



## Evaluation of Solar Energy Maps in the United States

### background

Solar maps serve to increase awareness of solar potential for citizens, communities, and their local governments. Interest in solar energy mapping has been steadily increasing, noticeable through the increase in available online solar potential energy maps. However, as new solar maps are designed, it is necessary to understand current practices to inform future designs. This study aimed to assess the cartographic design and interaction primitives used in seventeen solar maps in the United States.

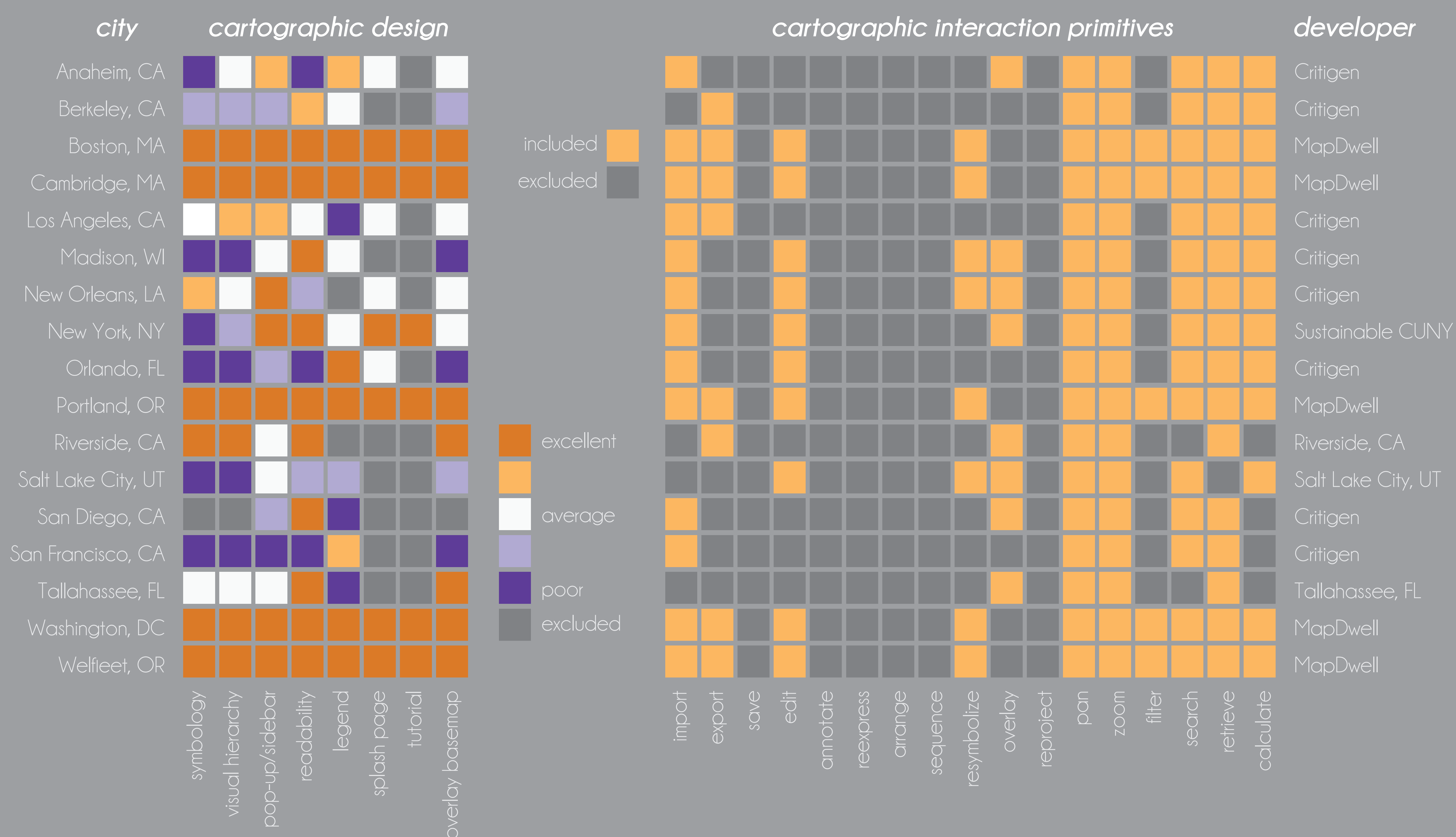
### methods

Using content analysis we evaluated seventeen (n=17) interactive solar energy maps to:

1. Access cartographic design of currently available maps
2. Classify usage of the cartographic interaction primitives
3. Develop an understanding of how to better design future maps

### results

The matrices below summarize the cartographic design and the use of cartographic interaction primitives.



There was great variation in cartographic design across the maps. The MapDwell products (5/17) consistently had high quality cartographic design. Nearly half of the maps (8/17) were developed by Critigen, yet these maps varied cartographically. All maps included the interactions of pan and zoom (17/17). Many of the maps allow users to search (15/17), specifically for their own address; and nearly all the maps allowed users to retrieve (16/17), either information about solar potential on a perspective roof or about currently installed systems. Additionally, many of the maps included the calculate primitive (13/17) to allow users to calculate solar potential for their home's rooftop.

### conclusions

Future maps developers can use this compilation of maps to drive design decisions. Ideally future maps will include:

- well designed cartographic symbology
- coordination with the basemap material
- appropriate visual hierarchy and readability
- well designed splash pages and/or tutorials
- ability to add your own installed system to the map
- search capabilities to find an address within a city
- pop-up or sidebar information about solar potential
- ability to calculate solar potential for a rooftop