

ESTIMATING THE POTENTIAL MARKET VALUE OF PROPOSED VALHALLA BRANDYWINE DEVELOPMENT BY VALHALLA BRANDYWINE PARTNERS IN WALLACE TOWNSHIP, PENNSYLVANIA

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TABLE OF CONTENTS

Executive Summary	iii
1.0 Introduction	1
2.0 Valhalla and Comparable Communities	2
3.0 Summary Statistics	5
4.0 Empirical Strategy	9
5.0 Empirical Analysis	11
6.0 Valhalla Valuation	17
7.0 Conclusion	19
Appendix A - References	A-1

EXECUTIVE SUMMARY

Valhalla Brandywine Partners has asked Econsult Corporation to examine the potential market value and viability of Valhalla Brandywine Country Club, Wellness Center and Spa, a proposed upscale resort community in Wallace Township, Pennsylvania. This study involved the compilation and analysis of transaction data in other comparable resort communities around the US, and the development of a regression pricing model using these transactions in order to generate price predictions for Valhalla's units. Among the central findings of our report are the following:

- With an average price per square foot of \$377, Valhalla's proposed prices are below the average of other comparable resort communities. Valhalla's relative affordability makes it accessible to a larger market than if priced otherwise.
- Valhalla's proposed prices are 2.5 times its average Zip code house price and 4.1 times its average county house price. This is also below the average multiple for these communities and falls well within the range of price multiples for other resort developments. This suggests that Valhalla's pricing structure is credible, as well as relatively more affordable than other resort communities.
- The data also indicate that the market for upscale resort dwellings has continued to perform very strongly despite the current national housing slump. From 2004 through 2008, house prices in the resort communities we examined have appreciated at an annual average of 15% per year, while average house prices in the ten largest US cities have fallen by 18% from their peak.
- The continued strong performance of resort communities during the current housing downturn suggests that the market can continue to absorb new resort dwellings, like Valhalla's, during a time when the national housing market will remain challenging in general. A regression pricing model developed with sales from the comparable resort communities predicts prices for Valhalla that are slightly higher than Greenfield's proposed pricing plan. The model predicts total sales revenue of \$409 million, or 22 percent higher than the \$318 million under Valhalla's proposed pricing.
- Even assuming these higher predicted prices, Valhalla's pricing would remain well within the range of both prices and price multiples of other resort communities, and close to the average for these communities. These results are strongly supported by the fact that the statistical diagnostics for the pricing regression are very strong, and that the market for upscale resort communities continues to remain very robust despite the current housing downturn in the US. Consequently, the data suggest that Valhalla would be a relative value compared to other upscale resort developments.
- We conclude that this evidence unanimously supports the successful development of Valhalla.

1.0 INTRODUCTION

Valhalla Brandywine Partners is currently working to bring to fruition an upscale residential development in Wallace Township, PA. The project, Valhalla Brandywine (hereafter, “Valhalla”), consists of 275 LEED-certified “green” residential units on 600 acres. Amenities include a private membership club, an Audubon-certified golf course, a resort spa, fitness complex, and twenty miles of trails for hiking, cycling and horseback riding.

The project represents the first large-scale, resort-style residential development in the Delaware Valley region. As such, there is a lack of true local comparables that can inform the expected price points of the units. Valhalla Brandywine Partners asked Econsult Corporation to examine similar communities in other locations, and to perform an empirical analysis that gives a detailed quantification of Valhalla’s potential market value.

2.0 VALHALLA AND COMPARABLE COMMUNITIES

Valhalla Brandywine Partners has provided the following product mix of Valhalla units, their specifications and proposed pricing (see Figure 2.1):

Figure 2.1 - Valhalla Product Mix

Unit Type	# Units	Lot SqFt	Bldg SqFt	#Bedrms	#Baths	Proposed Price	Price/SqFt
Manor Estate Homes	37	13,100	5,000	5	5	\$2,125,000	\$425
Country Homes	55	9,075	3,200	4	4	\$1,500,000	\$469
Carriage Homes	60	7,725	2,800	3	4	\$900,000	\$321
Cottage	63	5,950	2,600	3	4	\$850,000	\$327
Duplex/Semi-attached	30	8,400	2,400	3	3	\$850,000	\$354
Mews Townhouse	30	12,000	2,200	3	3	\$800,000	\$364

Note: The dwelling dimensions given here are the average of the range for each unit. Source: Valhalla Brandywine Partners

Units range in size from 2,200 square feet to 5,000 square feet, and proposed prices range from a minimum of \$800,000 to just over \$2.1 million. The average price per square foot is \$377.

To examine how Valhalla compares with other resort communities, Valhalla Brandywine Partners has identified the following resort/spa communities as comparables (see Figure 2.2):

- Montelucia: Paradise Valley, AZ. <http://www.montelucia.com/>
- Crystal Springs: Sussex, NJ. <http://www.crystalgolfresort.com/>
- Tartan West: Dublin, OH. <http://www.corazontartanwest.com/>
- Greenbrier: White Sulphur Springs, WV. <http://www.greenbrier.com/>
- Cliffs at Keowee: Pickens, SC. <http://www.cliffscommunities.com/>
- Hammock Beach: Palm Coast, FL. <http://www.hammockbeach.com/>

- Juliette Falls: Marion, FL. <http://www.juliettefalls.com/>
- Southbridge: Savannah: GA. <http://www.southbridgesav.com/>
- Estates at Pronghorn: Deschutes, OR. <http://www.pronghornclub.com/>
- Suncadia: Kittitas, WA. <http://www.suncadia.com/>

Figure 2.2 - Locations of Comparable Resort Developments



Source: Valhalla Brandywine Partners.

Data on dwelling prices both in and around these resort developments were gathered from a variety of sources. Home sales data was purchased from First American CoreLogic. The websites of each of the developments and their county assessors were reviewed for both list and transaction prices. The US Census Bureau provided average house size in the Zip codes of both these communities and nearby.

Average house prices at the Zip code and county level were obtained from www.trulia.com. Lastly, home sales in Glenmoore were compiled from Trend Multiple Listing Services.

The data were cleaned to identify only arms-length transactions of completed units.¹ Sales were classified as belonging to one of three categories:

- Sales of finished resort dwellings
- Sales of non-resort dwellings in the same Zip code as a resort
- Sales of non-resort dwellings in the same county as a resort

In the final dataset, there are 115 transactions that were identified as being sales of finished resort dwellings that were valid for further empirical analysis. In addition to their date of sale, address and price, information on dwelling size, lot size, floor-area ratio, age and number of beds and baths were also collected and screened for accuracy.

¹ Some purchases of existing units appeared to be “teardowns”; i.e. purchases by the developer of lots with an existing dwelling on it that was subsequently torn down before being redeveloped into a new resort dwelling. These transactions were dropped.

3.0 SUMMARY STATISTICS

Figure 3.1 gives summary statistics on the price and characteristics of all comparable transactions, across resorts. Prices range from a low of \$303,750 to a high of nearly \$4.3 million, with an average of \$1.2 million. In terms of price per square foot, the range is from a low of \$82 to a high of \$1,346, with an average of \$345.

Figure 3.1 - Summary Statistics for Comparable Resort Properties

Variable	Count	MIN	MEAN	STD	MAX
Price	115	\$303,750	\$1,232,652	\$984,309	\$4,296,547
Price/SqFt	115	\$82	\$345	\$261	\$1,346
SqFt	115	1,637	3,599	1,020	6,326
Lot SqFt	115	3,638	27,092	16,661	74,923
FAR	115	0.0413	0.2168	0.1920	1.0445
# Beds	115	2.00	3.63	0.68	5.00
# Baths	115	2.00	3.71	0.96	7.00

Source: First American CoreLogic, Resort's Sales websites, County Assessor websites

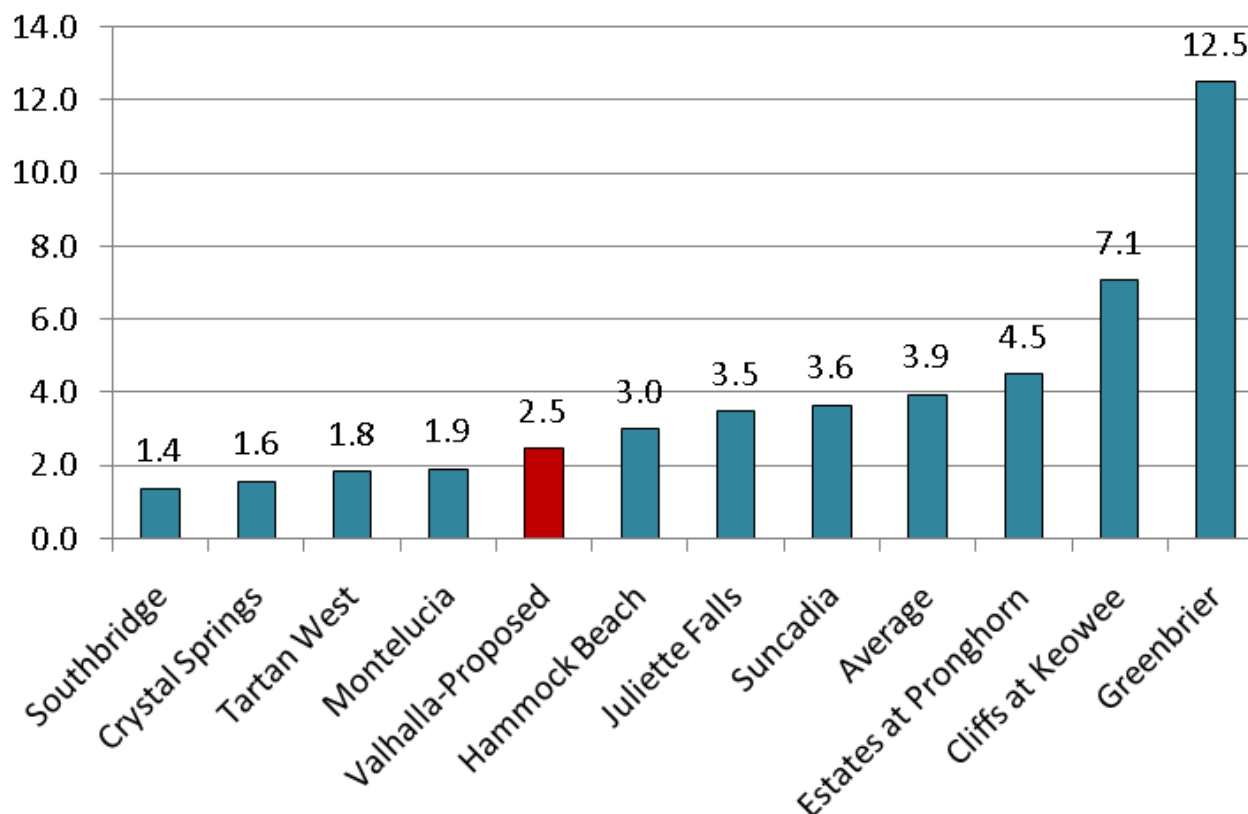
Compared to Valhalla, the average dwelling in these communities is both larger (3,599 sqft v.3,033 sqft) and more expensive (\$1.233 million v. \$1.17 million). However, Valhalla has a slightly higher average price per square foot than these other communities (\$345 v. \$377).² Consequently, it appears that Valhalla's proposed price points are consistent with other upscale resort communities in the US.

Having compared Valhalla to its comparables, we now compare the average prices of resort dwellings to the average prices of non-resort dwellings in these markets. This was done by taking the ratio of the

² This last result is likely driven by the first two aforementioned results. It is a stylized fact of real estate that, although overall price increases with size of a unit, price/sqft generally decreases with size. The reason is what economists refer to as "Diminishing Marginal Utility": the more of something that a consumer has, the less they are willing to pay to acquire more of it. So, just as an additional bottle of water is worth more to someone who is thirsty than someone who has drunk a bottle of water, so too is an additional square foot of space worth more to someone who lives in a studio apartment than someone who lives in a mansion. Hence, the fact that Valhalla has a price/sqft that is higher than its comps is more likely due to the fact that it has an average smaller size than its comparables, rather than some other factor affecting its value, such as its location or finishes.

former to the latter, which expresses resort prices as a multiple of non-resort prices. We did this at both the Zip and County level, using price per square foot (see Figure 3.2).

Figure 3.2. Resort Prices per Square Foot as a Multiple of Average Zip Code Prices per Square Foot



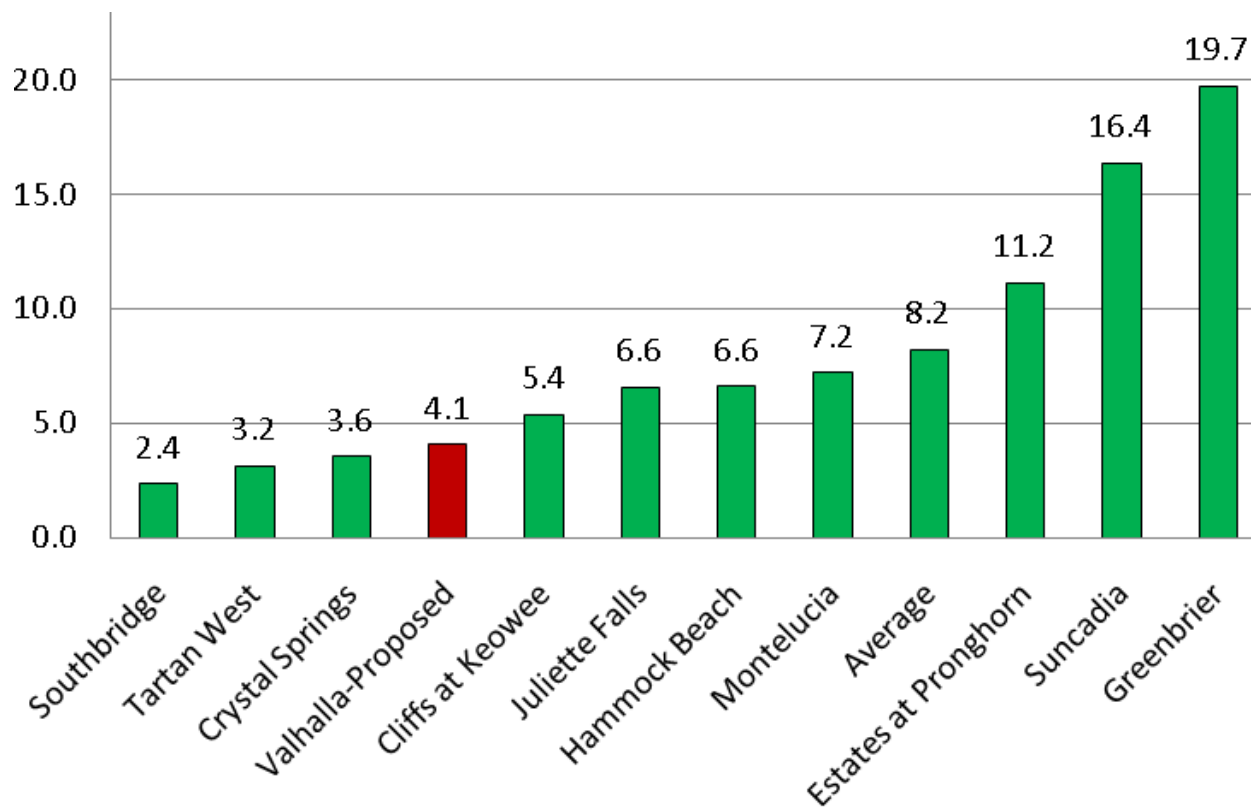
Source: Econsult Corporation (2008)

As Figure 3.2 indicates, the prices of dwellings in resort communities all exceed the prices of existing homes in the Zip codes that these resort communities occupy. This is likely attributable to multiple reasons. First, the resort dwellings are newer—and hence less depreciated—than the existing stock of housing in its Zip code. Second, the resort dwellings likely have better finishes and design due to the fact that they are marketed to a more upscale and affluent consumer. Lastly, the fact that the resort dwellings are part of a “community”, and have amenities such as golf courses, spas and private security also adds to the price that they are able to command. So, the fact that they all transact at prices which are a multiple of nearby non-resort dwellings is unsurprising. What may be surprising, however, is how much this ratio varies. At the low end, units in Southbridge are priced at 1.4 times the average price of homes in its Zip code. At the other extreme, units at Greenbrier have prices that are 12.5 times the average house price in its Zip code. The average multiple is 3.9, but this is doubtless skewed upwards by the presence of Greenbrier in the sample. **With its proposed pricing, Valhalla would be priced at 2.5 times the average price in its Zip code. This is below the sample average across all resort communities, and**

is well within the range of all values. Hence, the proposed pricing of Valhalla appears to be both plausible and credible, relative to the premiums obtained by other upscale resort communities.

To provide further support for these results, we perform this same analysis at the county level. Because Zip codes are relatively small geographic units, the existing dwellings in a Zip code may not be representative of the housing stock in that region. If that is so, the price premium that resort dwellings command in the market may be different when compared to the larger region rather than just their own Zip code(s). To see if this is true or not, we computed the ratio of average resort dwelling price to the average house price in the county of each resort's location (see Figure 3.3).³

Figure 3.3. Resort Prices as a Multiple of Average County Prices



Source: Econsult Corporation (2008)

Figure 3.3 indicates that the distribution of price multiples at the county level of analysis is consistent with the multiples at the Zip code level of analysis. Most resorts are ranked at or near the ranking they had at the Zip code level, with Southbridge again having the lowest multiple (2.4) and Greenbrier again having the largest multiple (19.7). Once again, **Valhalla is located in the middle, but still below the average, with**

³ "Price" was used rather than "Price/SqFt" because dwelling size was not obtainable at the county level.

proposed prices that are an average of 4.1 times the county average.⁴ This is consistent with the Zip-level analysis.⁵

Hence, Valhalla's proposed pricing structure appears consistent with the pricing strategies of other comparable, upscale resort communities. Its prices are well within the range of price multiples when compared to existing local dwellings, and the fact that its multiple is below the average of the other resorts supports Valhalla's affordability and attractiveness to a larger population of potential buyers.

⁴ The average price of Valhalla units was computed as a weighted average of the list prices across units, with the number of proposed units serving as the weights. It was computed to be \$1,157,000. By contrast, the average house price in Chester County was reported to be \$285,000.

⁵ One difference between the county- and Zip-level analyses is that the average multiple is higher at the county level. At the Zip level, the average resort dwelling is priced at 3.9 times the average house price. At the county level, the average resort dwelling is priced at 8.2 times the average county price. Since average resort price is the same in both analyses, this implies that the average Zip price is higher than the average county price. This would seem to make sense, since resort dwellings are very upscale, and are marketed to relatively affluent buyers. Since location is as important an attribute of real estate as the structure itself, it would be logical for the developers of these communities to choose to locate in the relatively more attractive areas of the region. The fact that the price multiples are higher at the county level than at the Zip level supports this, since the analysis indicates that average house prices in the resorts' Zip codes are higher than the average house prices in the resorts' counties.

4.0 EMPIRICAL STRATEGY

Having provided evidence that Valhalla's proposed price points seem to be within a feasible range of values, we now set out to determine what its actual prices would be if the units were finished and listed for sale in the current market. Although it is fairly easy to compare Valhalla's prices to those of other comparable resorts, what is more difficult is identifying why and how there are any difference in prices. For example, it is straightforward to note that the average difference in price between two properties is X dollars per square foot; it is more difficult to determine how much of this difference may be attributable to differences in various house characteristics, such as size, location, and quality of finishes. While it is obvious that the presence of a swimming pool, for example, contributes to a property's value, an explicit and exact identification of just how much value a swimming pool adds is much more difficult.

The solution to this problem is to undertake an objective statistical analysis of the correlation between the price of condos and their locational and physical attributes. At the center of such an analysis is a pricing model that is constructed according to widely accepted industry standards. Termed "Hybrid Hedonic Valuation Models,"⁶ these models are ubiquitous in the housing economics profession, and have industry-wide acceptance and precedent.⁷

The basic idea of hedonic analysis is that it decomposes the overall value of a property into the sum of the values of its individual attributes. Since different attributes of a property (e.g. neighborhood, school district, square footage, design, etc.) impart different levels of value, these models deploy statistical analysis to place explicit marginal prices on the values of these individual attributes. The numbers that represent these marginal prices are obtained by estimating a regression of property prices on a vector of the property's attributes.

The general form of these models is as follows:

$$P_i = \sum_{i=1}^K \beta_i X_i \quad (1)$$

Where:

- P_i = the sales price of the i th property
- X = an observable characteristic of the i th dwelling (e.g. square footage, distance to CBD, etc.)
- B = the marginal price of the X th attribute
- K = the total number of observable characteristics for the sample of dwellings

⁷ See Appendix A for a bibliography of references.

Equation (1) specifies a linear relationship between the price of a home and its attributes. However, it is well-known by housing economists that most consumers of housing (i.e. the buyers) exhibit what economists refer to as “diminishing marginal utility”: the marginal price of additional attributes is always positive, but it increases at a decreasing rate.

For example, the first square foot of housing is always worth more than the last square foot. The reason is because an additional square foot of space is worth more to someone who lives in a small house than to someone who lives in a large house. The same is true for other quantitative attributes, such as additional bedrooms and bathrooms. Adding another bedroom to a house with only one bedroom is likely to add much more in value than, say, adding another bedroom to a house that already has five of them. Similarly, adding a 300 square foot bump-out to a 700 square foot cottage will contribute a larger increase in value than doing the same sized bump-out to a 5,000 square foot mansion.

The solution to making a linear equation capture nonlinear effects is to add nonlinear variables to the regression. Adding squared values of the property characteristics is the most commonly used technique. For example, adding not only the number of bathrooms but also the number of bathrooms squared to the regression specification is an accepted practice.

The objective of the model described in Equation (1) is to obtain explicit numeric values of the β parameters. These are the marginal prices of the property’s attributes. The pricing model is constructed using a comprehensive dataset containing the sample of all 115 arms-length resort sales compiled for this report. This sales data was read into a standard statistical software package (SAS), cleaned and formatted, and the necessary attribute variables created. The model in Equation (1) is then computed by regressing price on a vector of unit-level attributes. The estimation algorithm used by the software was Ordinary Least Squares, which is the default industry standard.

5.0 EMPIRICAL ANALYSIS

With the cleaned and formatted data, the pricing model was estimated via a regression using price/sqft as the dependent variable. The regression output is given in Figure 5.1.

Figure 5.1 - Regression Results

Variable	Coeff. Est.	S.E.	t Value	Pr > t
Bldg_SqFt	-0.33214	0.11053	-3.01	0.0035
bldg_sqft_sq	0.00003372	1.29E-05	2.62	0.0105
Beds	-258.84567	213.3764	-1.21	0.2286
beds_sq	35.00887	28.83923	1.21	0.2283
baths	423.03993	136.258	3.1	0.0026
baths_sq	-42.7904	15.76882	-2.71	0.0081
Listed	-154.89714	82.32847	-1.88	0.0635
Cliffs_at_Keowee	829.09932	336.5925	2.46	0.0159
Crystal_Springs	643.21096	346.1852	1.86	0.0668
Estates_at_Pronghorn	1072.85702	343.3415	3.12	0.0025
Greenbrier	845.39363	352.0012	2.4	0.0186
Hammock_Beach	757.01106	352.7215	2.15	0.0348
Juliette_Falls	709.79635	344.222	2.06	0.0424
Montelucia	N/A--does not have #beds or #baths			
Southbridge	588.20893	341.5713	1.72	0.0889
Suncadia	869.73337	335.9963	2.59	0.0114
Tartan_West	594.06569	323.7827	1.83	0.0702
year2004	-339.48008	69.11625	-4.91	<.0001
year2005	-271.37082	71.22935	-3.81	0.0003
year2006	-228.76733	72.16727	-3.17	0.0022
year2007	-196.75833	52.59214	-3.74	0.0003
N=101,⁸ R-sq.=.895				

Source: Econsult Corporation (2008)

⁸ The regression used 101 of the 115 resort sales. Sales from Montelucia were omitted because information on the number of beds and bathrooms there was not obtainable, and these are critical variables in the regression.

The R-squared of the regression, which is a performance diagnostic, is 89.5 percent. Translated literally, this number means that 89.5 percent of the variation in prices in these resort communities is explained by the variables in the regression. The remaining 10.5 percent of variation is likely due to idiosyncratic noise in the data and differing preferences across the buyers. By comparison, an R-squared of 100 percent would imply that the regression is literally perfect, and that prices were predicted to the exact dollar. An 89.5 percent R-squared is therefore exceptionally high for a regression with a modestly sized dataset and only a limited number of variables. This indicates the regression is likely to be highly accurate in explaining and predicting the sale prices of resort dwellings.

Each row in the table reports how each dwelling's individual characteristics contribute to its market value.⁹ Each column reports the regression output for each variable.

- The column labeled "Coeff. Est." gives the estimated regression coefficient for each variable. It states how a unit increase in that variable affects the price of that unit, holding all other variables constant.
- The column label "S.E." reports the standard error of the coefficient estimate. This is an estimate of how accurately each coefficient is computed. Smaller standard errors imply greater precision and stability.
- The column labeled "t-value" is the t-value of each coefficient. Computed as the ratio of each coefficient to its standard error, it measures whether a variable significantly contributes to explaining dwelling prices. Generally speaking, a value of +1.8 or greater or -1.8 or less is considered "statistically significant".
- The column labeled Pr>|t| is the p-value of each t-value. It is the probability that a t-value is not actually significant, even if it appears to be. Small values indicate that a variable is likely to be statistically significant.

Every variable in the regression, with the exception of the number of bedrooms, is statistically significant at the 10 percent level; a standard threshold. The fact that number of beds is not statistically significant is likely due to the presence of multicollinearity: because the number of bedrooms is positively correlated with a dwelling's size (larger units typically have more bedrooms), this variable does not light up as statistically significant when dwelling size (as measured by bldg_sqft) is included in the regression specification.

Each coefficient measures the "unit price" of its variable. This indicates the change in the price per square foot of a dwelling in response to a unit increase in a given variable. For example, the estimated coefficient for bldg_sqft is -0.33214, which implies that the price per square foot of a resort dwelling decreases by approximately 33.2 cents with each additional square foot that is added to the dwelling. Note that this empirical result is consistent with the results of the previous section, which found that Valhalla's price/ per square foot numbers were higher than the other resorts even though its total prices were lower, which is likely attributable to the fact that its dwelling sizes are smaller. The t-value for this coefficient is -3.01 and

⁹ "Age" and "Lot SqFt" are not in the regression because that information was not available for all communities.

its p-value is 0.0035. These numbers easily meet the threshold conditions for statistical significance, which implies that total square footage of a resort dwelling is an important factor of its price.

Squared terms of the variables were added to the regression specification to capture nonlinear relationship between dwelling price and its physical characteristics. For example, `bldg_sqft_sq` is simply a building's square footage times itself. Its coefficient is 0.00003372, and its t-value is 2.62, which implies that it is statistically significant. But, unlike `bldg_sqft`, this variable has a positive sign. This implies that, while price/sqft declines with the total square feet of a property, it declines at a decreasing rate as total square feet increases. For example, adding an additional one hundred square feet to a very small dwelling will have a far larger impact on price than adding an additional one hundred square feet to a very large property. This makes intuitive sense, since the percent increase in the size of the smaller property is much larger than the percent increase in the size of the larger property when an additional one hundred square feet is added. So, not only does the regression capture the diminishing marginal utility of real estate characteristics, it also captures its nonlinearity.

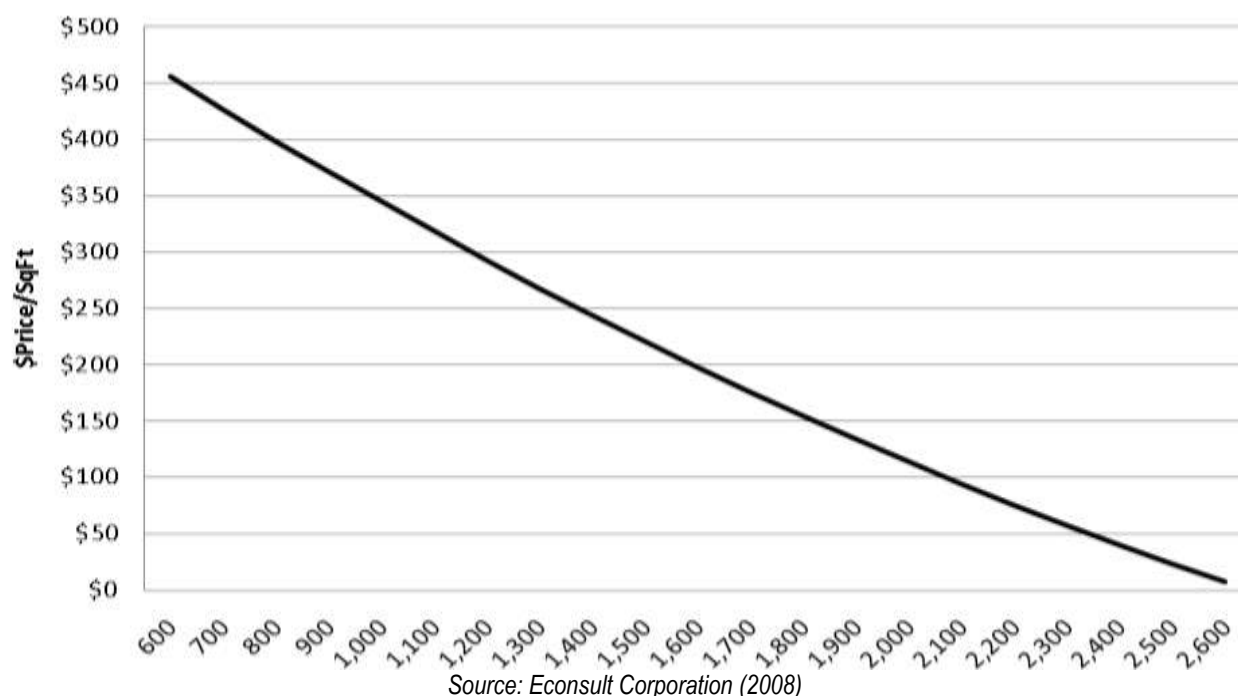
To see a fuller example of this, we can derive the explicit pricing function for dwelling size from the regression. As the regression output indicates, the coefficient for `bldg_sqft` is -0.33214 and the coefficient for `bldg_sqft squared` is 0.00003372. Suppose that the dwelling is located in Crystal Springs, which is the nearest comparable for Valhalla. It has a coefficient of 643.21096. This implies that the relationship between a resort dwelling's price/sqft in Crystal Springs and its size can be expressed by the following equation:

$$\text{Price/SqFt} = 643.21096 + (-0.33214 \times \text{bldg_sqft}) + (0.00003372 \times \text{bldg_sqft_sq}) \quad (2)$$

Predicted resort prices (per sqft) can be obtained by simply plugging plausible square footage numbers into Equation (2) and computing through. For example, consider a small dwelling with only 800 square feet. Inserting this value into Equation (2) yields a predicted price per square foot of \$399. Now, consider a larger dwelling with 1,600 square feet. This yields a predicted price per square foot of \$198; a substantial difference as a result of doubling the dwelling's size.

With the assistance of a spreadsheet, this exercise was repeated for a range of plausible dwelling sizes. The result is a predicted price per square foot for each size. The results are plotted in Figure 5.2, with dwelling size on the horizontal axis and the predicted price/sqft on the vertical axis.

Figure 5.2 – Resort Price per Square Foot by Dwelling Size



As the plot indicates, predicted price/sqft declines with total size of a dwelling. Moreover, note that the plotted function has a slightly bowed shape to it. This is the nonlinearity of the relationship captured by the squared term in the regression. Hence, as this example indicates, the pricing regression estimated with the resort data appears to accurately capture the stylized relationships between real estate prices and the underlying characteristics of the actual properties.

The regression also yields interesting information regarding the trend in resort prices during the 2004-2007 period covered by the sales data. In addition to physical characteristics and location, there is a vector of “year” variables, spanning the years 2004 through 2008, that denotes the year in which each property transaction occurred. . Because 2008 is the omitted category,¹⁰ the remaining year variables measure the changes in price per square foot, controlling for size, characteristics and location, relative to 2008. Note that they all have negative signs. This implies that prices of resort dwellings were lower in all years prior to 2008. For example, the coefficient for year2004 is -339.48, which is interpreted to indicate that (controlling for all else), **resort prices were \$339.48 per square foot lower in 2004 than in 2008.** A similar interpretation holds for the other years.

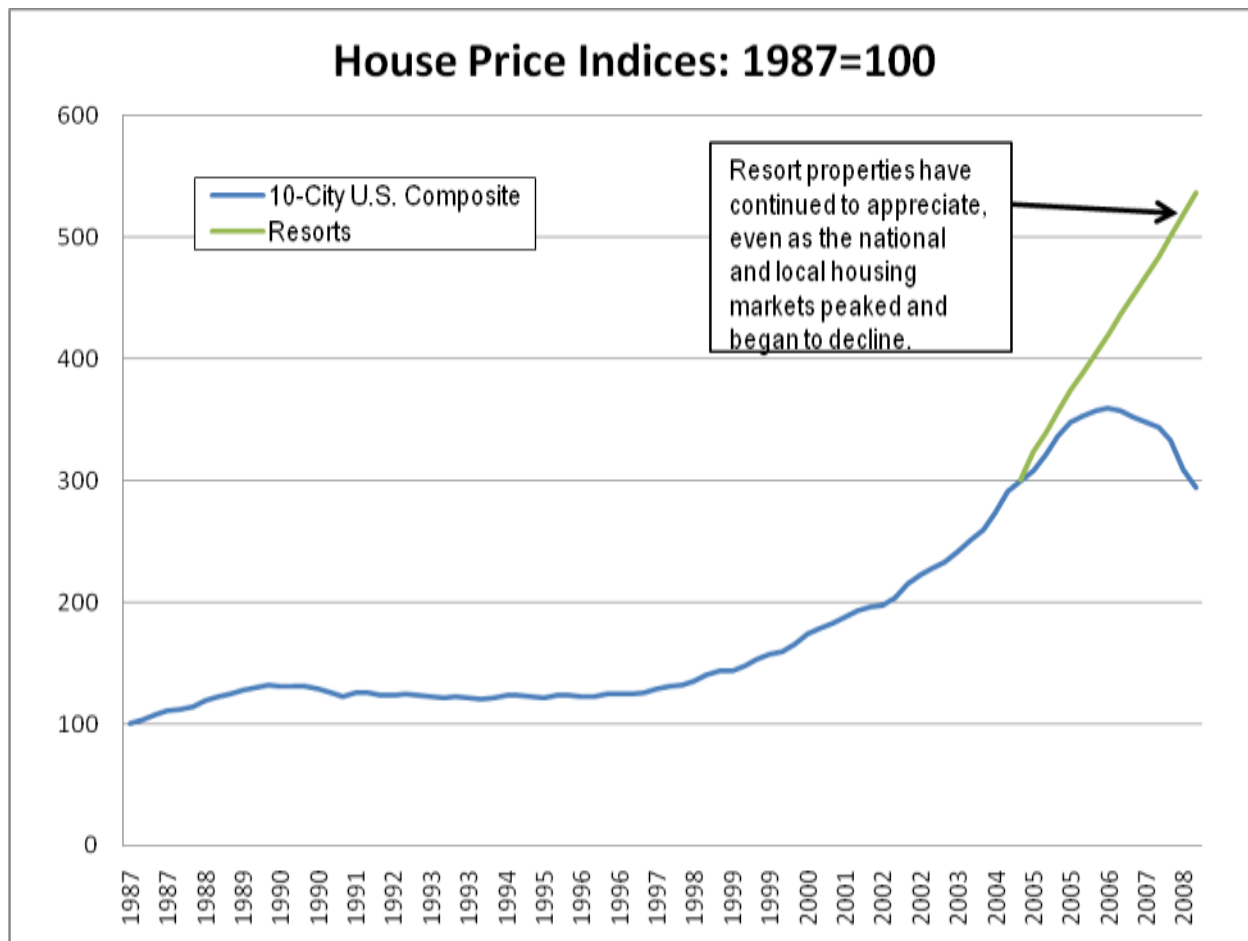
¹⁰ The year variables are what statisticians term “dummy” variables. This is because, unlike square footage or number of bathrooms, these variables only take on one of two values: zero or one. The year variables are set to a value of one if a dwelling transacted in that year, and zero otherwise. 2008 is the omitted category because when all the other year variables are set to zero, then by definition a dwelling must have transacted in 2008. To include a year variable for 2008 would cause the regression matrix to be non-singular, and therefore the regression would not be able to be run.

Moreover, note that the magnitude of the “year” coefficients declines as you move forward in time. For example, price per square foot in 2005 was \$271.37 less than in 2008. But this is higher than in 2004. This, in turn, implies that resort prices were steadily rising during the 2004-2008 period, a timeframe during which the national (and most local) housing markets were topping out and beginning to decline. Moreover, these coefficients are all statistically significant, so this is not a spurious result¹¹.

To put this into perspective, we created a house price index for resort communities and then compared it to house price indices for the national housing market. The resort price index is computed by calculating the percent change in resort prices from one year to the next, using the year coefficients from the regression, and then applying these year-to-year appreciation rates to the national house price index from 2004 forward. The price index for the national market was computed via a regression that is very similar to the one used in this analysis. Published by Case-Shiller MacroMarkets LLC, the national index is a composite house price index that uses home sales in the 10 largest US cities. Figure 5.3 compares the path of house price appreciation in these resorts to the national average, as represented by the 10-city composite.

¹¹ Note: The fact that the year-to-year change in price per square foot is so large is because the regression omits an intercept term. As a result, both the intercept effect and year-to-year effect get rolled into the year-to-year coefficients. However, this does not change the result that resort prices continued to rise throughout the 2004-2008 period.

Figure 5.3 - House Price Movements in Resort Communities Versus National Average (1987 = 100)



Source: Case-Shiller MacroMarkets LLC, First American CoreLogic

The difference in house price movements between these two markets is stark. When the 10-city composite index began to slow in 2005 and then peak in 2006, resort prices kept increasing. Moreover, even as national house prices began to decline in 2007, resort prices continued to rise. The total appreciation rate of resort dwellings was 79 percent over this five year period, which is approximately 15 percent per year; a very attractive return. Moreover, this absolute return becomes even larger when one considers this return relative to movements in national house values. The national index has fallen slightly more than 18 percent from its peak in 2006. Adding this deflationary return to the resort index, the relative return on resort dwellings was actually 97 percent over the five year period, or about 19 percent per year. **So, not only did resort properties appreciate significantly in absolute terms, but they did so during a significant period of deflation in the housing market. Such performance suggests that the market can continue to absorb new resort dwellings, like Valhalla's, during a time when the housing market in general will remain challenging.**

In summary, the evidence indicates that the regression coefficients' statistical significance and the model's consistency with the stylized relationships about real estate pricing factors make it suitable for application in generating predictions for Valhalla. Moreover, the model also indicates that price appreciation trends will have both positive and important implications for computing Valhalla's predicted pricing. The next section proceeds with this exercise.

6.0 VALHALLA VALUATION

Predicted prices for Valhalla were computed by applying the estimated pricing regression to Valhalla's units. This was done by plugging the information on Valhalla's units from Figure 2.1 into the pricing regression given in Figure 5.1, and then computing the predicted price per square foot for each dwelling type. Multiplying this predicted price per square foot by each unit's total square footage yields a predicted sales price for each unit. Summing this across all units subsequently yields the total predicted sales revenue that Valhalla would generate in the current 2008 market. These results are provided in Figure 6.1 alongside Valhalla's actual proposed pricing for each type of unit.

Table 6.1 - Predicted Valuation of Valhalla

Unit Type	# Units	Proposed Price	Predicted Price/SqFt	Predicted Price	Price x # Units	% Change ¹²
Manor Estate Homes	37	\$2,125,000	\$452	\$2,259,720	\$83,609,642	6%
Country Homes	55	\$1,500,000	\$458	\$1,465,371	\$80,595,384	-2%
Carriage Homes	60	\$900,000	\$524	\$1,466,192	\$87,971,503	63%
Cottage	63	\$850,000	\$554	\$1,439,491	\$90,687,919	69%
Duplex/Semi-attached	30	\$850,000	\$463	\$1,110,843	\$33,325,284	31%
Mews Townhouse	30	\$800,000	\$498	\$1,096,165	\$32,884,947	37%
Total	275	N/A	N/A	N/A	\$409,074,680	22%

Source: Econsult Corporation (2008)

¹² The % Change is the percent difference between the model's predicted price and the original proposed price.

The table is interpreted as follows: The model predicts a price/ per square foot of \$452¹³ for the first product type, "Manor Estate Homes." Multiplying this with the product type's square footage of 5,000 yields a predicted sales price of \$2,259,720. Multiplying this with the number of units of this type that Valhalla Brandywine Partners plans to develop (37) gives a predicted total sales revenue of \$83.6 million for Manor Estate Homes. Repeating this exercise for each product type and then summing yields a predicted total sales revenue of just over \$409 million for the entire Valhalla development.

In most cases, the model's predicted price for Valhalla is higher than Greenfield's proposed pricing. For example, the predicted price of the Manor Estate Homes is \$2,259,720, whereas the proposed price is \$2,125,000. The differential is even larger for the other categories of homes with proposed prices of less than \$1 million, where the model predicts sales prices greater than \$1 million. The only exception is Country Homes, where the model predicts a price just under the proposed price of \$1.5 million.

These price differentials naturally translate into higher predicted total sales revenue for Valhalla as a whole. **Whereas the proposed prices would yield a total sales revenue of \$309 million, the total sales revenue predicted by the pricing model is slightly greater than \$409 million; a 32% difference. In other words, the model indicates that Valhalla's units could command higher prices than what are originally proposed.**

The fact that the model predicts prices that exceed those in the original proposal is supported by several facts. First, the R-squared (predictive power) of the model is an exceptionally high 89.5 percent out of a possible 100 percent. This implies a very high level of accuracy for predictions.

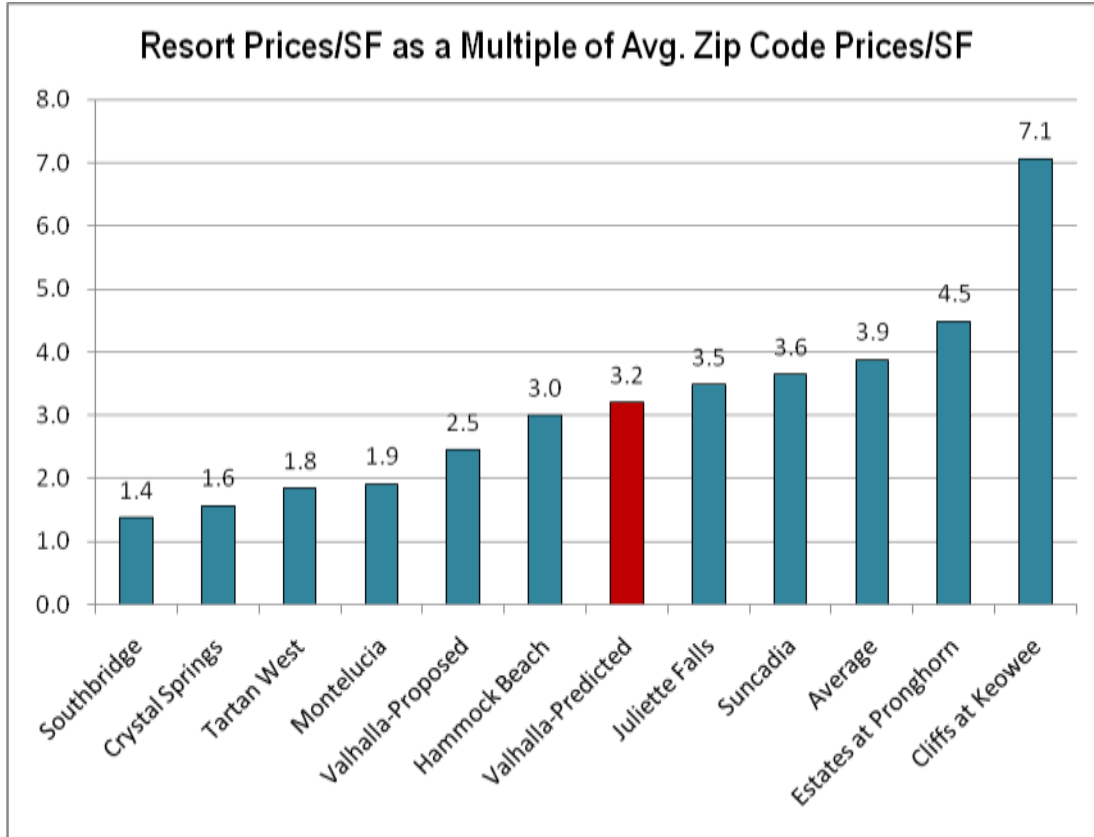
Second, as the earlier analysis indicated, the relative pricing of Valhalla's units is below average. Its average proposed price is \$1.17 million compared to \$1.233 million in the other resort communities. Furthermore, Valhalla is priced at a multiple of only 2.5 times its average Zip code house price and 4.1 times its average county house price. Both of these multiples are well below the average of the other resort communities. Even if these multiples were re-computed with the higher predicted prices, they would still be well in line with the multiples of the other resort communities.

Lastly, as the house price indices indicated, the market for dwellings in resort communities has remained strong throughout the current housing downturn in the U.S. This suggests that this market will continue to be buoyed by non-cyclical factors, such as the current demographic bulge of affluent baby boomers that find developments such as Valhalla to be an attractive residential option.

To see how these results would affect Valhalla's pricing position relative to the other resort comparables, we re-computed Valhalla's price multiple using the average predicted price. The following slides show where Valhalla would be positioned among the comparables with this predicted pricing schedule.

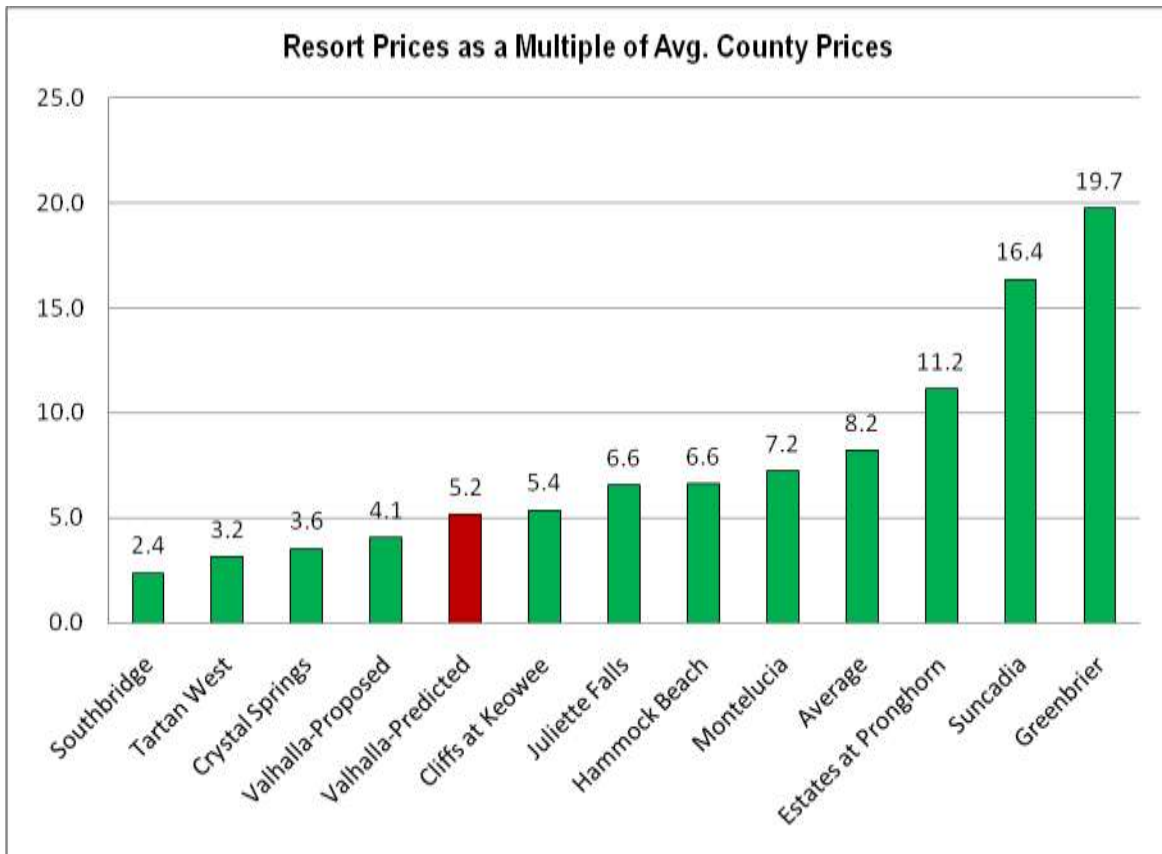
¹³ Note: Predicted price per square foot is computed to several decimal places, but is rounded to the nearest dollar in Figure 6.1

Figure 6.2 Resort Prices as a Multiple of Avg. Zip Code Prices Per Square Foot



If units at Valhalla were to transact at the average price per square foot predicted by the model (\$491), its units would be priced at a multiple of 3.2 times the average house price in its Zip code. This would place Valhalla exactly in the middle of the distribution of this multiple across comparable resort communities. Even though this is a significantly higher price than what is currently proposed for Valhalla, it would still be at a multiple that is only at the median of this multiple for all resort communities examined in this study.

Figure 6.3 Resort Prices as a Multiple of Avg. County Prices



If this exercise is repeated using average county house prices, the results predict that Valhalla units would now transact at prices that are an average of 5.2 times the average house price in Chester county. While this is a multiple that is 27 percent higher than the original proposed pricing schedule, it results in only a modest increase in Valhalla's relative ranking. Compared to the other resort communities, Valhalla would still be priced below both the sample mean and median multiples (8.2 and 6.6, respectively). Subsequently, Valhalla's relative position in the distribution of price multiples is only modestly changed if the model's pricing schedule is applied. This result holds at the county level as well as the Zip level.

Hence, although the prices suggested by the model are significantly higher than those originally proposed by Greenfield, the effect on Valhalla's relative positioning compared to other resort communities is only modest. Even if Valhalla units are listed at the higher price points suggested by the model, those units would still trade at only a slightly higher multiple compared to the resort comparables examined in this report. **These results suggest that, regardless of which pricing scheme is chosen, Valhalla's units will be priced affordably relative to other comparable resort developments.**

7.0 CONCLUSION

This report has reviewed several analytical measures of Valhalla's proposed and likely market value. Among its central findings are:

- Valhalla proposed prices are within the range of prices for other comparable resort communities, and are actually below the average of these other communities. This improves Valhalla's affordability and makes it accessible to a larger market than if priced otherwise.
- Valhalla's proposed prices are 2.5 times its average Zip code house price and 4.1 times its average county house price. This is also well within the range of price multiples for other resort developments, and is also below the average multiple for these communities.
- A regression pricing model developed with sales from the comparable communities predicts prices for Valhalla that are slightly higher than the proposed pricing structure: \$409 million versus \$318 million, a 22% difference.
- Even assuming these higher predicted prices, Valhalla would still be priced well within the range of both prices and price multiples of other resort communities, and close to the average for these communities. These results are strongly supported by the fact that the statistical diagnostics for the pricing regression are very strong, and that the market for upscale resort communities remains very robust despite the current housing downturn in the US.
- We conclude that this evidence unanimously supports the successful development of Valhalla.

APPENDIX A - REFERENCES

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