

Seattle Section 8 Expansion Project

Louis Casanave, Flatiorn School Phase II Project



Premise:

City of Seattle has \$100M to buy
market-rate property to
renovate for public housing.

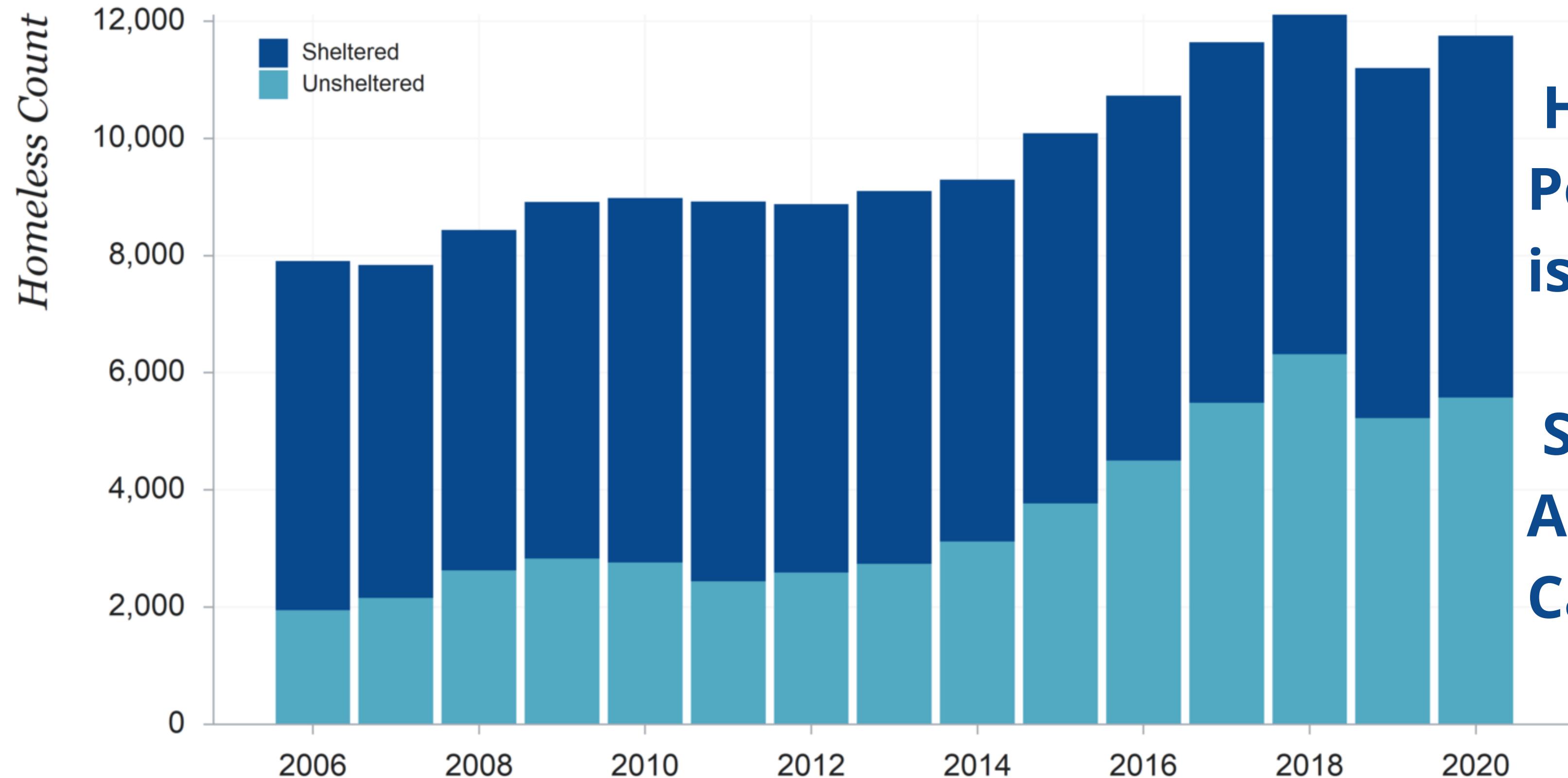
Expanding Section 8 housing to tackle homelessness.

Image Credit: David Lee via Flickr



Seattle Homeless Count 2006-2020

Count of sheltered and unsheltered population



**Homeless
Population
is Growing.
Shelters
Are Past
Capacity.**

To Avoid Political Polarization:

- Use Machine Learning
- Hire Data Scientist Experienced in Social Services

(GeekWire Photo /
Monica Nickelsburg)



Data Understanding

Primary Data Source:

Kings County Housing Dataset

Homes sold May 2014-May 2015

21597 properties, 20 distinct features.

<https://www.kaggle.com/datasets/harlfoxem/housesalesprediction>

Additional Data Sources:

Schools: <https://www.seattleschools.org/schools/> (Scraped using Selenium: April, 2022)

Police Stations: <http://www.seattle.gov/police/about-us/police-locations> (April 2022)

Hospitals: <https://data-seattlecitygis.opendata.arcgis.com/datasets/hospitals/explore?showTable=true> (March 2022)

DISTANCE DATA: FOUND CLOSEST:

- HOSPITAL
- POLICE STATION
- SCHOOL



1) REMOVED DUPLICATES

2) ELIMINATED PROPERTIES:

1. over \$2.5M
2. over 8,000 sq. ft. living space
3. over 100,000 sq. ft. lot
4. over 9 bedrooms
5. below code or above "luxury" grade
6. over 25 m. from downtown

3) CHANGED:

1. basements with "?" as a value to 0
2. waterfront and view to binary features
3. condition and grade to spectrum data
4. filled N/A values in Year Renovated with 0

**Cleaning &
Preparing
Data:**

ZIPCODE

Compare
All Properties
to Wealthiest*
Zipcode
Properties
(98039) to
Reveal Disparity



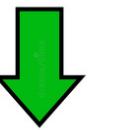
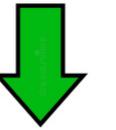
* (Source: US Internal
Revenue Service - 2018)

**2500 Evergreen Point Rd,
Medina, WA, 98039**

MODELING:

- Grade
- Bathrooms
- Bedrooms
- Floors
- Closest School Distance
- Sqft Basement
- Longitude
- Age of Home
- Condition
- Waterfront
- View
- Zipcode

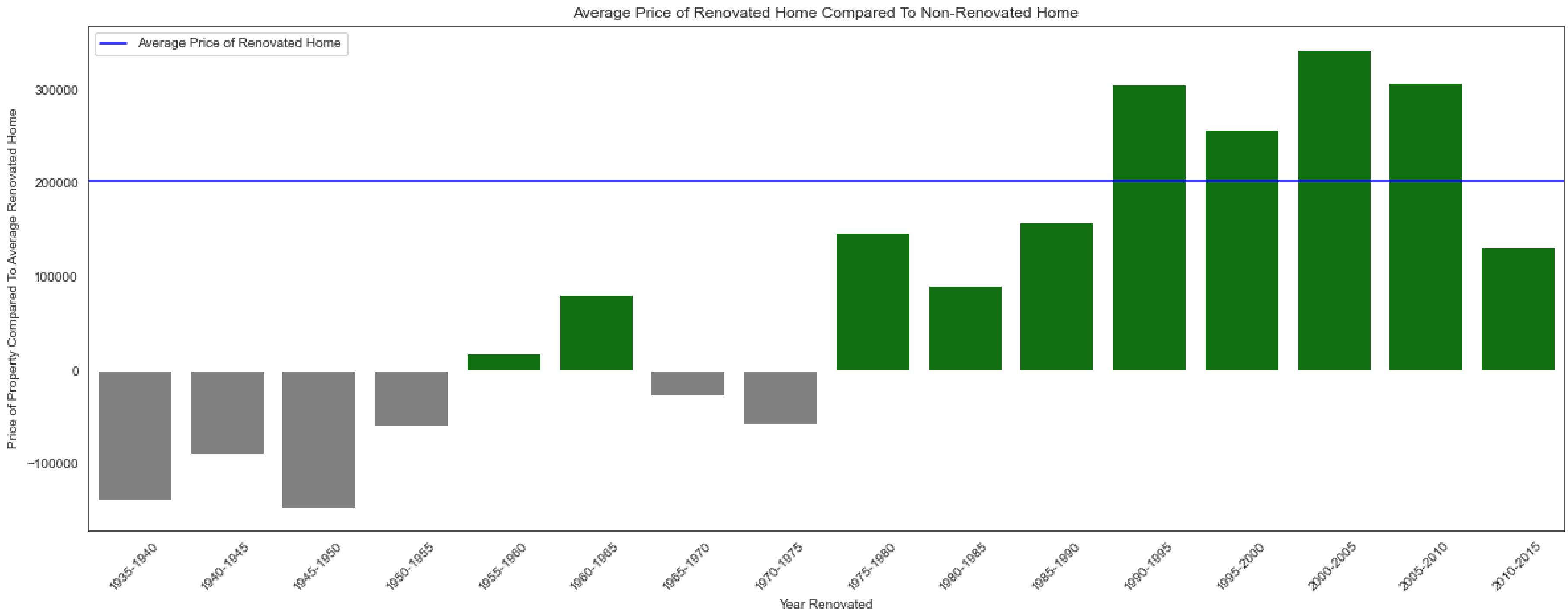
FINDINGS

| | | | |
|---------------|--|------------------|---|
| ZIPCODE 98032 |  123.89% | CONDITION |  4.89% |
| WATERFRONT |  47.77% | BEDROOMS. |  4.72% |
| LONGITUDE |  38.47% | BASEMENT SQ. FT. |  2.31% |
| VIEW |  24.85% | SCHOOL DISTANCE |  1.56% |
| GRADE |  19.58% | FLOORS |  0.85% |
| BATHROOMS |  11.89% | AGE OF HOME |  0.20% |

RECCOMENDATIONS

- Buy where grade/condition cost effective to improve
- Spend 1/3 budget only in recommended zipcodes*
- Buy where within 2 miles of school

*98168, 98188, 98178, 98198, 98148, 98146, 98108, 98092, 98058, 98055, 98042, 98032, 98031, 98030, 98023, 98003, 98002, 98001.

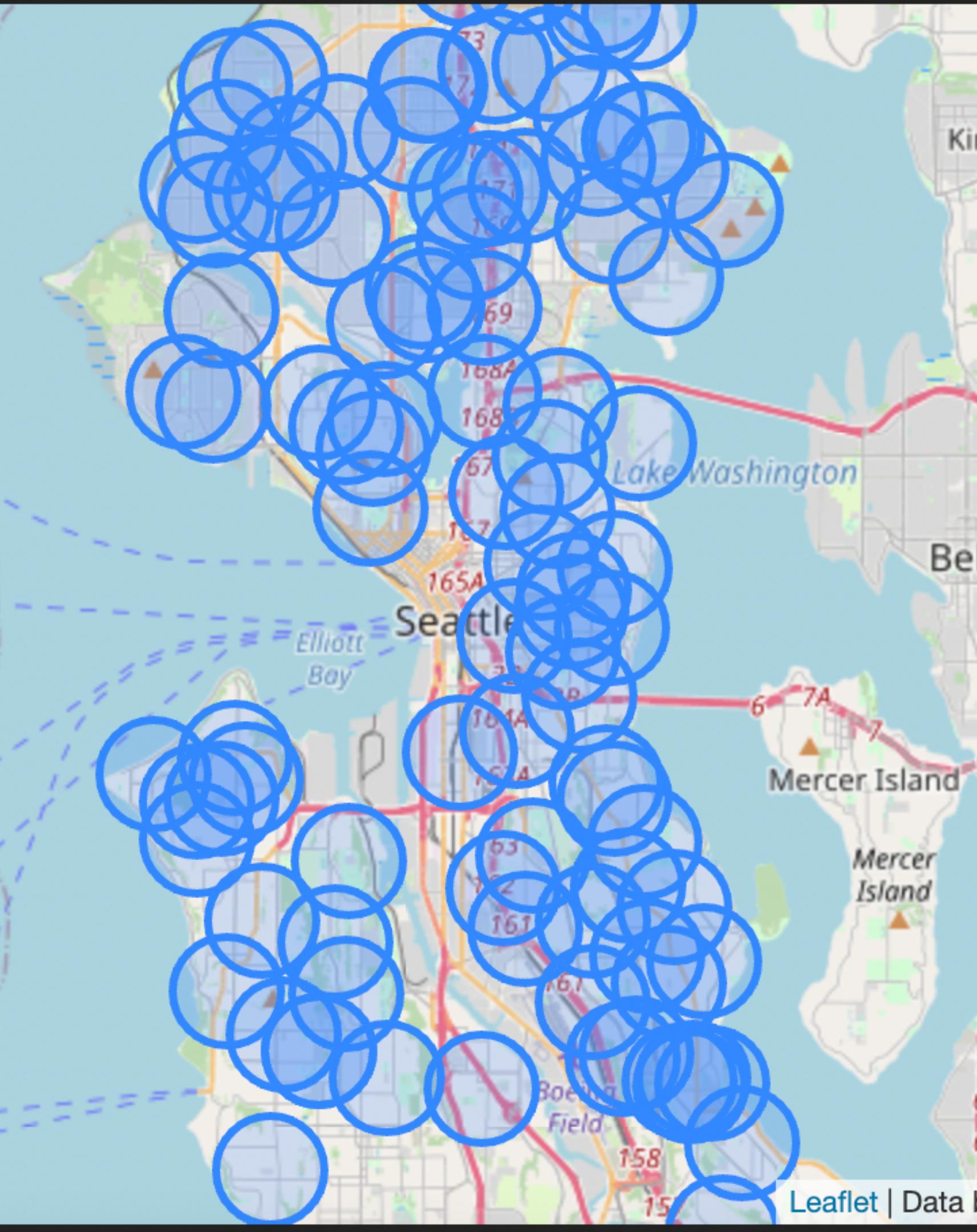


Renovation Analysis:

Buy and Renovate Properties in
grey Bars to "flip" them green

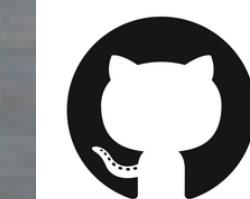
Expanding Scope:

- Further Research On Public Infrastructure
- Building Schools Where Sparsely Shaded





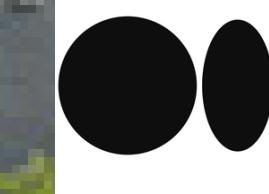
**Thank
You**



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