

Housing Guidance for New Home Buyers in WA

King County, WA, U.S.A.



Objective

Offer guidance on pricing expectations for home buyers looking for a home in King County, WA, particularly as it relates to:

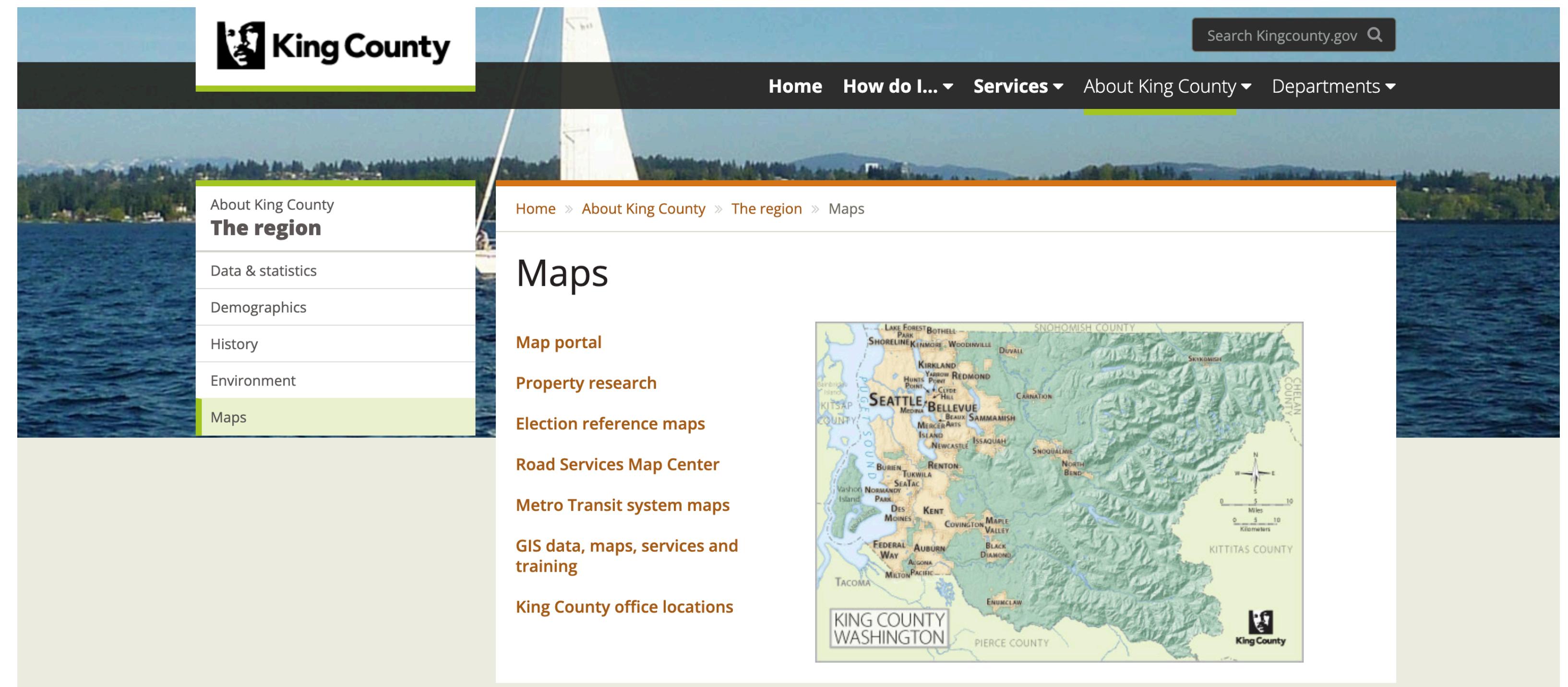
1. Square Footage
2. Bedrooms
3. Bathrooms

Data Source

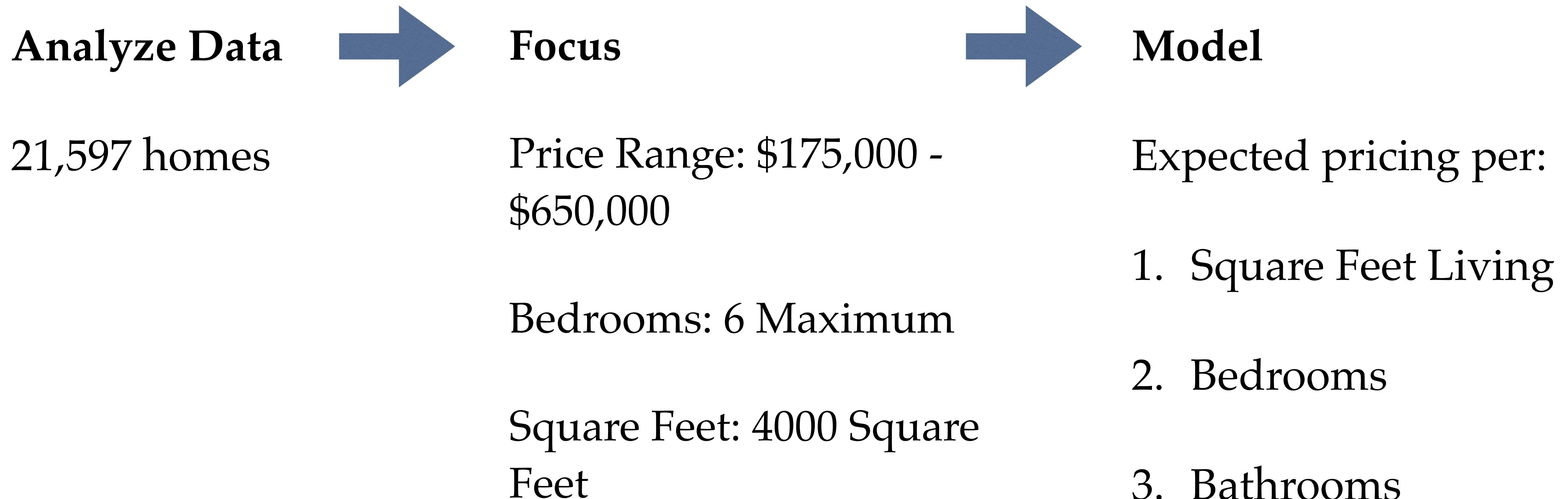
King County Housing Data from 2014-2015.

Includes:

- Price
- Square Feet
- Bedrooms
- Bathrooms
- Zip Codes
- Year Built
- Year Renovated
- Waterfront View

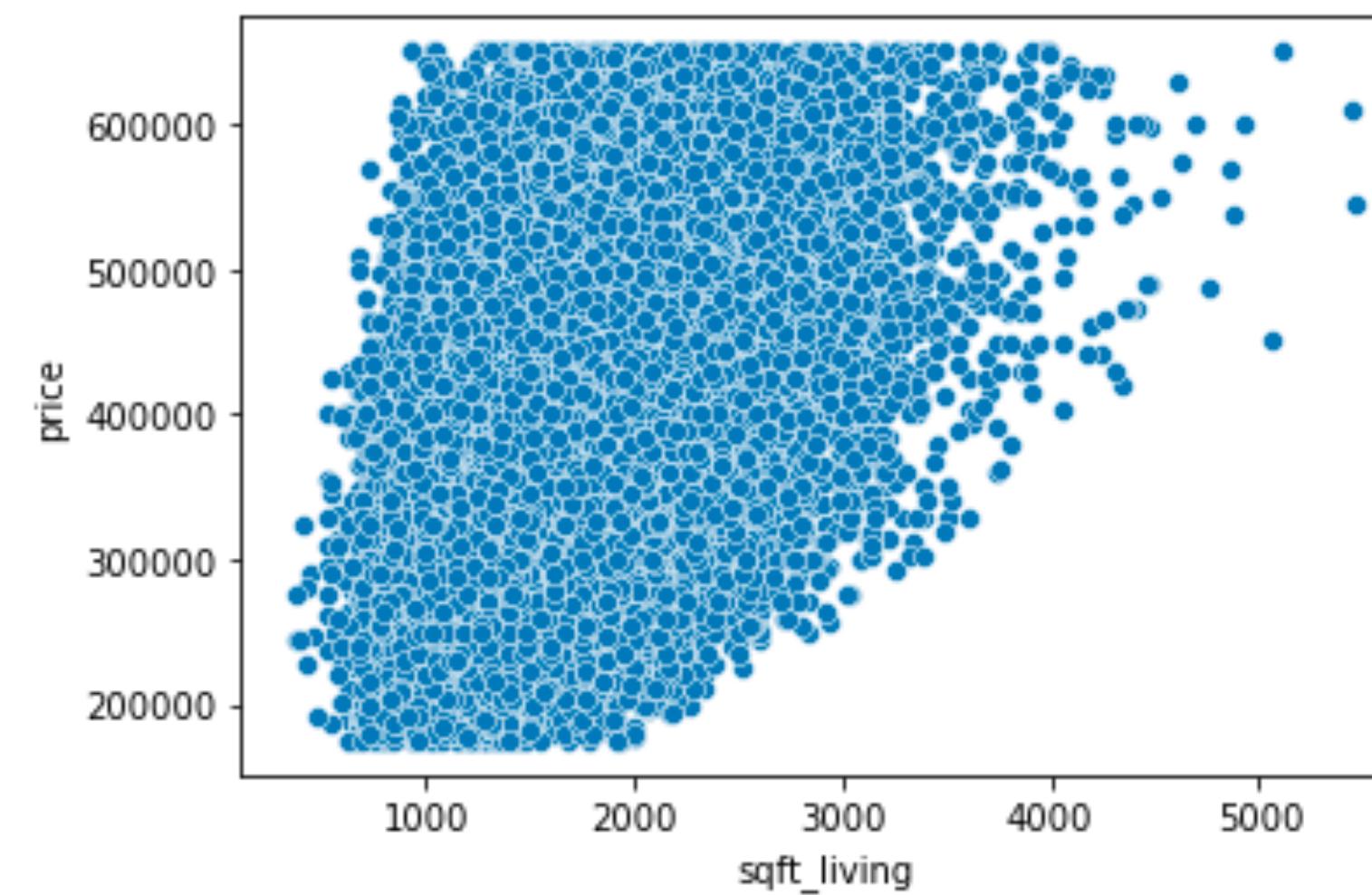


Methodology



Price per square feet: \$209

- Of the variables tested, the strongest predictor of price is square footage
- **The expected cost per square feet of a house in King County is \$209/square feet**

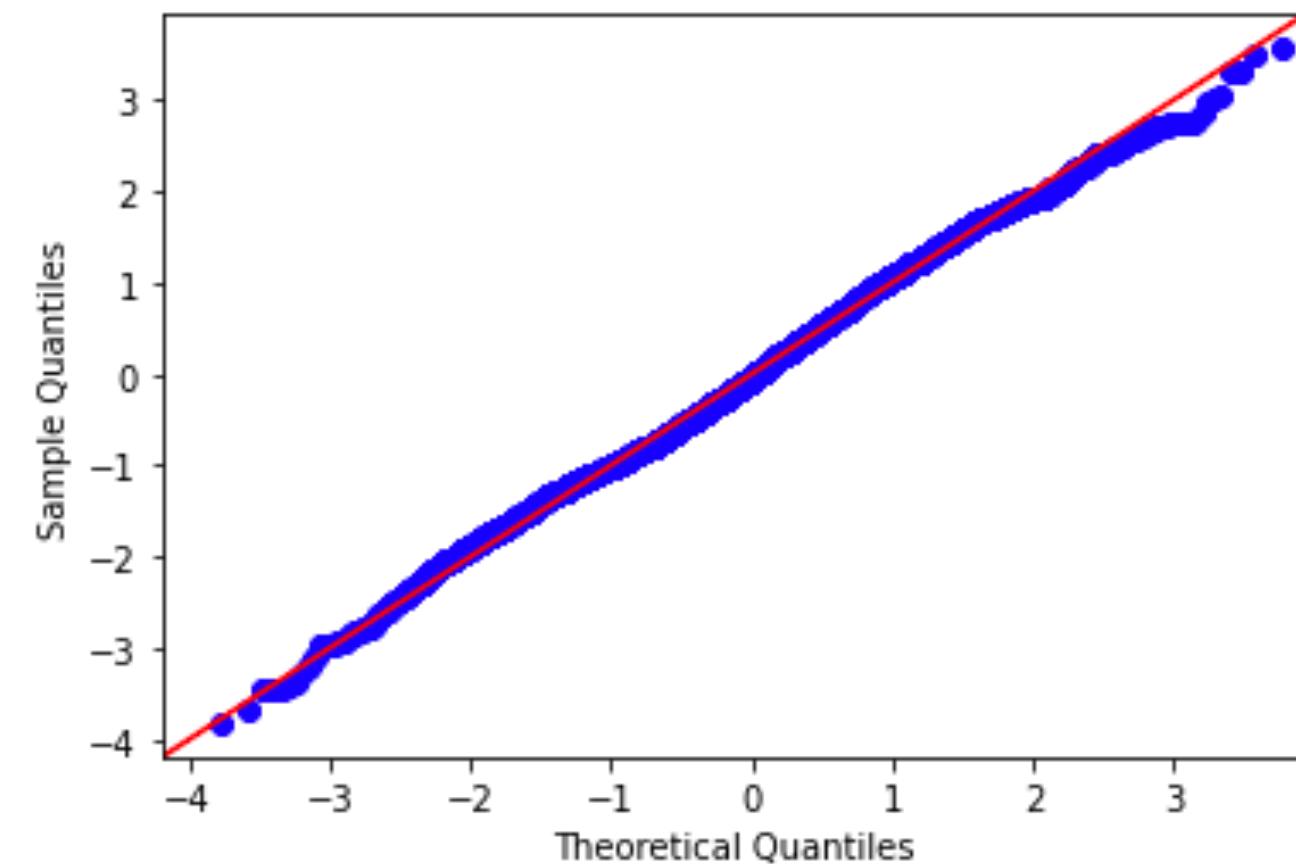


OLS Regression Results

Dep. Variable:	price	R-squared (uncentered):	0.891			
Model:	OLS	Adj. R-squared (uncentered):	0.891			
Method:	Least Squares	F-statistic:	9.739e+04			
Date:	Mon, 25 Oct 2021	Prob (F-statistic):	0.00			
Time:	02:57:34	Log-Likelihood:	-1.5824e+05			
No. Observations:	11937	AIC:	3.165e+05			
Df Residuals:	11936	BIC:	3.165e+05			
Df Model:	1					
Covariance Type:	nonrobust					
	coef	std err	t	P> t	[0.025	0.975]
sqft_living	208.9138	0.669	312.078	0.000	207.602	210.226
Omnibus:	52.481	Durbin-Watson:	1.938			
Prob(Omnibus):	0.000	Jarque-Bera (JB):	39.304			
Skew:	0.025	Prob(JB):	2.92e-09			
Kurtosis:	2.724	Cond. No.	1.00			

Price per bedroom: \$117,500

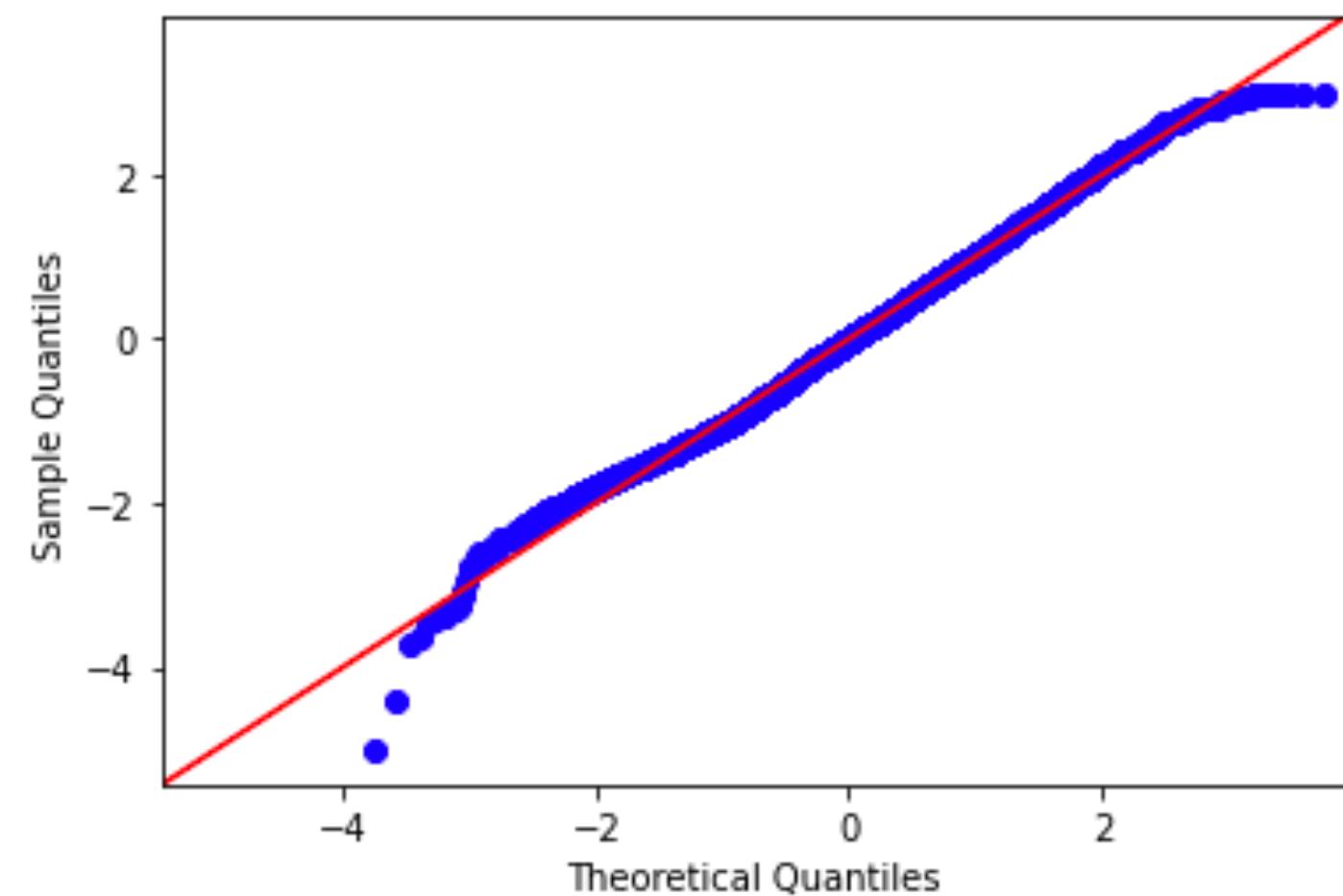
- The expected cost per bedroom of a house in King County is \$117,500/bedroom



Model:	OLS	Adj. R-squared (uncentered):	0.880			
Method:	Least Squares	F-statistic:	8.732e+04			
Date:	Mon, 25 Oct 2021	Prob (F-statistic):	0.00			
Time:	02:57:34	Log-Likelihood:	-1.5882e+05			
No. Observations:	11937	AIC:	3.176e+05			
Df Residuals:	11936	BIC:	3.177e+05			
Df Model:	1					
Covariance Type:	nonrobust					
	coef	std err	t	P> t	[0.025	0.975]
bedrooms	1.175e+05	397.608	295.503	0.000	1.17e+05	1.18e+05
Omnibus:	59.733	Durbin-Watson:	1.960			
Prob(Omnibus):	0.000	Jarque-Bera (JB):	46.074			

Price per bathroom: \$190,800

- The expected cost per bathroom of a house in King County is \$190,800/bathroom



Model:	OLS	Adj. R-squared (uncentered):	0.875			
Method:	Least Squares	F-statistic:	8.373e+04			
Date:	Mon, 25 Oct 2021	Prob (F-statistic):	0.00			
Time:	02:57:35	Log-Likelihood:	-1.5904e+05			
No. Observations:	11937	AIC:	3.181e+05			
Df Residuals:	11936	BIC:	3.181e+05			
Df Model:	1					
Covariance Type:	nonrobust					
	coef	std err	t	P> t	[0.025	0.975]
bathrooms	1.908e+05	659.483	289.356	0.000	1.9e+05	1.92e+05
Omnibus:	50.150	Durbin-Watson:	1.956			
Prob(Omnibus):	0.000	Jarque-Bera (JB):	48.364			

Summary - The Price for Paradise

- With the highest correlation (r-squared: 0.891) of our models, our model for price to square feet shows: **In King County, WA, every additional square feet of space costs approximately \$209**
- Model for price to bedrooms shows: **every additional bedroom costs approximately \$117,500**
- Model for price to bathrooms shows: **every additional bathroom costs approximately \$190,800**

Future Work

- Refine existing models and expand dataset for different types of home buyers
- Explore relationship of price to zip code
- Build models for Suburbs (Medina, WA) vs. City (Seattle, WA)
- Build more comprehensive models considering other factors such as location, renovations, waterfront view



THANK YOU!!