



# Realtor Pricing Tool Study

Prepared for Premier Properties, LLC  
By Jen Wadkins





# Introduction: Model or Comps?

# Business Questions

What are the primary factors influencing housing prices in the King County metro area?

Can we effectively use a regression model for realtors to determine a proper list price?

Is a model-based system more accurate for determining list price than the traditional comps-based system?

What easy-to-use features can we add to our model to increase its accuracy?

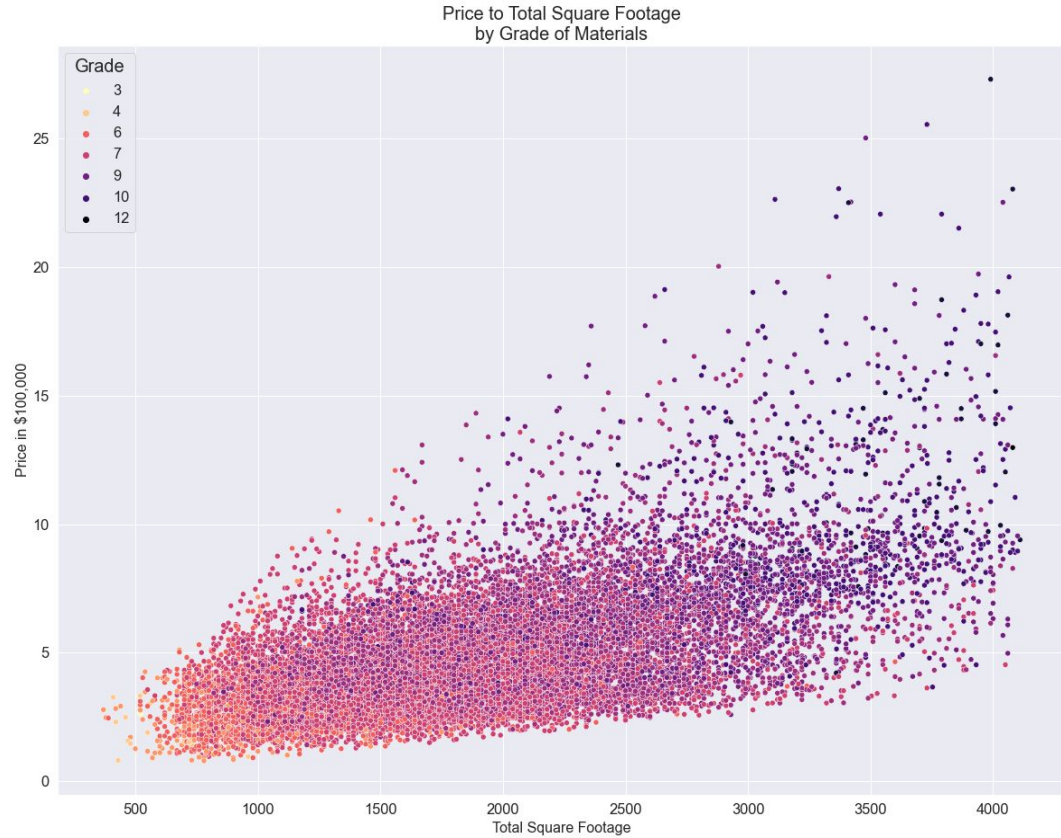
# Important Feature

## Square Footage

How big is the house?

## Grade

What kind of quality  
of builder materials  
And finishes



# Important Feature

## Zip Code

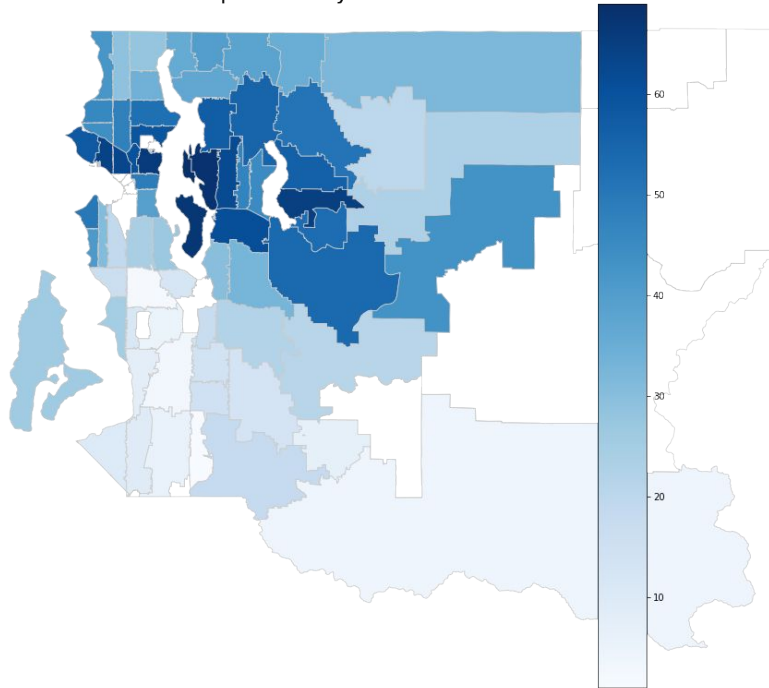
A glimpse of zip code importance



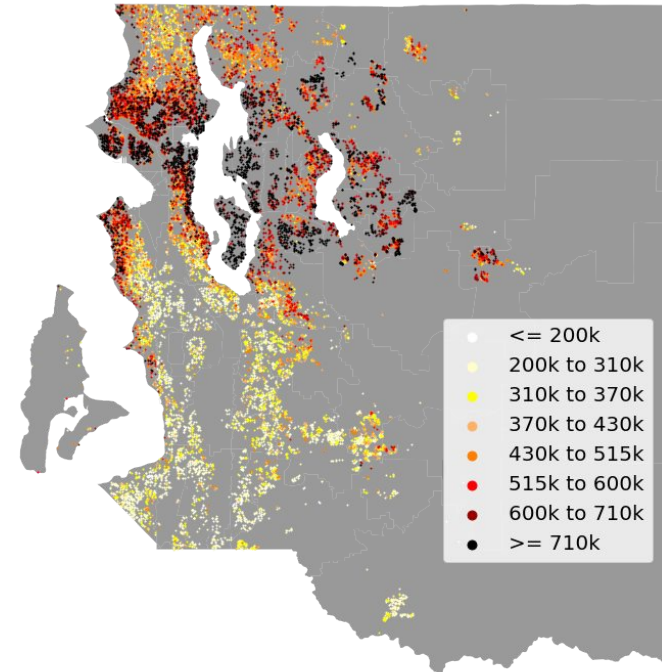
# Most important feature

Location is everything.

Zip Codes by Median Rank



Home Sales in King County Metro Area





# 88%

Sounds decent, but average error is 55k either direction

Error on properties under 700k is still average 45k

**Model provides at best a baseline.**



# Realtor Simulator

Realtor simulator - the “comps model”

Uses fewer features

Provides the properties that would need to be located after running model

**Was more accurate on our new test data**

## Target property and comps found by realtor simulator



This property:

Actual price: 665000

Model estimate: 783695

Realtor simulator estimate: 663722



# Model or Comps? Pros and Cons

## Model

### Pros

- Can be used without housing data on hand
- Does not need frequent updating

### Cons

- Wide error range gives only a starting point
- Still requires human intervention to determine final price

## Comps

### Pros

- Is a familiar method for realtors
- Can capture subjective elements that a model misses
- Can still be done programmatically

### Cons

- Requires entire data set be present to function
- Must be updated frequently, preferably daily, for most accurate results

# Recommendations?

First - source better data that has sale type to weed out non-market sales.

Add easy-use features for realtors that might improve the model and capture some of the subjective elements that the model is currently missing.

- Utilize lat/long for more granular location, and provide an address lookup tool to easily obtain these values

- School ratings - GreatSchools.org

- Distance to major waterfront and parks

- Public services access - King County GIS

- “Walkability” metric like Redfin

- Non-discriminatory census statistics

# Future Work

## Add improved features

- Web scraper to use lat/long with GreatSchools.org to get exact schools and school ratings
- Integrate additional King County GIS map information in concordance with lat/long to determine proximity scores to various public features (parks, services)
- Determine method to calculate “walkability” - utilize Google Maps API to find restaurants and grocery stores within mile radius of property

Realtor simulator - Determine coefficient multipliers for view, basement, waterfront, renovations, comparative sq footage that would allow the realtor simulator to take these elements into account

GUI for use of tool



Thank you!