Certified Home Performance:

Assessing the Market Impacts of Third Party Certification on Residential Properties

Ann Griffin, Earth Advantage Institute

with
Ben Kaufman, GreenWorks Realty and
Sterling Hamilton, Hamilton Investments, LLC

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I. Acknowledgements

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II. Abstract

The report presents an analysis of the market performance of third-party certified sustainable residential properties in the Portland and Seattle metropolitan areas. In each location, a sample of third-party certified homes was selected and comparable homes were found. The author documents that certified homes in the Seattle metro area sold at a price premium of 9.6% when compared to noncertified counterparts, based on a sample of 68 certified homes. In the Portland metro area, certified homes sold at a price premium ranging between 3% and 5%. In addition, the certified homes stayed on the market for 18 days less than noncertified homes. These results are based on a sample of 92 certified homes and comparable properties approved by a project appraiser.

This investigative research effort also includes surveys and interviews with the builders of third-party certified homes and their residents. The author discusses the inherent limitations of current valuation practices for homes with sustainable features. Finally, the report includes a synopsis of related research on the relationship between marketing initiatives and the sale price of third-party certified properties.

III. Executive Summary

Certified homes are worth more. This report explains the basis for this statement, using an analysis of third-party certified sustainable homes in the Seattle and Portland metropolitan areas. Moreover, the report shows that there are several important issues inherent in this seemingly simple statement. The report concludes with recommendations to further expand the study of the market performance of third-party certified sustainable homes. It supports heightened collaboration among residential appraisers, real estate brokers, homebuilders, and sustainable building advocates to improve a common understanding of the multiple issues involved in home valuation and communicating the results to a larger audience.

How one defines a building's value may vary. Market sales information is based on standard approaches to building appraisal that do not account for performance-based cost savings. Further, standard approaches do not consider resident health or broader environmental benefits that result from the measures required to achieve third-party sustainable certification. Public understanding of general sustainability concepts has certainly improved in the past 5 years. At the same time, more homebuilders recognize the potential market advantages of building certified homes. However, for many consumers and some homebuilders, the connection between quality home construction and sustainability is not always understood.

<u>Comparable Property Study Results</u>
Earth Advantage Institute selected Taylor Watkins of Watkins & Associates in Portland to serve as the project appraiser for the comparable property analysis. Watkins recommended the parameters for defining a comparable home and reviewed suggested comparables for their suitability. The parameters used to identify a comparable home are listed in the study. The goal was to test the hypothesis that certified homes would demonstrate improved market performance in terms of sales price and time on market than comparable, noncertified homes.

In Portland, a sample of 92 certified homes and 340 comparable homes was compiled. The certified homes were built between 2000 and 2008, with a majority sold in 2006 and 2007. Most certified homes were matched with 3 or 4 comparables. Certified homes were geographically distributed throughout the metro area. The Portland study found that:

- Certified homes sold 18 days faster than noncertified homes.

- Certified homes sold for 3% to 5% more than noncertified homes. In a statistical analysis with a 95% level of confidence, the overall price difference was found to be 4.2%.

In Seattle, a sample of 68 certified homes and 207 comparable residences was determined. Like the Portland sample, most certified homes were matched with 3 or 4 comparable homes. The Seattle analysis also documented superior market performance in terms of the sales price achieved.

- The expected percentage change for sales price was found to be 9.6% more for the third-party sustainable certified homes.

- The certified homes did not sell faster, and stayed on the market an average of 5 days longer (or 40% more time on the market).

These findings are positive factors that will work to the benefit of sustainable home builders and consumers, providing welcome news during a time of reduced home market activity.

Consumer Input

The same issues that determine how much someone is willing to pay for a house - location, amenities, and size – are involved whether one is shopping for a certified sustainable home or not. However, residents living in third-party certified homes should also understand the sustainable features and the positive impact of those features on the longevity of their homes. The study recommends public education so that current and future residents of certified homes will have a greater understanding of those benefits.

Earth Advantage Institute, Master Builders Association of Pierce County, and Olympia Master Builders conducted surveys of residents living in either Earth Advantage® or Built Green® certified homes. Residents value the sustainable attributes of their homes, particularly energy efficiency and improved indoor air quality. Of those surveyed, 90% reported that they would choose a certified versus a noncertified home for their next residence if all other factors were equal. Collectively, the residents also agreed that they would pay more in order to continue to live in a sustainable home. Eighty percent of the survey respondents living in a third-party certified home reported that they would pay up to 5% more in order to move into a home that had been certified as sustainable versus one that had not.

Self-certified and third-party certification. Consumer surveys were taken from residents living in both self-certified and third-party certified homes. In many respects, their answers were similar. Both groups agreed that energy efficiency and indoor air quality were extremely important. In one area of difference, residents of self-certified homes reported that sustainable certification

was less of an influencing factor in their decisions to buy a particular home than did residents of third-party certified homes. (Thirty-one percent of residents in self-certified versus 61% of residents in third-party certified homes reported that the certification was an influence in their decisions to buy their homes). Additionally, 56% of third-party certified home residents reported that their utility bills had been lowered by moving into a certified home versus 46% of noncertified home residents.

Homebuilder Input

Thirty-five builders responded to an online survey and an additional 10 Earth Advantage homebuilders provided in-person interviews. The home builders answered questions regarding any costs associated with building a third-party sustainable certified home and trends in those costs over the past five years. They were also asked to assess current appraisal methodologies.

Home builders responded that awareness for sustainable features in a home had grown sigificantly over the past five years. Despite this, however, demand for third-party certified sustainable homes had not directly increased as a result.

The survey asked if there were added costs associated with building a sustainable residence. The majority of the responsents – 74% - indicated that building a home to certification standards was more expensive than building a home to code. However, they also noted that the change in cost is coming down. (See Table 5.4.) The increase in construction costs was observed to be between 5 and 10%. As builders become more experienced with the specifications of a given program, and as their networks of sub-contractors and other knowledgeable professionals become more extensive, they have seen some of these cost increases go down. Home builders join the call for increased public awareness related to sustainable building practices and increased collaboration among sustainable building advocages

Recommendations for Action

The interviews and surveys conducted for this research clearly point to a number of recommended actions. The following list is further detailed in the body of the report:

1) Increase tracking of third-party certified sustainable homes
2) Conduct property comparable work in other areas of Oregon and Washington
3) Develop and support professional training opportunities
4) Work with homebuilder and professional realtor associations to increase consumer knowledge about sustainable homes
5) Develop additional educational tools (e.g., a glossary of terms related to green building, an online resource guide)

IV. Project History and Summary of Key Findings

The Pacific Northwest is a stronghold for sustainable building and design. The region has earned a national and international reputation for public policy and public sentiment that supports sustainable living. Several green building and energy efficiency certification programs are available to prospective property owners in the region, including Built Green, Earth Advantage®, ENERGY STAR®, and LEED for Homes®. As of September 2008, there were close to 10,000 third-party Earth Advantage certified homes in Oregon and Washington. An additional 10,000 homes in Washington have achieved Built Green Home certification, including self-certified and third-party certified homes.

However, while demand for green buildings has increased appreciably over the past 10 years, many financial, appraisal, and real estate professionals do not have an adequate understanding of sustainable building practices (Jamison, 2007). This has resulted in a lack of consistent measurement and the potential undervaluing of sustainably built projects.

The Green Building Value Initiative (GBVI) started in the summer of 2007 when a number of leading green building and local government organizations in the Pacific Northwest met to discuss a growing need: demonstrating the practical value of sustainable certification for residential and commercial properties. According to Rachel Jamison of the Washington State Department of Ecology,

> GBVI was created to determine whether green building certification truly adds value to residential and commercial real estate projects. If so, the GBVI will determine the most effective method of communicating this to the real estate finance, appraisal, lending, and investment communities.

In 2009, a coalition of private industry, nonprofit and government organizations will release a series of papers examining certified residential and commercial properties through case studies, property comparisons, interviews, and surveys. This report is part of that effort.

Investigative research into the value of property certification and the valuation of sustainable building practices can be traced back to the efforts of the Vancouver Valuation Accord in 2007. In March of that year, leaders of valuation groups from throughout North and Latin America, Europe, and various Pacific countries met in 2007 in Vancouver, BC, to discuss the valuation implications of sustainability and how they should be approached on a global basis. The result of that meeting was the Vancouver Valuation Accord, a document that was signed by representatives from 20 countries and that adopted the definition of sustainable development created for the United Nations by the Brundtland Commission in 1987:

> …development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Research related to market performance of high performance buildings has followed two tracts: residential and commercial. This report presents the findings related to the residential sector in Oregon and Washington. Specific research activities included:

- residential property comparables (specific comparison between certified and comparable non-certified homes as determined by a certified appraiser)
- home builder surveys and interviews
- residential appraiser interviews
- surveys of residents living in certified homes
- study on the impact of marketing and consumer education to home sales performance
- residential property case studies (published separately)
- commercial property case studies (published separately)

The property comparison work focuses on Portland and Seattle. In each metro area, comparable homes were identified for a large number of certified homes. The sample sizes of certified homes were 92 and 68 in the Portland and Seattle metropolitan areas, respectively. Additional property comparison work on smaller samples of homes was completed in central Oregon and in the Willamette Valley.[1]

Sustainable Building Valuation

The Green Building Value Initiative recognizes the importance of value in discussions related to sustainable property development and certification. The value that is assigned to a single- or multi-family home may vary depending on the context of the assessment. Residential appraisers are responsible for determining the worth of a home in a given real estate market. Appraisal reference guides commonly offer three different approaches to defining value (sales comparison, cost approach, and income approach, although these are more frequently associated with commercial appraisals). The term *market value* is generally defined as the price that could be obtained for the sale of a given item in current market conditions. This study does not choose one specific definition of value over another. Rather, it points to the lack of a common, comprehensive definition of *value* as a primary obstacle in recognizing the contributions of sustainable home features. Measuring the added value to a home resulting from sustainable features, or from third-party sustainable certification as a whole, remains a challenge.

Sustainable building advocates face a challenge when trying to document the market value or performance of sustainable buildings. This is partially due to the lack of existing certified projects. This challenge has been less evasive as the number of certified properties in the United States has increased. However, the tools that property appraisers customarily use have not been modified to reflect the more complex valuation required for a sustainable or *triple-bottom line* approach. Valuation professionals "need to rely more heavily upon thorough analysis of sustainability attributes at the property level to ensure accurate identification of costs, benefits and risk" (Chappell, 2007).

Another consideration stems from the fact that a building cannot simply be labeled *sustainable*. Green building certifications vary in terms of the building elements that are evaluated under and the performance metrics associated with them. Many builders may not pursue certification at all but will incorporate one or more sustainable or high performance building features into their

[1] The budget for this residential property analysis did not make it possible to retain residential appraisers in either of these two areas. The sample size of homes in these areas was very small (less than 12 homes per area) and therefore not statistically significant.

projects. In some respects, the residential sector has lagged behind the commercial sector in terms of understanding property value implications related to sustainable certification (Pitts & Jackson, 2008). The Pacific Northwest may be at an advantage in this regard, as the region has more sustainable certified homes than any other U.S. region. As in the commercial sector, residential appraisers will become better able to evaluate properties as the number of completed projects grows.

Studies on the relationship between energy efficiency and resulting home values have shown that home values do increase as efficiency improvements are made (Nevin, 1998). Nevin suggests that home values increase by $11 to $21 for every dollar reduction in annual fuel expenditures. Homeowners obviously review a number of factors before buying a new home. Anticipated home energy savings is one factor that may be considered, particularly as domestic energy prices increase or become more uncertain. Similar to other sustainable characteristics in certified homes, energy efficient components can only be valued according to current industry norms and understanding.

> A key challenge in assessing the value implications of energy management strategies is gauging the market's acceptance of those strategies. This factor, coupled with the knowledge that the appraisal community relies heavily upon empirical data, means new or unorthodox approaches to building construction and operations will require a greater burden of proof to support performance projections. (Better Bricks, 2007)

Appraisers in the commercial sector are concerned with the value of real estate assets as investment opportunities. Residential properties (particularly single-family homes) are traditionally viewed as long-term assets for homeowners rather than as investments. This may contribute to the lack of professional literature on the appraisal of sustainable residential properties.

A growing number of builders and real estate brokers are aware of the limitations of the existing home valuation process. EAI staff interviewed three residential appraisers regarding the process of conducting an appraisal on a certified home. While three interviews obviously do not represent a cross-cross section of appraisers, they support trends observed in the wider market. Each appraiser agreed with Linehard, suggesting that there is a need to change regular residential appraisal practices in order to allow individual brokers more flexibility with documentation. The interviewees observed that more training for brokers and financial lenders regarding the specific attributes of energy efficient equipment and sustainable design features will benefit the evaluation of sustainable homes. These last two points were reiterated in additional interviews and surveys with home builders and consumers.

Residential Property Analysis: Summary of Key Findings

- *Sustainable third-party certified homes sell faster*. Certified homes stay on the market for a shorter period of time, selling 18 days faster in the Portland metro area in 2007-08. In the Portland metro area, the certified homes were primarily Earth Advantage® or Earth Advantage and ENERGY STAR® homes. In Seattle, the homes were primarily Built Green certified.

- *Certified homes sell for more than noncertified homes*. In the Seattle metro area, third-party certified sustainable homes were found to sell for 9.6% more than noncertified homes. In the Portland metro area, certified homes sold for 4.2% more than noncertified homes. This and the previous finding are based on appraiser qualified property comparable results described in section V.

- *Market aggregate data, Portland*. Price premiums for certified homes were observed in market-wide sales data for the first year that certified homes were tracked by the Portland Multiple Listing Service. Certified homes sold for 11% more than noncertified homes between May 1, 2007 and April 30, 2008 in the Portland metropolitan market (not including Clark County).

- *Market aggregate data, King County, WA.* A 4% price premium for newly constructed, green-certified homes was found in King County, WA for the 9-month period ending May 31, 2008. On a per square foot basis, certified homes sold for 37% more than noncertified homes.

- *Home builders believe that third-party verification adds value*. Almost all of the builders who contributed to this study (98%), stated that third-party sustainable certification adds to the value of the product. However, they were also concerned that current residential appraisal practices do not sufficient recognize the positive benefits of such certification.

- *Home buying public needs to better understand the value and significance of certified sustainable homes.* Increased public awareness regarding sustainability in the general media has not necessarily translated into a greater understanding of green home certification. Home builders who build Earth Advantage and Built Green homes asserted that homebuyers need to learn more in order to appreciate the full quality and value of their products. Long-term durability, high quality materials, improved indoor air quality, and increased energy efficiency are part of a certified home.

- *Home values should incorporate performance measures.* Residential performance measures should be incorporated into standard home valuation. For example, long-term reductions in home utility and repair costs should be a considered when a newly built or remodeled home is appraised for sustainable and energy efficiency features.

- *More dynamic appraisal models are needed*. Dialog among sustainable building advocates, home builder associations, residential appraisers, realtors, and financial institutions regarding more accurate and dynamic residential appraisal should continue. Such dialog is needed in order to develop the mechanisms for recording sustainable improvements in a home and monitoring those improvements' ongoing performances.

- *Certified homes perform better if the home buyer understands the quality and systems differentiation of that home*. A certified home is more likely to earn a price premium if the quality and performance savings of that home is clearly communicated to the future home resident.

V. Residential Property Analysis – Portland and Seattle Metropolitan Areas

This study was undertaken to test the hypothesis that sustainable third-party certified homes have a market advantage over comparable noncertified homes based on sales prices and time on the market. The homes in this study were all certified to Earth Advantage®, ENERGY STAR® or Built Green® (Four- or Five-Star) standards.

How have certified homes performed in the marketplace? The report explores this question in two ways. First, market-wide aggregate data regarding certified and noncertified homes are reviewed. Second, a specific sample of certified homes and the accompanying property comparables as determined by a qualified residential appraiser are analyzed. This was done in both the Portland and Seattle metro areas.

RMLS and NWMLS Data – The First Year of Tracking Certification

The section begins with an examination of sales data from the Regional Multiple Listing Service (RMLS) in Portland and the Northwest Multiple Listing Service (NWMLS) in Seattle. In 2006, EAI was instrumental in successfully lobbying RMLS to modify its database to include the new certification field. Seattle followed suit due to similar efforts. Both RMLS and NWMLS started to track the sales of sustainably certified homes in 2007. They were among the first MLS organizations in the nation to do so. NWMLS provides information on the sale of homes that have received a Built Green, ENERGY STAR, or LEED for Homes certification. RMLS allows real estate brokers to list new homes as Earth Advantage, co-branded Earth Advantage/ ENERGY STAR, ENERGY STAR, or LEED for Homes.[2]

Between May 1, 2007, and April 30, 2008, 833 newly constructed housing units in Multnomah, Clackamas, Columbia, Washington, Yamhill, and Clark counties were listed as Earth Advantage homes, Earth Advantage/ENERGY STAR co-labeled homes, ENERGY STAR, or LEED for Homes. This number is equal to 13.6% of all newly constructed units in the metro region, according to RMLS.

Certified homes performed better than noncertified homes, in terms of two key metrics: sales price and time on the market. The average sales price among all noncertified homes in the Portland, Oregon metropolitan area (new and existing) was $346,400. Noncertified new homes in the same market sold for an average of $390,400. Sustainable third-party certified new homes sold for an average of $431,900.

On a square foot aggregate basis, the certified homes in Portland sold for $223 per square foot. The noncertified homes sold for $196 per square foot. Newly constructed certified homes sold for 13.8% more than noncertified homes when compared in this way.

In the Portland metro market, not including Clark County, WA, new and existing homes stayed on the market for an average of 73 days. New homes in the same area stayed on the market for

[2] In 2007 and 2008, RMLS also provided the option of classifying a certified home as *other*. In 2008, RMLS discontinued this option, recognizing that the open-ended nature of such a response would make year-to-year comparisons impossible.

an average of 99 days. Sustainable new homes in the same market sold one-third faster, staying on the market for an average of 66 days.

The Northwest MLS reported similarly positive results for the first year of tracking certified home sales data. Sustainably certified homes (or *E-Cert homes*) built in 2007 accounted for 16.7% of the single-family homes and 18.7% of the condominium sales in King County in the 9-month period ending May 31, 2008 (Green Works, 2008).

NWMLS data shows that new construction E-Cert single-family homes sold in 18% less time, sold for 4% more, and were 25% smaller than noncertified homes. Priced per square foot, E-Cert homes were 37% more valuable. New construction E-Cert condominiums sold for 3% more and were 20% smaller than noncertified new construction condos. Priced per square foot, E-Cert condos were 28% more valuable than noncertified condos.

	Portland metro area	Seattle metro area
New homes, noncertified	$390,400	$470,000
New homes, certified	$431,900	$487,000
Percentage increase	10.6%	3.6%
New homes, noncertified per square foot	$196	$202
New homes, certified per square foot	$223	$278
Percentage increase, per square foot	13.8%	37.4%

Portland data provided by RMLS and analyzed by Earth Advantage Institute
Information for Portland metro area, less Clark Co.
Seattle data provided by NWMLS, analyzed by Green Work Realty.

The reports of improved sales performance in two major metropolitan areas were certainly encouraging for many professionals in the green building industry. In order to demonstrate that the primary component of comparison (the main difference between third-party certified homes and comparable traditionally built homes) was the evidence of sustainable certification, property comparables were required. Earth Advantage Institute and Built Green undertook the comparison analysis.

Property Comparison Work - Methodology

Ann Griffin of Earth Advantage Institute led the property comparison work for the Portland metropolitan area and Ben Kaufman of Green Works Realty completed the work for the Seattle metropolitan area. Watkins and Associates were retained as the project appraiser for the Portland analysis. The methodology described in this section was endorsed by Taylor Watkins, the project appraiser, and used in each of the comparable property analyses. The information gathered provides positive results regarding the performance of certified homes in the residential marketplace.

The Portland Regional MLS (RMLS) office provided Earth Advantage Institute with access to its home sales information. Using RMLS, researchers working with Earth Advantage Institute drew between 3 and 7 comparables for each certified property in the sample, with the majority having 3 or 4 comparables. The selected sample contains 92 certified properties in the Portland metropolitan statistical area (including Washington, Yamhill, Multnomah, and Clackamas Counties in Oregon, and Clark County in Washington). The project appraiser developed the guidelines to define comparable properties and confirmed the suitability of each comparable property selected. In Seattle, Ben Kaufman of Green Works Realty conducted a similar study using the same methodology.

Comparable properties were defined as residences that were

- sold with a closing date no more than 6 months prior to the closing date of the subject property
- located within the same neighborhood or sub-neighborhood
- constructed in a similar style based on photographs and staff determination
- constructed to the same degree of quality (e.g., design and materials)
- in the same age range (built within 10 years prior and 5 years after the subject home)
- approximately the same size (within a range from 15% smaller to 5% larger in square feet)
- approximately the same value (with a final sales price from 20% below to 10% above the sales price of the subject home)
- built with no distinguishing green features

The project appraiser reviewed an initial sample of property comparables to verify that EAI was gathering properties that were suitable for analysis (i.e., properties that may be deemed comparable according to professional standards in the residential appraisal field). The project appraiser approved between 2 and 7 comparables for 92 certified properties. Several dozen suggested comparables were rejected by the project appraiser for not satisfactorily meeting the needed criteria for a comparable home.

For each set of subject and comparable properties, the average price difference and average percentage change in price was determined. Rather than just the average price difference, the average percentage change in price was used in an effort to normalize the distribution of home prices. In order to account for the different number of comparable homes found for each subject home, a weighted average was calculated to determine differences in sales price. The number of days on the housing market for each subject and comparable home were also compared.

The study determined that newly constructed residential properties that obtained a sustainable certification sold on the market at a value that ranged between 3.3% and 5.1% higher than comparable properties that had not been certified. This finding was based on a sample of 92 homes at a statistical confidence level of 95%. The difference in home price between a certified home and a noncertified comparable home was found to be 4.2%.

Portland metro area property comparison

1. Certified homes sell faster than noncertified homes. Within the Portland market, homes that had a sustainable certification were purchased 18 days faster than noncertified homes.

2. Certified homes sell for more than noncertified homes, by a difference ranging from 3% to 5%. The margin of price difference was found to be a 4.2%.

Days on Market

As previously noted, the certified homes sold 18 days faster than noncertified homes. Stated as a percentage rate, the certified homes sold 30% faster. For most consumers, a two-week plus period translates into a month's mortgage payment. As a result, consumers selling certified homes are able to potentially realize important cost savings. Builders also realize the benefits of a property that sells faster. Builders may be able to close on outstanding construction loans more quickly and have shorter inventory turnover times, contributing to positive cash flow.

Reference has been made to the relationship between overall home value and the number of days on the market, with some observers finding that more expensive homes require longer time periods to sell. To determine if this was the case in the selected sample of Portland homes, EAI staff sorted the homes by sales price and examined the resulting pattern in days on the market. A positive linear relationship was not observed; the selling price of the home did not appear to have an impact on days on the market. Certified homes sold faster than noncertified homes. However, more expensive properties did not necessarily take longer to sell.

Seattle metro area property comparison

3. Certified homes in the Seattle metropolitan area sell for more than noncertified homes. The price premium based upon a sample of 68 subject homes was found to 9.6%.

4. In the Seattle study, certified homes remained on the market for an average of 5 days longer, or required 40% more time to be sold than non-certified comparables.

Home Performance and Home Value

The property comparison sections of this study focus on market performance in terms of sales price and time on market. These are standard economic performance metrics. Value may also be defined as the overall benefits of a home divided by its costs. Based on this definition, operational issues become more important. Occupants living in certified homes enjoy a number of benefits, such as reduced utility expenses, improved indoor air quality and accompanying health benefits, and reduced maintenance costs associated with high quality materials and durable construction methods. If these benefits were capitalized, then the value of a home would certainly increase. Larger exogenous economic factors resulting from reduced green house gas emissions could also be calculated and added to the overall performance measurements of a home.

Green commercial buildings are sometimes referred to as *Super Class A*, or more commonly as *high performance* buildings. Reduced utility costs and waste removal costs have been documented in a growing number of building case studies. According to USGBC, "(commercial) green buildings save an average 30 percent of energy costs, 35 percent of carbon costs, 30-50 percent of water use costs and 50-90 percent of waste costs" (Nicolay, 2007).

Reduced costs in the same categories are also observed in residential buildings. The following section of this report describes the survey results of homeowners living in Earth Advantage certified homes. More than half (56%) stated that their utility bills were lower in their current home than in their previous (noncertified) home. National surveys have produced similar results, indicating that the prospect of reduced utility costs also attracts prospective homebuyers. McGraw Hill Construction and the National Association of Home Builders conducted a survey of homeowners in early 2007. Sixty-three percent of the respondents reported lower operating and maintenance costs as the key motivation behind buying a green home (Environmental Leader, 2007). Nearly 50% reported environmental concerns and family health as motivators (Environmental Leader, 2007).

A number of articles in professional appraisal journals have cited the need for increased understanding and more detailed reporting with respect to appraisal reports related to sustainably constructed and appraised buildings, both residential and commercial.[3] For example, Claire Nicolay of Loyola University of Chicago, a frequent contributor to articles related to real estate appraisal, observed that

> (A)lthough the appraisal framework for a green building will not fundamentally change, appraisers will have to enhance their knowledge of key sustainable features and potential value impacts, similar to the type of information they have had to learn in recent years to better understand building-related telecommunication changes, American Disabilities Act legislation, and the effect of the securities markets on capital flows. (Nicolay, 2007)

The basic job that appraisers undertake will not change in terms of needed research, but research on a wider variety of topics will be necessary. These topics can include the performance specifications of energy efficient heating and cooling systems, home infiltration, home material sourcing, and construction site impacts on the local area.

> The current lack of a significant body of empirical data (comparable sales, surveys of property performance, and return expectations)…valuation professionals (will need to) rely more heavily upon thorough analysis of sustainability attributes at the property level to ensure accurate identification of costs, benefits and risk. (Lowe & Chappell, 2007)

In 1999, the National Association of Home Builders president, Charlie Ruma, stated that "lenders, appraisers and investors need to recognize the enhanced value in housing that comes from environmentally-efficient building practices so that buyers are given the credit" (McCuen, 2007). McCuen referred to the creation of home mortgage programs that credit sustainable home improvements as a step in the right direction.

[3] See Reference section and articles by Chappell, Corps, Muldavin, and Nicolay.

VI. Consumer Surveys – Input from Residents of Certified Homes

Consumer understanding and attitudes regarding sustainable home features play an important role in residential markets. The GBVI Steering Committee conducted surveys to identify consumer attitudes toward the sustainable attributes of their homes. Survey responses also provided some social demographic information for home residents.

Residents living in certified homes value the sustainable attributes of their houses, particularly their energy efficiency and improved indoor air quality. Of the respondents, 90% reported that they would choose a certified versus a noncertified home for their next place of residence, if other factors (e.g., location, price, quality) were equal. If cost were an issue, survey respondents continued to favor living in a certified home: 80% of the respondents from third-party certified homes reported that they would pay up to 5% more for their homes. In the case of a $400,000 home, a 5% premium is the equivalent of $20,000.

Ninety-eight percent of the survey respondents said that they would elect to purchase a green branded home over a home that was not green branded. Thirty-six percent of those surveyed indicated that they would pay up to 10% more on a $300,000 home that incorporated Earth Advantage measures.

In another regional consumer survey conducted at the Greener Homes and Gardens Expo in May 2005, 35% of the respondents indicated that Earth Advantage certification had had a direct influence on their home purchases. This finding in a more recent survey of home residents conducted in 2008, and described below.

Consumer Survey Description

Three organizations conducted consumer surveys among residents living in either Built Green or Earth Advantage certified homes: Earth Advantage Institute, the Master Builders Association of Pierce County, and Olympia Master Builders. Each organization used the same basic questionnaire. Among the three organizations, 248 people completed the survey either electronically or via mail. The surveys were conducted in May and June 2008.

Organization	Number of Responses
Olympia Master Builders	32
MBA of Pierce County	33
Earth Advantage Institute	183
TOTAL	248

Earth Advantage homes are third-party certified homes. Built Green Washington recognizes 5 levels of certification. Homes that receive Four- or Five-Star certification are third-party certified homes. Survey responses were analyzed separately by organization to determine if there were differences in attitude among residents of self-certified and residents of third-party certified homes. More importantly, the property comparison work was conducted on third-party certified homes. Survey responses were sorted accordingly to be consistent.

Residents of Third-party Certified Homes

In June 2008, Earth Advantage Institute mailed 3,000 surveys to residents living in Earth Advantage certified homes. EAI received a 6% return rate or 183 responses. A copy of the consumer survey and a summary of responses are included in the appendices. Importantly, the majority of survey respondents indicated that the sustainable certification positively influenced their decisions to purchase their particular homes.

Question: Did sustainable certification have any influence on your decision to buy your home?	**Response**
Yes	61%
No	39%

The survey asked about specific home attributes, including energy efficiency and indoor air quality. Respondents were asked to rank the importance of these attributes, on a scale from 1 (not important) to 5 (extremely important). Energy efficiency was considered an important or extremely important characteristic by 77% of the survey respondents, while only 3% answered that energy efficiency was not important. Residents living in certified homes also reported lower utility costs. More than half of the Portland respondents (56%) believed that their average utility costs (gas and electric) were lower in their new certified homes than their previous traditionally built homes.

Table 4.2. Important issues among residents 3rd party certified homes

Attribute	**Ranking**	
Energy Efficiency	(5) Extremely important	44.2%
	(4)	32.6%
	(3)	13.8%
	(2)	6.6%
	(1) Not important	2.8%
Indoor Air Quality	(5) Extremely important	43.4%
	(4)	28.0%
	(3)	19.2%
	(2)	7.1%
	(1) Not important	2.2%
Lower Utility Costs	Lower	55.6%
	Higher	13.5%
	The Same	19.1%
	Don't Know	11.8%

The survey asked consumers whether, when presented with two homes that were otherwise similar except for certification, they would choose the sustainably certified home. The majority (90%) responded that they would select the certified home. The survey also asked residents to specify how much more they might be willing to pay and the specific features that they valued

the most. Eighty percent indicated that they would be willing to pay up to 5% more to live in a certified home.

The consumer survey indicates that residents living in certified homes will choose a certified home for their next purchase and that they are willing to pay more for a certified home. The green home features that residents would be the most willing to pay for include energy efficient hot water systems, an energy efficient furnace, and improved indoor air quality. The responses are summarized in Table 4.3.

Table 4.3 Please check/describe the particular sustainable feature or features in which you would be most likely to invest.

energy efficient hot water heater/tankless water heater	89%
energy efficient furnace	87%
indoor air quality	69%
construction practices that utilize reclaimed/recycled materials and recycling	49%
on-site renewable energy source	42%
grey-water capture and re-use	27%
other feature(s)	10%

Note: Percentages may not add up to 100 due to rounding.

Table 4.4. What would be the maximum amount ***more*** you would be willing to pay for these added benefits and features on a $400,000 home? (1% 3% 5% 7% 10% 15%+)

$4,000 (1% more)	23%
$12,000 (3% more)	31%
$20,000 (5% more)	26%
$28,000 (7% more)	4%
$40,000 (10% more)	10%
$60,000 (15% more)	2%
$0 (I wouldn't be willing to pay more)	4%
Didn't answer question	11%

Other studies regarding owner preferences with respect to investments in sustainable homes have reached similar conclusions. According to the Concrete Network, a 2002 report found that 85% of homeowners would spend 1% more for an integrated concrete form (ICF) home, while 23% would spend 5% more for the same improvement (Balogh, 2008). While consumers have indicated that they would be willing to pay more for a sustainable home (perhaps up to 10% more or greater), the builders surveyed for this report did not generally have the same impression of consumer willingness to pay such an added cost.

Social Demographics of Earth Advantage Survey Respondents

Survey respondents provided basic demographic information about themselves. These questions were added to help determine how residents of certified homes might compare with the general population. Any observed trends could be used to better understand consumer behavior and target potential homebuyers.

In terms of gender, Earth Advantage consumer survey respondents were fairly evenly split between female (51%) and male (48%). Typical household size was reported as 2 (40%), 3 (21%) or 4 people (21%). People completing the survey reported their age as 39 or younger (51%), 40 to 64 (42%) or 65 or older (7%). Their education and income levels are reported in Tables 4.5 and 4.6.

Table 4.5. Education Level of Earth Advantage home residents

Answer Options	Percent	Number
Did not complete high school	0.0%	0
High School Grad/GED	13.2%	24
2-Year College Degree	10.4%	19
4-Year College Degree	38.5%	70
Masters Degree	26.4%	48
Doctoral Degree	4.4%	8
Professional Degree (MD, JD, DDS, etc.)	7.1%	13
No answer	0.5%	1

Table 4.6. Reported Household Income

Answer Options	Percent	Number
$40,000 – $59,000	18.6%	31
$60,000 – $79,000	19.2%	32
$80,000 – $99,000	12.6%	21
$100,000 -$199,000	39.5%	66
$200,000 - $499,000	10.2%	17
$500,0000 or more	0.0%	0
No answer	8.7%	16

Compared to the general Oregon and Portland metro county populations, residents living in Earth Advantage certified homes have completed more years of education. As education levels commonly correlate with income, the survey respondents also reported a higher level of income.

For example, in Multnomah County, approximately 31% of the population had a bachelor's degree or higher degree in the year 2000 (U.S. Census Bureau State and County Quick Facts). By contrast, 70% of the Earth Advantage survey respondents reported a bachelor's, master's, doctoral degree, or other professional degree. The median family income for a 4-person household in Portland in 2008 was $67,500 (Portland Development Commission). Sixty-two percent of the survey respondents reported household income of $80,000 or more.

Table 4.7 Certified Home Residents Compared to General Population

	Portland General Population	Earth Advantage Survey Respondents
Education – Bachelor degree or higher	31%	70%
Income	$67,500	$80,000

Portland general income based on median family income for a four person household. Earth Advantage survey respondents reported their household income.

While a demographic overview alone does not determine future market trends, it is useful to review how certified homes are distributed across the metro area and the typical profile of residents living in a sustainably certified home. From a policy perspective, this information may be useful to as a way to identify effective strategies for promoting public outreach messages regarding energy efficiency and sustainable home choices. This demographic information is also of interest to builders, developers, and realtors.

Residents of Self-Certified Homes

Olympia Master Builders received 32 survey responses. Of these, 28 responses were from residents with self-certified homes. All of the surveys received by the Master Builders Association of Pierce County were from self-certified homes. This section provides an overview of their responses. Their answers largely mirrored those given by residents of third-party certified homes, with some exceptions. For example, 68% of these respondents ranked energy efficiency as either a 4 or 5 on a five-point scale, suggesting that it is very or extremely important.

While residents in third-party certified and self-certified homes responded to the survey in a similar manner, a few differences were found. A greater number of residents in the third-party certified homes reported that their utility costs were lower in their current than in their previous home (46% versus 56%). Also, more residents in self-certified homes reported that sustainable certification was less of an influencing factor in their decisions to buy homes. This may be rationalized by the fact that they had not decided to pursue certification until after they have moved into their homes or, in the case of an existing certification, it may not have been highlighted as a selling point.

Finally, residents were asked if they thought that sustainable certification would have a positive impact on the future sales prices of their homes (Table 4.9). A number of respondents commented that the future value of their properties would depend on the market.

Table 4.8. Important issues among residents of self-certified homes

Attribute	**Ranking**	
Energy Efficiency	(5) Extremely important	42.6%
	(4)	26.2%
	(3)	18.0%
	(2)	1.6%
	(1) Not important	9.8%
Indoor Air Quality	(5) Extremely important	32.8%
	(4)	24.6%
	(3)	31.1%
	(2)	8.2%
	(1) Not important	1.1%
Lower Utility Costs	Lower	45.9%
	Higher	14.8%
	The Same	18.0%
	Don't Know	23.0%

Table 4.9 Consumer Purchase Decision

Question: Did sustainable certification have any influence on your decision to buy your home?	**Response**
Yes	31%
No	61%
no answer	7%

Note: Percentages may not add up to 100 due to rounding.

A few thoughtful residents went on to comment on the need for increased education for consumers and residential appraisers.

> "The impact will grow as the Real Estate agents and consumers are educated."
> "We built our home so if we ever decide to sell, we believe that the market for green homes, especially ones with certification, would be strong."
> "It's all in the market, what are people willing to pay at the time."
> "Not immediately, perhaps in five years. Some realtors, don't even know or care yet."
> "Our home will sell due to its appeal, location, and affordability, less the 'green clause'."

These comments reflect opinions stated in valuation and real estate literature on the topic. Green certification programs and the adoption of sustainable building practices will continue to grow, but within the field of real estate valuation, assessing the impact of sustainable certification remains an undeveloped science.

VII. Builder Interviews and Surveys

Home builders are clearly an important part of the valuation puzzle. The viability of their green business models depends on public knowledge regarding sustainable homes and public demand for those homes. Lenders and residential appraisers need to understand their products in order to provide financing and accurate value estimates. Builder input is included in this study as a means to identify trends in both industry and public perceptions regarding residential green building. Builders were asked about their motivations for building certified homes, the cost implications of certification, and general market demand.

The GBVI Steering Committee authorized one-on-one interviews and online surveys with residential builders who have constructed certified homes. Ten in-person builder interviews were conducted with senior staff of companies enrolled as Earth Advantage builders in April and May 2008. An additional 35 builders answered the same questions using an online survey conducted by the Master Builders of Pierce County and Earth Advantage Institute

The companies where the individual builders work are listed in Table 5.1.

Table 5.1 Earth Advantage Builder Interviews

Arbor Homes
Ben Walsh
CoHo Construction
Craftsman Homes
Legend Homes
New Traditions
Palmer Homes
Solaire Homes
Sun Forest Homes
Woodhill Homes

Company motivation: Builders reported a number of different reasons for offering certified homes. Primary answers involved extending or demonstrating a commitment to quality and the means to differentiate their companies from the competition. Other builders voiced their personal beliefs in the need for increased societal efforts to reduce climate change.

As a group, the builders stated that in order to remain a leader in a competitive environment, they needed to be abreast of green building technologies and techniques. One manager remarked,

> "All builders now need to be in the running (and need to offer sustainable products). The cost of energy is one the largest things on the mind of customers. Sustainable features are also of a growing interest in this market."

Consumer awareness and demand: Builders uniformly agreed that there is an appreciably higher level of awareness among their customers on issues related to sustainability. According to one builder, awareness has increased over the past 5 years. However, this increased awareness does not necessarily translate into greater demand for sustainably certified new homes. The builders generally commented that consumer demand was not the primary reason for offering an Earth Advantage certified home at this time.

Table 5.2 Role of Consumer Demand

Did direct consumer demand influence your decision to introduce green products into your homes?	
yes (9)	26%
No (25)	71%
No answer (1)	3%

n=35

Interviewees mentioned that they receive more questions about energy efficiency and sustainability in general and that consumers may ask about sustainable certification. Certification has become more important but remains one factor among several considered, most notably location and price.

Consumer demand for green homes increased nationally according to a survey released by Green Builder Media. Green Builder Media surveyed 250 residential builders across the U.S. and reported that more than half had stated that they saw not only an increase in demand for green homes but a willingness to pay more. According to this source, builders have reported a willingness of homebuyers to pay between 11% and 25% more for green-built homes (US Newswire, 2007). According to this source, the "average green homebuyer is between the ages of 35 to50 with a college degree and fair understanding of green products."

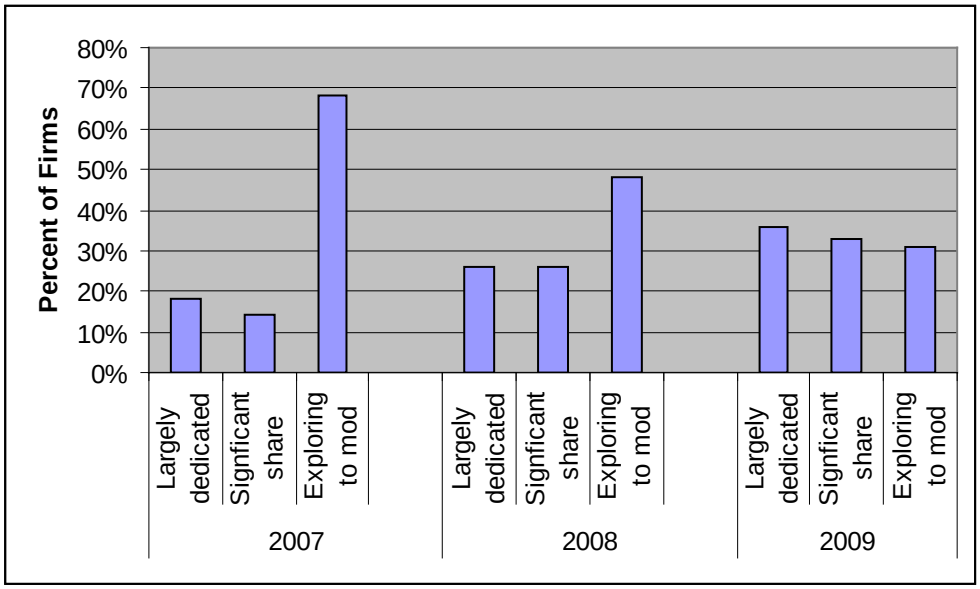
Some reduction in new residential construction began to take place in the later part of 2007. It should be noted that the significant slowdown in new housing and other challenges to the national economy occurred between spring 2008, when the builder interviews were conducted, and the time when this draft was written. Changes in consumer credit availability and a national decline in new residential construction experienced during the latter half of 2008 are not directly reflected in the responses given by the individual homebuilders. However, several home builders working with Earth Advantage Institute have credited their decisions to provide sustainably certified, high-quality products as a response to the down economy. According to McGraw Hill Construction's "The Green Builder SmartMarket Report" (2008), 40% of builders report a marketing advantage from green homes in today's housing slump.

Despite the recession in the U.S. economy, builders anticipate increased participation in sustainable residential projects in 2009. Table 5.3 shows the degree to which builders have and will be involved in sustainable building on a national level. The percent reporting that they would be "largely to fully dedicated" to green building (i.e., more than 60% of their projects) will grow from 18% in 2007 to an anticipated 36% in 2009.

Building professionals are positively responding to the market growth surrounding energy efficiency and green building. According to a survey conducted by the National Association of Home Builders (NAHB), "there has been a 20% increase since last year [2005] in builders dedicated to green building issues. The number was expected to rise by another 30 percent in 2007 to 64% of builders either heavily or moderately involved in green building projects." The survey also found that "nine out of ten builders say they are incorporating energy-saving products into new homes at all price levels" and "the leading factors triggering building firms to expand their green home building activities were: consumer demand, 88%; superior performance, 87%; competitive advantage, 83%."

Building professionals recognize the value of energy efficient and green building construction, features, and benefits. More builders are offering sustainable product as a way to differentiate themselves in the market. The Home Builders Association of Metro Portland joined a dozen other HBAs in adopting Earth Advantage as their preferred green building provider of choice. As market conditions shifted in the 2nd half of 2008, market differentiation become more important. The number of firms that provide green building projects grew from 2007 to 2009, according to McGraw Hill (see Table 5.3). describe themselves as providing sustainable building projects to their clients has grown dedicating projects

Table 5.3 Construction Firms Dedicated to Sustainable Building Projects



Source: McGraw Hill Construction Green Outlook 2009

Need for more consumer education: In their comments, home builders pointed to a separation between growing consumer awareness of general sustainability issues and market demand for certified residential properties. The home buying public may not understand the many elements that are needed to construct a home that will meet third-party certification requirements. According to one builder,

> If you know what we know about the quality and the added work that goes into a home to make it Earth Advantage certified, then absolutely, you understand the value. However,

most buyers don't know about the certification process or what goes in to building a home. There is a need to educate the buyer.

Another builder added that there was definitely an increase in the overall value of his company's homes, but that that value did not automatically translate into a higher price. "It doesn't follow that if we spend an extra $2,000 for a given item that we will automatically mark up the price by $2,000." The market may not know how to account for this increase in value. Additionally, a builder may choose not to directly change a price in order to maintain market competitiveness.

Cost implications: Popular perceptions linking sustainable construction with higher construction costs have been common (McCuen, 2007). Builders were asked to comment on the cost implications for building homes to meet sustainable certifications. Among those responding to the survey, 74% answered positively to the question, *Do you believe that building sustainably certified homes adds significant initial cost to you as a builder?* The survey then included a follow-up question to determine what the home builders had experienced in any additional costs. The greatest single answer was provided by twenty-nine percent of the respondents; they estimated that the added cost to the construction budget was between 5% and 10%. (See Table 5.4.)

Table 5.4 Cost of sustainable certification

Do you believe that building sustainably certified homes adds significant initial costs to you as a builder? (n=35)			
	Yes	26	74%
	No	8	23%
	No answer	1	3%
If yes, what is the additional cost that is added to the construction budget?			
	a. up to 5%	7	20%
	b. between 5 and 10%	10	29%
	c. between 10 and 20%	5	14%
	d. other	0	0%
	e. depends on home	8	23%
	f. not sure	1	3%
	No answer given	4	11%

Note: Above does not include the 10 in-person interviews

Importantly, builders who participated in one-on-one interviews stated the added cost has gone down over the past 5 years because more applicable products have become available, the economies of scale yielded benefits, and market demand for their homes has grown. Eight out of 10 individual builders who were interviewed reported that their costs had decreased over the last several years. Two builders attributed this cost decrease to their own increased level of experience and said that the growing experience of their contractors had helped to decrease their costs.

In the 2007 summary report by the World Business Council for Sustainable Development, 1,423 professionals were interviewed between November 2006 and February 2007. The results indicate that nationally, people perceive green buildings to be more expensive than they are.

While the majority of builders acknowledged additional costs, they also agreed that the costs associated with sustainable residential construction have decreased over the past several years. Twenty nine percent responded that costs had become much more competitive and an equal number stated that the costs had decreased by a small amount.

Table 5.5 Costs decreases

Has the additional cost of building a sustainably certified home decreased over time? (n=35)	
Yes, now cost neutral	0
yes, it has become much more price competitive	29%
yes, the costs have decreased by a small amount	29%
no, the costs have not changed	31%
no answer given	11%

Market value: Of the builders who contributed to this study, 98% agreed that sustainable certification adds to the market value of residential properties. The builders equate certification efforts with a high-quality end product, superior construction, increased energy efficiency, and positive health impacts for home residents. Additional discussion followed regarding how market value is determined. Several builders commented that the increased value of their homes is not adequately rewarded by the market.

One builder replied, “Yes, there is added value to a home (in achieving certification), but we don’t just adjust the price. So it can be difficult to measure the value exactly. We are selling at cost right now in order to be competitive.” Most residential appraisers simply may not know how to assign a dollar value to specific sustainable features in a home, such as high efficiency furnaces or improved duct sealing. Additionally, standard residential appraisal documents do not include an area where this information may be recorded.

Builders responded to the question, *Do your sustainably certified homes command a higher market value? If yes, by what percentage?* Builders were almost evenly split in their responses. They believed that the certified homes that they had built were more valuable. But they also stated that the market would not fully recognize that value.

> “In my opinion the answer… is yes, but if you're asking whether or not the home will sell for a higher price to prospective buyers, no, not in this market.”

"(Our homes are) More likely to be purchased over similarly priced competition. As to being able to price them higher, the answer would be no additional value."

"We may be able to sell our homes for perhaps as much as 10 - 15% more. However, location is still the primary driver for home buyers...and green certification cannot offset a less desirable location."

Valuation challenges: A primary issue involved in the valuation of certified homes is the difficulty involved in finding suitable comparable homes. This was clearly demonstrated by the research conducted on property comparisons. This difficulty stems in large part from the lack of objective data and a common language for the description of sustainable features. Builders answering the online survey from Earth Advantage unanimously agreed that this is a primary issue. The majority of builders responded that current appraisal practices do not recognize the value of green features incorporated into a certified home (Table 5.6).

Table 5.6 Current Appraisal Practices

"Current appraisal practices do not recognize the value of green features incorporated into a certified home." Do you agree with this statement? (n=20)	
Yes	80%
No	5%
not sure	15%

NOTE: This question was not included on the electronic survey conducted by Pierce Co.

Public Incentives: The builder survey included questions regarding public incentives and utility rebates to support higher energy efficiency in new residential construction projects. Builders were asked if they were aware of these programs and if they had taken advantage of them. Most of the builders had taken advantage of utility rebates. A smaller number had utilized state or federal tax incentives.

Table 5.7 Builder Awareness of Public Incentives

Are you aware of rebates offered by some utility companies for higher efficiency furnaces/heat pumps/appliances? N=35	
Yes	91%
No	9%

Have you take advantage of any utility rebate programs to install higher efficiency equipment in a home that you have built? N=35	
Yes	57%
No	34%
no answer	9%

Have you taken advantage of state or federal tax incentives to support the construction of any of your residential projects? N=10	
Yes	30%
No	70%

Did tax incentives influence your decision to increase the energy efficiency of your homes? N=25	
Yes	72%
No	24%
no answer	4%

Builders generally acknowledged the important role that these kinds of programs can play in raising public awareness and providing support to individual homeowners. This was particularly true of programs offered by Energy Trust of Oregon. Seventy two percent (72%) of the builders surveyed reported that tax incentives had influenced their decision to increase the energy efficiency levels of their home products.

The downturn in new home construction that began in 2007 and that has continued into 2009, has certainly had an impact on all home builders, including those who construct certified homes. The housing market contracted further in 2008 in the months that followed the interviews and surveys described above. Sustainable or green homes have been reported to provide some amount of market protection for home builders. McGraw Hill Construction reports that green homes have not been as adversely impacted as standard construction homes. “In the context of today’s down economy, green homes offer an opportunity for market differentiation for builders as well as cost savings and health benefits for consumers” (McGraw Hill, 2008). According to McGraw Hill’s research on U.S. construction trends, “the green home market is expanding despite the downward trends of the market as a whole” (McGraw Hill, 2008).

VIII. Western Washington Marketing Analysis

In March 2009, the Master Builders Association of King and Snohomish Counties selected Hamilton Investments, LLC to study the relationship between the marketing comments included by real estate brokers on the Northwest Multiple Listing Service when selling a certified home and the sales price achieved for the home. The study includes Built Green, LEED for Homes and ENERGY STAR homes as certified homes. The study makes an important contribution to this report as it reinforces the important role that real estate brokers play in educating their buyers and the added value that results from this consumer understanding.

The following excerpt is from the report abstract:

(Hamilton's report) quantifies the effects of marketing and the acknowledgement in marketing materials of environmental certifications and sustainable features on sales prices of homes in a five-county western Washington region. The counties included in this study are: King (excluding Seattle), Pierce, Kitsap, Snohomish and Thurston. Homes are broken down into two major categories: marketed and unmarketed homes. These two categories are then analyzed by geography, certification type, and listing offices. The certifications used are Built Green®[4], LEED for Homes and ENERGY STAR. The listing offices included in this study are Windermere and John L. Scott. Major findings of this study include:

- Throughout the five-county region, certified homes that were marketed as green achieved an average sales price of $534,000 and homes that were not marketed achieved an average sales price of $458,000. In all of the homes analyzed, a roughly 14 percent premium is associated with the marketing of green features. This study includes 1,470 certified homes sold between 2007 and April, 2009, and built between the years 2005 and 2009.

- All counties show some sort of premium for marketed homes, presenting strong evidence that marketing green features and certifications has a positive effect on home prices.

- Thurston County received the highest premium, with marketed certified homes achieving an average price that was 25% higher than homes that were not marketed through the Northwest Multiple Listing Service.

- The county with the highest percentage of homes to receive marketing attention was Kitsap County, with 45 of 117 certified homes marketed. King County followed with 29% or 165 of all certified homes marketed as green. Thurston and Snohomish counties recorded the fewest percentage of homes marketed, at 16%.

- The Built Green® certification is the most referenced certification among marketing comments in the Northwest Multiple Listing Service, with 145 total listings referencing Built Green within their marketing remarks.

[4] Built Green® is a registered trademark of the Home Builders Association of Metro Denver, Colorado, used by the Washington State Built Green programs with permission.

- Both Windermere and John L. Scott are Northwest residential real estate brokerages. Together they make up the majority market share of environmentally certified home sales in the five-county region. Of this study's 1,470 certified homes sold between 2007 and April, 2009, fifty two percent of those homes were listed by either Windermere or John L. Scott.

- Of the 766 certified homes listed by both Windermere and John L. Scott, 207 of these homes were marketed as green. John L. Scott marketed 75 homes and Windermere marketed 132 homes.

- The average price for all certified homes listed by Windermere was $541,783, whereas certified homes listed by John L. Scott sold for an average of $495,746. This discrepancy reinforces findings throughout the study that certified homes marketed as green will achieve higher premiums than certified homes which are not marketed as green.

Conclusions drawn from this study point to the positive effects on pricing of environmentally certified homes when marketing includes descriptions of sustainable features and of the specific program used to certify the home. While this study presents a very strong case for the relevance of the findings, it in no way questions the decisions of individual real estate agents in marketing their clients' product. The premiums shown amongst marketed product are only statistically significant in that they show a positive trend amongst many data sets. While some statistical tests were conducted, such as scatter diagrams and simple t-tests, specific metrics associated with marketing cannot be measured with high levels of specificity due to the many variables affecting real estate prices.

One conclusion that can be drawn from this study is that evidence points to consumers paying more for cost-saving and environmentally friendly home systems. Marketing these homes is a good way for a real estate brokerage firm to raise overall revenues as well as to educate consumers and other agents about the sustainable features of a certified home.

For more information regarding this report, please contact Aaron Adelstein, executive director of the Master Builders Association of King and Snohomish Counties, or Sterling Hamilton of Hamilton Investments, LLC.

IX. Conclusions and Recommended Next Steps

Residential appraisers, real estate brokers, and financial institutions will benefit from a greater understanding of sustainable home construction and home value by improving their ability to work with third-party certified buildings. Increased professional training and understanding of sustainable home practices will lead to more accurate value assessments of sustainable homes.

Home builders who participated in this study also emphasized the need for greater consumer understanding of what is involved in sustainable home construction and its benefits. As reported by Hamilton in section VIII, consumer familiarity with sustainable home features has a direct positive relationship with the sales price of third-party certified homes. Public outreach of this kind aligns with the marketing goals of the builders, but the promotion of their construction methodologies has a larger goal as well. Sustainable construction has a societal benefit in terms of reduced resource consumption and greenhouse gas reduction. Consumers will benefit from a greater understanding of the impacts that their homes collectively have on the environment and the economy.

Home valuations need to report on aspects of home construction that are tangible but potentially harder to quantify, such as the quality of durable materials and health benefits associated with improved indoor air quality. These long-term performance benefits can be measured, although they typically are not factored in to a home valuation.

Residential builders and sustainable building advocates must continue their dialog with appraisers, real estate professionals, and relevant financial institutions in order to facilitate this improved knowledge transfer. The importance of this dialog was underscored in a publication by Better Bricks, a program of the Northwest Energy Efficiency Alliance.

> Thus, investors, developers, and owners will be better served by engaging more directly with lenders and appraisers, detailing how your approaches to energy management present a more compelling investment opportunity. A clear explanation of key strategies, innovative or non-traditional techniques - and the reason for their incorporation - will facilitate a better assessment, increasing the potential for increased assessed value. (Better Bricks, 2007)

Conversations among builders and the professional groups mentioned earlier are ongoing. Additional training opportunities by organizations such as the American Appraisal Institute on the value and requirements for accurate assessments of sustainable residential properties, are clearly helpful and are beginning to occur. The Vancouver Valuation Accord resulted in a number of goals, including the support of valuation organizations in developing education courses and providing training to appraisal organizations (Bergsman, 2007). Green building organizations in the Pacific Northwest will continue their efforts to meet some of the same education and outreach goals, including real estate and appraiser professional training.

Recommended Actions

This study points to a number of specific recommendations to improve understanding related to the valuation of sustainable homes, including professional development and general public outreach. The proper venue for these actions will vary as will the source of needed resources.

1) Increase Tracking of Third-Party Sustainable Certified Properties

The property comparable work completed in this study only became possible in 2007 when the Portland RMLS and the NWMLS began to track the sale of sustainable homes. Other multiple listing services in the region also provide real estate brokers with the opportunity to track the certification of sustainable homes and/or significant sustainable features. The number of multiple listing services that provide this option should be expanded.

- Meet with other multiple listing service providers to determine if they would be able to provide a forum for information about third-party certified sustainable homes on their Web-based portals.

- Discuss with multiple listing service providers if they would be able to provide training to real estate brokers regarding the different sustainable certification listings. This training would also provide hands-on instruction in the input of information onto the Web-based tool.

2) Conduct Property Comparable Work in Other Areas

As other multiple listing service agencies begin to provide the platform for tracking the sales of homes that have received third-party sustainable certifications, additional property comparison work should be undertaken. Central Oregon MLS and Willamette Valley MLS, for example, have information about certified homes. If sales information can not be tracked by a multiple listing service, realtor associations may be able to to contribute sales data results.

3) Develop and Support Professional Training Opportunities

Following the Vancouver Valuation Accord, the American Appraisal Institute established a training seminar for real estate appraisers and other professionals. Earth Advantage Institute also plans to offer a training course for appraisers in 2009.

4) Work with Homebuilder and Professional Realtor Associations to Increase Consumer Knowledge about Sustainable Homes

Built Green Washington, Cascadia USGBC, Earth Advantage Institute, different Master Builder Associations, Home Builder groups and others, regularly work with professional home builder and real estate associations. These partnerships should be continued and used as an opportunity for increased and coordinated public outreach regarding the connection between sustainable certification and home value. Articles in on-line and printed newsletters, conference presentations and continuing education opportunities each play a role. A concentrated, short-term

outreach campaign would also result in increased general pubic understanding of these complex issues.

5) Develop Additional Educational Tools

Expand Green Building Valuation on-line resources available through GBVI member organizations. When GBVI first began, an on-line library was established through Cascadia USGBC for member organizations. Existing GBVI member websites and other resources include:

American Appraisal Institute:
http://www.appraisalinstitute.org/

Cascadia Regional Green Building Council:
http://www.cascadiagbc.org

Built Green Washington:
http://www.builtgreenwashington.org/page.php?id=3

Earth Advantage Institute:
http://www.earthadvantage.org

Green Works Realty:
http://greenworksrealty.com/e-cert_report/e-cert_report.php?t=e-cert_report

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