



**GREEN BUILDING
MARKETING ANALYSIS**

**FIVE COUNTY REGION
WESTERN WASHINGTON**

Prepared for:

BUILT GREEN® WASHINGTON

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HAMILTON INVESTMENTS, LLC
1808 BELLEVUE AVE SUITE 201, SEATTLE, WA 98122
206.617.2470 (OFFICE)
206.706.2565 (FAX)
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I. ABSTRACT

This analysis will quantify the effects of marketing and 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^{®1}, LEED for Homes and Energy Star. The listing offices included in this study are Windermere and John L. Scott. Major findings of this study are as follows:

- Throughout the five county region, certified homes which were marketed as green achieved an average sales price of \$534,000 and homes which 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 year 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 which were not marketed through the Northwest Multiple Listing Service.
- The counties with lower standard deviations among certified home prices generally saw higher premiums for marketed homes, due in part to the normalcy of the data sets.
- The county with the highest percentage of homes marketed 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%.

¹ 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.



- 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.

Both Windermere and Johns L. Scott are Northwest residential real estate brokerages and together 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 positive effects on pricing of environmentally certified homes when marketing includes descriptions of sustainable features and of the 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 which can be drawn from this study is that evidence points to consumers paying more for cost-saving and environmentally friendly home systems, and 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.



II. INTRODUCTION

The primary research question throughout the analysis is: Does marketing of green features and environmental certifications have an effect on the sales prices of environmentally certified homes? The short answer to this question is yes, with further explanation found throughout this document as well as a brief summary of findings presented in the abstract above.

Methodology

The data presented throughout this study comes from the Northwest Multiple Listing Service (NWMLS) and represents homes sold between the year 2007 and April of 2009. The home sales analyzed are all denoted by the NWMLS as certified Built Green®, Energy Star or LEED for Homes with peripheral programs falling into an “other” category. By downloading sales records of certified homes, a comparison was then made between the listings. Of some 2,500 environmentally certified homes sold in the time period referenced, 1,470 of those homes were built after the year 2005. For the purposes of this study, these 1,470 homes are used in regard to analyzing various elements of their pricing and all charts, unless otherwise noted, reference this specific data set.

Throughout the study, marketed and unmarketed homes are referenced and an explanation for this delineation is included here. Each home sale comes from a listing on the NWMLS. Marketed and unmarketed homes are denoted utilizing the marketing comments associated with each of these listings. Using a database search engine created for this analysis, marketing remarks for each listing are searched for specific language associated with sustainable building practices and environmental certification. Each listing is searched for any green building certification as well as descriptions of environmentally friendly materials and sustainable features. While the data cleaning and searching mechanism is robust, it cannot account for every word or phrase potentially indicating each agent’s marketing intentions. Marketing comments are utilized by both buying and selling agents to inform themselves and their clients of each homes’ attributes and one of the major assumptions of this study is that the marketing of green features in certified homes begins with the marketing comments of a listing.

While the findings of the study support the hypothesis that marketing comments are a good method for analyzing the effects of marketing on sales prices for certified homes, each sale referenced in this document cannot account for every agent’s knowledge and intentions regarding the sustainable features of each home sold. However, without at least some explanation or denotation of environmental certification within a listing’s

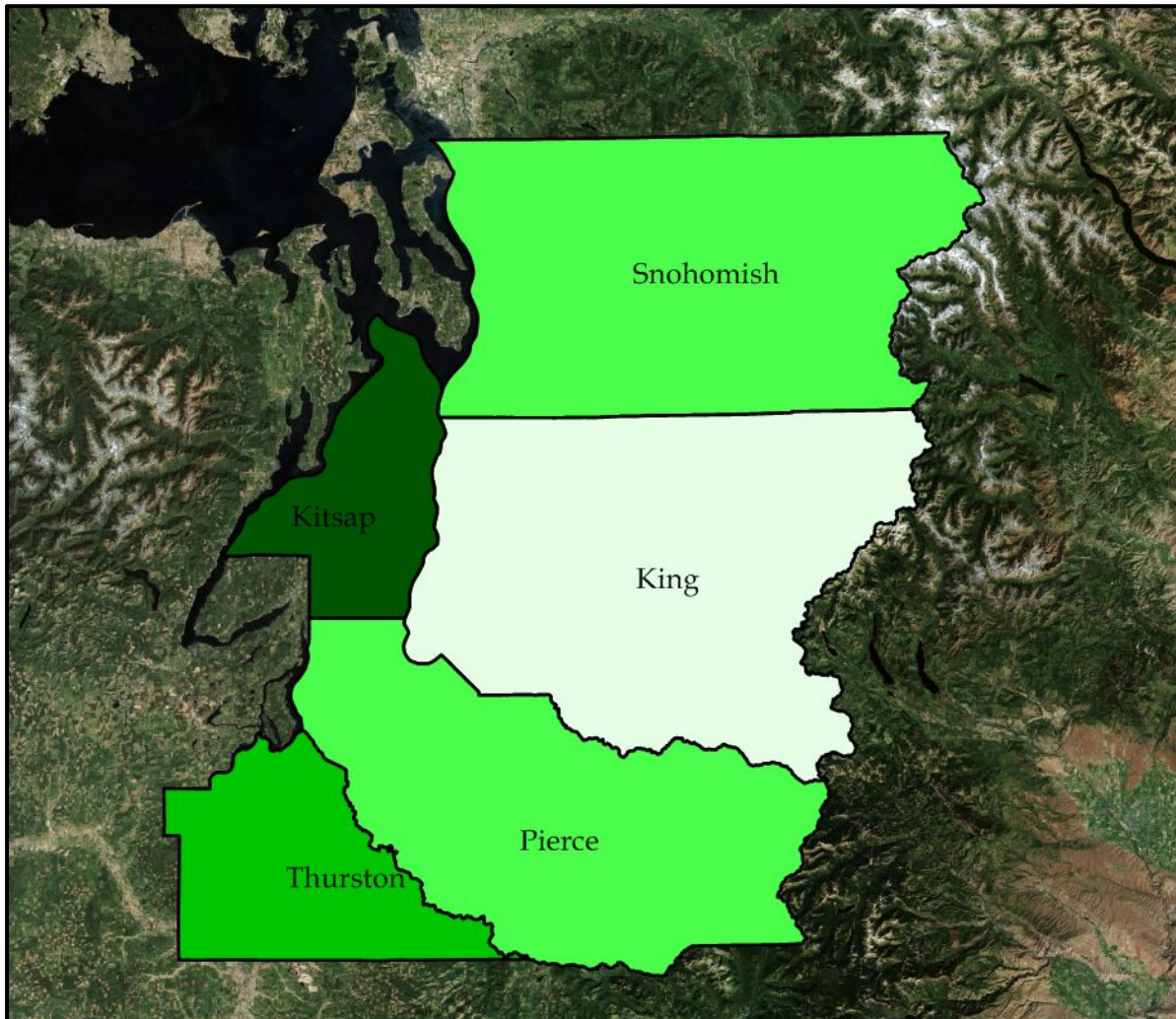


marketing comments, the stage seems to be set for less than optimal transfer of information for both clients and agents who are uninvolved in the listing process. Whether this represents an agent's lack of knowledge regarding environmental certification or a disregard for such information cannot be concluded without extensive interviews with each agent who created each of the listings.

In conclusion, the reader should note that marketed homes are homes which contain specific marketing language in NWMLS listings and unmarketed homes do not contain this language.



CONTEXT MAP
FIVE COUNTY REGION



Source: State of Washington

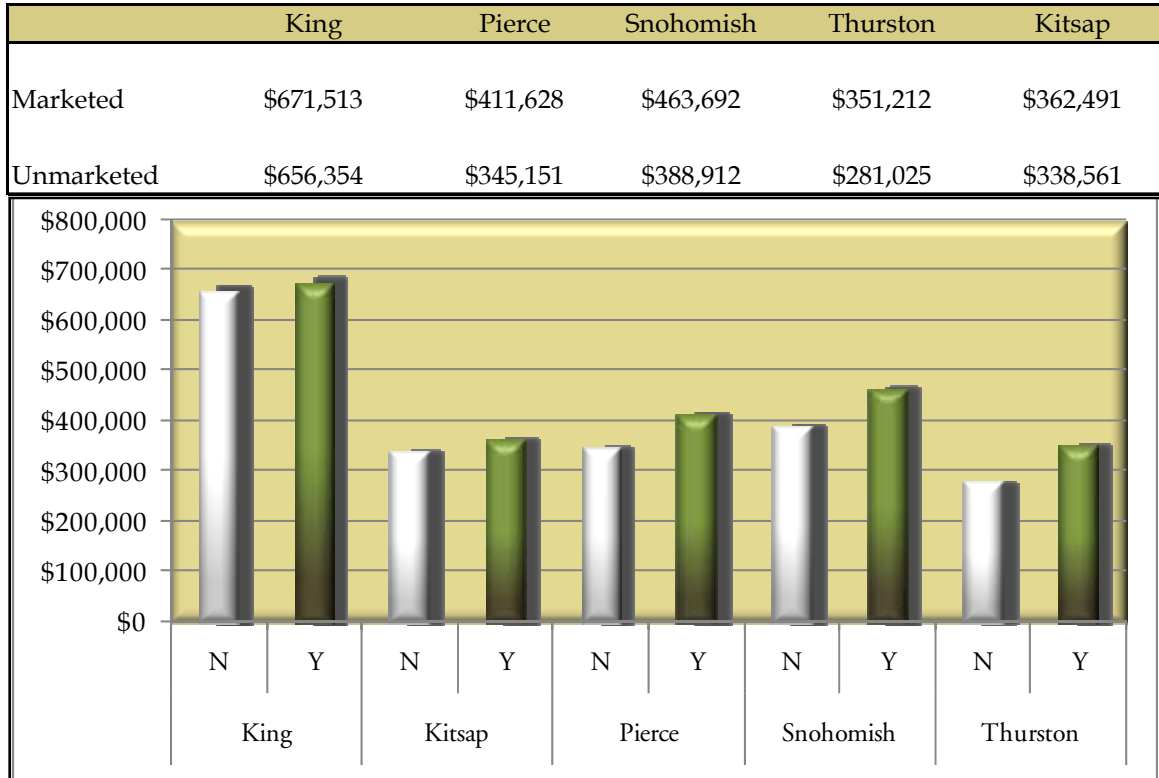
The map above shows the five county region discussed in this study. All home sales referenced throughout the study come from the Washington State counties shown above. King, Pierce, Snohomish, Thurston and Kitsap counties are all located along Puget Sound and are closely tied geographically as well as economically.



III. GEOGRAPHIC ANALYSIS

Pricing

AVERAGE PRICES FOR CERTIFIED HOMES SOLD BY COUNTY



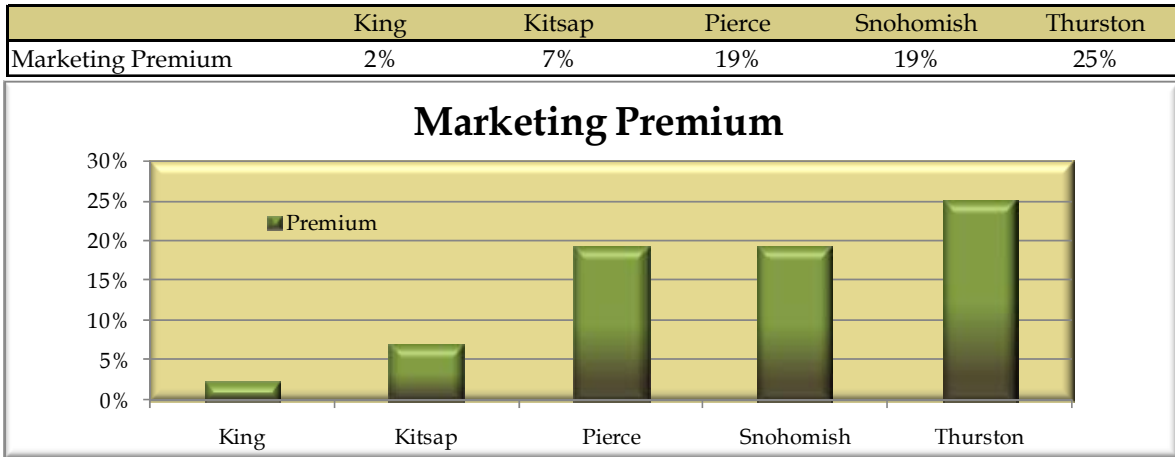
Source: Northwest Multiple Listing Service

The chart above shows the price difference by county for marketed (Y) and unmarketed (N) homes in the five county region. While these differences vary by county, it is interesting to note that, in all county submarkets, marketed homes consistently achieve higher average prices than those which are not marketed. An in depth discussion of the significance of the variability amongst price discrepancies will appear later in this document.

Thurston County shows the lowest average prices for both marketed and unmarketed homes with marketed homes averaging \$351,212 and unmarketed homes averaging \$281,025. Conversely, King County shows the highest average prices for both marketed and unmarketed homes with marketed homes achieving an average sales price of \$671,513 and unmarketed homes averaging \$656,354.



PRICING PREMIUMS OF MARKETED VS. UNMARKETED HOMES



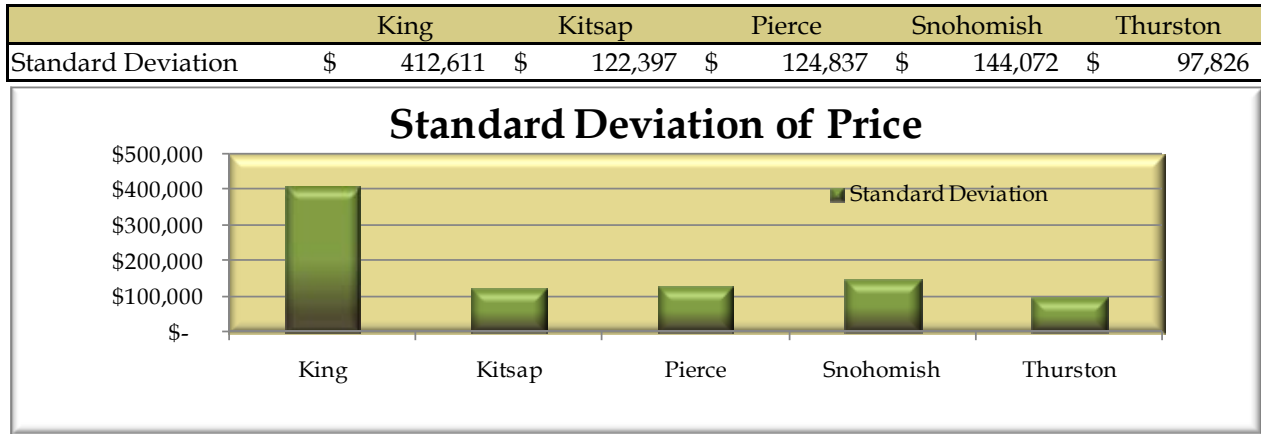
Source: Northwest Multiple Listing Service

The chart above shows the percentage premium of marketed homes vs. unmarketed homes in the five county region. Thurston County received the highest premium with certified marketed homes achieving an average price that was 25% higher than homes which were not marketed through the Northwest Multiple Listing Service. King County showed the lowest premium for certified marketed homes, with average prices just two percent above the average price of unmarketed homes.

The significance of these premiums has less to do with the specific premium associated with each county, but rather the ubiquity of marketing premiums across all counties. This theme is more thoroughly discussed in the abstract of this document and will be expanded on in the following section of the document.



STANDARD DEVIATION OF CERTIFIED HOME PRICES BY COUNTY

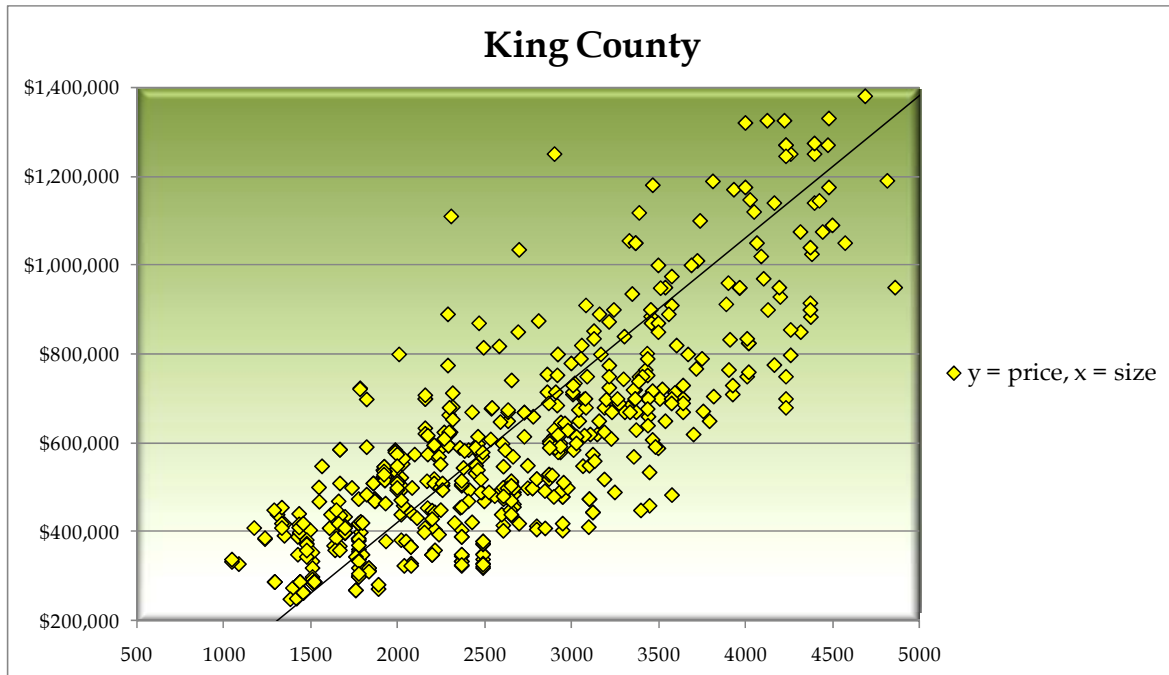


Source: Northwest Multiple Listing Service

The following section will attempt to offer an explanation of the variation in premiums and prices between counties. The chart above shows standard deviations for all prices of homes within each county. Standard deviation is a statistical measure of the likely variation of a variable from the mean of a series of variables. In the case of King County, the mean price for all certified homes was \$660,696 with a standard deviation of \$412,611. In other words, any price of a certified home in King County is likely to have a deviation from the mean price of \$660,696 of about \$412,611. This differs significantly from the other counties within the study and helps to explain the variance in marketing premiums among counties. This explanation does not isolate a specific metric for valuing marketing of environmentally certified homes but rather helps to explain the variation between each county's marketing premium. The fact that all counties show some sort of premium presents strong evidence that marketing green features and certifications has a positive effect on home prices.



KING COUNTY CERTIFIED HOME PRICES
SHOWN BY SQUARE FOOTAGE AND PRICE AROUND THE MEAN



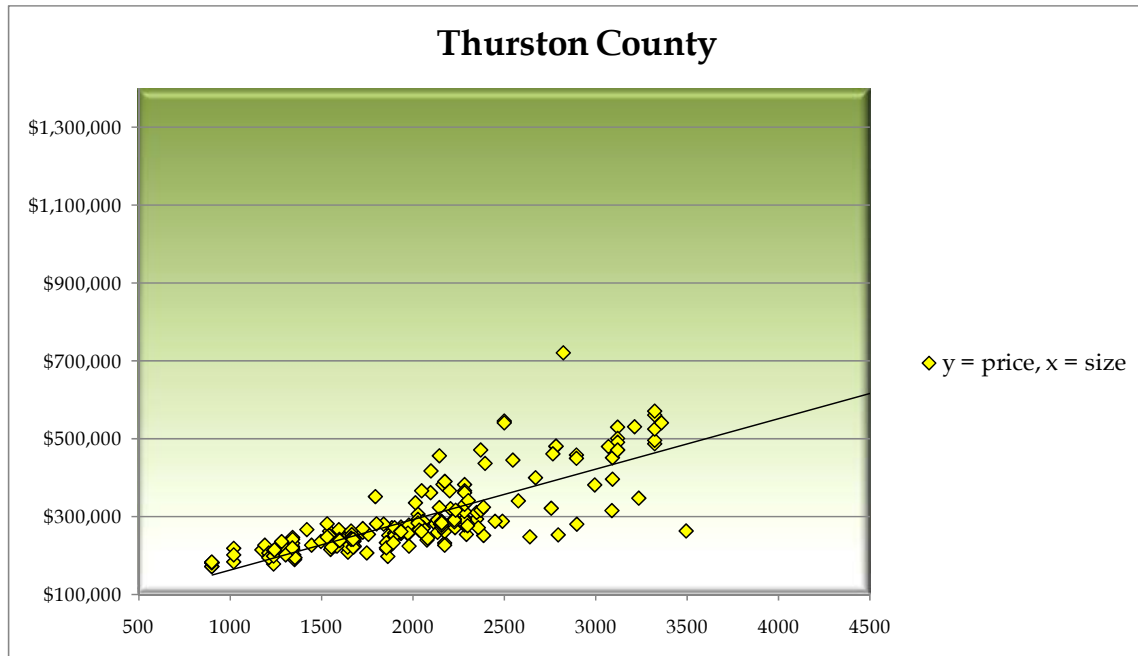
Source: Northwest Multiple Listing Service

The scatter plots shown in this section make the case for positive correlation between marketing and sales price; in fact a simple T-score shows that marketing has some effect on sales prices at a 95 percent confidence level. Determining the actual effect of the marketing as well as accounting for heteroskedasticity among variances must be determined through educated assumptions of correlation as a result of this analysis.

King County homes in the chart above show a lack of normalcy around their mean on a price and square foot comparison. In other words, the lack of comparable properties within the King County data sets creates a high degree in variation of product type and sales prices (high standard deviation). In perfectly like product with all variables equal (same house, same finishes, views, location etc.), the price of every unit would increase exactly along the mean line as square footage increased. King County, due to many factors including income diversity and the presence of many high wealth communities and families, shows a high diversity of product type. Such variation in product type (for example, Shoreline craftsman vs. Mercer Island mansion) increases the difficulty of isolating a variable such as marketing's effect in home prices across the county. The chart of Thurston County, shown on the following page, shows less diversity of product type and a higher level of normal/tighter distribution around the mean of the prices.



THURSTON COUNTY CERTIFIED HOME PRICES
SHOWN BY SQUARE FOOTAGE AND PRICE AROUND THE MEAN



Source: Northwest Multiple Listing Service

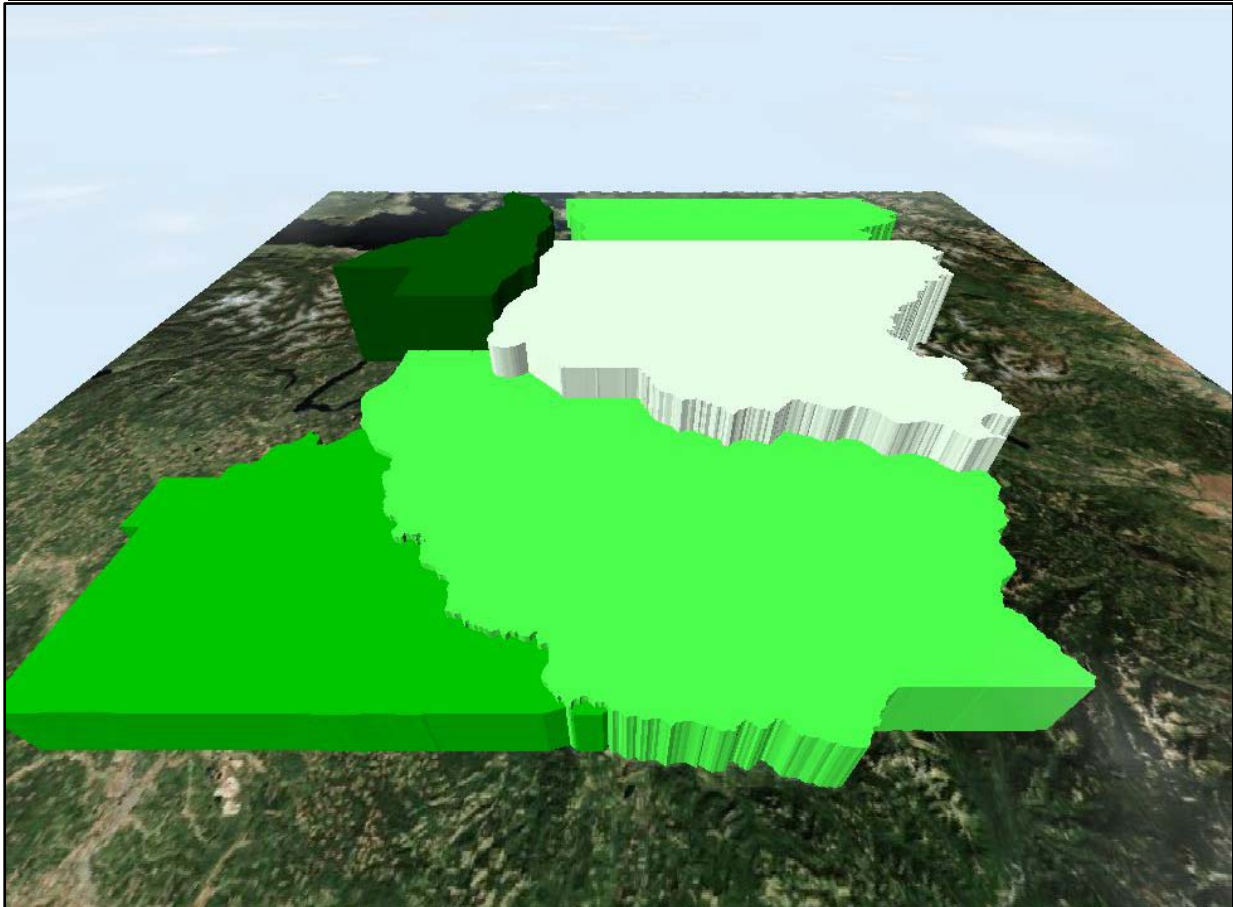
The chart above shows a much different data set from that of King County. The Thurston County data set reflects a more normalized set of data. With few outliers and close proximity to the mean, the Thurston data represents product which is much more analogous than King County housing units, at least on a price and size basis. It is not presumptive to assume that this product type is also more alike in other ways. Thurston County is more homogenous in income distribution as well as in housing prices, allowing for fewer custom homes and less general size and price diversity. As a result, a variable such as the marketing of environmentally certified homes can be more easily analyzed among more like product. While Thurston County saw the highest premium for marketed homes, it also had the lowest standard deviation among the prices of those homes. A 25% premium for green marketed homes should not be a hard and fast rule, but the counties with lower standard deviations among certified home prices generally saw higher premiums for marketed homes. These higher premiums are due potentially to the normalcy of the data set. The only exception was Kitsap County with a premium of only 7%. The trend in Kitsap may be somewhat anomalous due to the small sample size from which the premium was derived.



Volume

MARKETING BREAKDOWN OF CERTIFIED HOMES
FIVE COUNTY REGION

	King	Kitsap	Pierce	Snohomish	Thurston
Certified Homes Sold	576	117	231	332	214
Homes Marketed	165	45	41	53	34
Homes Unmarketed	411	72	190	279	180
Percent Marketed	29%	38%	18%	16%	16%



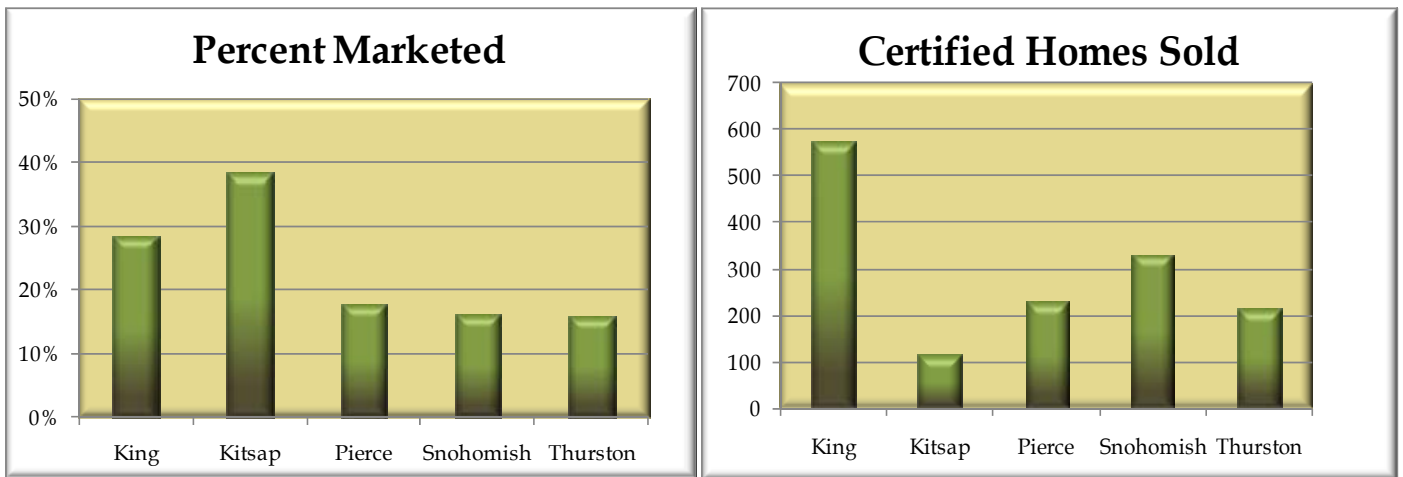
Source: State of Washington, Northwest Multiple Listing Service

In all counties represented in this study, certified homes which are shown to be marketed by agents using the multiple listing service all show higher average prices than those certified homes which are not marketed for their sustainable certifications and/or features. The chart and map above represent the percentage of certified homes which were marketed through the MLS for each county in the five county region with



the heights of each elevated county representing the percentage of homes within each county which were marketed.

The county with the highest percentage of homes marketed 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%.



Source: Northwest Multiple Listing Service



IV. PROGRAMMING

ENVIRONMENTAL CERTIFICATION PROGRAMS REFERENCED IN MARKETING REMARKS BY COUNTY

County	Built Green	LEED	Energy Star
King	101		48
Kitsap	24	1	8
Pierce	8		3
Snohomish	6		5
Thurston	6		13
Grand Total	145	1	76

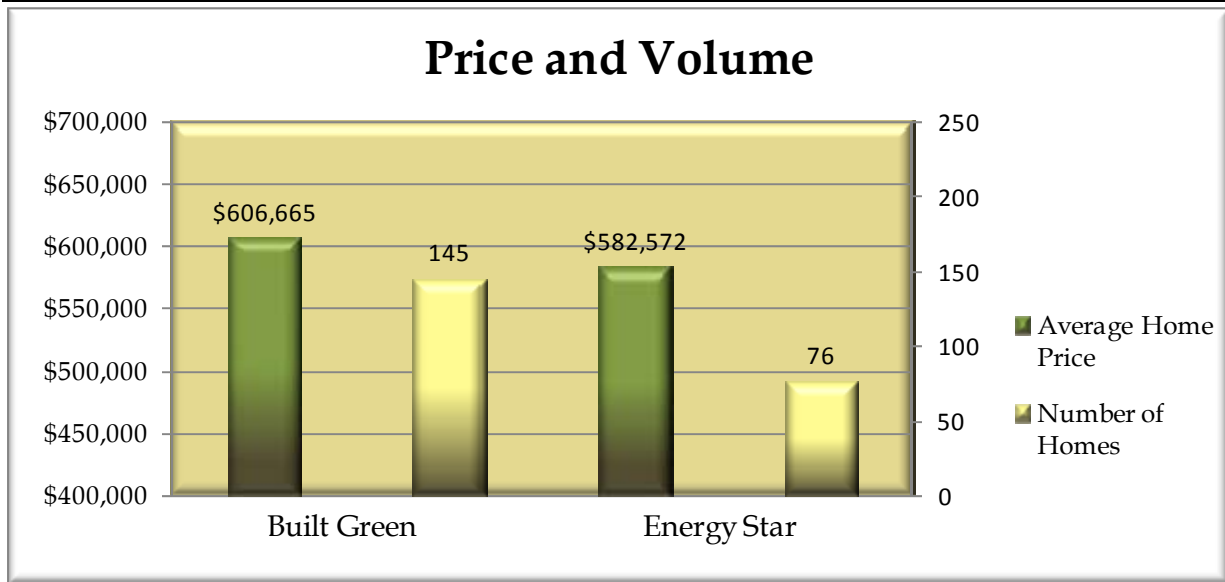
Source: Northwest Multiple Listing Service

The chart above shows the breakdown of certification types listed in marketing comments on the NWMLS. 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. LEED for Homes is underrepresented with one reference amongst marketed homes built after the year 2005 which is understandable as LEED for Homes is a young national program. Built Green® is the preeminent program in the Northwest, run by the Master Builders Association of King and Snohomish Counties. Energy Star is the second most referenced program behind Built Green® with 76 homes referenced in the five county region.



AVERAGE PRICING FOR PROGRAMS REFERENCED IN MARKETING COMMENTS
FIVE COUNTY REGION

Certification Type	Built Green	Energy Star
Average Home Price	\$606,665	\$582,572
Number of Homes	145	76



Source: Northwest Multiple Listing Service

The chart above compares pricing and volume for homes referencing Built Green® and Energy Star programs within the five county region. Built Green® certified homes averaged \$606,665 while Energy Star certified homes averaged \$582,572. Built Green® also saw about twice as many certified homes referenced in marketing remarks on the Northwest Multiple Listing Service.

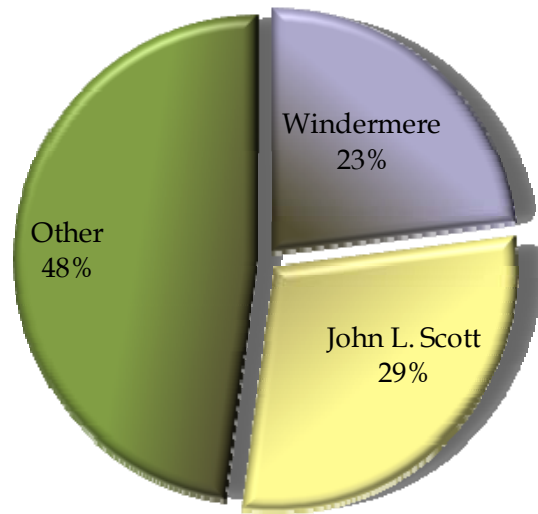
Homes marketed as Built Green® seem to be better recognized by the market in both pricing premiums as well as total sales volumes. This is not surprising as Built Green® is both local and well regarded by the development community. Many builders who are part of the Master Builders Association are encouraged to certify homes through the Built Green® rating system and the ratings system has the advantage of contribution of and feedback from many local builders and developers.



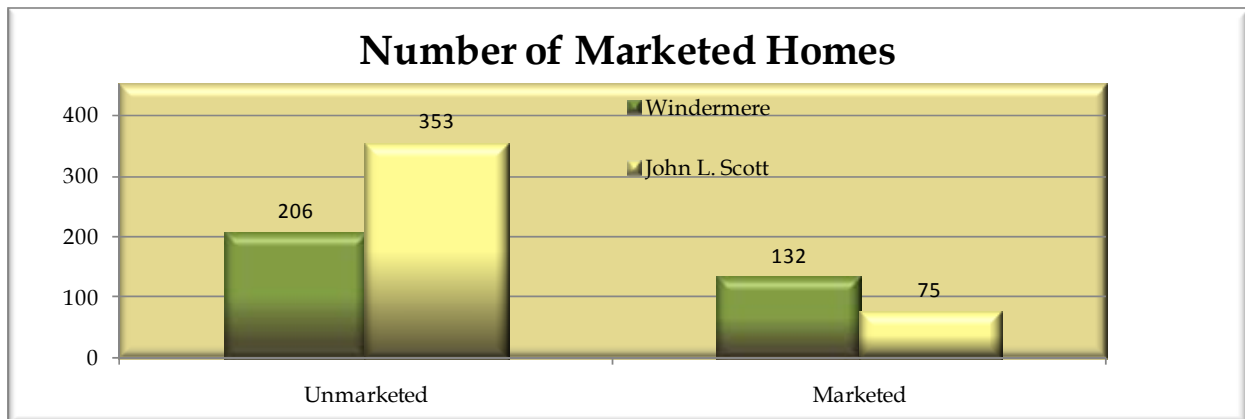
V. MARKETING BY LISTING OFFICE

CERTIFIED HOME SALES BY LISTING OFFICE

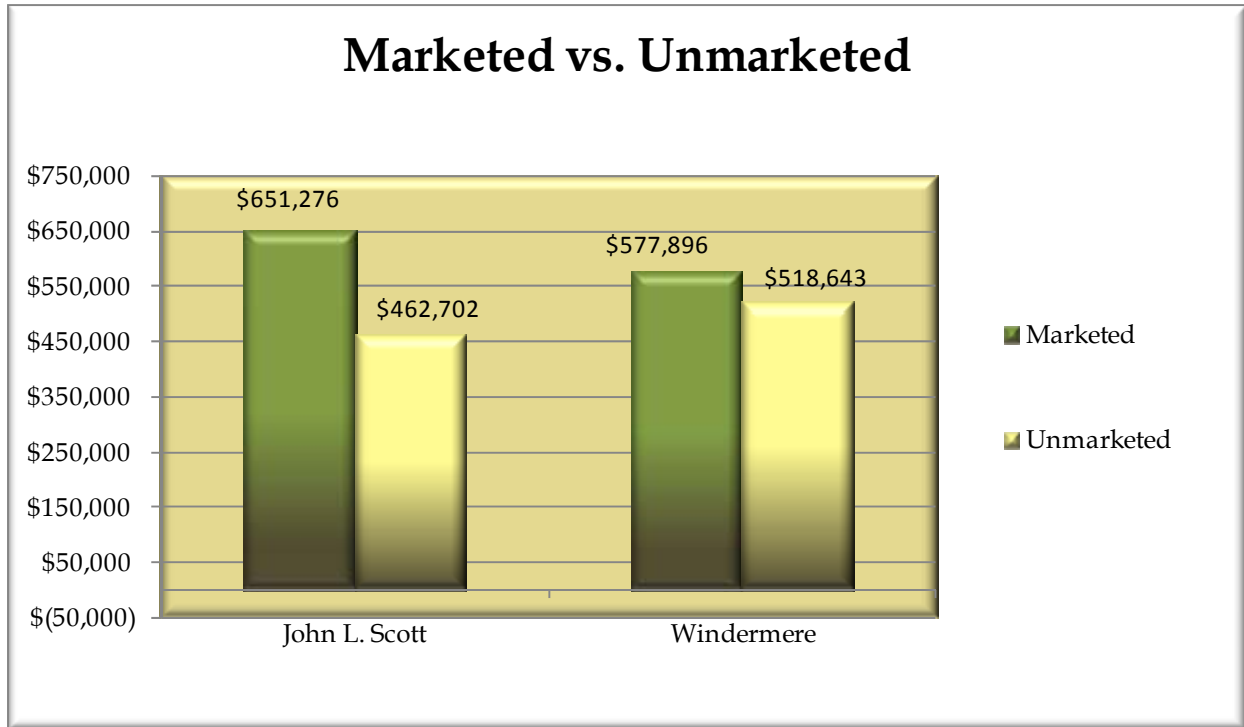
The following section details the two major listing offices and their participation in the marketing and sale of certified homes. Both Windermere and John L. Scott are Northwest residential real estate brokerages and together make up the majority market share of environmentally certified home sales in the five county region. Of the 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. John L. Scott listed 29% of the certified homes (both marketed and unmarketed) sold in this time period and Windermere listed 23% of these homes. It is important to keep in mind that the homes surveyed for this study were built after the year 2005 in order to maintain similar product type amongst the data set.



The chart below breaks down the sales of certified homes by listing office and related marketing. Of the 766 certified homes listed by both Windermere and John L. Scott, 207 of these homes listed were marketed as green. John L. Scott marketed 75 homes and Windermere marketed 132 homes. The term “marketing” refers to the comments made in the marketing remarks section of the NWMLS. If the listing mentioned environmental features/certifications in a listing, that listing’s home was “marketed”.



Source: Northwest Multiple Listing Service



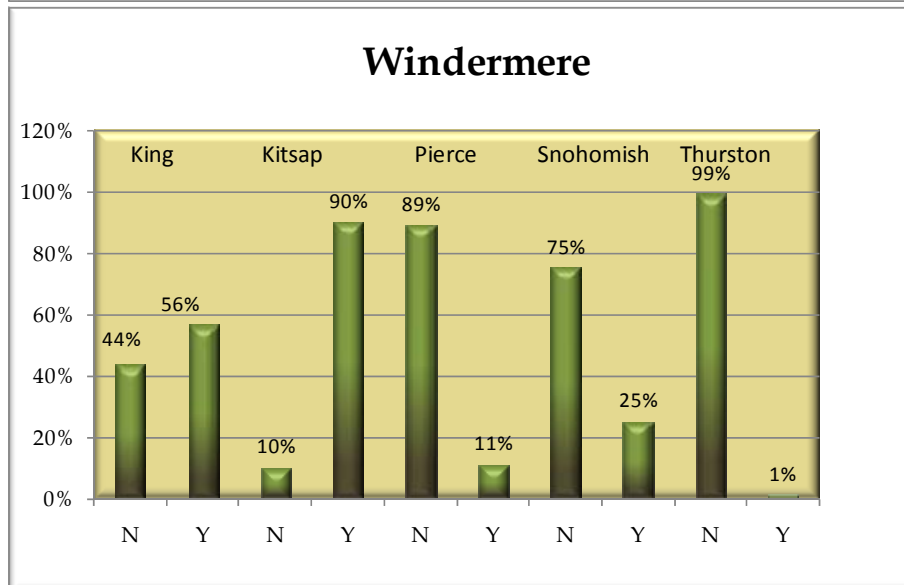
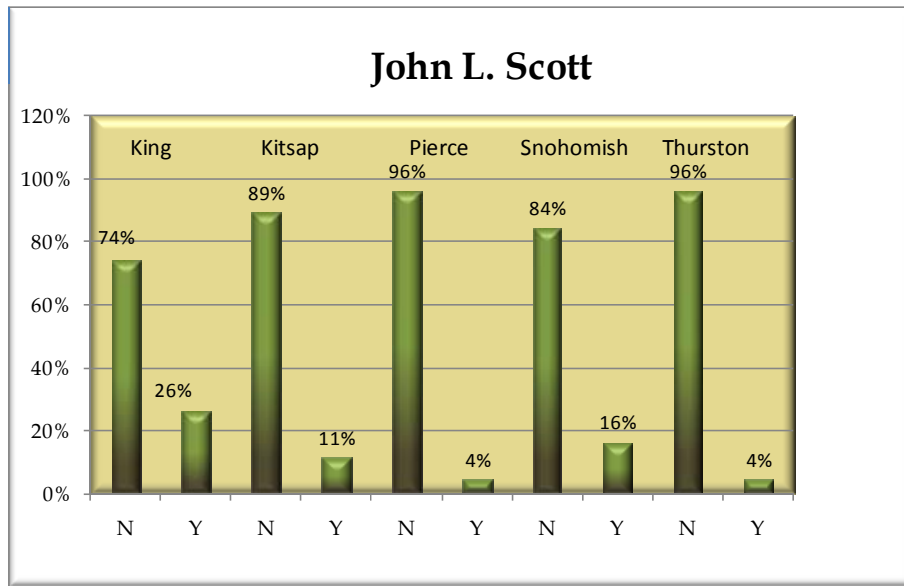
Source: Northwest Multiple Listing Service

The chart shown above reflects the average prices of marketed vs. unmarketed homes by real estate companies. John L. Scott marketed and listed 75 homes selling for an average of \$651,276 and listed but did not market 353 homes selling for \$462,702. Windermere listed marketed homes which sold for \$577,896 and unmarketed homes for \$518,643. John L. Scott saw a greater discrepancy between marketed and unmarketed homes in part because the percentage of homes marketed as green by John L. Scott was significantly lower than those marketed by Windermere. Of the 428 certified homes listed by John L. Scott, only 75 of those homes were marketed as green. Windermere listed 338 certified homes between 2007 and 2009 and, of those homes, 138 homes were marketed as green with marketed homes selling for an average of \$577,896 and unmarketed homes selling for \$518,643.

The charts on the following page detail the percentage of homes marketed by each real estate brokerage by county. Each county shows a bar graph labeled “Y” and “N”, denoting marketed (Y) and unmarketed (N). Across all counties but Thurston, Windermere clearly displays a marketing advantage over John L. Scott with a higher percentage of green homes marketed among various counties. In fact 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. A good case can be made that throughout the study, homes marketed as green will achieve higher premiums than



certified homes which are not marketed as green. This theory is represented in the difference in average selling prices for homes among real estate groups with certified homes sold by Windermere selling for higher average prices than homes listed by John L. Scott. Windermere is marketing more houses as green than John L. Scott which seems to result in the aforementioned pricing disparity.



Source: Northwest Multiple Listing Service



VI. GENERAL LIMITING CONDITIONS

The information on which this report's analysis and conclusions are based have been gathered from third party sources which Hamilton Investments LLC believes to be reliable. However, because of the possibility of human or mechanical errors by our sources, Hamilton Investments, LLC does not guarantee the accuracy, adequacy, or completeness of any information obtained from third parties. Likewise, analysis based on such information cannot be guaranteed, as different input data could yield different results.

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