

Potential Pocket Park Sites in Tacoma, Washington

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Goal Statement:

In the beginning of fall quarter 2010 at UW Tacoma in the GIS certificate program, my goal statement was formed for this project. This was my original goal statement at the beginning of the year.

My project will be looking at Tacoma Washington and analyzing where the most likely spot for pocket parks could be located based on empty land parcels. I want to rate the most likely spots by location in relation to other parks, if there is a community or neighborhood with more than three parks already with in walking distance then that location would be rated lower than a neighborhood that has two to zero parks with in walking distance. I am considering using the Polygon to point method in ArcMap to get the center of each neighborhood in Tacoma and then from those points I will be able to use 3 mile walking distance from the center of these neighborhoods also I will consider how many parks are actually with in these neighborhoods. Greenspace in urban environments provide a great space for children to play in and also a very relaxing spot to have a meal if you are on a lunch break in that empty land parcel next to your office down town. I am excited to see where the empty land parcels are located. Getting this information will require me to access the Census website and will use the most recent information that is ready available.

My Audience for this project will be primarily for Community and City developers and potentially neighborhood board groups. I would like the City of Tacoma too see this to contiplate what they might do with some of the empty land

parcels. Metro parks may also have interest, but I don't know if they will have the resources right now to look at building these pocket parks, however I know they would like this information as well.

Most of the academic journals that I have found for my literature review have been articles that are talking about greenspaces in urban settings and how they are vital to a healthy part of child development and provide a great way to reduce green house gas emissions. In the article entitled Neighborhood Access to Open Space and the Physical Activity of Residents: a National Study, provides with a study in New Zealand showing that the association between location and physical activity was low but there is however more opportunity for physical activity. To look at the environmental impacts the article entitled New Estimates of the Demand for Urban Green Space: Implications for Valuing the Environmental Benefits of Boston's Big Dig Project, which takes place in Massachusetts and like the title states provides the benefits of green space for example land value for residents with houses close to these green spaces have seen an increase in property value. Looking at what other cities have done around the world and how they view green space I believe will assist in bringing the main focus that other cities around the world and across the nation are concerned about having green space in their communities and close to their homes. Also I will touch briefly on what is going on in the Hilltop community of Tacoma with the Zina Linnik Project and how McCarver Elementary, faculty and staff, Metro Parks and Castings Tacoma, and University of Washington students have all used this park project to unify a neighborhood and help a community heal after having one of their 12 students abducted and murdered.

Methods and Problems

Through out the last year obviously there has been lots of tweaking of certain portions and the overall look of my project followed very closely to the plan set in my mind about this project. The first set of my problems occurred when I was trying to select by attributes all the vacant land parcels in Tacoma, Washington based on the land parcel data provided by American fact finders block group found on the census website. There were entirely too many residential vacant land parcels to consider doing a project that would make any sense. So, I chose from early on in the spring quarter to use industrial and commercial vacant land parcels and to drop the vacant residential parcels. I also chose to use a 10 minute walking distance to each of the these empty land parcels instead of a 3 mile buffer around the vacant land parcels.

The other dilemma that I ran into was choosing relevant demographic data to run my network analysis and zonal statistics on that would provide a reasonable solution to place a potential pocket park in that location. I wanted to choose data that would show accurate representation of the population density of families with children and also trying to cater to the areas of Tacoma that are high need and under served in terms of parks. The six demographics that I chose to determine an area of high need was population density, poverty rate, population density of 65 and over, population density of single male headed house holds with children under 18 years, population density of female headed house holds with children under 18 years and population density of families with children under 18 years. These

demographics were joined to my block group layer and from there, fields were added to each of these individual layers and density for all the populations were calculated and rate was calculated for poverty. At this point, I knew I wanted to keep commercial and industrial in separate data frames until it came time to visualize the results of the zonal statistic because I didn't want to get confused with having all of my layers in one data frame. Running all the processes for commercial and industrial didn't take much time but there were 3 main problems that I forgot to do with my raster layers that made this whole process very tedious however I consider myself fortunate because to interpolate data only took me a few seconds as apposed to some of my classmates who I know it took them hours if not days to interpolate. I set my extents to my Tacoma boundaries' layer after running everything about 2 times (12x2 = 6 demographics industrial and commercial vacant land parcels).

Results

From that point of having my entire vacant land parcel as points, I used Network Analysis to give all of my empty land parcels a 10-minute walking radius based on a 3 mph speed. Once I had my polygons around each of the land parcels I then used zonal statistics to run a analysis based on the raster layers created from the census data. Before running zonal statistics though, I had to use the reclassify tool on my census raster layers (both commercial and industrial) to give the areas of low, med, high density a score of one, two, or three (one being low). Once the raster layers were reclassified, zonal statistics then were processed 6 times, due to

the fact that I had 6 raster layers, because of the 6 demographic data chosen. The zonal statistics tool calculated the average density or rate within the 10-minute walk time polygon for all my empty land parcels. Raster calculator was used to determine the areas with the highest need. The two tables below show the results for the demographics within a 10-minute walk to the vacant land parcels that could be potential pocket parks. There were 8 parcels selected from the industrial vacant land parcels and 11 from commercial. Processing a zonal statistic again created the tables, but this time processing it as zonal statistics as a table and then exporting the data as Excel file created the tables.

Indust.P	Avg Population Density	Avg Poverty Rate	Population Density 65+	Avg Density of Family with Kids<18	Avg Density of Single Female Households with Kids<18	Avg Density of Single Male Households with Kids <18
1	7289	0.19	727.49	597.95	293.86	64.56
2	6025	0.17	768.91	492.72	220.03	69.70
3	5892	0.31	587.35	310.10	204.89	71.42
4	4911	0.25	360.43	312.15	364.53	73.82
5	5548	0.28	349.44	371.17	416.33	81.96
6	6065	0.19	560.59	478.68	254.13	87.69
7	6139	0.24	430.14	468.88	366.12	90.32
8	6119	0.15	666.37	529.32	220.38	105.42
Avg	5999	0.25	556	445	293	81

The Commercial vacant land parcels were far more dense and there were several parcels with one parcel like it was a large vacant building that wasn't being used but its was considered to be multiple parcels. Due to this fact I weeded out some of the high need vacant land parcels to give some variety and continuity of the parcels being consider for pocket parks.

Comm. P	Avg Population Density	Avg Poverty Rate	Avg Population Density 65+	Avg Density of Family with Kids<18	Avg Density of Single Female Households with Kids<18	Avg Density of Single Male Households with Kids<18
1	9607	0.37	732.684	320.284	372.351	107.604
2	9857	0.37	767.045	377.794	418.456	146.647
3	10037	0.35	918.152	468.254	355.631	121.980
4	9920	0.34	775.322	389.752	347.497	116.150
5	10345	0.32	948.212	516.202	338.748	95.486
6	10018	0.32	793.593	399.298	326.104	89.615
7	10036	0.30	814.554	442.710	333.389	88.447
8	9305	0.28	684.425	309.251	414.089	118.480
9	9263	0.21	625.323	290.582	367.819	106.090
10	7099	0.20	592.416	263.318	346.237	108.844
11	6387	0.15	582.347	262.063	235.448	162.785
MEAN	9261	0.29	748.55	367.23	350.52	114.74

Conclusion

It is my hope that with these potential pocket park parcels that Metro Parks and the City of Tacoma get behind the surrounding neighborhoods and use them to design an appropriate park that will meet the needs of the community. Jane Jacobs a urban theorist and a pioneer in new urbanism. JoAnn Greco, the author of article Learning From Jane Jacobs, shares the insight that Jacobs had while she was alive from 1916-2006. Jacobs said,

People don't use city open space just because it is there and because city planners or designers wish they would... Jacobs understood that parks could indeed serve as community comfort-givers, provided that citizens and government gave back. "Far from automatically uplifting their neighborhoods, neighborhood parks themselves are directly and drastically affected by the way the neighborhood acts upon them." (p56-57)

Alan Greenberger of MGA Partners, creators of the master plan said in Greco's article that:

...A successful park needs a strong neighborhood on its edge, and this neighborhood is doing real development work— there's \$200 million being spent here already by different venues and community groups. The work has prompted others to look again at the park, says Greenberger. "When the city's children's museum decided to relocate to the park, we realized that it would fill a crucial gap in what is a very big piece of parkland. Now the

spheres of influence between other institutions already here, such as the zoo, could conceivably start to touch.

Urban planners and designers need to remember that just because they are the experts making the decisions on how to create these parks, they still need to make sure that what they design is actually going to best meet the needs of the community around the park. Jacobs created a shared vision for park users and park legacy lovers that said parks are only successful if they provide opportunities for people to come together and to build communities that is what my dream is for these potential pocket park sites.

Reference:

American Fact Finder, found on www.Census.gov, accessed on April 30, 2011.

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Randall, T. A., Churchill, C. J., & Baetz, B. W. (2003). A GIS-based decision support system for neighbourhood greening. *Environment & Planning B: Planning & Design*, 30(4), 541-563. Retrieved from EBSCOhost.