

ANALYZING FOOD AVAILABILITY IN CAMBRIDGE, MA

COMPARING ACCESS BETWEEN PUBLIC HOUSING RESIDENTS AND AVERAGE CAMBRIDGE RESIDENTS

INTRODUCTION

This project documents food resources available within walking distance to residents of Cambridge, MA, comparing the quantity available to residents living at public housing sites and average Cambridge residents. The results will inform the planning process of the Cambridge Food & Fitness Policy Council (CFFPC). The CFFPC is a new, city-wide committee of public health professionals, business leaders, government officials, and community residents dedicated to improving the city's food and fitness systems.

While Cambridge appears to offer many opportunities for healthy eating and physical activity, studies from other communities have shown that these opportunities may not be as readily available to at-risk populations, such as low-income residents and people of color¹. Ideally, surveys of a community's food environment will take into account both the availability as well as other measures of food resources such as quality and affordability; access to healthy food is often associated with better health outcomes for an individual². This project is a first step in documenting Cambridge residents' access to food sources and only presents a baseline of access to all food resources. Importantly, however, this project improves on other studies that limit their results to resources within a city boundary; I have included not only the entirety of the city of Cambridge, but also food resources that are within ½ mile from the Cambridge city boundary and therefore accessible by foot to Cambridge residents.

¹ Zenk, Shannon, et al. (2005). Neighborhood Racial Composition, Neighborhood Poverty, and the Spatial Accessibility of Supermarkets in Metropolitan Detroit. *American Journal of Public Health*, 95(4): 660–667.

² Morland, K., S. Wing, A. Diez Roux. (2002). The contextual effect of the local food environment on residents' diets: the Atherosclerosis Risk in Communities (ARIC) study. *American Journal of Public Health*, 92(11):1761–7.

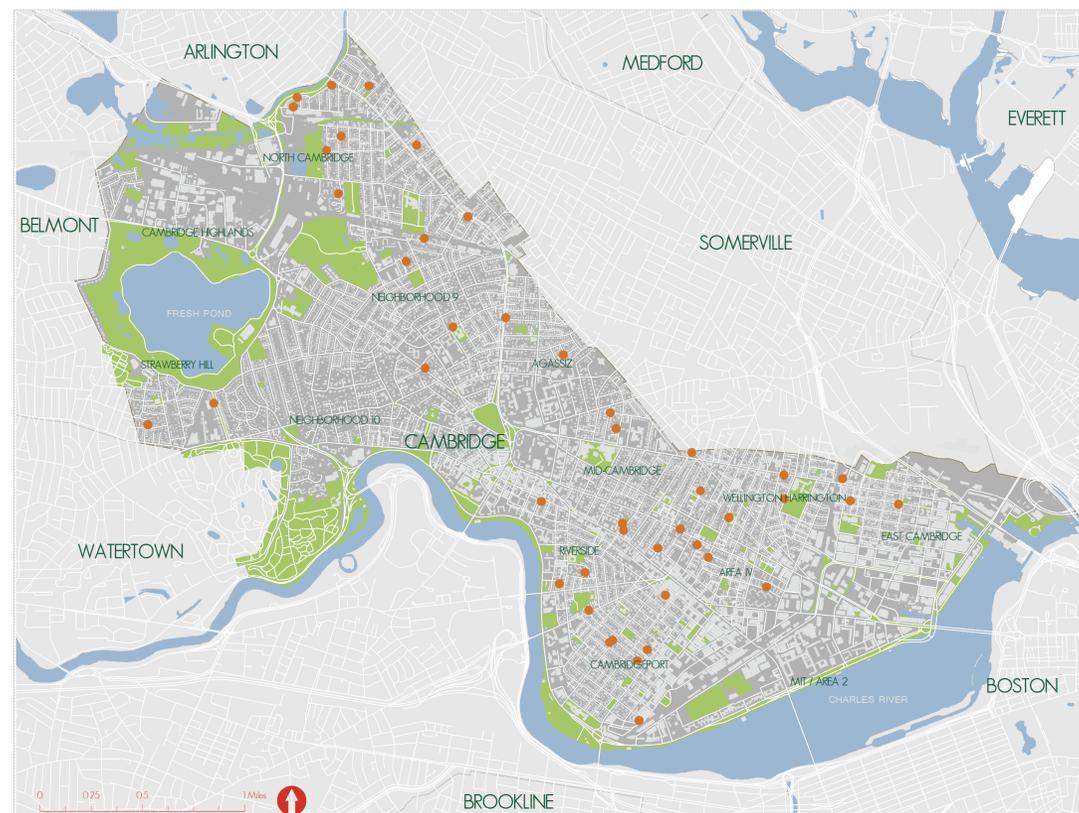
METHODOLOGY

Coordinate System: NAD_1983_StatePlane_Massachusetts_Mainland_FIPS_2001

1. Address/location data was collected for each of the food resource categories and public housing sites. Each resource was geocoded to Cambridge Address Locators or TIGER lines (depending on if they were located within Cambridge or outside of Cambridge).

2. Using the Service Area Analyst tool in ArcMap, polygons representing a walkable area ¼ mile (for visual reference only) and ½ mile along a street network were created from each public housing site (Map 2) and the center point of each census block group (to represent the average Cambridge resident) (Map 3).

3. Using the Intersect tool in ArcMap, food resources were grouped to each 1/2 mile walkable area (Maps 4 and 5). Summary statistics were calculated based on these groupings using ArcMap's Frequency tool (Table 1).



MAP 1: CAMBRIDGE PUBLIC HOUSING SITES

Data sources: Cambridge Housing Authority, Cambridge GIS, MassGIS

● PUBLIC HOUSING SITE ■ OPEN SPACE
— CAMBRIDGE CITY BOUNDARY

RESULTS

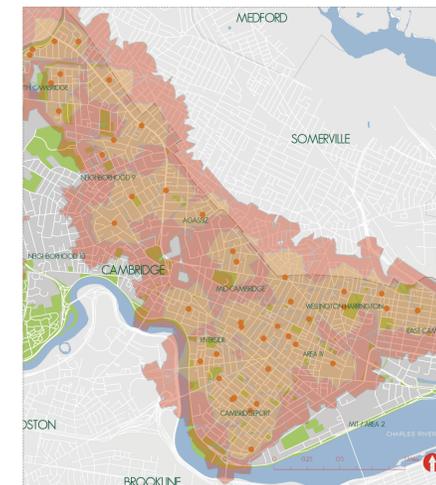
The results of the analysis show that public housing residents actually have access to slightly more food resources within a half mile walk of their residences than the average Cambridge resident does. This may be because Cambridge is a small, dense city and public housing sites are relatively evenly distributed geographically.

TABLE 1: RESULTS OF ANALYSIS

food resources within 1/2 mile	Average Public Housing Resident	Average Cambridge Resident
Average #	56.0	52.8
Fewest #	5	1
Highest #	129	129
Median #	54	50

Building on this initial quantification of food resources accessible in the Cambridge area, future analysis should:

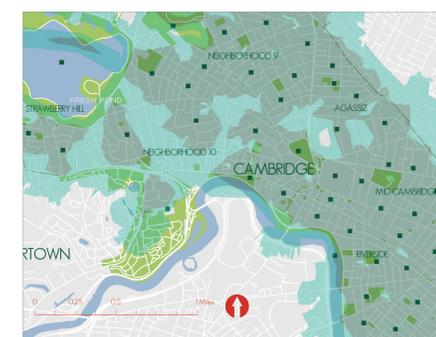
- compare the different types of food resources available within each area (for example, access to grocery stores vs. access to convenience stores).
- consider the number of residents in each public housing unit to determine if access is any different for residents in multi-family units as compared to scattered units.
- rate the quality of food resources on measures of nutrition quality and affordability of available food.



MAP 2: PUBLIC HOUSING WALKABLE AREAS

Data sources: Cambridge GIS, MassGIS, Cambridge Housing Authority

● PUBLIC HOUSING SITE
■ 1/4 MILE WALKING DISTANCE
■ 1/2 MILE WALKING DISTANCE

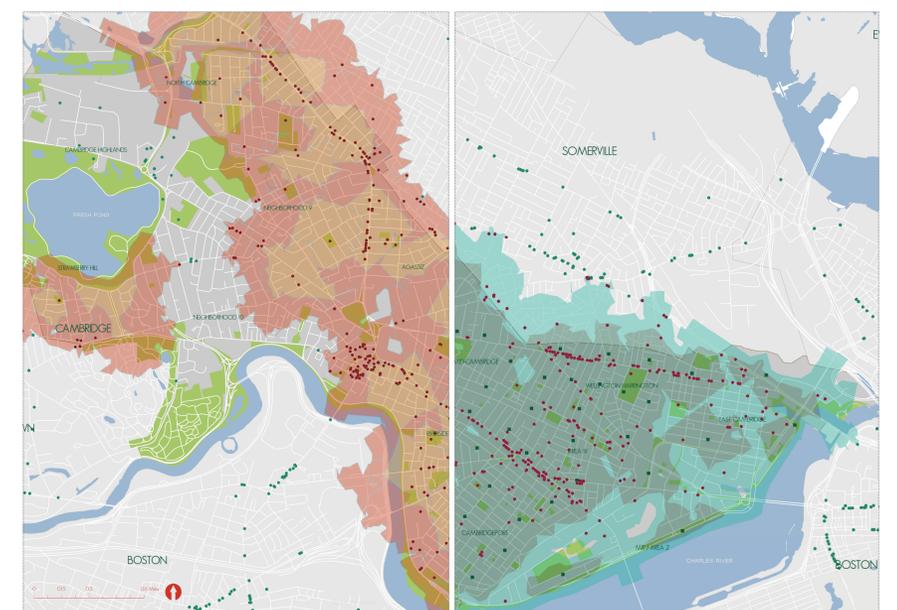


MAP 3: CENSUS BLOCK GROUP WALKABLE AREAS

Data sources: Cambridge GIS, MassGIS

■ PUBLIC HOUSING SITE
■ 1/4 MILE WALKING DISTANCE
■ 1/2 MILE WALKING DISTANCE

MAP 4: FOOD RESOURCES WITHIN PUBLIC HOUSING WALKABLE AREAS



MAP 5: FOOD RESOURCES WITHIN CENSUS BLOCK GROUP WALKABLE AREAS

● FOOD RESOURCE WITHIN 1/2 MILE OF SITE ● FOOD RESOURCE MORE THAN 1/2 MILE FROM SITE — CAMBRIDGE CITY BOUNDARY

The following food resources are included in Maps 4 and 5: Community Supported Agriculture pickup locations, community gardens, convenience stores, farmers' markets, food pantries/ community meal programs, grocery stores, restaurants, schools (cafeterias).

Data sources: Cambridge Economic Development Department, Cambridge GIS, Cambridge Housing Authority, company websites, Federation of Massachusetts Farmers' Markets, ReferenceUSA