

# Creative Vector Basemaps

ANDY SKINNER

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<http://esriurl.com/StylizedVectorMapsGroup>

How many of you have  
seen this web page on  
ArcGIS Online?

The screenshot shows the ArcGIS Online interface for the 'Sample Vector Tile Layers' group. The top navigation bar includes 'ArcGIS', 'Features', 'Plans', 'Gallery', 'Map', 'Scene', and 'Help'. A 'Sign In' button and a search bar are on the right. The main header is 'Sample Vector Tile Layers' with tabs for 'Overview', 'Content', and 'Members'. Below the header, there's a 'Refine Content' sidebar on the left with a tree view for 'Item Type' (Maps, Web Maps, Map Files, Layers, Scenes, Apps, Tools, Files) and filters for 'Data Modified' and 'Data Created'. The main content area shows a search bar and filters (1 - 15 of 15, Type: Web Maps, Clear All). Three map items are listed:

- A Children's Map**: Web Map by esri\_basemaps. Welcome to a Children's Map of the World. Last Updated: Jun 23, 2017. Created: May 30, 2017. 5 stars (ratings: 5), 5837 views.
- Autumn Canvas Map**: Web Map by esri\_basemaps. This vector web map provides a detailed basemap for the world, and is one of four with a neutral color palette inspired by the seasons. Last Updated: Dec 28, 2016. Created: Dec 28, 2016. 5 stars (ratings: 0), 848 views.
- Colored Pencil Map**: Web Map by esri\_basemaps. This vector web map provides a detailed basemap for the world featuring a hand-drawn look like it was created using colored pencils. Last Updated: Jun 20, 2017. Created: Jan 5, 2017. 5 stars (ratings: 9), 5427 views.

# Sample Vector Tile Layers

Autumn  
Canvas

Human  
Geography  
Basemap

Black  
and  
White





# Sample Vector Tile Layers

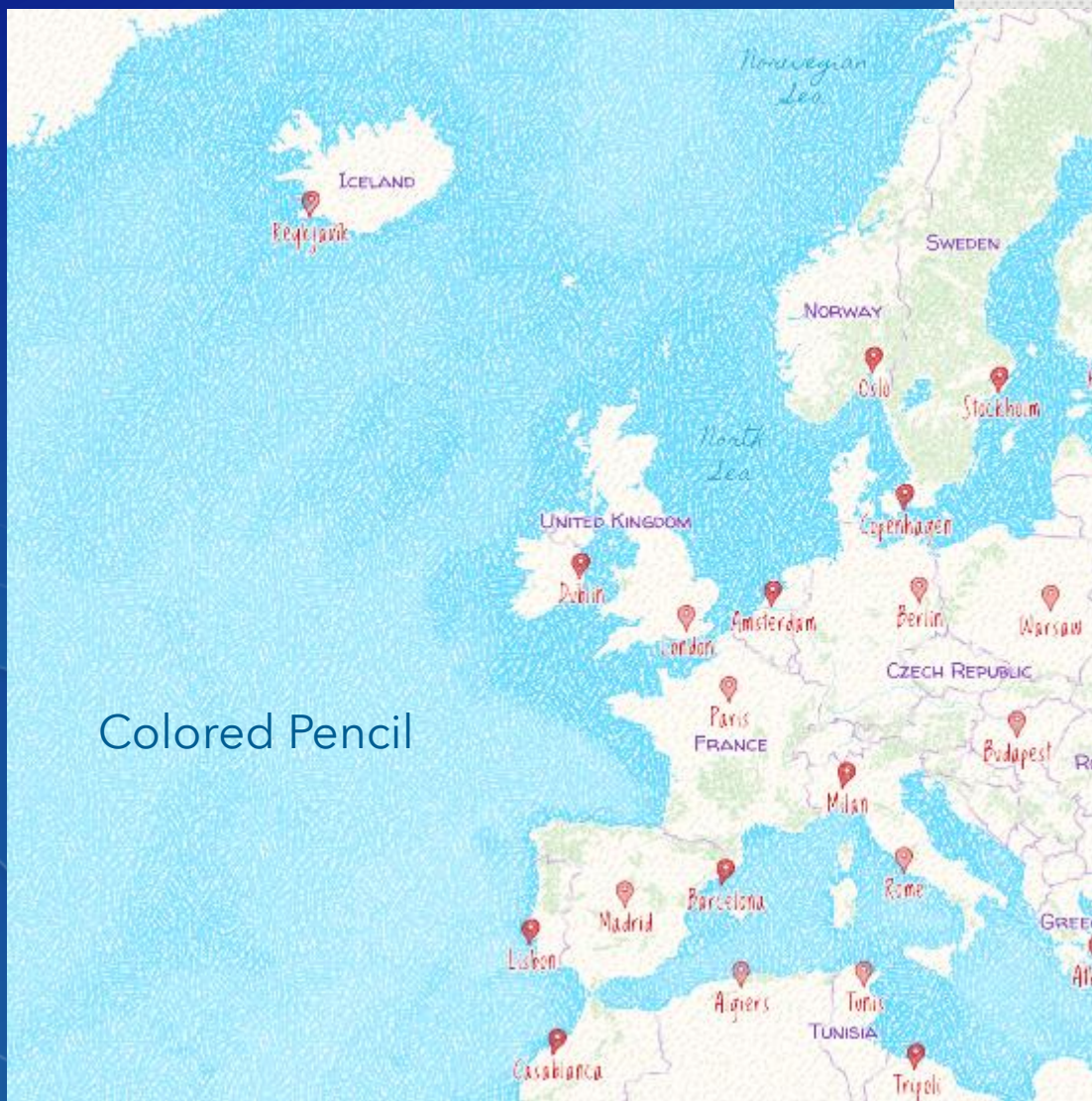
Newspaper



Mid-Century

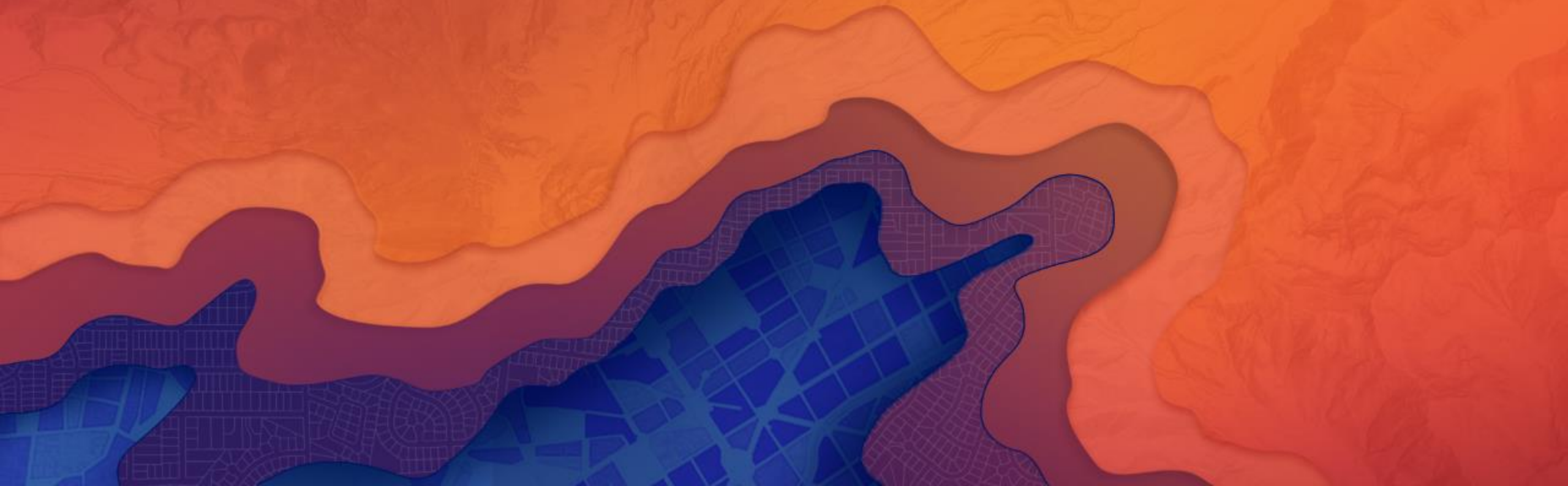


Colored Pencil





# Starting Out



# Requirements

A copy of one of our existing vector basemap layers or ...

ArcGIS Pro

... and a graphics drawing application that will allow you to create custom symbols

but most of all ...

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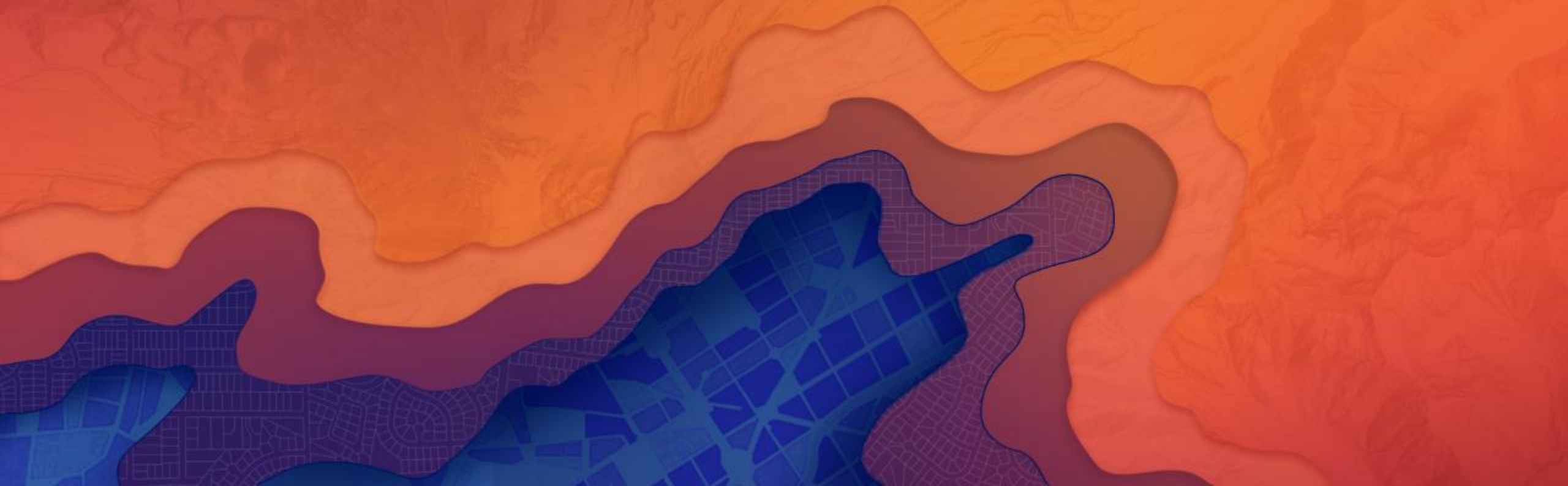


Imagination!

The word 'Imagination!' is rendered in a large, stylized font with a vibrant rainbow gradient. Each letter has a 3D effect with a shadow beneath it. The background features faint, white, wavy lines resembling topographic map contours.

# Changing Fonts

USING THE FONTS AVAILABLE IN OUR BASEMAPS





# Create your own copy of a layer

Sign in to your organizational account.

Search for 'basemaps' in the Living Atlas and choose one.

Make sure you pick a 'Vector Tile Layer'

Make a copy of the layer, and save it to your account.

Save a copy of the json and open it, or open the layer into a map editor app.

We've got a couple in beta:

<http://esri.github.io/arcgis-vectortile-style-editor/#>

<https://maps.esri.com/jg/VectorBasemapStyleEditor/index.html>

Available Fonts for use  
with Esri Vector Basemaps  
<http://esriurl.com/VectorRefDoc>

Arial

Avenir Next

Oswald

Just Another Hand

Belleza

Cabin Sketch

Noto Sans  
Noto Serif

Ubuntu

Palatino Linotype

Special Elite

Ubuntu Condensed

Ubuntu Mono

SYNCOPE

Redressed

Josefin Slab

Playfair Display

PLAYFAIR DISPLAY SC



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syn

Redressed

Josefin Slab

#### Esri Vector Basemaps Resources\Fonts

For each of the [Esri Vector Basemap Tile Layers](#) updated on May 3, 2017, there is a corresponding set of fonts available to use with the layers. Here is a list of 64 fonts currently in the fonts resources directory.

Open source fonts: [http://scripts.sil.org/cms/scripts/page.php?site\\_id=ori&id=OFL](http://scripts.sil.org/cms/scripts/page.php?site_id=ori&id=OFL)

The root.json style file already applies the fonts for how the map features will display. These are the current fonts possible for display in the Esri Vector Basemaps. The exact name (spaces and all) must be used when changing fonts.

Arial Bold	Josefin Slab Regular	Playfair Display Regular
Arial Bold Italic	Josefin Slab SemiBold	Playfair Display SC Bold
Arial Italic	Josefin Slab SemiBold Italic	Playfair Display SC Regular
Arial Regular	Josefin Slab Thin	Redressed Regular
Arial Unicode MS Bold	Josefin Slab Thin Italic	Special Elite Regular
Arial Unicode MS Regular	Just Another Hand Regular	Syncopate Bold
AvenirNext LT Pro Light Italic	Noto Sans Bold	Syncopate Regular
AvenirNext LT Pro Light Regular	Noto Sans Bold Italic	Ubuntu Bold
AvenirNext LT Pro Medium Bold	Noto Sans Italic	Ubuntu Bold Italic
AvenirNext LT Pro Medium Bold Italic	Noto Sans Regular	Ubuntu Condensed Regular
AvenirNext LT Pro Regular Bold	Noto Serif Bold	Ubuntu Italic
AvenirNext LT Pro Regular Bold Italic	Noto Serif Bold Italic	Ubuntu Light Bold
AvenirNext LT Pro Regular Italic	Noto Serif Italic	Ubuntu Light Bold Italic
AvenirNext LT Pro Regular Regular	Noto Serif Regular	Ubuntu Light Italic
Belleza Regular	Oswald Bold	Ubuntu Light Regular
Cabin Sketch Regular	Oswald Light	Ubuntu Mono Bold
CabinSketch Bold	Oswald Regular	Ubuntu Mono Bold Italic
Josefin Slab Bold	Palatino Linotype Regular	Ubuntu Mono Italic
Josefin Slab Bold Italic	Playfair Display Black Regular	Ubuntu Mono Regular
Josefin Slab Italic	Playfair Display Bold	Ubuntu Regular
Josefin Slab Light	Playfair Display Bold Italic	
Josefin Slab Light Italic	Playfair Display Italic	

# Change Fonts

JSON  
map  
editor

Sign OutApply StyleUndoResetSave?▾

Style Reference

779780781782783784785786787788789790791792793794795796797798799800801802803804805806807808809810811812813814815816817818819820821822823824

```
      "text-halo-width": 1.33,
      "text-halo-color": "#efefef"
    },
    "filter": [
      "==",
      "_symbol",
      4
    ],
    "source": "esri",
    "source-layer": "City small scale",
    "maxzoom": 10,
    "type": "symbol",
    "id": "City small scale/large admin0 capital"
  },
  {
    "layout": {
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      "symbol-avoid-edges": true,
      "text-allow-overlap": false,
      "icon-padding": 1,
      "text-padding": 1,
      "text-font": [
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      ],
      "text-anchor": "center",
      "icon-image": "City small scale/x large admin0 capital",
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      "text-size": 12,
      "text-max-width": 8
    },
    "paint": {
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      "text-halo-width": 1.33,
      "text-halo-color": "#efefef"
    },
    "filter": [
      "==",
      "_symbol",
      0
    ],
    "source": "esri",
    "source-layer": "City small scale",
    "maxzoom": 10,
    "type": "symbol",
    "id": "City small scale/x large admin0 capital"
  }
}
```


Q

+  
-  
+

LGRef\_for Font exercises

Find address or place

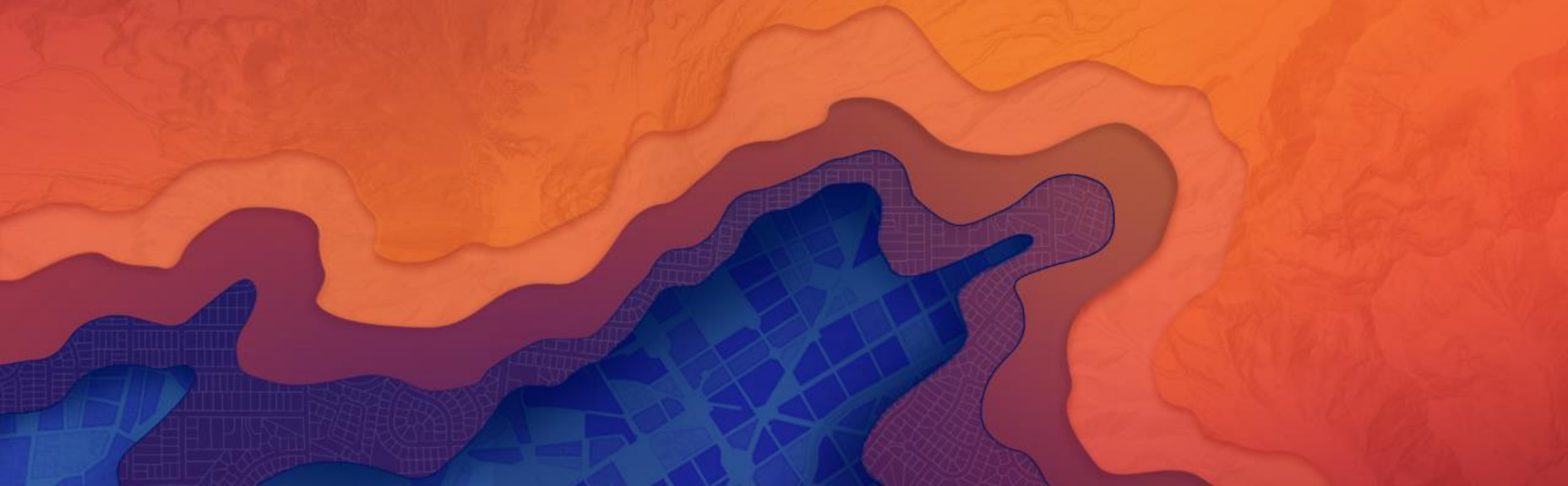
Q





# Creating Custom Symbols

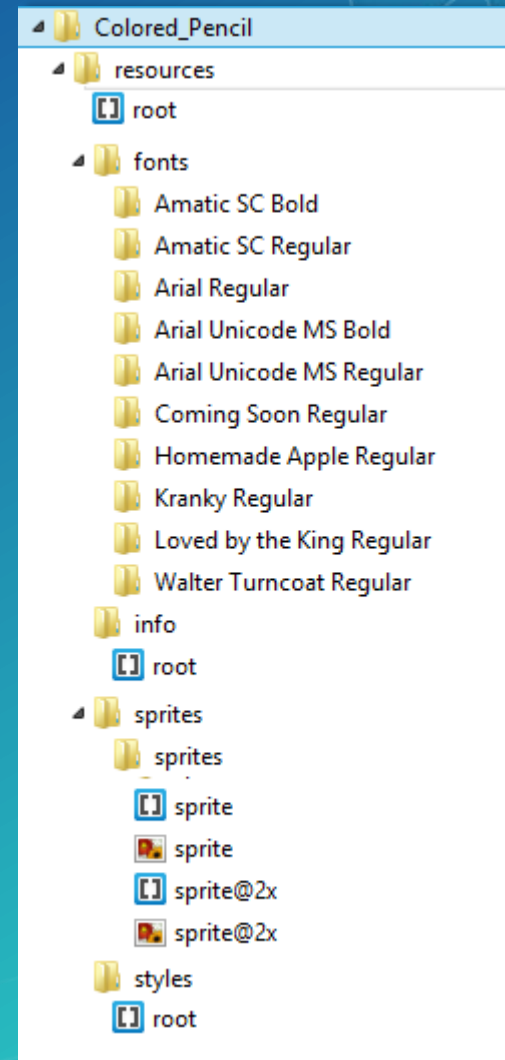
USING SPRITES TO ADD SPECIAL EFFECTS



# Build your map in ArcGIS Pro

Decide if you want to build a completed map, or a master document.

- Are the changes you need to make easily handled in the json?
- Are all of the fonts you require included?
- Can the derived maps be built using one set of sprites?

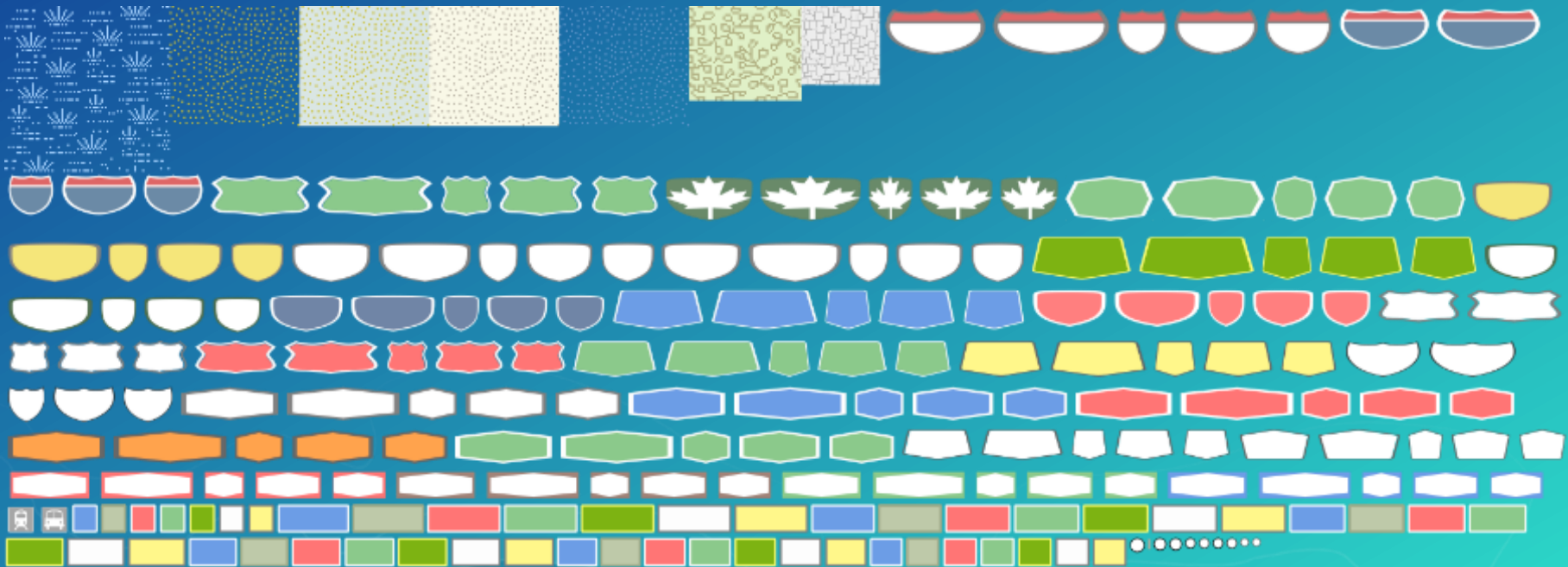




# Steps for customizing sprites

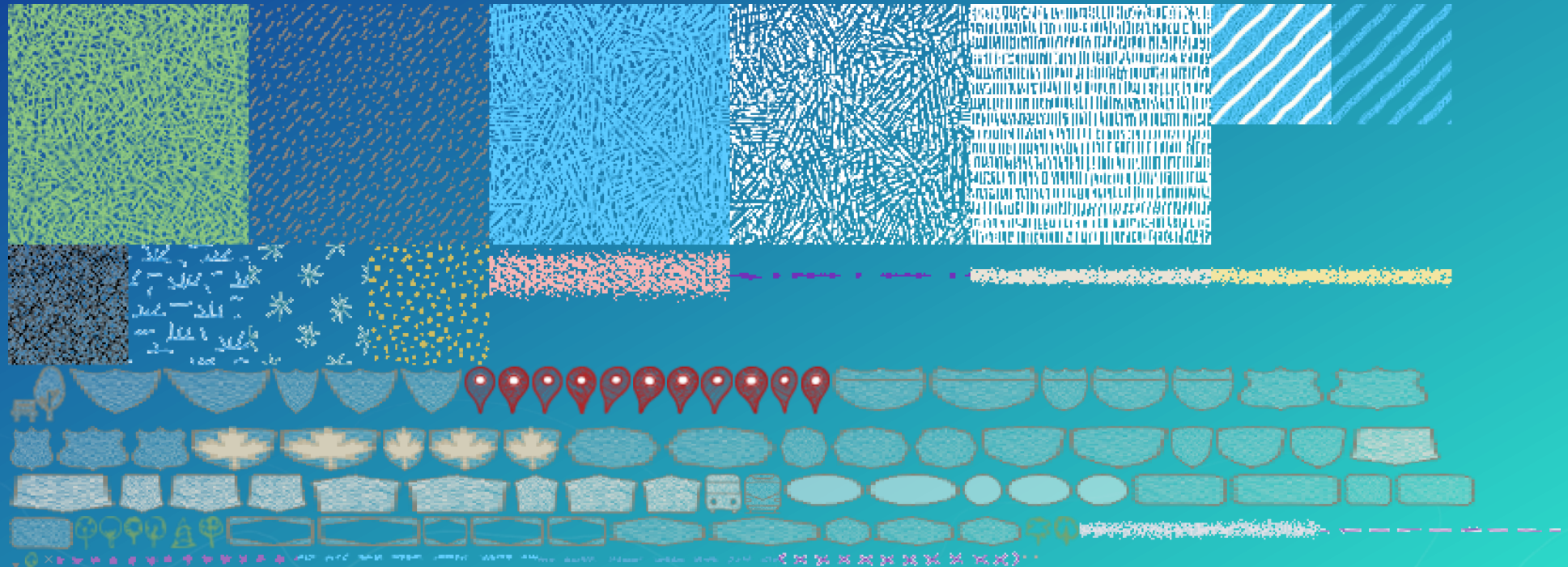
- Building the symbols
- Applying them in ArcGIS Pro
- Publishing a tile package

Sprites for the 'Street' Vector Basemap



# Sprites

## Sprites for the 'Colored Pencil' Vector Basemap





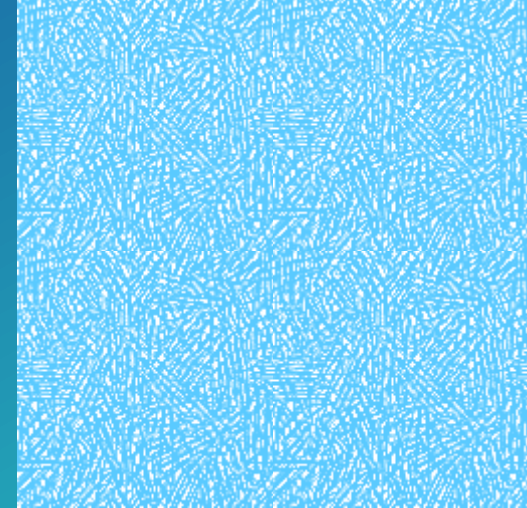
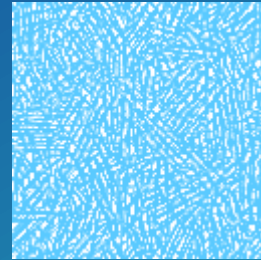
# Building the Symbols

Point symbols are straight forward – Use your imagination!



# Building the Symbols

Line and polygon symbols are not as simple as they may at first seem ...



# Building the Symbols

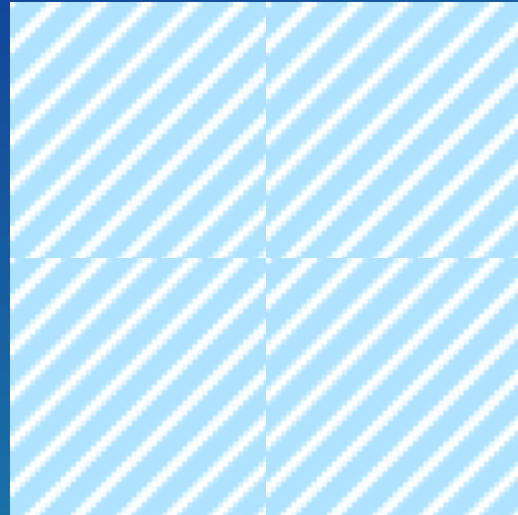
A cropped version of the hatched tile ...



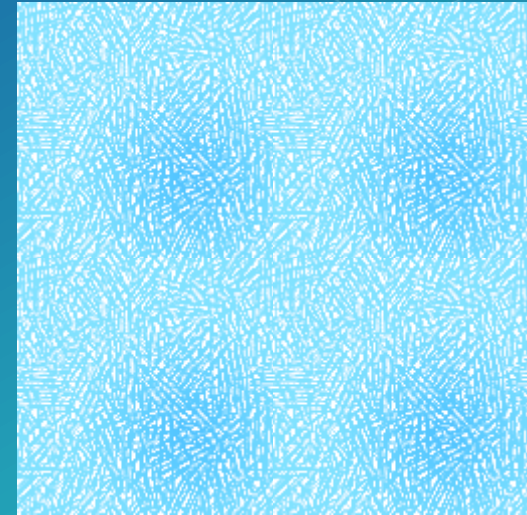
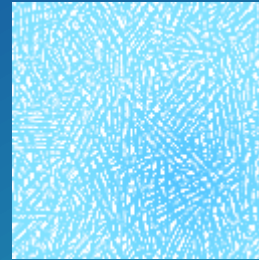


# Building the Symbols

A cropped version of the hatched tile ...

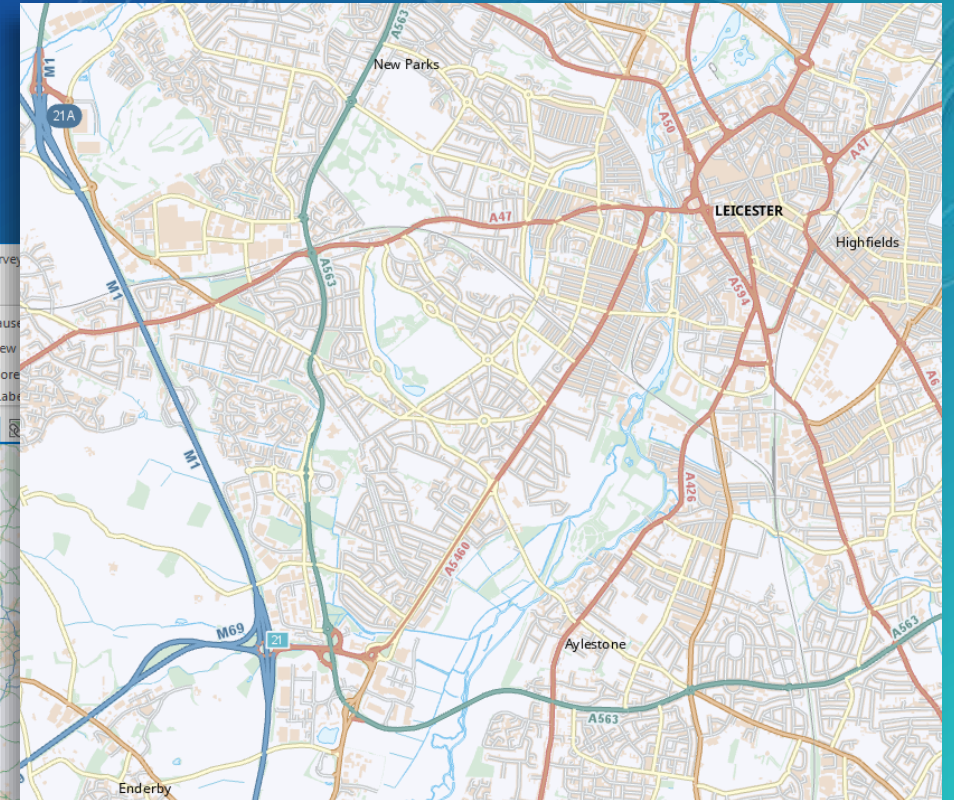
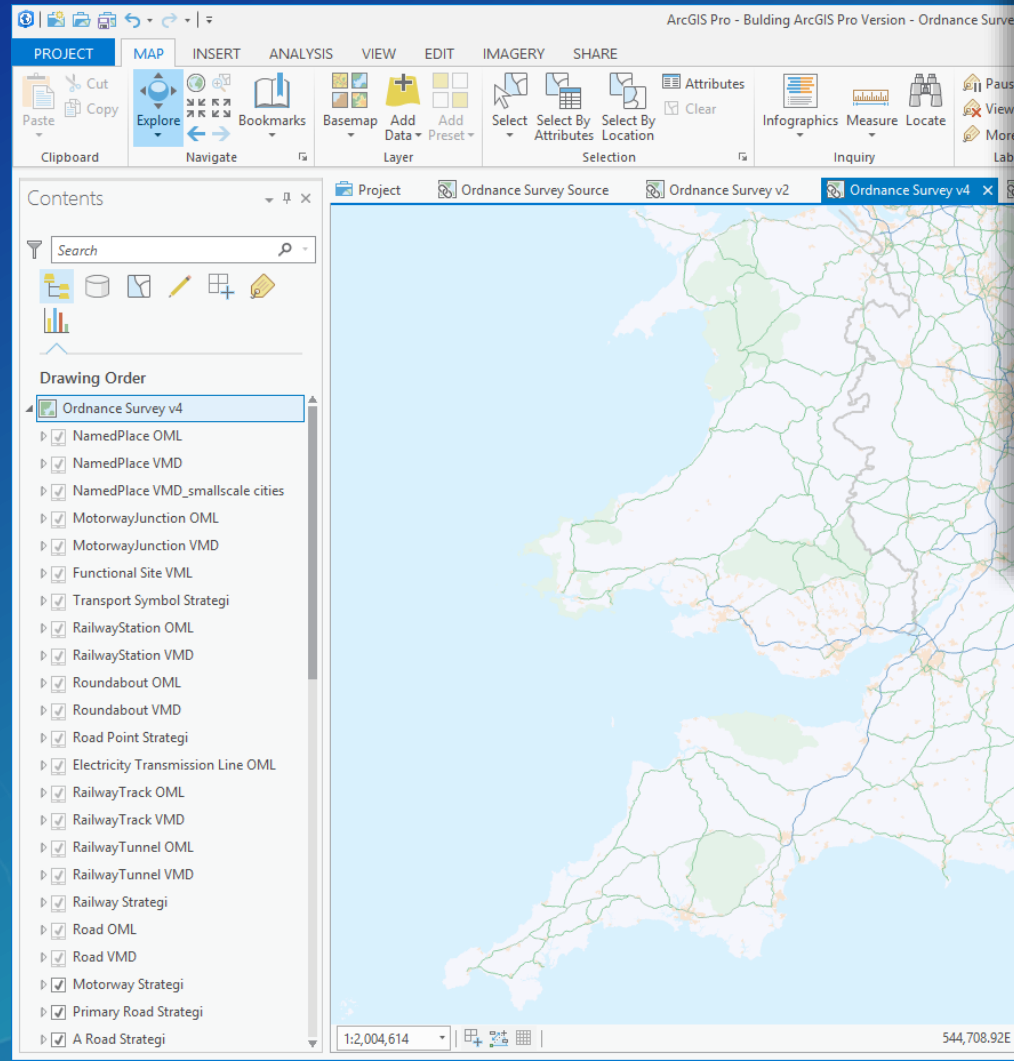


and an uneven version of the texture.



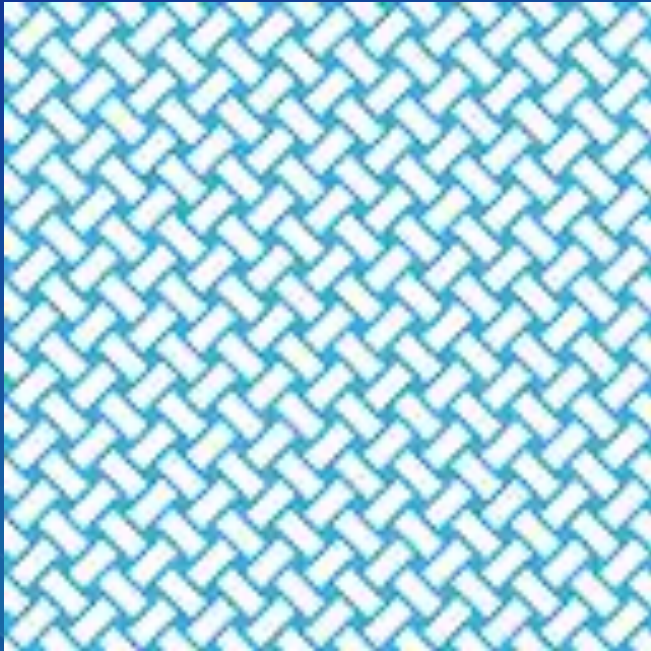
# Build your map in ArcGIS Pro

Ordnance  
Survey  
Open Data

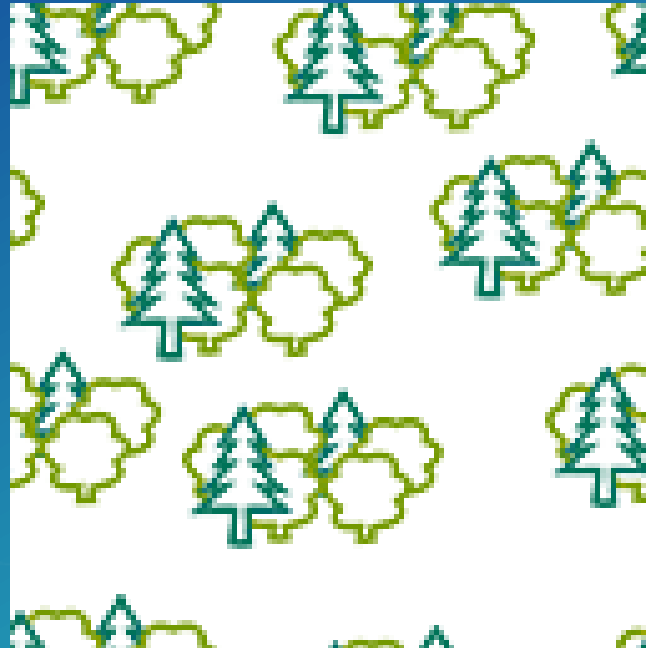


# Artwork for sprites

Pattern Tile for  
water



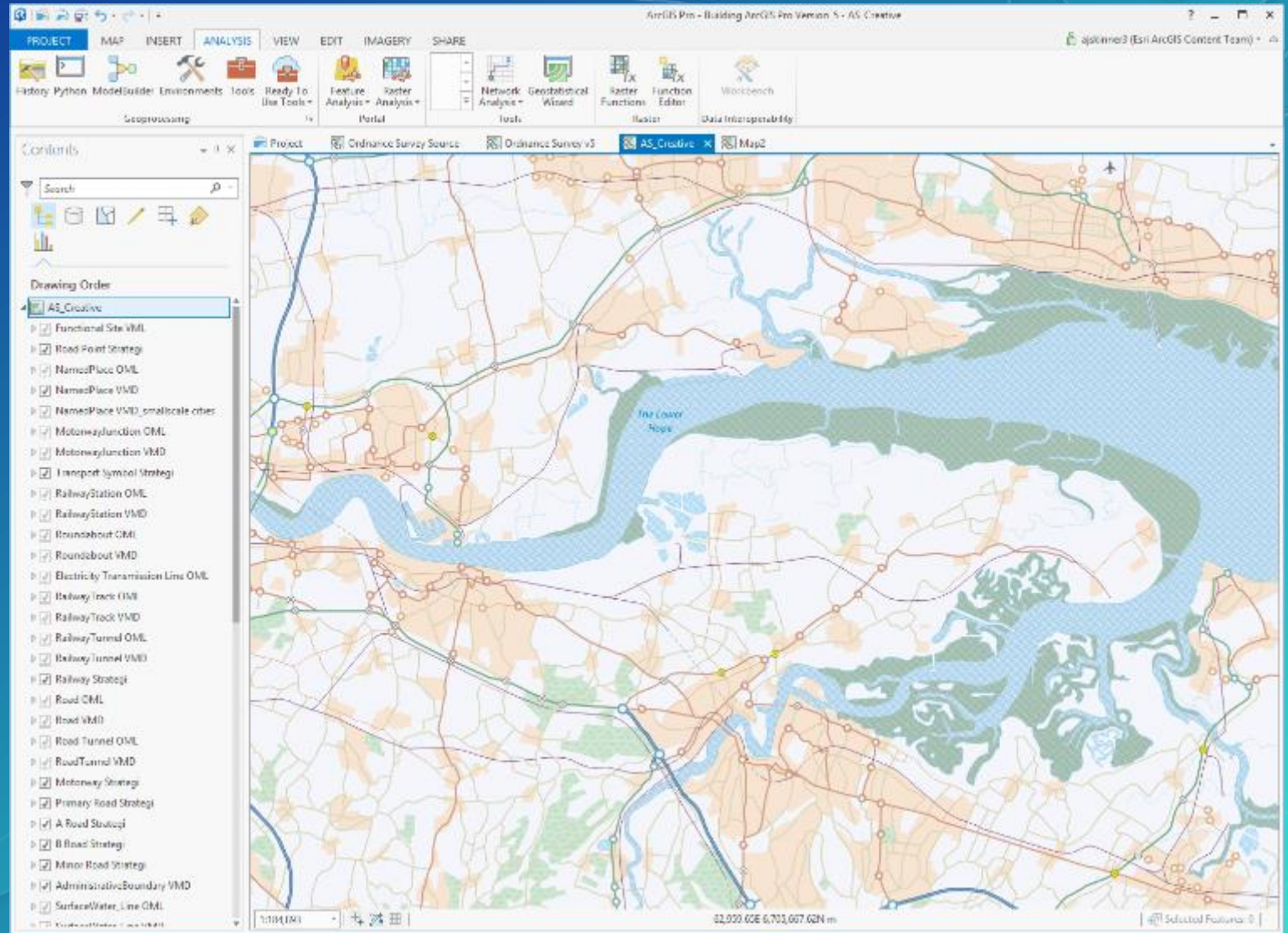
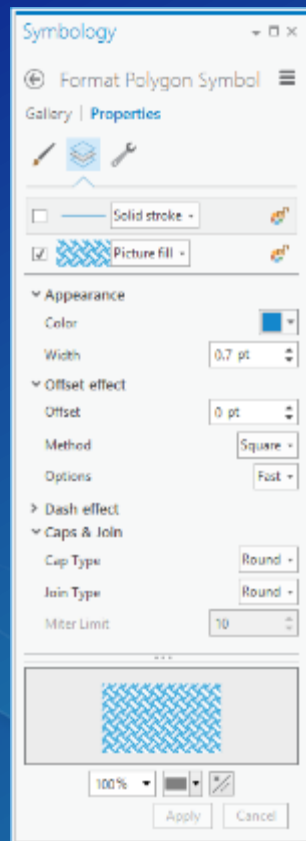
Pattern tile for  
forest





# Add special effects

## Textured effect in water

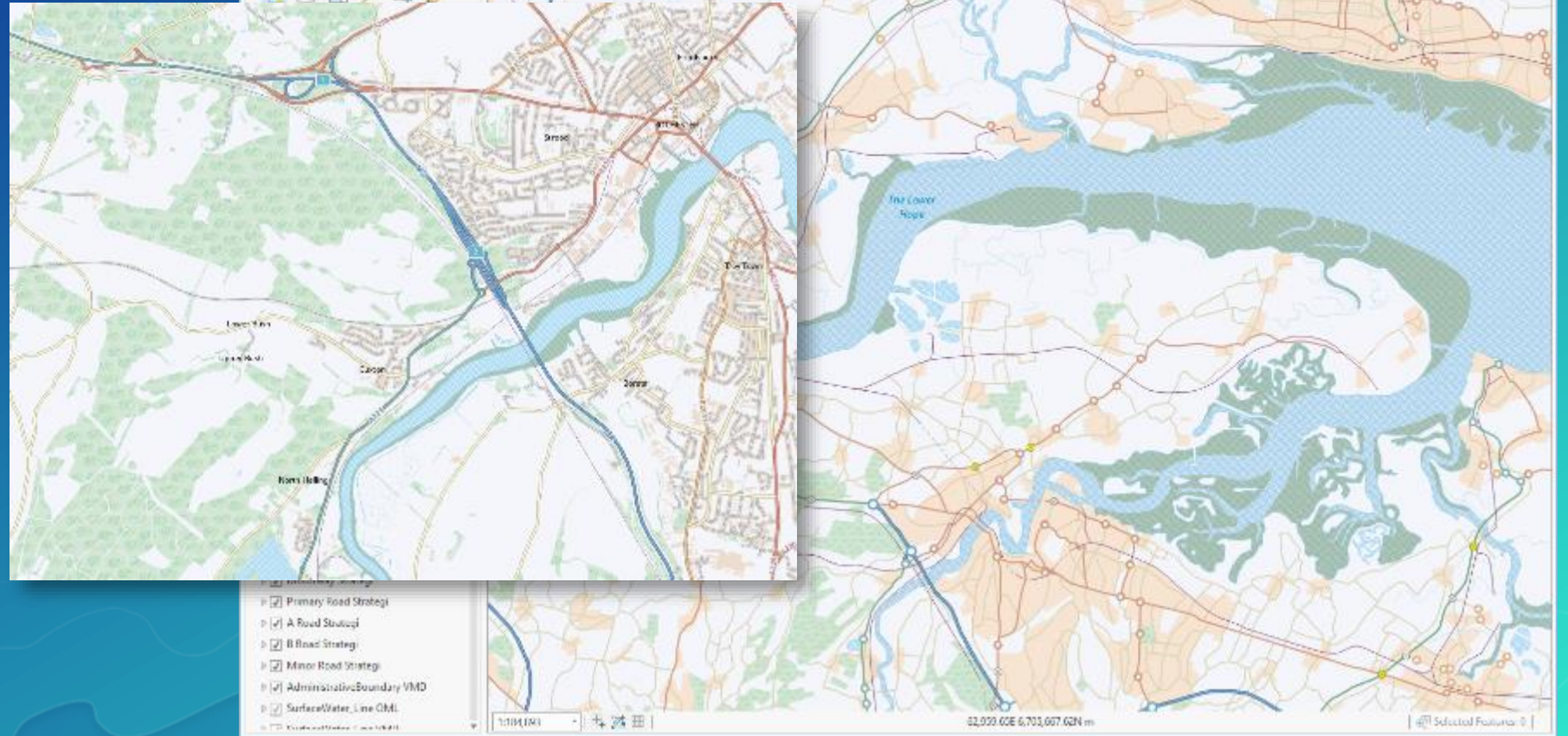
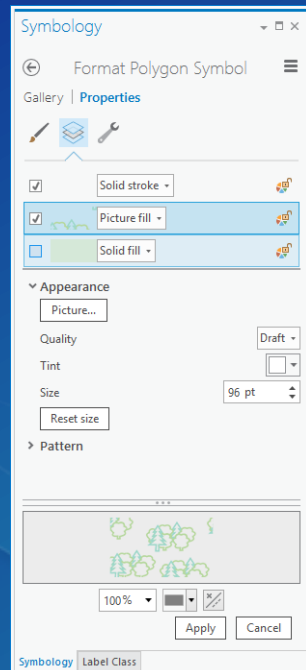




# Add special effects

Textured effect in water

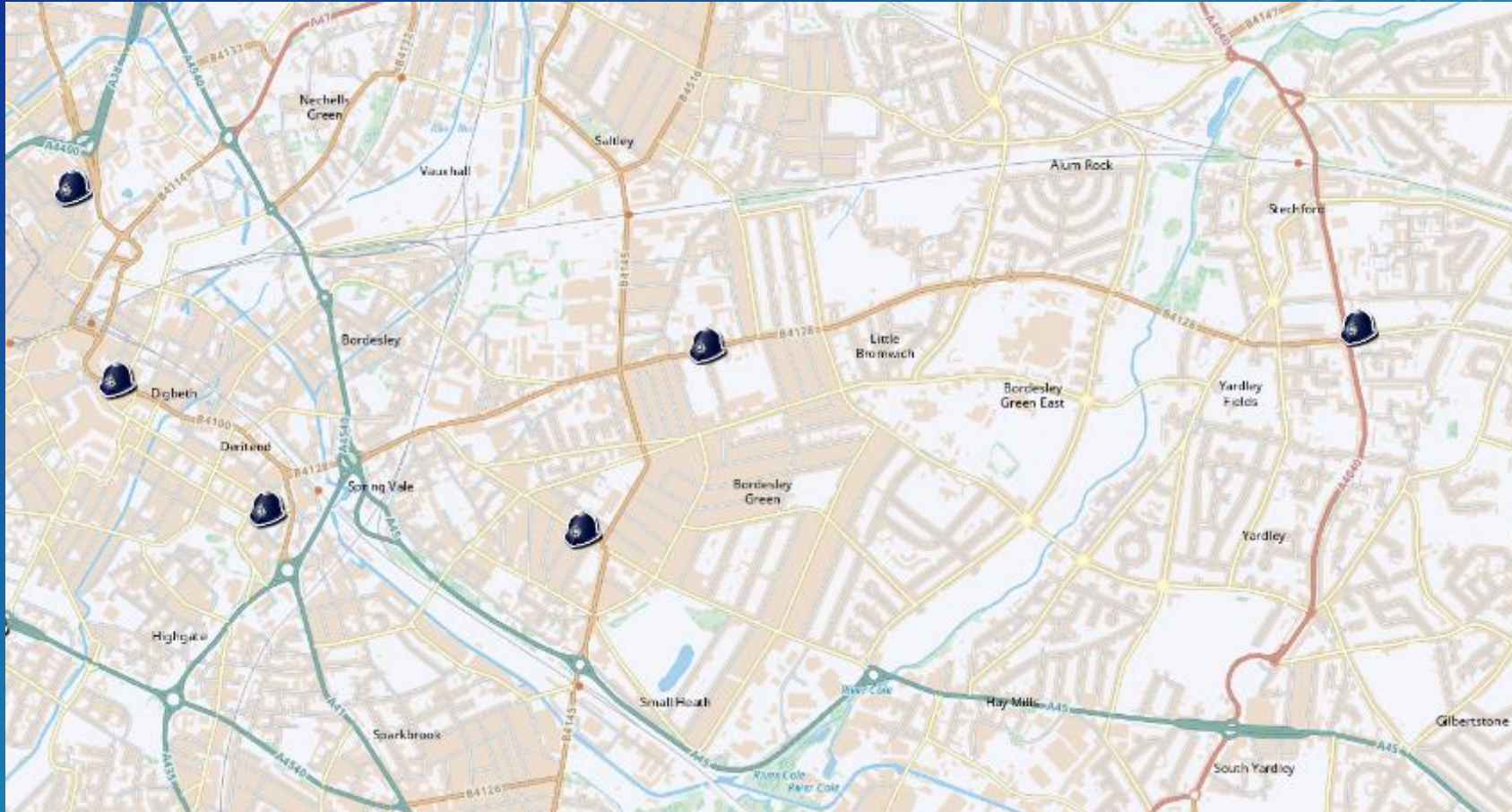
Pattern effect for woodland.





# Headline Here

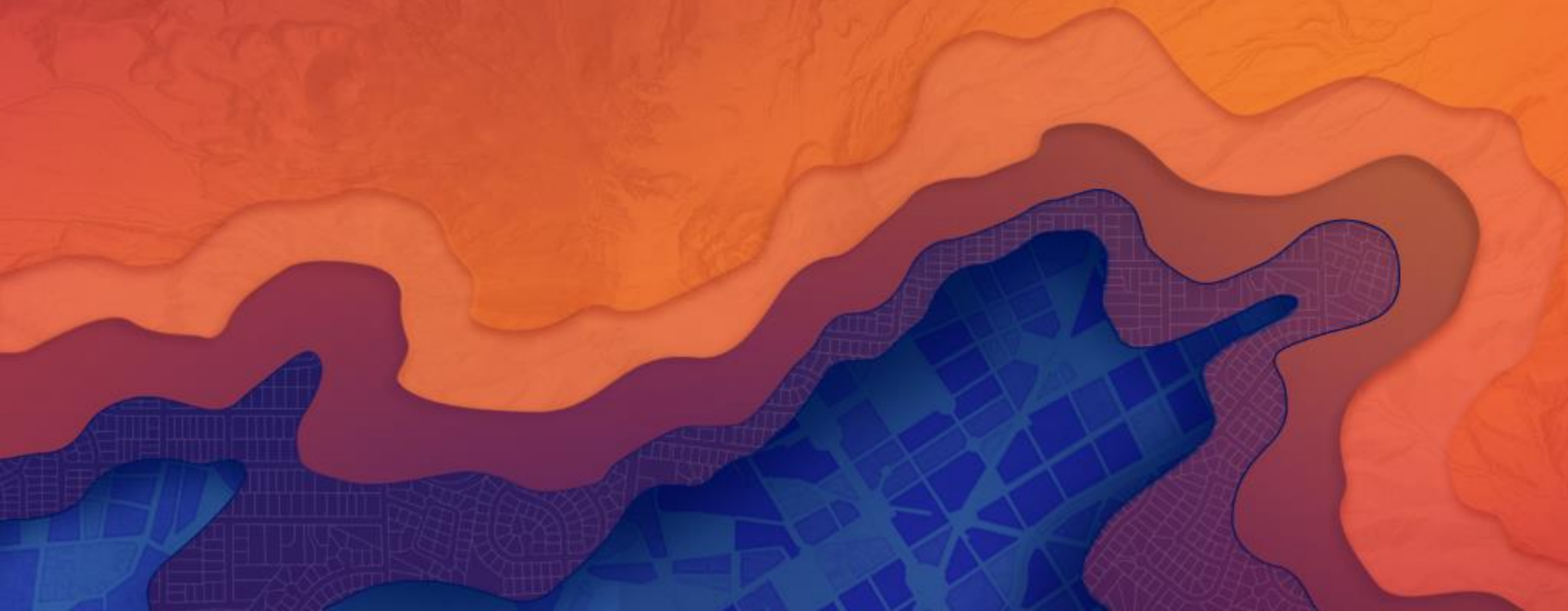
Point  
symbols





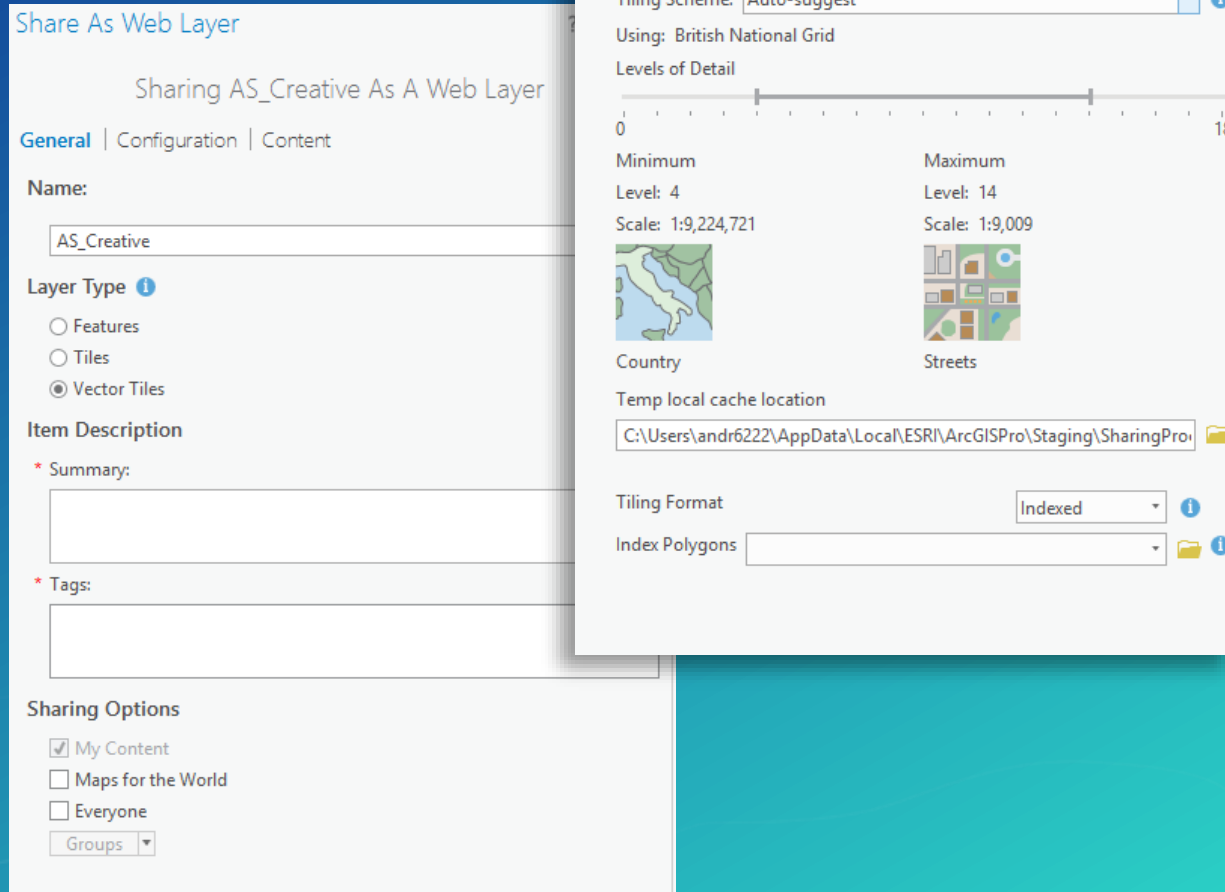
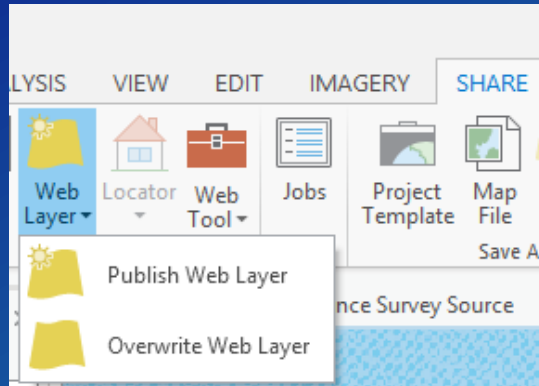
# Publishing the Map

CREATING A VECTOR TILE LAYER



# Publishing the service

## Directly to a web layer



# Publishing the service

Via a  
Vector Tile  
Package

Geoprocessing

← Create Vector Tile Package

Parameters | Environment

Input Map  
AS\_Creative

Output File  
E:\CURRENT\UC\_2017\AS\_Creative

☐ Package for ArcGIS  
Google Maps

Tiling scheme  
OS\_suggested\_tilings

Tiling Format  
Indexed

Minimum Cached Scale  
147595531.723137

Maximum Cached Scale  
5000

Index Polygons  
[Empty dropdown] +

Summary  
for tile service to demonstrate sprite generation

Tags  
Temp

+ Add Item | Create | Move

Title	Type	Modified
Firefly: Reference layer options	Web Map	Jul 11, 2017
GL_...		
GL_...		
LGR...		

1 - 4 of 4 results

### Item from my computer ?

Add an item from your computer.

File:  Creative\_Vect...Sample\_2.vtpk

☒ Publish this file as a hosted layer.  
(Adds a hosted layer item with the same name.)

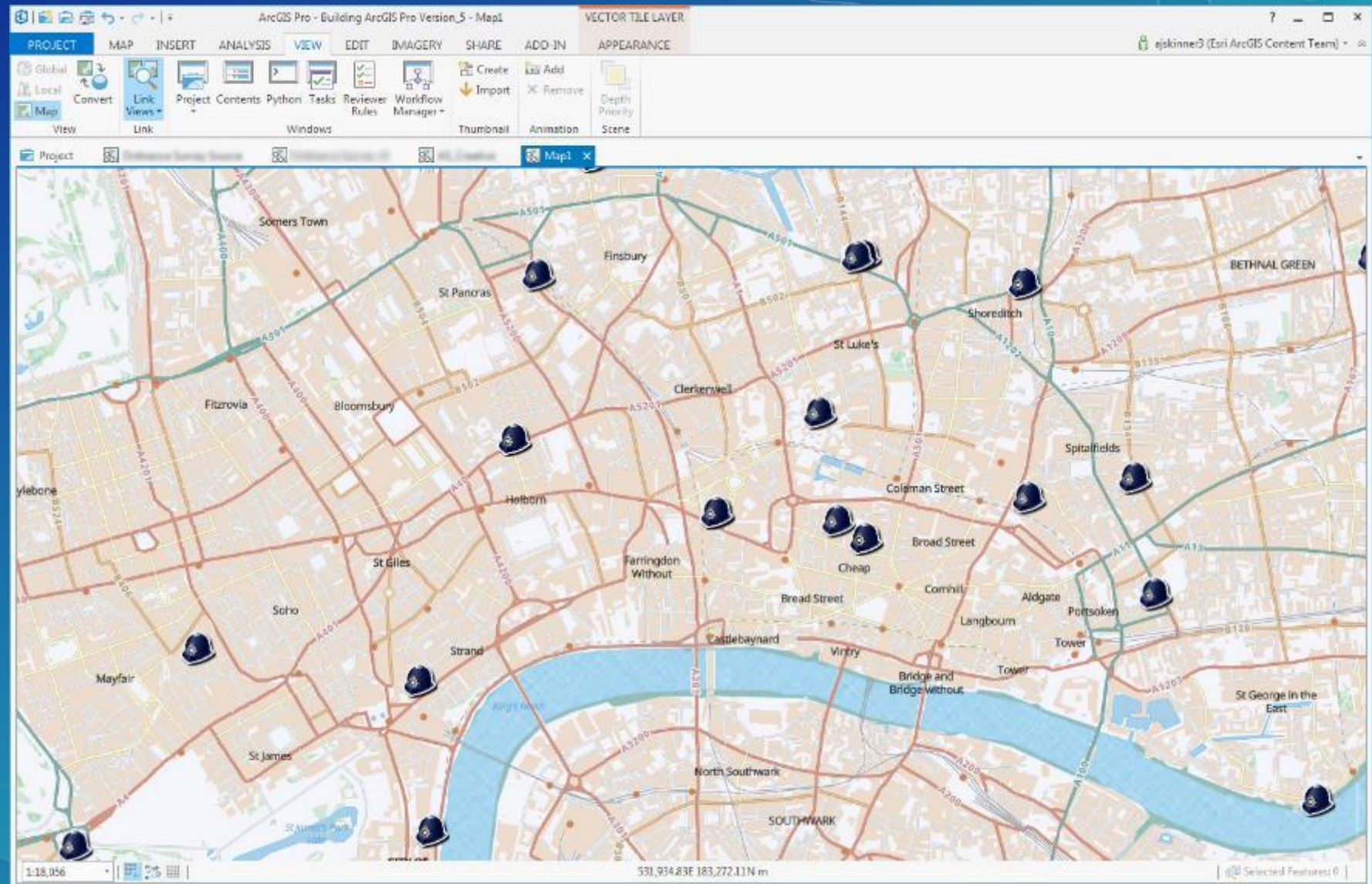
Title:

Tags:     
Add tag(s)



# The Final Result

Previewed in  
ArcGIS Pro



# Links

[ArcGIS.com 'Vector Basemaps'](http://arcgis.com/vector/basemaps)

<http://arcgis.com/vector/basemaps>

All of our core set of Vector Tile Basemaps

[ArcGIS.com 'Sample Vector Tile Layers'](http://arcgis.com/sample-vector-tile-layers)

<http://arcgis.com/sample-vector-tile-layers>

Our experiments using some of the techniques discussed here

[JSON Map Editor](http://esri.github.io/arcgis-vectortile-style-editor)

<http://esri.github.io/arcgis-vectortile-style-editor>

Simple vector tile editor with JSON code alongside a preview map

['GUI'-style Map Editor](https://maps.esri.com/jg/VectorBasemapStyleEditor/index.html)

<https://maps.esri.com/jg/VectorBasemapStyleEditor/index.html>

Vector tile editor that itemizes by layer

[JSON Lint](https://jsonlint.com)

<https://jsonlint.com>

A useful (and free) online tool for reformatting JSON files and validating the final result

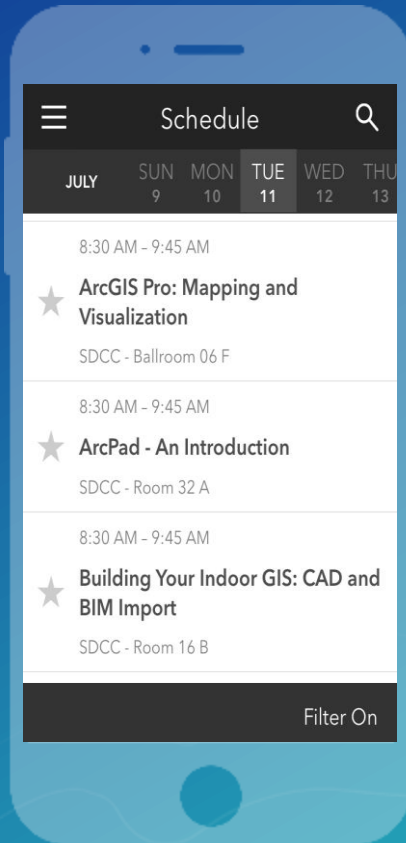


# Please Take Our Survey on the Esri Events App!

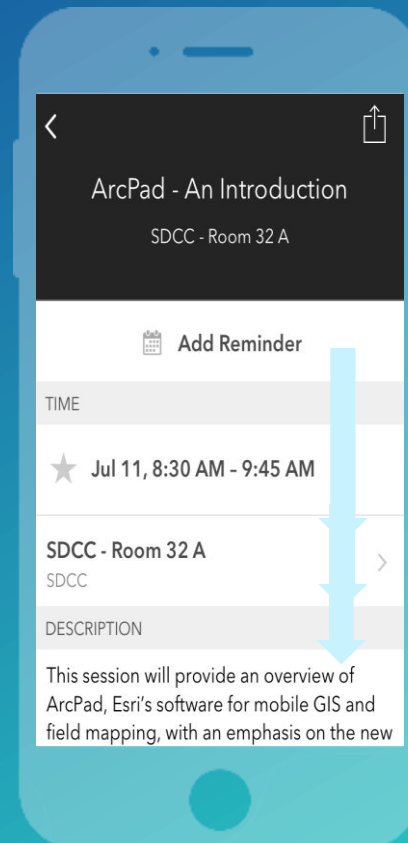
Download the Esri Events app and find your event



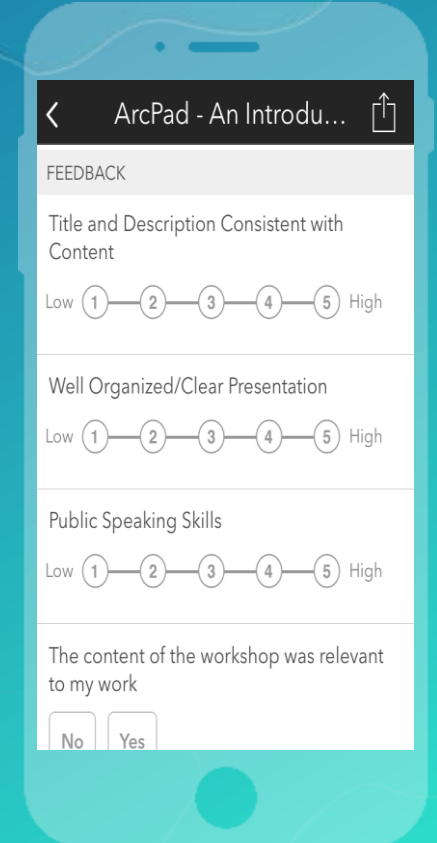
Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"







esri

THE  
SCIENCE  
OF  
WHERE