The Metro Area Impact of Home Building in the Portland, Oregon Area: 2008

Income, Jobs, and Taxes Generated

Prepared by the
Housing Policy Department

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Executive Summary

Home building generates substantial local economic activity, including new income and jobs for residents, and additional revenue for local governments. The National Association of Home Builders has developed a model to estimate the economic benefits. The model captures the effect of the construction activity itself, the ripple impact that occurs when income earned from construction activity is spent and recycles in the local economy, and the ongoing impact that results from new homes becoming occupied by residents who pay taxes and buy locally produced goods and services. In order to fully appreciate the positive impact residential construction has on a community, it's important to include the ripple effects and the ongoing benefits. Since the NAHB model was initially developed in 1996, it has been used to estimate the impacts of construction in over 600 projects, local jurisdictions, metropolitan areas, non-metropolitan counties, and states across the country.

This report presents estimates of the metro area impacts of home building in three counties (Clackamas, Multnomah, and Washington) in Oregon. For purposes of the report, these three-counties are called the Portland, Oregon Area, after the central city located in Multnomah County. The comprehensive nature of the NAHB model requires that the local area over which the benefits are spread be large enough to include the places where construction workers live and spend their money, as well as the places where the new home occupants are likely to work, shop, and go for recreation. In practice, this usually means a Metropolitan Statistical Area (MSA) as defined by the U.S. Office of Management and Budget (OMB). Based on local commuting patterns, OMB has identified the Portland-Vancouver-Beaverton MSA as a metro area consisting of five counties (Clackamas, Columbia, Multnomah, Washington, and Yamhill) in Oregon, and two (Clark and Skamania) in Washington (see map below).

Portland-Vancouver-Beaverton, Oregon-Washington MSA

In this report, wherever the term local is used it refers to the entire, seven-county metro area. The report presents estimates of the impacts of building 1,000 single-family homes, representative of the homes built in Clackamas, Multnomah, and Washington counties in 2008.

The NAHB model estimates impacts on income and employment in 16 industries and local government, as well as detailed information about taxes and other types of local government revenue. Aggregate results are summarized below. Subsequent sections of the report show detail by industry and type of tax or fee revenue generated.

- The estimated one-year metro area impacts of building 1,000 single-family homes in the Portland, Oregon Area include
    - $215.9 million in local income,
    - $39.6 million in taxes and other revenue for local governments, and
    - 3,108 local jobs.

  These are local impacts, representing income and jobs for residents of the Portland-Vancouver-Beaverton MSA, and taxes (and other sources of revenue, including permit fees) for all local jurisdictions within the metro area. They are also one-year impacts that include both the direct and indirect impact of the construction activity itself, and the impact of local residents who earn money from the construction activity spending part of it within the local area. Local jobs are measured in full time equivalents—i.e., one reported job represents enough work to keep one worker employed full-time for a year, based on average hours worked per week by full-time employees in the industry.

- The additional, annually recurring impacts of building 1,000 single-family homes in the Portland, Oregon Area include
    - $34.1 million in local income,
    - $8.4 million in taxes and other revenue for local governments, and
    - 550 local jobs.

  These are ongoing, annual local impacts that result from the new homes being occupied and the occupants paying taxes and otherwise participating in the local economy year after year. The ongoing impacts also include the effect of increased property taxes, based on the difference between the value of raw land and the value of a completed housing unit on a finished lot, assuming that raw land would be taxed at the same rate as the completed housing unit.

The above impacts were calculated assuming that new single-family homes built in Clackamas Multnomah, and Washington counties in 2008 have an average price of $352,000; are built on a lot for which the average value of the raw land is $80,960; require the builder and developer to pay an average of $26,688 in impact, permit, and other fees to local governments; and incur an average property tax of $4,127 per year. This information was provided by the Clackamas County Office of the Assessor, the Multnomah County Office of the Assessor, New Homes Sales, the Washington County Office of the Assessor, the U.S. Census Bureau, and Zell Associates.

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Detailed Tables on Income, Jobs, and Taxes

Impact of Building 1,000 Single-Family Homes in the Portland, Oregon Area

Summary

Total One-Year Impact: Sum of Phase I and Phase II:

Local Income	Local Business Owners' Income	Local Wages and Salaries	Local Taxes[1]	Local Jobs Supported
$215,906,400	$62,809,800	$153,096,700	$39,648,100	3,108

Phase I: Direct and Indirect Impact of Construction Activity:

Local Income	Business Owners' Income	Local Wages and Salaries	Local Taxes[1]	Local Jobs Supported
$138,270,400	$39,108,400	$99,162,200	$31,296,200	1,920

Phase II: Induced (Ripple) Effect of Spending the Income and Taxes from Phase I:

Local Income	Business Owners' Income	Local Wages and Salaries	Local Taxes[1]	Local Jobs Supported
$77,636,000	$23,701,400	$53,934,500	$8,351,900	1,188

Phase III: Ongoing, Annual Effect that Occurs When New Homes are Occupied:

Local Income	Local Business Owners' Income	Local Wages and Salaries	Local Taxes[1]	Local Jobs Supported
$34,141,900	$9,989,700	$24,152,400	$8,407,800	550

[1] The term local taxes is used as a shorthand for local government revenue from all sources: taxes, fees, fines, revenue from government-owned enterprises, etc.

Impact of Building 1,000 Single-Family Homes in the Portland, Oregon Area
Phase I—Direct and Indirect Impact of Construction Activity

A. Local Income and Jobs by Industry

Industry	Local Income	Local Business Owners' Income	Local Wages and Salaries	Wages & Salaries per Full-time Job	Number of Local Jobs Supported
Construction	$94,274,300	$24,314,300	$69,960,000	$53,000	1,323
Manufacturing	$14,000	$900	$13,100	$55,000	0
Transportation	$203,200	$27,400	$175,800	$47,000	4
Communications	$1,416,600	$432,600	$984,000	$80,000	12
Utilities	$388,600	$151,000	$237,600	$90,000	3
Wholesale and Retail Trade	$13,862,200	$2,538,300	$11,323,900	$39,000	289
Finance and Insurance	$3,145,600	$257,900	$2,887,700	$89,000	33
Real Estate	$6,750,900	$5,942,900	$808,000	$55,000	15
Personal & Repair Services	$963,800	$363,600	$600,200	$35,000	17
Services to Dwellings / Buildings	$556,700	$110,800	$446,000	$36,000	13
Business & Professional Services	$13,389,100	$4,001,800	$9,387,300	$62,000	151
Eating and Drinking Places	$460,000	$61,900	$398,100	$22,000	18
Automobile Repair & Service	$456,100	$141,600	$314,500	$35,000	9
Entertainment Services	$79,500	$16,300	$63,200	$48,000	1
Health, Educ. & Social Services	$17,900	$4,800	$13,100	$41,000	0
Local Government	$237,200	$0	$237,200	$58,000	4
Other	$2,054,700	$742,300	$1,312,500	$47,000	28
Total	$138,270,400	$39,108,400	$99,162,200	$52,000	1,920

B. Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	$514,500	Residential Permit / Impact Fees	$26,688,000
Residential Property Taxes	$0	Utilities & Other Govt. Enterprises	$1,994,700
General Sales Taxes	$20,200	Hospital Charges	$600
Specific Excise Taxes	$90,000	Transportation Charges	$480,000
Income Taxes	$0	Education Charges	$394,300
License Taxes	$16,900	Other Fees and Charges	$901,900
Other Taxes	$195,100	TOTAL FEES & CHARGES	$30,459,600
TOTAL TAXES	$836,500	TOTAL GENERAL REVENUE	$31,296,200

Impact of Building 1,000 Single-Family Homes in the Portland, Oregon Area
Phase II—Induced Effect of Spending Income and Tax Revenue from Phase I

A. Local Income and Jobs by Industry

Industry	Local Income	Local Business Owners' Income	Local Wages and Salaries	Wages & Salaries per Full-time Job	Number of Local Jobs Supported
Construction	$3,307,800	$1,273,400	$2,034,400	$53,000	38
Manufacturing	$14,800	$1,100	$13,700	$55,000	0
Transportation	$202,000	$27,400	$174,600	$44,000	4
Communications	$4,350,800	$1,474,200	$2,876,700	$79,000	36
Utilities	$1,888,800	$749,500	$1,139,300	$90,000	13
Wholesale and Retail Trade	$11,875,900	$2,233,600	$9,642,300	$35,000	277
Finance and Insurance	$2,977,700	$268,900	$2,708,800	$80,000	34
Real Estate	$12,490,100	$10,995,200	$1,494,900	$55,000	27
Personal & Repair Services	$2,622,800	$1,194,400	$1,428,400	$35,000	40
Services to Dwellings / Buildings	$615,500	$122,500	$493,000	$36,000	14
Business & Professional Services	$7,791,600	$2,259,200	$5,532,400	$56,000	99
Eating and Drinking Places	$3,481,700	$468,300	$3,013,400	$22,000	140
Automobile Repair & Service	$1,704,600	$519,400	$1,185,200	$35,000	33
Entertainment Services	$818,900	$225,600	$593,200	$40,000	15
Health, Educ. & Social Services	$9,848,900	$1,212,700	$8,636,200	$52,000	166
Local Government	$11,759,300	$0	$11,759,300	$54,000	219
Other	$1,884,800	$676,000	$1,208,700	$38,000	32
Total	$77,636,000	$23,701,400	$53,934,500	$45,000	1,188

B. Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	$2,036,900	Residential Permit / Impact Fees	$0
Residential Property Taxes	$0	Utilities & Other Govt. Enterprises	$3,631,300
General Sales Taxes	$79,900	Hospital Charges	$1,700
Specific Excise Taxes	$356,300	Transportation Charges	$269,500
Income Taxes	$0	Education Charges	$221,400
License Taxes	$15,100	Other Fees and Charges	$967,500
Other Taxes	$772,400	TOTAL FEES & CHARGES	$5,091,300
TOTAL TAXES	$3,260,600	TOTAL GENERAL REVENUE	$8,351,900

Impact of Building 1,000 Single-Family Homes in the Portland, Oregon Area
Phase III—Ongoing, Annual Effect That Occurs Because Units Are Occupied

A. Local Income and Jobs by Industry

Industry	Local Income	Local Business Owners' Income	Local Wages and Salaries	Wages & Salaries per Full-time Job	Number of Local Jobs Supported
Construction	$1,848,500	$712,600	$1,135,900	$53,000	21
Manufacturing	$7,500	$600	$7,000	$55,000	0
Transportation	$98,200	$13,300	$85,000	$46,000	2
Communications	$2,082,500	$708,300	$1,374,200	$79,000	17
Utilities	$1,064,300	$421,400	$642,900	$90,000	7
Wholesale and Retail Trade	$6,320,500	$1,190,100	$5,130,400	$35,000	148
Finance and Insurance	$2,030,300	$184,200	$1,846,100	$79,000	23
Real Estate	$3,790,400	$3,336,700	$453,700	$55,000	8
Personal & Repair Services	$1,051,600	$484,900	$566,700	$35,000	16
Services to Dwellings / Buildings	$341,700	$68,000	$273,700	$36,000	8
Business & Professional Services	$3,353,500	$1,010,800	$2,342,700	$55,000	42
Eating and Drinking Places	$1,860,000	$250,200	$1,609,800	$22,000	75
Automobile Repair & Service	$872,900	$266,000	$606,900	$35,000	17
Entertainment Services	$545,600	$149,700	$395,900	$37,000	11
Health, Educ. & Social Services	$4,743,100	$602,600	$4,140,500	$51,000	81
Local Government	$2,589,600	$0	$2,589,600	$54,000	48
Other	$1,541,700	$590,300	$951,400	$37,000	26
Total	$34,141,900	$9,989,700	$24,152,400	$44,000	550

B. Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	$985,700	Residential Permit / Impact Fees	$0
Residential Property Taxes	$3,177,900	Utilities & Other Govt. Enterprises	$2,986,100
General Sales Taxes	$38,700	Hospital Charges	$1,200
Specific Excise Taxes	$172,400	Transportation Charges	$118,500
Income Taxes	$0	Education Charges	$97,400
License Taxes	$6,900	Other Fees and Charges	$449,200
Other Taxes	$373,800	TOTAL FEES & CHARGES	$3,652,400
TOTAL TAXES	$4,755,500	TOTAL GENERAL REVENUE	$8,407,800

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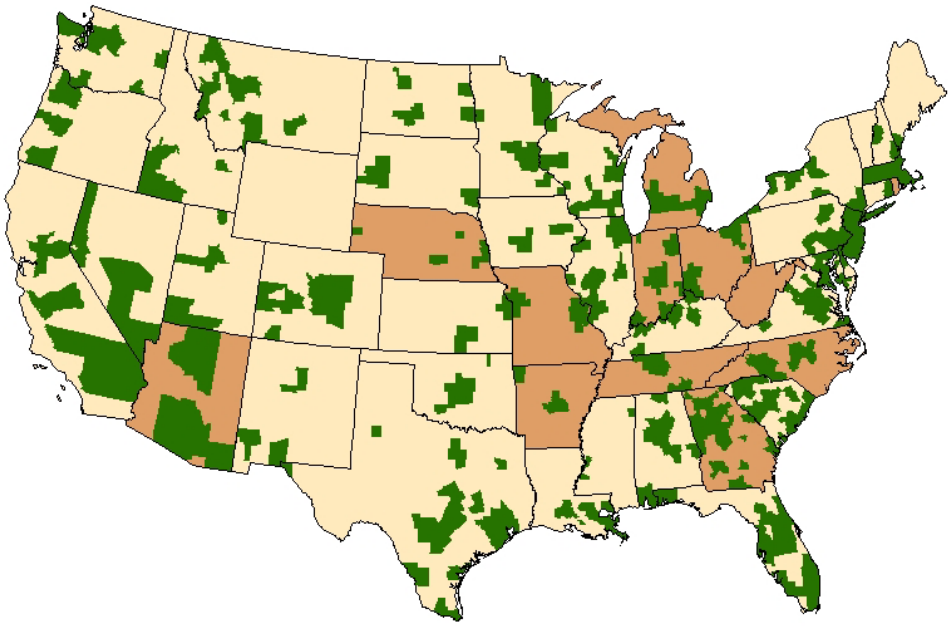
Background and a Brief Description of the Model Used to Estimate the Economic Benefits

In 1996, the Housing Policy Department of the National Association of Home Builders (NAHB) developed an economic model to estimate the local economic benefits of home building. Although at first calibrated to a typical metropolitan area using national averages, the model could be adapted to a specific local economy by replacing national averages with specific local data for key housing market variables. The initial version of the model could be applied to single-family construction, multifamily construction, or a combination of the two.

Since 1997, NAHB has used the model to produce customized reports on the impact of home building in various parts of the country. As of June 2009, over 600 of these reports have been produced, analyzing residential construction in various metropolitan areas, non-metropolitan counties, and states (see map below).

Areas Covered by NAHB Local Impact Studies

The darkest shading indicates studies that covered metro areas and non-metro counties; the somewhat lighter shading indicates studies that were produced for an entire state.



The reports have analyzed the impacts of specific housing projects, as well as total home building in areas as large as entire states. In 2002, NAHB developed new versions of the model to analyze active adult housing projects and multifamily development financed with the Low-Income Housing Tax Credit, then in 2005 a version of the model that analyzes remodeling.

Results from NAHB's local impact model have been used by outside organizations such as universities, state housing authorities and affordable housing agencies:

- The Shimburg Center for Affordable Housing at the University of Florida used results from the NAHB model to establish that "the real estate taxes paid year after year are the most obvious long-term economic benefit to the community. Probably the second most obvious long-term economic benefit is the purchases made by the family occupying the completed home." www.shimberg.ufl.edu/pdf/Newslett-June02.pdf

- The Louisville Affordable Housing Trust Fund (AHTF) used results from the NAHB model to determine the initial one-year impact and the ongoing annual effect that occurs when new homes are occupied. This analysis was performed to help justify the creation of a commission to oversee the newly established AHTF to insure that it works at "finding creative ways to create a sustainable and renewable fund to provide affordable housing opportunities throughout the Louisville community." www.openthedoorlouisville.org/housing-trust/economic-growth

- The Illinois Housing Development Authority used the NAHB model to determine that "the Authority's new construction activity in single and multifamily housing….resulted in the creation of 4,256 full-time jobs in construction and construction-related industries." The Authority also used the NAHB impact model to determine the federal, state and local taxes and fees generated from new construction and substantial rehabilitation activity. www.ihda.org/admin/Upload/Files/94c0ecf7-a238-4be3-90bd-6043cfae81ea.pdf

- The Stardust Center at the Arizona State University used "the model used and developed by the NAHB to assess the immediate economic impacts of affordable housing" by phase including the construction effect, the construction ripple, and on-going impacts. This was done to show "that permanent, affordable and geographically accessible housing provides numerous benefits both to individual families and to the broader community." www.orangecountyfl.net/NR/rdonlyres/efo5wiffiqvqqgn2s35shus5i4lwdgqbcxpck2dddnds3msj5qs26ubzllsfl6s6rrwnmtkq4dypnjrdrdzei2llq5g/Socialeconomicimpacts.pdf

- The Center for Applied Economic Research at Montana State University used "results from an input-output model developed by the National Association of Home Builders to assess the impacts to local areas from new home construction." The results show that "the construction industry contributes substantially to Montana's economy accounting for 5.5 percent of Gross State Product."

- The Housing Education and Research Center at Michigan State University also adopted the NAHB approach: "The underlying basis for supporting the implementation of this [NAHB] model on Michigan communities is that it provides quantifiable results that link new residential development with commercial and other forms of development therefore illustrating the overall economic effects of residential growth."

- The Center for Economic Development at the University of Massachusetts found that "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. …these factors were evaluated by means of a quantitative assessment of data from the National Association of Home Builder's Local Impact of Home Building model."

- Similarly, the Association of Oregon Community Development Organizations decided to base its analysis of affordable housing on the NAHB model, stating that "This model is widely respected and utilized in analyzing the economic impact of market rate housing development," and that, compared to alternatives, it "is considered the most

comprehensive and is considered an improvement on most previous models." www.aocdo.org/docs/EcoDevoStudyFinal.pdf

- The Boone County Kentucky Planning Commission included results from the NAHB model in its 2005 Comprehensive Report. The Planning Commission used values from the impact model to quantify the increase in local income, taxes, revenue, jobs, and overall local economic impacts in the Metro Area as a result of new home construction.

The NAHB model is divided into three phases. Phases I and II are one-time effects. Phase I captures the effects that result directly from the construction activity itself and the local industries that contribute to it. Phase II captures the effects that occur as a result of the wages and profits from Phase I being spent in the local economy. Phase III is an ongoing, annual effect that includes property tax payments and the result of the completed unit being occupied.

Phase I: Local Industries Involved in Home Building

The jobs, wages, and local taxes (including permit, utility connection, and impact 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 jobs generated in retail and wholesale sales of components, transportation to the site, and the professional services required to build a home and deliver it to its final customer.

Phase II: Ripple Effect

The wages and profits for local area residents earned during the construction period are spent on other locally produced goods and services. This generates additional income for local residents, which is spent on still more locally produced goods and services, and so on. This continuing recycling of income back into the community is usually called a ***multiplier*** or ***ripple*** effect.

Phase III: Ongoing, Annual Effect

The local jobs, income, and taxes generated as a result of the home being occupied. A household moving into a new home generally spends about three-fifths of its income on goods and services sold in the local economy. A fraction of this will become income for local workers and local businesses proprietors. In a typical local area, the household will also pay 1.25 percent of its income to local governments in the form of taxes and user fees, and a fraction of this will become income for local government employees. This is the first step in another set of economic ripples that cause a permanent increase in the level of economic activity, jobs, wages, and local tax receipts.

Modeling a Local Economy

The model defines a local economy as a collection of industries and commodities. These are selected from the detailed benchmark input-output tables produced by the U.S. Bureau of Economic Analysis. The idea is to choose goods and services that would typically be produced, sold, and consumed within a local market area. Laundry services would qualify, for example, while automobile manufacturing would not. Both business-to-business and business-to-consumer transactions are considered. In general the model takes a conservative approach and retains a relatively small number of the available industries and commodities. Of the roughly 600 industries and commodities provided in the input-output files, the model uses only 87 commodities and 89 industries.

The design of the model implies that a local economy should include not only the places people live, but also the places where they work, shop, typically go for entertainment, etc. This corresponds reasonably well to the concepts of Metropolitan Statistical Areas and Metropolitan Divisions, areas defined by the U.S. Office of Management and Budget based on local commuting patterns. Outside of these officially defined metropolitan areas, NAHB has determined that a county will usually satisfy the model's requirements.

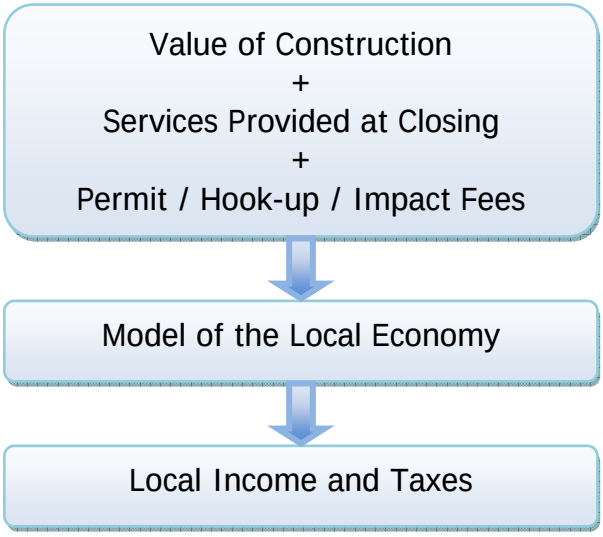
For a particular local area, the model adjusts the indirect business tax section of the national input-output accounts to account for the fiscal structure of local governments in the area. The information used to do this comes primarily from the U.S. Census Bureau's Census of Governments. Wages and salaries are extracted from the employee compensation section of the input-output accounts on an industry-by-industry basis. In order to relate wages and salaries to employment, the model incorporates data on local wages per job published by the Bureau of Economic Analysis.

Phase I: Construction

In order to estimate the local impacts generated by home building, it is necessary to know the sales price of the homes being built, how much raw land contributes to the final price, and how much the builder and developer pay to local area governments in the form of permit, utility connection, impact, and other fees. This information is not generally available from national sources and in most cases must be provided by representatives from the area in question who have specialized knowledge of local conditions.

The model subtracts raw land value from the price of new construction and converts the difference into local wages, salaries, business owners' income, and taxes. This is done separately for all 95 local industries. In addition, the taxes and fees collected by local governments during the construction phase generate wages and salaries for local government employees. Finally the number of full time jobs supported by the wages and salaries generated in each private local industry and the local government sector is estimated.

Summary of Phase I



Phase II: The Construction Ripple

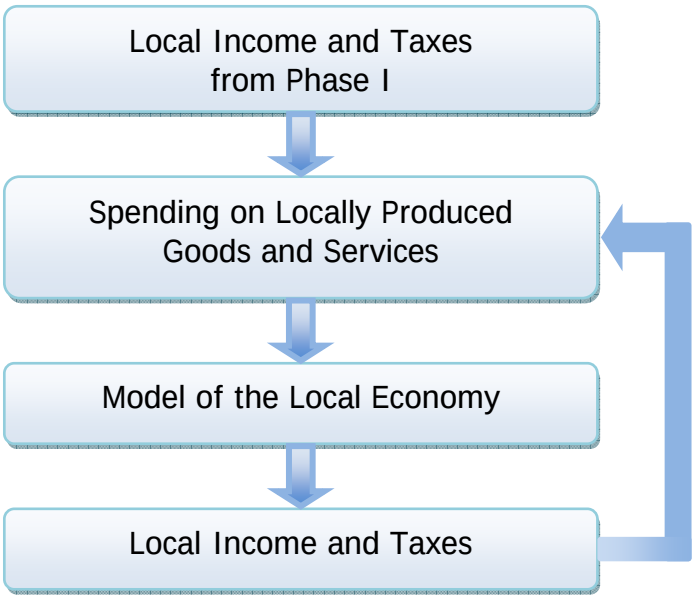
Clearly, the local residents who earn income in Phase I will spend a share of it. Some of this will escape the local economy. A portion of the money used to buy a new car, for example, will become wages for autoworkers that are likely to live in another city, and increased profits for stockholders of an automobile manufacturing company who are also likely to live elsewhere. A portion of the spending, however, will remain within, and have an impact on, the local economy. The car is likely to be purchased from a local dealer and generate income for a salesperson that lives in the area, as well for local workers who provide cleaning, maintenance, and other services to the dealership. Consumers also are likely to purchase many services locally, as well as to pay taxes and fees to local governments.

This implies that the income and taxes generated in Phase I become the input for additional economic impacts analyzed in what we call Phase II of the model. Phase II begins by estimating how much of the added income households spend on each of the local commodities. This requires detailed analysis of data from the Consumer Expenditure (CE) Survey, which is conducted by the U.S. Bureau of Labor Statistics primarily for the purpose of determining the weights for the Consumer Price Index. The analysis produces household spending estimates for 55 local commodities. The remainder of the 87 local commodities enter the model only as business-to-business transactions.

The model then translates the estimated local spending into local business owners' income, wages and salaries, jobs, and taxes. This is essentially the same procedure applied to the homes sold to consumers in Phase I. In Phase II, however, the procedure is applied simultaneously to 56 locally produced and sold commodities.

In other words, the model converts the local income earned in Phase I into local spending, which then generates additional local income. But this in turn will lead to additional spending, which will generate more local income, leading to another round of spending, and so on. Calculating the end result of these economic is a straightforward exercise in mathematics.

Summary of Phase II



Phase III: The Ongoing Impacts

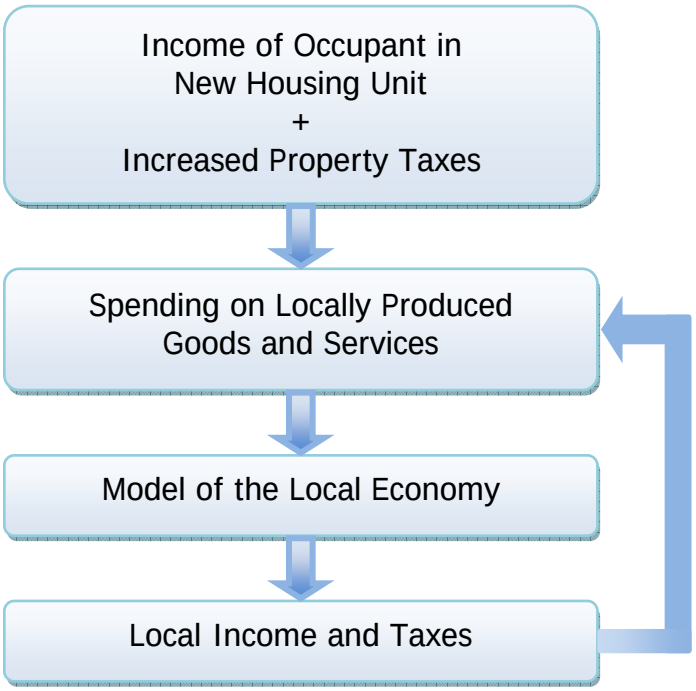
Like Phase II, Phase III involves computing the sum of successive ripples of economic activity. In Phase III, however, the first ripple is generated by the income and spending of a new household (along with the additional property taxes local governments collect as a result of the new structure). This does not necessarily imply that all new homes must be occupied by households moving in from outside the local area. It may be that an average new-home household moves into the newly constructed unit from elsewhere in the same local area, while average existing-home household moves in from outside to occupy the unit vacated by the first household. Alternatively, it may be that the new home allows the local area to retain a household that would otherwise move out of the area for lack of suitable housing.

In any of these cases, it is appropriate to treat a new, occupied housing unit as a net gain to the local economy of one household with average characteristics for a household that occupies a new home. This reasoning is often used, even if unconsciously, when it is assumed that a new home will be occupied by a household with average characteristics—for instance, an average number of children who will consume public education.

To estimate the impact of the net additional households, Phase III of the model requires an estimate of the income of the households occupying the new homes. The information used to compute this estimate comes from several sources, but primarily from an NAHB statistical model based on decennial census data. Phase III of the local impact model then estimates the fraction

of income these households spend on various local commodities. This is done with CE data and is similar to the procedure described under Phase II. The model also calculates the amount of local taxes the households pay each year. This is done with Census of Governments data except in the case of residential property taxes, which are treated separately, and for which specific information must usually be obtained from a local source. Finally, a total ripple effect is computed, using essentially the same procedure outlined above under Phase II.

Summary of Phase III



The details covered here provide a brief description of the model NAHB uses to estimate the local economic benefits of home building. For a more complete description, see the technical documentation at the end of the report. For additional information about the model, or questions about applying it to a particular local area, contact one of the following in NAHB's Housing Policy Department:

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