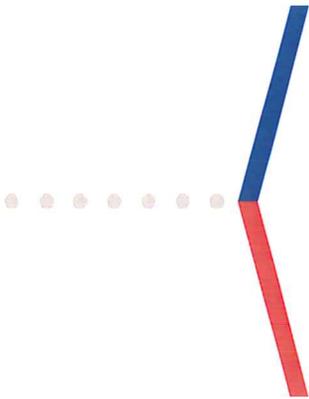


**The Local Impact of
Quarry Bluff in
Door County, Wisconsin:
Income, Jobs and
Taxes Generated**

January 2020

Housing Policy Department



The Local Impact of Quarry Bluff in Door County, Wisconsin: Income, Jobs and Taxes Generated

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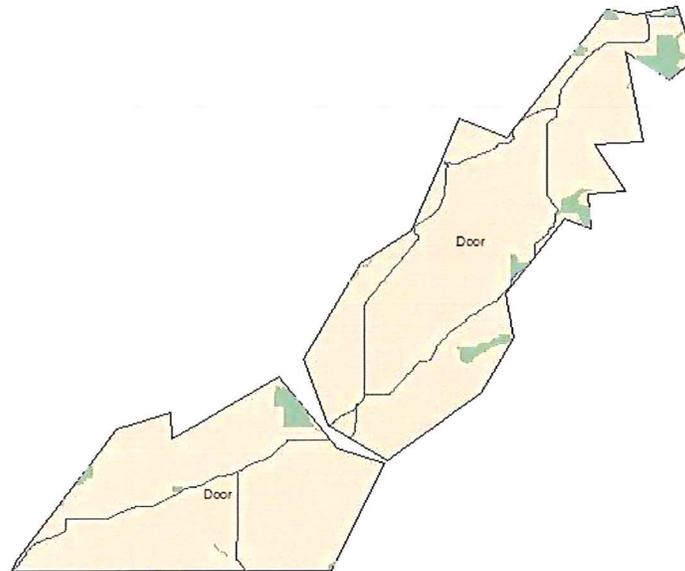
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Executive Summary

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 these 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. To fully understand the economic impact residential construction has on a local area, it is important to include the ripple effects and the ongoing benefits. Since the model was initially developed in 1996, NAHB has used it successfully to estimate the impacts of construction in over 800 projects, local jurisdictions, metropolitan areas, non-metropolitan counties, and states across the country.

This report presents estimates of the local impacts of Quarry Bluff, a development in Door County, Wisconsin (see map below).

Door County, Wisconsin



For purposes of the NAHB model, a local area must 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. NAHB has determined that outside of metropolitan areas officially defined by the U.S. Office of Management and Budget (OMB), a county will usually satisfy this criterion. Door county is not included in any metropolitan area on OMB's current list. Therefore, in this report, wherever the term local is used, it refers to all of Door County.

As currently planned, the Quarry Bluff project will be divided into 117 lots. The developer of the project estimates that 75 homes will be built during a 7-year initial build out phase of the development, generally sold in the year after they are built, with 11 homes built in a typical year during that period. After that, the schedule of production and sales is uncertain. This report presents estimates of the impacts, at current prices, of building the 11 homes in a typical year during that build out period.

The NAHB model produces 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 local impacts of building 11 single-family vacation homes in a typical year during the initial build out of Quarry Bluff include
 - **\$3.1 million** in local income,
 - **\$205,000** in taxes and other revenue for local governments, and
 - **50.5** local jobs.

These are local impacts, representing income and jobs for residents of Door County and taxes (and other sources of revenue, including permit fees) for all local jurisdictions within the county. 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 the 11 homes built in a typical year during the initial build out include
 - **\$236,000** in local income,
 - **\$79,000** in taxes and other revenue for local governments, and
 - **4.9** local jobs.

These are ongoing, annual local impacts that result from the new homes becoming 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. Except for property taxes, the ongoing impacts have been reduced to account for the assumption that the project consists of vacation homes that may not be occupied year round.

The above impacts were calculated assuming that the new single-family vacation homes built in the Quarry Bluff development have an average price of \$360,000, which includes \$21,368 in raw land value and \$750 in permit fees paid to the local government. The estimates also assume that a local sales tax of 0.5% is charged on construction materials, and that the homes will incur an average annual property tax of \$3,528 and be occupied for half the year. This information was provided by members of Quarry Bluff Development, LLC.



**The Local Impact of
Quarry Bluff in
Door County, Wisconsin:
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**Detailed Tables on the
Impact from Production in a
Typical Year During the
Initial Build Out**



Impact of Building 11 Single-family Vacation Homes in Quarry Bluff

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
\$3,093,500	\$950,400	\$2,143,200	\$204,600	50.5

Phase I: Direct and Indirect Impact of Construction Activity:

Local Income	Business Owners' Income	Local Wages and Salaries	Local Taxes ¹	Local Jobs Supported
\$2,157,400	\$730,600	\$1,426,800	\$67,200	30.9

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
\$936,100	\$219,800	\$716,400	\$137,400	19.7

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
\$235,800	\$51,900	\$183,800	\$78,600	4.9

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 11 Single-family Vacation Homes in Quarry Bluff
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	\$1,669,600	\$569,300	\$1,100,300	\$52,000	21.2
Manufacturing	\$200	\$0	\$200	\$42,000	0.0
Transportation	\$1,000	\$500	\$500	\$17,000	0.0
Communications	\$13,900	\$4,900	\$9,000	\$47,000	0.2
Utilities	\$2,800	\$600	\$2,200	\$90,000	0.0
Wholesale and Retail Trade	\$173,000	\$38,100	\$134,800	\$27,000	5.0
Finance and Insurance	\$30,700	\$1,100	\$29,600	\$82,000	0.4
Real Estate	\$79,700	\$68,600	\$11,100	\$30,000	0.4
Personal & Repair Services	\$8,500	\$2,000	\$6,500	\$26,000	0.3
Services to Dwellings / Buildings	\$5,800	\$2,200	\$3,600	\$29,000	0.1
Business & Professional Services	\$136,500	\$31,700	\$104,900	\$43,000	2.4
Eating and Drinking Places	\$4,900	\$800	\$4,100	\$26,000	0.2
Automobile Repair & Service	\$1,800	\$500	\$1,300	\$26,000	0.0
Entertainment Services	\$1,100	\$100	\$1,000	\$30,000	0.0
Health, Educ. & Social Services	\$200	\$0	\$200	\$29,000	0.0
Local Government	\$6,000	\$0	\$6,000	\$47,000	0.1
Other	\$21,700	\$10,200	\$11,500	\$27,000	0.4
Total	\$2,157,400	\$730,600	\$1,426,800	\$46,000	30.9

B. Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$10,200	Residential Permit / Impact Fees	\$8,300
Residential Property Taxes	\$0	Utilities & Other Govt. Enterprises	\$25,500
General Sales Taxes	\$7,400	Hospital Charges	\$0
Specific Excise Taxes	\$100	Transportation Charges	\$700
Income Taxes	\$0	Education Charges	\$2,900
License Taxes	\$300	Other Fees and Charges	\$11,800
Other Taxes	\$100	TOTAL FEES & CHARGES	\$49,100
TOTAL TAXES	\$18,200	TOTAL GENERAL REVENUE	\$67,200

**Impact of Building 11 Single-family Vacation Homes in Quarry Bluff
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	\$57,700	\$21,100	\$36,600	\$52,000	0.7
Manufacturing	\$200	\$0	\$200	\$41,000	0.0
Transportation	\$4,000	\$1,900	\$2,100	\$17,000	0.1
Communications	\$52,400	\$21,700	\$30,700	\$54,000	0.6
Utilities	\$14,100	\$3,000	\$11,100	\$90,000	0.1
Wholesale and Retail Trade	\$143,900	\$24,100	\$119,700	\$27,000	4.4
Finance and Insurance	\$30,500	\$1,200	\$29,300	\$60,000	0.5
Real Estate	\$98,200	\$40,700	\$57,500	\$30,000	1.9
Personal & Repair Services	\$35,900	\$13,200	\$22,700	\$26,000	0.9
Services to Dwellings / Buildings	\$12,500	\$4,800	\$7,700	\$29,000	0.3
Business & Professional Services	\$128,300	\$37,400	\$91,000	\$40,000	2.3
Eating and Drinking Places	\$65,800	\$12,800	\$53,000	\$26,000	2.1
Automobile Repair & Service	\$29,300	\$8,800	\$20,500	\$26,000	0.8
Entertainment Services	\$8,000	\$1,500	\$6,500	\$30,000	0.2
Health, Educ. & Social Services	\$163,500	\$17,800	\$145,700	\$51,000	2.9
Local Government	\$71,900	\$0	\$71,900	\$49,000	1.5
Other	\$19,900	\$9,800	\$10,200	\$23,000	0.4
Total	\$936,100	\$219,800	\$716,400	\$36,000	19.7

B. Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$50,700	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$0	Utilities & Other Govt. Enterprises	\$69,500
General Sales Taxes	\$5,100	Hospital Charges	\$0
Specific Excise Taxes	\$600	Transportation Charges	\$300
Income Taxes	\$0	Education Charges	\$1,200
License Taxes	\$1,600	Other Fees and Charges	\$7,700
Other Taxes	\$600	TOTAL FEES & CHARGES	\$78,800
TOTAL TAXES	\$58,600	TOTAL GENERAL REVENUE	\$137,400

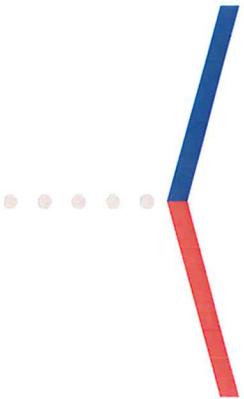
**Impact of Building 11 Single-family Vacation Homes in Quarry Bluff
Phase III—Ongoing, Annual Effect that Occurs as the Homes are Occupied**

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	\$12,900	\$4,700	\$8,200	\$52,000	0.2
Manufacturing	\$0	\$0	\$0	\$41,000	0.0
Transportation	\$700	\$300	\$400	\$17,000	0.0
Communications	\$13,100	\$5,400	\$7,600	\$54,000	0.1
Utilities	\$3,500	\$800	\$2,800	\$90,000	0.0
Wholesale and Retail Trade	\$36,000	\$5,900	\$30,100	\$28,000	1.1
Finance and Insurance	\$8,500	\$300	\$8,200	\$59,000	0.1
Real Estate	\$16,100	\$6,700	\$9,400	\$30,000	0.3
Personal & Repair Services	\$8,300	\$3,200	\$5,000	\$26,000	0.2
Services to Dwellings / Buildings	\$3,200	\$1,200	\$2,000	\$29,000	0.1
Business & Professional Services	\$34,900	\$10,700	\$24,200	\$40,000	0.6
Eating and Drinking Places	\$17,200	\$3,300	\$14,000	\$26,000	0.5
Automobile Repair & Service	\$7,000	\$2,100	\$4,900	\$26,000	0.2
Entertainment Services	\$2,700	\$500	\$2,200	\$30,000	0.1
Health, Educ. & Social Services	\$35,300	\$4,000	\$31,300	\$50,000	0.6
Local Government	\$30,600	\$0	\$30,600	\$49,000	0.6
Other	\$5,800	\$2,800	\$2,900	\$23,000	0.1
Total	\$235,800	\$51,900	\$183,800	\$37,000	4.9

B. Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$13,000	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$36,500	Utilities & Other Govt. Enterprises	\$24,800
General Sales Taxes	\$1,300	Hospital Charges	\$0
Specific Excise Taxes	\$200	Transportation Charges	\$100
Income Taxes	\$0	Education Charges	\$300
License Taxes	\$400	Other Fees and Charges	\$2,000
Other Taxes	\$100	TOTAL FEES & CHARGES	\$27,100
TOTAL TAXES	\$51,500	TOTAL GENERAL REVENUE	\$78,600

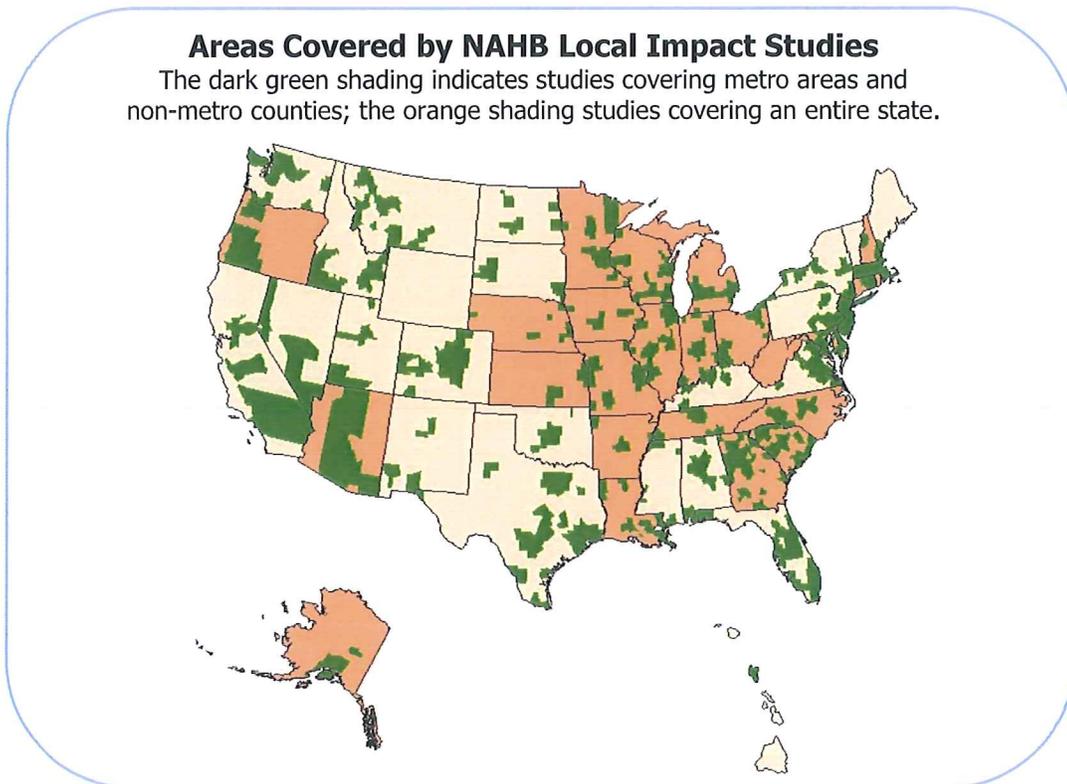


**The Local Impact of
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Income, Jobs and
Taxes Generated**

**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 February 2012, NAHB has produced over 800 of these customized reports, analyzing residential construction in various metropolitan areas, non-metropolitan counties, and states (see map below).



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 Shimberg 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/efo5wiffiqvqqgn2s35shus5i4lwdgqbcxpc2dddnds3msj5qs26ubzllsfl6s6rrwnmtkq4dypnjrdrdzei2llq5g/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 400 industries and commodities provided in the input-output files, the model uses only 97 commodities and 99 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.

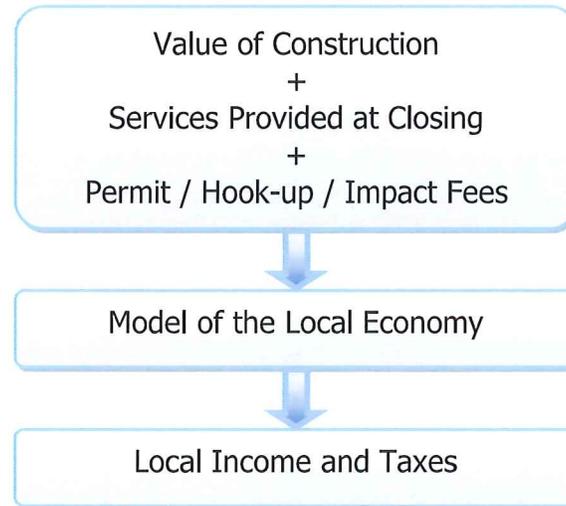
For a particular local area, the model adjusts the indirect business tax section of the national input-output accounts to account for the fiscal structure of local governments in the area. The information used to do this comes primarily from the U.S. Census Bureau's Census of Governments. Wages and salaries 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 each of the 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.

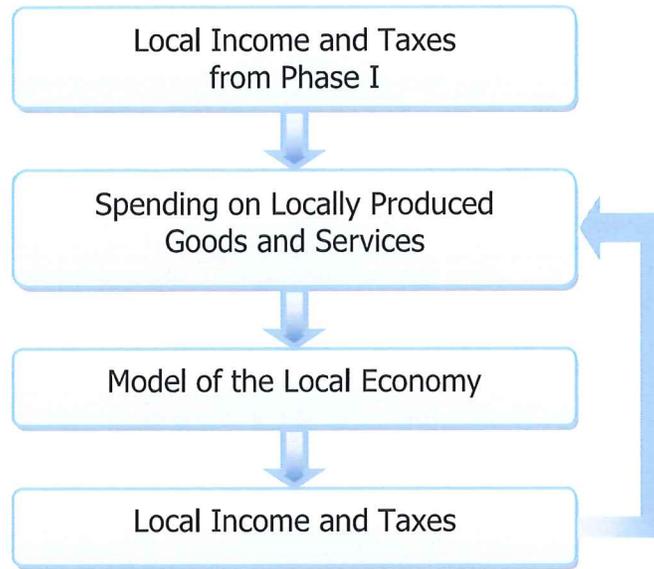
The car is likely to be purchased from a local dealer and generate income for a salesperson that lives in the area, as well for local workers who provide cleaning, maintenance, and other services to the dealership. Consumers also are likely to purchase many services locally, as well as to pay taxes and 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 52 local commodities. The remainder of the 97 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 economics is a straightforward exercise in mathematics.

Summary of Phase II



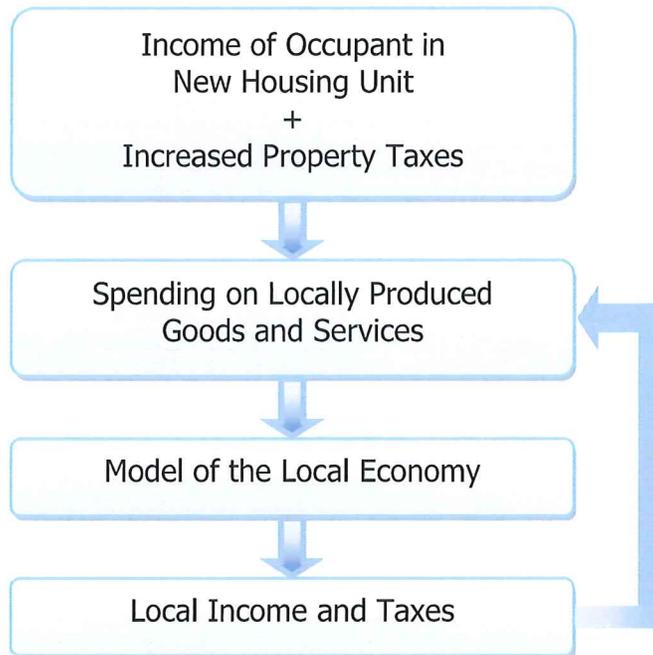
Phase III: Ongoing Impacts

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. The spending tendencies are estimated with CE data in a fashion similar to that described under Phase II. The model also estimates the amount of local taxes the households pay each year. These estimates are based on Census of Governments data with the exception of residential property taxes, which are treated separately, most often with specific information obtained from a local source. Finally, a total ripple effect is computed in a way similar to the procedure outlined above under Phase II.

Summary of Phase III

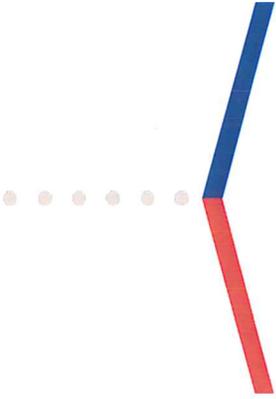


The details covered here provide a brief description of the model NAHB uses to estimate the local economic benefits of home building. For a more complete description, see the technical documentation at the end of the report. For additional information about the model, or questions about applying it to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

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Survey and Housing Policy Research (202) 266-8449, pemrath@nahb.org

Na Zhao, Housing Policy Economist (202) 266-8398 nzhao@nahb.org



Local Impact of Home Building Technical Documentation for the NAHB Model Used to Estimate Income, Jobs and Taxes

Paul Emrath
Vice President
Survey and Housing Policy Research

Technical Documentation for the NAHB Model Used to Estimate Income, Jobs and Taxes

The Housing Policy Department of the National Association of Home Builders (NAHB) maintains an economic model that it uses to estimate the local economic benefits of home building. 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.

The model can be customized to a specific local economy by replacing key housing market variables. This document explains describes the sources of data used and explains how the estimates are generated.

Modeling a Local Economy

In the NAHB model, a local economy is defined as a collection of industries and commodities, selected from the 2007 benchmark input-output accounts produced by the U.S. Bureau of Economic Analysis (BEA). These accounts are generally based on the North American Industry Classification System (NAICS), although BEA combines and otherwise modifies the NAICS categories for purposes of the input-output estimates. NAHB's model uses the most detailed (6-digit) industry codes in order to parse industries and commodities as precisely as possible and include only those that are generally local in nature. BEA's 2007 benchmark input-output tables contain a total of 389 industries at the 6-digit level of detail. NAHB's local economy retains the following 99:

<i>IO Code</i>	<i>Detailed Industry Name</i>
1	111400 Greenhouse, nursery, and floriculture production
2	212310 Stone mining and quarrying
3	221100 Electric power generation, transmission, and distribution
4	221200 Natural gas distribution
5	221300 Water, sewage and other systems
6	230301 Nonresidential maintenance and repair
7	230302 Residential maintenance and repair
8	233210 Health care structures
9	233411 Single-family residential structures
10	233412 Multifamily residential structures
11	323120 Support activities for printing
12	339950 Sign manufacturing
13	420000 Wholesale trade
14	441000 Motor vehicle and parts dealers
15	445000 Food and beverage stores
16	452000 General merchandise stores
17	485000 Transit and ground passenger transportation
18	492000 Couriers and messengers
19	493000 Warehousing and storage
20	511110 Newspaper publishers
21	515100 Radio and television broadcasting
22	515200 Cable and other subscription programming
23	517110 Wired telecommunications carriers
24	517210 Wireless telecommunications carriers (except satellite)

25	518200	Data processing, hosting, and related services
26	519130	Internet publishing and broadcasting and Web search portals
27	524200	Insurance agencies, brokerages, and related activities
28	525000	Funds, trusts, and other financial vehicles
29	531000	Real estate
30	532100	Automotive equipment rental and leasing
31	532400	Commercial and industrial machinery and equipment rental and leasing
32	533000	Lessors of nonfinancial intangible assets
33	541100	Legal services
34	541200	Accounting, tax preparation, bookkeeping, and payroll services
35	541300	Architectural, engineering, and related services
36	541400	Specialized design services
37	541511	Custom computer programming services
38	541512	Computer systems design services
39	541800	Advertising, public relations, and related services
40	541920	Photographic services
41	541940	Veterinary services
42	561100	Office administrative services
43	561200	Facilities support services
44	561300	Employment services
45	561400	Business support services
46	561600	Investigation and security services
47	561700	Services to buildings and dwellings
48	561900	Other support services
49	562000	Waste management and remediation services
50	611100	Elementary and secondary schools
51	621100	Offices of physicians
52	621200	Offices of dentists
53	621300	Offices of other health practitioners
54	621400	Outpatient care centers
55	621600	Home health care services
56	621900	Other ambulatory health care services
57	622000	Hospitals
58	624100	Individual and family services
59	624400	Child day care services
60	711100	Performing arts companies
61	711200	Spectator sports
62	712000	Museums, historical sites, zoos, and parks
63	713100	Amusement parks and arcades
64	713200	Gambling industries (except casino hotels)
65	713900	Other amusement and recreation industries
66	722110	Full-service restaurants
67	722211	Limited-service restaurants
68	811100	Automotive repair and maintenance
69	811200	Electronic and precision equipment repair and maintenance
70	811300	Commercial and industrial machinery and equipment repair and maintenance
71	811400	Personal and household goods repair and maintenance
72	812100	Personal care services
73	812200	Death care services
74	812300	Dry-cleaning and laundry services
75	812900	Other personal services
76	813100	Religious organizations
77	2332A0	Commercial structures, including farm structures
78	2332B0	Other nonresidential structures
79	2334A0	Other residential structures
80	4A0000	Other retail
81	517A00	Satellite, telecommunications resellers, and all other telecommunications

82	5191A0	News syndicates, libraries, archives and all other information services
83	522A00	Nondepository credit intermediation and related activities
84	523A00	Securities and commodity contracts intermediation and brokerage
85	52A000	Monetary authorities and depository credit intermediation
86	532A00	Consumer goods and general rental centers
87	54151A	Other computer related services, including facilities management
88	5419A0	Marketing research & other miscellaneous professional, scientific, & tech. services
89	611B00	Other educational services
90	623A00	Nursing and community care facilities
91	623B00	Residential mental retardation, mental health, substance abuse and other facilities
92	624A00	Community food, housing, and other relief services, including rehabilitation services
93	722A00	All other food and drinking places
94	813A00	Grantmaking, giving, and social advocacy organizations
95	813B00	Civic, social, professional, and similar organizations
96	S00201	State and local government passenger transit
97	S00202	State and local government electric utilities
98	S00203	Other state and local government enterprises
99	S00700	State and local general government

In contrast to the industry categories used in the previous (2002) version of the benchmark input-output tables, the 2007 version shows considerably more detail in the construction sector, and breaks retail trade into several categories.

In the input-output accounts, commodities generally correspond to industries, with the exception of "state and local government passenger transit" and "state and local government electric service," for which there is no distinct commodity (passenger transit and electric services are defined as input-output commodities irrespective of which industry produces them), so the local economy as defined in the NAHB model consists of 99 industries and 97 commodities.

The above list includes industries in trade, construction, finance, transportation, and services—but excludes virtually all manufacturing, mining, and agriculture, under the presumption that the markets for these products are regional—if not national or international—in nature.

The exclusion of many industries is a distinguishing feature of the NAHB local impact model and is consistent with the overall intent of the model: to analyze the impact of locating a housing unit and the household that occupies it in one place rather than another. From this perspective, a house built in Seattle, Washington should not cause additional airplanes to be built or additional software to be produced, even though the occupants of a home built in Seattle may use software produced in Seattle and travel on planes built in Seattle. Because these households would be likely to use these products the same way even if they lived in some other metropolitan area, use of these products is not a function of the home's location. Hence, industries like software publishing and aircraft manufacturing are excluded from the model.

Based on the industries and commodities described above, a "total local requirements" matrix is constructed that shows the total output required from each of the local industries to produce \$1 of each local commodities.

To show the derivation of this matrix, let

c = a 97-element column vector of commodity outputs

- g = a 99-element column vector of industry outputs
- V = a 99×97 subset of the benchmark make table that shows how much of each commodity is produced by each industry
- h = a 99-element column vector showing how much scrap is produced by each industry
- U = a 97×99 subset of the benchmark use table that shows how much of each commodity used as an input by each industry. Coefficients for the wholesale trade commodity are set to zero, assuming that these transactions are often non-local in nature. The wholesale trade industry produces a considerable amount of the retail trade commodity. The effect of this is to retain retail trade in the model, irrespective of which industry produces it, but to exclude wholesale trade activities.

The following matrices can then be defined through standard input-output algebra:

- $B = U \hat{g}^{-1}$ the direct requirements matrix, showing the amount of each commodity needed as a direct input to produce \$1 of each industry's output. (The symbol $\hat{}$ indicates a matrix created from a vector by placing the vector's elements on the matrix diagonal.) This is simply the use table scaled by industry output.
- $j = \hat{g}^{-1}h$ a vector showing scrap as a fraction of each industry's output. Many of the elements of this vector are zero in the NAHB local impact model, which excludes most of the manufacturing sector.
- $D = V\hat{c}^{-1}$ a 99×97 market share matrix, or the make table scaled by commodity output. D shows the fraction of each commodity (excluding scrap) produced by each industry.
- $F = (I-j)^{-1}D$ a 99×97 matrix showing, for \$1 worth of each commodity, the fraction produced by each industry. In short, F is D adjusted for scrap. F is often called a transformation matrix, because it can be used to transform commodities into the output of industries and vice versa.

$$\text{Total Local Requirements} = F(I-BF)^{-1}$$

The total local requirements matrix translates local commodities into the output of local industries. The NAHB model is designed to capture only a fraction of the output: the fraction that becomes either income for local households or revenue for local governments. These fractions are estimated from a combination of value added components of the input-output tables, plus information taken from other BEA industry accounts. In the BEA accounts, the final price of a commodity is the sum of intermediate outputs plus value added by the industry. To avoid double counting, the NAHB model retains only the value added in each local industry for further analysis.

BEA's input-output accounts break value added into three components: compensation of employees, taxes on production and imports (TOPI), and gross operating surplus. In the NAHB model, local income is derived from compensation of employees and gross operating surplus.

The following table shows information taken from BEA accounts used in this derivation:

	Wages & Salaries per \$ of Employee Compensation	Other Corp. as a % of Gross Operating Surplus	Other Non-Corp. as a % of Gross Operating Surplus
Farms	85.98%	77.63%	28.12%
Mining, except oil and gas	82.18%	12.40%	71.60%
Utilities	74.17%	9.32%	84.32%
Construction	83.11%	68.10%	29.88%
Miscellaneous manufacturing	71.19%	10.16%	87.83%
Printing and related support activities	81.90%	11.75%	85.14%
Wholesale trade	85.93%	15.89%	82.08%
Motor vehicle and parts dealers	85.39%	27.06%	69.55%
Food and beverage stores	81.55%	27.06%	69.55%
General merchandise stores	81.30%	27.06%	69.55%
Other retail	84.09%	27.06%	69.55%
Transit and ground passenger transportation	81.66%	76.22%	22.04%
Other transportation and support activities	81.76%	23.56%	74.53%
Warehousing and storage	81.97%	34.38%	63.45%
Publishing industries (includes software)	84.22%	14.36%	84.75%
Broadcasting and telecommunications	81.49%	26.07%	71.94%
Information and data processing services	84.23%	24.24%	74.30%
Federal Reserve banks, credit intermediation, related act.	85.01%	1.98%	87.89%
Securities, commodity contracts, and investments	87.89%	-2.28%	107.02%
Insurance carriers and related activities	84.36%	6.88%	120.64%
Funds, trusts, and other financial vehicles	57.88%	-16.43%	114.13%
Real estate (estimated by NAHB)	85.90%	100.00%	0.00%
Rental & leasing services and lessors of intangible assets	86.04%	32.70%	64.08%
Legal services	84.92%	76.96%	21.03%
Computer systems design and related services	87.90%	42.09%	53.54%
Misc. professional, scientific, and technical services	86.62%	57.56%	40.53%
Administrative and support services	84.67%	57.36%	40.59%
Waste management and remediation services	79.35%	13.44%	84.75%
Educational services	81.12%	39.22%	54.48%
Ambulatory health care services	82.70%	53.75%	42.32%
Hospitals	82.54%	42.00%	45.89%
Nursing and residential care facilities	80.79%	42.00%	45.89%
Social assistance	82.09%	48.30%	47.41%
Performing arts, spectator sports, museums, related act.	86.80%	70.36%	28.48%
Amusements, gambling, and recreation industries	84.18%	8.46%	90.01%
Food services and drinking places	85.50%	38.55%	58.57%
Other services, except government	85.92%	82.52%	15.81%
State and local government enterprises	68.40%	NA	NA
State and local general government	68.17%	NA	NA

Due to data limitations, ratios from relatively broad categories are sometimes applied to more narrowly defined local industries. For example, ratios for the broad categories "farms" is applied to a much more narrowly defined local industry "Greenhouse, nursery, and floriculture production."

Treatment of real estate is less straightforward than it might be, because the input-output accounts provide one set of estimates for real estate with no detail within that relatively broad industry. When analyzing a local housing economy, it is desirable to account for residential real

estate brokers and property managers, each which has well-known distinctive characteristics. NAHB uses data from the U.S. Census Bureau's 2007 Economic Census to estimate a separate set of coefficients for residential real estate brokers. Coefficients derived this way allocate a relatively small 8 percent of value added to wages and salaries, because most realtor offices are organized as a group of businesses where each broker legally counts as proprietor rather than an employee. The modified coefficients are applied to broker fees that arise in the transaction of single-family homes built for sale (as opposed to custom homes built by a general contractor on home owners' land) and individual multifamily condominiums to the ultimate owner-occupants. Any broker fees that that may be charged in the sale of multifamily rental buildings are assumed to be paid to non-local entities and excluded from the model.

Similarly, owners of rental buildings are considered non-local and excluded. However, for obvious reasons, managing the properties needs to be done locally. To handle this, except for the broker fees mentioned above, the NAHB model treats payments made to the real estate sector (primarily rental payments made by tenants in new multifamily buildings) as revenue for non-local property lessors (the federal government's term for what is elsewhere typically called a rental property owner) who then employ local businesses to manage the property. In practice this means subtracting about 57 percent of the rental payment and treating the remaining 43 percent as a local payment for management services. Again, this ratio was computed using detailed industry data from the 2007 Economic Census.

A key feature of the NAHB local impact model is the way it translates the wages and salaries from BEA accounts into local jobs, measured in full-time equivalents (FTEs); i.e., enough work to keep a person employed full-time for a year, based on the hours typically worked by full-time employees in a given industry. Indeed, when users of NAHB's local impact studies cite a single number from one of the studies, it is usually this one.

In general, the translation is accomplished using data on wages per job in each local industry from the Quarterly Census of Employment and Wages (QCEW) produced by the U.S. Bureau of Labor Statistics (BLS). The QCEW provides data for each county in the country, although it may be suppressed in particular cases for some industries due to a small sample size. To reduce the chances of missing data and produce an estimate that can more easily be adjusted for inflation, annual rather than quarterly QCEW data are used. If annual data for a particular industry in a particular local area are missing, they are imputed based on national wages per job in that industry, adjusted by the ratio of local to national wages per job across all industries. If QCEW data are not yet available for the year of construction being analyzed (as is typically the case), wages per job in each industry is inflated using HUD's estimates of median family income, which are available for the current year and for each state and local area in the country. Job counts in the QCEW are based on payroll employment and therefore include part-time as well as full-time workers. The QCEW job counts are converted to FTEs using the ratio of FTEs to jobs in each industry from BEA's national industry accounts.

The estimates of local income in the NAHB model exclude most corporate profits, based on the rationale that ownership of most corporations is national or international in scope. Even if a household living in a particular metropolitan area buys a product manufactured by a corporation located in in that metropolitan area, profits derived from the sale are likely to be distributed to shareholders living in other locations.

The model makes an exception for subchapter S corporations, which tend to be smaller and more local in nature than C corporations. S corporations also tend to be relatively common in particular industries, such as residential construction. The Internal Revenue Service (IRS) provides information on business receipts by form of business and industry, and this is used to decompose corporate profits into profits for S-corporations and C-corporations. The IRS tables provide relatively limited industry detail, so again percentages for a broadly defined industry are sometimes applied to several 6-digit NAICS industries. The S-corporation profits by industry are then counted as part of local income.

In general, local government revenue is estimated industry by industry, as a function of both local income and TOPI. TOPI includes taxes imposed at the federal, state and local level. BEA national accounts show that, in the year of the most recent Census of Governments, 9.2 percent of TOPI is federal (almost all excise taxes and custom duties). The Census of Governments is then used to further decompose TOPI into 42.4 percent collected by state governments and 48.4 percent collected by local governments (the largest components of state and local TOPI being sales and property taxes). Thus, the NAHB model uses a base of 90.8 or 48.4 percent of TOPI in each local industry as a starting point, depending on whether a state or local economy is being analyzed.

A distinctive feature of the NAHB model is the way it further employs Census of Governments data to customize the government finances to a particular area. Census of Governments data are available for each of the roughly 89,000 units of government in the U.S., and the NAHB model reads in every line item for every government within the local area being analyzed. Aggregated across all local (or state and local) governments in the U.S., the ratio of TOPI to personal income is 2.776 (or 6.595) percent. This ratio is also calculated for the area being analyzed and used to adjust TOPI by industry up or down. Personal income is used as the base of the ratio, because this is a measure that is available for every local area in the country.

There are two substantial exceptions to this procedure, as discussed below in the sections on Phase I and Phase III. In the case of residential property taxes and sales taxes paid on construction materials, specific information is collected for the construction being analyzed and fed into the model instead.

Census of Governments data is also used to customize taxes and fees paid by the workers and local proprietors who receive income as a result of the home building activity, and, where applicable, corporate income taxes to a local area. Aggregated over all local (or state and local) governments in the U.S., taxes and fees paid by individuals sum to 4.198 (or 7.843) percent of personal income. Again, equivalent ratios are calculated for the area being analyzed and used to customize the government revenue estimates.

To the extent that S corporations pay taxes to state and local governments, these taxes are also counted on the assumption that stockholders of S corps reside in the same area as the company income.

The general procedure for customizing government revenue to a specific local area (or state) can be summarized as follows:

Personal taxes =
 4.198% (or 7.843%) \times Local Personal Income \times Local Factor 1

Business taxes =
 48.4% (or 90.8%) \times TOPI in Local Industries \times Local Factor 2 +
 6.349% \times Corporate Profits in Local Industries \times Local Factor 3

where the three local factors are derived on a case by case basis from data in the most recent Census of Governments. In practice, Local Factor 3 will usually be zero, as few local governments impose a tax on corporate profits.

The distinguishing aspect of this procedure is that it preserves the industry structure of the input-output accounts while being consistent with revenue being collected by all governments in the area of analysis, as reported by the governments themselves to the U.S. Census Bureau.

Phase I: Construction

As shown diagrammatically in "Background and a Brief Description of the Model Used to Estimate the Economic Benefits", Phase I of the model feeds the dollar amount of construction and ancillary locally produced items into the income and tax matrices derived from the model total local requirements. Accounting for everything that goes into building a home and delivering it to its customer is more complicated than it may at first appear.

For one thing, the Census Bureau subtracts several items from construction value before providing the numbers to BEA for use in the input-output and related GDP accounts. On new homes built for sale, the Census Bureau subtracts 1.1 percent of the sales price for landscaping, 0.5 percent for appliances, 2.9 percent for realtor and brokers fees, and 2.7 percent for marketing and finance costs. There are equivalent subtractions for custom homes (i.e., homes where the builder functions as a general contractor for a home built on the customer's lot).

However, the landscaping and purchases of appliances and marketing/broker services associated with a newly built home clearly are attributable to the construction of the home. Phase I of the NAHB model therefore accounts for these items as separate purchases of the local construction, retail trade, and real estate industries. For retail trade, only the gross margin of appliance purchases are counted. Gross margins for different types of retailers are available from the Census Bureau's Annual Retail Trade Survey.

In addition, there are settlement or closing costs associated with transferring property from a builder to the ultimate owner. In a typical case, these costs are shared between buyers and sellers. Construction value as defined in the input-output accounts includes closing costs if they are paid by the seller, but not the buyer. When the local impact model was first developed, NAHB verified these details with economists at BEA.

In order to estimate both closing costs as a fraction of the home's price and the share of these costs the buyer pays, the NAHB model uses national average data compiled by the U.S.

Department of Housing and Urban Development.² The share of settlement costs paid for by the buyer for loan origination and discount fees, title and private mortgage insurance, and legal fees are counted as output of the local depository credit intermediation, insurance, and legal services industries, respectively.

Another category of closing costs sometimes paid by the buyer is mortgage or deed transfer taxes. Phase I of the NAHB model does not automatically include an amount for transfer taxes. In most (but not all) instances, these taxes are imposed by state, rather than local, governments. To the extent that transfer taxes apply in a specific case, that information needs to be supplied by the local entity requesting the analysis.

The local entity requesting the analysis is also asked to provide information on whether or not sales taxes are imposed on construction materials and supplies; and, if so, the relevant sales tax rate. The model then applies the relevant rate to 34.1 percent of construction value, assuming that materials account for that share of the final value of a housing unit. The figure of 34.1 was calculated from the ratio of materials to construction value for several categories of construction businesses in the Economic Census, including trade contractors. The calculation takes subcontracting into account, as a large fraction of the final construction value of a housing unit is subcontracted to businesses that may also purchase materials.

Phase II: The Construction Ripple

Phase I of the model translates home building activity into income for local workers and business proprietors, and revenue for local governments. This output serves as the input for Phase II, as part of the local income generated will be spent, generating more income, generating more spending, and so on. These spending ripples damp and eventually converge to a limit, which is the ultimate ripple or multiplier effect.

To convert local income to local spending, the model requires information about local household spending tendencies. Detailed spending information at the household level is available from the Consumer Expenditure (CE) Survey, produced by the U.S. Bureau of Labor Statistics (BLS) primarily for the purpose of determining the weights for the Consumer Price Index.³

The CE consists of two different types of surveys: 1) an interview survey that collects data on monthly expenditures as well as information on income and household characteristics, and 2) a diary survey that collects data on weekly expenditures of frequently purchased items. These are two separate surveys, each designed individually with weights that aggregate to an estimate of total spending in the U.S. When it estimates aggregate measures of consumer spending, BLS combines results from the two different types of surveys in a manner it does not disclose.

² Report to Congress on the Need for Further Legislation in the Area of Real Estate Settlements, 1981, Exhibits II-1 and II-6.

³ Technically, in the Consumer Expenditure Survey, the unit of measurement is actually not a household, but a *Consumer Unit*, a group of individuals who live in the same house and make joint purchasing decisions. There may be more than one Consumer Unit in a household.

The NAHB local impact model uses only data from the interview survey, primarily to avoid the need for arbitrary decisions about which spending items to take from which survey. Based on its CE interview survey, BLS produces a public use microdata set consisting of quarterly files with household characteristics (including income), another set of quarterly files with income and other characteristics for each member of the household, and a set of fifty-one annual "EXPN" files with detailed information about various categories of expenditures.

These detailed files allow NAHB to maintain a conservative approach and exclude spending on items that may often be purchased from a vendor outside the local area. For example, BLS collects information on spending while on trips and vacations away from home in a separate "ETRV" and "ETRE" file. The NAHB local impact model does not include any spending information at all from these files. NAHB processes the information from the EXPN files along with information on household characteristics and income to estimate spending tendencies on 52 locally produced commodities, as shown in the following table:

Local Spending Extracted from the CE EXPN Files

	Local commodity	IO Code	CE File	Description of items included in local spending
01	Greenhouse, nursery, and floriculture production	111400	ECRB	Costs of all items and services for planting shrubs or trees, or otherwise landscaping the ground of the housing unit in which the consumer unit lives.
02	Electric power generation, transmission, and distribution	221100	EUTC	Electricity bills for the housing unit in which the consumer unit lives, including if combined with natural gas and/or water, sewerage. This is also the default category for generally combined expenses with particular utility not specified.
03	Natural gas distribution	221200	EUTC	Gas bills for the housing unit in which the consumer unit lives.
04	Water, sewage and other systems	221300	EUTC	Water and/or sewage bills, including water combined with trash collection, for the housing unit in which the consumer unit lives.
05	Residential maintenance and repairs	230302	ECRB	Costs of all items and services associated with building or repairing an addition to the house or a new structure including porch, garage or new wing; finishing a basement or an attic or enclosing a porch; remodeling one or more rooms; building outdoor patios, walks, fences, or other enclosures, driveways, or permanent swimming pools, inside painting or papering; outside painting; plastering or paneling; plumbing or water heating installations and repairs; electrical work; heating or air-conditioning jobs; flooring repair or replacement; insulation; roofing, gutters, or downspouts; siding; installation, repair, or replacement of window panes, screens, storm doors, awnings, etc.; and masonry, brick or stucco work; or other improvements or repairs for the housing unit in which the consumer unit lives.
For the four categories of retail trade, only gross margins rather than total spending is put into the model. Gross margins are applied industry by industry. A single factor is used to reduce the amount to account for loss of business to local retailers to E-commerce and mail order business. The source is the most recent data in the Census Bureau's 2012 Annual Retail Trade Report, released in 2014,				
06	Motor vehicle and parts dealers	441000	EOVB	Purchases of automobiles, including down payment and payment of principle on loans \times 17.6% (gross margin for automobile dealers).
07	Food and beverage stores	445000	ETRF	Cost of food or beverages at grocery, convenient or liquor stores during local overnight stays \times 27.9% (gross margin for food and beverage stores).

	Local commodity	NAICS Code	EXPN File	Description of items included in local spending
07	Food and beverage stores (cont.)	445000	EXPA	Expenditure for food, non-alcoholic beverages and nonfood items at grocery stores, food and non-alcoholic beverages from places other than grocery stores, and all alcohol to be served at the home × 27.9% (gross margin for food and beverage stores).
08	General merchandise stores	452000	EAPA	50 percent of major appliance purchases (assuming other 50 percent purchased from other retail) × 26.3% (gross margin for general merchandise stores), adjusted for losses to E-commerce and mail order business.
			EAPB	50 percent of purchases of other households appliances and other selected items (assuming other 50 percent purchased from other retail) × 26.3% (gross margin for general merchandise stores), adjusted for losses to E-commerce and mail order business.
			EFRA	50% of purchases of home furnishings (assuming other 50 percent purchased from other retail) × 32.1% (gross margin for department stores), adjusted for losses to E-commerce and mail order business
			ECLA	50% of purchases of clothing and accessories (assuming other 50 percent purchased from other retail) × 32.1% (gross margin for department stores), adjusted for losses to E-commerce and mail order business.
			EENT	50% of purchases of CDs or audio tapes, photographic film, video cassettes or tapes or discs, and books, but not through a mail order club or subscription × 32.1% (gross margin for department stores), adjusted for losses to E-commerce and mail order business.
09	Other retail	4A0000	EUTC	Bills for fuel oil, bottle or tank gas, or fuels not specifically identified, for the home in which the consumer unit lives × 37.8% (gross margin for nonstore retailers).
			ECRA	Purchase of building materials and supplies, either for or not for a specific project × 34.7% (gross margin for building materials and supplies dealers).
			EAPA	50 percent of major appliance purchases (assuming other 50 percent purchased from general merchandise stores) × 28.2% (gross margin for electronics and appliance stores), adjusted for losses to E-commerce and mail order business.
			EAPB	50 percent of purchases of other households appliances and other selected items (assuming other 50 percent purchased from general merchandise stores) × 28.2% (gross margin for electronics and appliance stores), adjusted for losses to E-commerce and mail order business.
			EFRA	50% of purchases of home furnishings (assuming other 50 percent purchased from general merchandise stores) × 46.6% (gross margin for furniture and home furnishing stores), adjusted for losses to E-commerce and mail order business.
			ECLA	50% of purchases of clothing and accessories (assuming other 50 percent purchased from general merchandise stores) × 45.8% (gross margin for clothing and clothing accessories stores), adjusted for losses to E-commerce and mail order business.
			EVOT	Purchases of gasoline and other fuels and fluids used in vehicles × 10.8% (gross margin for gasoline stations)
			EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to purchase prescription drugs and durable medical equipment × 30.0% (gross margin for health and personal care stores), adjusted for losses to E-commerce and mail order business.
			EIHC	Number of persons covered by Medicare if in a senior household × Medicare expenditure per enrollee × the share of Medicare expenditures used to pay for prescription drugs, other nondurable medical products, and durable medical equipment × 30.0% (gross margin for health and personal care stores), adjusted for losses to E-commerce and mail order business.

	Local commodity	NAICS Code	EXPN File	Description of items included in local spending
09	Other retail (cont)	4A0000	EMDB	Direct purchases of glasses, hearing aids, prescription medication, convalescent equipment, or other medical equipment × 30.0% (gross margin for health and personal care stores), adjusted for losses to E-commerce and mail order business.
			EEDA	Purchases of books or other equipment for elementary or high school for members of the consumer unit × 41.6% (gross margin for sporting goods, hobby, book and music stores), adjusted for losses to E-commerce and mail order business.
			EENT	50% of purchases of CDs or audio tapes, photographic film, video cassettes or tapes or discs, and books, but not through a mail order club or subscription (assuming other 50 percent purchased from general merchandise stores) × 41.6% (gross margin for sporting goods, hobby, book and music stores), adjusted for losses to E-commerce and mail order business.
			EMIS	Expenses for flowers, potted plants, pet supplies and medicines, toys, and games, and hobbies, including if combined with computer software for games × 45.4% (gross margin for miscellaneous store retailer), and adjusted for losses to E-commerce and mail order business.
			EXPB	Expenditures for cigarettes and other tobacco products × 29.4% (gross margin for all retailers excluding motor vehicle and parts dealers), adjusted for losses to E-commerce and mail order business.
10	Transit and ground passenger transportation	485000	EXPB	Costs for taxis, limousine service, and public transportation, except while on a trip.
11	Newspaper publishers	511110	EENT	Expenses for newspapers and other periodicals not through a subscription.
12	Wired telecommunications carriers	517110	EUTA	Bills from telecommunications companies for residential service, internet access, non-telephone rental and purchases, and 71.2% of bills for cable or satellite television service (financial data compiled by Multimedia Research Group, Inc indicates that satellite had a 28.8% share of the combined cable/satellite market).
			EUTP	Pre-paid phone card or public pay phone services.
			EUTI	Bills from internet service providers for internet connection and service (excluding those away from home), miscellaneous combined expenses, and 71.2% of bills for cable or satellite television service.
13	Wireless telecommunications carriers (except satellite)	517210	EUTA	Bills for mobile/cellular telephone service.
			EUTP	Pre-paid cellular minutes.
14	Satellite, telecommunications resellers, and all other telecommunications	517A00	EUTA	28.8% of the bills from telecommunications for cable or satellite television service, plus bills for Voice over IP service.
			EUTI	Bills from internet service providers for satellite radio, plus 28.8% of the bills for cable or satellite television service.
15	Data processing, hosting, and related services	518200	EUTA	Bills paid to providers of applications, games or ringtones.
16	Monetary authorities and depository credit intermediation	52A000	EHEL	Interest paid on lump sum home equity loans, based only on the home in which the consumer unit lives.

	Local commodity	NAICS Code	EXPN File	Description of items included in local spending
16	Monetary authorities and depository credit intermediation (cont)	52A000	EOPH	Interest paid on home equity lines of credit, based only on the home in which the consumer unit lives.
			EXPB	Charges for safe deposit boxes, checking accounts, and other banking services.
17	Nondepository credit intermediation and related activities	522A00	EOVB	Interest payment on automobile loans.
18	Insurance agencies, brokerages, and other insurance related activities	524200	EINB	Percent of premiums for all types of insurance other than health (percentage based on agent/brokers' share of industry).
			EIHB	Percent of premiums for health insurance (percentage based on agent/brokers' share of industry).
19	Real estate	531000	RNT	Total rental payments for the housing unit in which the consumer unit lives.
			OPI	Ground or land rent, regular HOA fees, special payments for property management services—for the property in which the consumer unit lives.
20	Automotive equipment rental and leasing	532100	ERTV	Expenses for renting vehicles, except if rented while on a vacation.
			ELSD	Expenses for leasing vehicles.
21	Consumer goods and general rental centers	532A00	EAPA	Expenses for renting major appliances.
			EAPB	Expenses for renting other household appliances and selected items.
			EFRB	Expenses for renting furniture.
			ECLD	Expenses for renting clothing.
			EMDB	Expenses for renting convalescent or other medical equipment.
			EENT	Amount paid for rental of Blu-ray Discs, DVDs, or VHS tapes.
22	Legal services	541100	EMIS	Expenses for services of lawyers or other legal professionals.
23	Accounting, tax preparation, bookkeeping, and payroll services	541200	EMIS	Accounting fees.
24	Photographic services	541920	EENT	Amount paid for film processing or printing digital photographs.
			EMIS	Amount paid for professional photography fees.
25	Veterinary services	541940	EMIS	Veterinarian expenses, including if combined with other pet services.
26	Investigation and security services	561600	EMIS	Home security service fees.
27	Services to buildings and dwellings	561700	EAPA	Charges for installing major appliances.

	Local commodity	NAICS Code	EXPN File	Description of items included in local spending
27	Services to buildings and dwellings (cont.)	561700	EEQB	Costs for pest control or repairing and servicing heating and air conditioning equipment.
			EMIS	Gardening or lawn care, housekeeping, or other home services and small repair jobs around the house.
28	Waste management and remediation services	562000	EUTC	Trash/garbage collection bills, including if combined with sewerage, and septic tank cleaning services, for the housing unit in which the consumer unit lives.
29	Elementary and secondary schools	611100	EEDA	Tuition and other expenses for elementary or high school for members of the consumer unit.
30	Offices of physicians	621A00	EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to pay for physician and clinical services.
			EIHC	Number of persons covered by Medicare if in a senior household x Medicare expenditure per enrollee x the share of Medicare expenditures used to pay for physician and clinical services.
			EMDB	Direct payments for eye care or physician services.
31	Offices of dentists	621200	EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to pay for dental services.
			EIHC	Number of persons covered by Medicare if in a senior household x Medicare expenditure per enrollee x the share of Medicare expenditures used to pay for dental services.
			EMDB	Direct payments for dental care
32	Offices of other health practitioners	621B00	EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to pay for other professional services.
			IHC	Number of persons covered by Medicare if in a senior household x Medicare expenditure per enrollee x the share of Medicare expenditures used to pay for other professional services.
			EMDB	Direct payments for services by medical professionals other than physicians, lab tests, and other medical care.
33	Home health care services	621600	EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to pay for home health care.
			EIHC	Number of persons covered by Medicare if in a senior household x Medicare expenditure per enrollee x the share of Medicare expenditures used to pay for home health care.
34	Hospitals	622000	EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to pay for hospital care.
			EIHC	Number of persons covered by Medicare if in a senior household x Medicare expenditure per enrollee x the share of Medicare expenditures used to pay for hospital care.
			EMDB	Direct payments for hospital rooms or services.
35	Nursing and residential care facilities	623000	EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to pay for nursing home care.
			EIHC	Number of persons covered by Medicare if in a senior household x Medicare expenditure per enrollee x the share of Medicare expenditures used to pay for nursing home care.
			EMDB	Direct payments for care in convalescent or nursing home.
36	Child day care services	624400	EEDA	Expenses for nursery school or child day care centers for members of the consumer unit.

	Local commodity	NAICS Code	EXPN File	Description of items included in local spending
36	Child day care services	624400	EMIS	Expenses for babysitting, nanny services, or child care in the consumer unit's or someone else's home.
37	Performing arts companies	711100	ESUB	Theater or concert season tickets.
			EENT	Single admissions to movies, theaters, and concerts.
38	Spectator sports	711200	ESUB	Season tickets to sporting events.
			EENT	Single admissions to spectator sporting events.
39	Gambling industries (except casino hotels)	713200	EMIS	Expenses for lotteries and games of chance.
40	Other amusement and recreation industries	713900	EEDA	Recreational lessons and instruction for members of the consumer unit.
			ESUB	Expenses for membership in golf courses. Country clubs, health clubs, fitness centers, or other sports and recreational organizations.
			EENT	Fees for participating in sports.
			ETRF	Amount paid for entertainment or admissions during local overnight stays
41	Full-service restaurants	722110	ETRF	50% of cost of meals, snacks, or beverages at restaurants, bars or fast food places during local overnight stays.
			EXPA	50% of expenditures for food and beverages at restaurants, cafeterias, cafes, drive-ins, etc. or t school for or pre-school for school-age children.
42	Limited-service restaurants	722211	ETRF	50% of cost of meals, snacks, or beverages at restaurants, bars or fast food places during local overnight stays.
			EXPA	50% of expenditures for food and beverages at restaurants, cafeterias, cafes, drive-ins, etc. or t school for or pre-school for school-age children.
43	All other food and drinking places	722A00	EMIS	Food and beverage for catered affairs.
44	Automotive repair and maintenance, except car washes	8111A0	EVEQ	Expenses for vehicle maintenance and repair.
			EVOT	Expenses for towing and automobile repair service policies.
45	Electronic and precision equipment repair and maintenance ⁴	811200	EEQB	Cost for repairs and services to AV equipment (except if installed in a vehicle) and to computers and related equipment.
46	Personal and household goods repair and maintenance	811400	EEQB	Costs for repairing or servicing miscellaneous items such as appliances, tools, photographic, sports, and lawn and garden equipment.
			EFRB	Costs for repairing furniture.
			ECLD	Costs for repairing or altering clothing and accessories, or repairing watches or jewelry.
47	Personal care services	812100	EIHB	Share of health insurance premiums, after broker/agent share is subtracted, used to pay for other health, residential and personal care services.
			EIHC	Number of persons covered by Medicare if in a senior household x Medicare expenditure per enrollee x the share of Medicare expenditures for other health, residential and personal care services.

	Local commodity	NAICS Code	EXPN File	Description of items included in local spending
48	Death care services	812200	EMIS	Expenses for funerals, burials, cremation, and purchase and upkeep of cemetery lots or vaults.
49	Dry cleaning and laundry services	812300	EXPB	Expenses for clothing and other items sent to drycleaners and laundry, as well as coin operated dry cleaning and laundry machines.
50	Other personal services	812900	ECLD	Costs of clothing storage services.
			EVOT	Fees for vehicle parking, boat docking and plane landing.
			EMIS	Pet services.
			EXPB	Expenses for haircuts, hair styling, manicures, massages, and other salon services.
51	Religious organizations	813100	ECNT	Contributions to religious organizations.
52	Civic, social, professional and similar organizations	813B00	ESUB	Expenses for membership in civic, service, or fraternal organizations.

There is somewhat more detail in a few input-output industries than is available in a spending line from the CE files. For example, the CE files do not distinguish spending in limited service eating places from spending in full service restaurants. According to the 2007 Economic Census, total sales in each category was \$182 to \$192 billion—close to a 50-50 split. Therefore, half of spending in eating places is allocated to full service restaurants; the other half to the limited service places. Similarly, the CE files don't distinguish items purchased in general merchandise stores from those purchased in more specialized retail outlets. For goods that likely could be purchased in either, again a 50-50 split is used, as shown for local commodities 08 and 09 in the table above.

For all items included under any retail sales category, only the gross margins are included, and in most cases a further adjustment is made to account for loss of local sales to E-commerce and mail order business. These adjustments are based on information in the Census Bureau's Annual Retail Trade Report for 2012. The report includes a table on gross margins by 6-digit NAICS code that can be used directly. The report also contains separate tables on total sales and mail order & E-commerce. An adjustment factor is calculated based on total E-commerce & mail order sales as a fraction of total retail sales, excluding food and beverage service and motor vehicle and parts dealers. For 2012, the adjustment factor is 1-322,543/4,344,140. In the above table, "adjusted for E-commerce and mail order loss" means that particular category of retail spending is multiplied by this factor.

Insurance payments are separated into a share going to brokers and agents and the insurance companies, based on the proportional share of revenue reported in the latest Economic Census. The share going to brokers and agents is counted as local income. However, it is also assumed that the share going to insurance companies comes back in some cases as these companies pay medical costs for policy holders that go to health care providers in the local area. This is estimated using "Personal Health Care Expenditures by object & Source of Payment" reported by the Census Bureau in the Table 138 of the 2012 [Statistical Abstract of the United States](#). A similar calculation is made for expenses covered by Medicare. The CE data include the number of household members covered by Medicare. Payments made by Medicare to local

health care providers are estimated using statistics on Medicare Enrollees from Table 146 of the 2012 Statistical Abstract, combined with the health care expenditure information from Table 138.

The consumer spending variables used in the model are all in the form of average propensities to consume—that is, average fractions of before-tax income spent on various items. As shown in the table above, The EXPN files generate consumer spending estimates for 52 locally produced commodities. In addition, seven categories of local commodities produced by local government enterprises are appended to the list:

- 1 Local government electric service
- 2 Local government natural gas distribution
- 3 Local government water & sewerage
- 4 Local government passenger transit
- 5 Local government liquor stores
- 6 Local government sanitary services
- 7 Local government hospitals

Although these seven extra commodities do not increase local spending in total, they allow the model to allocate consumption between the publicly produced and privately produced commodities based on information from the Census of Governments. In this sense, the model is consistent with both national household consumption patterns and revenue collected by all government enterprises in a particular local area.

To this is added one other local commodity, general government, to account for tax and fee payments (computed in Phase II primarily from BEA personal income estimates and Census of Governments revenue data).

The results can be collected in the 2×60 matrix, A :

$$A = \begin{bmatrix} a_1 & a_2 & a_3 & \dots & a_{59} & 0 \\ 0 & 0 & 0 & \dots & 0 & 1 \end{bmatrix}$$

The elements in the first row of A show the average fraction of income spent on each of the 59 local commodities (including those produced by local government enterprises such as publicly owned utilities or hospitals). The "0"s and "1" in the second row indicates that no taxes are spent directly by the household on any of the first 59 commodities; 100 percent is spent on the local general government commodity. This two-row structure is designed to align with the output from Phase I of the model, which comes in the form of before-tax local income and local tax estimates.

Several other matrices and vectors derived from the above concepts are needed to calculate the Phase II ripple or multiplier effect:

W : a 60×99 matrix that translates local commodities into local income,

G : a 60×99 matrix that translates local commodities into local government general revenue collected from persons, and

T : a 60×99 matrix that translates local commodities into local government general revenue collected from businesses

$L = [W \ G \ T]$ therefore defines a 60×297 matrix

x = a two element column vector containing local income and local taxes generated in Phase I

$Y = \begin{bmatrix} i & 0 & 0 \\ 0 & i & 0 \\ 0 & 0 & i \end{bmatrix}$ a 297×3 matrix where i is a 99-element unit column vector,

$$Z = \begin{bmatrix} 1 & 0 \\ 0 & 1 \\ 0 & 1 \end{bmatrix}$$

In summary, x is the income and tax output from Phase 1, A translates income and taxes into spending on particular commodities, L translates the detailed commodity spending into income and taxes in each of 99 local industries, and Y and Z are technical devices for summing results. Y collapses the components of a 297-element vector into a 3-element vector of income, personal taxes, and business taxes. Z converts a 3-element vector of this form into a 2-element income and tax vector.

The row vector defined as $x' A$ shows how much, in dollar terms, people who earn income during Phase I spend on each of the 60 local commodities (including local government employees, whose paychecks are supported by taxes and charges for particular government-run enterprises).

The calculation $x' ALYZ$ produces a 2-element local income and local tax vector of the same form as x' . Postmultiplying a vector of this type by $ALYZ$ will always produce a similar, 2-element income and tax vector. Either by construction, or by checking that both eigenvalues are smaller than 1, it is possible to show that $ALYZ$ is a contracting matrix. This implies that the rounds below show successively smaller increments of income and taxes added to the local economy:

Round 0: x'

Round 1: $x' ALYZ$

Round 2: $x' ALYZ ALYZ$

Round 3: $x' ALYZ ALYZ ALYZ$

\vdots

Round K : $x' \prod_{k=1}^K ALYZ$

The terms of this sequence can be summed in the usual manner to create an infinite series. Because $ALYZ$ is a contracting matrix, the result is a convergent series, the limit of which is

$$x' [I - ALYZ]^{-1}$$

This is the final multiplied effect on local income and local taxes at the end of Phase II. The factor $[I - ALYZ]^{-1}$ is a matrix version of the conventional Keynesian spending multiplier. Because x' is reported in Phase I, it is subtracted from the effect reported in Phase II.

For some purposes, especially estimating employment impacts, we are interested in tracking income in Phase II by industry. Calculations to accomplish this are based on the following sequence of 1×297 vectors:

$$\begin{aligned} \text{Round 1: } & x'AL \\ \text{Round 2: } & x'ALYZAL \\ & \vdots \\ & \vdots \\ \text{Round } K: & x'AL \prod_{k=1}^{K-1} YZAL \end{aligned}$$

Note that sequence begins with the spending vector $x'AL$ —that is, it excludes the income and taxes that have already been captured in Phase I. The limit of the series defined based on this sequence is

$$x'AL [I - YZAL]^{-1}$$

This is a 297-element row vector, the first 89 elements containing the final, multiplied effect on local income by industry generated during Phase II. As explained above, income by industry can be separated into business owners' income and wages and salaries, and the wages and salaries converted to full-time job equivalents.

From the standpoint of local governments, it may be desirable to track individual sources of revenue, such as particular fees and taxes. To facilitate this, it is useful to have a three element local income and local tax vector, where the tax revenue is decomposed into taxes collected from persons and taxes collected from businesses.

Consider the following sequence of such 3-element vectors:

$$\begin{aligned} \text{Round 1: } & x'ALY \\ \text{Round 2: } & x'ALY ZALY \\ & \vdots \\ & \vdots \\ \text{Round } K: & x'ALY \prod_{k=1}^K ZALY \end{aligned}$$

This sequence begins after *Round 0*, implicitly excluding income earned and taxes paid during Phase I. The limit of the infinite series defined by this sequence is

$$x' ALY [I - ZALY]^{-1}$$

This is the final, multiplied effect on local income, local government revenue collected from persons, and local government revenue collected from businesses in Phase II of the model. The tax structure for a particular local area, derived primarily from Census of Governments data as described above, can be applied to this result in order to decompose local government revenue into particular types of taxes and fees.

Phase III: Ongoing Impacts

Another distinctive feature of the NAHB model is the way it uses CE and other data to model the average behavior of occupants that differs based on the type of housing being built. At present, there are six basic variants of the NAHB model designed to handle the following types of construction:

1. Generic Single-family
2. Generic Multifamily
3. Active Adult
4. Family Low-Income Housing Tax Credit (LIHTC)
5. Elderly LIHTC
6. Remodeling

The remodeling version of the model does not in general incorporate ongoing impacts, so it requires no occupant income estimates. For the other five versions of the model, separate occupant income estimates are derived in a way that vary with location as well as with the type of units being built. The derivations are based on relationships between average income and standard variables that are typically available at the local level. The methods for establishing these relationships are summarized below.

Generic Single-family. Regression of average income of home owners on area median family income and average value of the units using American Community Survey (ACS) microdata.

Generic Multifamily. Regression of average income of home owners on area median family income and average rent using ACS microdata.

Active Adult. Average income of movers into age-restricted owner occupied units and average income of all home buyers are computed from American Housing Survey (AHS) microdata, and the ratio of the two averages is used to adjust home buyers' income for the active adult case.

Family LIHTC. Average incomes of all movers into rental units who have less than 60 percent of median family income for the U.S. as a whole, computed from CE data.

Elderly LIHTC. Average incomes of all elderly movers into rental units who have less than 60 percent of median family income for the U.S. as a whole, computed from CE data.

The ACS is the Census Bureau's replacement for the long form questionnaire that until 2000 was used to collect information on income and structure type in the decennial Census. The AHS, funded by the U.S. Department of Housing and Urban Development (HUD) and conducted by the Census Bureau, is the federal government's primary vehicle for collecting detailed information about housing units and their occupants at the national level.

The ratios and regression results listed above allow the model to be simultaneously customized to a particular area and a particular type of construction by inputting specific local information that is generally available. When customizing to a local area, median family income for that particular area is used. HUD produces median income estimates for all parts of the country in a timely fashion as part of the process it uses to establish income limits for various housing programs.

When it is necessary to translate rents into value or vice versa, the median cap rate from the Rental Housing Finance Survey (RHFS), also funded by HUD and conducted by the Census Bureau, is used.

In addition to average income, estimated spending tendencies for movers into each type of construction are needed. Separate spending vectors are estimated for each using household information available in the CE data. The table on the following page shows average local propensities to consume computed from the 2012 CE.

This modeling of average spending by different types of households soon after they move in is another distinguishing feature of the NAHB local impact model. In addition to the function they serve in the local model, average spending tendencies computed from CE data have also proven to be of interest for their implications at the national level.⁴

Compared to home buyers, renters tend to spend more of their incomes locally—partly due to the tendency of lower-income households to spend a greater fraction of their incomes on necessities, but also due to rental payments that go to a local owner, or owner employing a management company with a local presence. The equivalent housing expense for a home buyer would be a mortgage payment. Because mortgage payments typically are made to non-local owners of the mortgage through non-local servicers, they are excluded from the spending estimates in the NAHB local impact model.

Average propensities to spend on virtually all categories of local health care services are higher for households moving into construction designed for older residents (age-restricted active adult and elderly LIHTC).

As was described in Phase II, seven categories of commodities produced by local government enterprises are added to the model, and a share of local spending (which may be zero) is allocated to these enterprises instead of private producers based on revenues reported in the Census of Governments for each local government enterprises in the area.

⁴ See, for example, the December 2008 Special Study "[Spending Patterns of Home Buyers](#)," written by Natalia Siniavskaia and published by NAHB in [Housing Economics.com](#).

Average Local Spending Computed from CE Data

	All Households	New Home Buyers	New Multifamily Renters	Active Adult Buyers	New Family LIHTC	New Elderly LIHTC
Output of industry purchased locally						
1 Greenhouse, nursery, and floriculture production	0.129%	0.172%	0.000%	0.176%	0.000%	0.000%
2 Electric power generation, transmission, and distr.	2.689%	2.410%	0.002%	3.428%	0.000%	0.000%
3 Natural gas distribution	0.674%	0.499%	0.000%	0.723%	0.000%	0.000%
4 Water, sewage and other systems	0.793%	0.802%	0.000%	1.108%	0.000%	0.000%
5 Residential maintenance and repair	3.059%	2.087%	0.000%	3.567%	0.170%	0.072%
6 Motor vehicle and parts dealers	1.218%	1.439%	5.098%	1.447%	1.408%	1.190%
7 Food and beverage stores	4.829%	3.303%	4.446%	3.567%	8.573%	8.793%
8 General merchandise stores	0.745%	0.840%	1.271%	0.723%	1.129%	0.437%
9 Other retail	3.119%	2.494%	3.088%	2.906%	3.896%	4.069%
10 Transit and ground passenger transportation	0.190%	0.030%	0.269%	0.028%	0.990%	0.990%
11 Newspaper publishers	0.027%	0.016%	0.042%	0.042%	0.057%	0.096%
12 Wired telecommunications carriers	2.392%	1.770%	1.878%	2.588%	2.868%	4.441%
13 Wireless telecom. carriers (except satellite)	2.081%	1.809%	3.565%	1.811%	3.323%	2.435%
14 Satellite, telecom. Resellers & all other telecom.	0.323%	0.249%	0.620%	0.335%	0.472%	0.494%
15 Data processing, hosting, and related services	0.003%	0.002%	0.000%	0.002%	0.006%	0.000%
16 Monetary authorities, depository credit intermediation	0.437%	0.298%	0.000%	0.366%	0.000%	0.000%
17 Nondepository credit intermediation+related activities	0.417%	0.616%	0.906%	0.463%	0.381%	0.327%
18 Insurance agencies, brokerages, and related activities	0.407%	0.387%	0.722%	0.462%	0.291%	0.288%
19 Real estate	8.301%	2.048%	27.078%	1.292%	33.130%	34.324%
20 Automotive equipment rental and leasing	0.795%	0.775%	0.000%	0.348%	0.426%	0.000%
21 Consumer goods and general rental centers	0.070%	0.055%	0.041%	0.046%	0.104%	0.030%
22 Legal services	0.335%	1.185%	0.006%	0.163%	0.852%	0.055%
23 Accounting, tax preparation, bookkeeping, and payroll	2.512%	1.939%	0.250%	1.691%	4.895%	0.904%
24 Photographic services	0.045%	0.039%	0.257%	0.017%	0.054%	0.015%
25 Veterinary services	0.236%	0.199%	0.006%	0.209%	0.149%	0.104%
26 Investigation and security services	0.024%	0.042%	0.055%	0.066%	0.009%	0.015%
27 Services to buildings and dwellings	0.385%	0.389%	0.093%	0.666%	0.181%	0.119%
28 Waste management and remediation services	0.219%	0.217%	0.000%	0.283%	0.000%	0.000%
29 Elementary and secondary schools	0.212%	0.314%	0.000%	0.134%	0.060%	0.022%
30 Offices of physicians	4.361%	2.732%	3.879%	5.881%	3.595%	10.321%
31 Offices of dentists	0.787%	0.693%	0.416%	1.036%	0.698%	1.082%
32 Offices of other health practitioners	0.670%	0.387%	0.280%	0.812%	0.453%	1.269%
33 Home health care services	0.884%	0.395%	0.625%	1.123%	0.755%	2.585%
34 Hospitals	3.761%	2.482%	5.133%	5.953%	2.682%	9.324%
35 Nursing and community care facilities	0.974%	0.386%	0.592%	1.140%	0.791%	2.808%
36 Child day care services	0.202%	0.345%	0.632%	0.013%	0.183%	0.000%
37 Performing arts companies	0.191%	0.235%	0.353%	0.403%	0.279%	0.062%
38 Spectator sports	0.070%	0.071%	0.109%	0.020%	0.156%	0.007%
39 Gambling industries (except casino hotels)	0.068%	0.036%	0.005%	0.083%	0.128%	0.351%
40 Other amusement and recreation industries	0.335%	0.490%	1.146%	0.416%	0.350%	0.058%
41 Full-service restaurants	2.415%	1.902%	3.289%	2.020%	4.756%	2.625%
42 Limited-service restaurants	2.415%	1.902%	3.289%	2.020%	4.756%	2.625%
43 All other food and drinking places	0.107%	0.699%	0.007%	2.638%	0.034%	0.008%
44 Automotive repair and maintenance	1.713%	1.289%	2.595%	1.961%	1.799%	1.746%
45 Electronic and precision equip. repair & maintenance	0.022%	0.019%	0.000%	0.031%	0.012%	0.005%
46 Personal and household goods repair & maintenance	0.105%	0.078%	0.027%	0.131%	0.084%	0.154%
47 Personal care services	0.144%	0.070%	0.107%	0.183%	0.121%	0.403%
48 Death care services	0.278%	0.067%	0.029%	0.163%	0.524%	0.259%
49 Dry-cleaning and laundry services	0.264%	0.103%	0.225%	0.116%	0.886%	0.752%
50 Other personal services	0.745%	0.707%	0.678%	0.859%	1.163%	0.988%
51 Religious organizations	0.746%	0.821%	0.746%	1.205%	0.337%	0.415%
52 Civic, social, professional, and similar organizations	0.011%	0.005%	0.000%	0.009%	0.000%	0.002%

Also as described in Phase II, Census of Governments data are used to estimate most categories of tax and fee revenue generated for general (non-enterprise) governments in the area. The exemption is residential property taxes. Perhaps surprisingly, residential and non-residential property taxes are not reported separately. Moreover, some states have restrictions on rate increases, or other laws that tend to make property tax rates different on new construction. Particular developments (for example, those financed by the LIHTC program) may also be granted special forms of property tax relief.

For these reasons, when customizing the local impact model to a specific area, information about property taxes on the units being built must be supplied by the entity requesting the analysis. Phase III of the model counts only property tax on the value of construction. Unless specific information is provided for an individual project or jurisdiction, this is calculated assuming that the raw land would be taxed at the same rate if not developed. Any residential property tax from existing units is treated as unrelated to the new homes being analyzed and excluded from the government revenue impact estimates.

Non-residential property taxes are treated much like other categories of government revenue, except that the aggregate for a jurisdiction to be estimated from a larger aggregate in the government data that does not distinguish residential from non-residential. This is accomplished by subtracting an estimated 53.37 percent from total property taxes to account for residential share of property taxes. The estimate is calculated as follows, from data available for 2012 in the ACS, RHFS and the Census Bureau's Summary of State and Local Government Tax Revenue (SSLGTR):

Aggregate real estate taxes paid by homeowners:	\$206.04 billion (ACS)
Estimate for homeowners not reporting:	5.93 billion
<u>Estimated real estate taxes paid on rental housing</u>	<u>41.85 billion</u> (ACS and RHFS)
Total residential real estate taxes	\$253.82 billion
<u>Total property taxes</u>	<u>\$475.83 billion</u> (SSLGTR)
Residential share	53.37%

The estimate for homeowners not reporting in the ACS is based on the number of non-reporters multiplied by median tax payment for those who do report. The estimate for rental units is based on the number of rental units in the ACS multiplied by median tax per rental unit in the RHFS.

Multifamily Phase III impacts are reduced to account for vacant units. By default, the single-family version of the model assumes that units are intended for owner-occupancy and have negligible vacancies. In the Census Bureau's Housing Vacancy Survey homeowner vacancy rates are usually in the neighborhood of only one percent.

For multifamily units, the average multifamily rental annual vacancy rate over the prior decade and average annual multifamily homeowner vacancy rate over the prior decade are used, depending on whether the units are condominiums or rental apartments. In other respects, Phase III treats condo buyers the same as single-family home buyers (the income and spending tendencies discussed above being based on buyers of owner-occupied housing units, irrespective of structure type).

Although vacancy rates are known to fluctuate, the model estimates annual ongoing impacts that are expected to persist for an extended period, so a long-term “natural” measure of vacancy rates is more appropriate for Phase III than a very current, possibly anomalous, number. The reduction for vacancies is applied to all Phase III multifamily impacts except for property taxes, which are assumed to be paid by the owner of the property, whether the units are occupied or not.

Local spending and taxes (including fees and charges paid to local government entities) generate income for local residents, and this income will be spent and recycled in the local economy, much as in Phase II of the model.

Let x_n denote the initial income and tax column vector for new home occupants, A_n denote the matrix formed from the consumption spending patterns of new home occupants, and otherwise maintain the notation used in Phase II of the model. Then consider the following sequence:

$$\begin{aligned}
 \text{Round } 0 &: x_n' \\
 \text{Round } 1 &: x_n' A_n L Y Z \\
 \text{Round } 2 &: x_n' A_n L Y Z A L Y Z \\
 \text{Round } 3 &: x_n' A_n L Y Z A L Y Z A L Y Z \\
 &\vdots \\
 &\vdots \\
 \text{Round } K &: x_n' A_n L Y Z \prod_{k=1}^K A L Y Z
 \end{aligned}$$

The sum of these terms forms an infinite series that converges to the limit

$$x_n' [I + (A_n - A) L Y Z] [I - A L Y Z]^{-1}$$

When results are reported for Phase III the income earned by the occupants is subtracted from the final multiplied effect, so that only income generated for occupants of housing units already existing in the area is counted.

Note that, were new home occupants to spend the same fraction of their incomes on the various local commodities as average households, $A_n = A$ and the formula would simplify to

$$x_n' [I - A L Y Z]^{-1}$$

The formula that produces a 297-element vector, the first 99 of which contain the added income by industry, for Phase III is

$$x_n' A_n L [I - Y Z A L]^{-1}$$

Again, the income in each industry can be disaggregated into business owners' income and wages and salaries, and the wages and salaries converted to full time jobs. These exclude any jobs filled by occupants of the new housing units.

The formula that produces a 3-element vector showing the final, multiplied effect on local income, local government general revenue from persons, and local general government revenue from business generated in Phase III is

$$x_n' A_n LY [I - ZALY]^{-1}$$

As in Phase II, the last two elements of the final 3-element vector can be disaggregated to show revenue generated by particular types of taxes, fees, and charges. The primary difference in Phase III is that the increase in residential property tax revenue (which is introduced into the model as a separate input independent of the Census of Government computations) needs to be subtracted before the decomposition procedure can be applied.

Final Notes

All of the matrix operations in the NAHB local impact model are performed using the O-Matrix package provided by Harmonic Software. The O-Matrix code used to generate Phase III impacts for single-family construction and the code used to compute a local total requirements matrix for a previous iteration of the NAHB model are published on the Harmonic Software web site as notable uses of the O-Matrix package (<http://www.omatrix.com/userstories.html>).

The technical documentation on the NAHB model used to estimate the local income, jobs, and taxes generated by home building was prepared by Paul Emrath, Vice President of Survey and Housing Policy Research. For questions on the technical documentation, or on NAHB's impact of home building models in general, he may be contacted in NAHB's Economics and Housing Policy Group by phone at 202-266-8449, or by email at pemrath@nahb.org.

RECEIVED

FEB 17 2020

DOOR COUNTY
LAND USE SERVICES DEPARTMENT

Real Estate Consulting Report

Updated Real Estate Consulting Report for:

Quarry Bluff Development Property

for the property located at:

*Bay Shore Road (CTH B)
Town of Sevastopol, Wisconsin*



CONSULTING REPORT FOR THE PROPERTY LOCATED AT:

Bay Shore Road (CTH B)
Town of Sevastopol, Wisconsin

PREPARED FOR:

Tom Goelz & Mike Parent
P.O. Box 54
Fish Creek, WI 54212

DATE OF REPORT:

February 14, 2020

RECEIVED

FEB 17 2020

**DOOR COUNTY
LAND USE SERVICES DEPARTMENT**

CONSULTING REPORT PREPARED BY:

FORENSIC APPRAISAL GROUP
116 E. Bell Street
Neenah, WI 54956
ph (920) 558-4638
www.forensic-appraisal.com

AERIAL VIEW OF SUBJECT PROPERTY



Figure 1: project is outlined in yellow.

CONCEPTUAL VIEW OF PROPOSED PROJECT



onyx|creative
CREATING THE VISION FOR YOUR PROJECT

The Quarry
10000 Woodbine Ave. #100 Woodbine, ON L3R 9W3
Tel: 905.709.1111
www.thequarry.com

Figure 2: conceptual view of the project.

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**The Fundamentals of the
Consulting Report and a
Summary of the Facts and
Conclusions**





February 14, 2020

Tom Goelz & Mike Parent
 P.O. Box 54
 Fish Creek, WI 54212

Dear Tom Goelz & Mike Parent:

We have made an updated investigation of certain real estate comprised of the land of the property known as:

Bay Shore Road (CTH B)
 Town of Sevastopol, Wisconsin

This investigation was made for the purpose of concluding the impact that the proposed Quarry Bluffs Development will have on surrounding property values.

Type of Report

This is a consulting report and as such will only estimate the impact of the proposed development project to surrounding property values. This is not an appraisal.

Property Defined

The property is comprised of:

- Six parcels totaling 49.53 acres.
- Vacant land.
- Vacated stone quarry, no longer in operation.

The property is in the Town of Sevastopol, Door County, Wisconsin. The property is bordered by Bay Shore Road (aka CTH B) along the south property line and single-family lots (improved and vacant) along the rest of the property. The property was a stone quarry that has not been in operation for several years. The



property contour has severe inclinations along the perimeter and a relatively flat contour in the middle of parcel. There are excellent views from the property of Sturgeon Bay. George K. Pinney County Park is located across Bay Shore Drive to the southeast of the property. This park abuts Sturgeon Bay and has boat launches, public parking and a recreational area.

Project Defined

The Quarry Bluff Development project is proposing to develop a 49.53-acre parcel as a luxury RV resort. This development plans on developing 117 sites to be individually owned. Each site will provide a parking platform for a Class A motorhome, hookups for the motorhome, a small to full-sized single-family homes specifically designed to integrate the luxury RV lifestyle into the living area design. The amenities planned include an upscale clubhouse, tennis courts, walking paths and a small lake in the center of the property.

The development intends to offer ownership and use of the facility to luxury late model RV class-A motorhome owners. The motorhomes will have a minimum threshold of age, size, and value to qualify for ownership and, or use of the development. The single-family homes will be built by the individual owners and will have a minimum and maximum gross living area requirement.

Intended Users of the Consulting Report

The intended user of this consulting report is Tom Goelz and Mike Parent in their application for project approval with the Town of Sevastopol and Door County.

Purpose of the Report

The purpose of this come to an opinion of the economic impact of the project to the surrounding property values.

The report consists of

- This letter which identifies the property under review and summarizes the results of the investigation and conclusions.
- A report section containing the investigation of the economic impact of the project to surrounding property values.
- Summary of qualifications.

Scope of Work

The Scope of Work in this assignment included:

1. Collection of information on the subject property including assessment data, property description



from governmental agencies, mapping property information from AgriData Inc (FSA maps & soil data) and the conceptual development information submitted by the client.

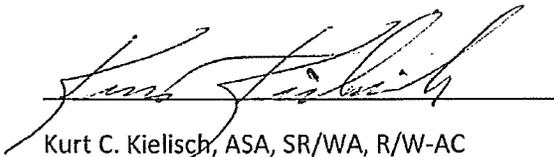
2. A review of the proposed development project.
3. A literature review to find information or data on similar RV luxury developments and their impact to surrounding property value.
4. Complete an opinion survey of Realtors in areas of similar type of RV development projects.
5. Complete an opinion survey of municipal assessors (aka appraisers) located in the region of select luxury RV resorts.
6. A review of the issue of stigma and how that could impact the surrounding property values of the development.
7. Completion of a consulting report relating the conclusions of impact and adequate information to support this opinion.

Conclusion of Impact

Considering all factors as reported in this analysis it has been concluded that the impact of the Quarry Bluff Development project is:

- There is no evidence that the Quarry Bluff Development project will negatively impact the surrounding single-family property values.
- There is no evidence that the Quarry Bluff Development project will negatively impact the local economy.
- There is no evidence that a stigma to surrounding property values will be caused by the Quarry Bluff Development once in place.

Sincerely,



Kurt C. Kielisch, ASA, SR/WA, R/W-AC
President/Senior Appraiser



**The Analysis of the Impact on
Property Value of the
Proposed Development**



Literature Research

To discover if there were any studies or published research on the economic impacts that a luxury RV resort that a RV development such as the subject, we completed a literature study. A literature study reviews both public and industry specific publications on a specific topic to see what other real estate or economic professionals have concluded on that topic. Our study utilized the following resources:

- A Google search for published articles.
- A search in the Appraisal Institute’s publications The Appraisal Journal and Valuation Magazine archives (requires association membership)
- A search in the Appraisal Institute’s Lum Library (requires association membership)
- A search in the International Right-of-Way Association’s publication Right-of-Way Magazine archives (requires membership).

There were no articles or studies found on the economic impact or property value impact relating to the presence of a luxury RV resort. There were local stories found in the Peninsula Pulse¹, Fox News channel 11² and the Door County Daily News³. Two articles cited the opposition to this development by some local landowners and their effort to organize against it. One article discussed the proposed development and that some property owners were organizing against it. No local articles were found that included a study or research into the economic impact of such a development.

Overall, we found that luxury RV resorts that have individual ownership and single family or dwelling that are used to extend the living area of a motorhome are a new trend having no investigative reporting or impact studies related to such developments and their economic impact.

1 *Opposition Mounts to Proposed Quarry RV Campground*. Peninsula Pulse, September 5, 2109.

2 *Door County property owners upset about proposed RV resort on Bayshore Dr*. Fox 11 News, Friday, August 30, 2019.

3 *Long road for Old Quarry RV Development*. Door County Daily News.com, August 2019.



Realtor Survey

We engaged in a survey of Realtors to collect their opinions regarding an economic impact of a similar RV development in their area.

Initially we considered surveying Door County Realtors, however we decided not to do such a study as the project is not in place and, hence, there would be no history to base an opinion. Therefore, any opinion rendered would be on speculation, not fact. Additionally, we felt that the local resistance and publicity may taint the opinion of those surveyed. However, the biggest reason for not surveying the Door County Realtors was that the project was not a reality and there was no history on which to base an opinion.

Our literature study discovered several potential RV resort developments that might provide insights regarding the impact of the proposed property development. These resorts were then selected for their similarity to the subject development having auxiliary housing or living area extension structures on individual sites, all requiring Class-A RVs, covenants as to the age, condition and value of the RVs, recreational amenities, a clubhouse or similar type of improvement on the premises and located in a vacation destination. All these developments have been in place for a while so a history of their impact was and knowledge of facilities by local Realtors would validate the survey.

The resorts selected were: Hearthside Grove Luxury Motorcoach Resort (Michigan), Mountain Falls Luxury Motorcoach Resort (North Carolina), Bella Terra of Gulf Shores Resort (Alabama), Desert Shores Luxury Motorcoach RV Resort (California) and Buena Vista Coastal RV Luxury Resort (Alabama).

We interviewed all the Realtors within a certain distance of each development via the use of Survey Monkey. We gathered the email addresses of the participants from a local Realtor directory and created a list that was then imported into the online survey. The survey's response rate and responses were tabulated for analysis. Survey Monkey also collects each individual survey response identified by their email address, so we can follow up and check on each response.

Online surveys are best when they have ten questions or less and can be completed in less than two minutes. Our survey was simple, having just three questions. The first question qualified their responses by asking if they were familiar with the local RV resort cited. Then the survey asked if they believed the development increased, decreased or had no measurable impact to surrounding single family property values. The third question was similar but focused on the impact to then local economy.

We received the following response rates from the surveys as of February 13, 2020:



RV Resort	State	Total Surveys	Total Responses	Response Rate
Hearthside Grove	MI	141	14	10%
Mountain Falls	NC	63	15	24%
Bella Terra	AL	8	1	13%
Desert Shores	CA	69	2	3%
Buena Vista	AL	28	1	4%
Totals		309	33	11%
Totals without Desert Shores & Buena Vista		212	30	14%

The Desert Shores survey was considered of little use due only a 3% response and one of the respondents had no knowledge of the local resort cited. Therefore, their response would offer little insight into the real impact of such a resort.

The Buena Vista survey was considered of little use due to only a 4% response rate. It should be noted that this survey is young having had only one day for responses and we hold the right to revise the results from this survey as more responses are tallied.

A good survey response rate is 10% or greater. The overall average was 11%, but with both Desert Shores and Buena Vista removed from the analysis, the response rate was revised to 14%.

A brief explanation of each resort and the survey results are found on the following pages.

Map of Selected RV Resorts



Hearthside Grove Luxury Motorcoach Resort

This development was considered the most comparable development to the subject's proposed development and has some of the same designers and planners. Therefore, this survey is considered the most weighted response toward developing an opinion of economic impact of the proposed development.

The summary of the development is found in the chart below.

Name of Resort	Hearthside Grove Luxury Motorcoach Resort
Location of Resort	Petoskey, MI
Population of immediate area	5,724
Size of Resort in Acres	140 acres
When the Resort Began	Not published
Recreational Amenities	Clubhouse, Full size clubhouse theater, resort-style pool, fitness center, spa
Site Amenities	<p>Standard lot: 5000+ sf lot, 20'x70' paved pad, full hook-ups with 50amp, cable, WiFi, metal table and 2 chairs, some include concrete patio areas.</p> <p>Standard Plus Lot: Standard lot plus one more of the following: Patio furniture (some include enhanced furniture), water view, secluded lot.</p> <p>Deluxe Lot: Standard Plus Lot plus one more of the following: Fire pit, BBQ grill, outdoor kitchen. Deluxe lots normally will have a fire pit or at least two other enhanced amenities which could include a view of a pond, enhanced furniture, pergola, or a gas grill. Every lot is unique.</p> <p>Premium Lot: Deluxe Lot plus one more of the following: Water feature, pergola, outdoor kitchen. Premium lots will have some combination of at least three enhanced amenities which could include a view of a pond, fire features, water features, enhanced furniture, pergolas, outdoor kitchens, etc. Every lot is unique.</p>



Clubhouse or Similar Facility	Clubhouse
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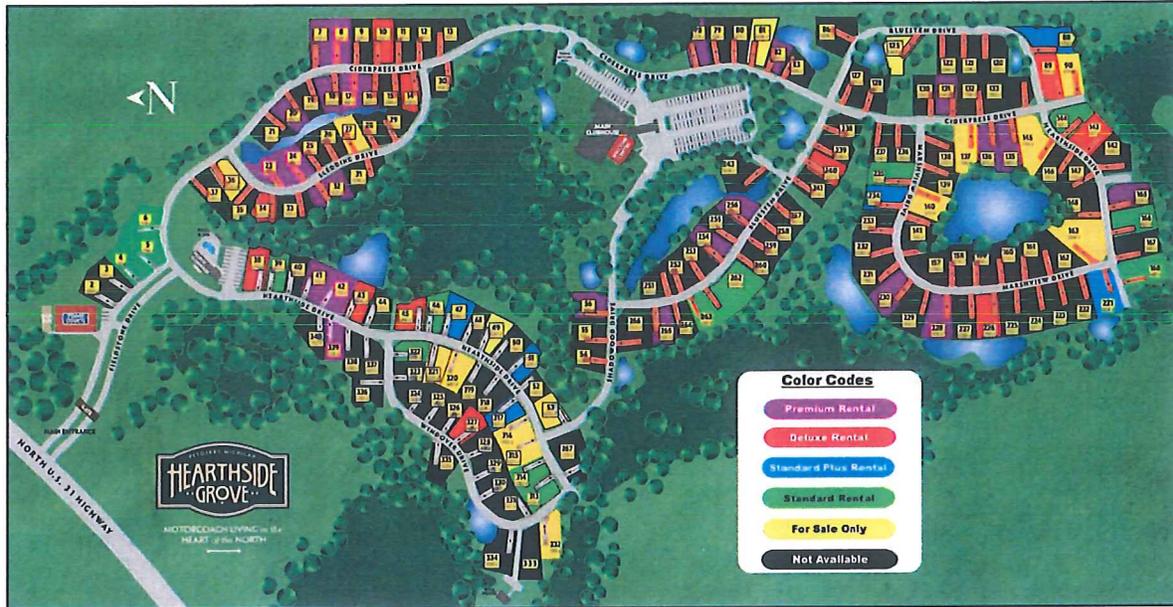


Figure 3: site plan of development.

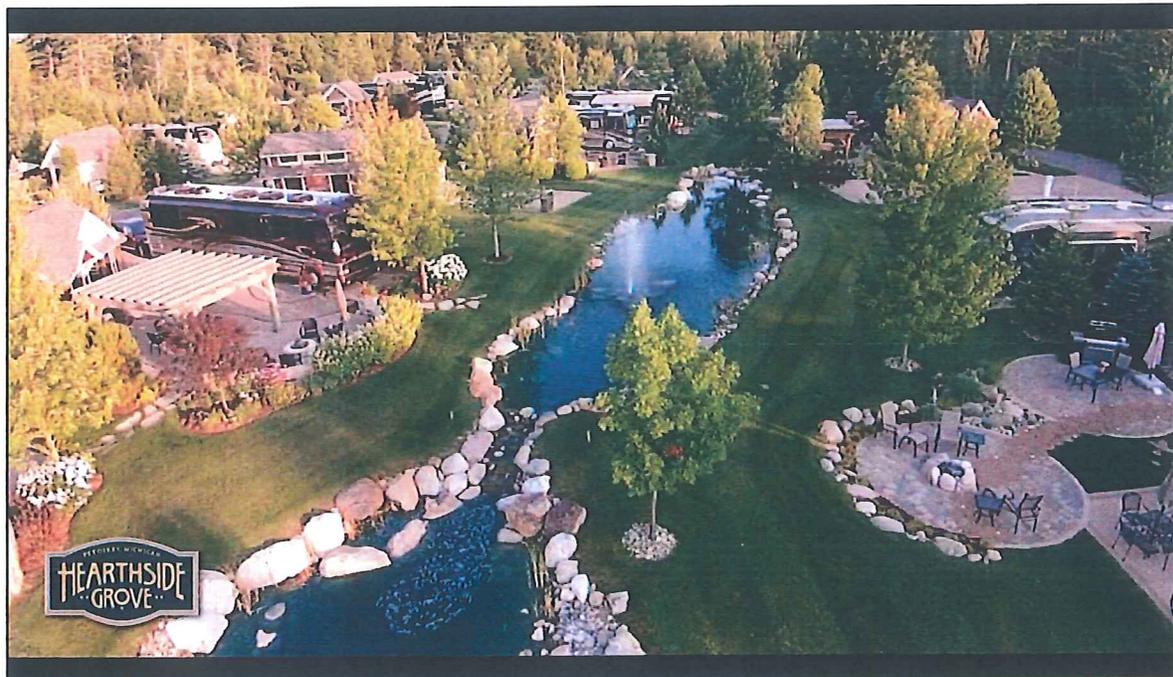
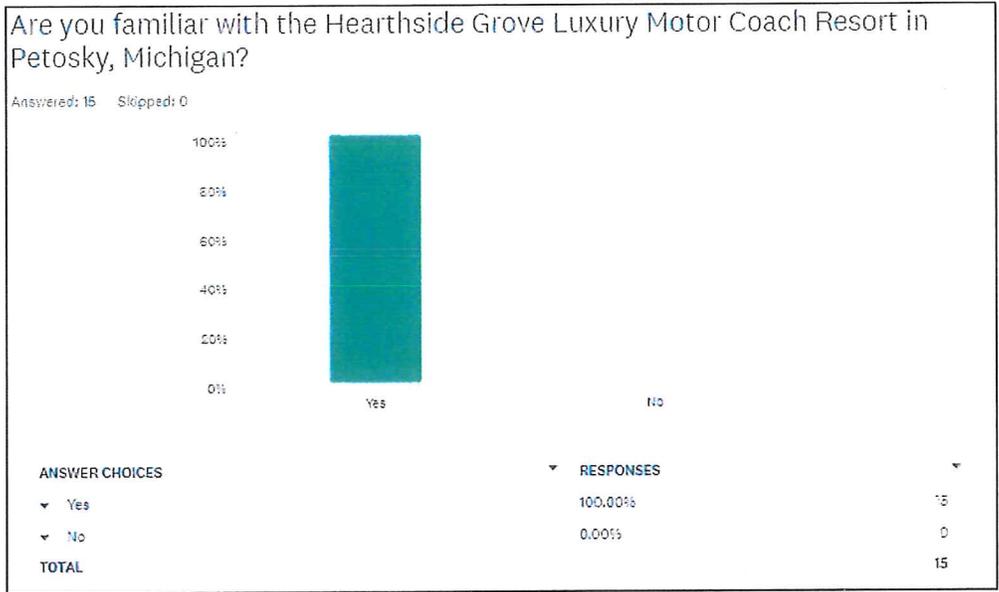


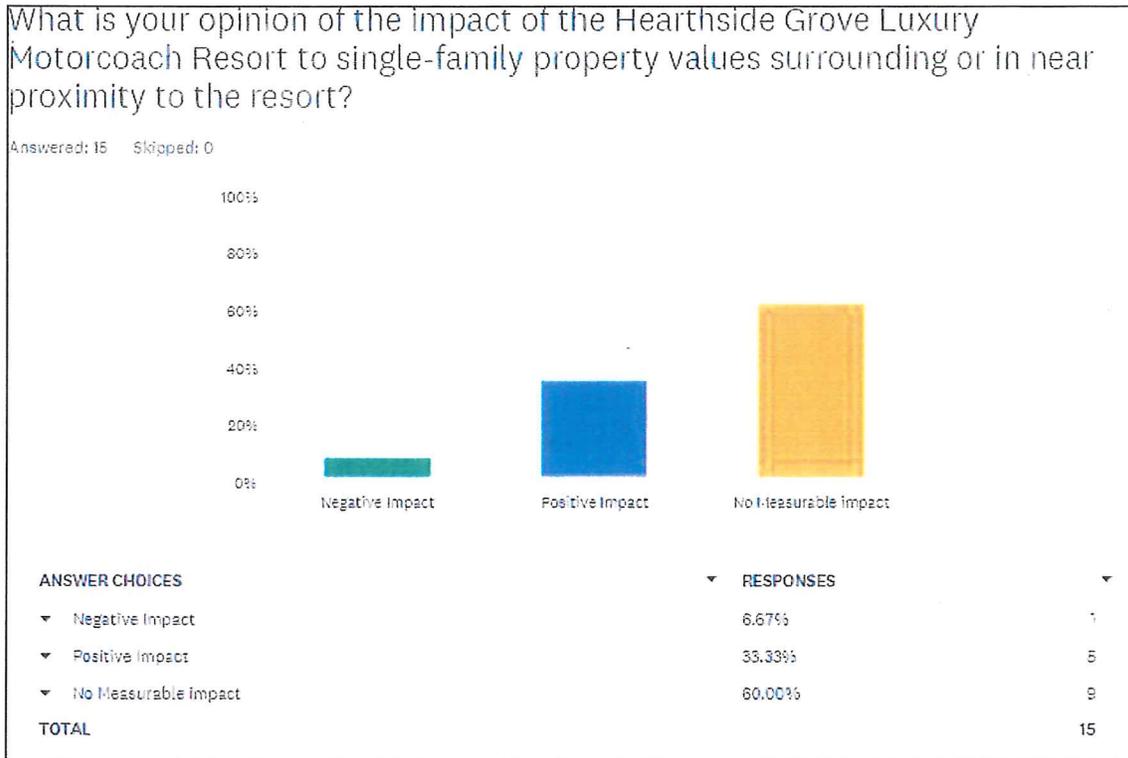
Figure 4: sample view of development.

There survey results are as follows:

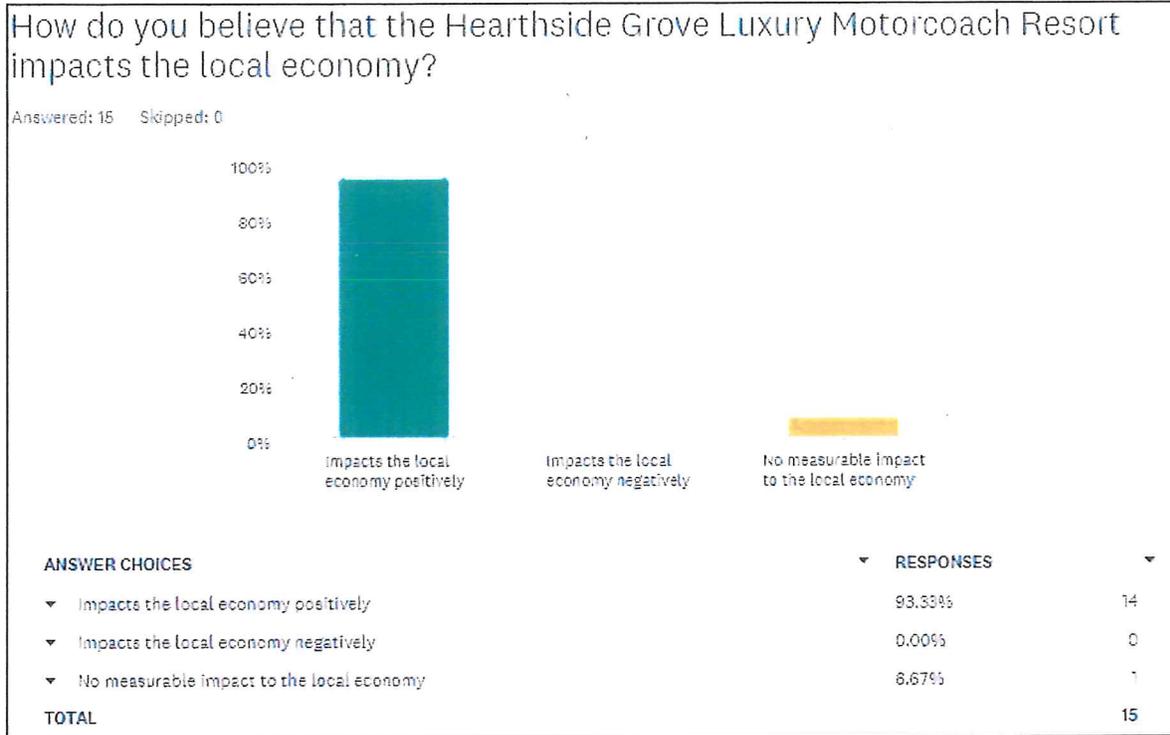
1. Are you familiar with the Hearthside Grove Luxury Motor Coach Resort in Petosky, Michigan?



2. What is your opinion of the impact of the Hearthside Grove Luxury Motorcoach Resort to single-family property values surrounding or in near proximity to the resort?



3. How do you believe that the Hearthside Grove Luxury Motorcoach Resort impacts the local economy?



Mountain Falls Luxury Motorcoach Resort

Mountain Falls resort was selected due to its similar type of design and that it is in a vacation destination with a comparably small population. The summary of this development is found in the chart below.

Name of Resort	Mountain Falls Luxury Motorcoach Resort
Location of Resort	Lake Toxaway, NC
Population of immediate area	2,222
Size of Resort in Acres	
When the Resort Began	2000
Recreational Amenities	Private Clubhouse Lodge, Tennis Courts, Pickleball, Bocce Ball, Fitness Facility, Hot Spa, Executive 9-Hole Golf Course, Two Pools and Bath Houses
Site Amenities	All lots include WiFi, Cable TVC, Water/Sewer Hook-up, 30/50amp Hook-up; some include, fireplaces, patios with tables and chairs, landscaping, grills, stone outdoor kitchens, umbrellas, stone patios with covered or open seating, terraces, custom designed 400sf coach cottages Some lots have an option to include a bungalow at an additional cost per night
Clubhouse or Similar Facility	Private Clubhouse

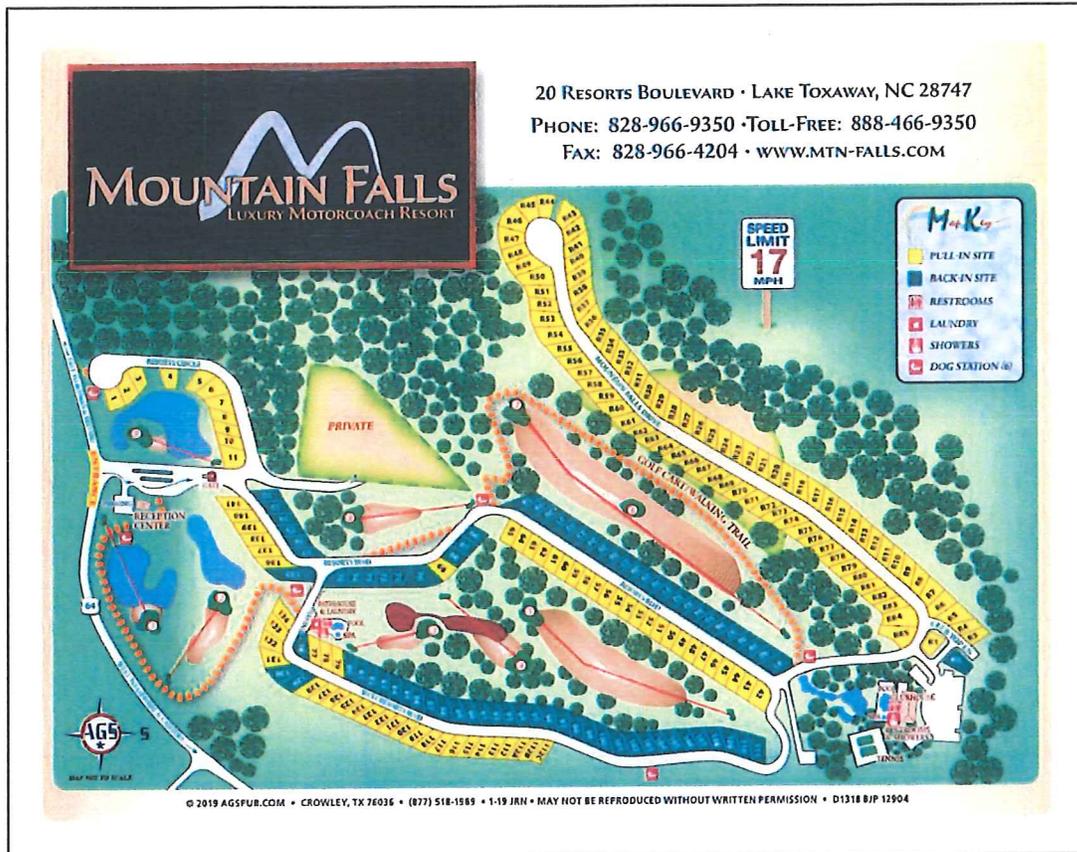


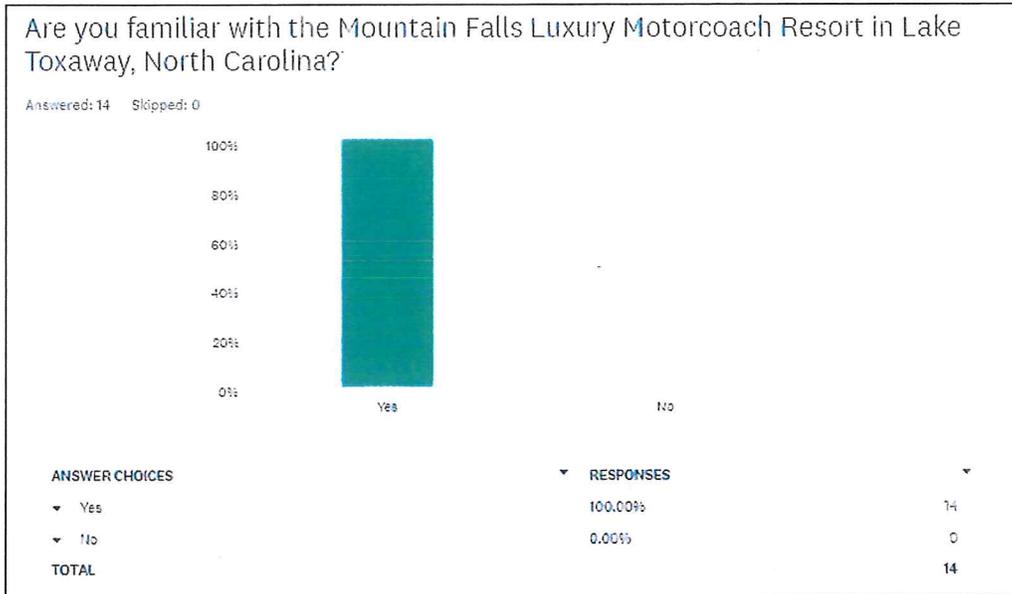
Figure 5: development site plan.



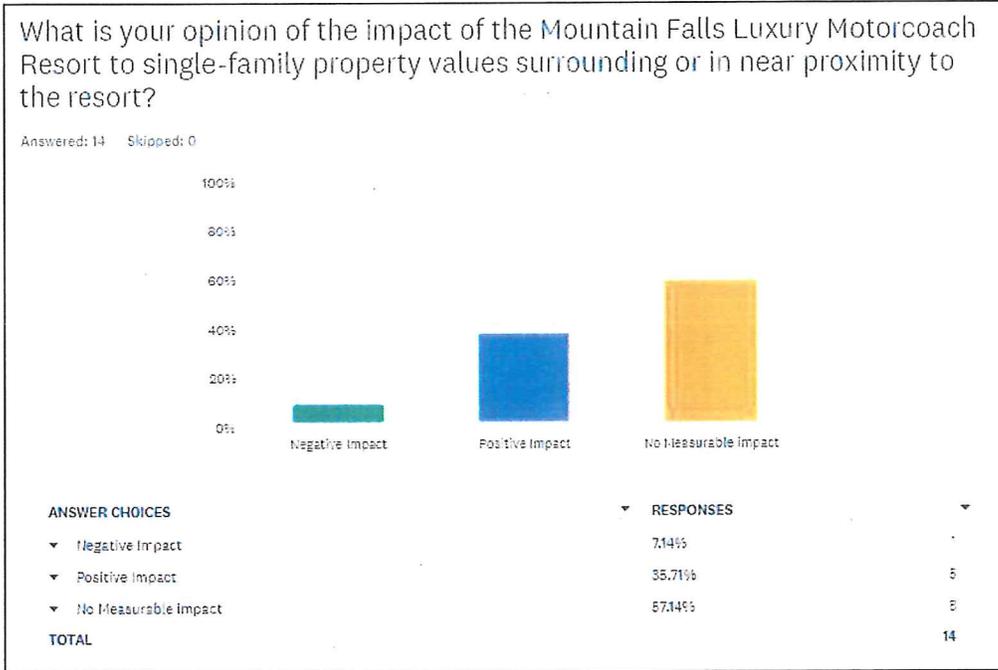
Figure 6: sample view of development.

There survey results are as follows:

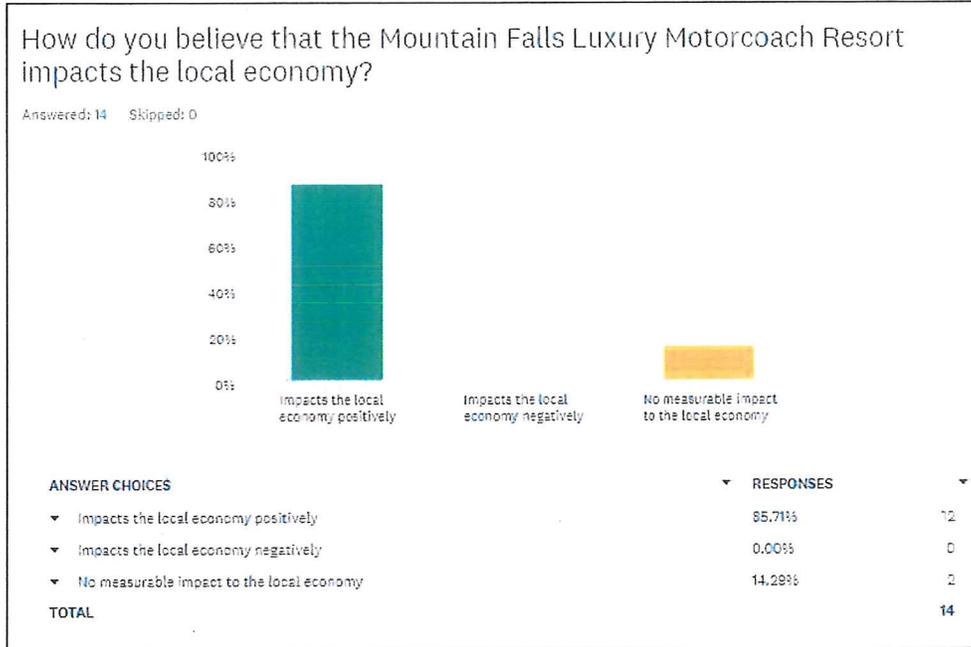
1. Are you familiar with the Mountain Falls Luxury Motorcoach Resort in Lake Toxaway, North Carolina?



2. What is your opinion of the impact of the Mountain Falls Luxury Motorcoach Resort to single-family property values surrounding or in near proximity to the resort?



3. How do you believe that the Mountain Falls Luxury Motorcoach Resort impacts the local economy?



Bella Terra of Gulf Shores Resort

The Bella Terra Gulf Shores Resort was selected for it is a vacation destination in a small populace area. The chart below summarizes the development.

Name of Resort	Bella Terra of Gulf Shores Resort
Location of Resort	Foley, AL
Population of immediate area	18,288
Size of Resort in Acres	40 acres
When the Resort Began	November 2008
Recreational Amenities	Fenced-in Dog Parks, Infinity-edge Pool, Jacuzzi & dry sauna, Center Piece Lake – fully stocked for “catch & release” fishing, Grand Clubhouse (6,000 sq ft) with outdoor fire pit & BBQ, Private movie theater that comfortably seats 14, Fully-appointed fitness center, Putting Green, Private bath houses with all-inclusive shower suites and restrooms
Site Amenities	<p>Standard Lot: 60-degree angle lots for ease of RV parking, concrete pad and built in patio</p> <p>Seating Lot: Same as standard but also includes seating</p> <p>Premium Lot: Same as standard and seating but Upgrade features include gazebos, outdoor entertainment centers with Bar-B-Qs, fire pits, storage units, and carriage houses. Each premium lot is unique.</p> <p>All lots will feature electrical, water, sewer, cable television, and internet access</p> <p>Oversized lots – some as large as 5,000 sq ft – professionally landscaped for natural privacy</p>
Clubhouse or Similar Facility	Grand Clubhouse



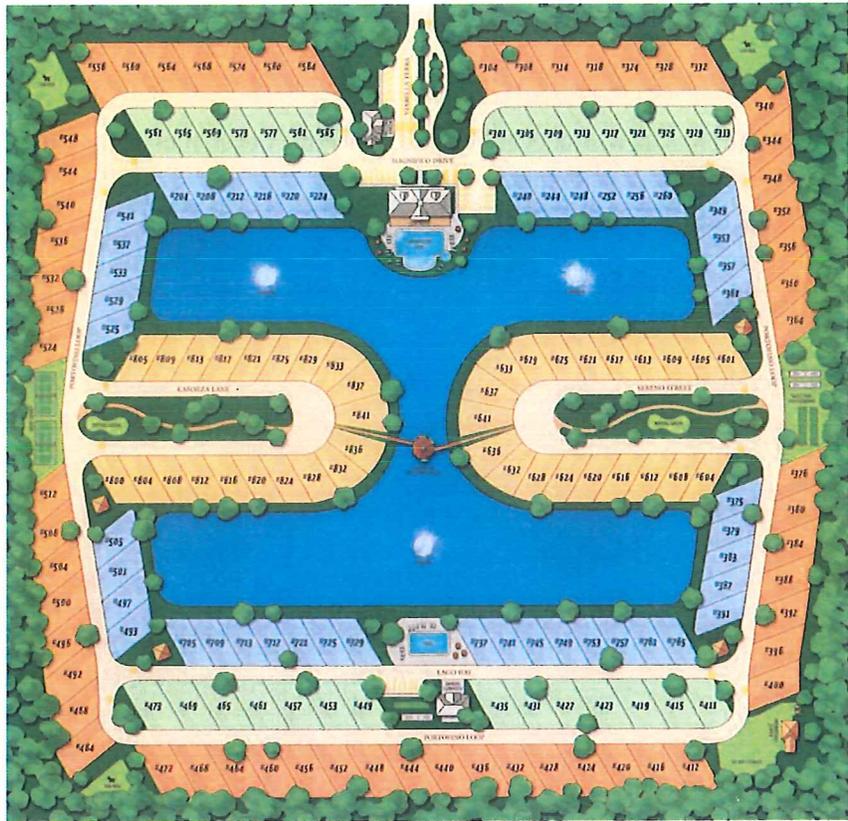


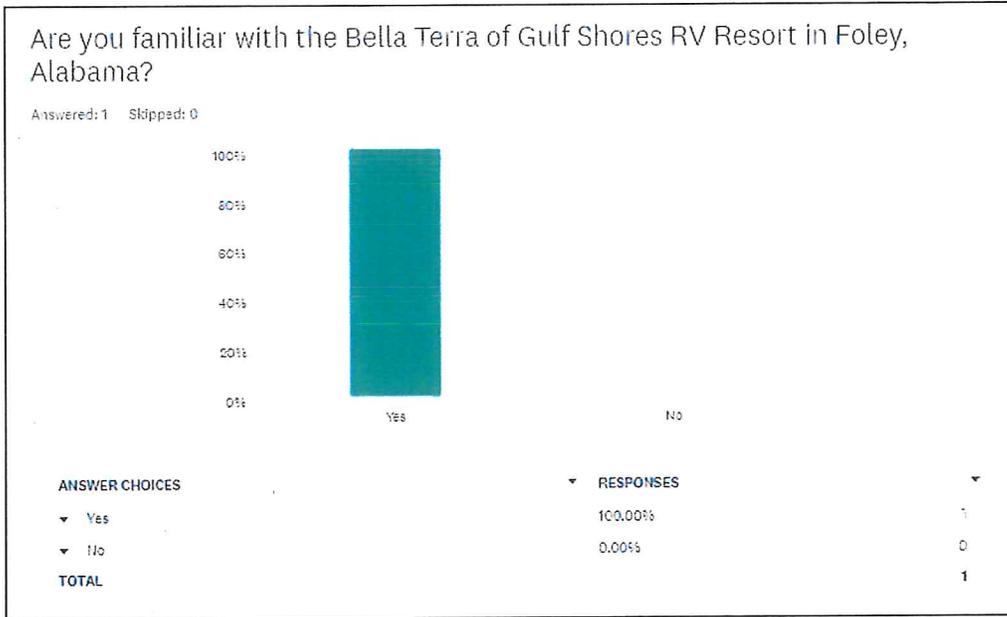
Figure 7: site plan of development.



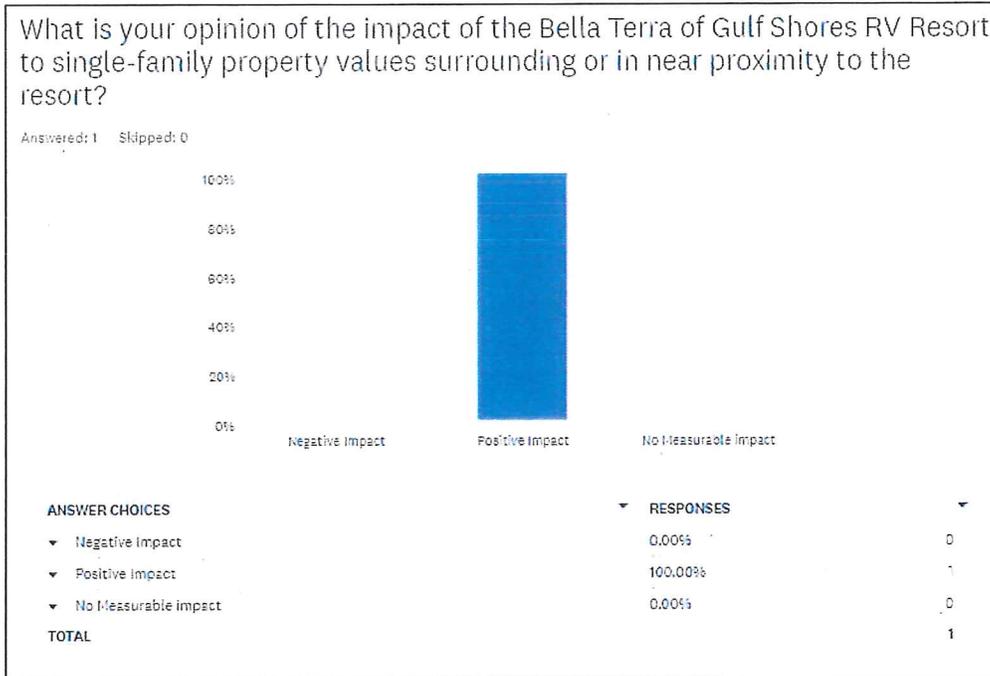
Figure 8: sample view of development.

There survey results are as follows:

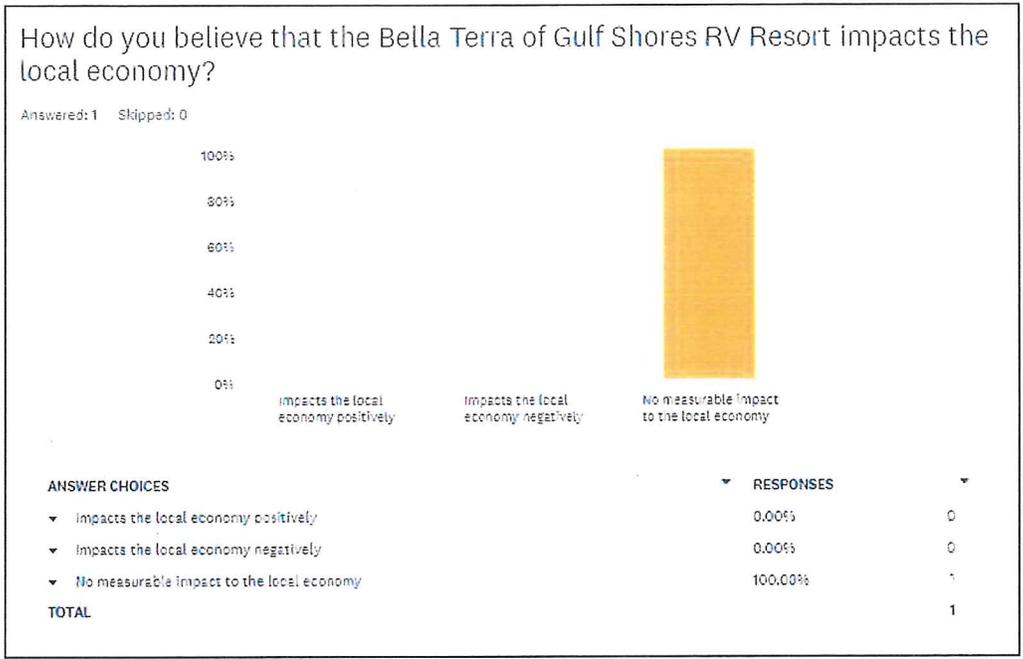
1. Are you familiar with the Bella Terra of Gulf Shores RV Resort in Foley, Alabama?



2. What is your opinion of the impact of the Bella Terra of Gulf Shores RV Resort to single-family property values surrounding or in near proximity to the resort?



3. How do you believe that the Bella Terra of Gulf Shores RV Resort impacts the local economy?



Bella Vista Coastal Resort

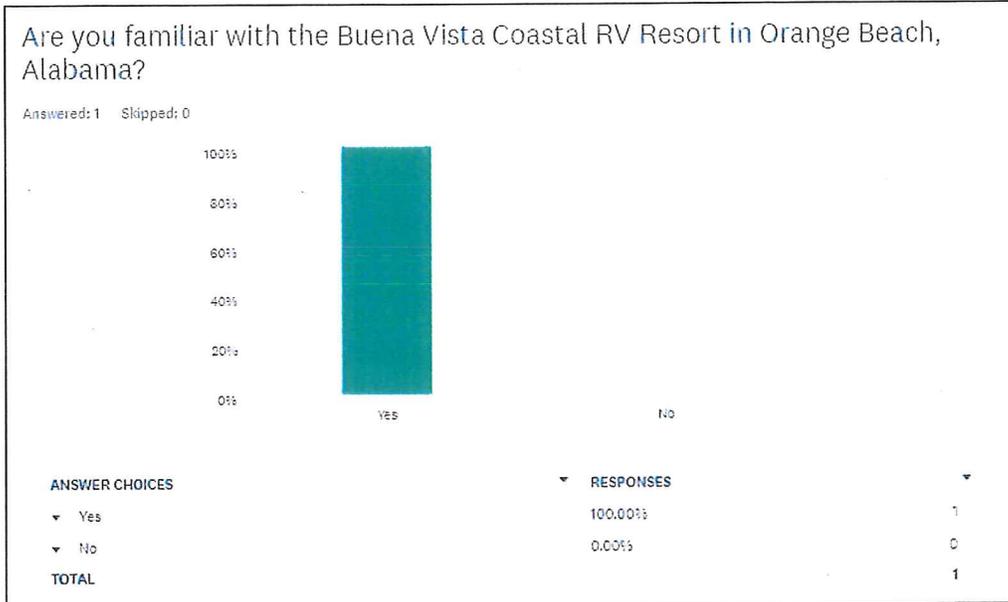
Name of Resort	Buena Vista Coastal RV Resort
Location of Resort	Orange Beach, AL
Population of immediate area	6,029
Size of Resort in Acres	
When the Resort Began	
Recreational Amenities	Dog park Indoor pool Hot tub Fitness center Outdoor resort style pool with lazy river Event center
Site Amenities	Full hookups with water and sewer Wi-Fi internet access Expansive sites averaging 4,350 square feet Brick Paved RV pads averaging 1,430 square feet
Clubhouse or Similar Facility	Event Center



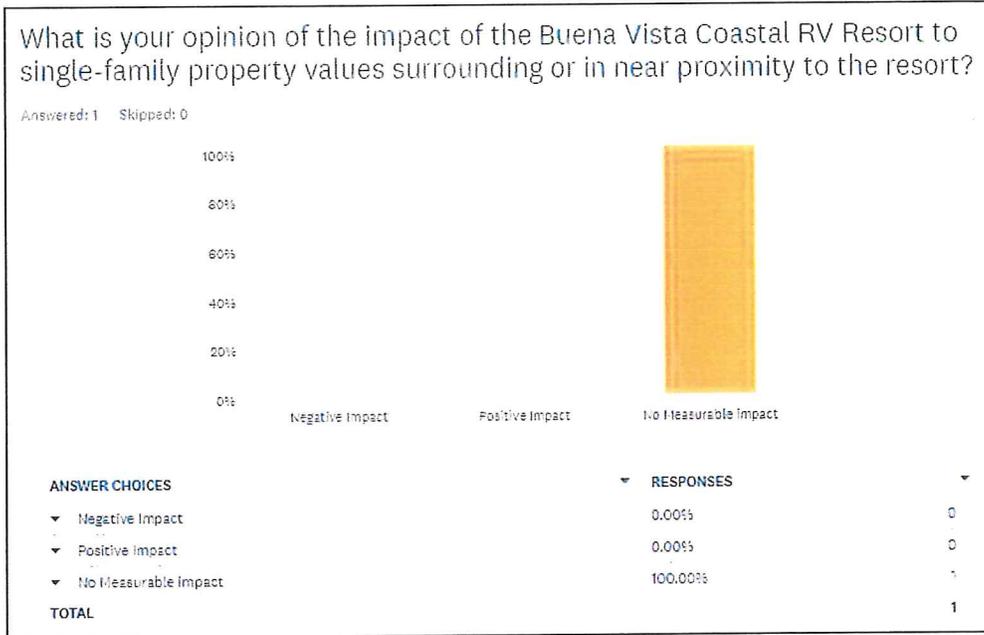


There survey results are as follows:

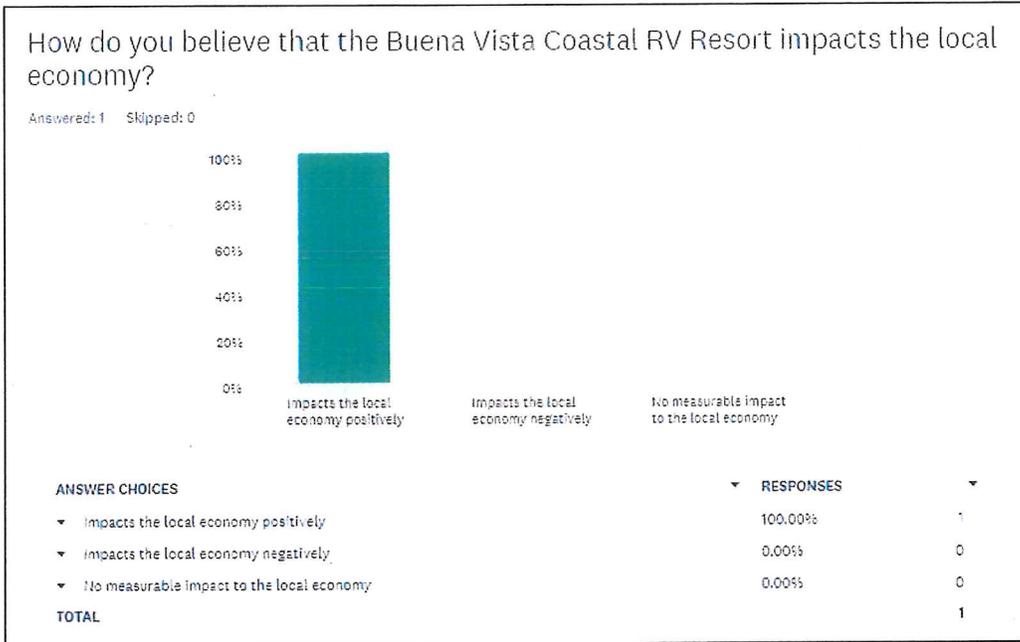
1. Are you familiar with the Buena Vista Costal RV Resort in Orange Beach, Alabama?



2. What is your opinion of the impact of the Buena Vista Costal RV Resort to single-family property values surrounding or in near proximity to the resort?

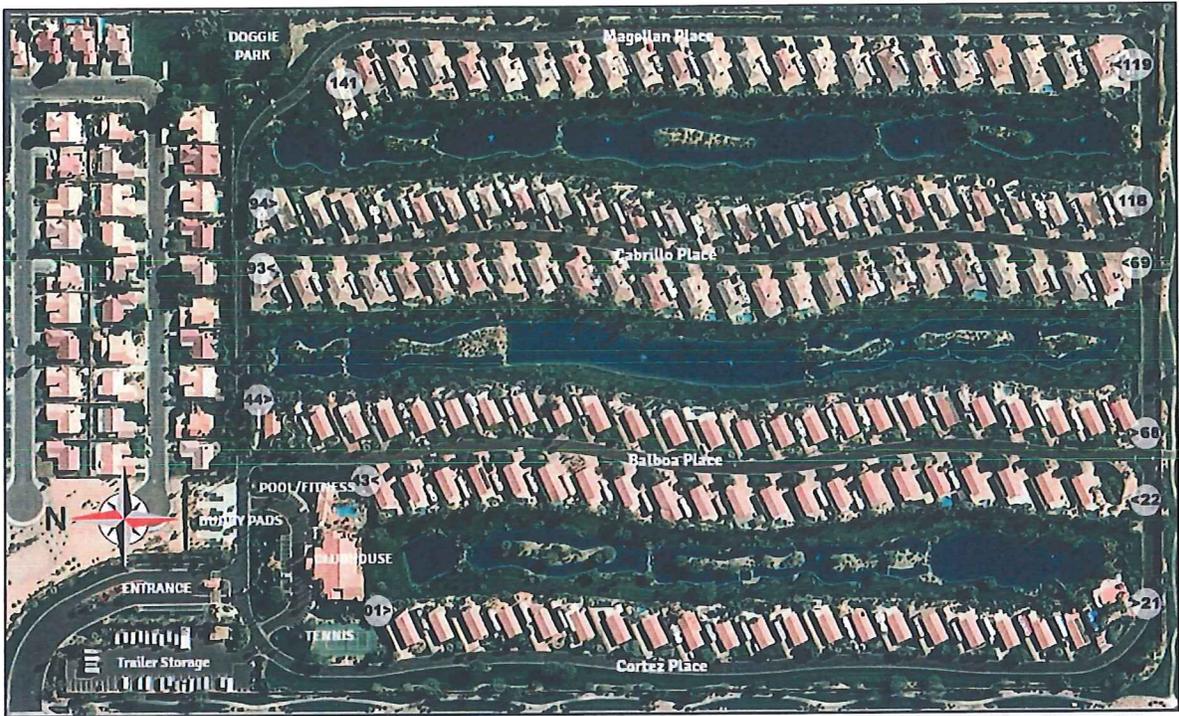


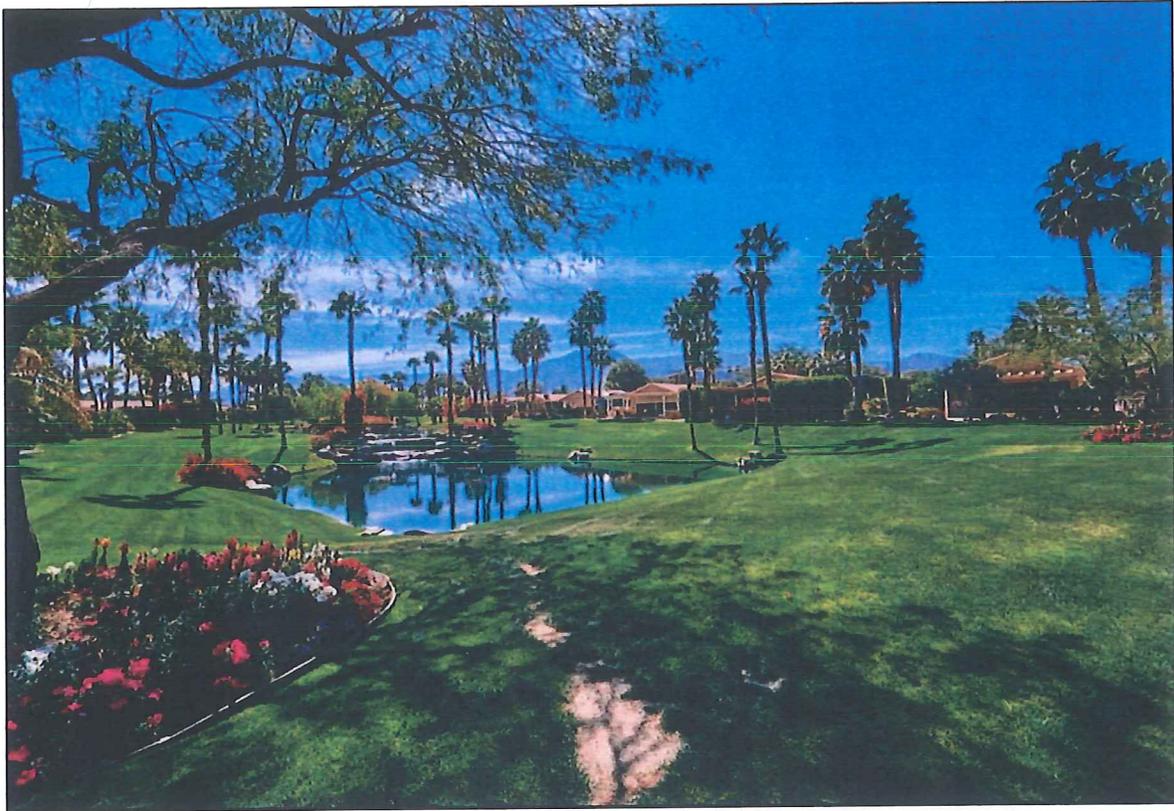
3. How do you believe that the Buena Vista Coastal RV Resort impacts the local economy?



Desert Shores Luxury Motorcoach RV Resort

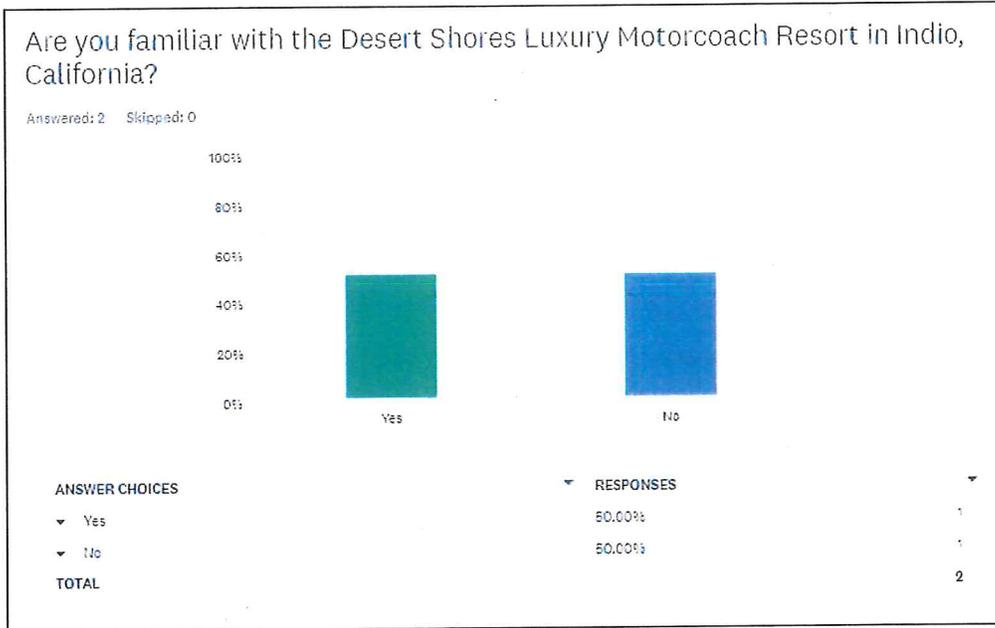
Name of Resort	Desert Shores Luxury Motorcoach RV Resort
Location of Resort	Indio, CA
Population of immediate area	89,783
Size of Resort in Acres	
When the Resort Began	
Recreational Amenities	<p>Club Amenities Include:</p> <p>10,000 Sq. Ft. Clubhouse + New Addition of Cozy Media/Library Stage with Dance Floor Community Pool & Spa New Fitness Center Tennis Doggie Park</p>
Site Amenities	<p>1,200 Sq. Ft. Villa including:</p> <p>Great Room/Kitchen Garage Bonus Room with Luxurious Bathroom Double or Single Vanity Sinks Large Shower Walk-In Closet, Wardrobe Slider or Cabinet Closet.</p> <p>Supersized Lakeside Lots with your own:</p> <p>Private Pool & Spa or Extended Patio Lot Covered Patios Lush Landscaping Mountain & Lake Views Super High Speed Fios available to each Villa</p>
Clubhouse or Similar Facility	Clubhouse



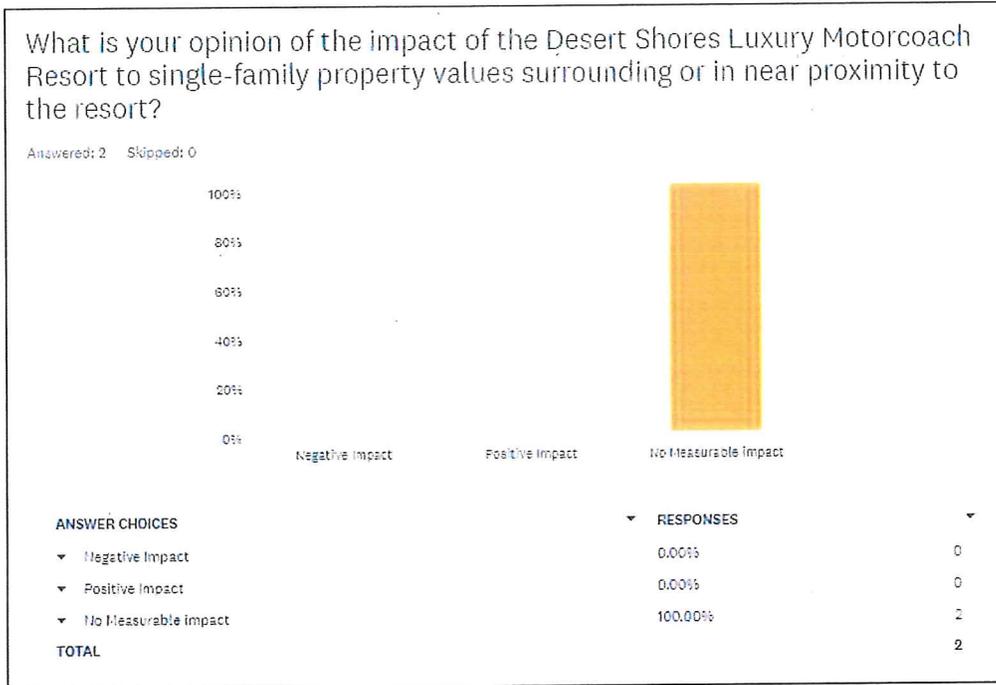


There survey results are as follows:

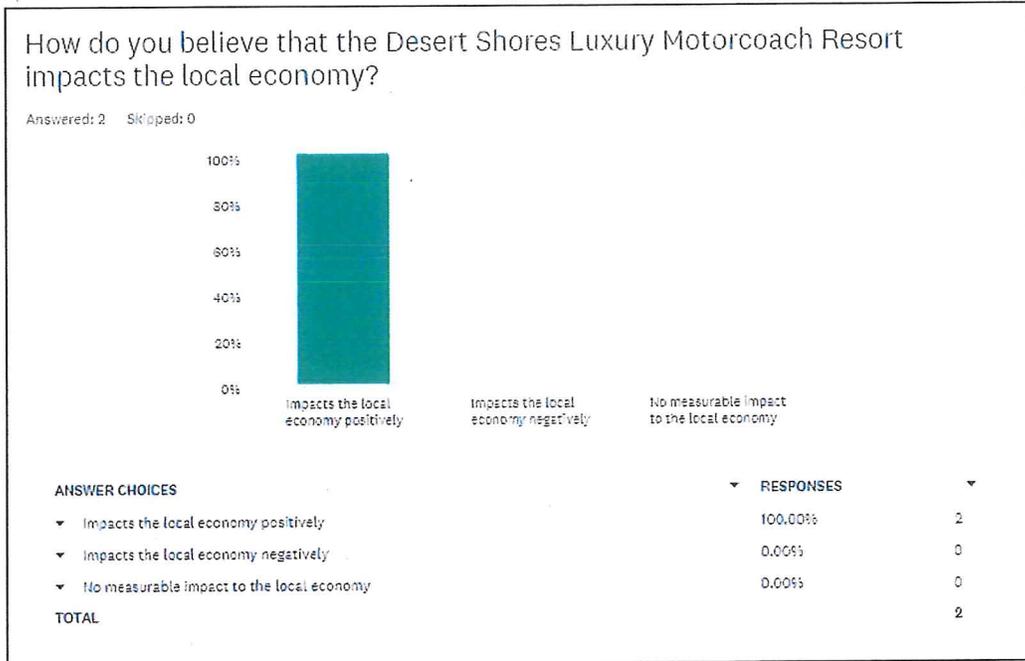
1. Are you familiar with the Desert Shores Luxury RV Motorcoach Resort in Indio, California?



2. What is your opinion of the impact of the Desert Shores Luxury RV Motorcoach Resort to single-family property values surrounding or in near proximity to the resort?



3. How do you believe that the Desert Shores Luxury RV Motorcoach Resort impacts the local economy?



Summary of Survey

The summary of the survey results is found the chart below.

Summary of Survey Results					
Q1.	Familiar with the local resort?	<i>yes</i>	<i>no</i>		
		32	1		
		97%	3%		
Q2.	Opinion of the impact of the local resort to single family property values surrounding or near the resort?	<i>negative impact</i>	<i>positive impact</i>	<i>no measurable impact</i>	<i>total respondents</i>
		2	11	20	33
		6%	33%	61%	
Q3.	Opinion of impact of local resort to the local economy?	<i>Impacts positively</i>	<i>impacts negatively</i>	<i>no measurable impact</i>	<i>total respondents</i>
		29	0	4	33
		88%	0%	12%	
Total Respondents					33

This survey indicates that overwhelmingly there is no negative impact of the comparable resort developments to single family property value or the local economy. Therefore, it is concluded that the Quarry Bluff Development will also have no measurable negative impact to surrounding single family property values, or the local economy.

Phone Surveys to Assessment Offices

We completed phone surveys with assessors or appraisers in the offices of the municipality that a luxury RV resort was located. After the phone survey we emailed the memorialized responses to the individuals for corrections or changes. Here are the responses.

Buena Vista Coastal RV Resort, Orange Beach, AL

- Spoke with Griffin Powell, City Planner Orange Beach, AL
 - RV Resort has not negatively impacted local “smart growth community” known for its smaller lots and walkable community
 - Located on Beach Rd. near beach homes
 - RV Resort with Class A, Super C and C+ high-end motor coaches. The high-end motor coaches made a difference with community acceptance of the RV Resort being developed
 - Not had a measurable impact to single family homes
 - It has impacted the economy in a positive way as it provides accommodations for people to enjoy the beach and brings people to town to use amenities
 - Community was not strongly opposed to the RV Park being developed especially when it became known the class of RVs which would be required

Desert Shores Luxury Motor Coach Resort, Indio, CA

- Spoke with Jon Arnett, Appraiser for Riverside County, California
 - Has a positive impact on the community
 - Has a positive impact as it is high-end/high-quality resort attracting affluent buyers
 - Is in the middle of a residential area and he has not heard anything negative about the resort
 - Is considered a good neighbor as the resort is properly maintained
 - Residents of the resort positively impact the economy by visiting area restaurants, stores, services, etc.
 - Is ranked in the Top 10 of RV Resorts in the US Today Report

Zion River Resort, Virgin, Utah

- Spoke with David Wright, Certified General Appraiser, Washington County Assessor’s Office
 - Is the nicest one in the area and is located near the Zion National State Park
 - Is in a high tourist area
 - Is not aware of a negative impact
 - There are other RV Parks in the area
 - The homes are not devalued
 - It has had a positive impact on the economy
- Spoke with Frankie Griffitts, Deputy Town Clerk



- Great asset to the town
 - Has brought in income
 - Beautiful resort
 - Has positive impact on the economy due to tourism
- Spoke with Gene Garate, Zoning Administrator Virgin, Utah
 - Resort is on a single road that goes to Zion National Park and is screened and isolated from single-family homes
 - Resort is in a mixed community of residential and business
 - RV Resort has not negatively impacted surrounding homes
 - RV Resort put in a sidewalk so people could walk to town to use amenities of the town. The town has been encouraged to plan for businesses that the residents of the RV Resort can frequent.
 - Land prices in the area have risen due to being close to Zion National State Park. People are visiting the park and using the RV Resort and eventually choosing to stay and purchase homes/land
 - Land prices have risen from \$100,000 an acre to \$130,000 an acre. Some listed for as high as \$300,000 an acre.
 - Zion National State Park is attracting people to the area
 - Planning and Zoning Administration sees the need for the Town of Virgin to explore business opportunities that will benefit the town's economy and tourism
 - The Town of Virgin is balancing the desire to develop the town with the desire to keep the surrounding natural beauty unchanged

In addition, the following page has the information on Zion River Resort. We did not complete a Realtors survey due to the limited number of Realtors in the area.

Zion River Resort RV Park & Campground

Name of Resort	Zion River Resort RV Park and Campground
Location of Resort	Virgin, UT
Population of immediate area	633
Size of Resort in Acres	
When the Resort Began	
Recreational Amenities	Dog Park Mining Sluice Playground Social Hall Swimming Pool & Spa
Site Amenities	Full hook-ups Shade tree Fire ring (with the exception of 4 sites) Picnic table Free Wi-Fi Cable television Pull thru sites are 60-70 feet long with a concrete pad and a grassy area Riverside Back-In sites average 40-50 feet deep, have gravel, and the Virgin River flowing behind them Standard Back-In sites range from 30-40 feet deep, have 30 amp electric, and are available with either a concrete pad & grass or gravel only
Clubhouse or Similar Facility	Social Hall

Welcome (Late Check-in)

(Please Come to Office in the Morning and Complete Check-in)
Sign up at the front desk to take our Fee-Based Shuttle to Zion National Park.

Quiet Hours
10 p.m.
to
7 a.m.

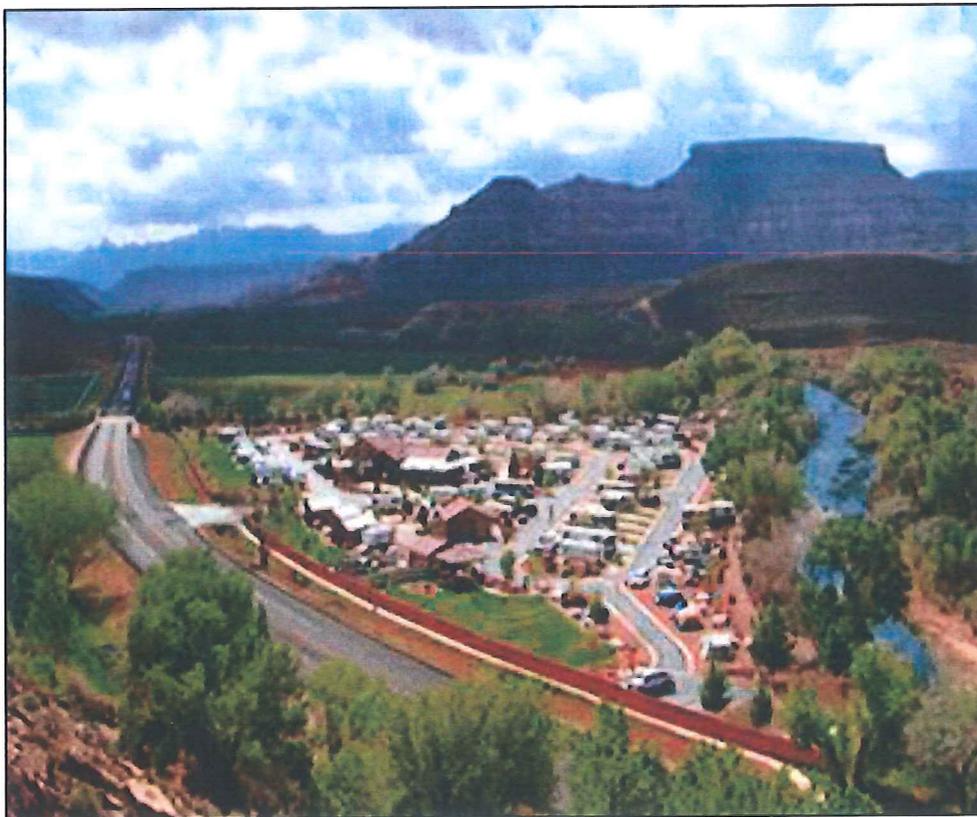
CAUTION!
LOOSE ROCK
Do not climb on
rock walls along
the river!

Check Out Time 12:00 Noon
Your Site # _____
Security Code # 2580*

Free WiFi
Connect to: Zion River Resort
Password: mothers19
Tech Support 435-674-0320 Ext. 3 8a-10p

Office Hours
8-10

We hope your stay at Zion River Resort RV Park & Campground has been a pleasant one. Please come back soon.



Stigma

We have investigated the possibility of the subject's development stigmatizing surrounding single family property values. We are well versed in stigma and its impact to property value being expert witnesses in this field having performed over four dozen impact studies relating to the stigma related to high voltage transmission lines, natural gas pipelines, oil pipelines, aviation easements, rails-to-trails easements, wind farms, solar farms, and contaminated property and testifying to their impacts before condemnation commissioners, state and federal courts, and governmental bodies including the State of Wisconsin joint senate and house committee hearings.

As it relates to real estate property value, stigma is defined as "An adverse public perception regarding a property that exacts a penalty on the marketability of the property and may also result in a diminution on value."⁴ Stigma can be temporary, as in a local house painted an ugly color, or long term as in high voltage transmission lines.

The Realtor survey indicated that the overwhelmingly majority of the Realtors believed that a luxury RV resort, such as the subject's development, does not have a negative impact to single family property value (93%, see Summary of Survey Results). This survey used properties that have been in existence for a period of time to develop a measurable response history. There were no published studies on the impact of such RV resort developments found, so there is no published support for long term stigma due to a comparable RV resort development.

There is such a thing as a temporary stigma. This stigma has a brief life and is typically a result of localized negative publicity. Our review of the published news stories about this development could have created negative publicity regarding the development. Additionally, it has been reported that there are numerous road signs (such as the one pictured to the left) that have been placed in near proximity of the subject's development. Such local negative publicity will result in stigmatizing property value



Figure 9: road sign found along Bay Shore Drive near the subject's proposed development.

due to a perceived undesirable influence. However, it is our opinion that this stigma is a temporal stigma and will fade away once the development has been constructed.

4 The Dictionary of Real Estate Appraisal, 5th edition. Appraisal Institute, Chicago, IL. Page 187.

Therefore, we conclude that the subject's development may have a temporal stigma impacting property values and their desirability, however this stigma will fade away on the completion of the subject's development having no measurable impact on surrounding single family property values or the local economy.



Qualifications of Kurt C. Kielisch

Work Experience

As of January 2020, I have 36 years of experience in the appraisal field. During this tenure I have completed over 8,200 valuations totaling \$13+ billion dollars.

As a practitioner, I entered the appraisal industry in 1984 employed by ValuPruf Valuation Service, Milwaukee, Wisconsin. Appraisal assignments through the years have included the following: single-family residential, multi-family residential, dairy farms, crop farms, horse ranches, cattle ranches, commercial properties, special use properties, tax assessment, ocean-front properties and islands, stigmatized properties, eminent domain, utility easements, valuation consulting, litigation support work and impact studies. I have provided appraisal services for properties located in Alaska, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Pennsylvania, South Dakota, South Carolina, Virginia, Wisconsin, and Wyoming.

As a communicator, I have authored the book: *The Listing Appraisal Program* (ATI press, 1996) and three magazine articles: *Dead Body Appraisers* (The Appraisal Buzz, October 3, 2002), *Expert Testimony and Reports: Is Change Good?* (Working R.E. Magazine, February 2002), and *Rails to Trails Property Rights* (Right of Way Magazine, Nov/Dec 2012). I have been engaged in valuation related research projects on the impacts of high voltage transmission lines, natural gas pipelines, oil pipelines, wind farms and solar farms on property value. Related to the impact on property value of utility projects, wind and solar farms, I have given testimony before the Wisconsin Senate Committee, Wisconsin Public Service Commission, Wisconsin Wind Farm Siting Council, Illinois Wind Farm Siting Councils, Missouri Public Service Commission and the Wyoming Industrial Committee. Our research has been utilized by other appraisers, experts and property owners when arguing before government committees, public service counsels, courts and in reports.

As an expert witness, I have been an approved expert in Wisconsin, Kansas, North Dakota, South Dakota and Virginia state courts, commissioner hearings in Wisconsin and Minnesota, mediation in Indiana and Illinois, and Federal Courts in Wisconsin, Kansas and Ohio. In the Wisconsin Supreme Court case of Spiegelberg vs. State of Wisconsin DOT (2004AP3384), I was the principle appraiser for Ms. Spiegelberg. This hearing resulted in a majority decision in favor of my client making a landmark decision relating to the proper valuation methodology when appraising property involved in eminent domain to obtain just compensation. In the Wisconsin Supreme Court decision of Waller vs. American Transmission Corporation, LLC (2012AP805 & 2012AP840) the high court overwhelming found in favor of my client and made a landmark decision involving relocation rights and an uneconomic remnant. I was the principle appraiser and expert witness for the Wallers.

As an educator, I taught appraisal pre-licensing and continuing education courses throughout a multi-state area from 1994 to 2000. During this time, I authored course curriculum for seven pre-licensing courses and twelve continuing education courses as well as the creation of a two-year professional appraiser training program. Since 2000, I have given presentations for professional continuing education (IRWA – Badger Chapter, The American Law Institute and CLE Annual Eminent Domain Conferences (2013, 2014, 2016), IRWA Annual Conference (2013) and for general information at many public meetings.

Academics

M.A. Education. Regent University, Virginia Beach, Virginia. This degree concentrated on the adult learner and state-of-the-art communication technology to enhance learning. The focus was on the adult learner.

B.A. Business Administration (Economics Minor). Lakeland College, Sheboygan, Wisconsin.



B.A. Biology (Natural Sciences Minor). Silver Lake College, Manitowoc, Wisconsin.

Certifications/Designations/Organizations

Certified General Real Property Appraiser State of Illinois. License #553.002453 (Expires 9/30/2021)

Certified General Appraiser State of South Dakota. License #1443CG (Expires 9/30/2020).

Certified General Appraiser State Pennsylvania. License #GA004389 (Expires 6/30/2021).

Certified General Appraiser State of Virginia. License #016559 (Expires 3/31/2021).

Certified General Appraiser State of Wisconsin. License #1097-010 (Expires 12/14/2021).

Temporary Certified General Licenses. Colorado, Illinois, Indiana, Iowa, Kansas, Nebraska, Mississippi, Missouri and Ohio.

Past Certified General Appraisal Licenses. Indiana, Iowa, Kansas, Michigan, Minnesota, North Dakota, Ohio, and Wyoming.

ASA (real property) Urban Designated Member. American Society of Appraisers (ASA).

SR/WA (Senior Member) Designated Member. International Right-of-Way Association.

R/W-AC (Appraisal Certified Member) Designated Member. International Right-of-Way Association.

IFAS (Senior Member) Designated Member (designation now retired). National Association of Independent Fee Appraisers (now merged with the ASA).

Review Appraiser (past). Department of Regulation and Licensing, State of Wisconsin (contract position).

Associate Member. Appraisal Institute (AI).

Approved Contract Appraiser. Wisconsin Department of Natural Resources (DNR).

REALTOR member. Realtors Association of Northeast Wisconsin and National Association of Realtors.

Approved R.E. Appraisal Instructor (past). Virginia, Maryland, Indiana, Illinois, Minnesota, and Wisconsin.

Assistant Editor. ASA-Real Property quarterly newsletter (2012-2014).

Faculty. Eminent Domain and Land Valuation Litigation, The American Law Institute – CLE: Miami Beach, FL (January 2013) and New Orleans, LA (January 2014). Eminent Domain Impact of Political & Economic Forces, Eminent Domain Institute CLE International (September 2013), Cleveland, Ohio. Eminent Domain: Current & Emerging Issues, Eminent Domain Institute-CLE International (September 2016), Las Vegas, NV.

Seminar Instructor. International Right-of-Way Annual Conference (2013), Charleston, West Virginia (topic Valuation of Rails to Trails Corridors); International Right-of-Way Appraisal Day Seminar (May 13, 2014) Ohio IRWA Chapter 13 (topic Valuation of Utility Corridors).

Appraisal/Real Estate Courses (29 courses, 572hrs)

Fundamentals of Real Property Appraisal (40hrs). IAAO, University of Virginia, Charlottesville, VA.

Income Approach to Valuation (40hrs). IAAO. University of Virginia, Charlottesville, VA.

Real Estate Appraisal (45hrs). Alpha College of Real Estate [Instructor].

Uniform Standards of Professional Appraisal Practice (15hrs). Alpha College of Real Estate [Instructor].

Appraising the Small Income Residential Property (15hrs). Alpha College of Real Estate [Instructor].

Advanced Income Appraisal I (30hrs). Alpha College of Real Estate [Instructor].

Advanced Income Appraisal II (30hrs). Alpha College of Real Estate [Instructor].

Residential Construction, Design & Systems (20hrs). Appraisal Training Institute [Instructor].

Residential Cost Approach & Depreciation Methods (20hrs). Appraisal Training Institute [Instructor].

Residential Market Approach & Extraction Methods (20hrs). Appraisal Training Institute [Instructor].

Computer Applications in Appraisal Report Writing (15hrs). Appraisal Training Institute [Instructor].

Completing the URAR in Compliance with FNMA Guidelines (15hrs). Appraisal Training Institute [Instructor].

The Residential Appraisal Process (20hrs). Appraisal Training Institute [Instructor].

Residential Appraisal Practicum (40hrs). Appraisal Training Institute [Instructor].

Pipeline ROW Agent's Development Program: Course 215 (16hrs). International Right-of-Way Association.

Eminent Domain Law Basics for Right-of-Way Professionals: Course 803 (16hrs). International Right-of-Way.



Financial Analysis of Income Properties (16hrs). National Association of Independent Fee Appraisers (NAIFA).
 Appraisal of Partial Acquisition: Course 401 (40hrs). International Right-of-Way Association.
 National Uniform Standards of Professional Appraisal Practice (USPAP): Course 2005 (15hrs). NAIFA.
 Easement Valuation: Course 403 (8hrs). International Right-of-Way Association.
 Principles of Real Estate Negotiation: Course 200 (16hrs). International Right-of-Way Association.
 Bargaining Negotiations: Course 205 (16hrs). International Right-of-Way Association.
 Principles of Real Estate Appraisal: Course 400 (exam). International Right-of-Way Association.
 Principles of Real Estate Law: Course 800 (exam). International Right-of-Way Association.
 Principles of Real Estate Engineering: Course 900 (exam). International Right-of-Way Association.
 SR/WA Comprehensive Exam: International Right-of-Way Association.
 Course 420: Business Practices & Ethics (8hrs). Appraisal Institute.
 United States Land Titles (16hrs). International Right-of-Way Association.
 Quantitative Analysis (40hrs). Appraisal Institute.

Appraisal/Real Estate Seminars (59 courses, 304.9hrs)

Real Estate Taxation (7hrs). University of Wisconsin: Continuing Education Division.
 Review Appraising as the Supervising Appraiser (3hrs). Appraisal Training Institute [Instructor].
 Legal Ramifications of Environmental Laws (3hrs). International Association of Assessing Officers (IAAO).
 Virginia State Mandatory Continuing Education (4hrs). Appraisal Training Institute [Instructor].
 Appraising the Small Income Property (8hrs). Appraisal Training Institute [Instructor].
 Listing Appraisals (7hrs). Appraisal Training Institute [Instructor].
 Marshall & Swift Residential Cost Approach: Sq. Ft. Method, (7hrs). Western Illinois University [Instructor].
 Marshall & Swift Residential Cost Approach: Segregated Method, (7hrs). Western Illinois University [instars].
 Residential Construction, Design and Systems (7hrs). Appraisal Training Institute [Instructor].
 EMF and Its Impact on Real Estate (4hrs). Appraisal Training Institute [Instructor].
 Easements and Their Effect on Real Estate Value (7hrs). Appraisal Training Institute [Instructor].
 Exploratory Data Analysis: A Practical Guide for Appraisers (3hrs). Appraisal Institute.
 Residential Statistical Modeling (3hrs). Appraisal Institute.
 Valuation Modeling: A Case Study (3hrs). Appraisal Institute.
 Real Estate Valuation Cycles (3hrs). Appraisal Institute.
 Subdivision Analysis (3hrs). Appraisal Institute.
 Appraisal of Nursing Facilities (7hrs). Appraisal Institute.
 National Standards of Professional Appraisal Practice: Course 400 (7hrs). Appraisal Institute.
 Land Valuation Adjustment Procedures (7hrs). Appraisal Institute.
 Valuation of Detrimental Conditions in Real Estate (7hrs). Appraisal Institute.
 Appraising Conservation Easements (7hrs). Gathering Waters Conservancy.
 ROW Acquisition in an Environment of Power Demand Growth & Legislative Mandates (12hrs). IRWA - Minnesota.
 Analyzing Distressed Real Estate (4hrs). Appraisal Institute.
 7 Hour National USPAP Course for 2008-2009 (7hrs). International Right-of-Way Association.
 6th Annual Condemnation Appraisal Symposium (6hrs). Appraisal Institute.
 Contemporary Issues in Condemnation Appraisal (4hrs). Appraisal Institute.
 7-Hour National USPAP course for 2010 (7hrs). International Right-of-Way Association.
 Real Estate Finance Statistics and Valuation Modeling (14hrs). Appraisal Institute.
 Michigan Law Update (2hrs): McKissock.
 Local Public Agency Real Estate Seminar 2010 (6hrs). Wisconsin Department of Transportation.
 8th Annual Condemnation Appraisal Symposium (6hrs). Appraisal Institute.
 Golf & Hotel Valuation (3.4hrs). International Right-of-Way Association.
 7-Hour National USPAP course for 2012 (7hrs). International Right-of-Way Association.
 Statistics, Modeling, and Finance (14hrs). McKissock.
 Eminent Domain Issues in the Pipeline Industry: IRWA 2013 Conference (1.5hrs).



Pipelines: Abandoned vs. Idle/Consequences of Not Maintaining Your Easements or ROW. IRWA 2013 Conference (1.5hrs).
 The Right of Reversion, "Who's on First." IRWA 2013 Conference (1.5hrs).
 Ad Valorem Tax Consultation (2hrs). McKissock.
 Appraisal Applications of Regression Analysis (7hrs). McKissock.
 Valuation of Avigation Easements (3hrs). ASA Wisconsin Chapter (Instructor)
 11th Annual Condemnation Symposium. Appraisal Institute – Wisconsin Chapter. (6hrs)
 7-Hour National USPAP course for 2014-2015 (7hrs). Appraisal Institute
 Uniform Standards for Federal Land Acquisitions – Appraisal Institute – Florida Chapter (16hrs)
 A Review of Disciplinary Cases: How to Avoid a Visit with the Licensing Board (3hrs), McKissock.
 Eminent Domain Current & Emerging Issues- Eminent Domain Institute (2016), CLE International – Las Vegas (12hrs)
 13th Annual Condemnation Symposium. Appraisal Institute – Wisconsin Chapter. (6hrs)
 Marcellus Shale: Effects of Energy Resource Operations on Residential Property Value (3hrs). McKissock.
 7-Hour National USPAP course for 2016-2017 (7hrs). McKissock.
 IRWA Aviation Easements Seminar (2hrs). International Right-of-Way Association.
 Review of Disciplinary Cases (3hrs). McKissock.
 The Dirty Dozen (3hrs). McKissock
 Attacking & Defending While Staying out of Trouble (2hrs). American Society of Appraisers.
 Introduction to Expert Witness Testimony for Appraisers (4hrs). McKissock.
 Pennsylvania State Mandated Law for Appraisers (2hrs). State Board of Certified Real Estate Appraisers.
 15th Annual Condemnation Symposium. Appraisal Institute – Wisconsin Chapter. (6hrs)
 Evaluations, Desktops and other Limited Scope Appraisals (4hrs). McKissock.
 7-Hour National USPAP course for 2018-2019 (7hrs). McKissock.
 16th Annual Condemnation Symposium. Appraisal Institute – Wisconsin Chapter. (6hrs)
 REALTOR Code of Ethics (0hrs). The National Association of Realtors.



EXPLANATION OF DESIGNATIONS

ASA-Urban Real Property: The ASA designation is the senior designation granted by the American Society of Appraisers, which is the only multi-discipline international appraisal association in America. The ASA-Urban designation requires the passing of five advanced level commercial appraisal courses, the passing of a comprehensive exam, a passing grade on a demonstration narrative report, 5 years full-time appraisal experience, a Certified General appraisal license and the recommendation of the local and national membership committee. All ASA designated members must adhere to the Code of Ethics of the Association and keep up-to-date with continuing education (Source: www.appraisers.org).

IFAS (now retired): For this senior level designation from the International Fee Appraisal Association the appraiser must meet the requirements for the Member [IFA], successfully pass the Senior Member Examination, score a passing grade on a narrative demonstration report on an income-producing property conforming to prescribed guidelines and meet educational and experience requirements as outlined by the Association. In addition, the designation requires a minimum of 4 years appraisal experience in commercial type properties, a State Certified General Appraisal license, successful completion of over 200-hours of appraisal course work, completion of the current USPAP course, a college degree and the recommendation of the appraiser's peers and local chapter (Source: www.naifa.com). All IFAS members must adhere to the Code of Ethics of the Association and keep up-to-date with continuing education.

Senior Right of Way (SR/WA): This is the most prestigious professional designation granted by the International Right-of-Way Association to members who have achieved professional status through experience, education, and examination. The SR/WA designation requires training and examination in seven major right-of-way disciplines. The SR/WA designation says, "I have more than five years of right-of-way experience, plus I have had formal training in a wide variety of right-of-way areas." The SR/WA professional may be a specialist in one area such as appraisal, engineering, or law, but also must be familiar with the other seven disciplines associated with the right-of-way profession. Additional requirements for the SR/WA designation include: a bachelor's degree, 5 years right-of-way experience, successful completion of four core courses and four elective courses, passing the all-day comprehensive exam and recommendation from the designee's peers and local chapter. The SR/WA designation is the only designation reflecting evidence of professional attainment in the right-of-way field (Source: www.irwaonline.org). All SR/WA members must adhere to the Code of Ethics of the Association and keep up-to-date with continuing education.

Right of Way Appraisal Certified (R/W-AC): The Right of Way (R/W) Certification is an esteemed professional designation granted to members who have achieved professional status through experience, education, and examination in a specific discipline. Earning this certification demonstrates an unparalleled achievement in a single discipline and reinforces a standard of excellence in services provided to the public (Source: www.irwaonline.org). All R/W-AC members must adhere to the Code of Ethics of the Association and keep up-to-date with continuing education.



