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# Modeling Housing Prices for King County Housing Authority

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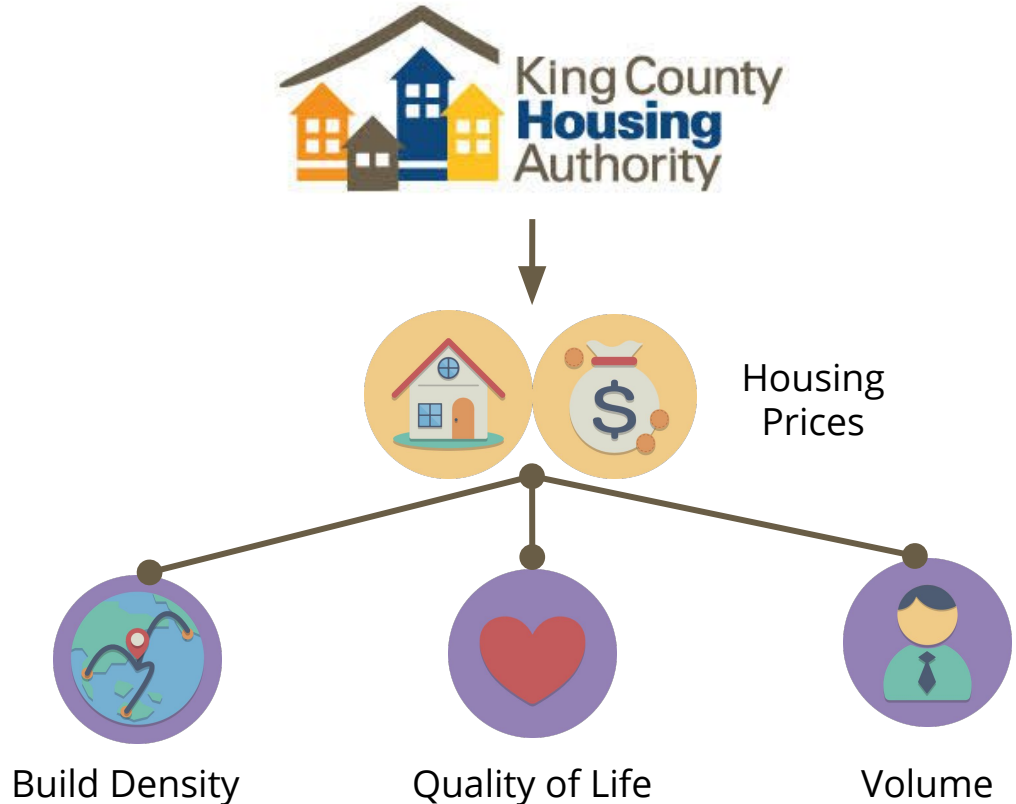
Eon Slem, Dan Valenzuela

# Business Problem

**Problem:** King County Housing Authority is trying to understand the effect of housing prices on the costs of subsidies they can provide.

**Solution:** Model housing prices using housing features that King County cares about, including the quality of housing.

**Impact:** Using a statistical model, King County can better understand how much in subsidies they need to provide.



# Data Overview

Source

kaggle

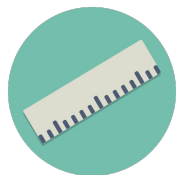
## Description

Sales of 27 thousand homes in King County from May 2014 to May 2015

## Relevant Variables Apart from Price



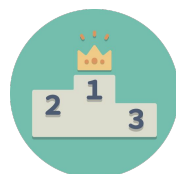
Lot Size



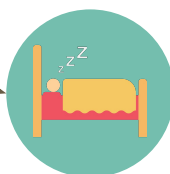
Living Space



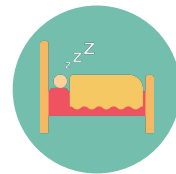
Build Quality Grade



Bedrooms



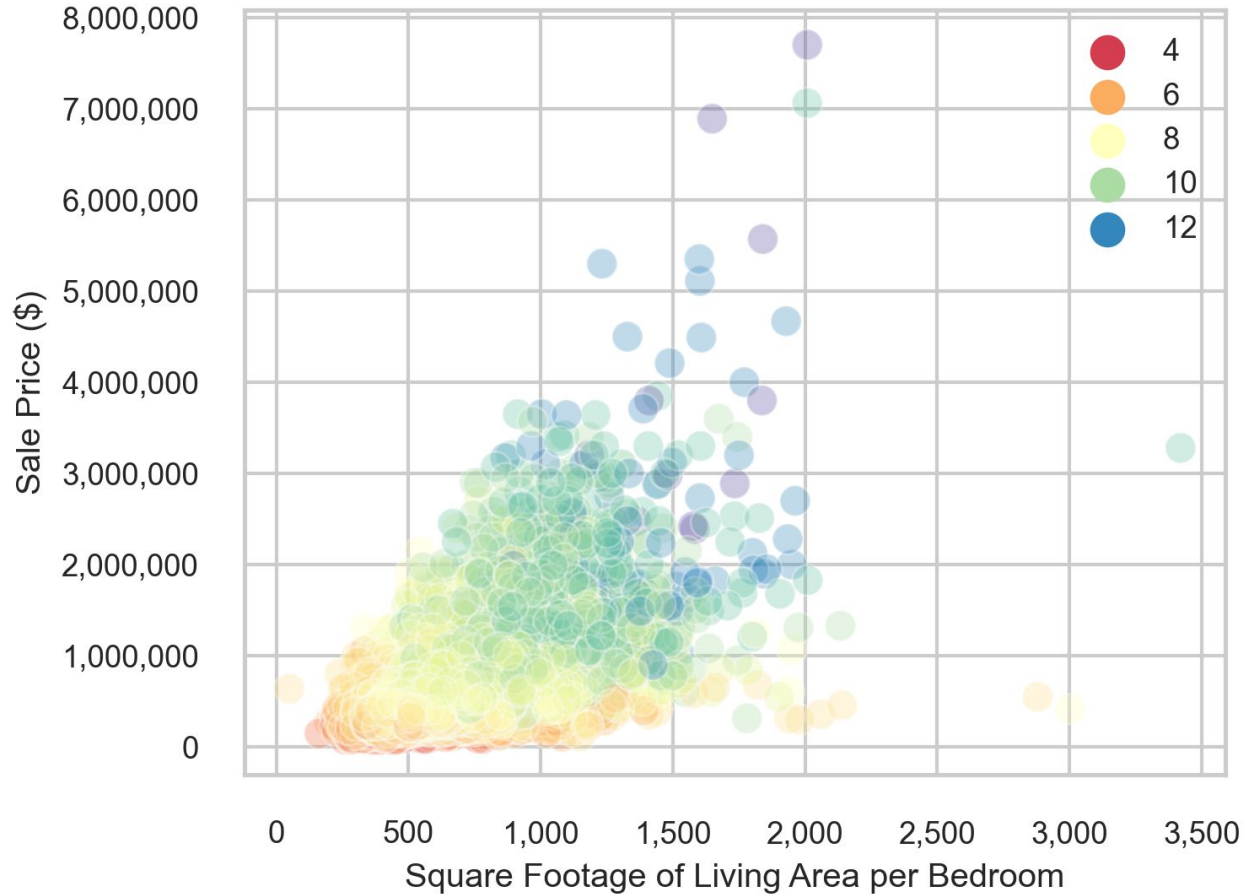
Bedrooms

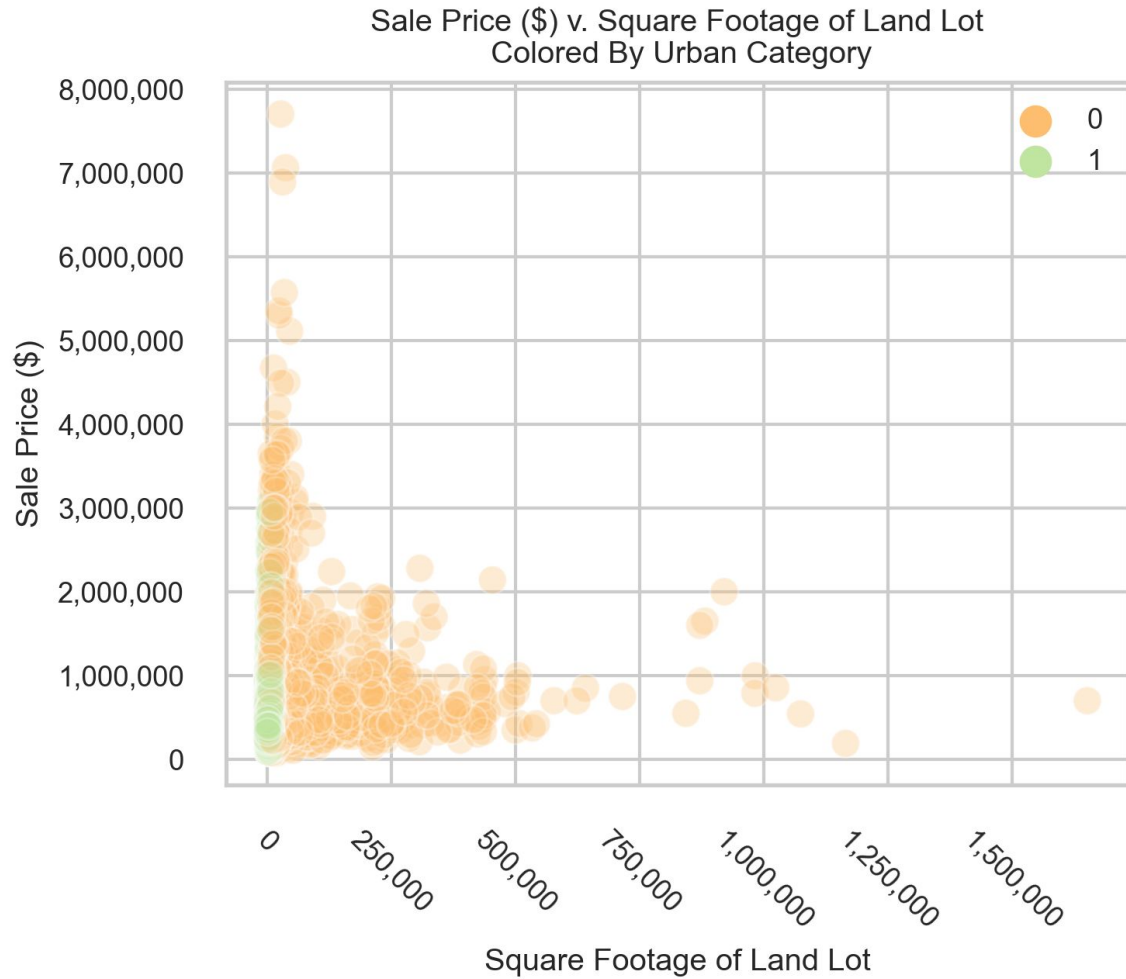


# Quality of Life, Build Density and Volume Effects

- Each additional square foot of living space per occupant increases price by about \$500
- Each additional bedroom increases price by about \$75,000
- Lot size bears heavily on price as “urban” plots costs about 2x suburban.
- Building grade was not useful in making prices predictions because of high variation in price with the metric.

Sale Price (\$) v. Square Footage of Living Area per Bedroom  
Colored By Grade Category





# Recommendations & Conclusions

- Use price model to help understand subsidy cost, barring the use of grade.
- Subsidies in housing for suburban areas are likely to be cheaper given lower prices.

## Next Steps

- Improve model so that prices can be predicted using grade.
- Improve identification of “urban” homes.
- Scale model so that impact of variables of interest can be compared.

# Contact Info & Credits

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## **Image Credits**

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