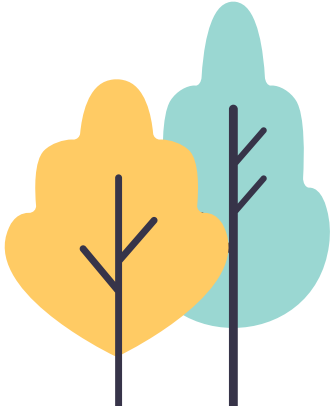# REAL ESTATE

The value of change

A look at housing features and their related market values.

Sam Samson and Sons

- **Area:**　　　Real estate development

- **Goal:**　　　Become more data driven

- **Question:**　Which upgrades yield the highest return?

Topics

01
ADDITION

Understand the value of adding living space to the footprint of a property
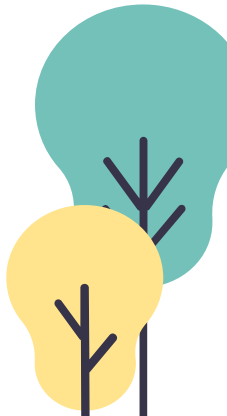
02
BEDS & BATHS

Understand the value of adding a Bedroom or Bathroom to the **existing footprint** of a property

03
VALUE PREDICTION

Use prediction to understand how listing price relates to the market for similar properties.

the DATA and the PROCESS

PROVIDED BY SS&S

SCOPE
King County home sales from May 2014 - May 2015 inclusive

PROCESSING
Remove irrelevant and redundant data, mathematically modify data to improve the model

NEW METRICS
Created new metrics to answer the questions

MODEL
Created a formula that can be used to calculate home value and answer the questions
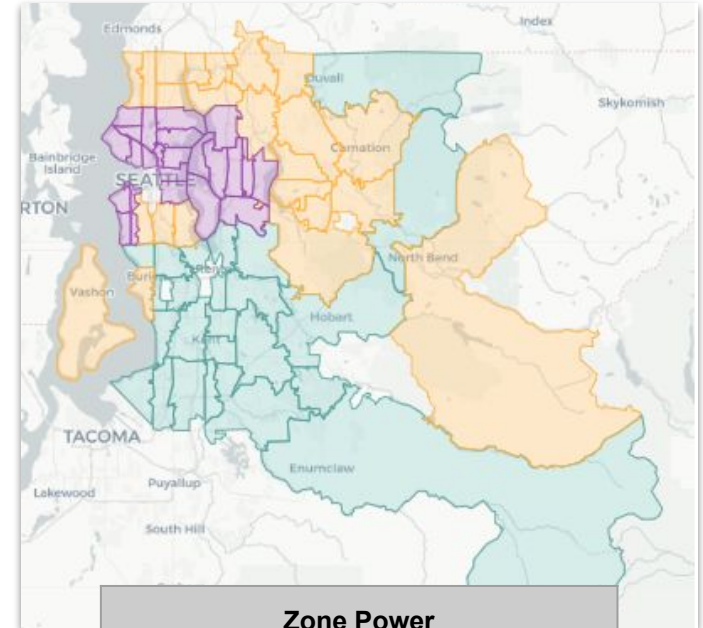
- Living space is space that is enclosed and heated.
- Varies by zone

Example

$$\text{Starting Value} \times \left(\frac{\text{sqft after}}{\text{sqft before}} \right)^{\textit{Zone Power}} = \text{New Price}$$
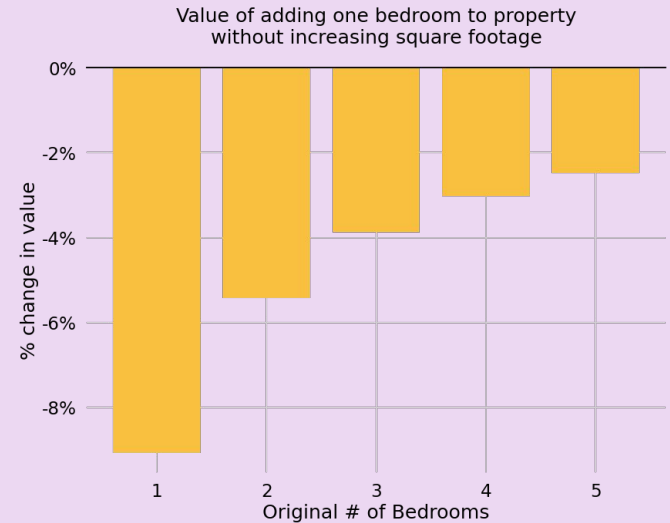
Sample

$$\$500,000 \times \left(\frac{2000 \text{ sqft}}{1500 \text{ sqft}} \right)^{0.73} = \$616,844$$

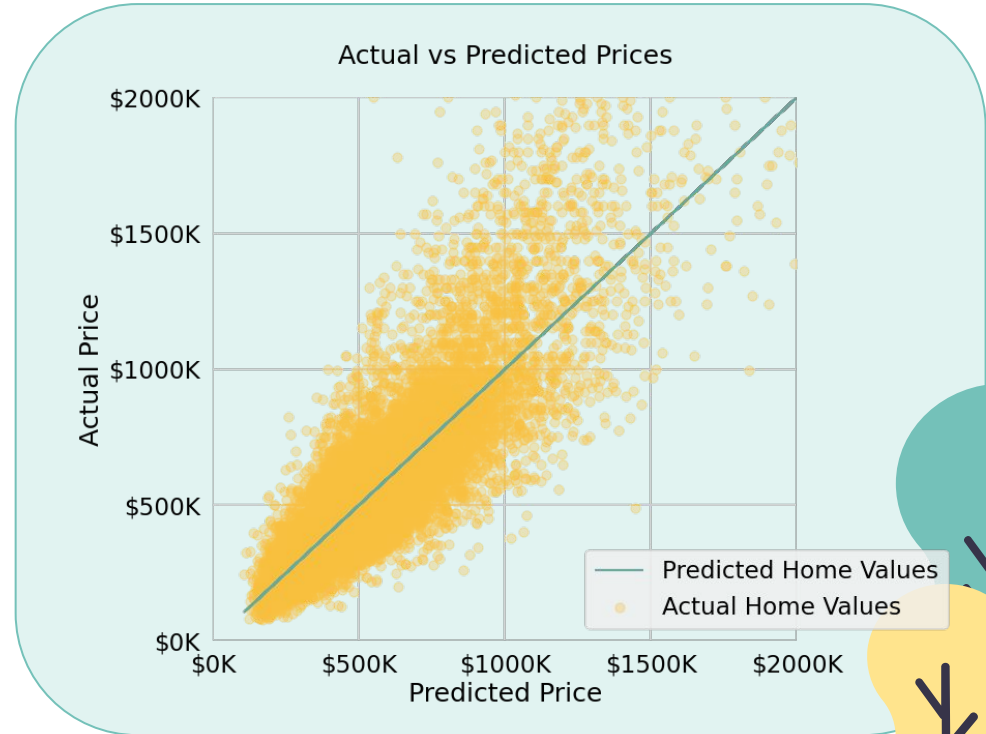| Zone Power		
Zone 1	Zone 2	Zone 3
0.67	0.73	0.77

- Change in number of bathrooms or bedrooms **without a change in sqft.**
- Change is proportional to the total number of bathrooms or bedrooms

Value of adding one bathroom to property without increasing square footage

Value of adding one bedroom to property without increasing square footage

- Predicts "average" home price

- 7 Characteristics

  1. Bedrooms
  2. Bathrooms
  3. View
  4. Waterfront
  5. Year renovated
  6. Zipcode
  7. Square Footage

Actual vs Predicted Prices

Addition: Living space
HIGH VALUE - highest increase in value

Addition: Bedroom or Bathroom
NO VALUE - changes in home value are likely to be negative

Prediction
Can be used to get an "average" price based on home characteristics

Condition

How does a change in the condition rating change home value

Addition type

Determine the value of different sqft expansions.

(Bedroom, Bathroom, Other)

Improve Model

Gather more current data to understand changes over time

Thank You

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