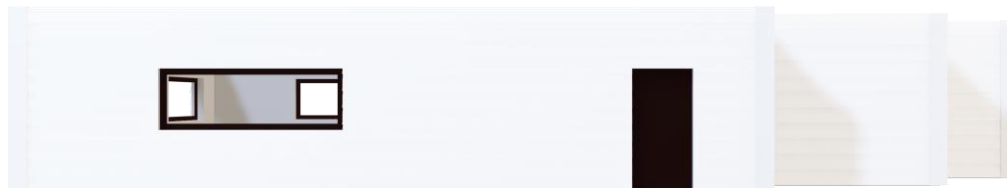


# King County House Sales

Property value predictions



# Summary



**King County Real Estate agency** want to provide valuable advice to their clients. We analyzed various property features to determine **which could offer homeowners or potential buyers/investors greater return or value.**

We found that larger living space, higher grade and waterfront homes increase the value of properties. We also found that selling between April and June result in higher prices, whilst February was the lowest and therefore a better time to buy.



# OUTLINE



## Business Problem

Objective and approach

## Data

Data adopted in analysis

## Methods

Preparation, analysis and modeling data

## Results and Conclusion

Interpretations and recommendations



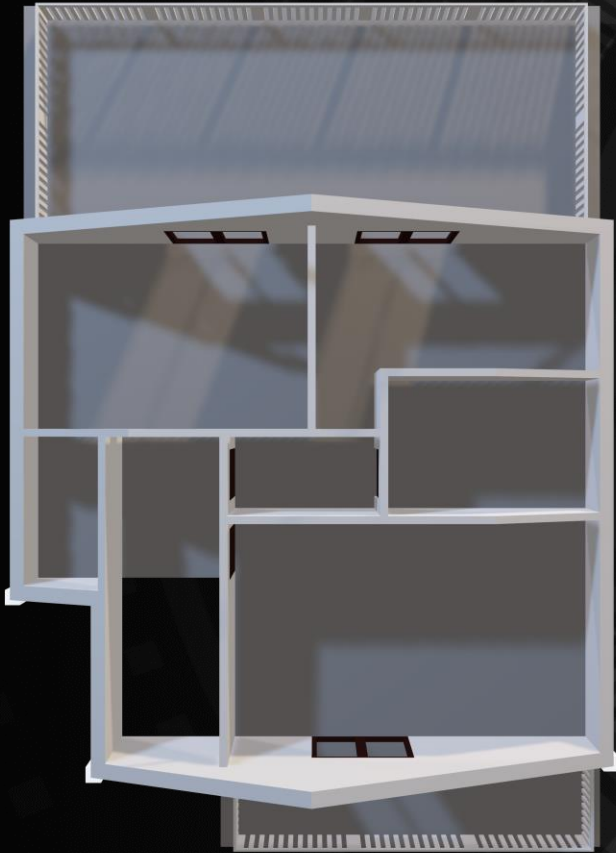
## Business Problem

Better advising homeowners and buyers of King County properties.

Which features generate/offer most value to homeowners/buyers?

Features that affect property prices:

- Living Space
- Grade
- Month sold
- Waterfront views





## Data

Kc\_house\_data represents property features and prices data such as; no. of bedrooms, bathrooms, living space, condition, grade etc.





## Method

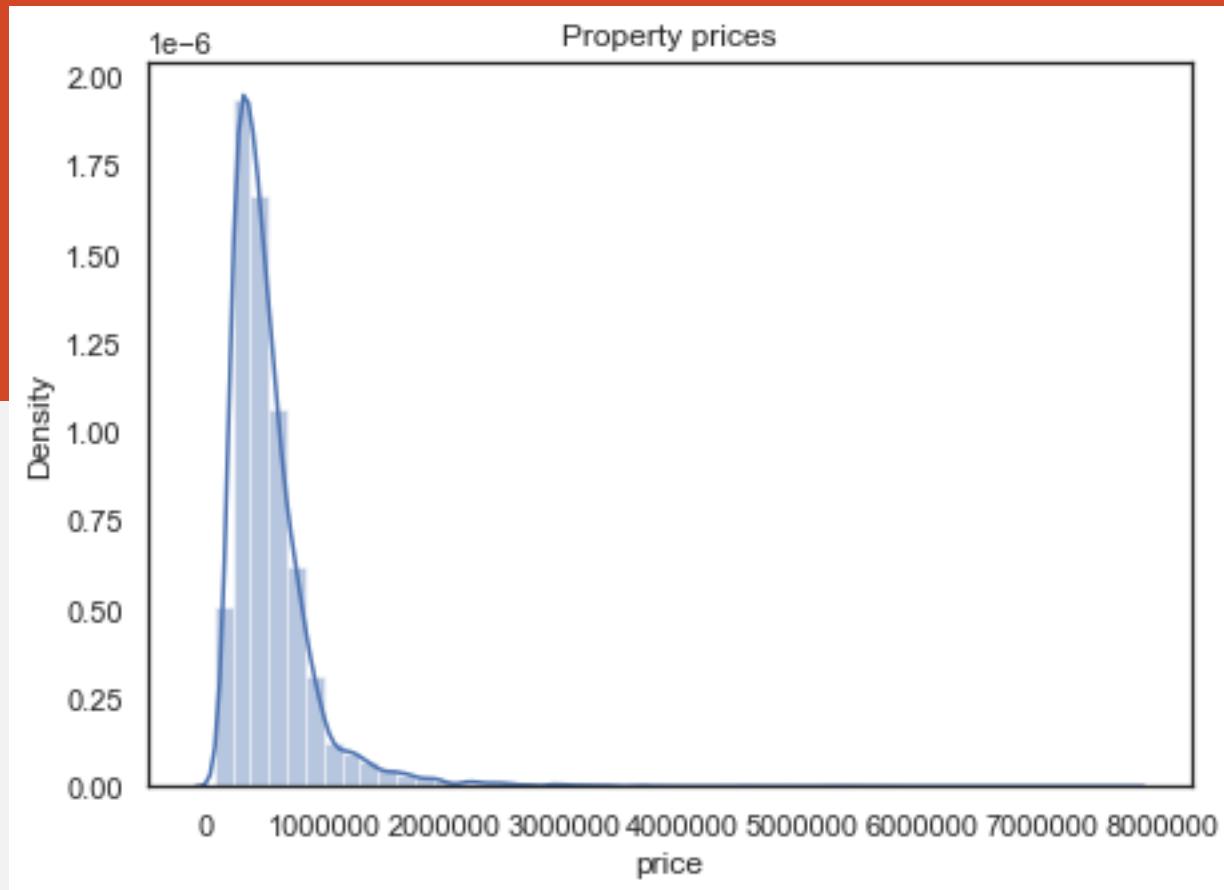
Data imported and performed EDA with visualizations. Outliers removed, created 'month\_sold' feature. Made assumptions on linear regression and assessed if any correlations between price and selected features.

Feature engineering to help final model predictions. Made hypotheses from selected features against target variable (price); month\_sold, age of property and waterfront.

Model with Train-test split to assess fitment. Baseline to find worst fitment to compare to other models. Determined R-Squared and feature coefficients, used Sklearn. RMSE between two models. Final model in 'housing\_predictions.csv'



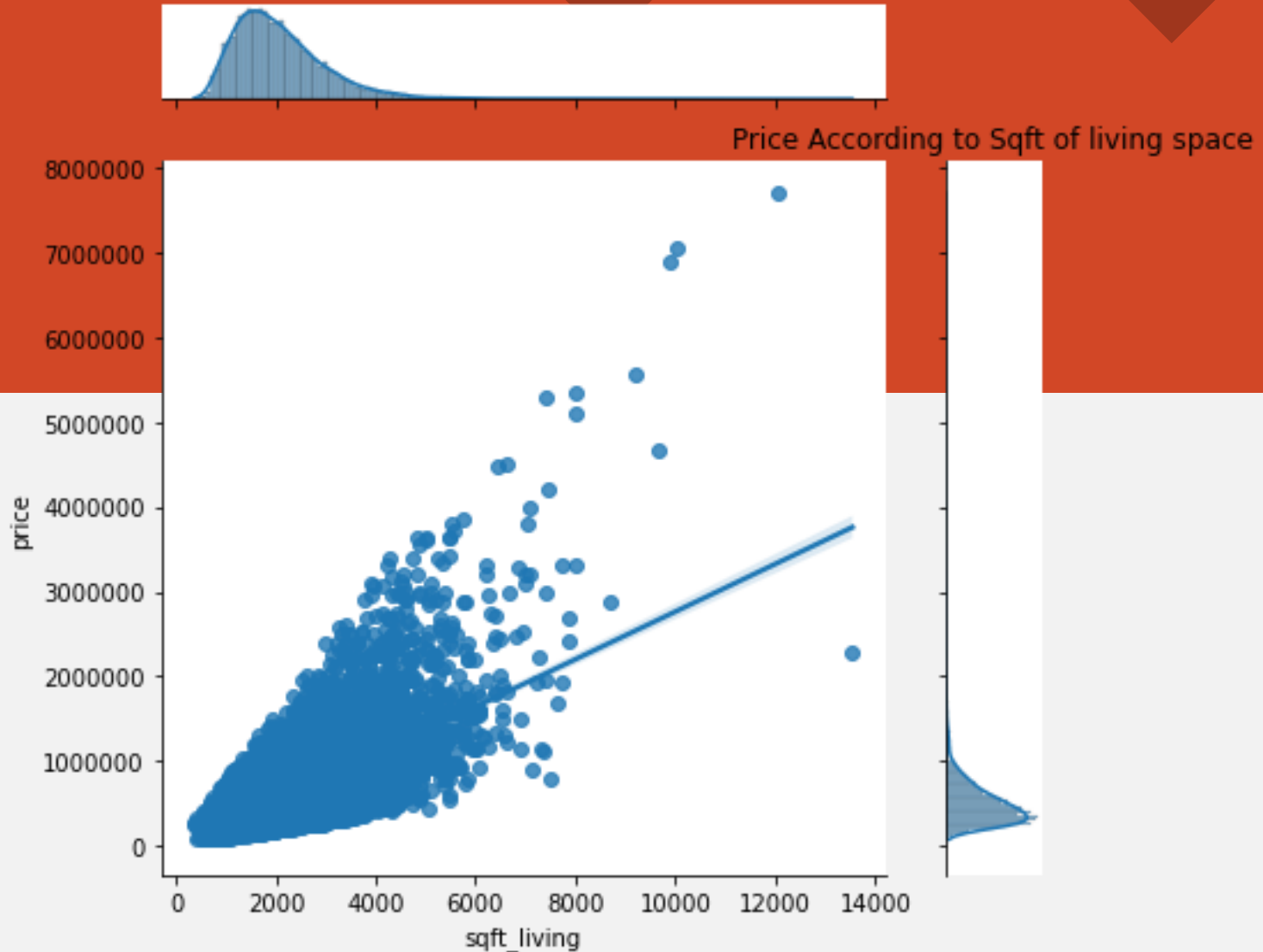
# Results – Property Prices



Most houses were sub \$1 mil.



# Results – Living Space

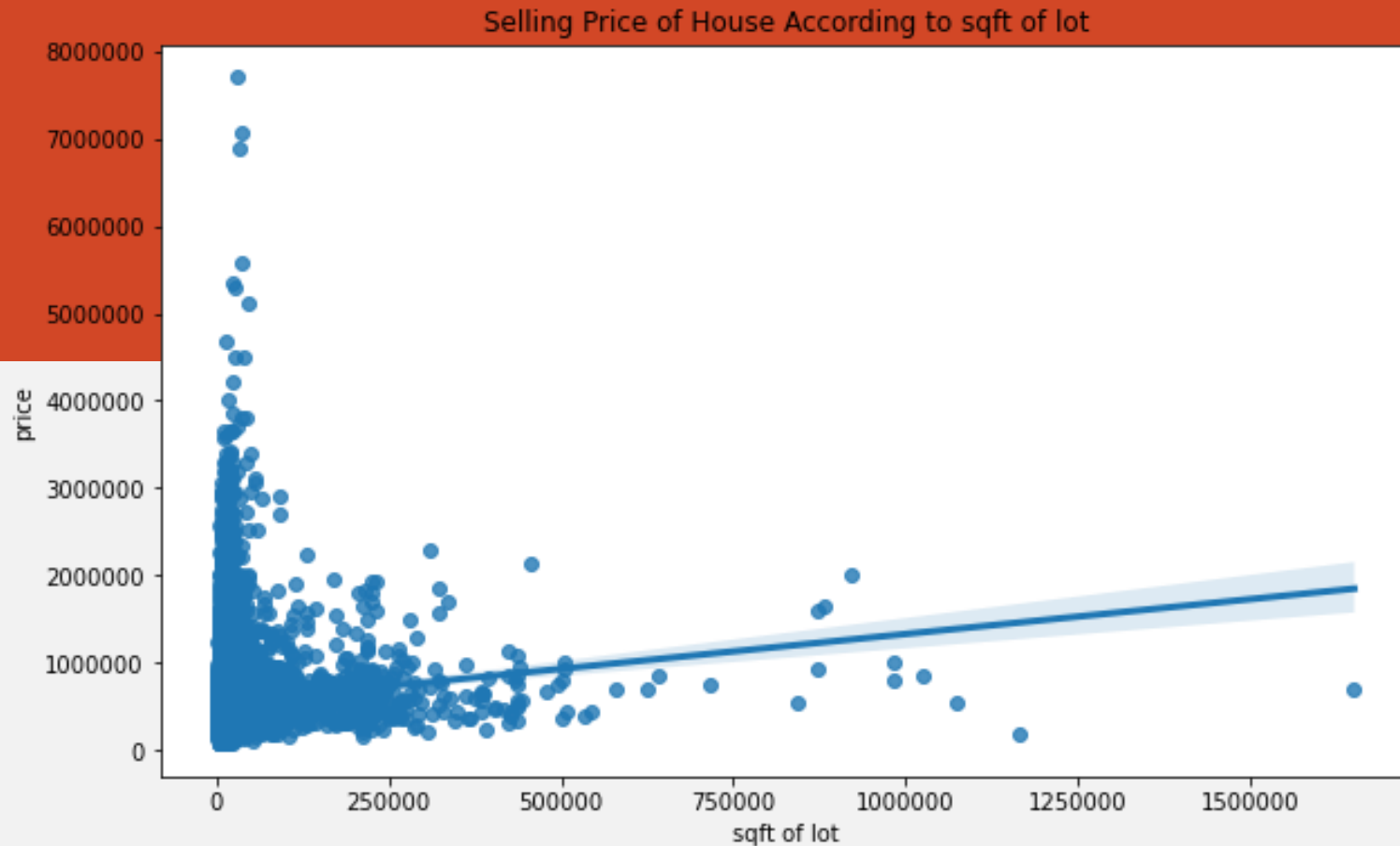


Greater living space generated higher property property prices.





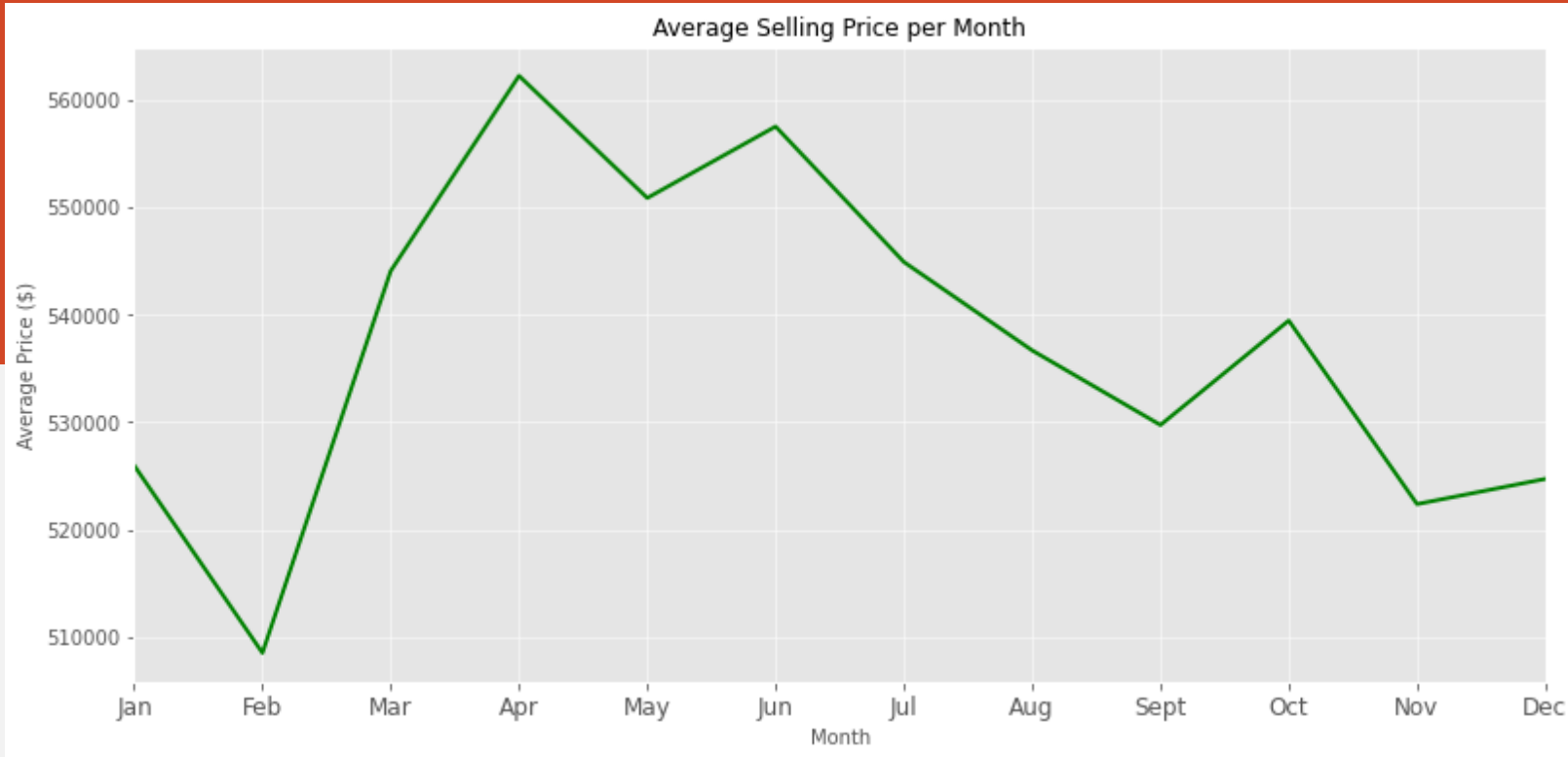
# Results – Land Space



Land space had no visible correlations, surprisingly.



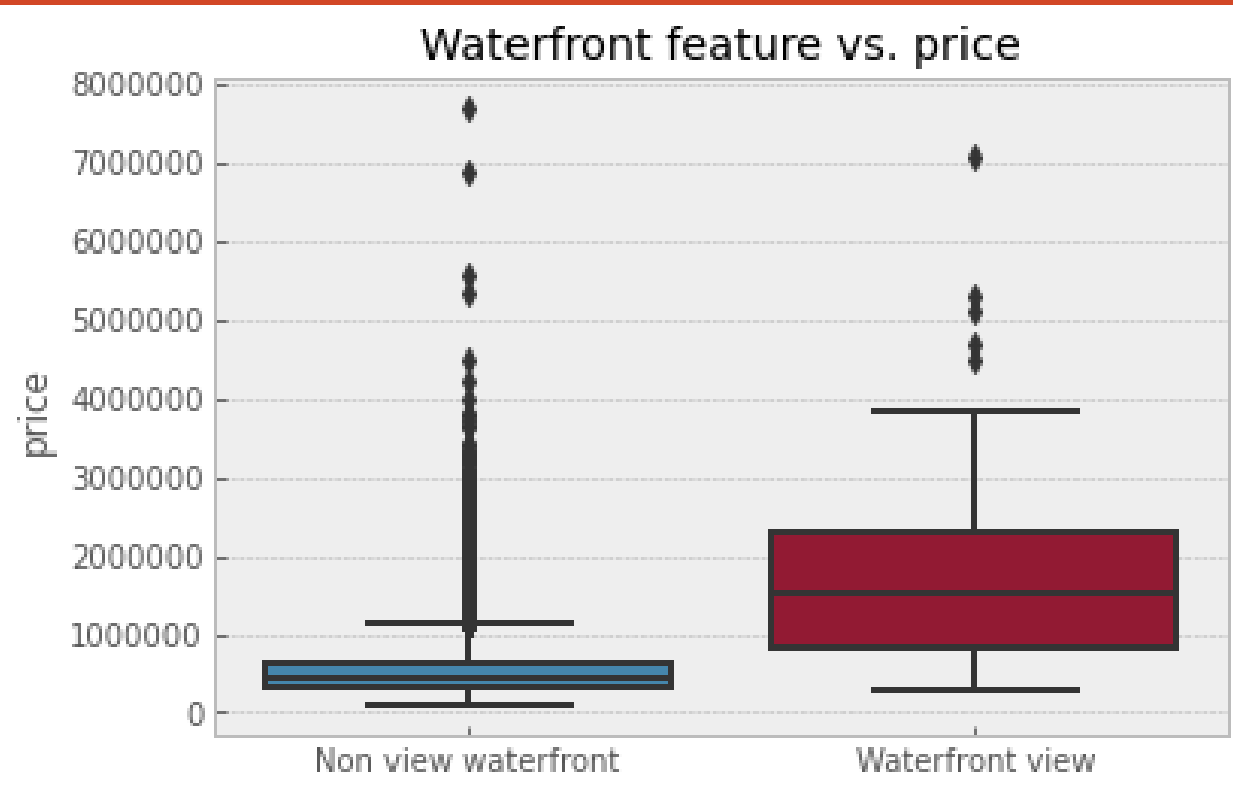
# Results – Seasonality



February showing lowest house prices, whilst April-June shows highest prices and tends to dip off gradually and won't pick up until March the following year.



# Results – Waterfront views



Waterfront view properties cost more than non-waterfront.



## Conclusions

If selling, sellers should look at ways to renovate and increase living spaces where possible. Buyers/investors should bear this in mind when buying.

Recommendation 1

Buyers should look at purchasing during lower performing months such as February, and sellers should put property on market during higher months April – June.

Recommendation 2

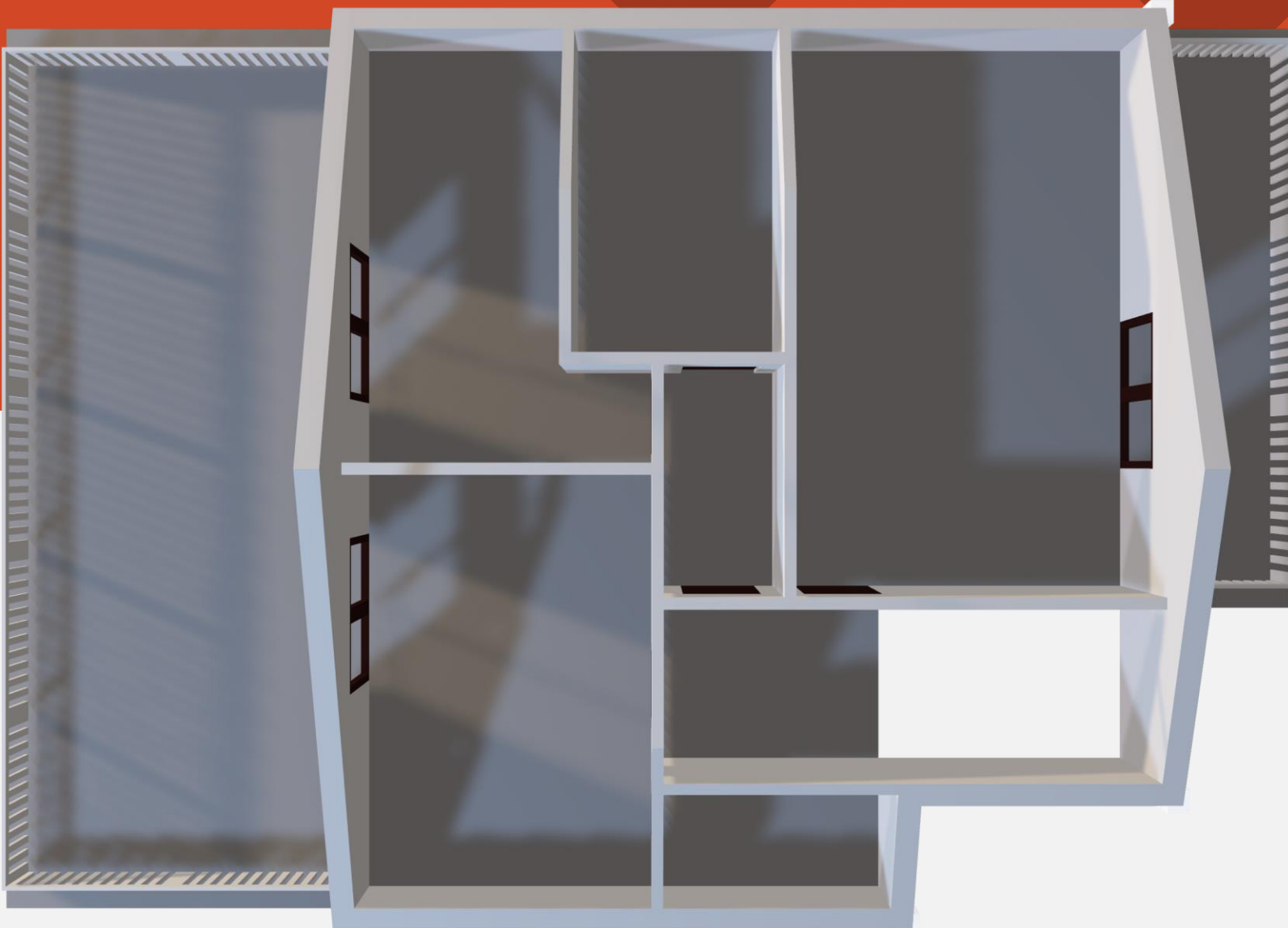
Waterfront properties tend to sell for higher, buyers can sell at a premium as it's certainly a scarce value add. Whilst buyers/investors need to be prepared for the premium price.

Recommendation 3





# Next Steps



There could be other variables that King County Real Estate and clients might be interested in, such as location. Perhaps there are certain catchment areas/locales that perform better than others depending on what's around such as schools, hospitals, shops etc.

It is important to factor in economical shifts that could impact the results we've seen such as interest rate fluctuations or inflation.



**Thank You**

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<https://github.com/anneliug/King-County-House-Sales.git>

