



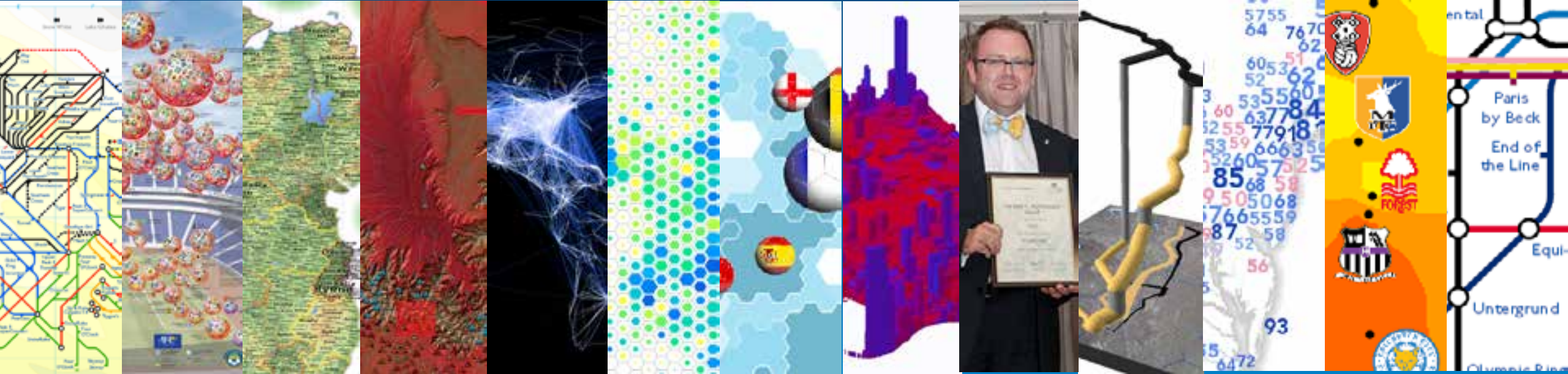
Best Practices for Map Design

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Damien Saunder

Technical Workshop

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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

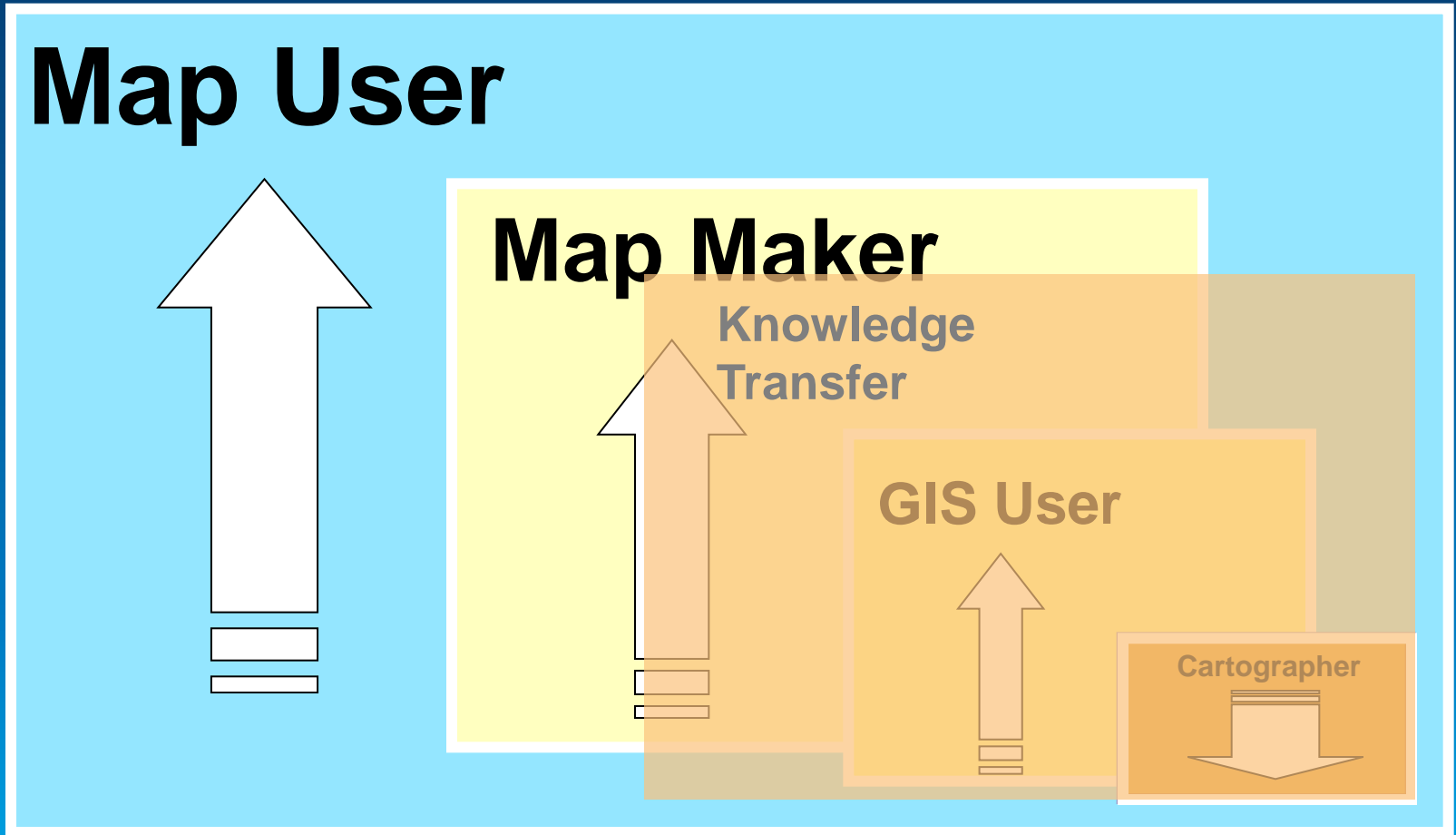
R

A

P

H

Y why?

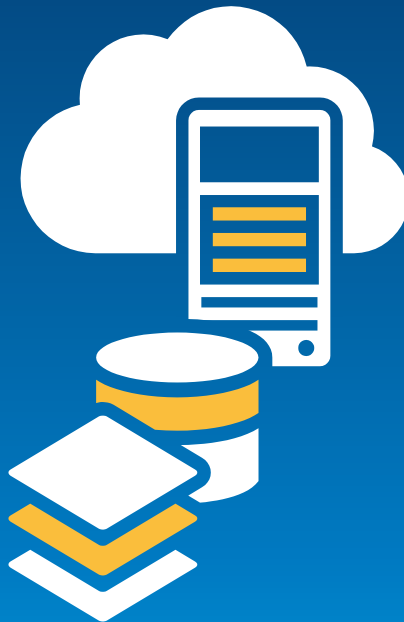


Design is crucial to communication in cartography

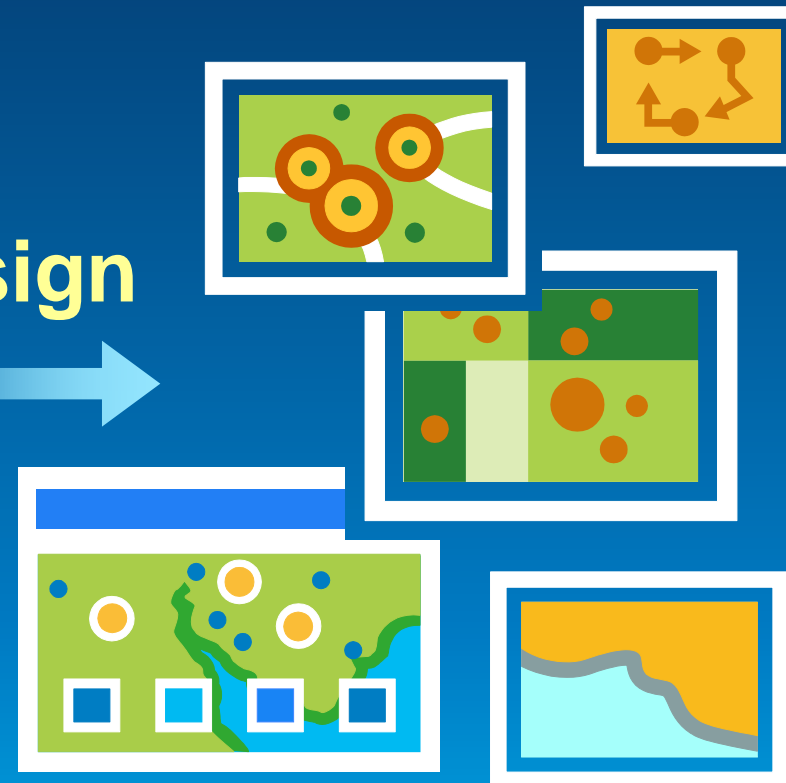
Large database

Equal
Treatment

No inherent
design



Design



Data
Processing

Function

Meaning

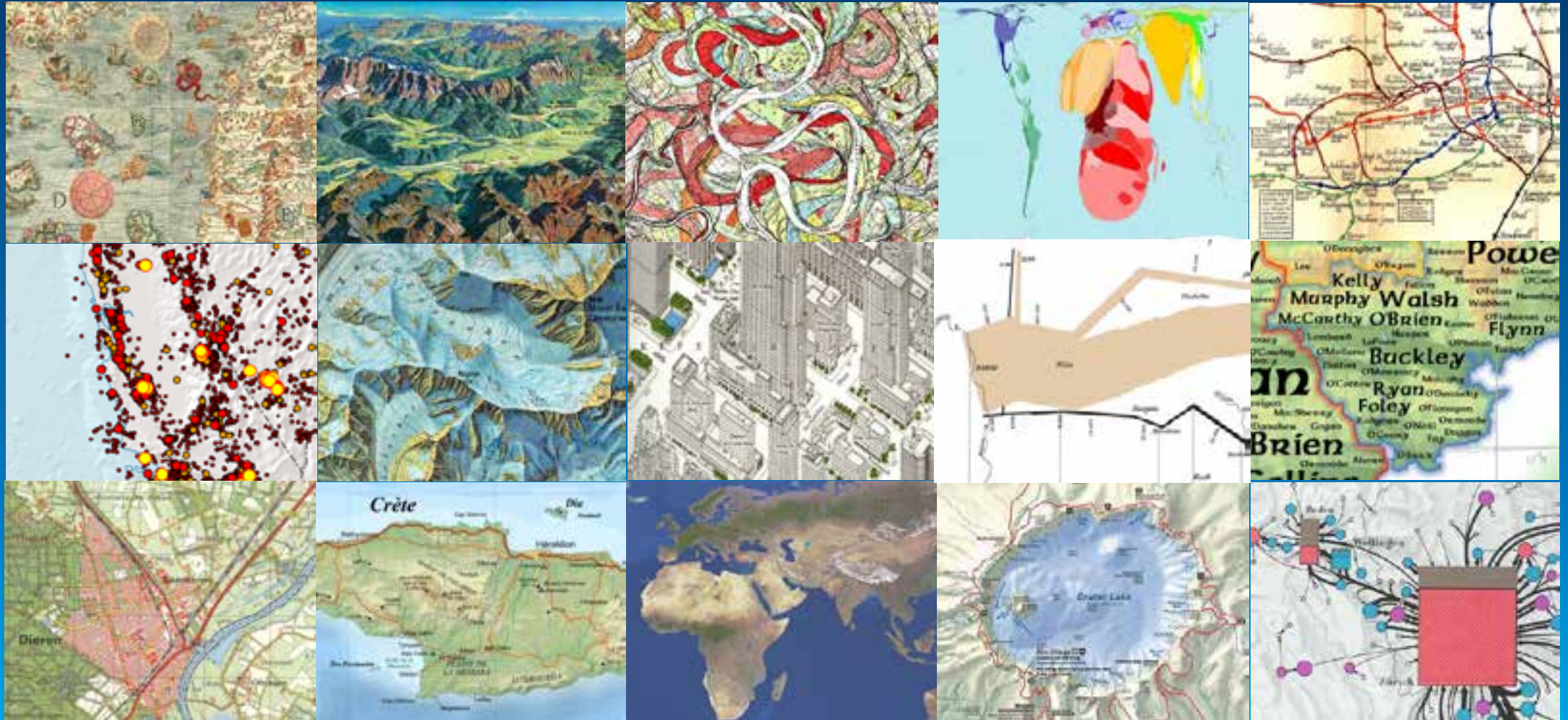
The design process



Why make the map?

Cartographic requirement

What's the story?

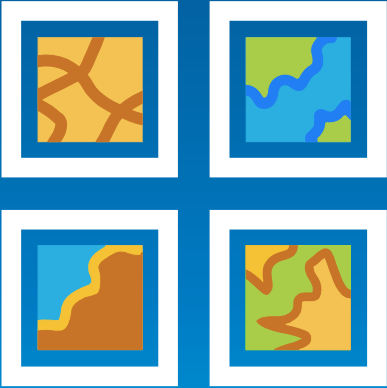


Speaking in graphical tongues

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

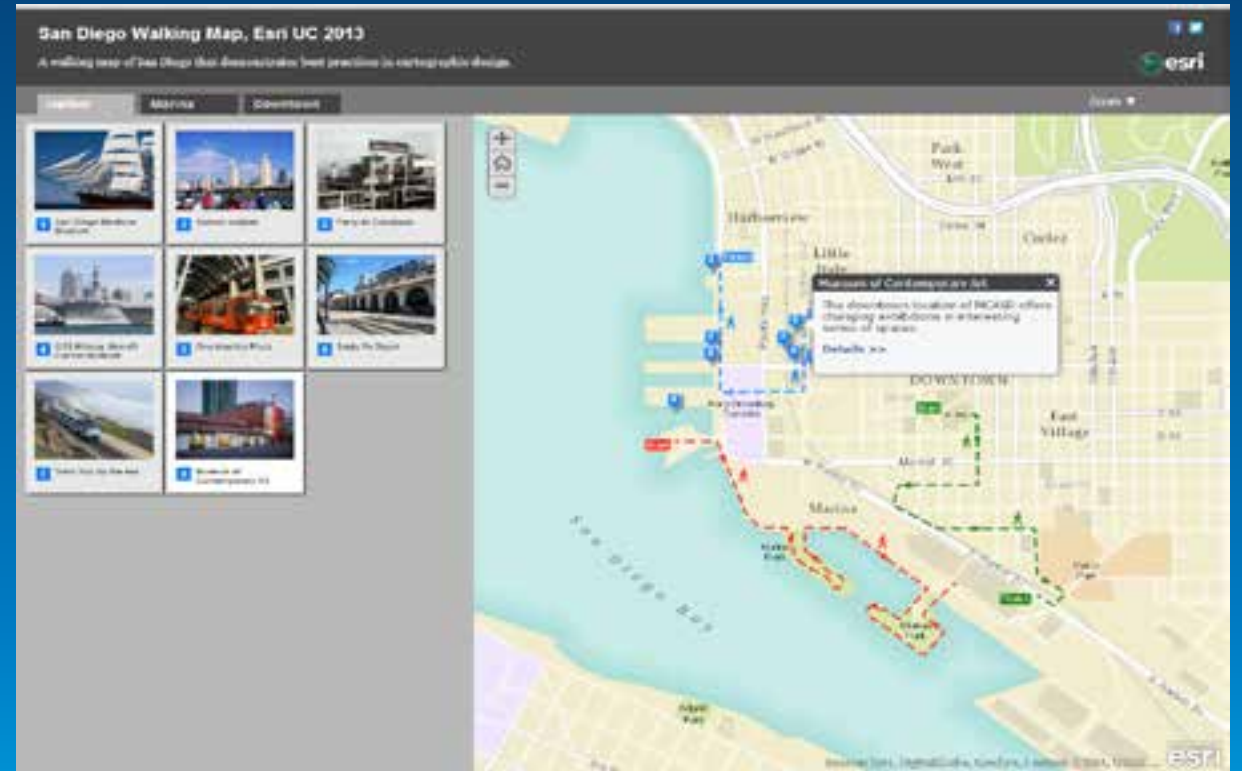


Demo: Requirement

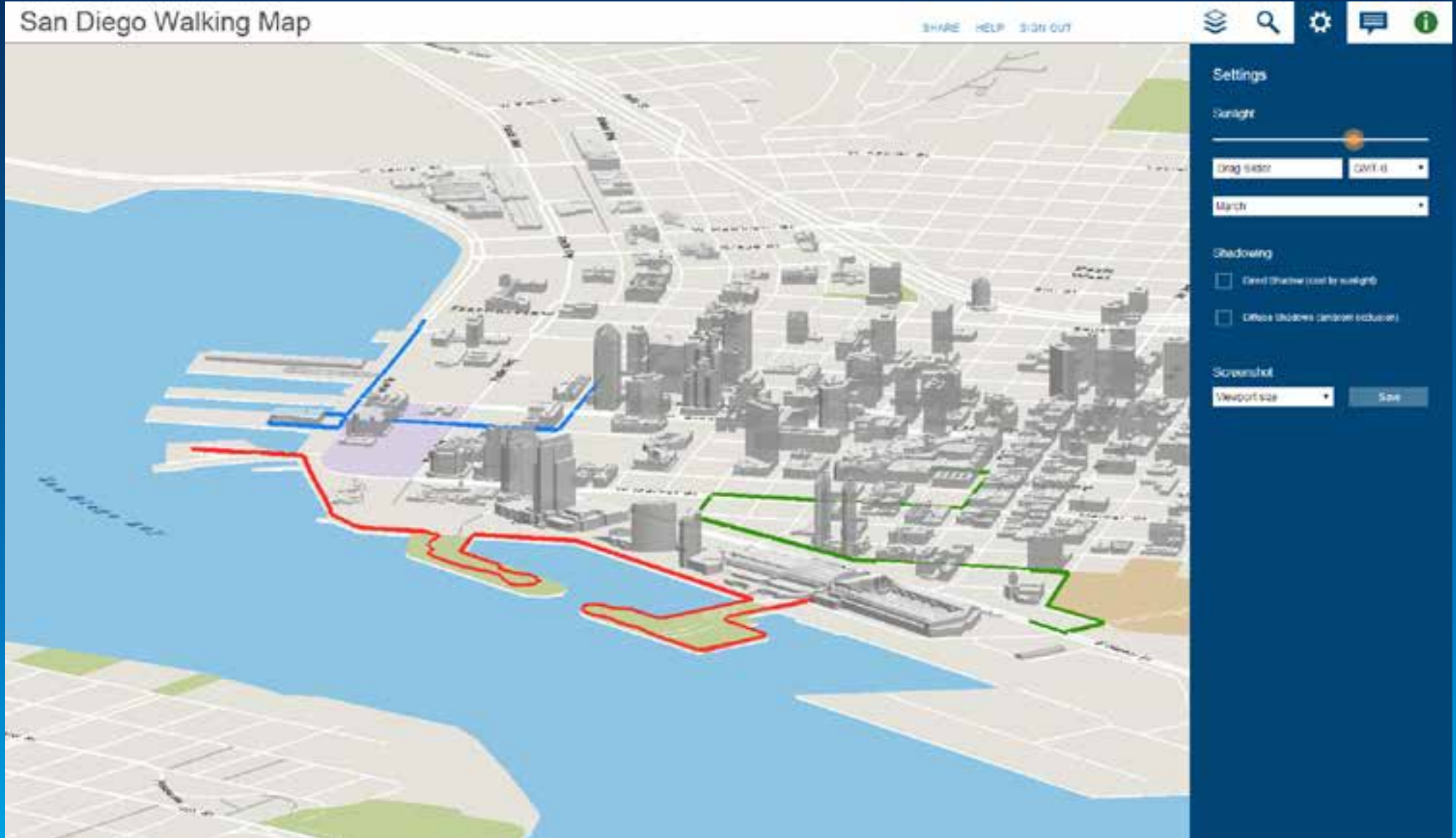
2011/12



2013

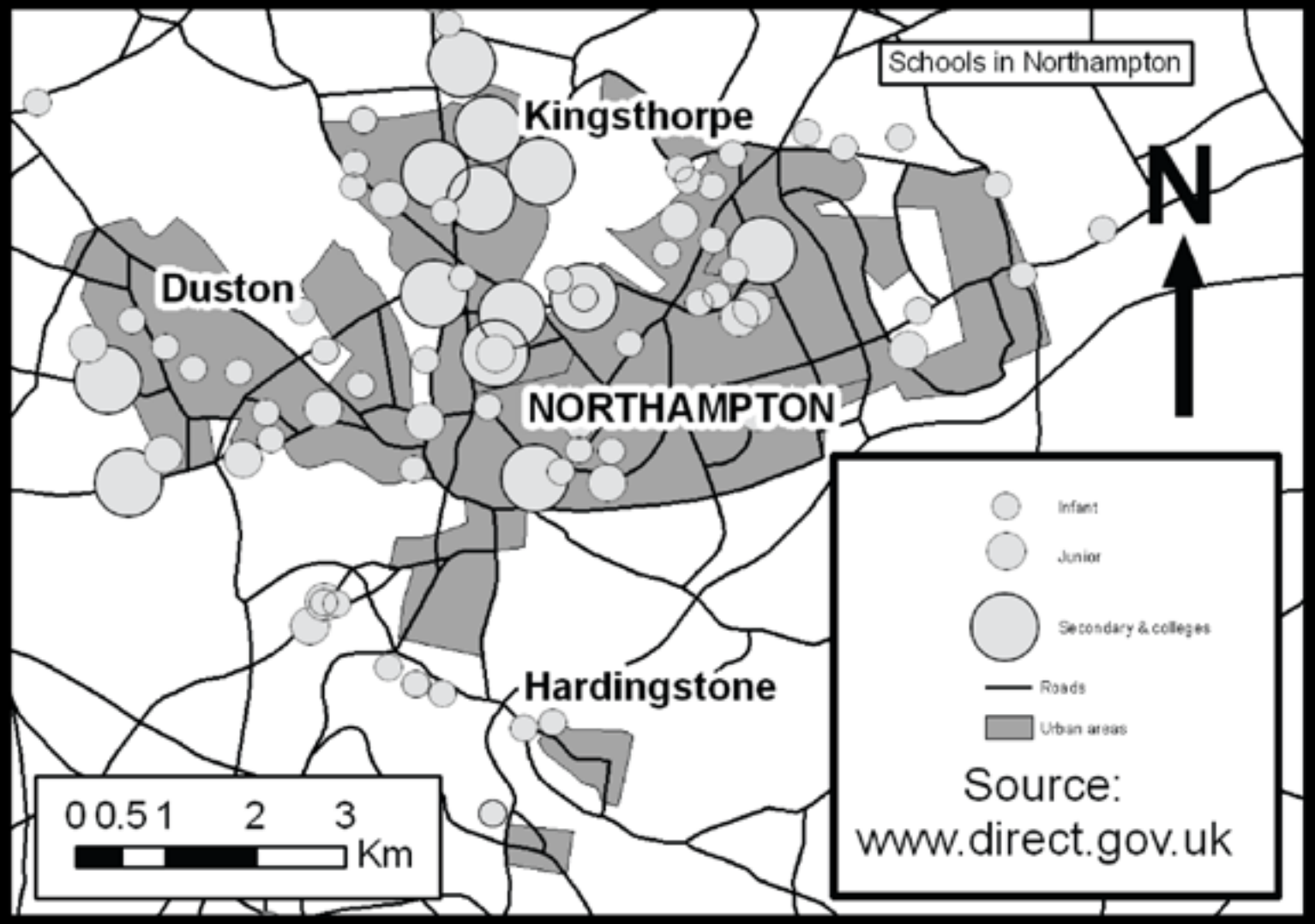


2014

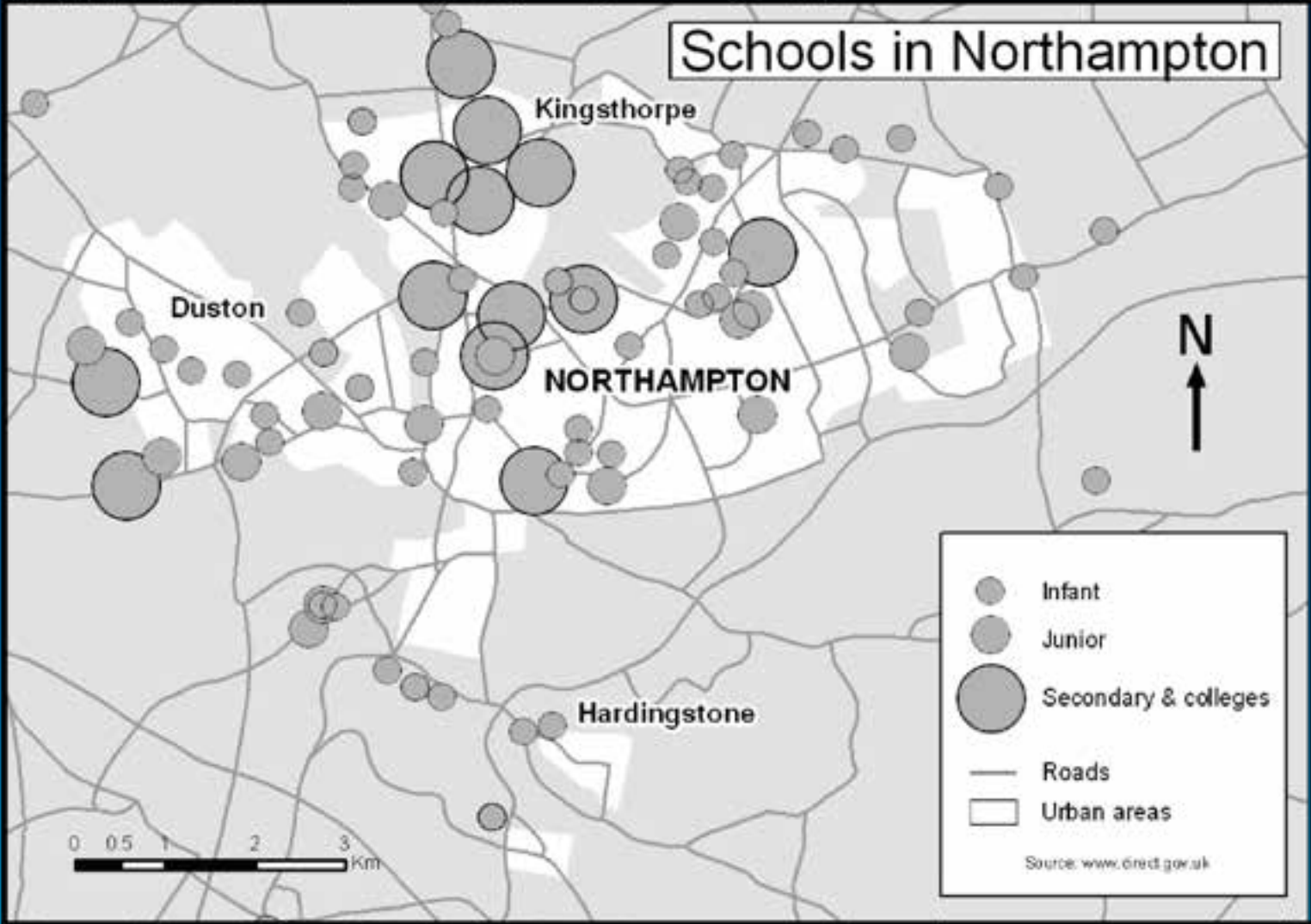


Getting to grips with design

Visual hierarchy



Visual hierarchy



Demo: Visual hierarchy

Visual contrast

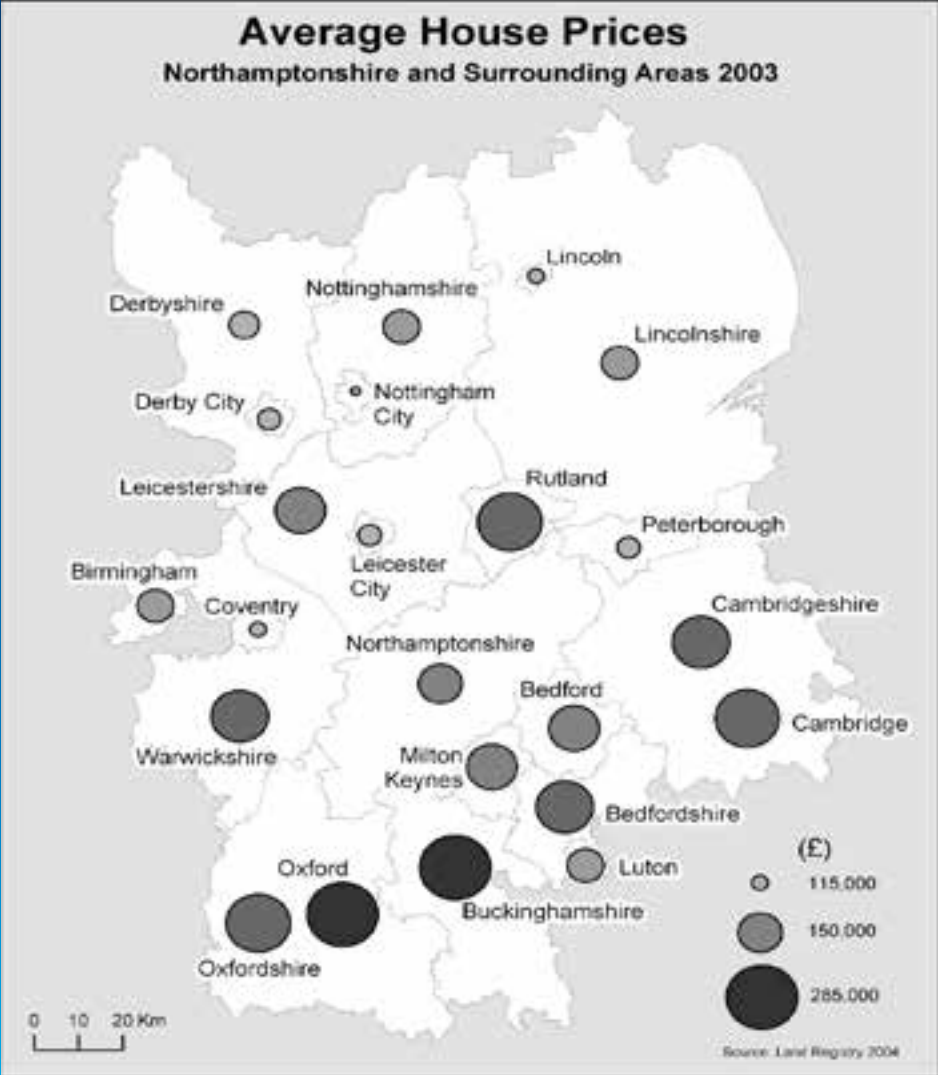
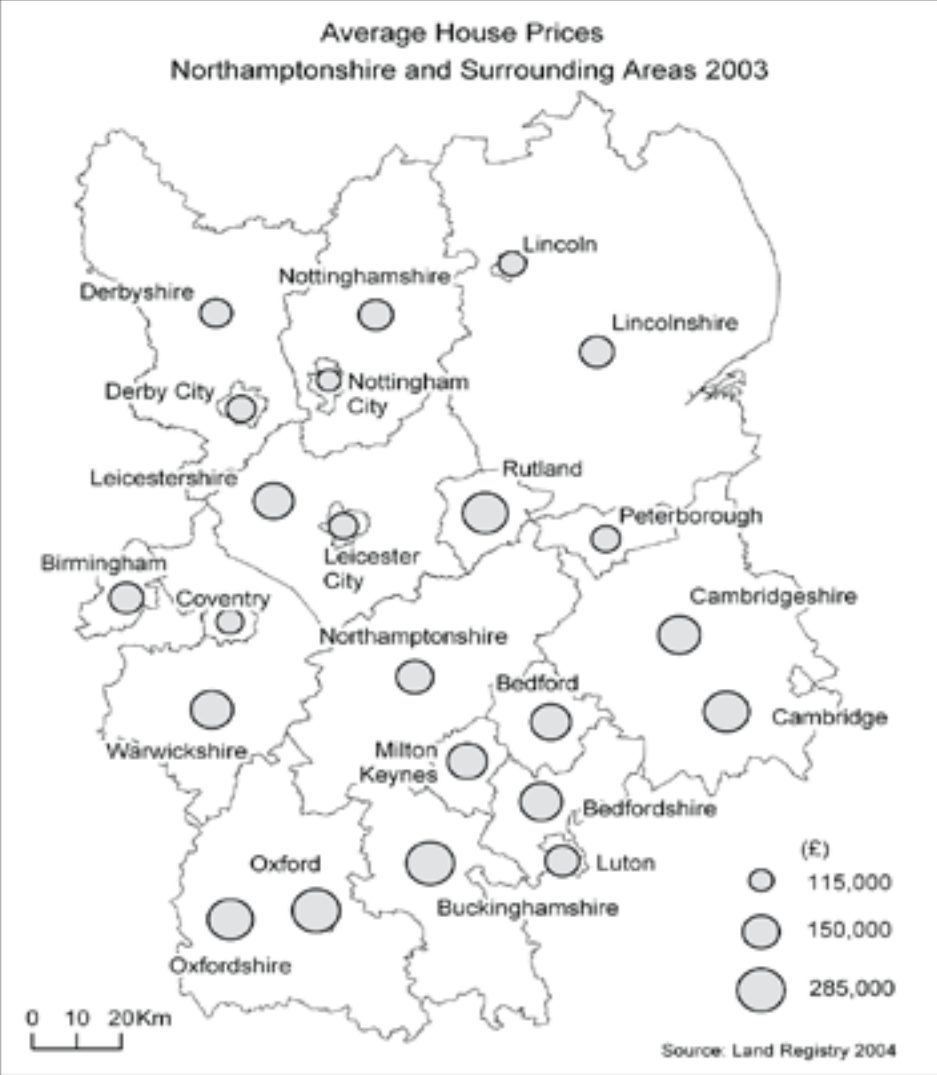
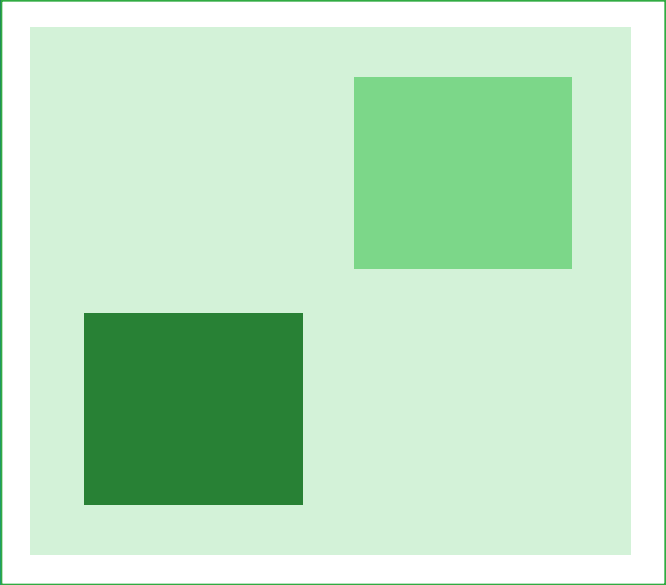


Figure-ground



Demo: Figure-ground

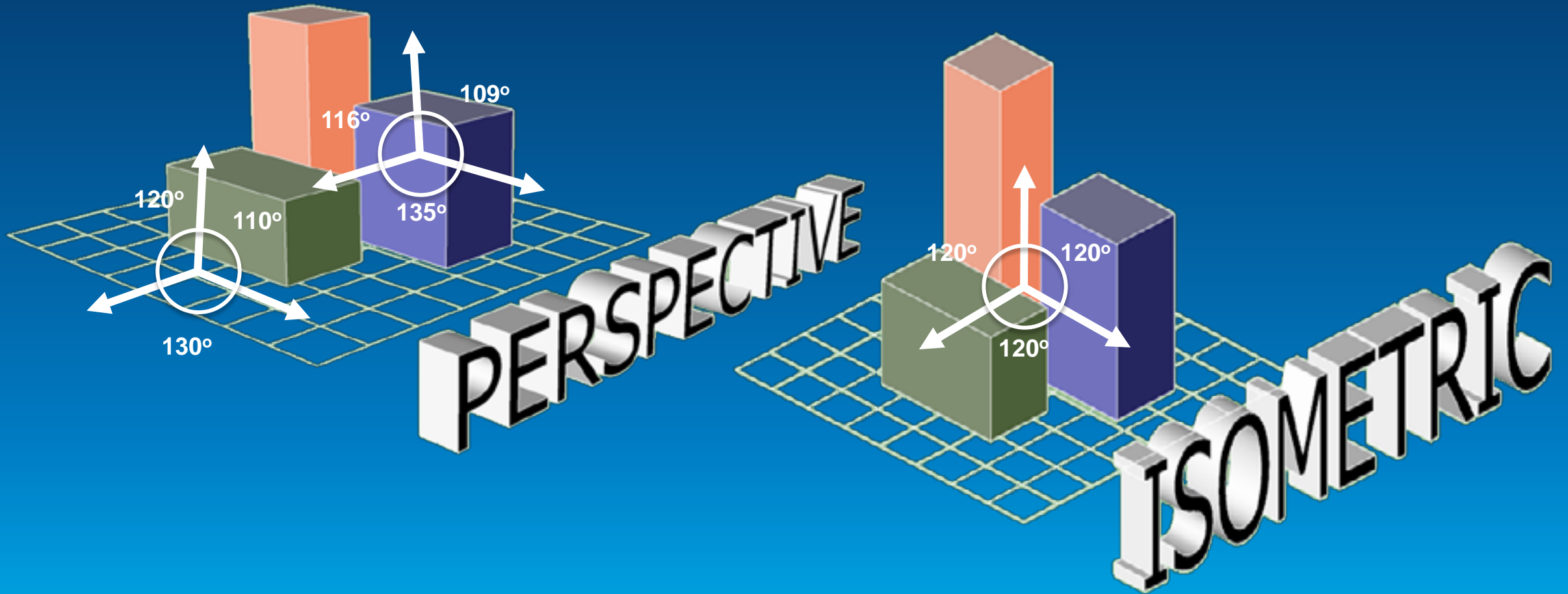
Projections

WGS 1984 Web Mercator (Auxiliary Sphere)



ArcGIS Online
Bing
OSM
Google

Projections



Demo: Projection

Symbol palette

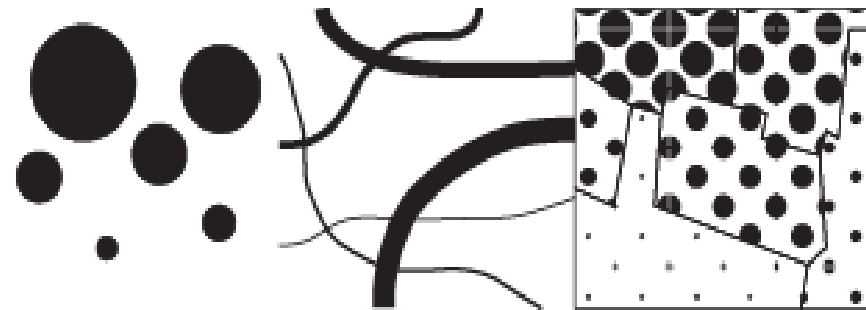
spacing



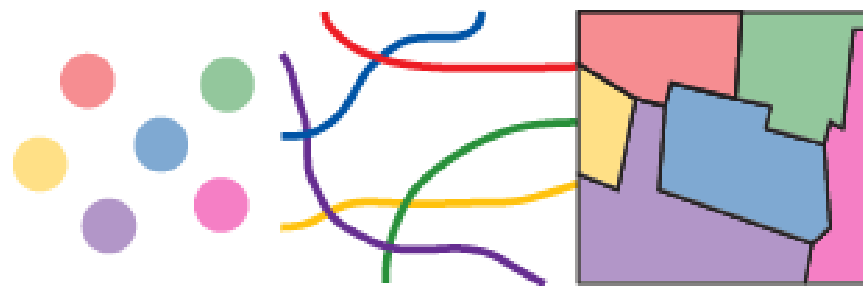
orientation



size



hue











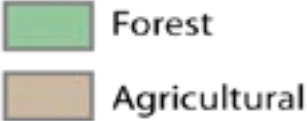









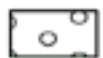










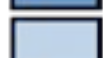


shape



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

Small
scale

1:18,489,298



1:144,448

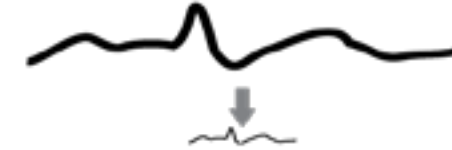


1:4,514



Feature generalization

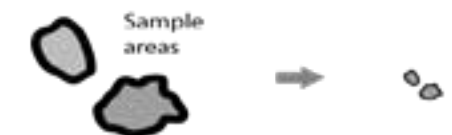
Simplify



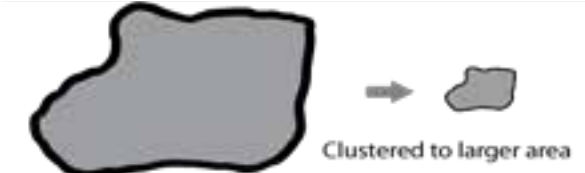
Smooth



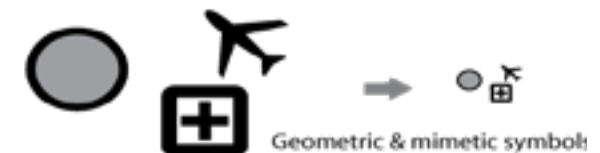
Aggregate



Amalgamate



Collapse

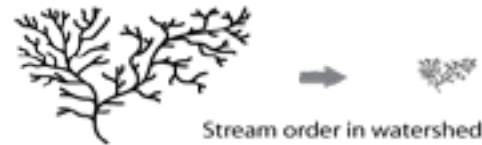


Feature generalization

Merge



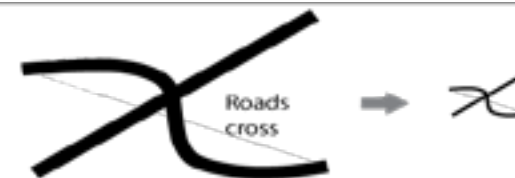
Refine



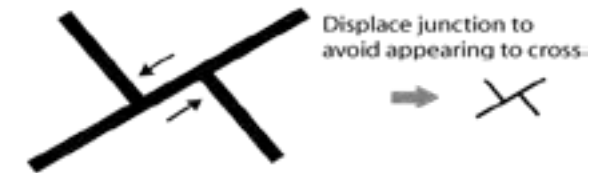
Exaggerate



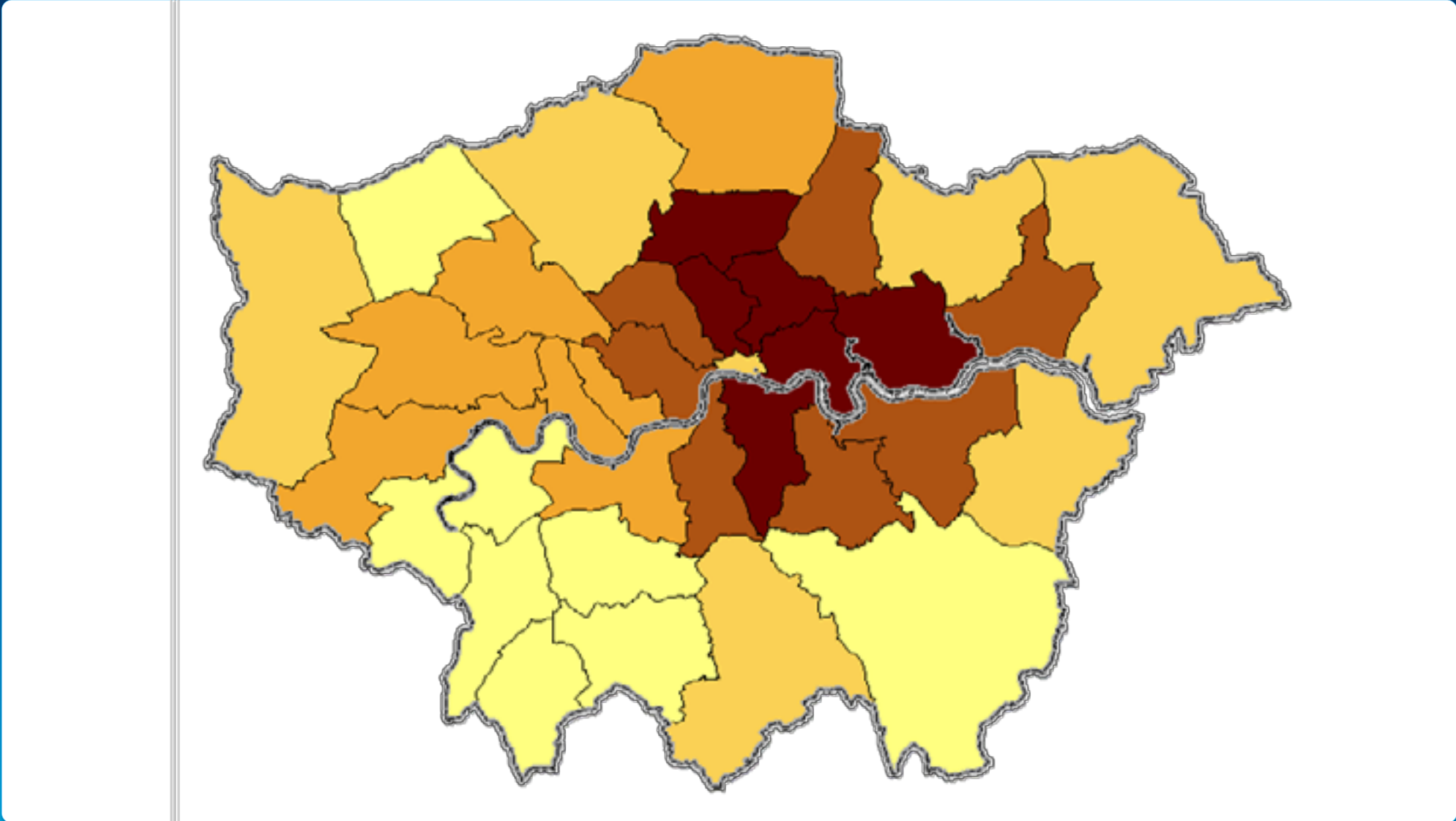
Enhance



Displace

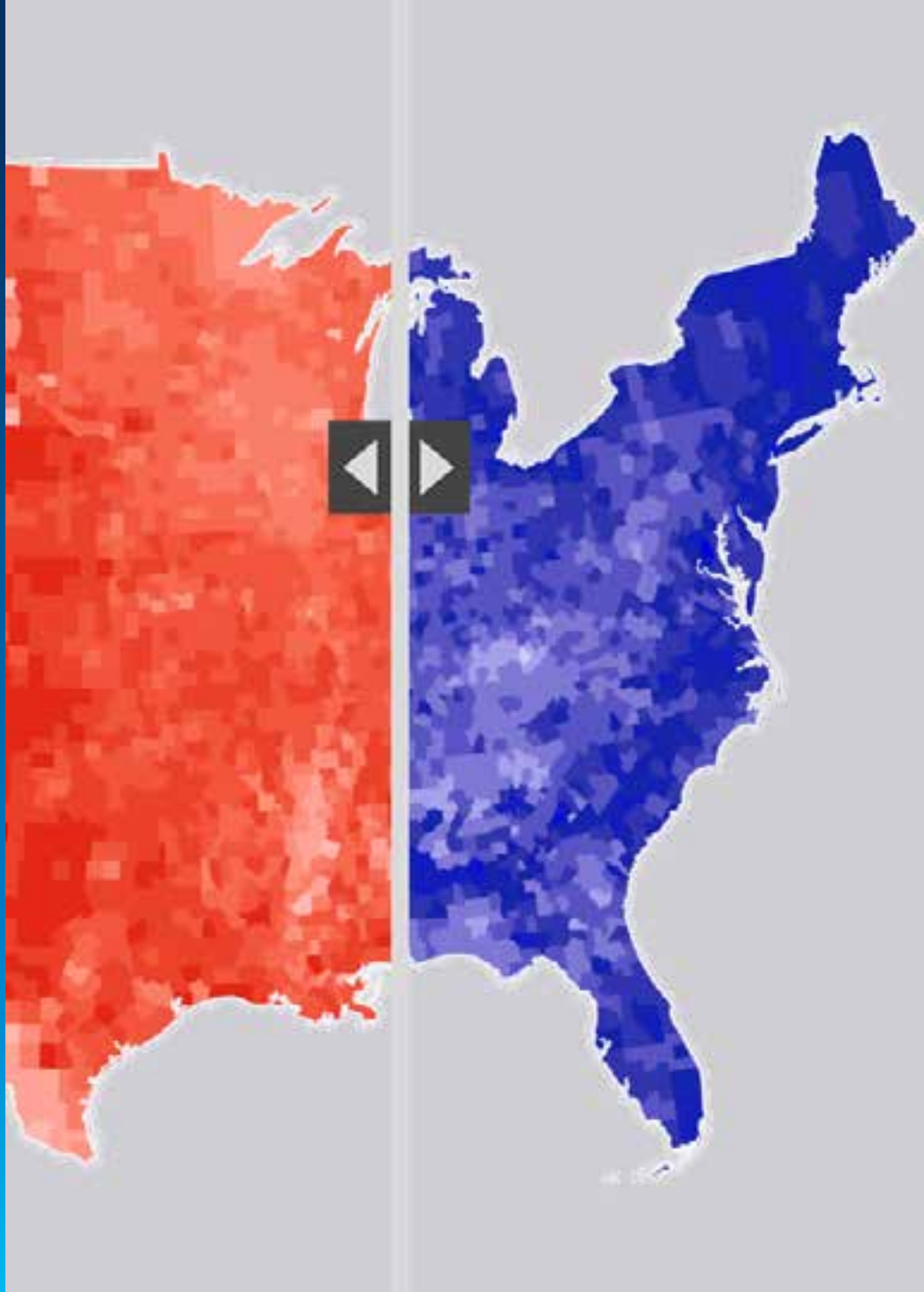
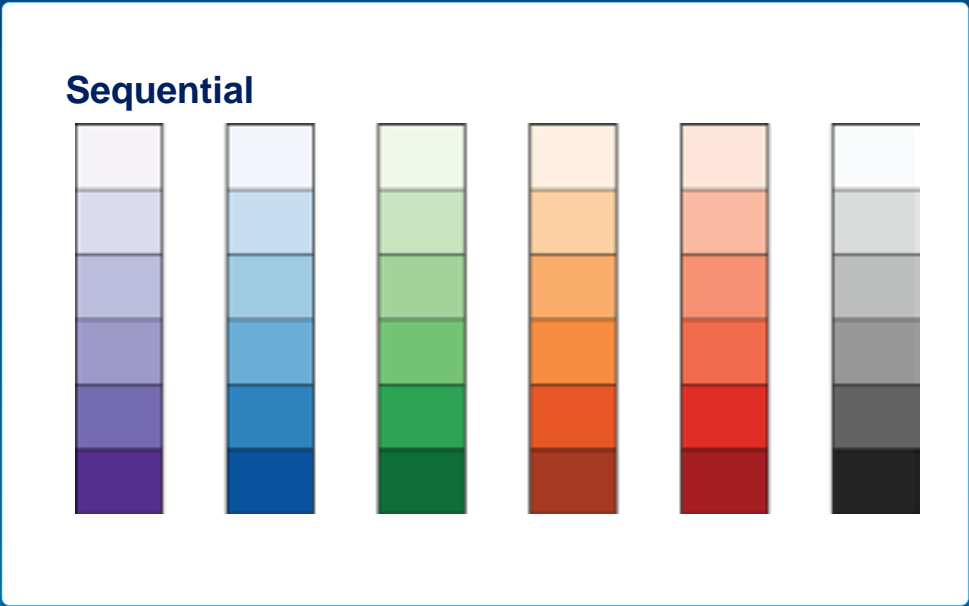


Classifying data

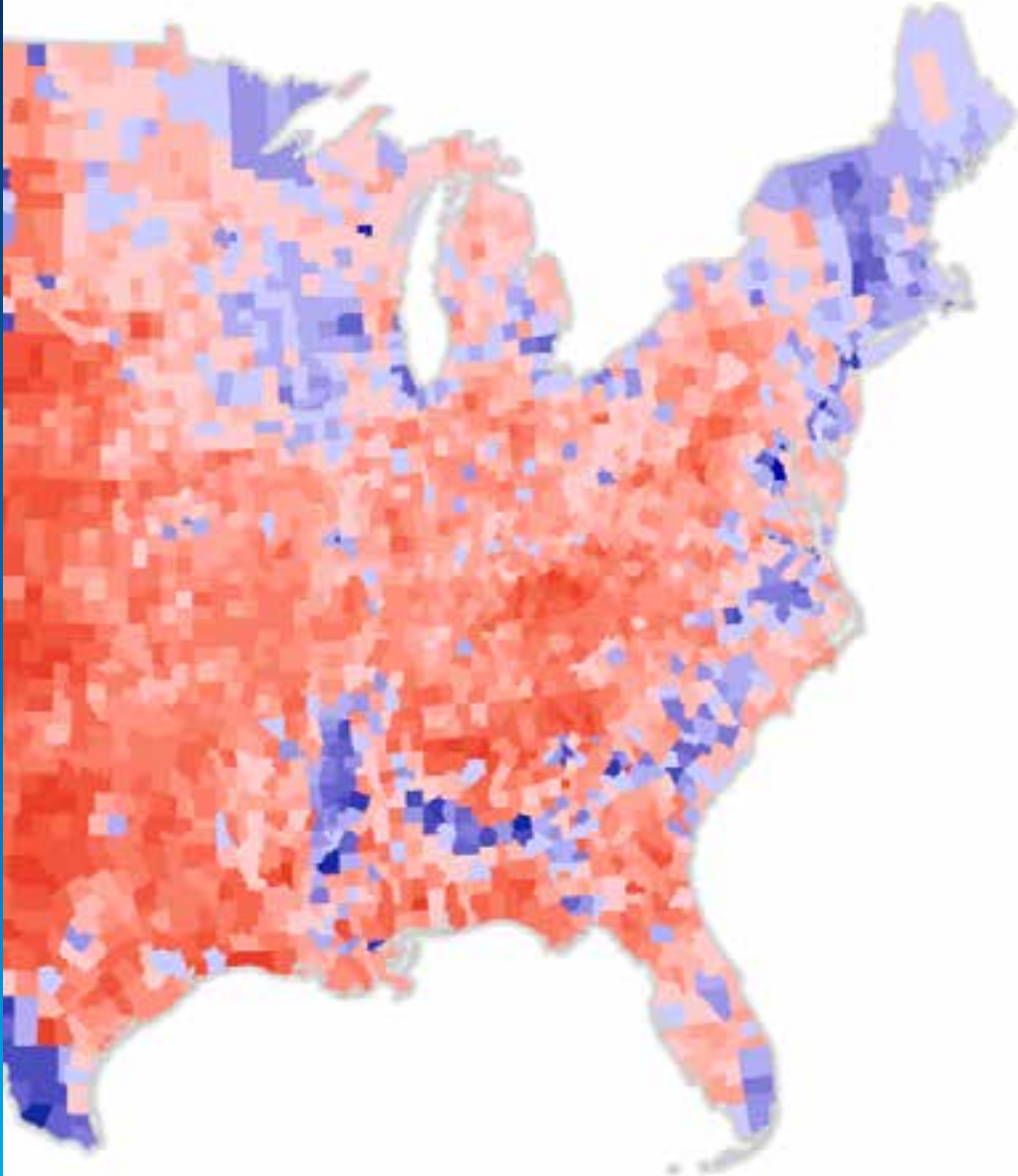
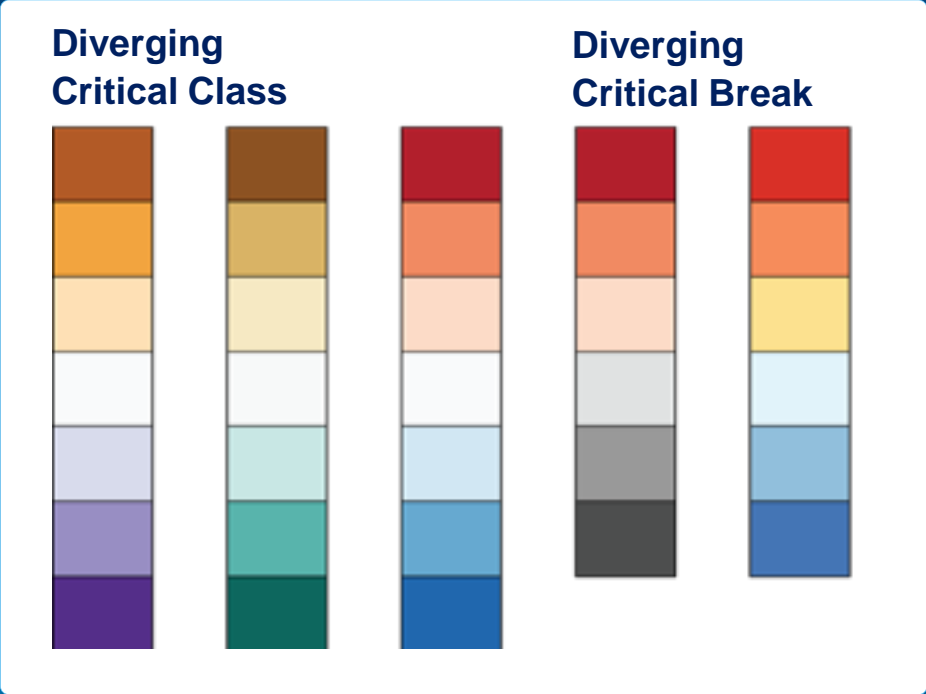


Demo: Feature generalization

Colour – sequential

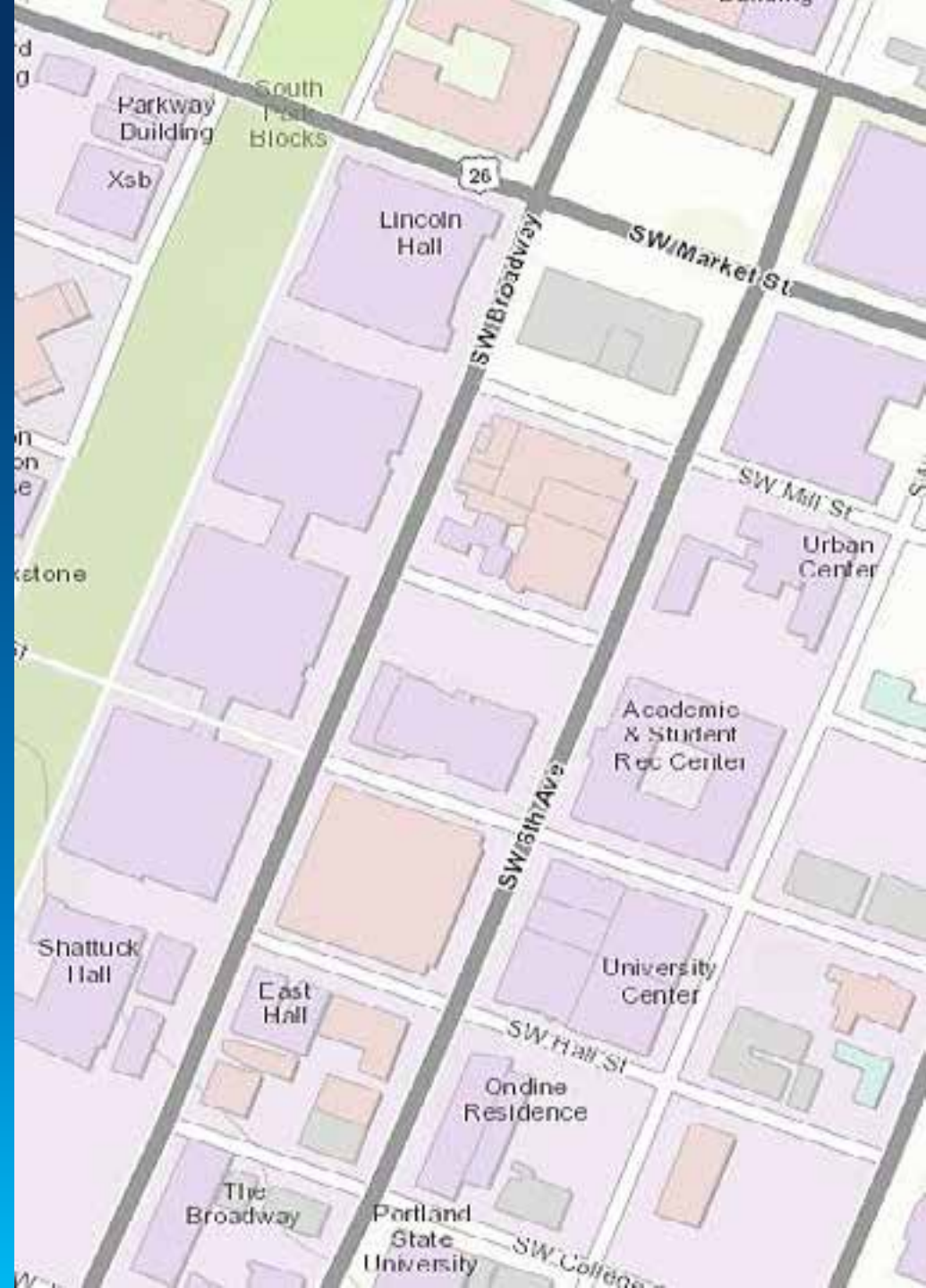
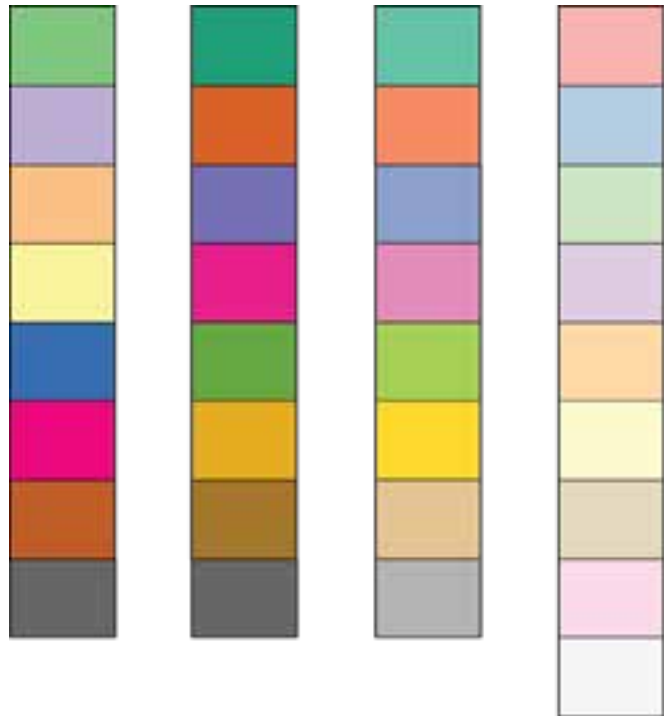


Colour – diverging



Colour – qualitative

Qualitative



Demo: Colour

Typography

Purpose



Size

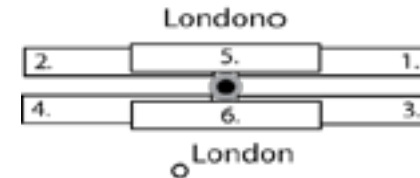
5 point 7 point
10 point 12 point
18 point
24 point

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

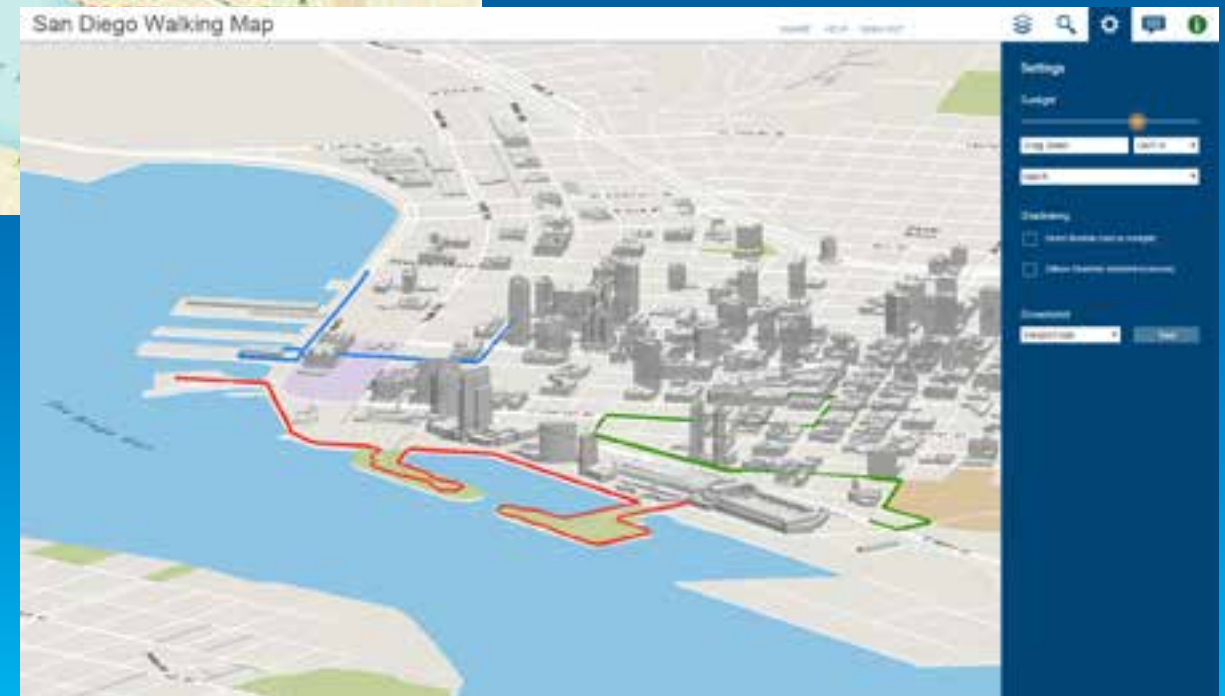
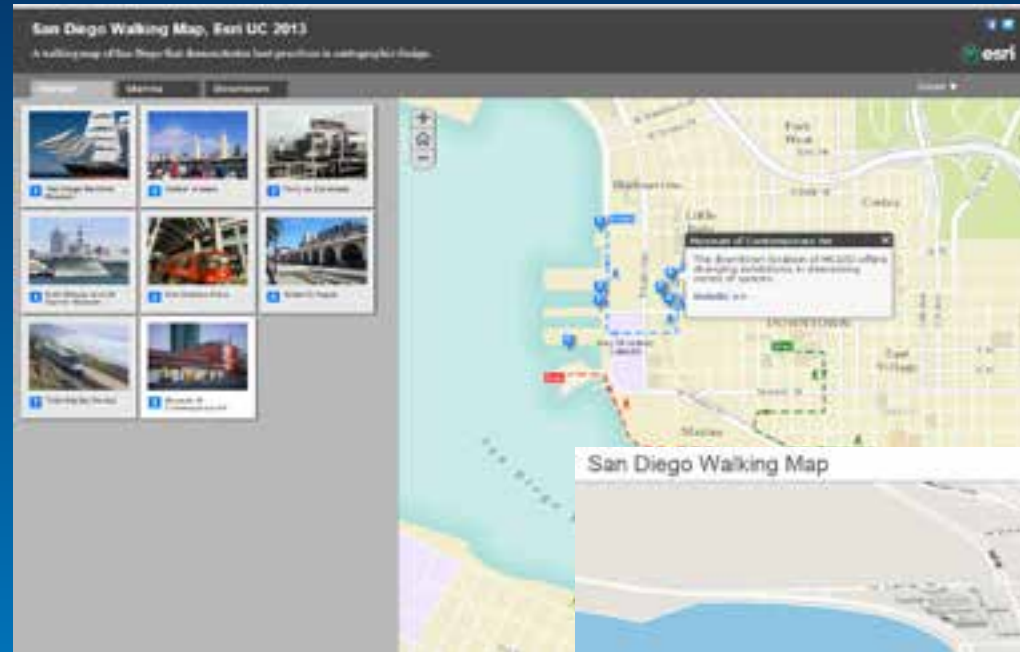
Pop-ups

Dynamic legends

Sliders, clickable icons

Multi-media content

Credit and source



Demo: 2D/3D layout

Review the outcome



Understanding our world.

kfield@esri.com
ddemaj@esri.com



@kennethfield
@damiensaunder

Thank you...

- **Please fill out the session survey:**

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Second Offering ID: 1675

Online – www.esri.com/ucsessionsurveys

Paper – pick up and put in drop box