\$576,000	\$20,000	28
Finance and Insurance	\$224,000	\$13,000	\$211,000	\$38,000	6
Real Estate	\$135,000	\$58,000	\$77,000	\$31,000	2
Personal & Repair Services	\$115,000	\$33,000	\$82,000	\$20,000	4
Services to dwellings / buildings	\$18,000	\$3,000	\$15,000	\$28,000	1
Business & Professional Services	\$197,000	\$51,000	\$145,000	\$37,000	4
Eating and drinking places	\$144,000	\$22,000	\$122,000	\$31,000	4
Automobile Repair & Service	\$132,000	\$62,000	\$71,000	\$25,000	3

Entertainment Services	\$54,000	\$14,000	\$40,000	\$29,000	1
Health, Education, & Social Services	\$254,000	\$47,000	\$207,000	\$31,000	7
State and Local Government	\$605,000	\$0	\$605,000	\$35,000	17
Other	\$27,000	\$1,000	\$25,000	\$22,000	1
<b>Total</b>	<b>\$2,983,000</b>	<b>\$490,000</b>	<b>\$2,493,000</b>	<b>\$29,000</b>	<b>86</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$57,000	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$0	Sewerage & Solid Waste Charges	\$14,000
General Sales Taxes	\$77,000	Hospital	\$7,000
Specific Excise Taxes	\$49,000	Transportation Charges	\$19,000
Personal And Corporate Income Taxes	\$142,000	Education Charges	\$20,000
License Taxes	\$12,000	Other Fees And Charges	\$93,000
Other Taxes	\$14,000	Total Fees & Charges	\$155,000
<b>Total Taxes</b>	<b>\$351,000</b>	<b>Total General Revenue</b>	<b>\$506,000</b>

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## Phase III -- Ongoing, Annual Effect that Occurs As New Homes are Occupied

### A. Income and Jobs by Industry

Industry	Income	Business Owners' Income	Wages and Salaries	Wages & Salaries per Full-time Job	Number of Jobs Supported
Construction	\$140,000	\$48,000	\$93,000	\$33,000	3
Manufacturing	\$13,000	\$1,000	\$12,000	\$37,000	0

Transportation	\$28,000	\$4,000	\$24,000	\$29,000	1
Communications	\$94,000	\$13,000	\$81,000	\$50,000	2
Utilities	\$64,000	\$17,000	\$47,000	\$53,000	1
Wholesale and Retail Trade	\$574,000	\$69,000	\$505,000	\$20,000	25
Finance and Insurance	\$322,000	\$20,000	\$303,000	\$37,000	8
Real Estate	\$74,000	\$32,000	\$42,000	\$31,000	1
Personal & Repair Services	\$100,000	\$29,000	\$71,000	\$21,000	3
Services to dwellings / buildings	\$14,000	\$2,000	\$12,000	\$28,000	0
Business & Professional Services	\$206,000	\$54,000	\$152,000	\$36,000	4
Eating and drinking places	\$124,000	\$19,000	\$105,000	\$31,000	3
Automobile Repair & Service	\$132,000	\$61,000	\$71,000	\$25,000	3
Entertainment Services	\$60,000	\$16,000	\$44,000	\$29,000	1
Health, Education, & Social Services	\$242,000	\$50,000	\$192,000	\$29,000	7
State and Local Government	\$527,000	\$0	\$527,000	\$35,000	15
Other	\$29,000	\$1,000	\$28,000	\$22,000	1
<b>Total</b>	<b>\$2,744,000</b>	<b>\$436,000</b>	<b>\$2,308,000</b>	<b>\$29,000</b>	<b>79</b>

*Note: Business & professional services include architectural and engineering services. The "Other" category consists mostly of landscaping services, and the production of greenhouse and nursery products.*

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## B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$46,000	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$161,000	Sewerage & Solid Waste Charges	\$22,000
General Sales Taxes	\$63,000	Hospital	\$22,000
Specific Excise Taxes	\$40,000	Transportation Charges	\$19,000
Personal And Corporate Income Taxes	\$353,000	Education Charges	\$60,000

License Taxes	\$20,000	Other Fees And Charges	\$111,000
Other Taxes	\$23,000	Total Fees & Charges	\$234,000
<b>Total Taxes</b>	<b>\$705,000</b>	<b>Total General Revenue</b>	<b>\$939,000</b>

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