

King County Housing

EXPLORATORY DATA ANALYSIS

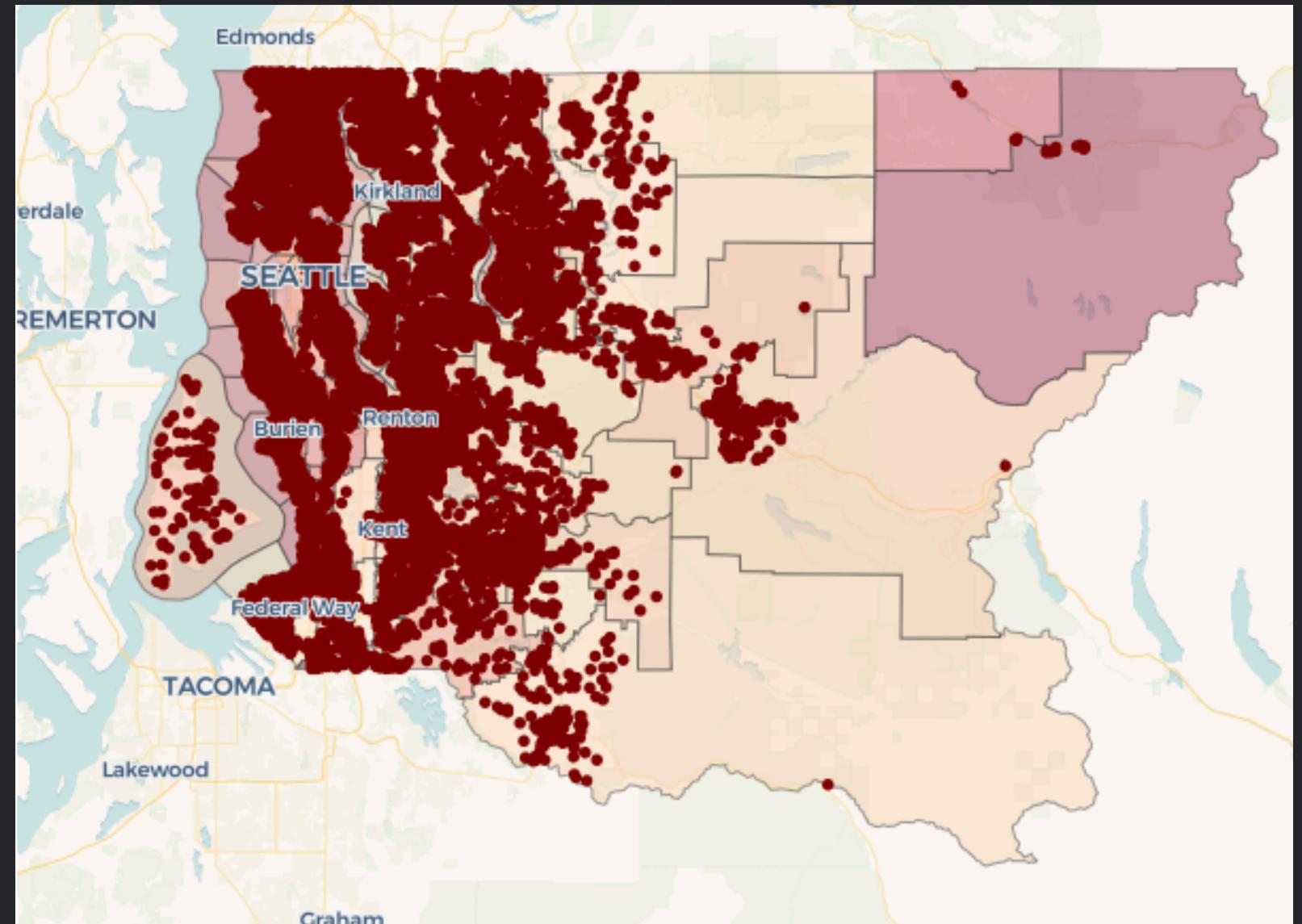
The Dataset

- **Price**
- **Dates**: year of built, year of renovation and date of sale
- **Location**: coordinates and zipcode
- **House metrics**: rooms, floors, size of house and lot
- **Surrounding area**: size of houses and lots of neighbours
- **Quality**: condition and grading
- **Features**: waterfront and view

Quality

- **Dates**: 02.05.2014 to 27.05.2015, data missing towards end
- **Entries**: 21597, 177 sold >1 time
- **Renovation data**: Is the data complete?
- **Zipcodes**: Do not match the coordinates in all cases

King County House Sales May 2014 - May 2015



The Client



Amy Williams

- Real-estate investor
- Sell: Top 10 % houses in central area
- Need: Average houses in the outskirts

Assumptions

- Sells recently renovated houses
- Wants to sell when most profitable
- Wants to keep a low profile

Hypotheses

- 1) Top 10% most expensive homes are concentrated in central areas
- 2) In typical transaction patterns over time, high-priced homes are sold irregularly
- 3) House prices are higher at a certain time of the year

Methodology

Data Cleaning, keeping only recent sale of duplicate IDs

Define Top 10% houses (price)

- houses that are renovated
 - houses with waterfront
 - houses with condition > 3

Check average house prices over time

- all houses versus top 10% houses

Check number of houses sold per day

- Top 10% vs. bottom 90% houses

Define average outskirt house (zip code, price, living area)

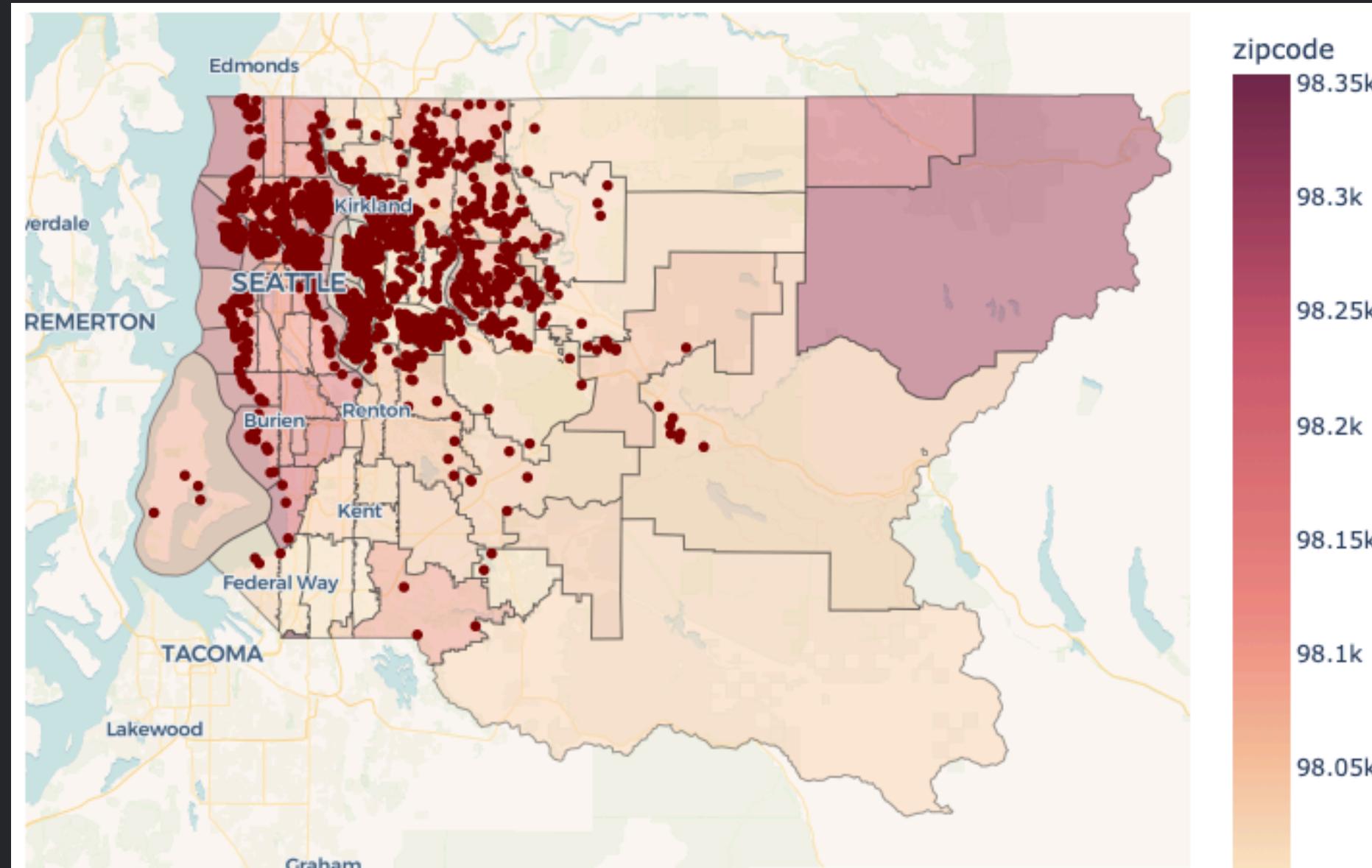
- houses that have basement
 - houses with condition > 3
 - houses with location in the mountains

Top 10% Houses

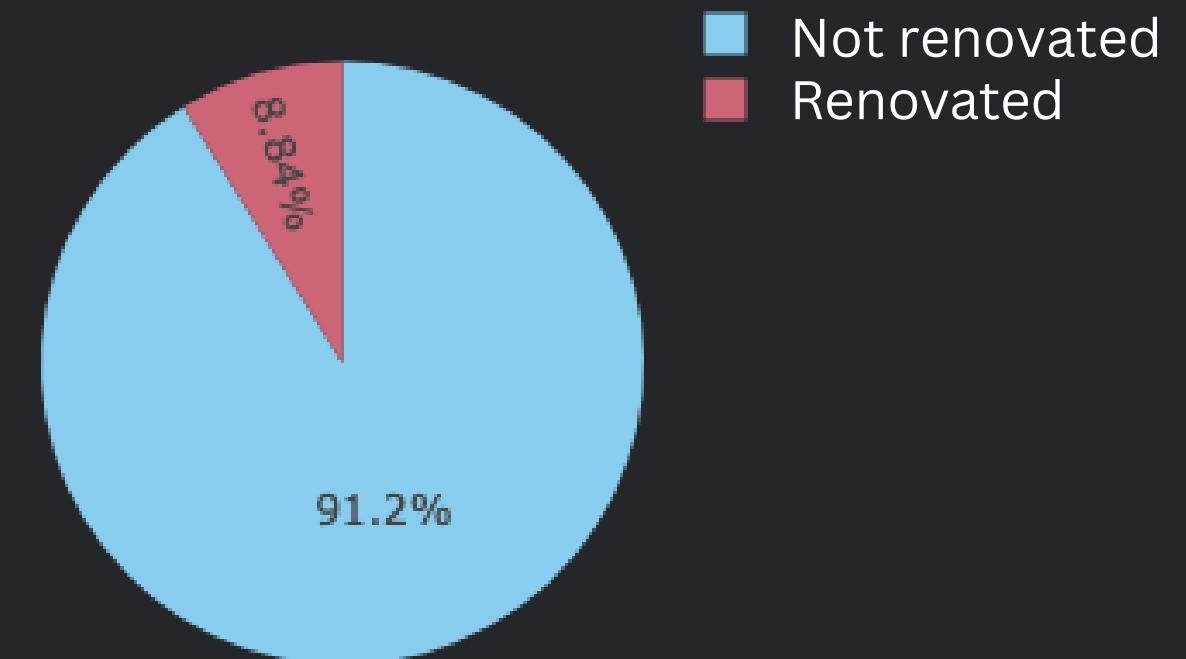


“Outliers” removed: houses > 3.5M USD

Top 10% Houses



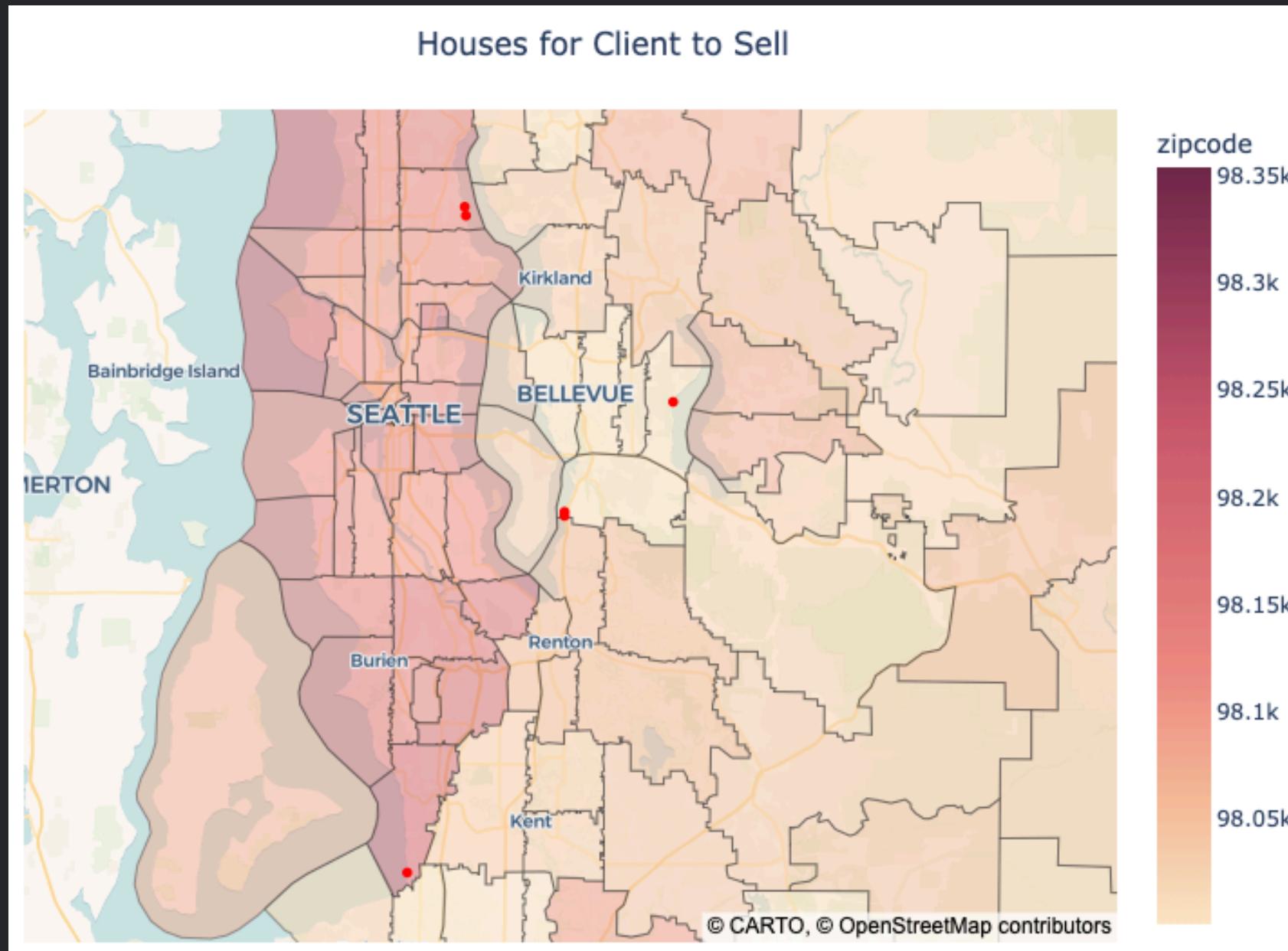
Renovation Status



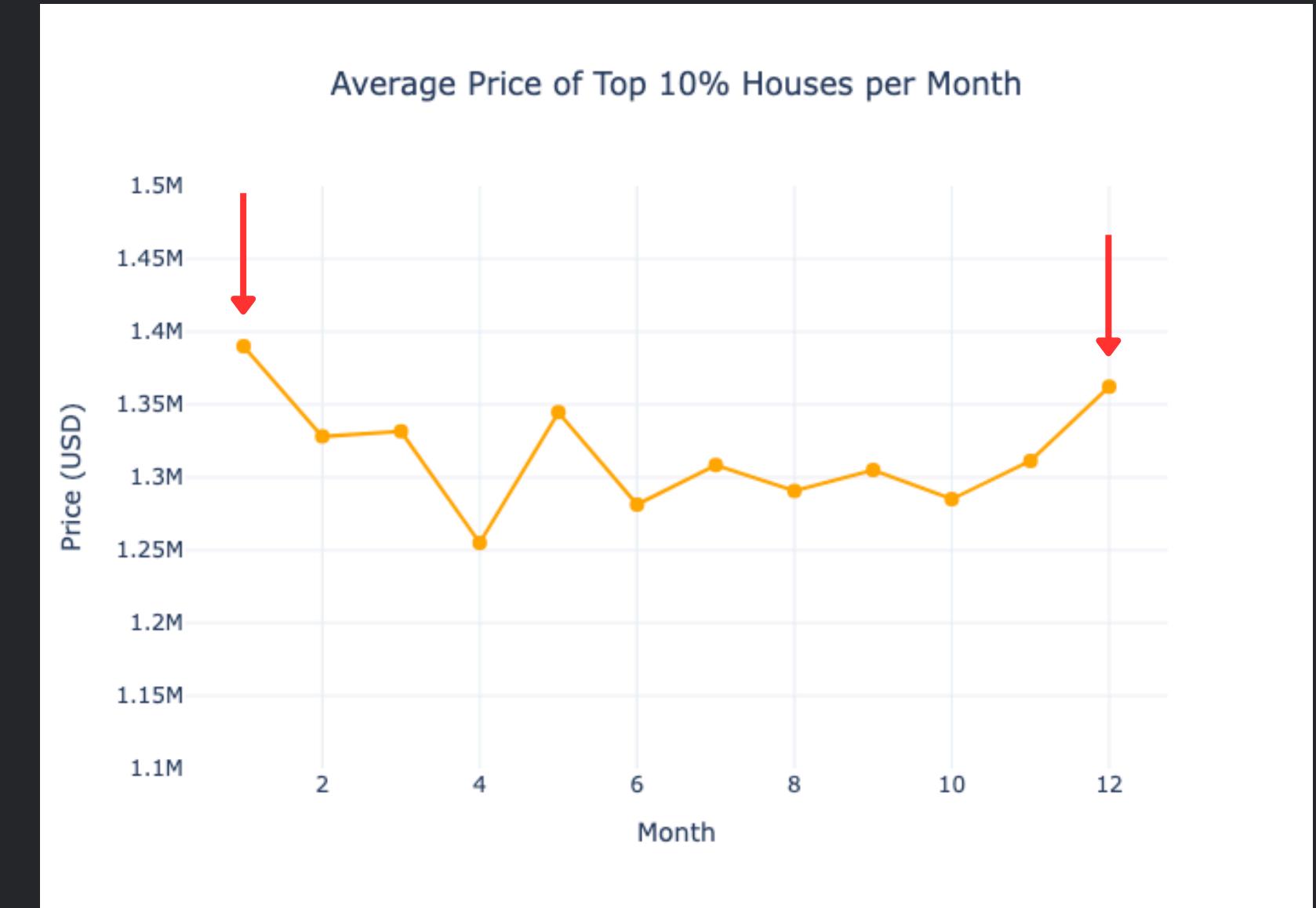
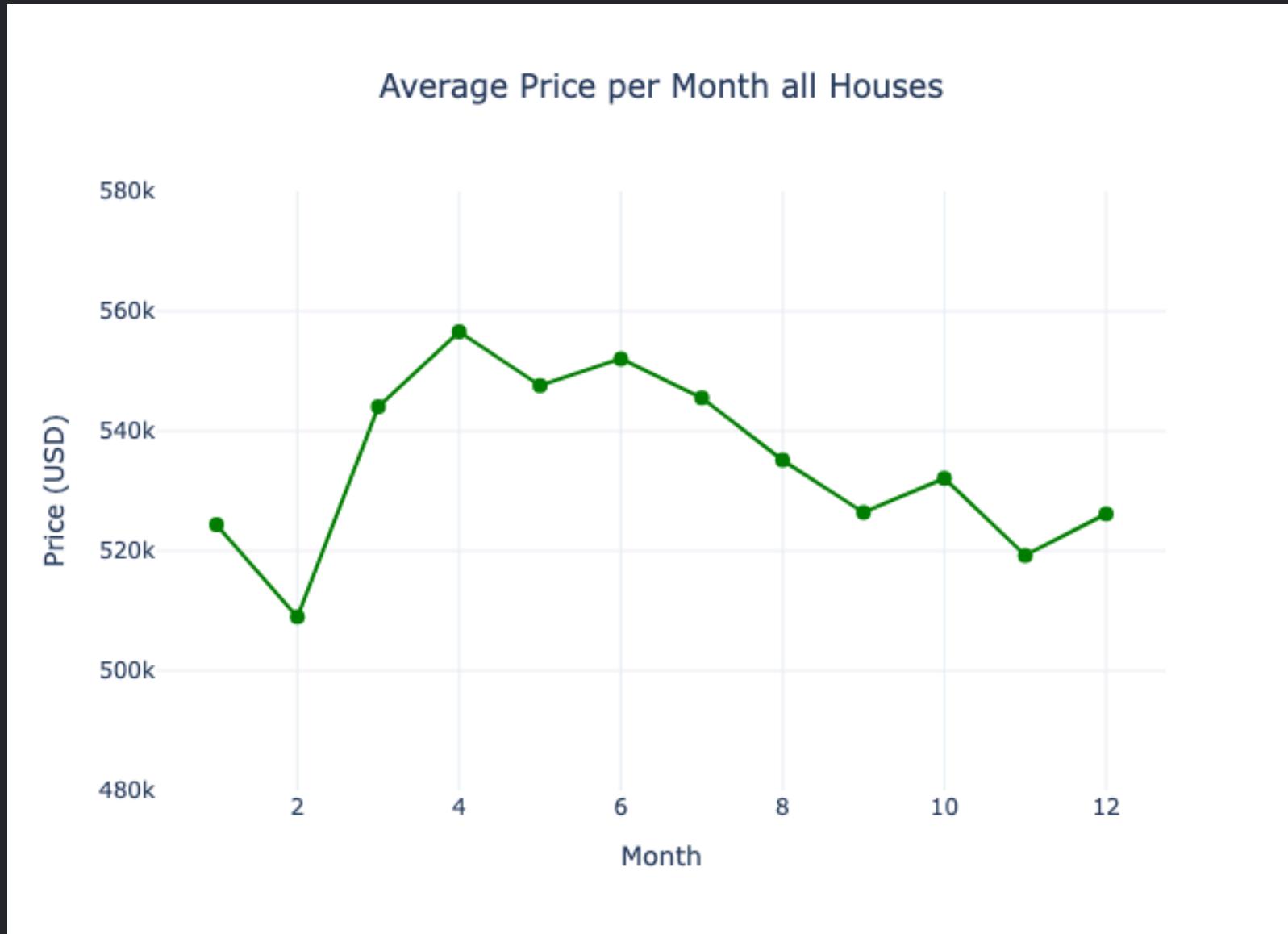
Top 10% most expensive homes are concentrated in central areas

Final Selection Top 10% Houses

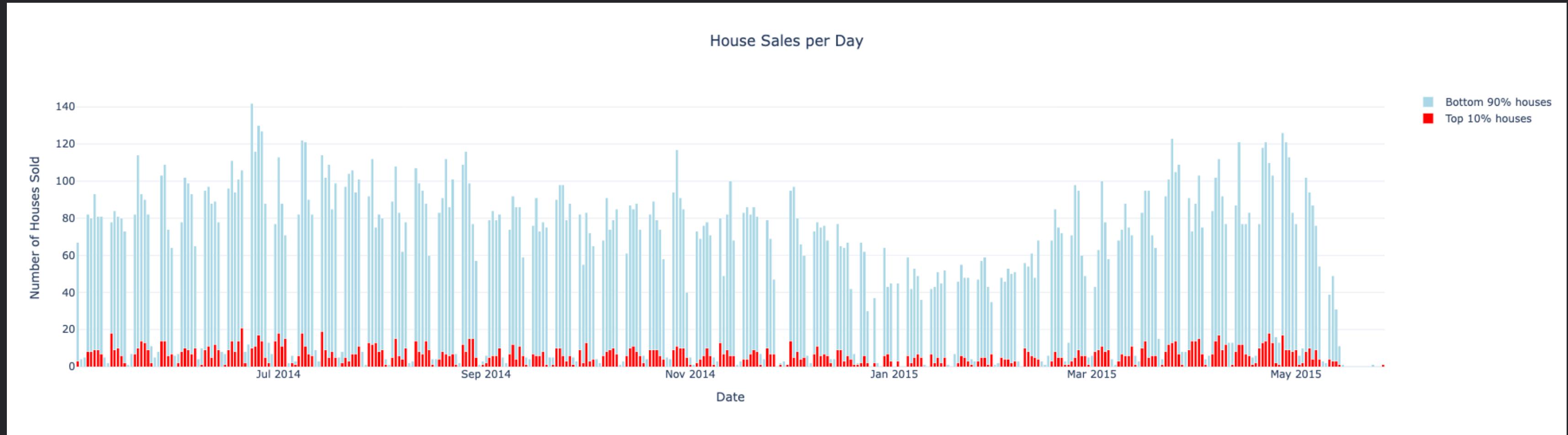
Renovated | Waterfront | Condition > 3



When to sell?

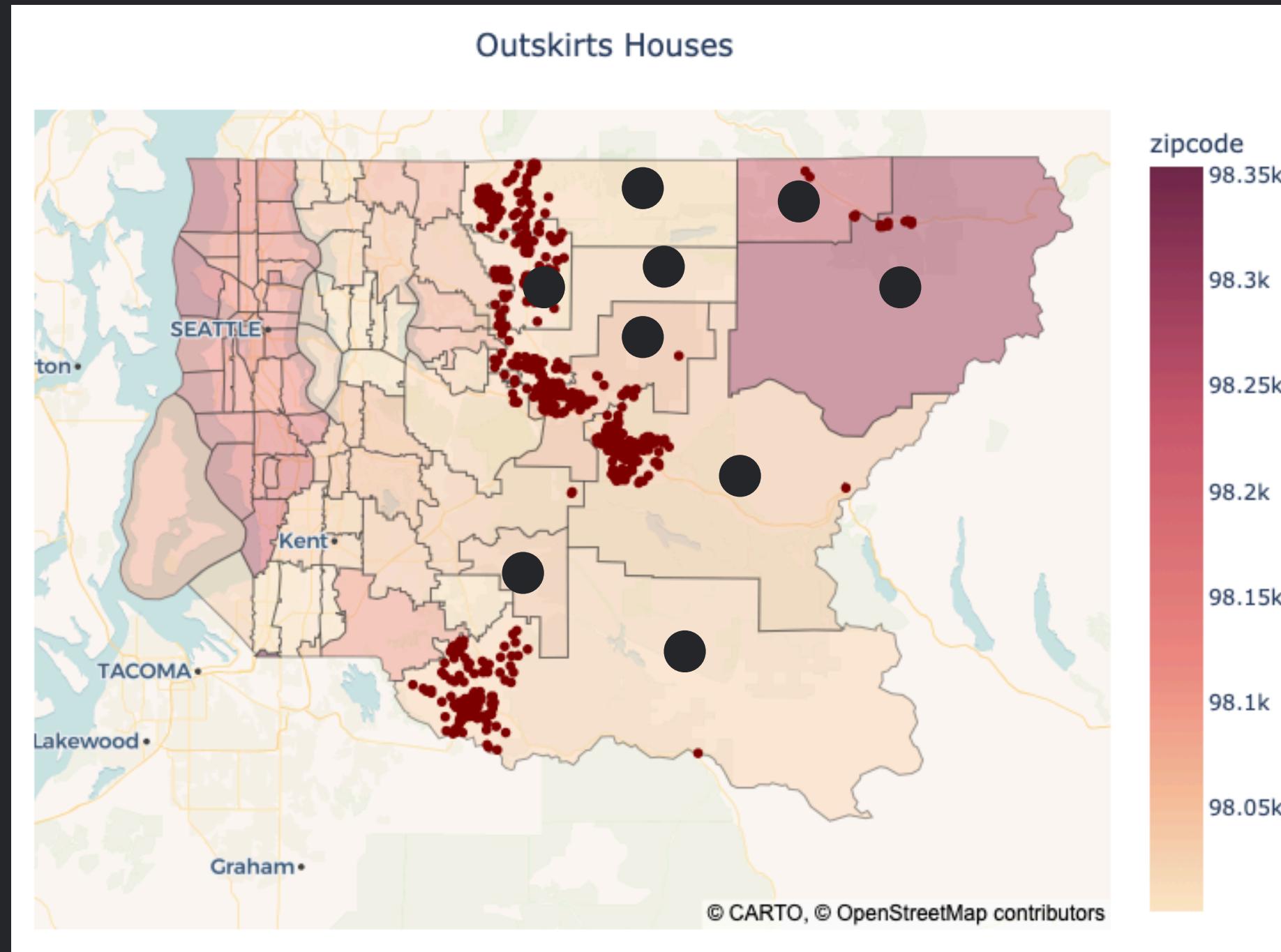


Are Top 10% houses sold irregularly?



Less top 10% houses sold per day, but they are sold regularly!

Outskirts houses



The average outskirts house is defined by:

price:

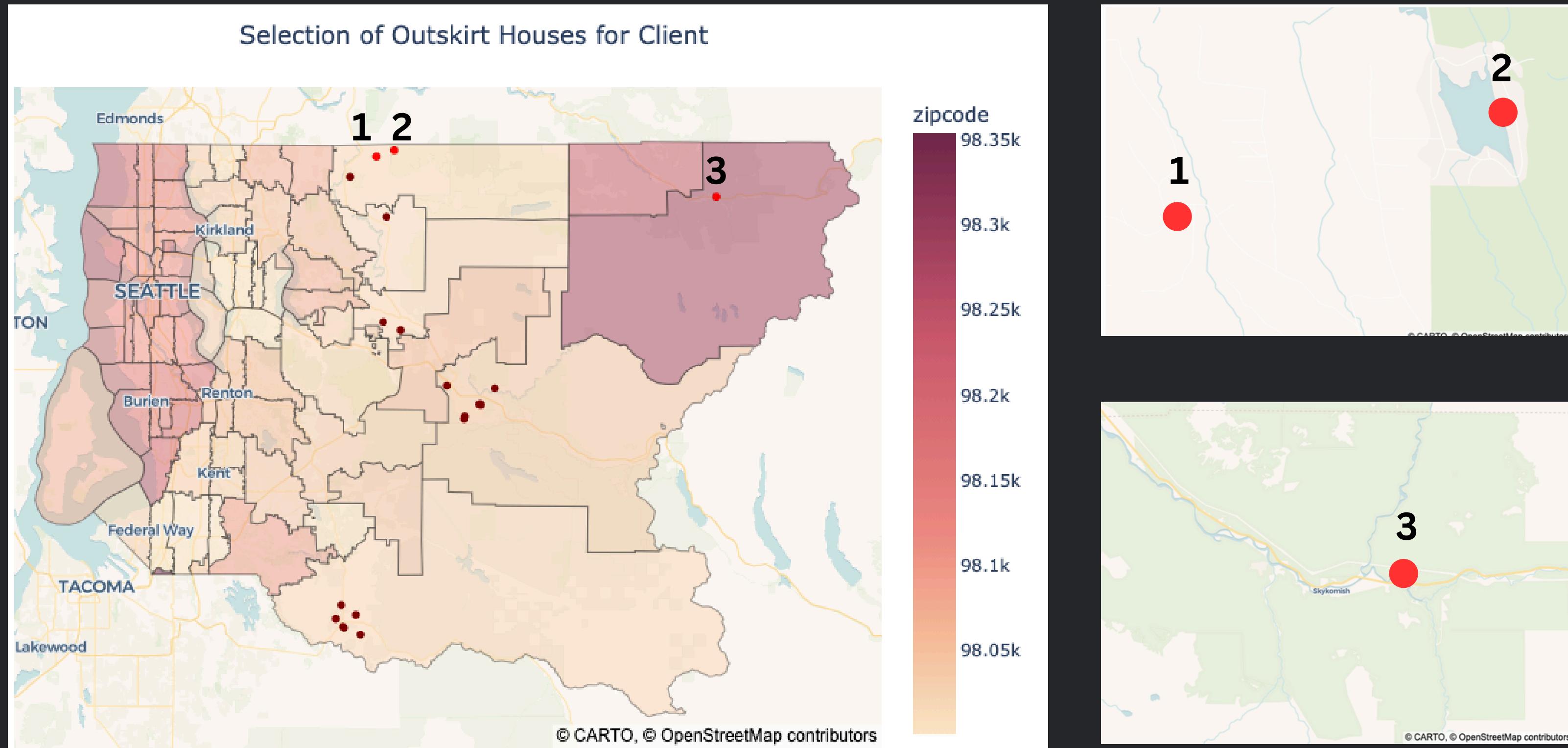
450.000 USD
(+/- 215.000USD)

living area:

2200sqft
(+/- 955sqft)

Final Selection Outskirts Houses

Average | Basement | Condition > 3



Insights

- The dataset is biased towards central houses
- Top 10% houses are located in central area
- Prices for top 10% houses are highest in winter
- Top 10% houses are sold regularly

Recommendations

- Client should NOT sell the most expensive properties (>3.5M)
- Identified 6 central renovated waterfront houses for client to sell
 - Best time to sell for highest price: December - January
 - Identified 3 average outskirts houses in remote mountain area

Future Work

- Data from a longer time period is needed
- More recent data is needed
- Calculate estimated profit from the selected houses
- More information on the properties
(Exposé with pictures)

Questions?



Seattle, WA



Greenwater, WA