DANIEL ROSS-LEUTWYLER, SEPT. 29, 2021

MODELING HOUSING PRICES IN KING COUNTY, WA.

Using Linear Regression to Describe House Prices

HOUSING SNAPSHOT

- Pop. 2.25M

- 16.6% Population Increase (2010-2019)

- $779k median home price (2021)

- 43.9% Home Ownership Rate

King County Housing Market Trends

Median Sale Price	# of Homes Sold	Median Days on Market
$779,000	3,850	6
+13.5% year-over-year	+7.7% year-over-year	-14.3% year-over-year

All Home Types ▾

1 year   3 years   **5 years**

$900K
$800K
$700K
$600K
$500K
$400K

2017   2018   2019   2020   2021

Source :https://www.census.gov/quickfacts/fact/table/kingcountywashington,WA/PST045219
https://www.redfin.com/county/118/WA/King-County/housing-market
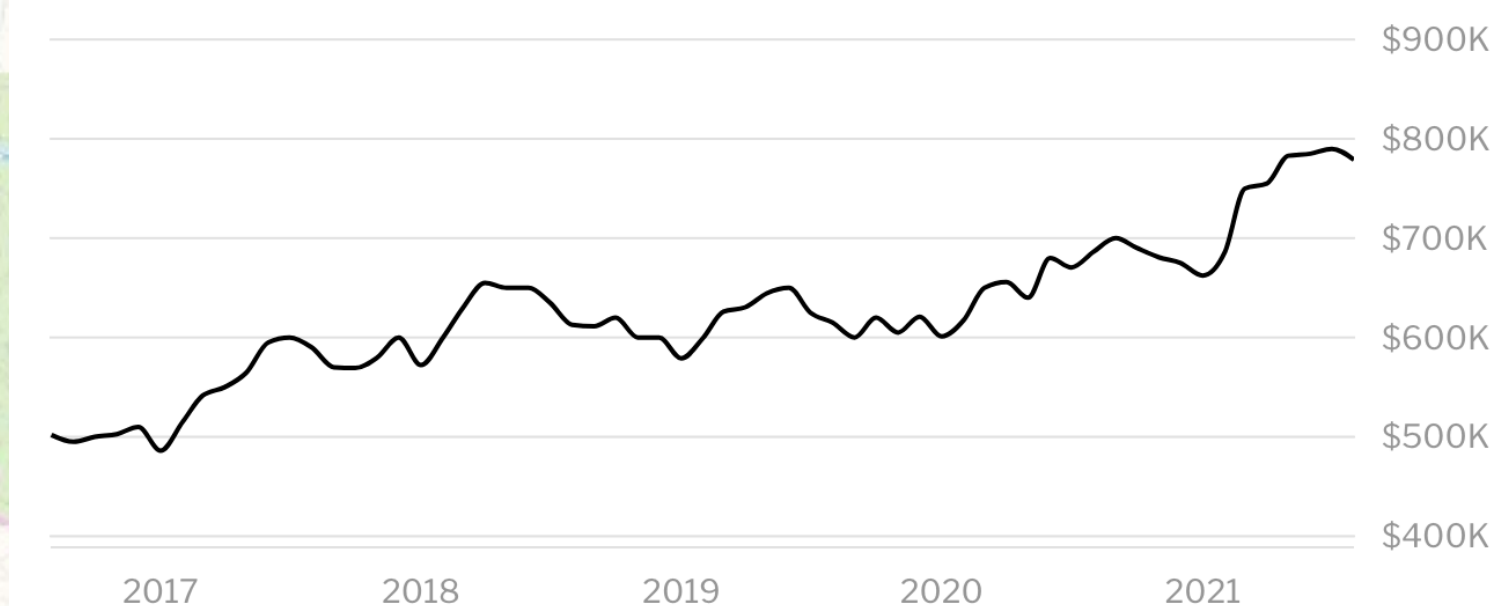
SUMMARIZING THE KC HOUSING DATA SET

- **Almost 21,600 entries.**

- **Contains all housing sales from May 2014 - May 2015.**

- **Includes data about house size, bedrooms, bathrooms, grade, condition, location, and lot size.**

- **Mean house price is $540,296**

- **Median house price is $450,000**

- **Most expensive house sold for $7.7 million.**

- **Least expensive house sold for $78,000.**

SHORTCOMINGS

- **Data is 5 years old.**

- **Some variables are missing a lot values.**

- **Price info contains a lot of outliers that skew data**

Box Plot of House Prices
Price, In Million USD
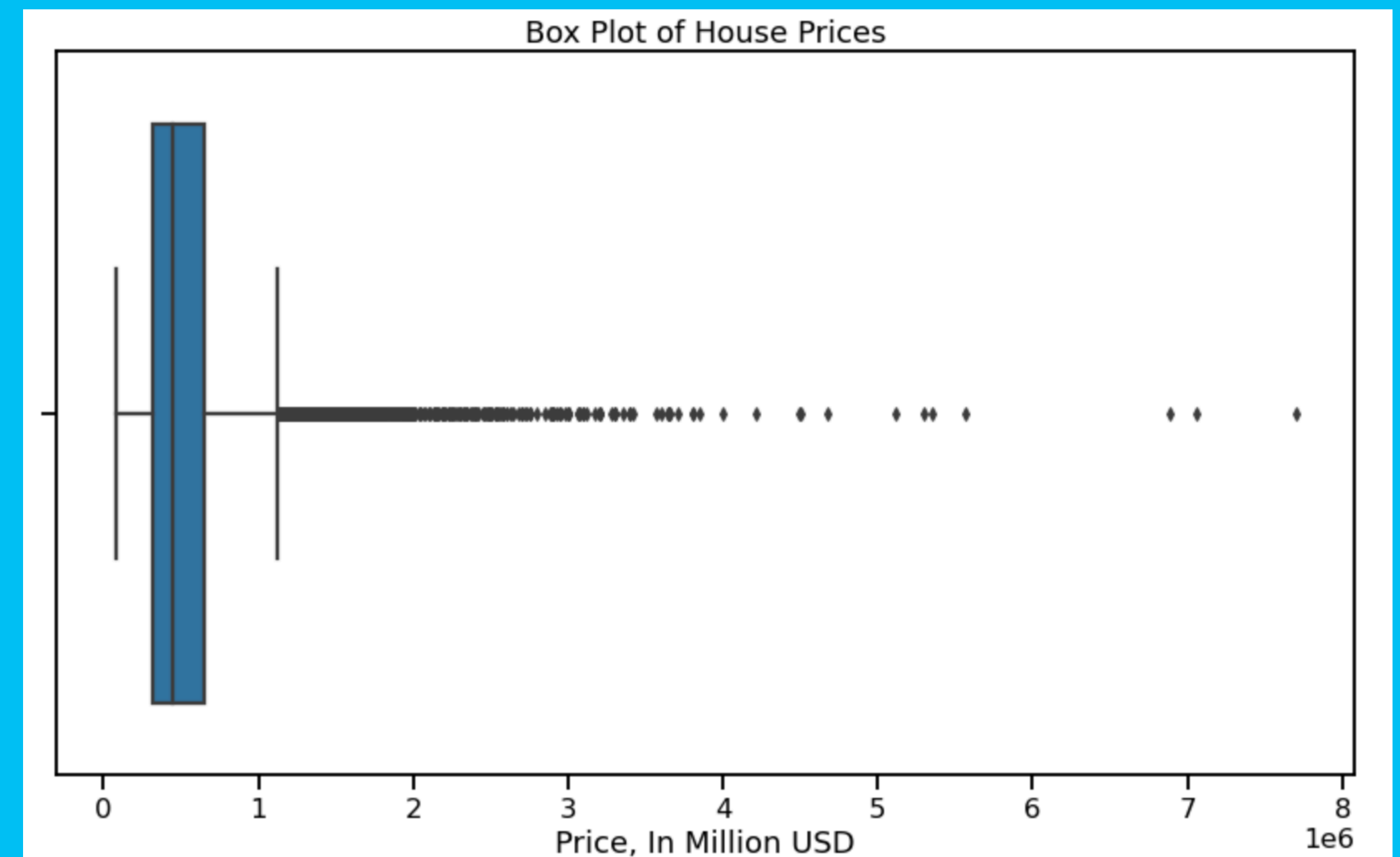
HOUSING FEATURES, RANKED

- House size — for every extra square foot of living space added, we can expect an increase of $129.

- Bathrooms increase housing price ($13.8k per whole bathroom), while bedrooms, paradoxically, decrease housing price (-$9.3k per bedroom.)

- The grade assigned to a house by the county is correlated with house price. ($52.7k per grade increase.)
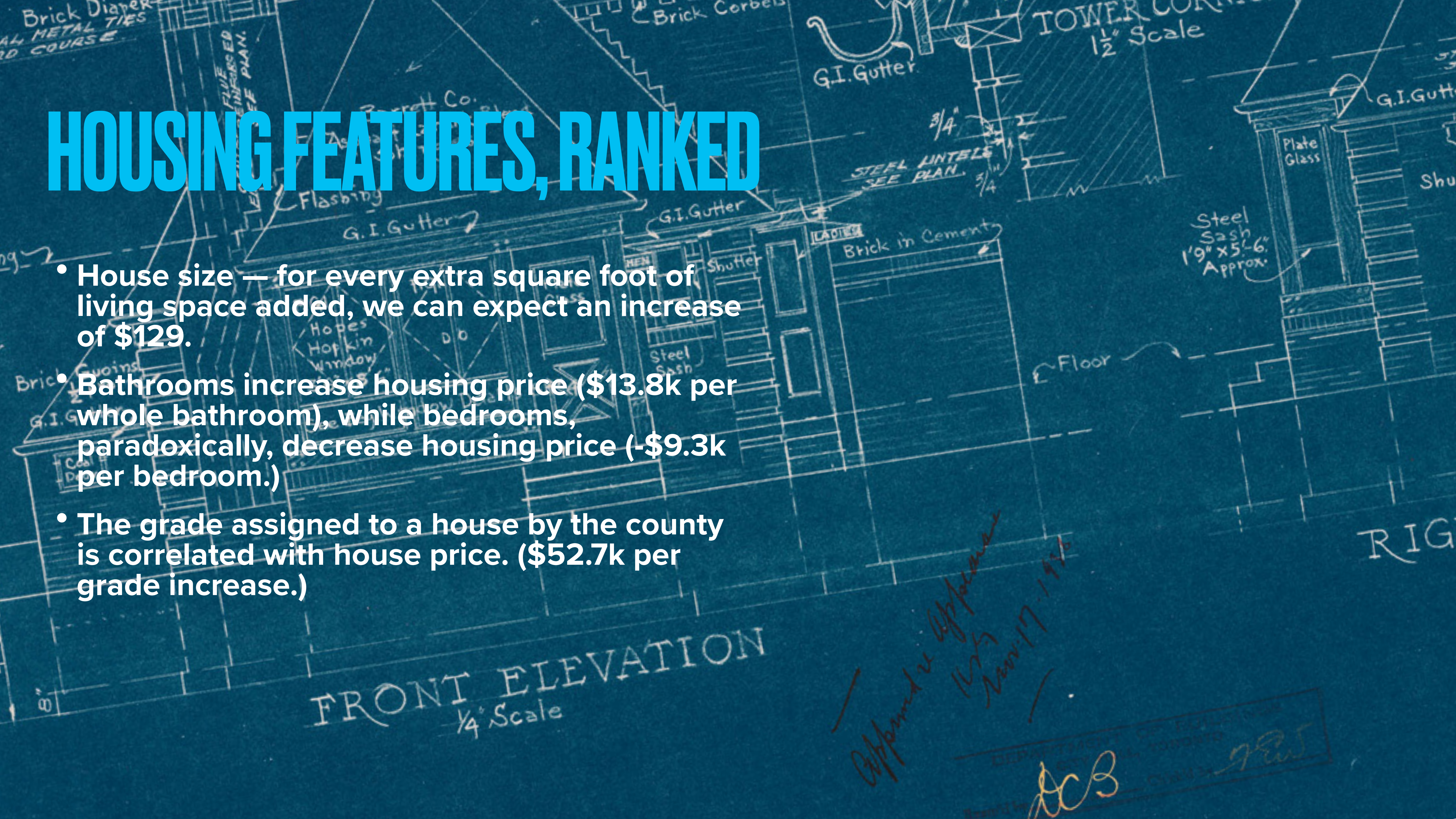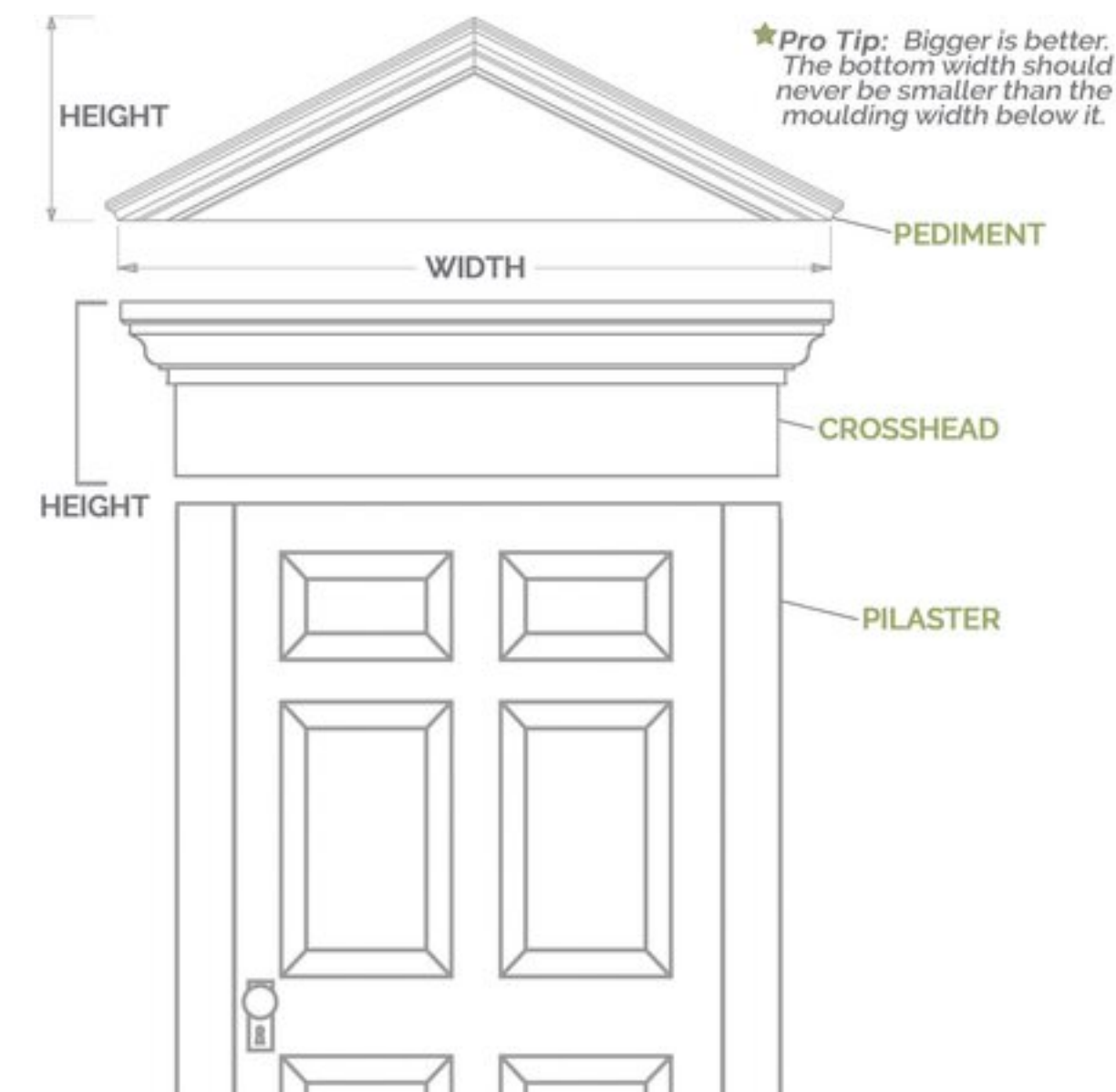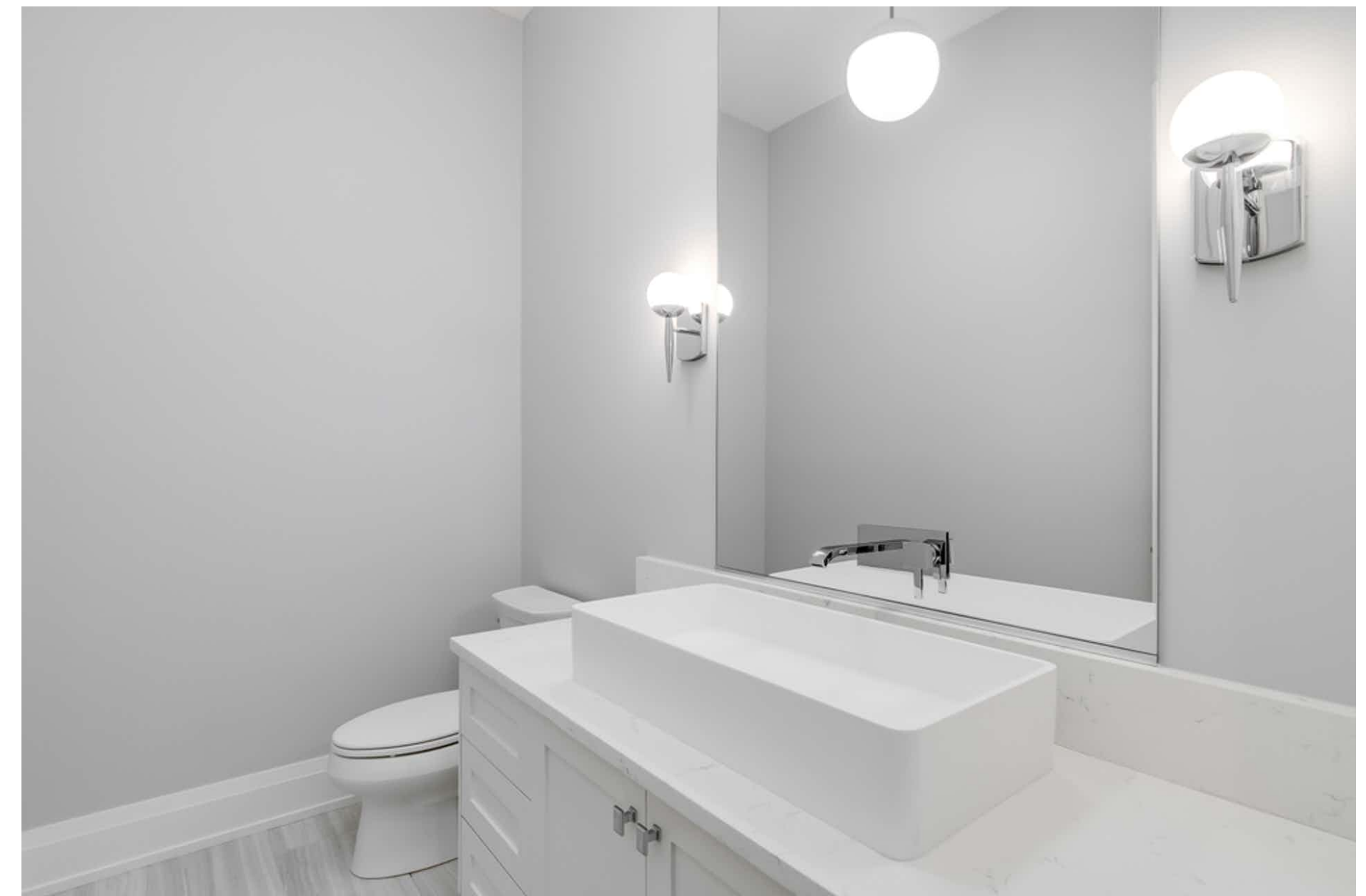
LOCATION!

LOCATION!

LOCATION!

- Houses with waterfront views sold for an average of $209k more than houses without a waterfront view.

- Houses in the 98039, 98004, 98112, and 98040 zip codes have a very high house price compared to other zip codes.

- Further investigation in adjacent zip codes could yield potential deals as demand for housing in exclusive zip codes grows.

RECOMMENDATIONS:

- Increase the square footage of your house by building a whole or half bathroom.

- Make improvements in the quality of building materials and craftsmanship whenever possible. You will have to get a reassessment of the grade of your house, but the upside is tremendous.

- If looking for investment properties, look in the aforementioned zip codes, and adjacent zip codes, for houses in need of renovations where improving the grade is relatively painless.

HEIGHT

★Pro Tip: Bigger is better. The bottom width should never be smaller than the moulding width below it.

PEDIMENT

WIDTH

CROSSHEAD

HEIGHT

PILASTER

THANK YOU !

Full Jupiter notebook and dataset available at:
https://github.com/dan-rl1976/kc_housing_regression

Image from settlement.com