## Changes in Portland Recreational Greenway Accessibility 2000-2010

### Ian Lambie, Tina Schroyer, and Alexandra Santora

### Introduction

Greenways are open or natural areas in a developed environment (1). Access to greenways is important for resident health and wellness (2). As cities grow, greenway accessibility can decline due to development of the areas or poor planning. Portland, Oregon has experienced huge population growth over the last 15 years. We asked:

- Has greenway access decreased with Portland's development?
- Have greenways become overcrowded?

### Methods

- **Census**
- **Zoning**
- **Parks Data**
  
  **Dasymetric Mapping**: First, we converted the vector zoning data to raster and reclassified it, assigning relative densities based on Portland zoning codes in '00 and '10. We combined this zoning raster with Census Tract population data to create dasymetrically mapped population density rasters, and verified our outputs using the Zonal Statistics as table tool.

  **Geographic Distance**: We generated a ¼ mi buffer around greenways using the Buffer tool. We overlaid this buffer with the population density raster and used the extract by mask tool to find density within the 1/4 mile raster.

  **Walking Distance**: We generated point locations as entry points for each greenway. We then created polygons for areas within ¼ mi of entry points using the Service Area toolkit. We overlaid the service area polygon population density rasters, and found density using the extract by mask tool.

  **Park Use Density**: To find park usage density, we ran a Euclidean Allocation with maximum distance of ¾ mi.; population within was found using Zonal Statistics.

## Results

### Geographic Distance

Figure 1. The population within ¼ mile geographic distance from a greenway. In 2000 65.8% of the population lived near greenways; in 2010 this number had increased to 68.8%.

### Walking Distance

Figure 2. Population within a quarter mile walk along roads from a greenway. In 2000 47.3% of the population were within easy walking distance of a greenway; this increased to 50% in 2010.

### Park Use Density

Figure 3. Greenway use visualized as park density if the entire population were to use their closest greenway at the same time. Only very small parks ever exceeded the threshold; it is likely that residents instead travel to the closest larger park.

## Conclusions

Recreational greenway access improved. The proportion of the population with access to greenways actually increased as Portland’s population grew. The number of greenways did not change significantly, so this is likely due to people preferentially moving to neighborhoods near greenways.

Greenways did not become overcrowded. Very few greenways exceeded our 7 people per 30x30 ft area density threshold, and this did not change from 2000-2010. Only very small parks ever exceeded the threshold; it is likely that residents instead travel to the closest larger park.

### References