

# PHASE II PROJECT: HOUSE SALES IN KING COUNTY, WASHINGTON

MAGALI SOLIMANO

JULY 2022



# PROJECT GOALS AND OVERVIEW

## Goal

King County, Washington has commissioned analysis of its house sales to inform decisions on property taxes, with the objective of maximizing revenue collection.

### Data

- King County House Sales dataset
- > 21,000 records

### Methods

- Descriptive data analysis and statistics
- Linear regression analysis

### Model

- Focus on single-family homes
- Best model explains 71% of the variation in single-family house prices

### Transparency

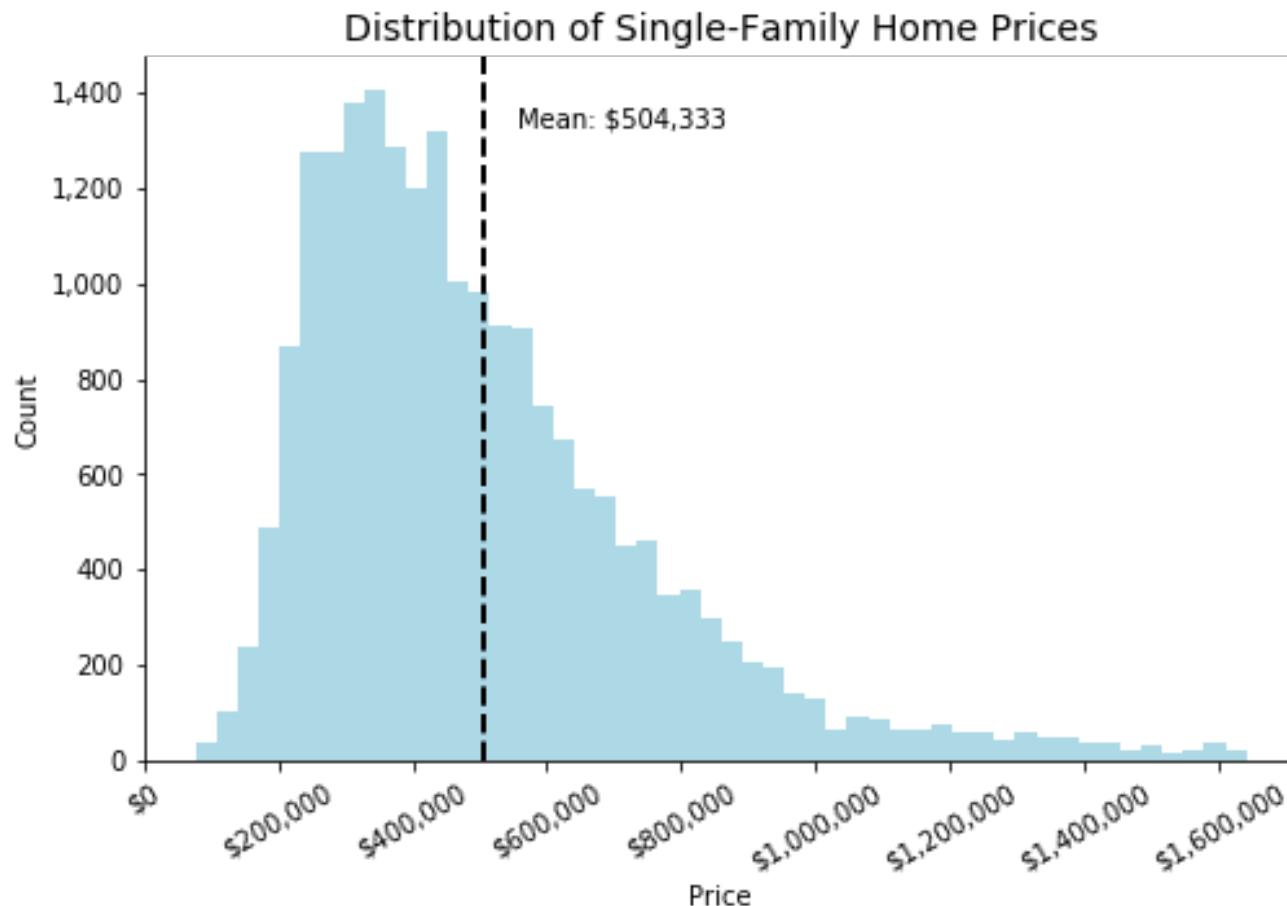
- Data and analysis to be made publicly available on King County's website

## KEY TAKEAWAYS

- Features that best explain county's home prices:
  - **Location**
  - **Construction grade**
  - **Condition**
  - **Renovations**
- Some standard features do not explain home prices well

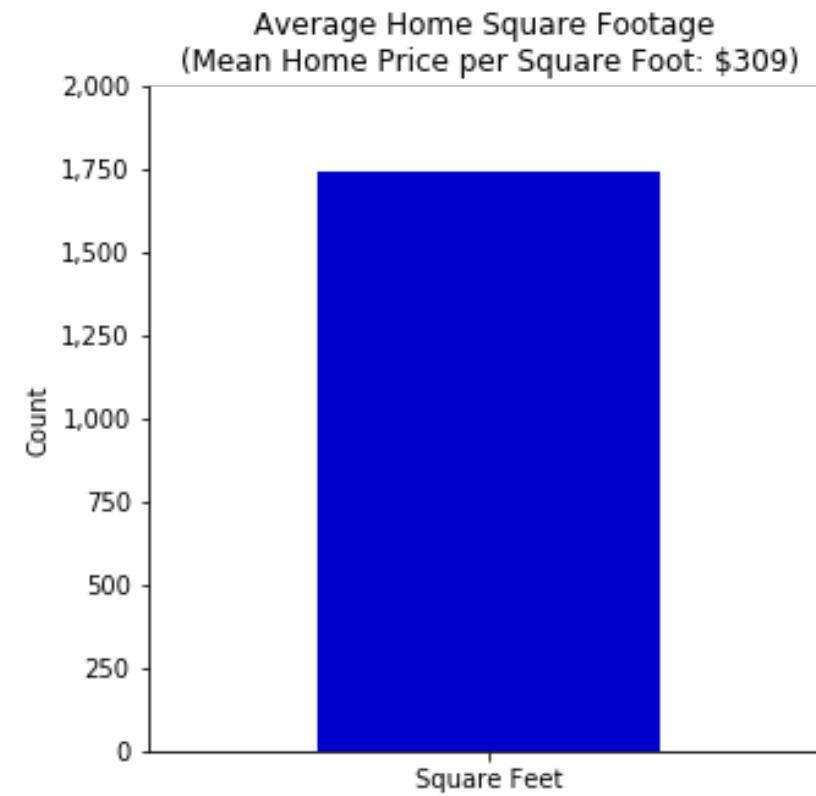
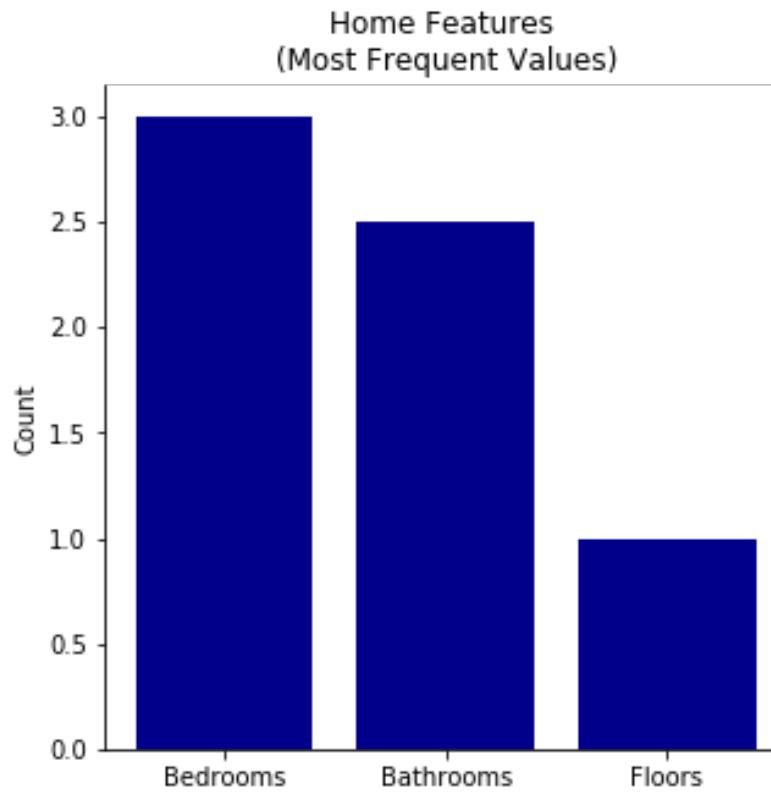
# PROFILE OF AVERAGE SINGLE-FAMILY HOUSE PRICES

- Mean price: \$504, 333
- Very large outliers for higher-priced homes



# PROFILE OF TYPICAL SINGLE-FAMILY HOUSE FEATURES

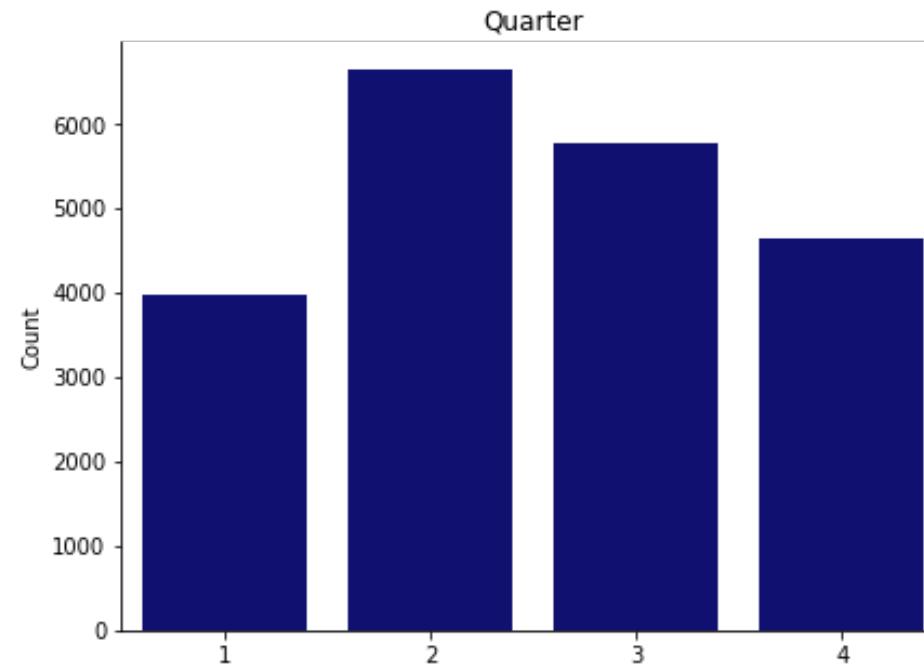
- 3 bed / 2.5 bath / 1 floor
- Mid-sized homes



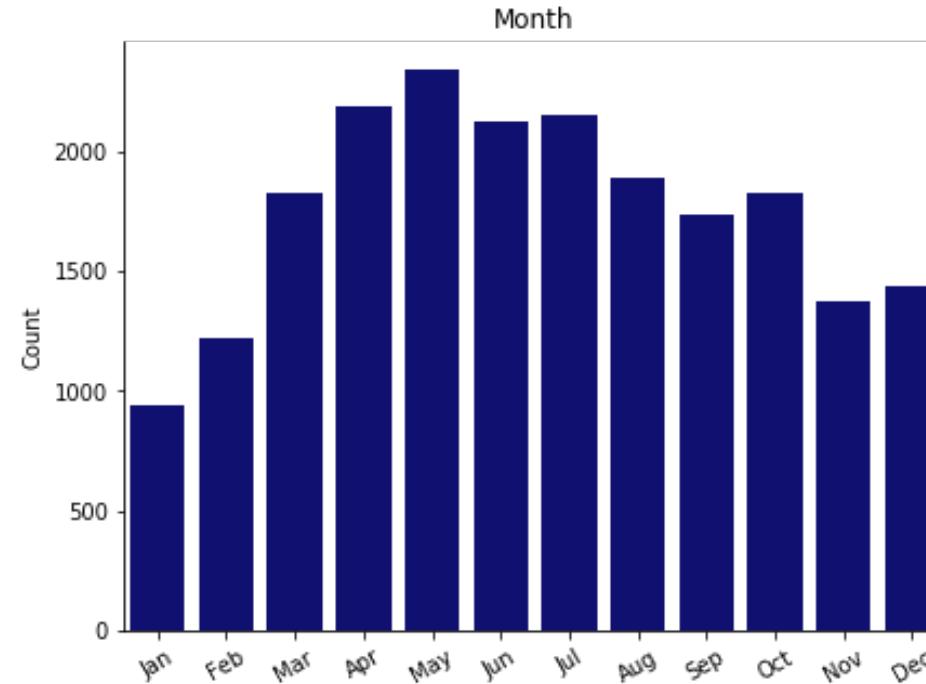
# SALES ACTIVITY EXHIBITS SEASONALITY

- More homes are sold in Q2 and Q3, and in the spring and summer months of April, May, June, July
- Q1 is a slower period

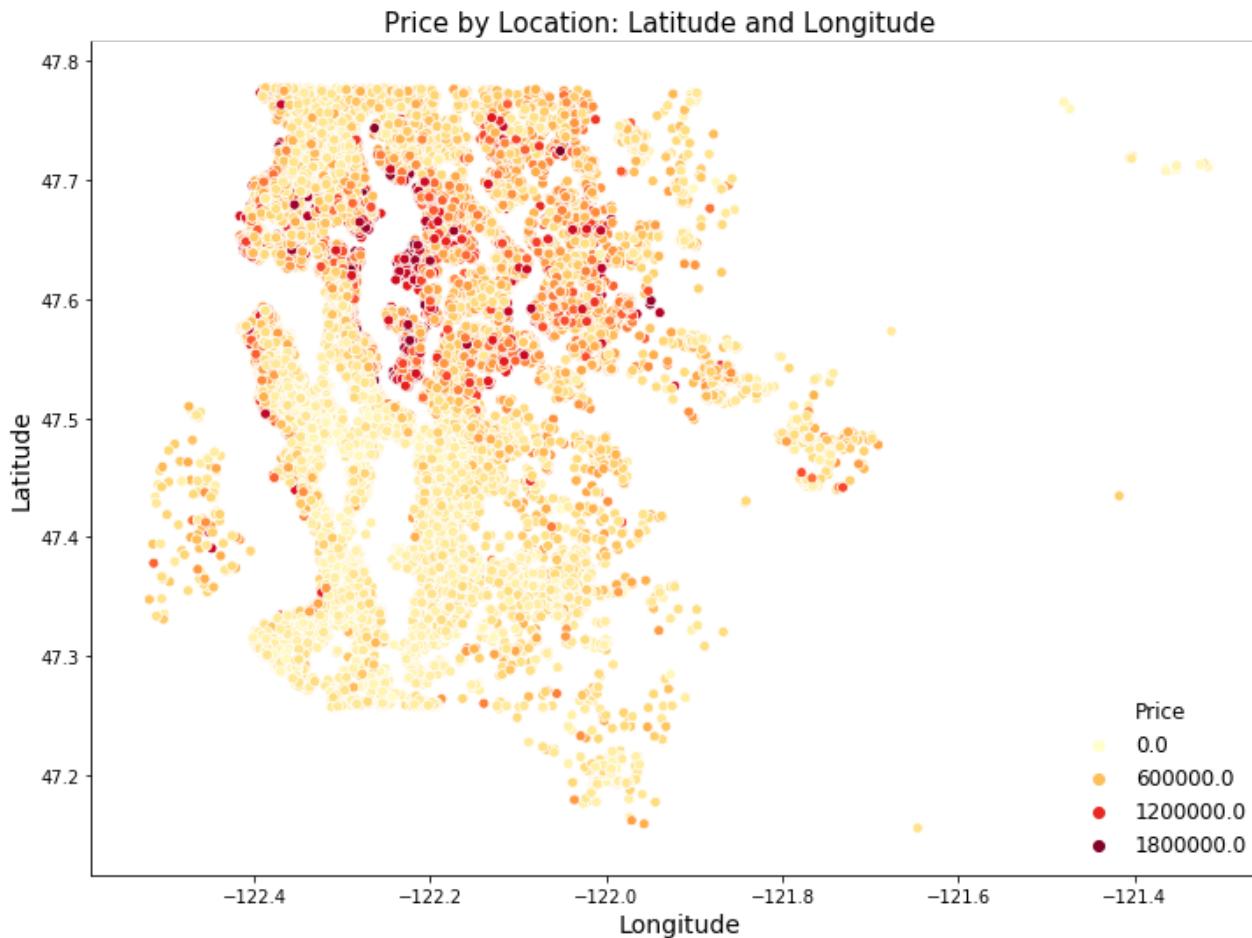
Home Sales by Time of Year



Month

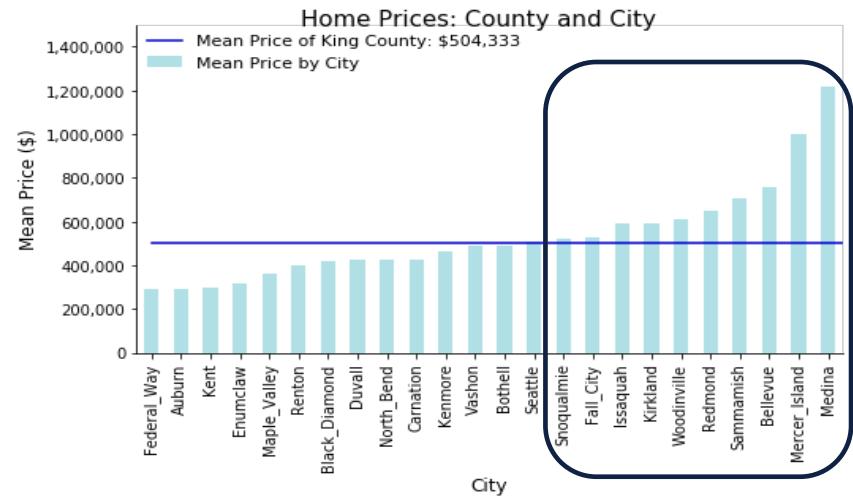


# LOCATION MATTERS

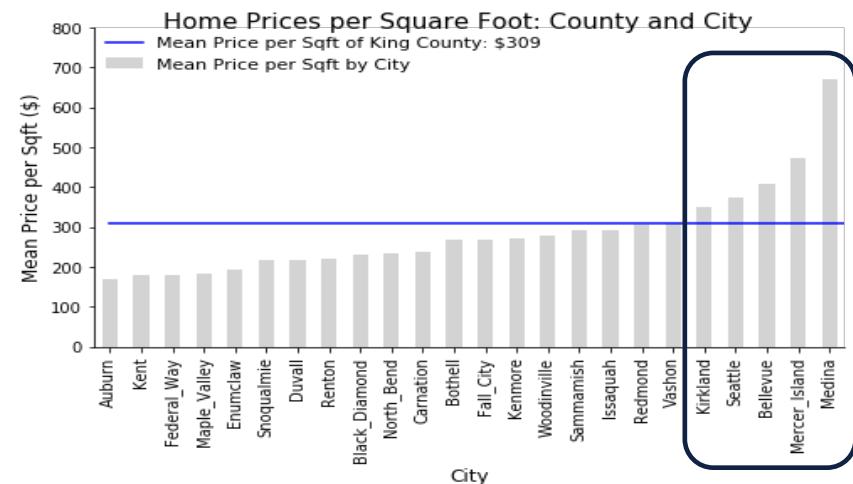


- Prices are higher for homes located in the northern part of King County
- Lower prices for homes located in the south

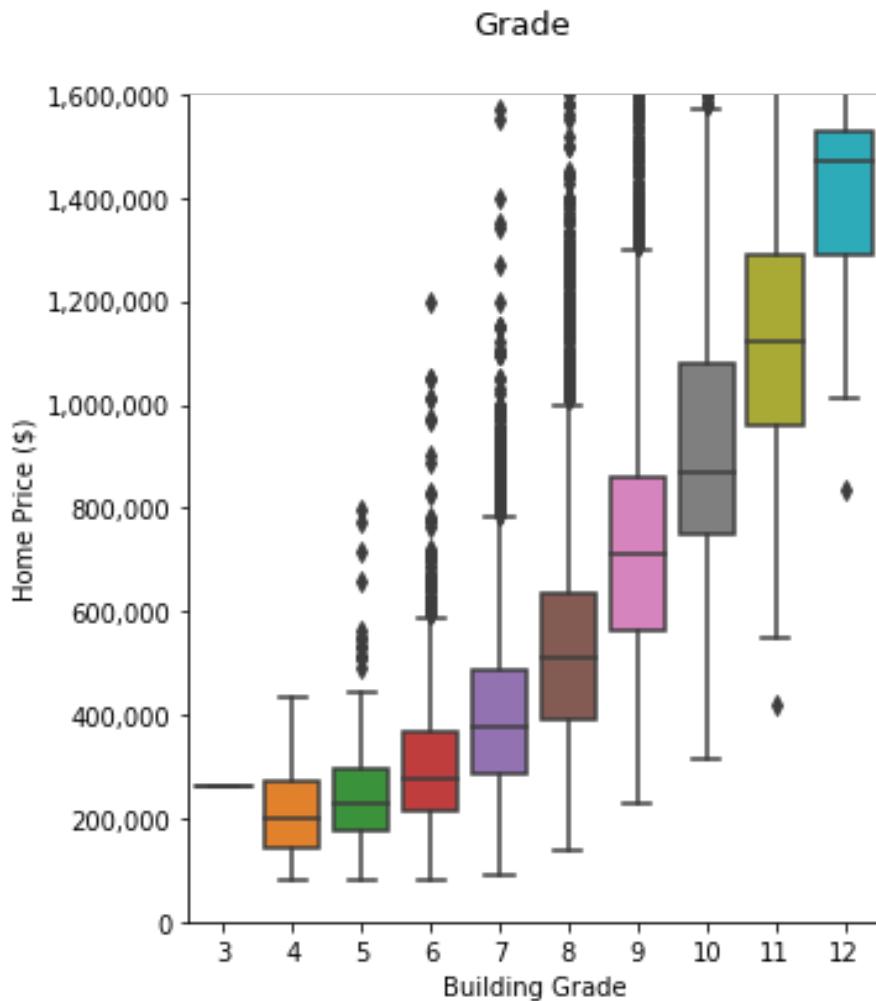
# LOCATION MATTERS



- Waterfront homes are worth **\$331k** more than homes that are not
- Ten cities have home prices above the county mean. And, five have price/sqft above the county mean

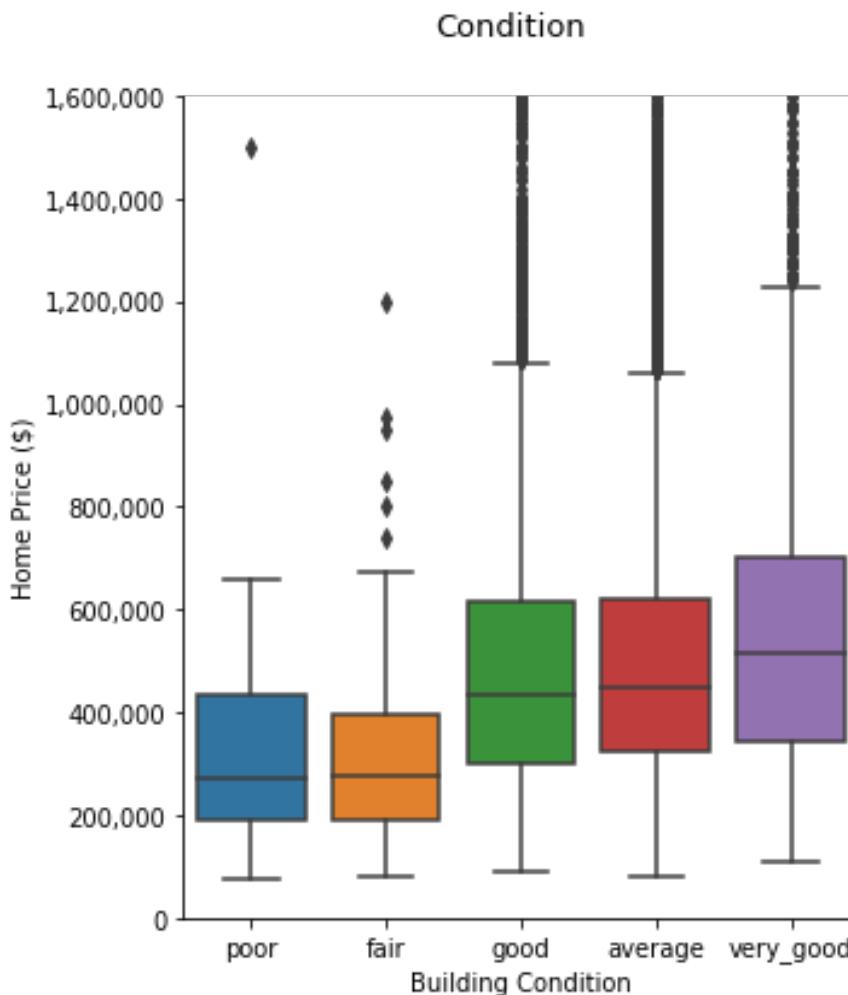


# IMPORTANT FEATURES: GRADE



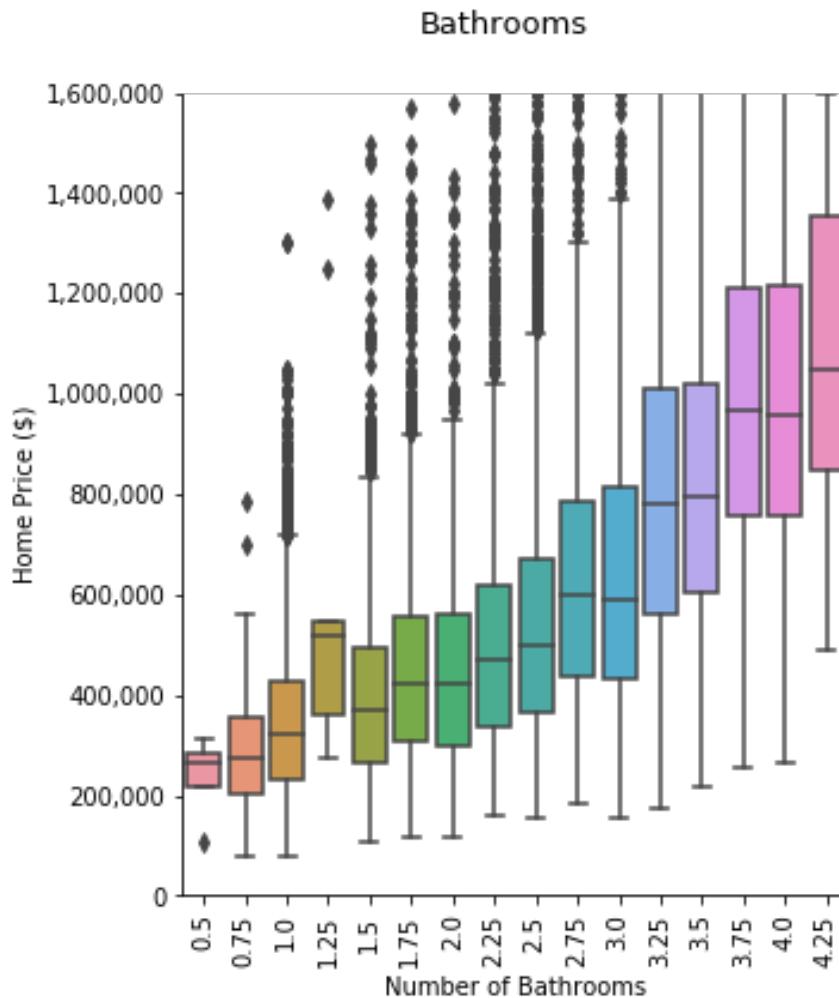
- Homes with custom design, excellent builders, and of the highest quality (grade 12) are worth \$540k more than average and below-average grade homes. Even homes that have just above average construction (grade 8) are worth \$85k more than the same comparison group.
  - Average price of grade 8 homes is USD 538k, higher than county mean home price. Average price of grade 12 homes is \$1.39M.
  - Average grade is 7.6, and median is 7.

# IMPORTANT FEATURES: CONDITION



- Homes in very good condition are worth \$103k more than homes in poor, fair, and average conditions. Homes in good condition are worth \$47k more.
  - Average price of homes in very good condition is \$559k, higher than the county mean home price. Average price of homes in good condition is \$490k.
  - Average condition is 3.4, and median is 3.

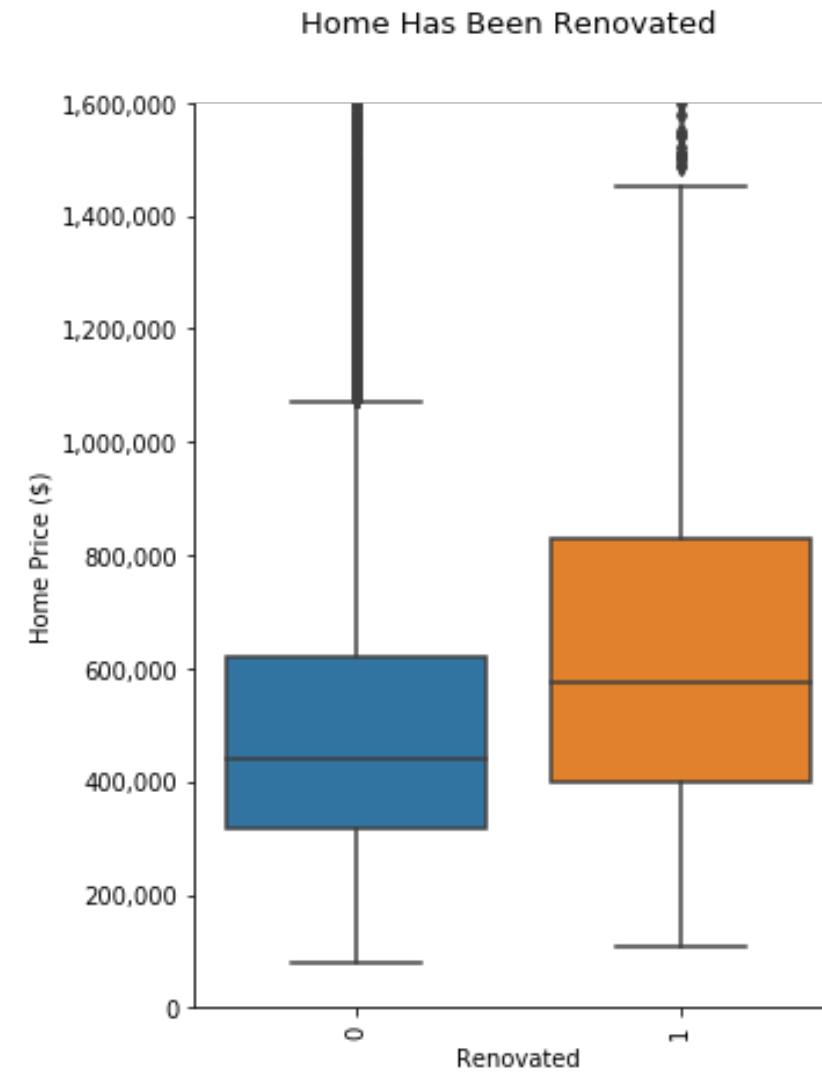
# IMPORTANT FEATURES: BATHROOMS



- Homes with more bathrooms are associated with higher prices. Two-bathroom homes are worth \$14k more than homes with up to 1.25 bathrooms, and homes with three baths are worth \$25k more.
  - Average price of homes with two bathrooms is \$455k, below county mean home price. Average price of homes with 3 bathrooms is \$542k, above county mean.
  - Average number of bathrooms is 2 and median is 2.25.

## ADDITIONAL INSIGHTS

- Renovations add \$92k to the sale price of a home compared to homes that are not renovated.
  - *Most homes are not renovated.*
- Levels: Homes with two levels above ground are associated with a \$15k higher price and three-plus story homes are associated with \$28k higher price compared to single-story homes.
  - *The median number of floors in King County homes is one, and the median is just shy of 1.5 floors.*



## ADDITIONAL INSIGHTS



- Bedrooms do not have statistically significant relationship with home prices
- Neither do neighbors' lot sizes

# RECOMMENDATIONS

*Goal: Maximize county's property tax revenue collections by way of higher home prices*

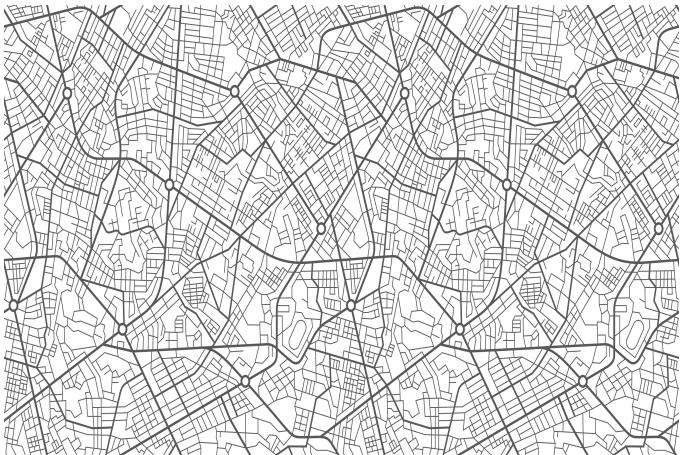
Recommendations focus on developing county-wide programs that:

i) Promote high-grade construction

ii) Encourage keeping homes in good and very good condition

iii) Support renovations on existing homes

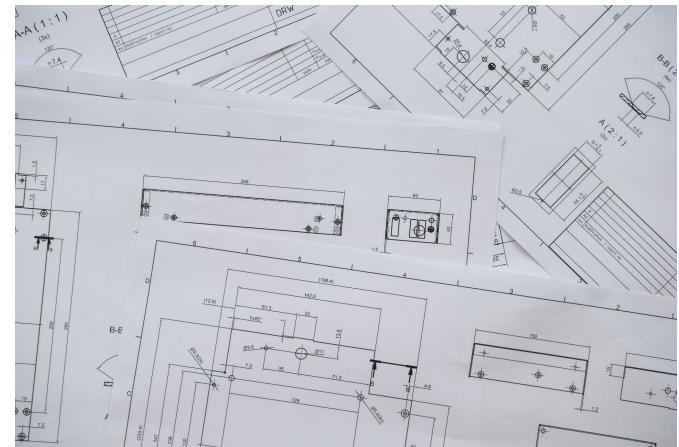
## NEXT STEPS: EXTENDED ANALYSIS



Geolocation map



Age of home



Number of bedrooms-to-bathrooms

# THANK YOU

***For questions, contact:***

Magali Solimano

[magali.solimano@gmail.com](mailto:magali.solimano@gmail.com)