FRESH AIR AND FRESH VEGGIES

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Spring 2015

INTRODUCTION

Portland Parks and Recreation (PP&R) oversees current community gardens.
In their 2020 Vision they aim to "Develop Parks and Recreation Facilities and Programs that Promote Community in the City" and "Provide a wide variety of park and recreation services and opportunities for all citizens". Studies have been done in several cities with community gardens and have found that they are great places to promote such visions. PP&R also aims to have a neighborhood park facility within a half mile of every resident and a community park within 1 mile.

BENEFITS TO COMMUNITY GARDENS

- ✓ Helps provide a place to grow fresh fruit and vegetables in an urban setting
- ✓ Helps encourage people of the community to come together and interact in ways they might not normally
- ✓ Improves community health and provides a platform to address community health issues
- ✓ Through partnerships and workshops, gardening skills and training can be shared with those participating in the garden

MISSION STATEMENT

Our goal is to find appropriate areas within the Portland city boundary where new community gardens could be placed. According to the latest calculations waitlists for plots in North and Southeast Portland is almost 2 years and for some up to 8 years. There is a clear demand for community gardens in Portland. We aim to find areas that can be utilized as such by exploiting existing parks in census blocks with the densest population and that are at least 600 ft. from a major road or railway. By finding suitable areas with those credentials we save on cost of purchasing new land, avoid air pollution from nearby cars and trains and serve areas with the highest populations.

METHODOLOGY

To begin we located all the community gardens within the Portland city boundary. In total we found 48.We then used summary statistics for the acreage to find the average size for community gardens which came to about 0.4 acres. Next, we incorporated existing parks that do not already have gardens. We narrowed down those parks by removing golf courses, natural areas, floodplains, maintenance facilities and cultural/community centers as these are already designated for a specific use or overall not suitable for placing a garden. We further narrowed down our selection by making sure that the parks were at least 1 acre so as to accommodate a garden and still remain a park.
We used Portland Census Blocks for 2010 and calculated density to use as a requirement for placing gardens in the most densely populated areas of Portland. Density was calculated as pop10/area which was in square miles. After density was calculated we narrowed it down to the top 5 densely populated census blocks in Portland by using select by attribute. The buffer tool was used on the Community Gardens with a half mile buffer around them. A half mile was used in reference to the PP&R initiative to have a park within a half mile of every resident. Buffers were applied to the Major Roads and Railroads layers at a distance of 600 ft. Ideally we would want parks to be over a quarter of a mile away from major roads and rails for them to be out of the "Danger Zone" for air pollution. However, in a major metropolitan area that is very hard to adhere to. We chose a number that is a little under half of that distance to choose a "happy medium" when it comes to finding a park that is suitable for a garden.

- ✓ Applied buffers to the Major arteries and Railways layers then used Union to join the buffers together to create one layer referred to as Major Road & Rails Buffer
- ✓ Used select by location to find parks that intersected with the major roads and rails layer
- ✓ Switched selection to get parks that do not intersect with the major roads and rails layer (meaning they are further than 600 ft. from any major road or railway)
- ✓ Made a layer from the selection and named it "Parks without Gardens outside of Major Roads and Rail Buffer"
- ✓ Select by location the parks that are outside the major roads and rail buffer and intersected with buffers of the community gardens
- ✓ Switched selection to get parks that are outside roads and rails buffer and outside of the community gardens buffer
- ✓ Select by Location for Parks that are outside all buffers and intersect with the highest population densities of the census block groups
- ✓ Made a layer from selected features which gives us the final parks that are outside all buffers and in the most dense block groups in Portland

RESULTS

Final Attribute Table of all parks that are good candidates to have a Community Garden

Table

Parks outside all buffers in Densest Block Groups

FID	Shape *	OBJECTID	PROPERTYID	NAME	ACRES	SHAPE_AREA	SHAPE_LEN	AVER
40	Polygon ZM	41	116	Essex Park	4.429804	192962.246295	1776.761578	0
46	Polygon ZM	47	123	Flavel Park	4.202657	183067.750392	1868.094899	0
54	Polygon ZM	55	148	George Park	2.030299	88439.808086	1284.596519	0
55	Polygon ZM	56	152	Glenfair Park	4.735774	206290.318103	2012.387141	0
63	Polygon ZM	64	173	Harney Park	6.501275	283195.559983	2131.378332	0
75	Polygon ZM	76	195	Irving Park	16.083458	700595.44634	3352.455227	0
85	Polygon ZM	86	213	Kenilworth Park	8.395438	365705.27306	2570.837229	0
87	Polygon ZM	88	216	Kern Park	1.624269	70753.172366	1089.436739	0
111	Polygon ZM	112	271	Mt Scott Park	11.21665	488597.275962	3099.017715	0
182	Polygon ZM	183	839	Wallace Park	5.382777	234473.744771	1941.810312	0
210	Polygon ZM	211	68	Brooklyn School Park	3.588371	156309.443027	1879.5302	0

The top 4 community gardens

Suitable Parks for Community Gardens

FID	Shape *	OBJECTID	PROPERTYID	NAME	ACRES	SHAPE_AREA	SHAPE_LEN	AVER
40	Polygon ZM	41	116	Essex Park	4.429804	192962.246295	1776.761578	0
46	Polygon ZM	47	123	Flavel Park	4.202657	183067.750392	1868.094899	0
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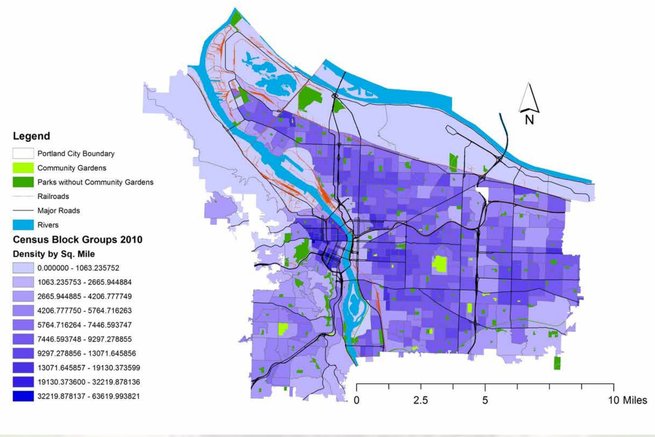
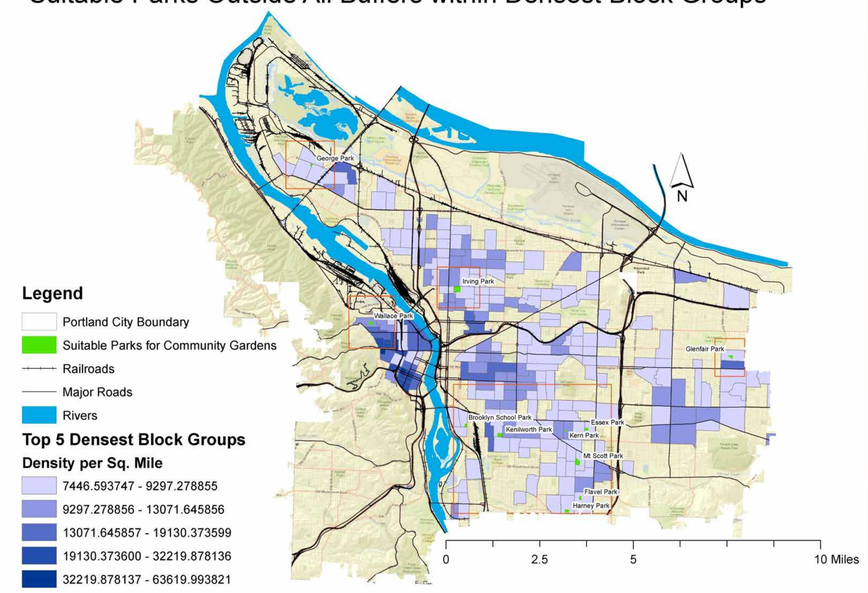
Final Map

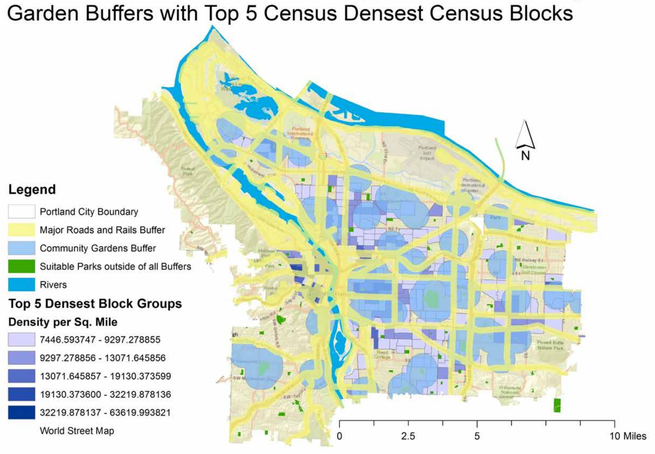
Current Community Gardens and Parks in Portland, Oregon with Census Block Groups



Suitable Parks Outside All Buffers within Densest Block Groups



Suitable Parks that are outside of Rail, Road and Community Garden Buffers with Top 5 Census Densest Census Blocks



CITATIONS

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2- "Parks 2020 Vision." *Portland Parks and Recreation*. Portland Parks and Recreation, Jan. 2000. Web. 31 May 2015.
3- Anderson, Jennifer. "Community Garden Plots, Waiting Lists Growing like Weeds." *Portland Tribune*. Pamplin Media Group, 9 Apr. 2015. Web. 01 June 2015.
4- Grinshpun, Sergey. "UC HealthNews : Many U.S. Public Schools in." *UC HealthNews*. University of Cincinnati, 18 Aug. 2008. Web. 02 June 2015.
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