WALKABLE COMMUNITIES

WHICH PORTLAND NEIGHBORHOODS ARE THE MOST WALKABLE?

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research question

where are the most
walkable communities
in the city of portland?

walkable community

a community in which the built environment is friendly to the presence of people living, shopping, visiting, enjoying, or spending time in an area
Steve Abley, "Walkability Scoping Paper." March 2005

criteria according to Dan Burden of The Walkable and Livable Communities Institute

- designed for people
- town centers
- mixed income, mixed use
- public spaces
- well-connected
- properly scaled to ⅛, ¼, and ½ mile segments

method

clip

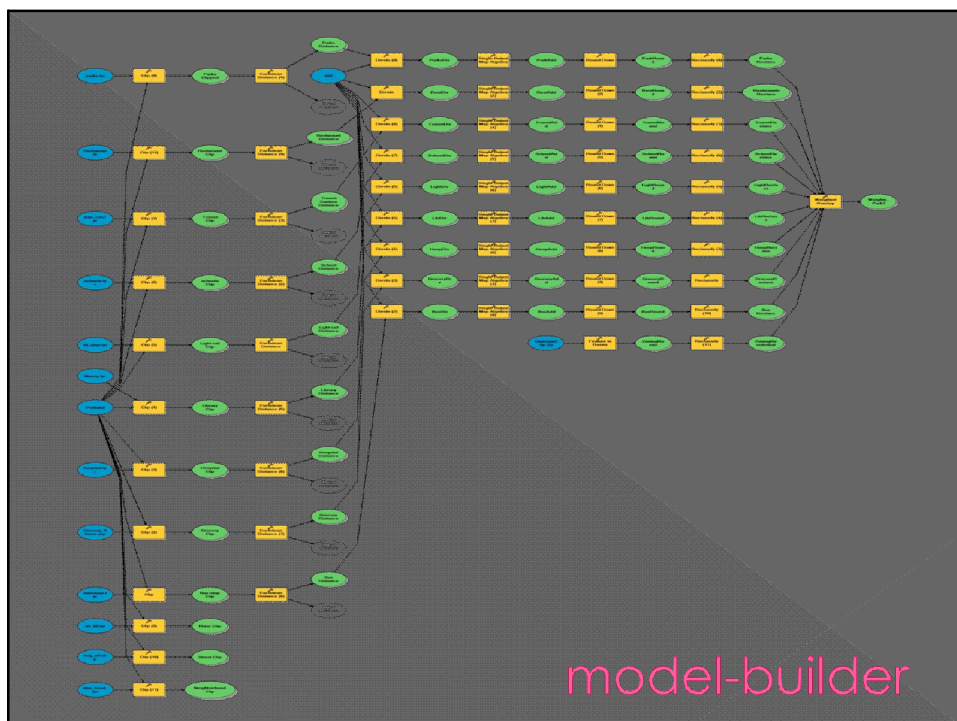euclidean distance

reclassify

weighted overlay

model-builder

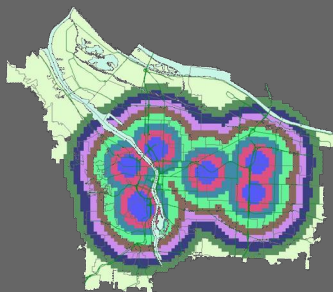# clip

- from metro RLIS
  - green spaces
  - schools
  - libraries
  - transit stops
  - zoning
  - river

- from city of portland
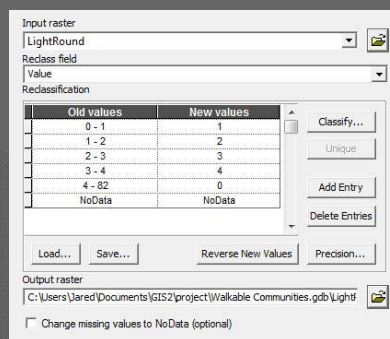 - restaurants
  - grocery stores

euclidean distance

- create rasters of distances from desired features
- convert feet to ⅛ mile units via:
  - divide (by 660)
  - simple output map algebra
  - round down

reclassify

- intervals of ⅛ mile
- walkable distances
  - ⅛ mile public spaces
  - ¼ mile schools
  - ¼ mile restaurants
  - ¼ mile libraries
  - ¼ mile grocery stores
  - ½ mile transit stops
  - 1 mile hospitals
- outside of "walkable" distance, reclassify as 0

Input raster
LightRound

Reclass field
Value

Reclassification

Old values	New values
0 - 1	1
1 - 2	2
2 - 3	3
3 - 4	4
4 - 82	0
NoData	NoData

Classify...
Unique
Add Entry
Delete Entries
Load... Save... Reverse New Values Precision...

Output raster
C:\Users\Jared\Documents\GIS2\project\Walkable Communities.gdb\Light
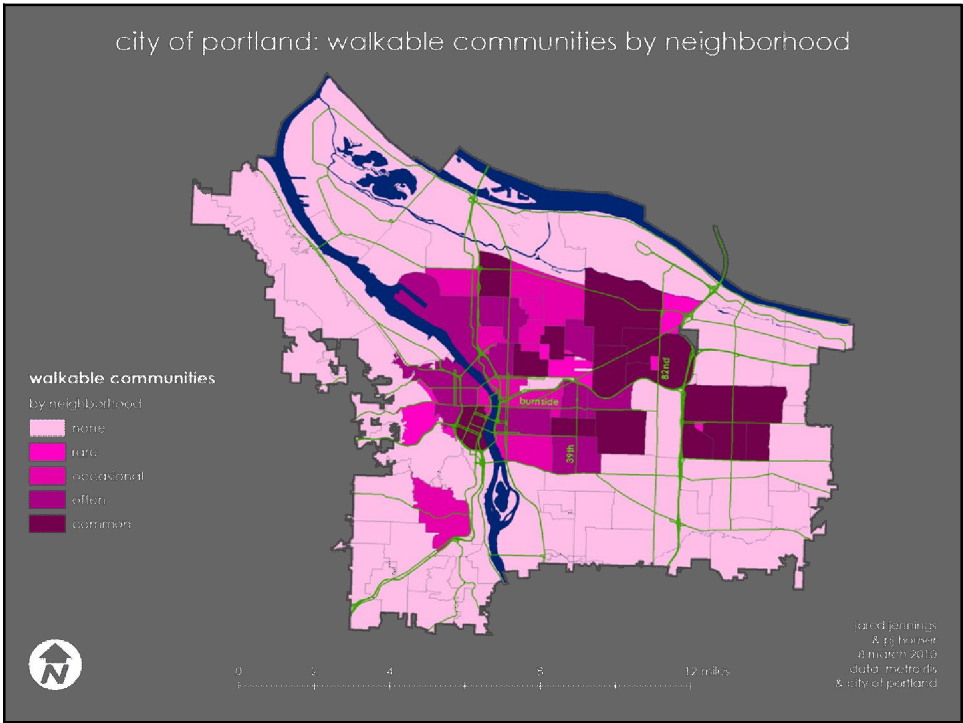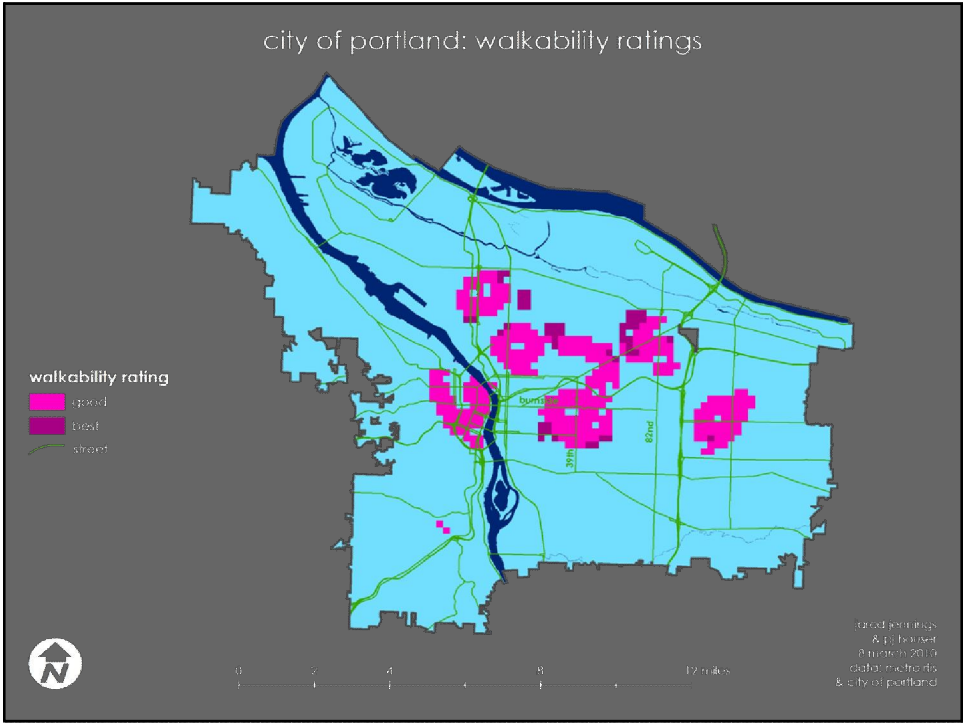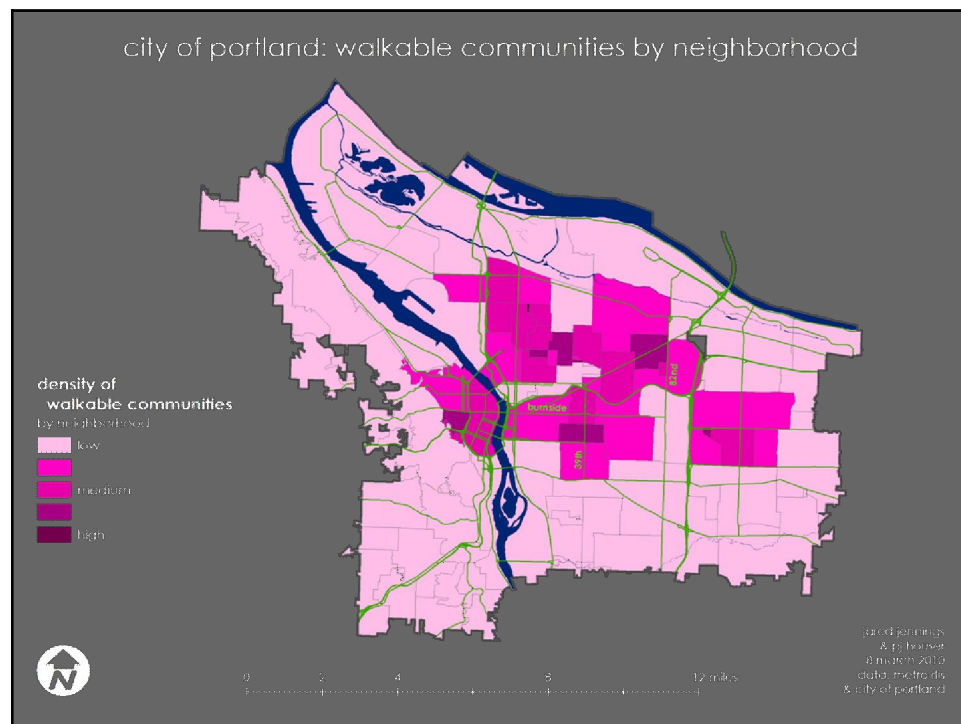☐ Change missing values to NoData (optional)

weighted overlay

- based on Dan Burden's distance criteria
- restricted to residential areas (via zoning)

Weighted overlay table

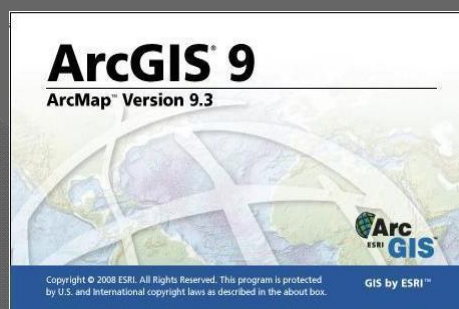| Raster	% Influence	Field	Scale Value
Parks Reclass	23	VALUE	
TransitReclass	6	VALUE	
SchoolReclass	17	VALUE	
LightReclass	6	VALUE	
LibReclass	11	VALUE	
HospReclass	3	VALUE	
GroceryReclass	17	VALUE	
Bus Reclass	6	VALUE	
ZoningResidential	0	VALUE	
Resturaunts Recla	11	VALUE	

city of portland: walkability ratings

city of portland: walkable communities by neighborhood

city of portland: walkable communities by neighborhood

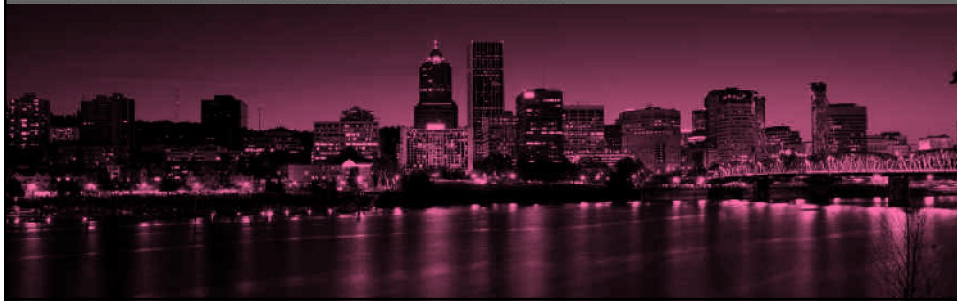density of
walkable communities
by neighborhood
low
medium
high

challenges

- decimal precision
- bugs in model-builder
  - inconsistent with relative path names
  - weighted overlay re-sorts values
- incomplete metro info

ArcGIS 9
ArcMap Version 9.3

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GIS by ESRI

recommendations

- distance by street network
- range of mixed income in residential areas
- combine all transit/bus/light rail stops

resources

- Abley, Steve. "Walkability Scoping Paper." March 2005.
- Burden, Dan. http://walkable.org
- Metro RLIS
- City of Portland employee