In Search of Food Access:

Finding Space for a Supermarket in Everett Massachusetts

**Background**

Everett Massachusetts is a city on the north shore of Boston, flanked by Somerville, Medford, Malden, Revere, Chelsea, Charlestown, the Mystic and Malden River. With easy access to Boston and surrounding cities via I-93 and Rte 16 Everett has seen continued population increases from immigrant groups, similar to surrounding north shore cities like Chelsea, but without the gentrification and higher prices of Somerville. However, residents in the central, residential regions of the city lack access to a full-size supermarket. This GIS model combines data on tax parcels, slope, land use, proximity to existing supermarkets, demographics, personal interviews, and satellite site-specific view analysis to narrow down potential sites that could be developed.

Food for Who

- Energi Everett
- Municipal Department of Health
- Urban Land Institute

**Model Evaluation**

The urban landscape in Everett has little open space in the residential areas north of Rte 16. The Woodlawn Cemetery consumes the northern tip and the majority of remaining land is in a light industrial zone along the Malden River. The latter area is home to a mix of other commercial enterprises and is rapidly being developed but easily accessible via footpaths and a bike path. According to urban planners, the minimum space needed for an urban supermarket is 4,500 sq meters (a little over 48,000 sq ft) (Newberg, 2011). Tax parcels are depicted and filtered by size and proximity to existing supermarkets.

**Considerations & Methodology**

Land use for included appropriate supermarket development locations are scored and overlaid on slope to contextualize walking accessibility to top three potential sites.

- **Excluded categories of land:**
  - Multi-family residential
  - Residential less than 1/2 acre
  - Cemeteries
  - Landfills/Lagoons
  - Agriculture
  - Transport/Power Facilities
  - Forests/Wetlands

- **Mineral rights**

The top three sites reinforce the scarcity of open land in Everett, as all three sites have currently operating businesses. Other factors that have not been modeled here include vehicle traffic (though lot size does include some parking consideration), proximity to schools for students to access healthful foods on the way home, and the ability of the existing small markets to service the food needs of the community. Many of the convenience stores/bodegas have fresh and ethnic foods and accept EBT, but are not a one-stop shop for families and feature more processed foods than fresh and healthful snacks. The City of Everett is unlikely to use this model to displace current businesses, but it is still useful for comparing the various impacts that the sites will have and keeping an eye on potential properties for purchase.

**Results**

Population density, density of households with children and SNAP participation data from American Community Survey in 2016 block groups has been combined with 2010 Environmental Justice Population block group data as a composite raster score showing the optimal areas to develop. Scoring land using impractical and sometimes arbitrary seeming block group data assumes that all residents within a block group have the same level of need, but using a composite score can potentially reduce the bias in targeting neighborhoods based on perceived need. Individual demographic scores are shown to the left.

<table>
<thead>
<tr>
<th>Reason Parcel Removed</th>
<th>Parcel ID#’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools/Fields</td>
<td>18, 27, 58, 92, 103, 112, 113, 117</td>
</tr>
<tr>
<td>Medical Center</td>
<td>69</td>
</tr>
<tr>
<td>Recreation/Park</td>
<td>16, 44, 106, 110, 115</td>
</tr>
<tr>
<td>Police Station</td>
<td>105</td>
</tr>
<tr>
<td>Church</td>
<td>97</td>
</tr>
<tr>
<td>Housing</td>
<td>27, 78, 102, 107, 109, 114</td>
</tr>
<tr>
<td>Odd lot shape</td>
<td>140</td>
</tr>
</tbody>
</table>

**Tufts**

Friedman School of Nutrition Science and Policy

*May 17, 2018*

Massachusetts State Plane Projection

Funds from GIS Spring 2018

**Sources**

- **Tax Parcels, Proximity**
  - Justice Population block group data as a composite score (via block group)
  - Families with children impact
  - Persons reached
  - Site C: Currently mixed use
  - Site B: Currently Rite Aid
  - Site A: Currently supermarkets

- **Consideration**
  - Population density, density of households with children and SNAP participation data from American Community Survey in 2016 block groups has been combined with 2010 Environmental Justice Population block group data as a composite raster score showing the optimal areas to develop. Scoring land using impractical and sometimes arbitrary seeming block group data assumes that all residents within a block group have the same level of need, but using a composite score can potentially reduce the bias in targeting neighborhoods based on perceived need. Individual demographic scores are shown to the left.