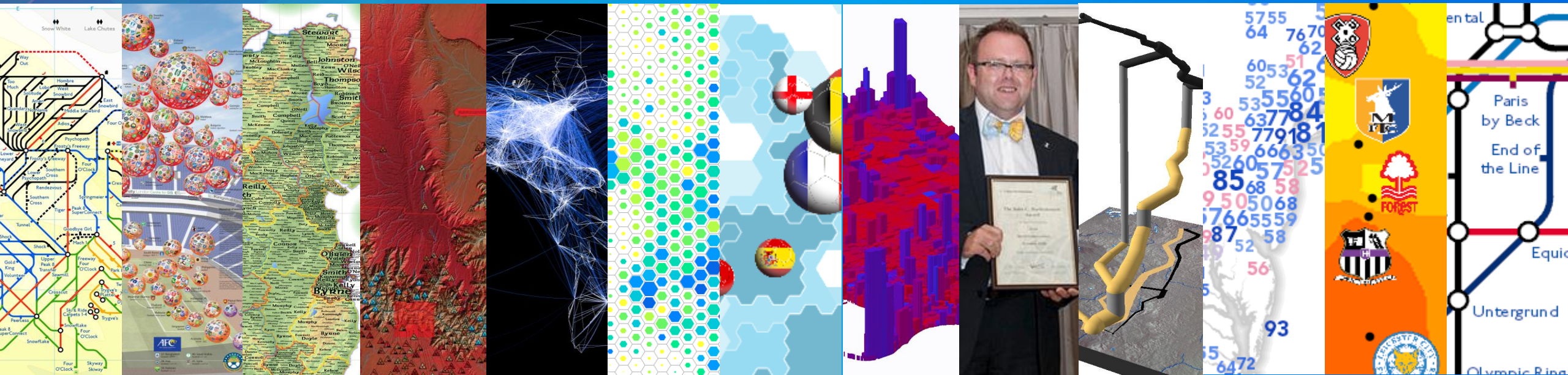




BEST PRACTICES FOR MAP DESIGN

Kenneth Field and Damien Saunder

Kenneth Field (@kennethfield)



Damien Saunder
(@damiensaunder)



Outline of session

Some basic cartography

Why make the map?

Getting to grips with design

hierarchy : contrast : figure-ground : projections

symbols : generalization: colour : typography

Putting the pieces together

Review the outcome

Some basic cartography



C ompromise

A

R

T

O pportunity

G

R

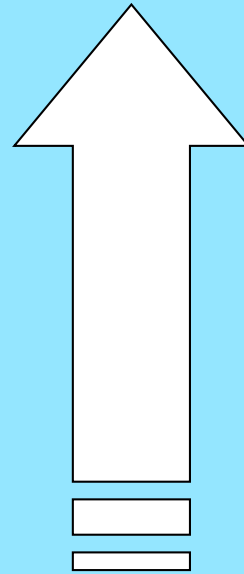
A

P

H

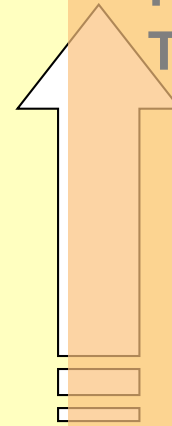
Y why?

Map User



Map Maker

Knowledge
Transfer



GIS User



Cartographer

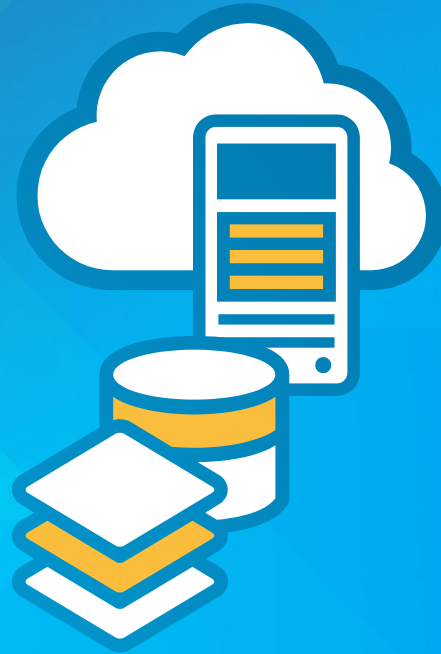


Design is crucial to communication in cartography

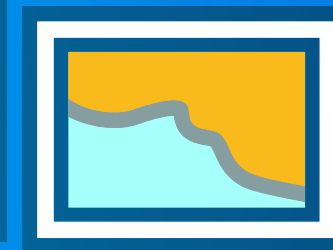
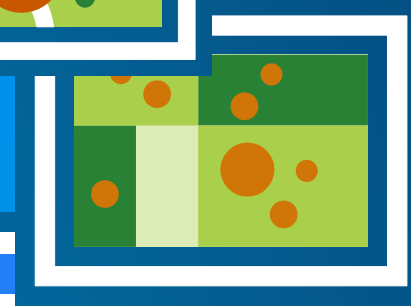
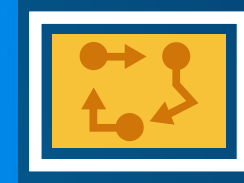
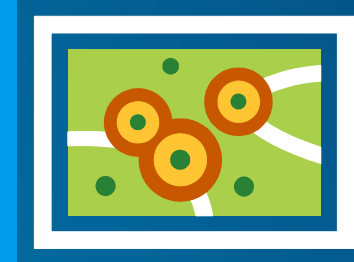
Large database

Equal
Treatment

No inherent
design



Design



Data
Processing

Function

Meaning

The design process

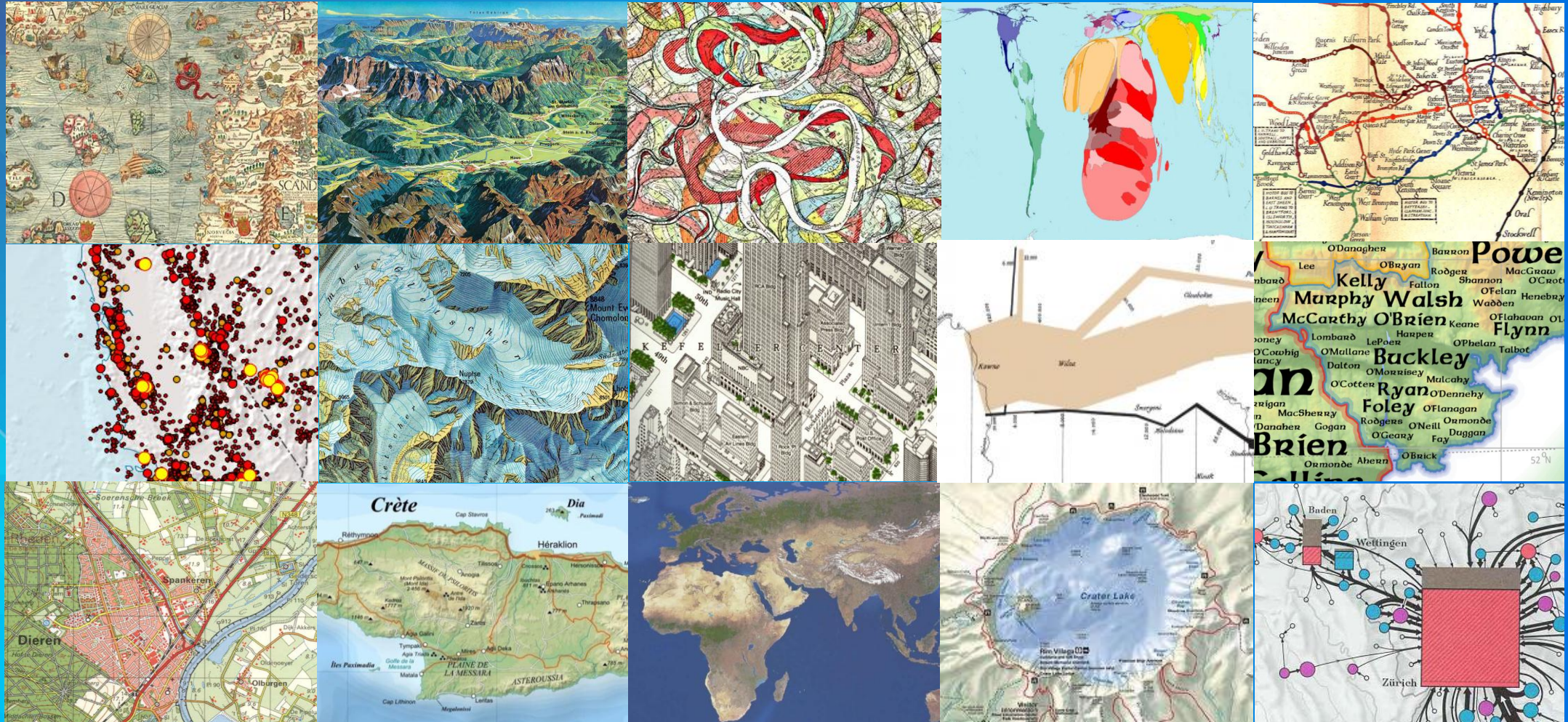


Why make the map?

Cartographic requirement



What's the story?



Speaking in graphical tongues

Written/spoken word: **SERIAL**

Graphics: **PARALLEL**



Audience

Media resolution

Viewing distance

Output medium

Anticipated level of understanding

Conditions of use

One map or multiple maps

What areal extent to show

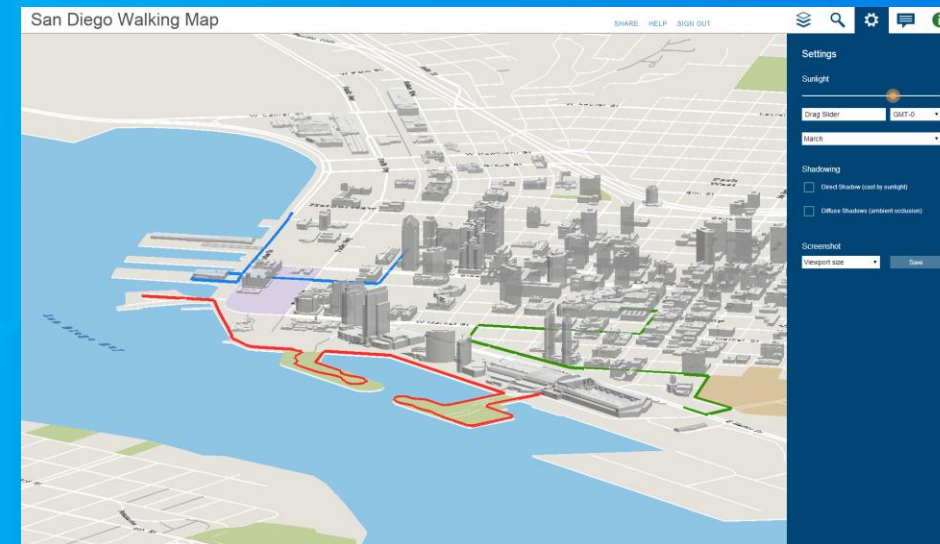
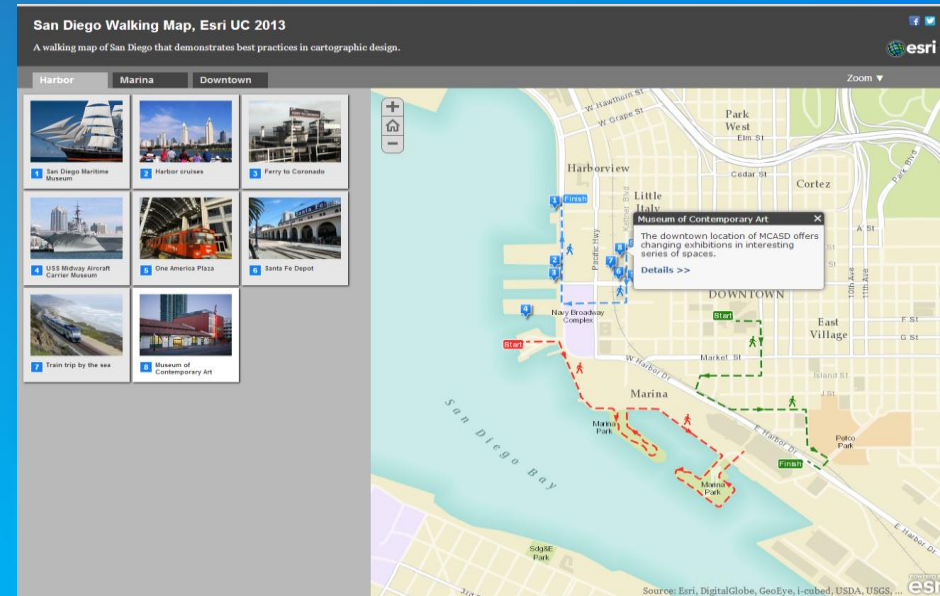
Insets/multiscale



Demo: Requirement



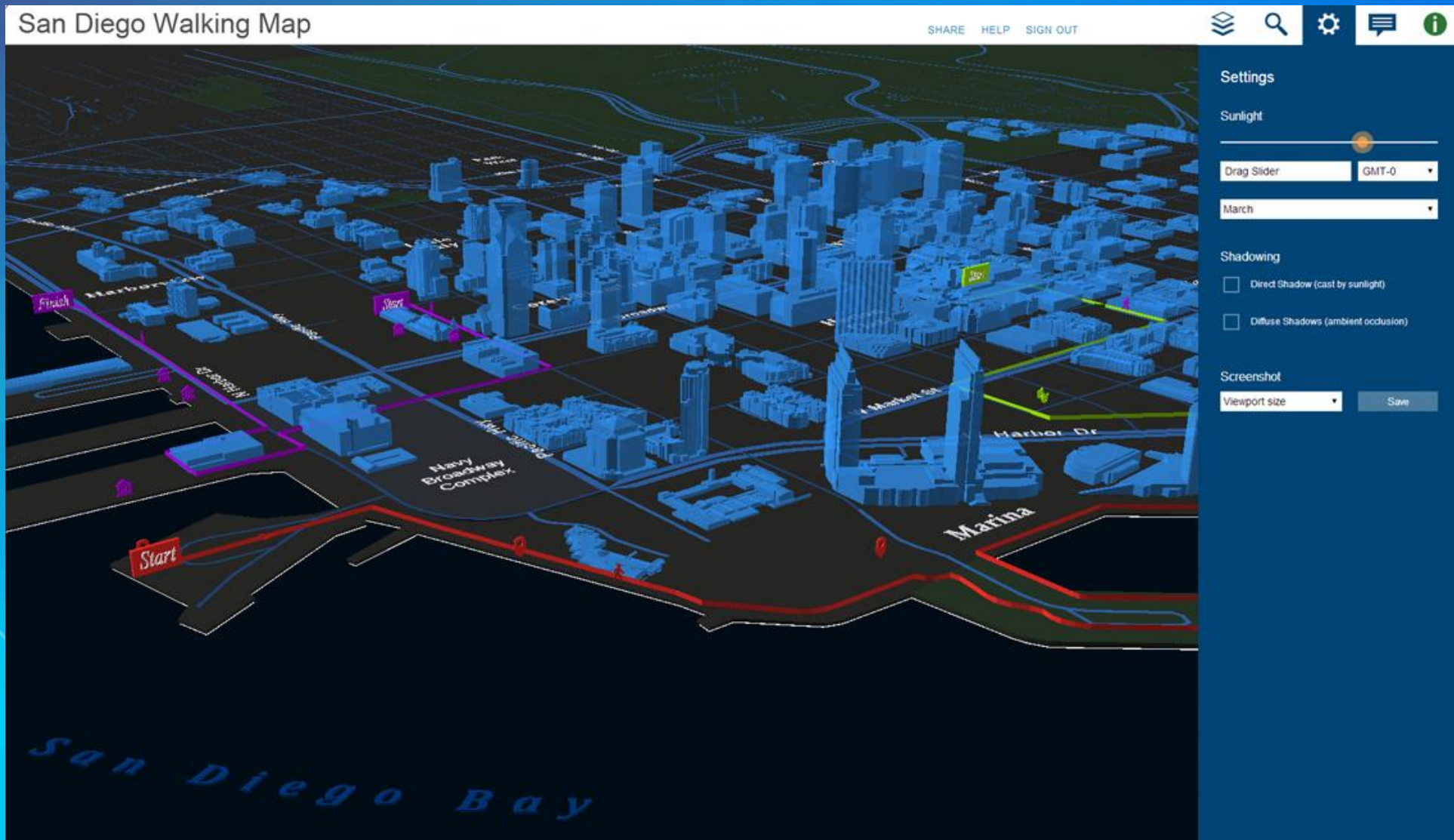
2012



2013

2014

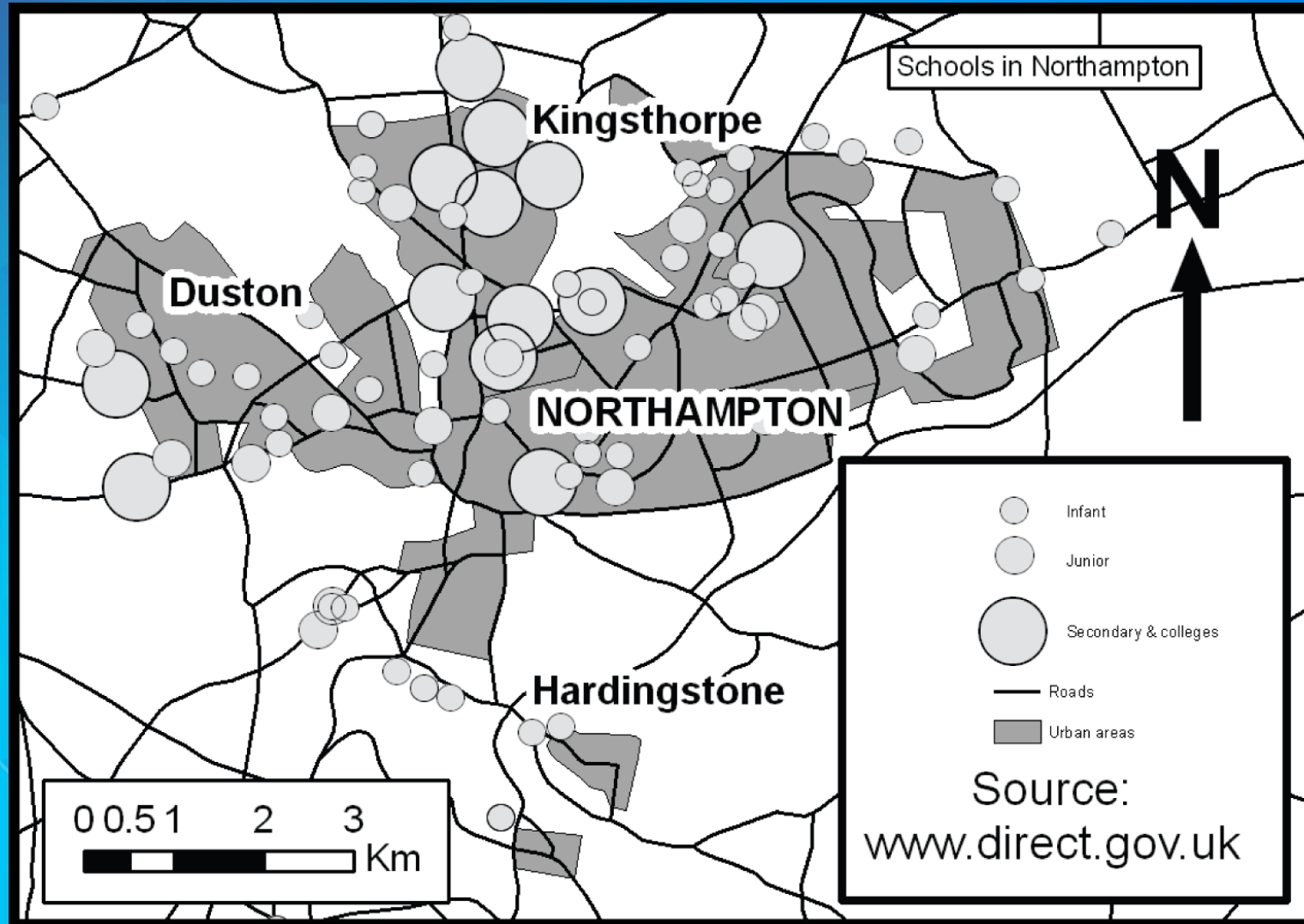
2015



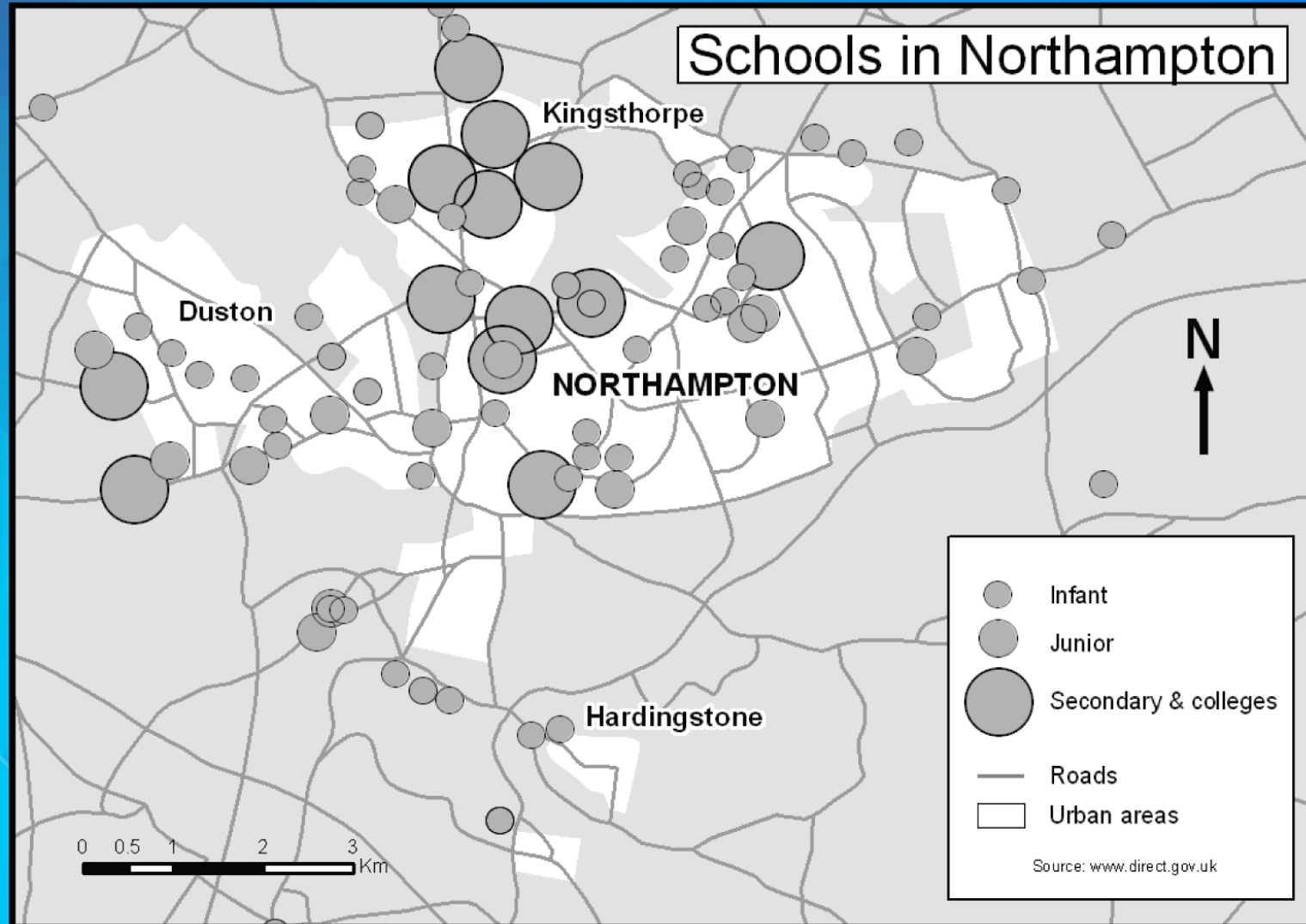
Getting to grips with design



Visual hierarchy



Visual hierarchy



Demo: Visual hierarchy

Visual contrast

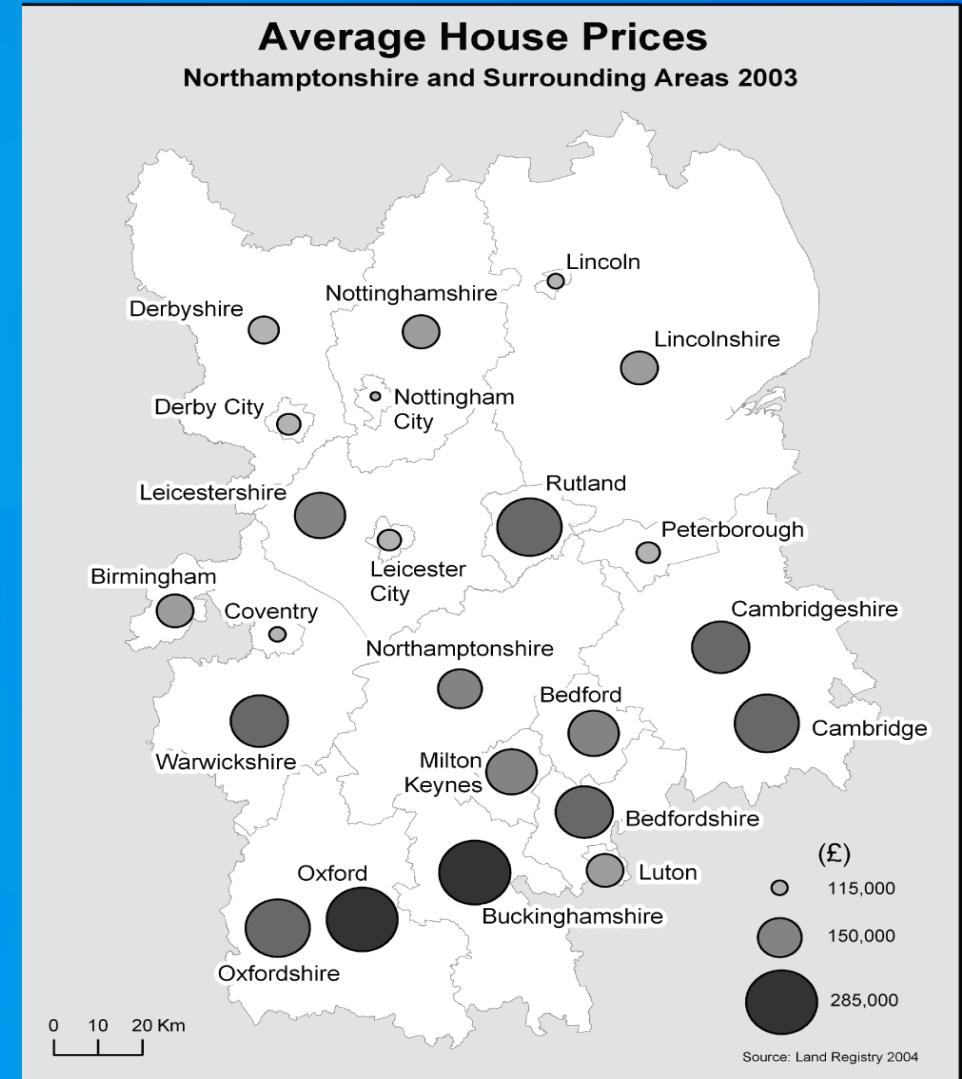
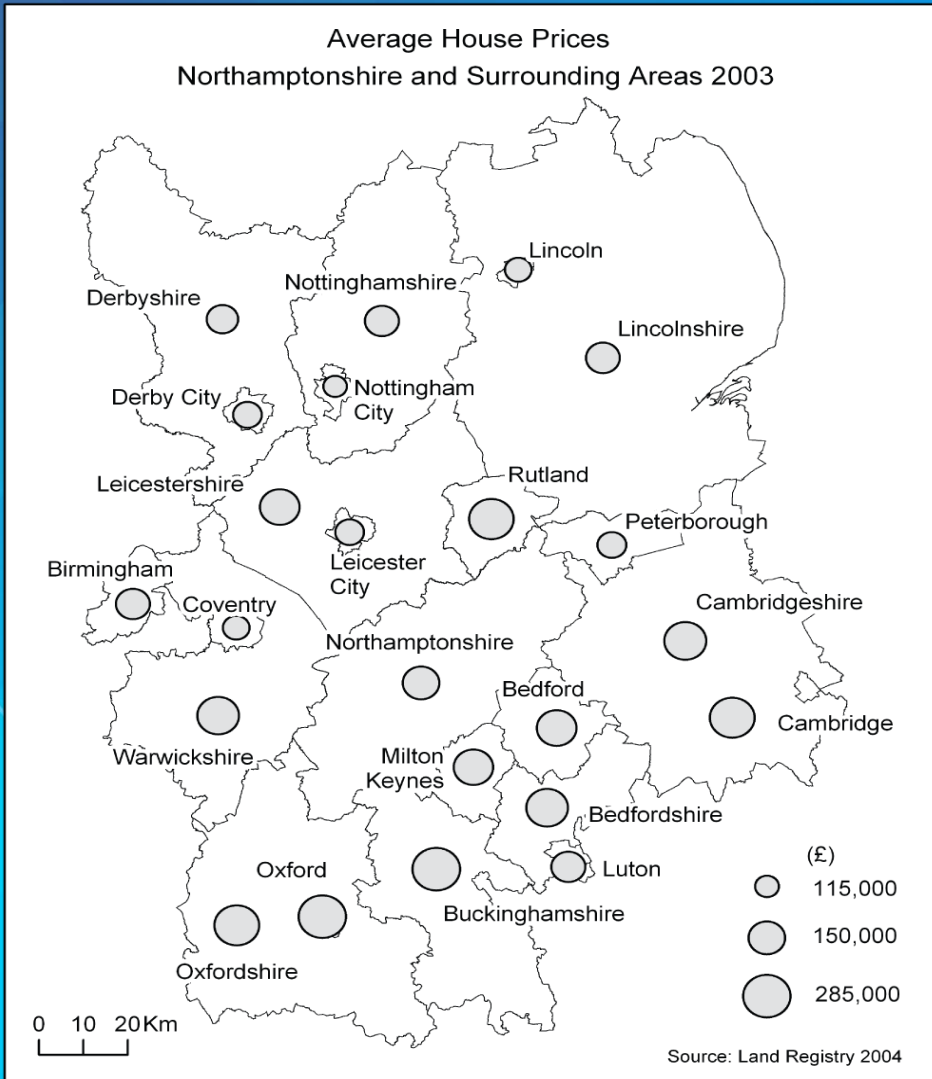
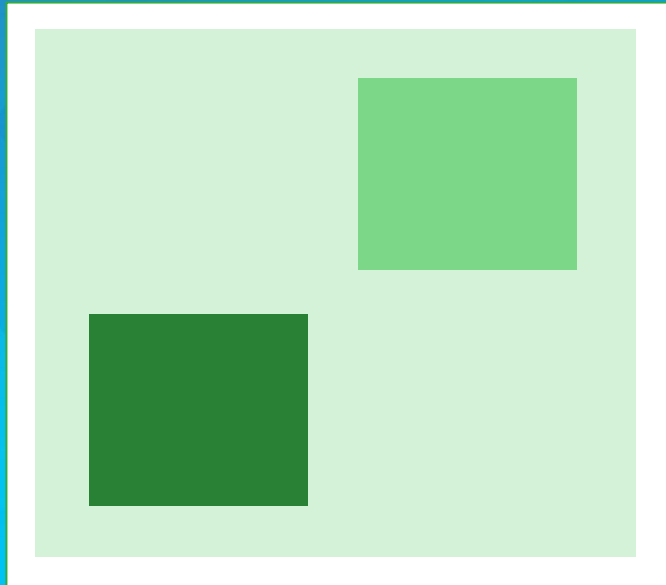


Figure-ground



Demo: Figure-ground



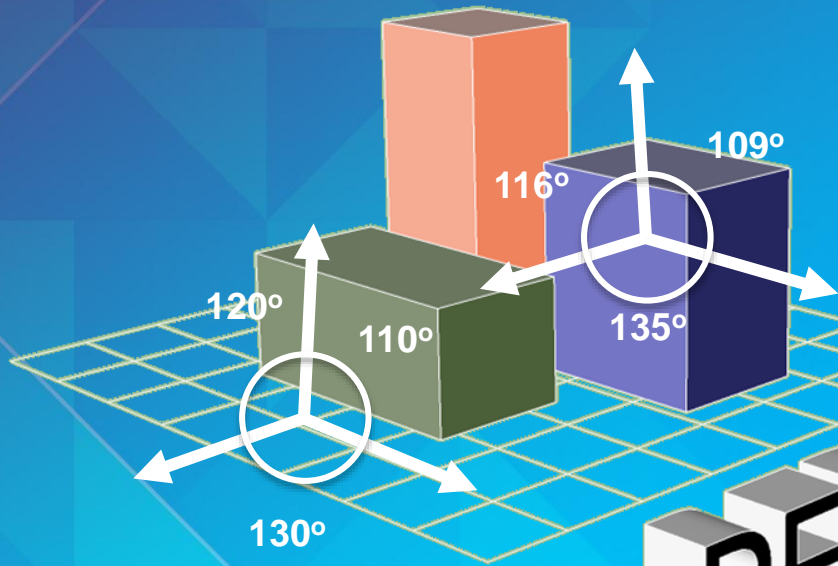
Projections

WGS 1984 Web Mercator (Auxiliary Sphere)

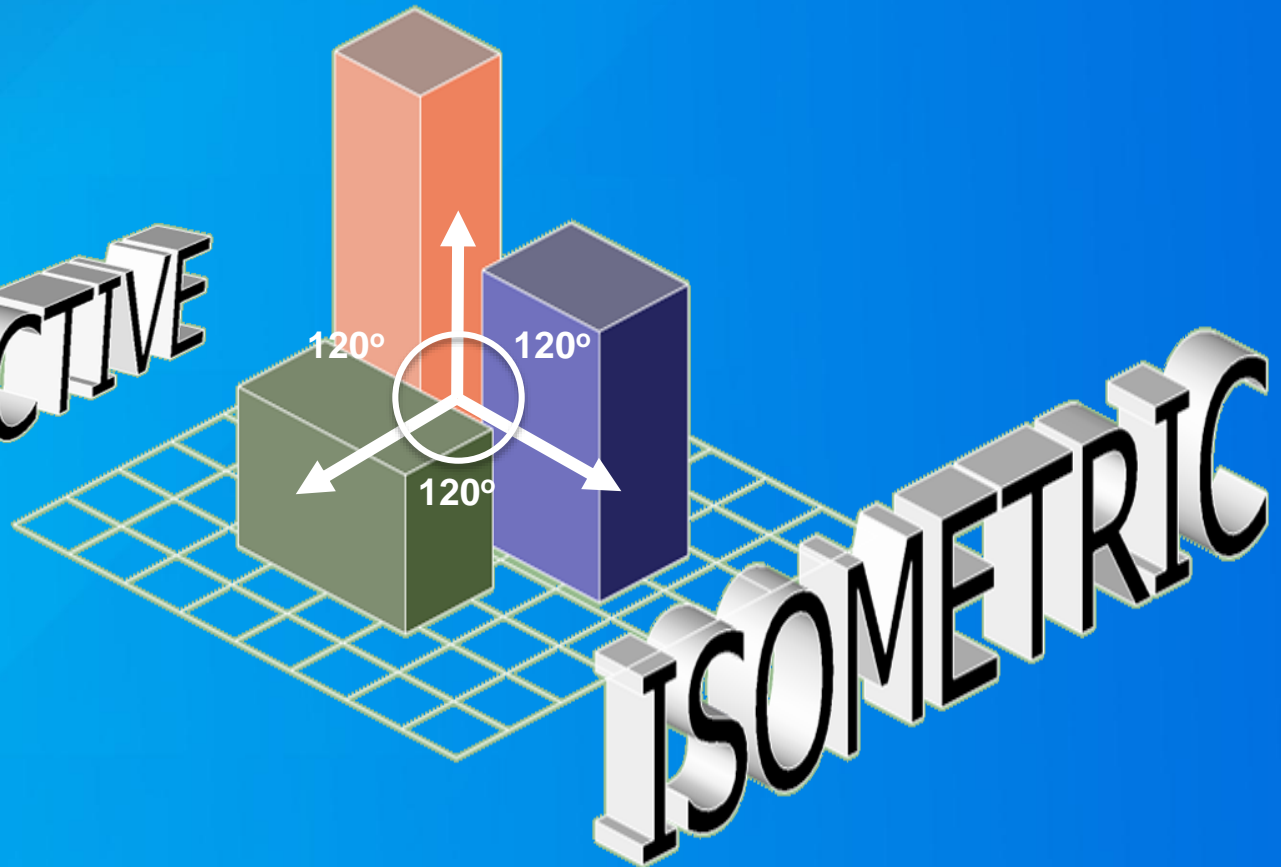


ArcGIS Online
Bing
OSM
Google

Projections



PERSPECTIVE



ISOMETRIC

Demo: Projection



Symbol palette

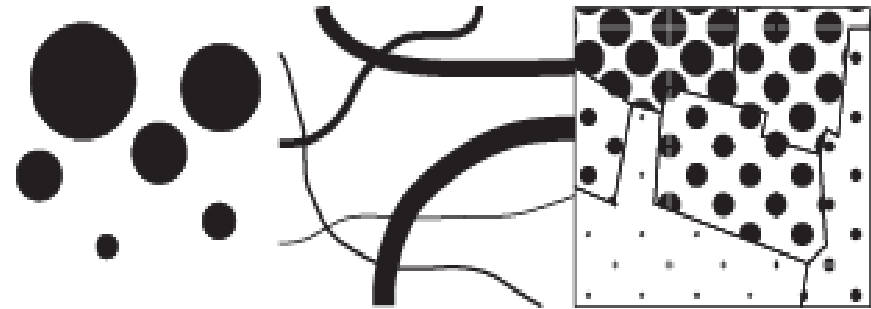
spacing



orientation



size



hue







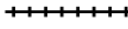


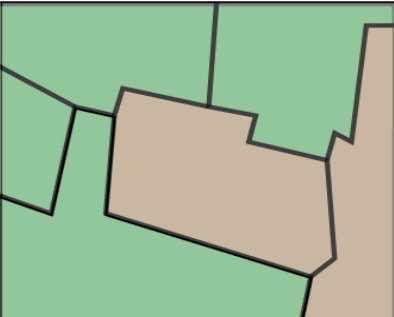










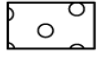
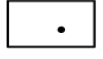











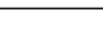
shape



lightness



Symbol meaning

	Points	Lines	Areas
Nominal	 Airport  Emergency Phone  Picnic site	 Motorway  Railway  River  Canal	 Forest  Agricultural
Ordinal	 Large  Medium  Small	 Motorway  A road (dual)  A road  B road  Minor	 Large  Medium  Small
Interval or Ratio	 500 - 999  100 - 499  0 - 99	 30 - 39  20 - 29  10 - 19  0 - 9	 40 - 49  30 - 39  20 - 29  10 - 19  0 - 9 %

Demo: Symbols



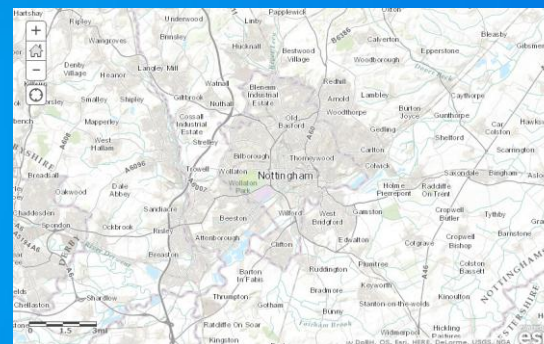
Feature generalization



1:147,914,382



1:577,791



1:72,224

Large scale



1:18,489,298



1:144,448



1:4,514



Feature generalization

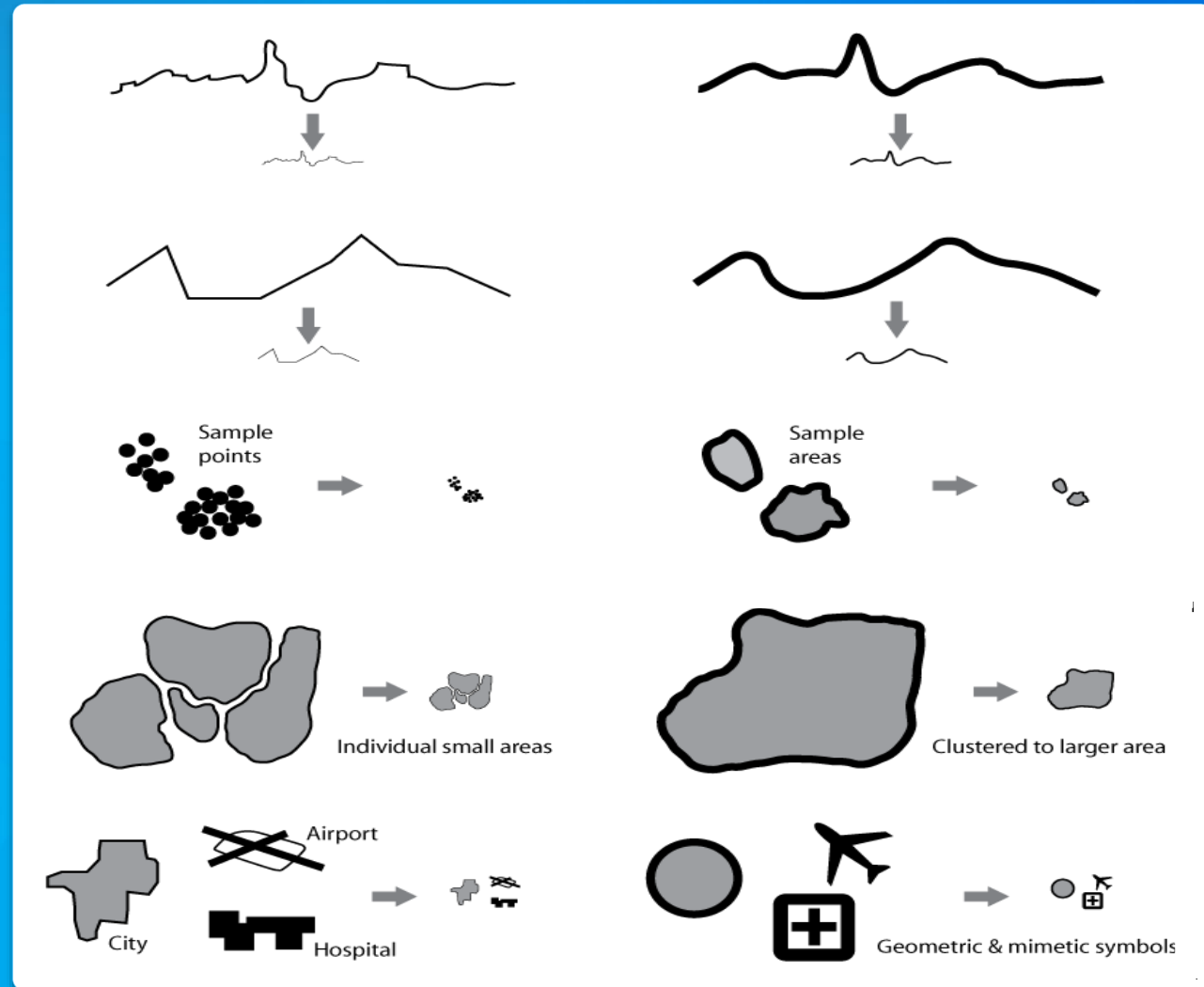
Simplify

Smooth

Aggregate

Amalgamate

Collapse



Feature generalization

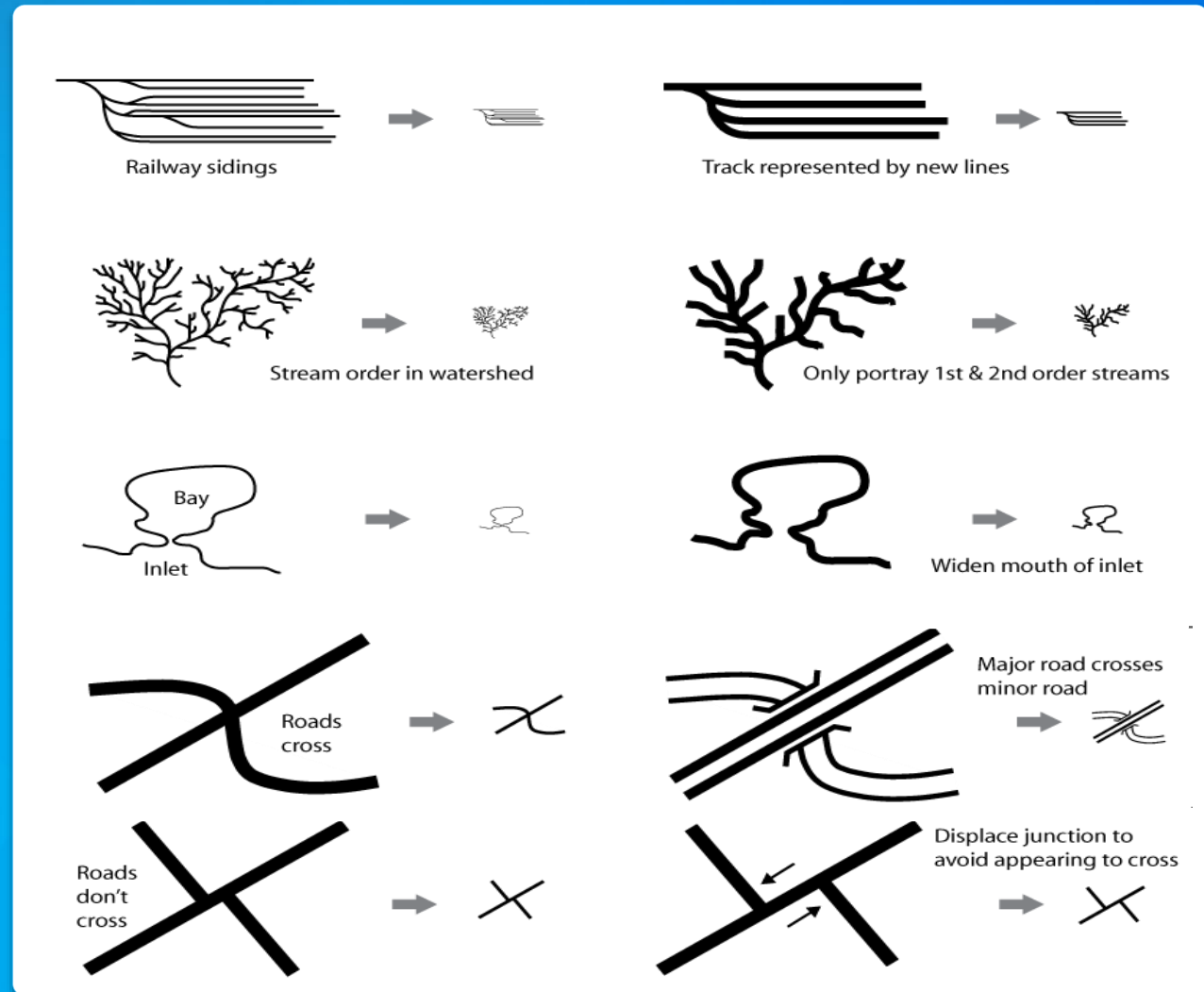
Merge

Refine

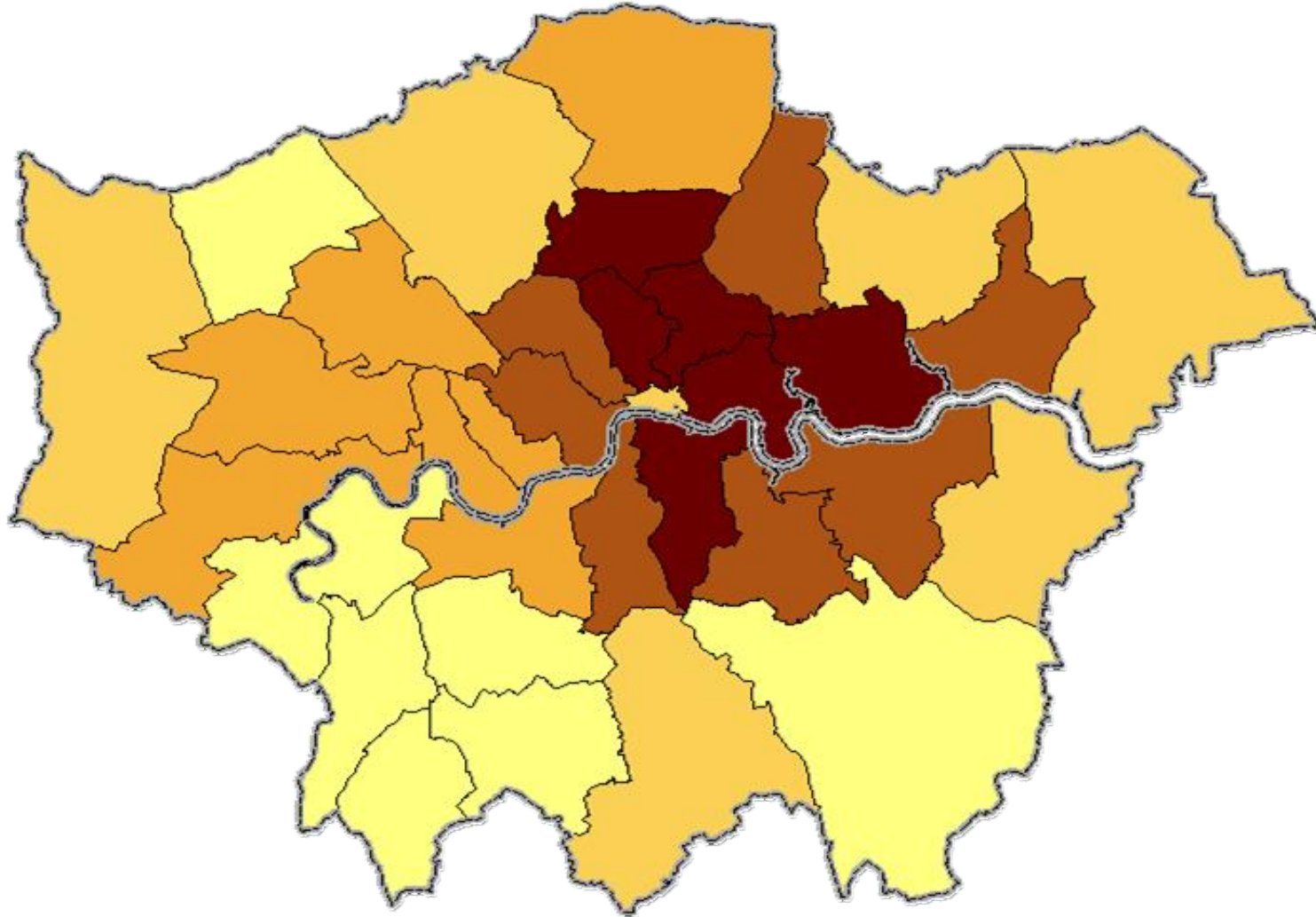
Exaggerate

Enhance

Displace



Classifying data

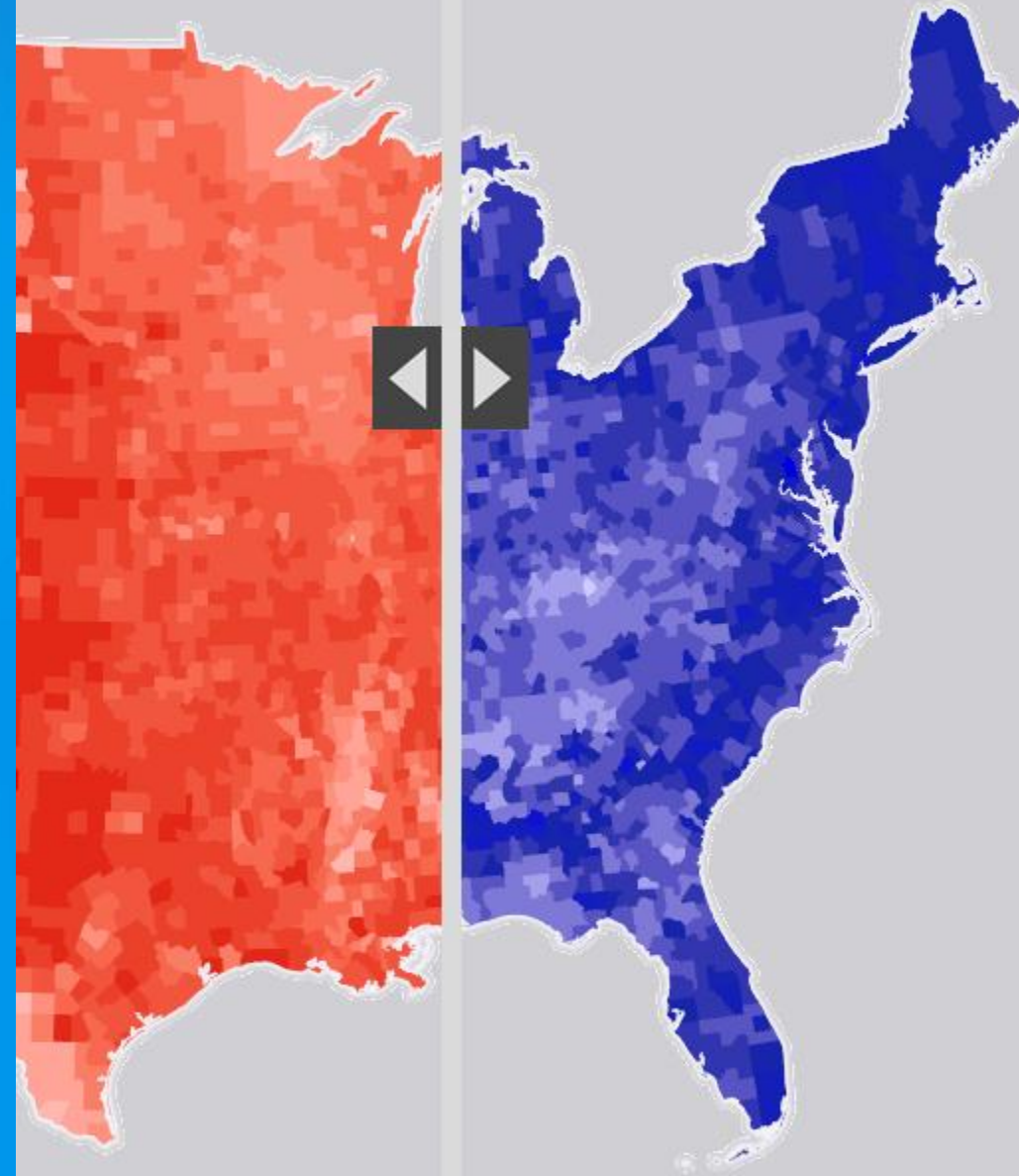
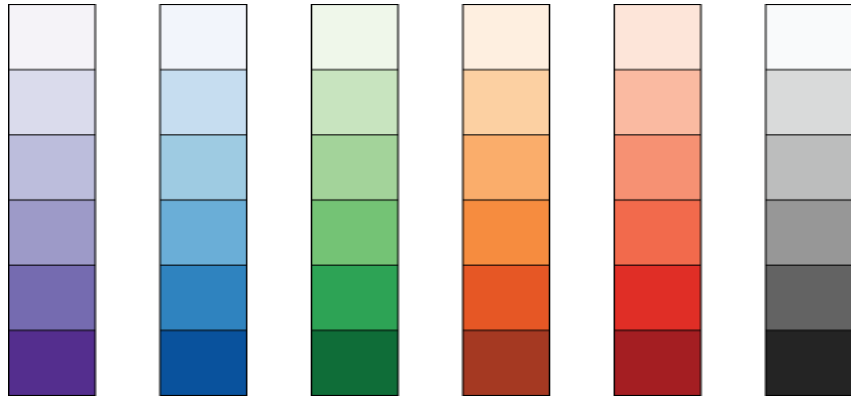


Demo: Feature generalization



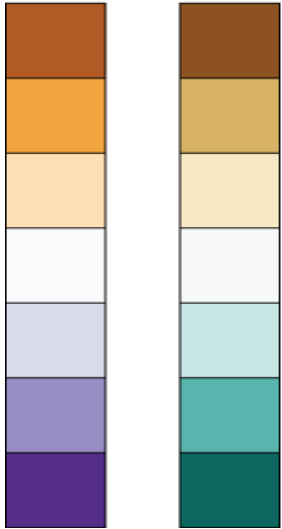
Colour – sequential

Sequential

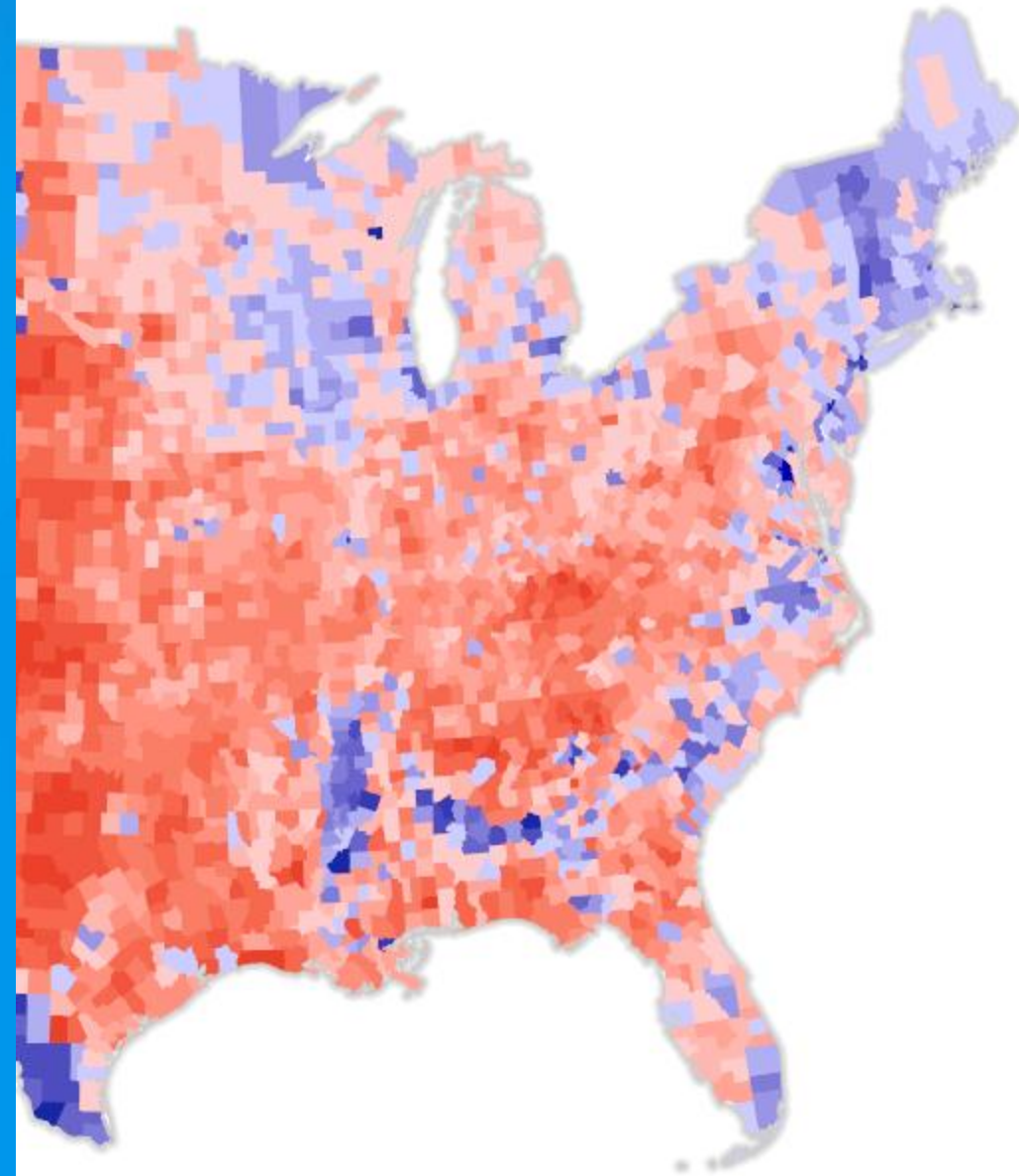
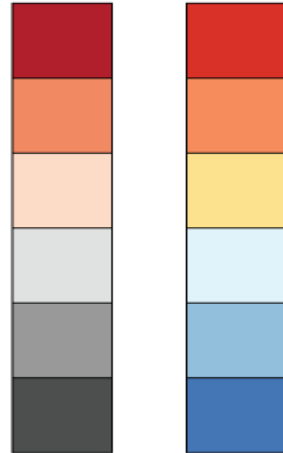


Colour – diverging

Diverging
Critical Class

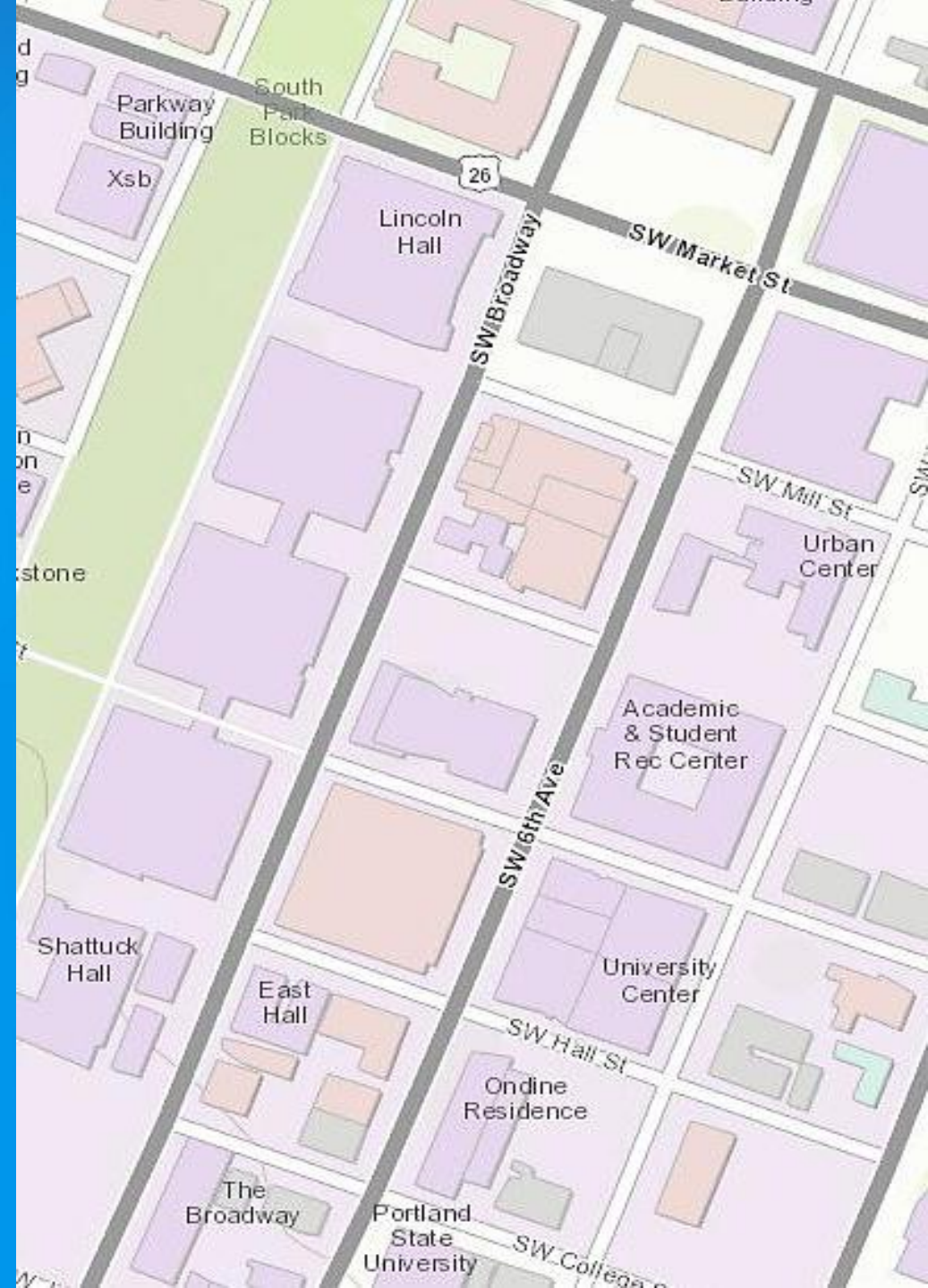
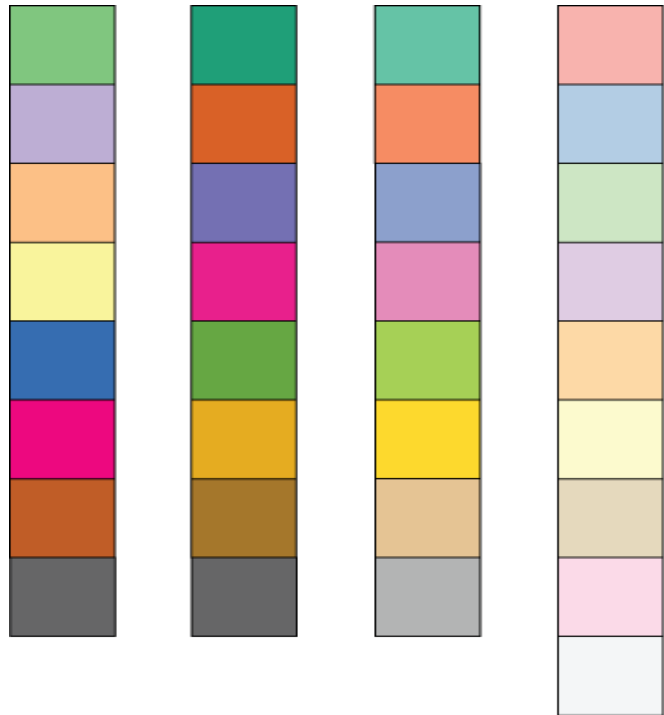


Diverging
Critical Break



Colour – qualitative

Qualitative



Demo: Colour



Typography

Purpose

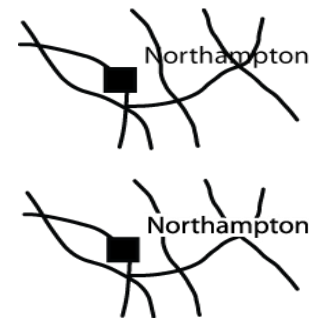


Size

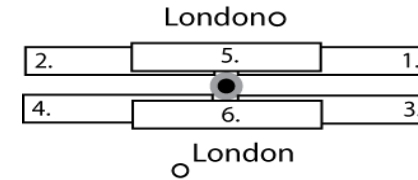
5 point 7 point
10 point 12 point
18 point
24 point

CITIES
Towns
villages

Conflict



Position



Style

sans serif
serif

Demo: Typography

Putting the pieces together



User interface for web maps

Map/app title

Main map

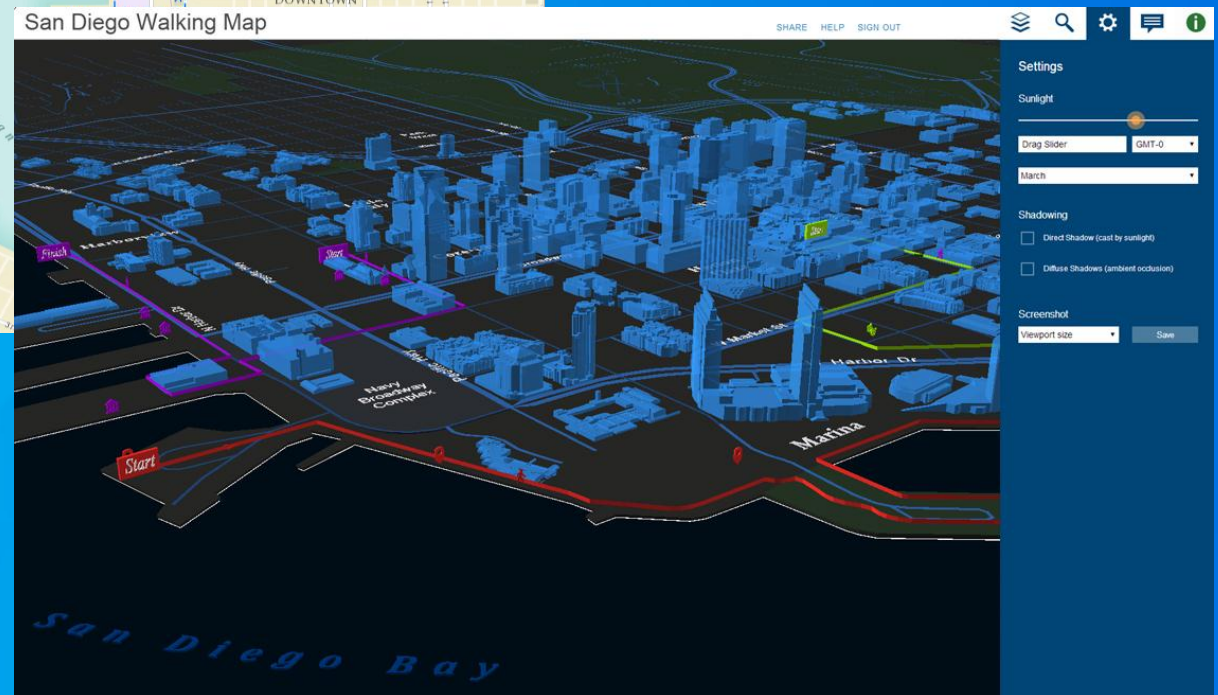
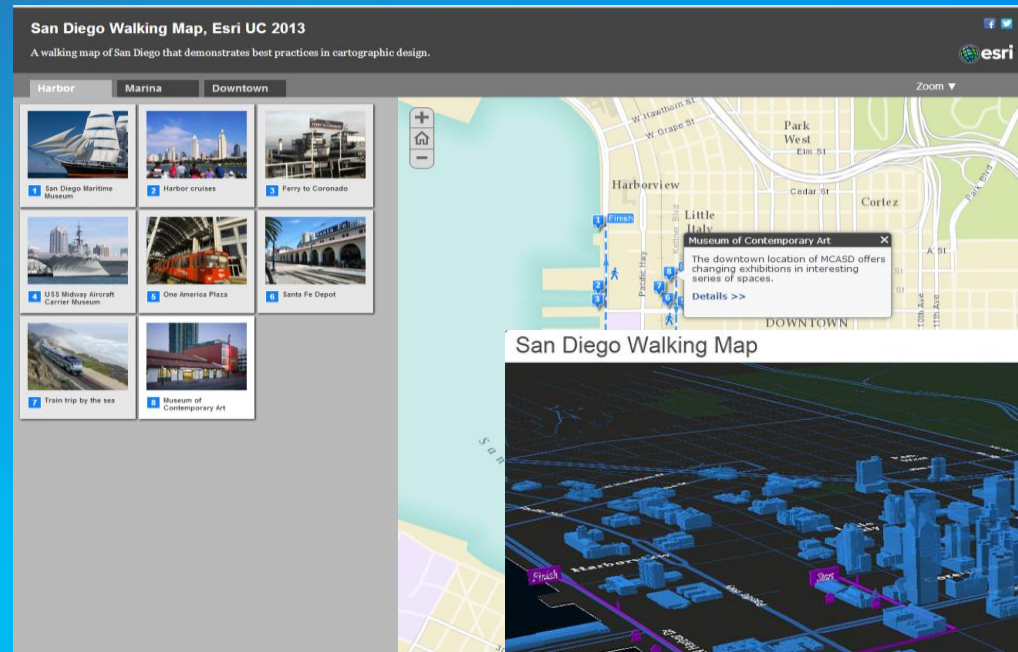
Pop-ups

Dynamic legends

Sliders, clickable icons

Multi-media content

Credit and source



Demo: 2D/3D layout

Review the outcome



One more thing

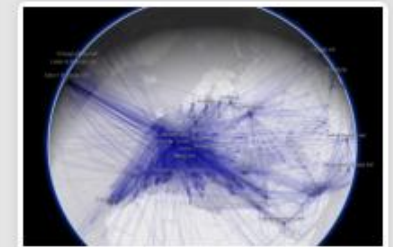
Actually...a few more things

carto.maps.arcgis.com

Compelling Cartography

Map Gallery to showcase examples of high quality map design in an online environment

Search maps



“Cartography” (forthcoming)

By Kenneth Field and Damien Saunder

Other sessions

Best Practices in Map Design

Full throttle Mapping

Mapping Statistical Data

3D Cartographic Techniques

Creating Beautiful Terrain Maps

Thank you...

- Please fill out the session survey:

First Offering ID: 1586

Second Offering ID: 1619

kfield@esri.com
dsaunder@esri.com



@kennethfield
@damiensaunder



Understanding our world.