Climate Change and Home Purchasing in King County: *a Brief Guide for Savvy Homebuyers*

Presented by Lou Hines and Jonah Devoy

Climate change impacts the whole world, but we often don't think of it when buying a home.

One of the biggest concerns is flooding: — estimated that between $66 billion and $160 billion worth of real estate will be below 2050. This doesn't even take into account flash flooding, which is an increasingly major risk in Seattle!

For more, see: this report by RIHA: https://www.mba.org/docs/default-source/research---riha-reports/22847-research-riha-september-2021-report-wb.pdf?sfvrsn=cd87eb81_0

FLOOD RISKS IN KING AND NEARBY COUNTIES

1 KING COUNTY
Major Flood Every 2 years
$9B buildings at risk
9,630 individual flood insurance policies

2 SNOHOMISH COUNTY
Major Flood Every 2 years
$1B buildings at risk
2,934 individual flood insurance policies

3 PIERCE COUNTY
Major Flood Every 3 years
$1.8B buildings at risk
3,681 individual flood insurance policies

4 LEWIS COUNTY
Major Flood Every 2 years
$700M buildings at risk
2,636 individual flood insurance policies

5 SKAGIT COUNTY
Major Flood Every 3 years
$156M buildings at risk
5,692 individual flood insurance policies

Data summary from the 2013 Washington State Enhanced Hazard Mitigation Plan, Cost to buildings at risk for each county are within 100 year floodplain.
Photos: Top (TNC/Julie Morse, Middle: King County, Bottom: TNC

We used *FEMA's NFIP* (National Flood Insurance Program) data with recent real estate data

Note: While comprehensive for their time, FEMA's scores are considered to be out-of-date. Real risks are probably much higher!

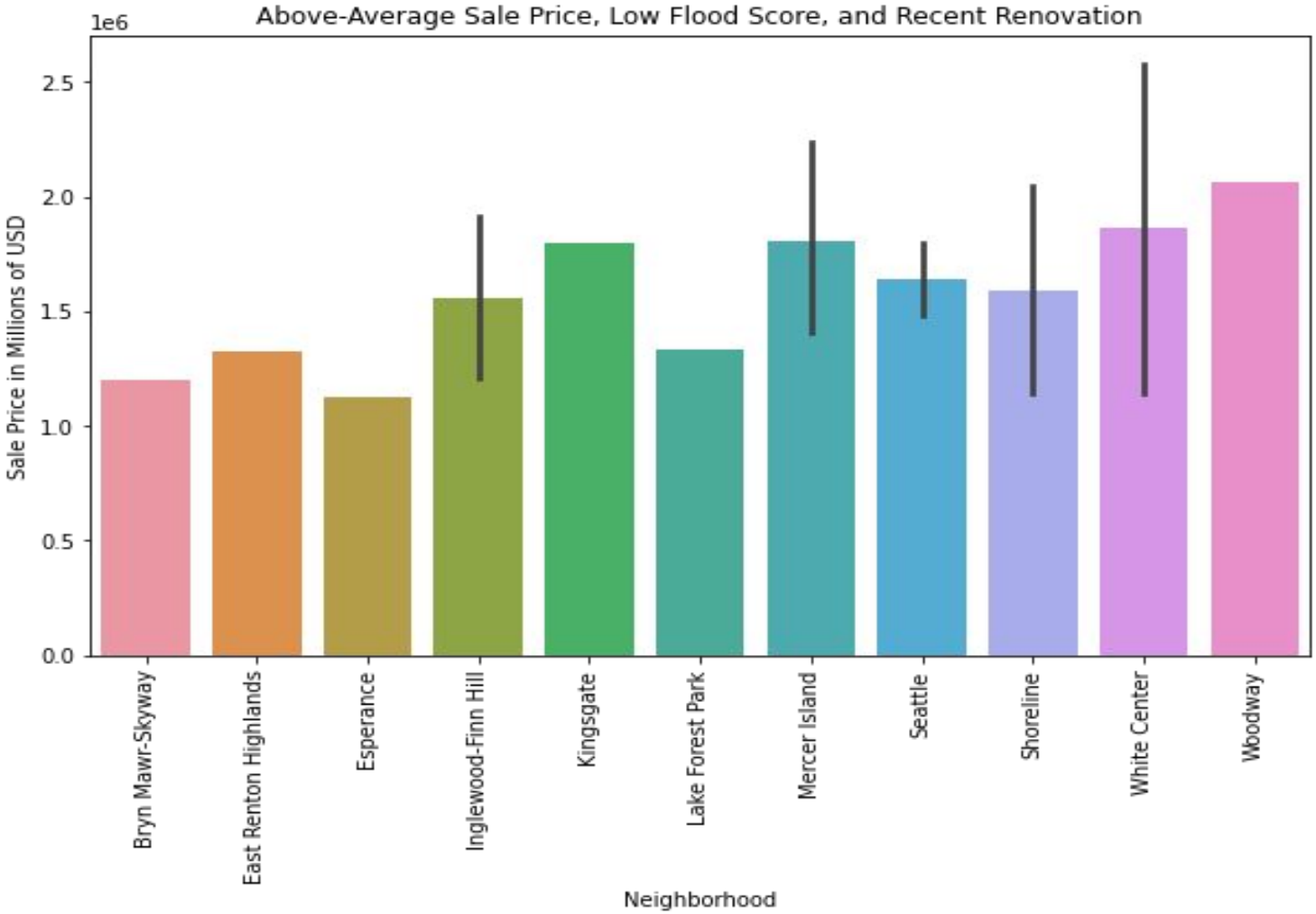
Homebuyers (not flippers!) want a stable, safe place to live that also adds to assets!

What were our results??

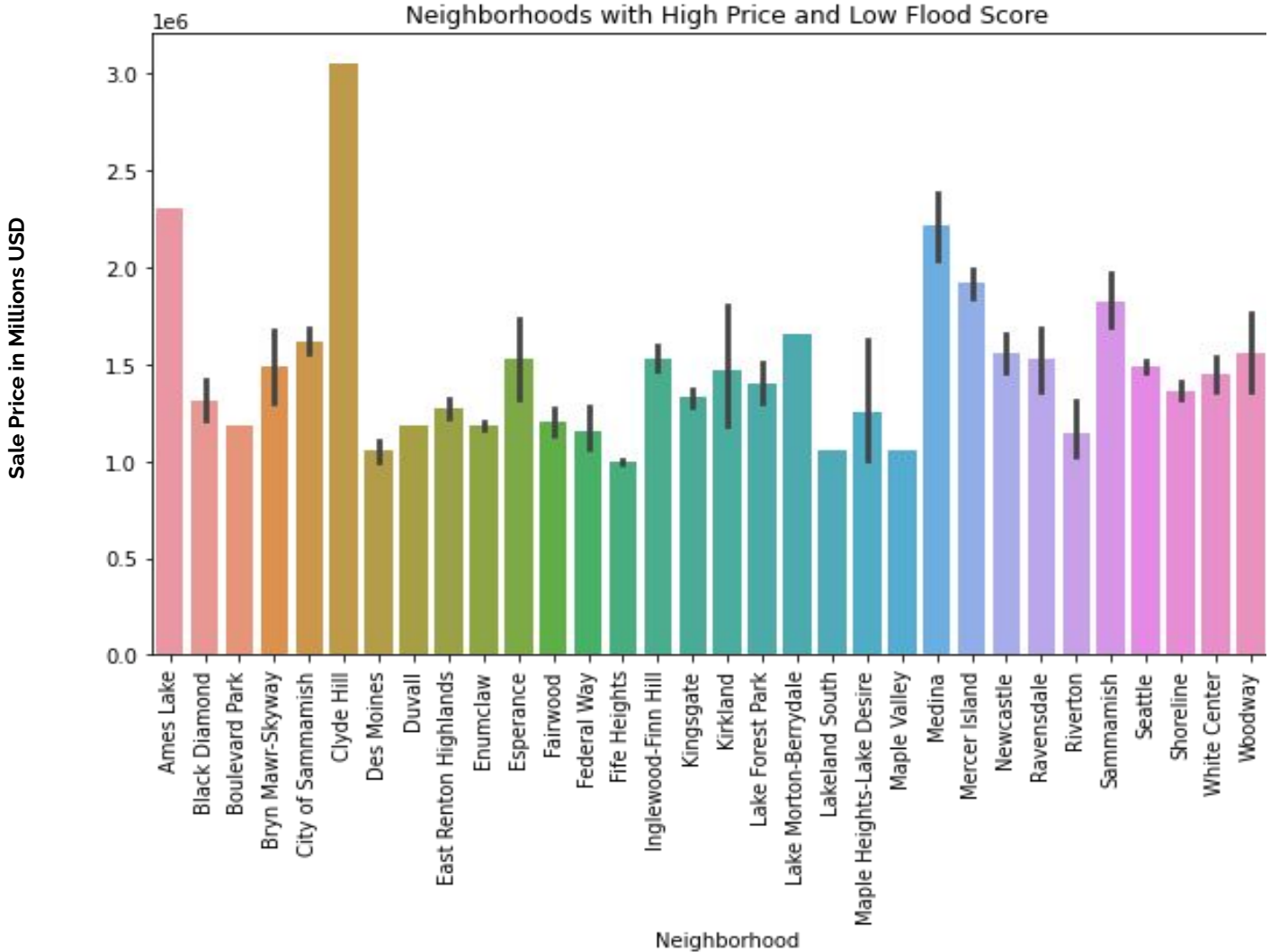
We looked primarily at :

- Average sales price of typical homes
- Homes with recent renovations
- Flood scores
- Neighborhood data

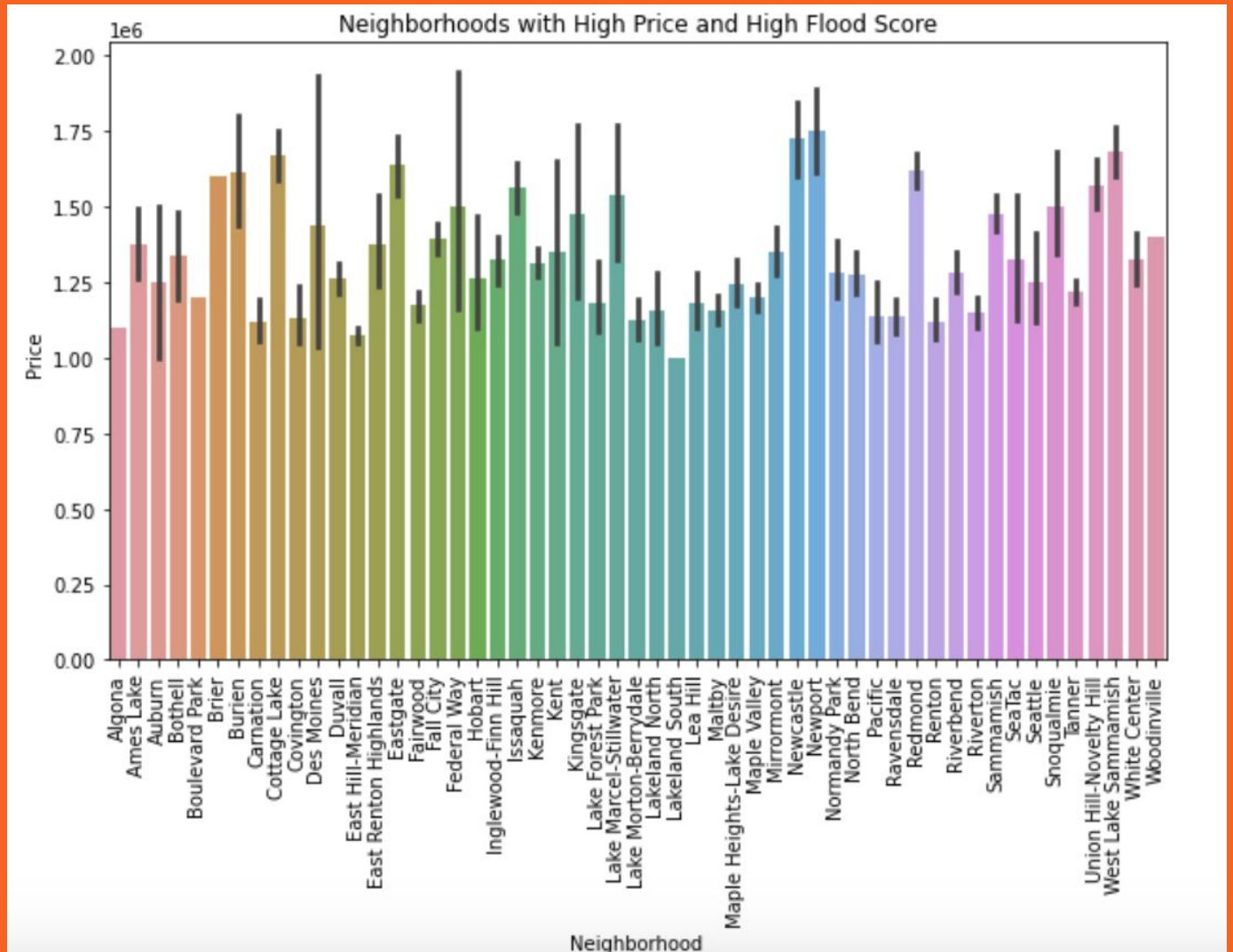
If you are primarily concerned with price and flood score, these are the results!



- Esperance
- Bryn Mawr-Skyway
- East Renton Highlands



- Clyde Hill
- Ames Lake
- Medina
- Lakeland South
- Maple Valley
- Fire Heights


Neighborhoods with High Price and High Flood Score
1e6
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
Price
Algona
Ames Lake
Auburn
Bothell
Boulevard Park
Brier
Burien
Carnation
Cottage Lake
Covington
Des Moines
Duvall
East Hill-Meridian
East Renton Highlands
Eastgate
Fairwood
Fall City
Federal Way
Hobart
Inglewood-Finn Hill
Issaquah
Kenmore
Kent
Kingsgate
Lake Forest Park
Lake Marcel-Stillwater
Lake Morton-Berrydale
Lakeland North
Lakeland South
Lea Hill
Maltby
Maple Heights-Lake Desire
Maple Valley
Mirrormont
Newcastle
Newport
Normandy Park
North Bend
Pacific
Ravensdale
Redmond
Renton
Riverbend
Riverton
Sammamish
SeaTac
Seattle
Snoqualmie
Tanner
Union Hill-Novelty Hill
West Lake Sammamish
White Center
Woodinville
Neighborhood

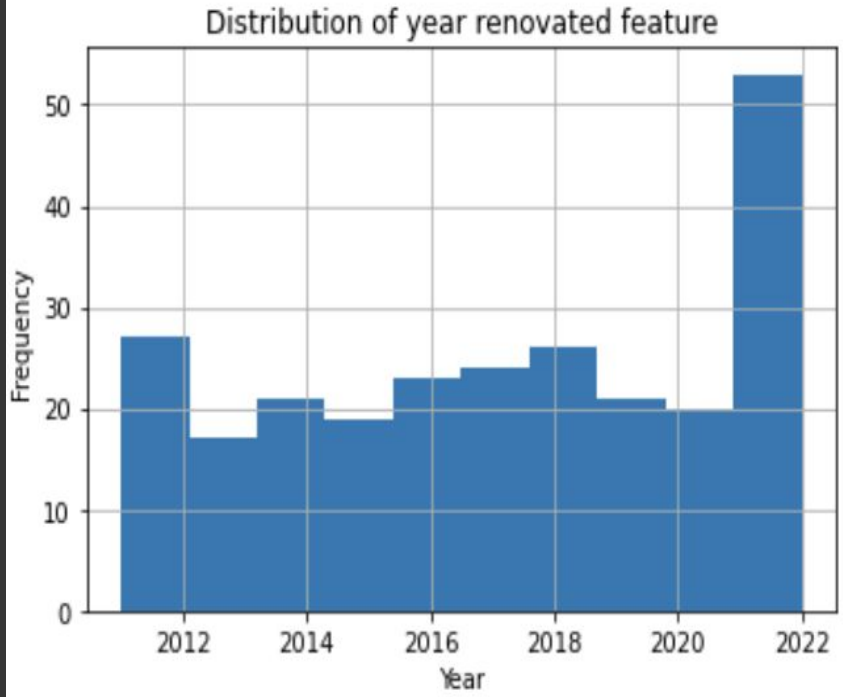
```
X_train = onehot_neighborhood_df.drop(['price', 'street address', 'coord', 'city', 'floodzones_in_zipcode', 'area_
y_train = onehot_neighborhood_df['price']
```

```
X_int = sm.add_constant(X_train)
model = sm.OLS(y_train, X_int).fit()
summary = model.summary()
summary
```

OLS Regression Results

Dep. Variable:	price	**R-squared:**	0.728
Model:	OLS	**Adj. R-squared:**	0.725
Method:	Least Squares	**F-statistic:**	241.9
Date:	Thu, 01 Jun 2023	**Prob (F-statistic):**	0.00
Time:	13:15:38	**Log-Likelihood:**	-2.6213e+05
No. Observations:	18805	**AIC:**	5.247e+05
Df Residuals:	18598	**BIC:**	5.263e+05
Df Model:	206		
Covariance Type:	nonrobust		

```
onehot_neighborhood_df[onehot_neighborhood_df['yr_renovated'] > 2010]['yr_renovated'].hist()
plt.xlabel("Year")
plt.ylabel('Frequency')
plt.title("Distribution of year renovated feature")
plt.show()
```



QUESTIONS?

Happy hunting!

We hope you'll use these tips to purchase a home a beautiful and resilient area of King County! Thanks for listening!!

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