# Happiness Suitability Analysis: King County, Washington

## INTRODUCTION

Over the past several years, the Greater Seattle area has continuously ranked in the top ten for "Happiest Cities in America" by CBS News, AARP Travel, Forbes, and several other publications. Growing up on Capitol Hill, near Downtown Seattle, I always considered myself extremely lucky to come from an incredibly diverse and vibrant place. The purpose of this project is to divide happiness into twelve different factors to see which neighborhoods in the Greater Seattle area have the highest happiness suitability rankings. This model, and the factors used, are adapted from the Gross National Happiness Index, a tool that is used across the globe to measure happiness. The happiness suitability model I created shows which areas of King County are the most suitable neighborhoods to live in and demonstrates which parts of the county need additional help and resources to boost their happiness levels.
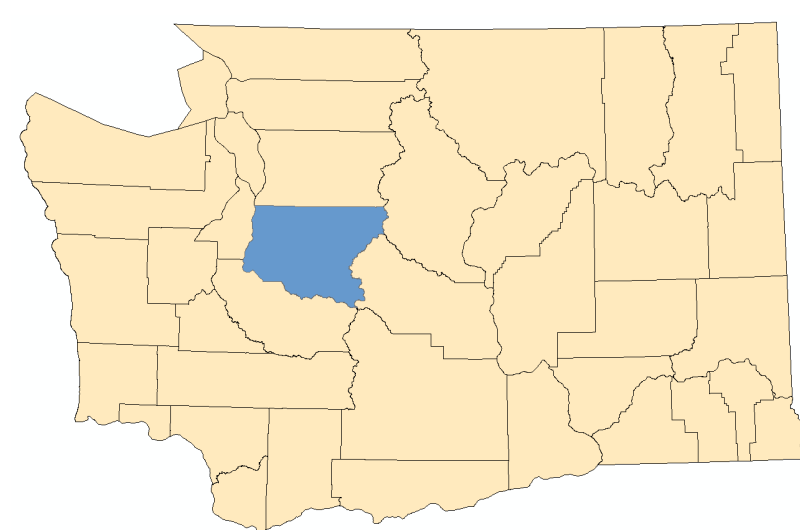


**Figure 1.** Location of King County in Washington State

## METHODOLOGY

In order to determine happiness, twelve different factors were considered and analyzed (shown in Figure 2). These factors were then divided into four sub-categories: Education, Environment, Health, and Community and Cultural Vitality. For **Education**, *educational attainment* was based on the percentage of the adult population with a Bachelor's Degree, *school density* was measured with the kernel density tool, and *high school graduation rates* were calculated by school district. For **Environment**, *parks* were measured using the euclidean distance tool and *trails* and *air quality* were measured using line density of trails and major roads, respectively. For **Health**, *public health clinics* and *community health centers* were measured using the euclidean distance tool and the *uninsured rates* were calculated with Census data. For **Community and Cultural Vitality**, *public safety* was calculated using the point density tool, *unemployment rates* were computed from Census data, and *popular landmarks* were calculated using kernel density. The twelve factors were each reclassified (1-5, with 5 as the best) and then the three factors for each sub-category were added together using the raster calculator. Finally, the four maps with the sub-categories were overlayed and calculated with map algebra to produce the final happiness suitability map.
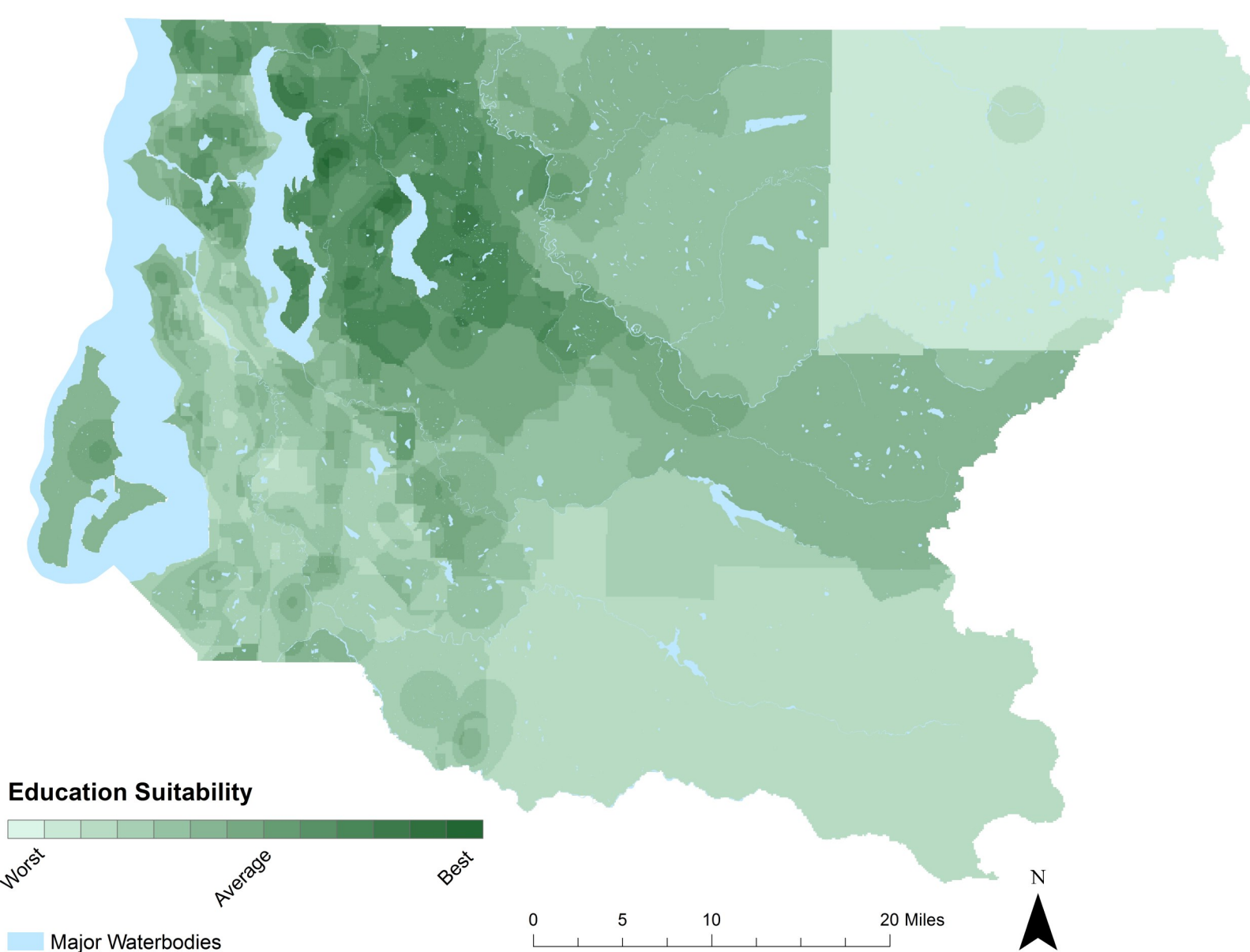
## FINAL HAPPINESS SUITABILITY MAP



**Happiness Suitability Model**

Worst — Average — Best

Major Waterbodies

0    5    10         20 Miles

N
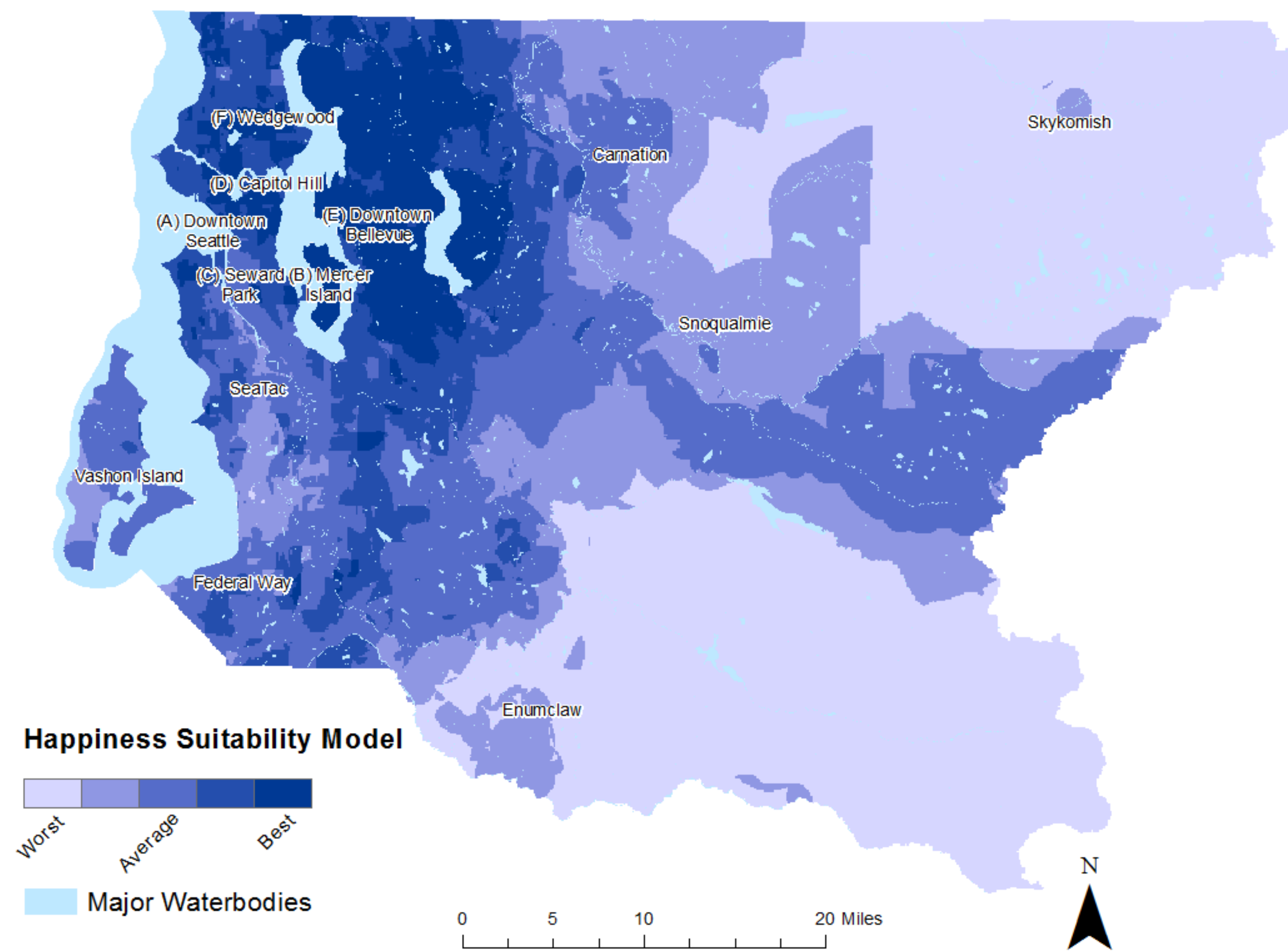
## FACTORS IN THE HAPPINESS SUITABILITY MODEL
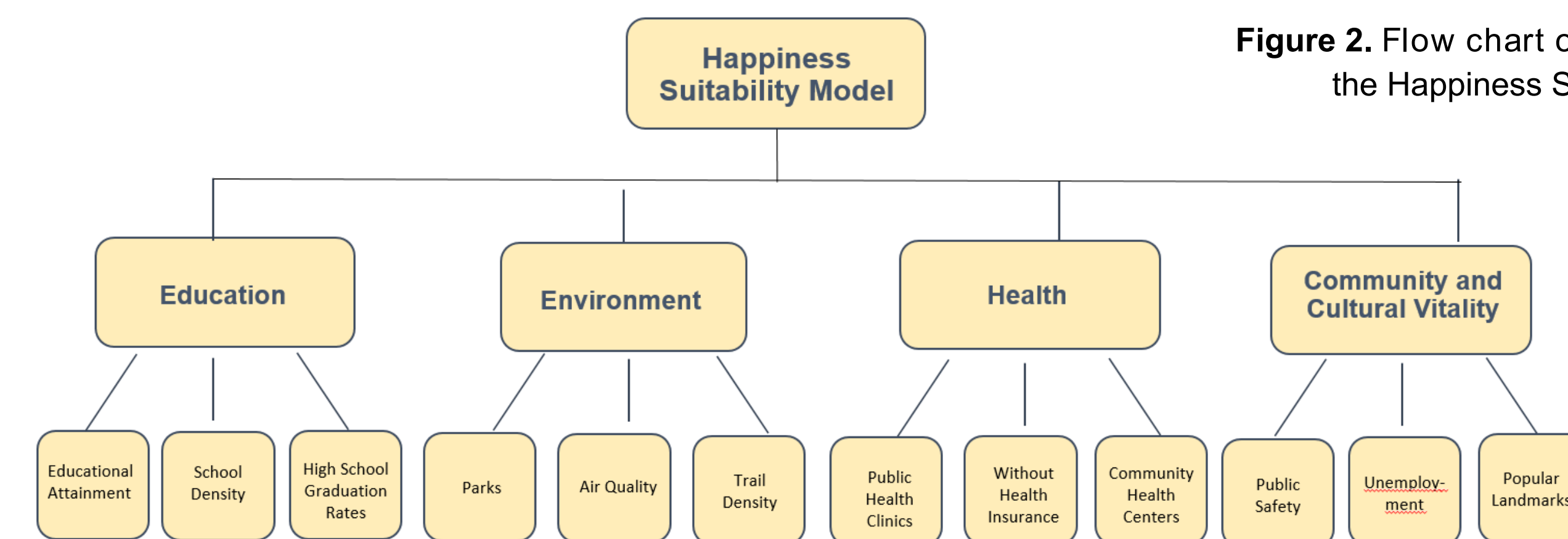


**Figure 2.** Flow chart of factors included in the Happiness Suitability Model

Happiness Suitability Model

Education | Environment | Health | Community and Cultural Vitality

Educational Attainment · School Density · High School Graduation Rates · Parks · Air Quality · Trail Density · Public Health Clinics · Without Health Insurance · Community Health Centers · Public Safety · Unemployment · Popular Landmarks
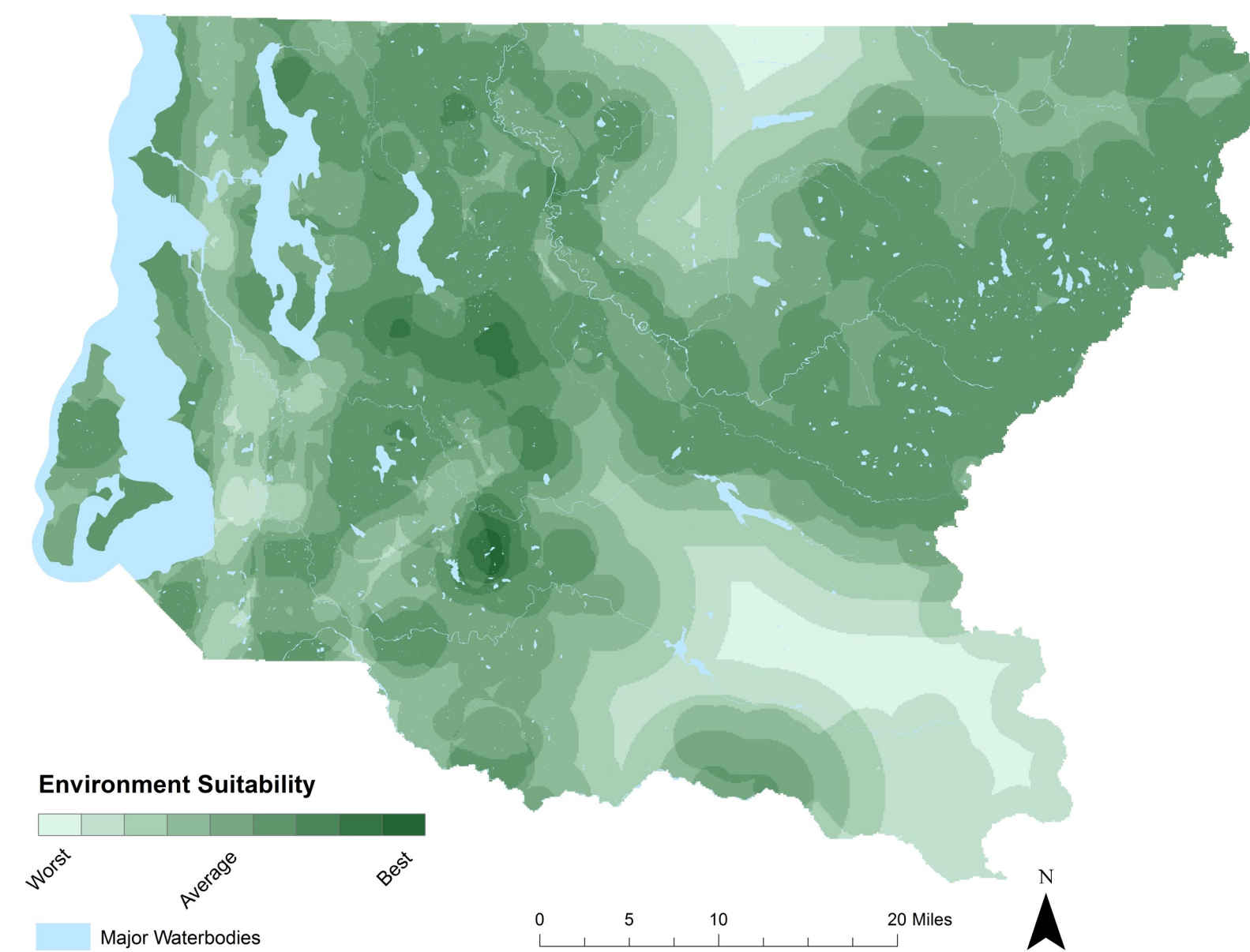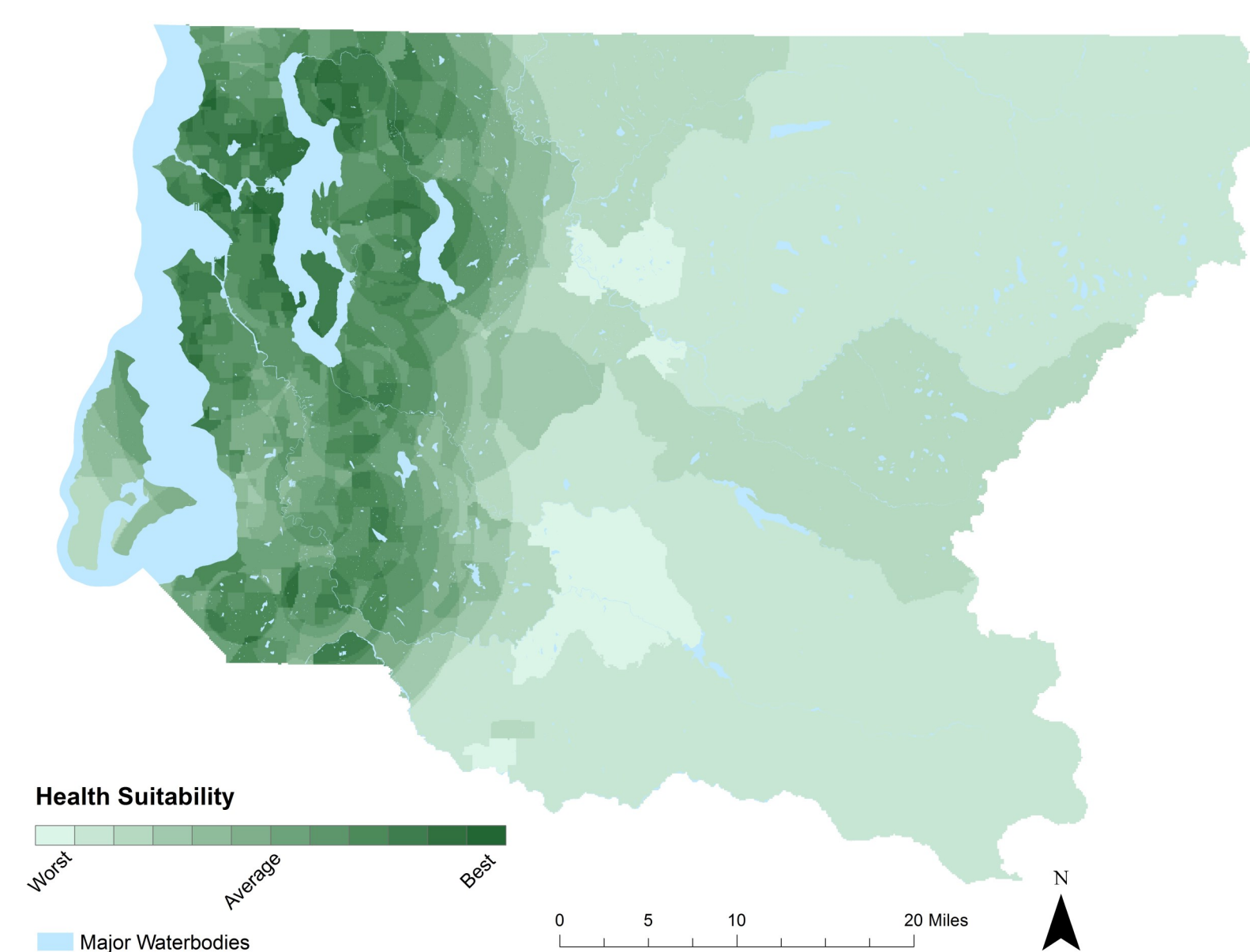
## RESULTS AND HAPPIEST NEIGHBROHOODS

The majority of the neighborhoods near Downtown Seattle, Bellevue, and Mercer Island have the highest happiness suitability rankings with scores of 4 or 5. The scores begin to decrease east of Inglewood and south of SeaTac, as the areas towards Snoqualmie, Carnation and Enumclaw show lower happiness rates of 1-3.



A. Downtown Seattle



B. Mercer Island



C. Seward Park, Seattle



D. Capitol Hill, Seattle



E. Bellevue



F. Wedgewood, Seattle

## LIMITATIONS

There are a few main limitations to my data and my suitability analysis. One of the limitations is the subjectivity of the definition of happiness and how this concept is best measured. While people across the globe view happiness in a variety of ways due to upbringing, culture or perspective, I attempted to lessen this limitation by using factors from the Gross National Happiness (GNH) Index. Additionally, this happiness model is not as comprehensive as the GNH Index because I had to modify several of the categories to work with the data available Census data and King County GIS data. To improve this happiness suitability model, it would be beneficial to understand what unique factors determine happiness in the specific study area.

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## EDUCATION



Education Suitability

Worst — Average — Best

Major Waterbodies

0    5    10         20 Miles     N

## ENVIRONMENT



Environment Suitability

Worst — Average — Best

Major Waterbodies

0    5    10         20 Miles     N

## HEALTH



Health Suitability

Worst — Average — Best

Major Waterbodies

0    5    10         20 Miles     N

## COMMUNITY AND CULTURAL VITALITY



Community and Cultural Vitality Suitability

Worst — Average — Best

Major Waterbodies

0    5    10         20 Miles     N