Dental Patient Advertising Feasibility
Whidbey Island, WA

Overview

An effective marketing campaign is crucial in dentistry. If you are not marketing your practice and promoting your services, you run the risk of losing many potential patients to your direct competitors. Dentists advertise in a variety of ways to capture a desired patient population. This study will examine Whidbey Island in Washington State and the advertising feasibility among different areas of the island.

This study will:

1. Examine and rank a variety of factors that make up a desirable patient population.

2. Outline target areas on Whidbey Island where the desirable patient population live.

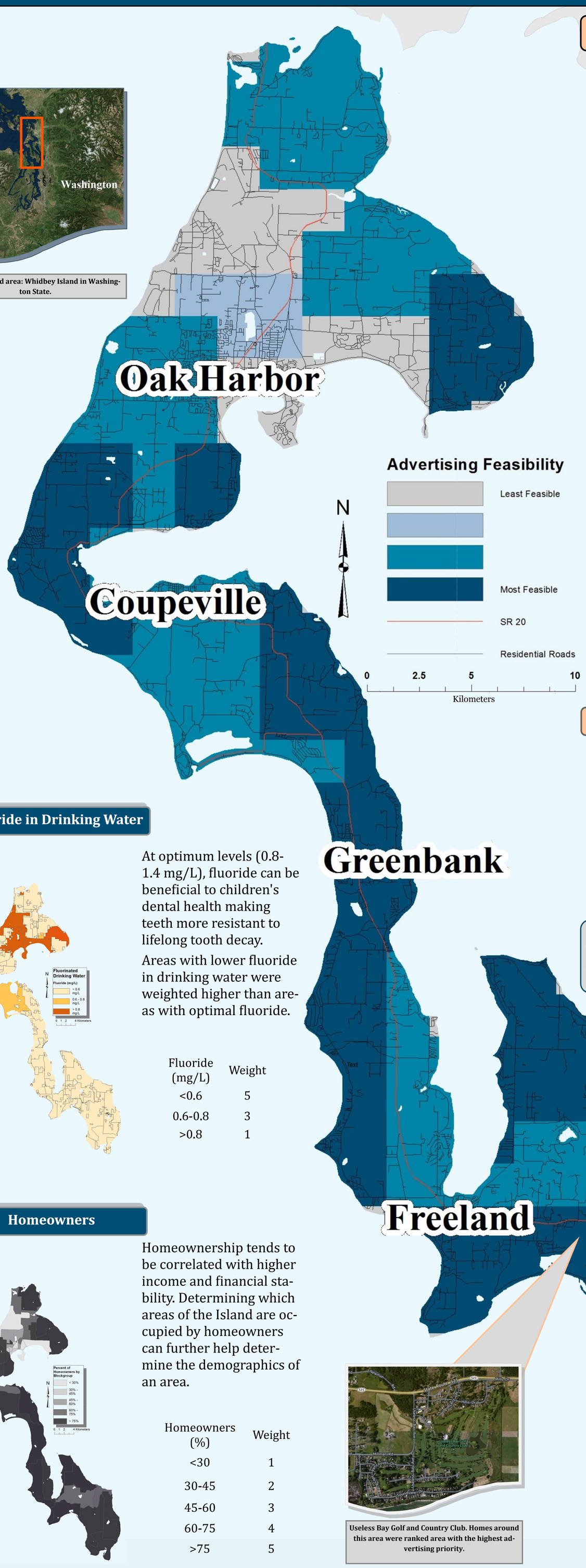
Map of featured area: Whidbey Island in Washington State.

Methodologies

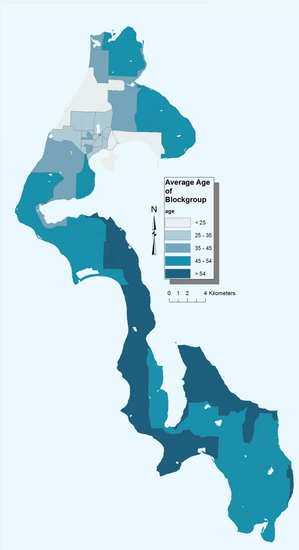
To determine the best areas on Whidbey Island for a dental practice to advertise I analyzed: age, median household income, homeownership and fluoride in drinking water.

After speaking with two dentists on Whidbey Island, I determined that these variables help describe the "perfect patient." Each of the variables are ranked by level of importance. Age was determined to be the most important variable and was assigned the highest weight of 3. Income was raked the second most important and assigned a weight of 2. Homeownership and fluorinated drinking water are assigned the lowest weight of 1.

Using the reclassify tool, the variable data was sorted and assigned a priority ranking (see tables below). I used a raster calculator to add the newly assigned variables together. This number was normalized by the four variables. The resulting map is a raster with assigned number 1 through 8; 8 being the most feasible ar-



Average Age

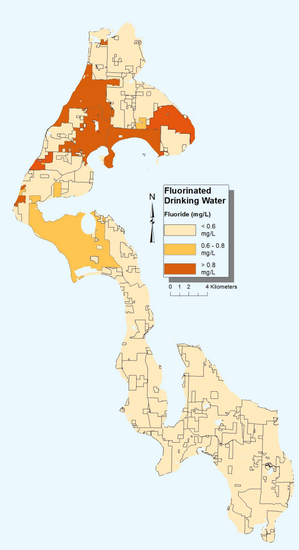


Older patients tend to have more oral heath problems and may need to be seen by a dentist more frequently than younger patients.

As older aged patients tended to have a higher demand for dentistry, they were assigned the highest weight.

Ages	Weight
<25	3
25-35	6
35-45	9
45-54	12
>54	15

Fluoride in Drinking Water

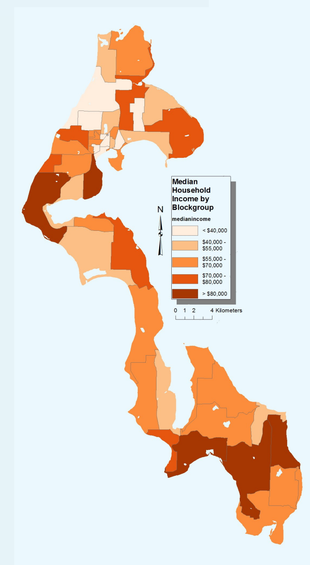


At optimum levels (0.8-1.4 mg/L), fluoride can be beneficial to children's dental health making teeth more resistant to lifelong tooth decay.

Areas with lower fluoride in drinking water were weighted higher than areas with optimal fluoride.

Fluoride (mg/L)	Weight
<0.6	5
0.6-0.8	3
>0.8	1

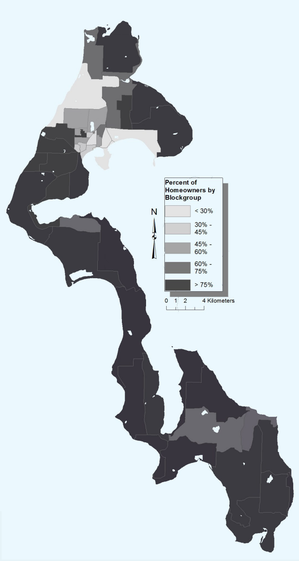
Median Household Income



A high household income is advantageous as households with a lower average income may not have the means to invest in their oral health. Elective cosmetic procedures can also be a great source of income for dentists and it is valuable to advertise to these potential patients.

Median Income ($)	Weight
< 40,000	2
40,000-55,000	4
55,000-70,000	6
70,000-80,000	8
>80,000	10

Homeowners



Homeownership tends to be correlated with higher income and financial stability. Determining which areas of the Island are occupied by homeowners can further help determine the demographics of an area.

Homeowners (%)	Weight
<30	1
30-45	2
45-60	3
60-75	4
>75	5

Useless Bay Golf and Country Club. Homes around this area were ranked area with the highest advertising priority.

Results and Accuracy

The final map displays the results of dental advertising feasibility. The areas are ranked from least feasible to most feasible.

The least feasible areas to advertise (marked in gray) include the Whidbey Island Navy Base and some Navy housing neighborhoods. These areas tend to be home to a younger population with a lower household income.

The area that was ranked as the most feasible to advertise to was the Useless Bay Golf and Country Club neighborhood. It was assigned a feasibility ranking of 8 out of 8. The average age of this neighborhood is 56, and the average median household income is $80,250.

The remaining *most feasible* areas (dark blue) reflect a feasibility ranking of 7 out of 8. Block groups where the average age is greater than 54 are encompassed in the rasterized model. It also reflects all of the block groups where the median household income is greater than $80,000. These two variables are not coincident but may be correlated to some degree. All of the blockgroup with an average median household income greater than $80,000 reflect an average age of 45 years and older.

The American Community Survey estimates have an associated sampling error. The modifiable areal unit problem also effects the results as the data is aggregated into blockgroups. This source of statistical biased can affect the results of the point based measures.

Sources

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Fundamentals of GIS Final Project
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