



# ArcGIS API for JavaScript: Creating Custom Layers and Layer Views

Sean McGee

 [@HertsWestUK](https://twitter.com/HertsWestUK)

Jacob Wasilkowski

 [@JWasilGeo](https://twitter.com/JWasilGeo)

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DEVELOPER SUMMIT

# Going Beyond the JSAPI Layer

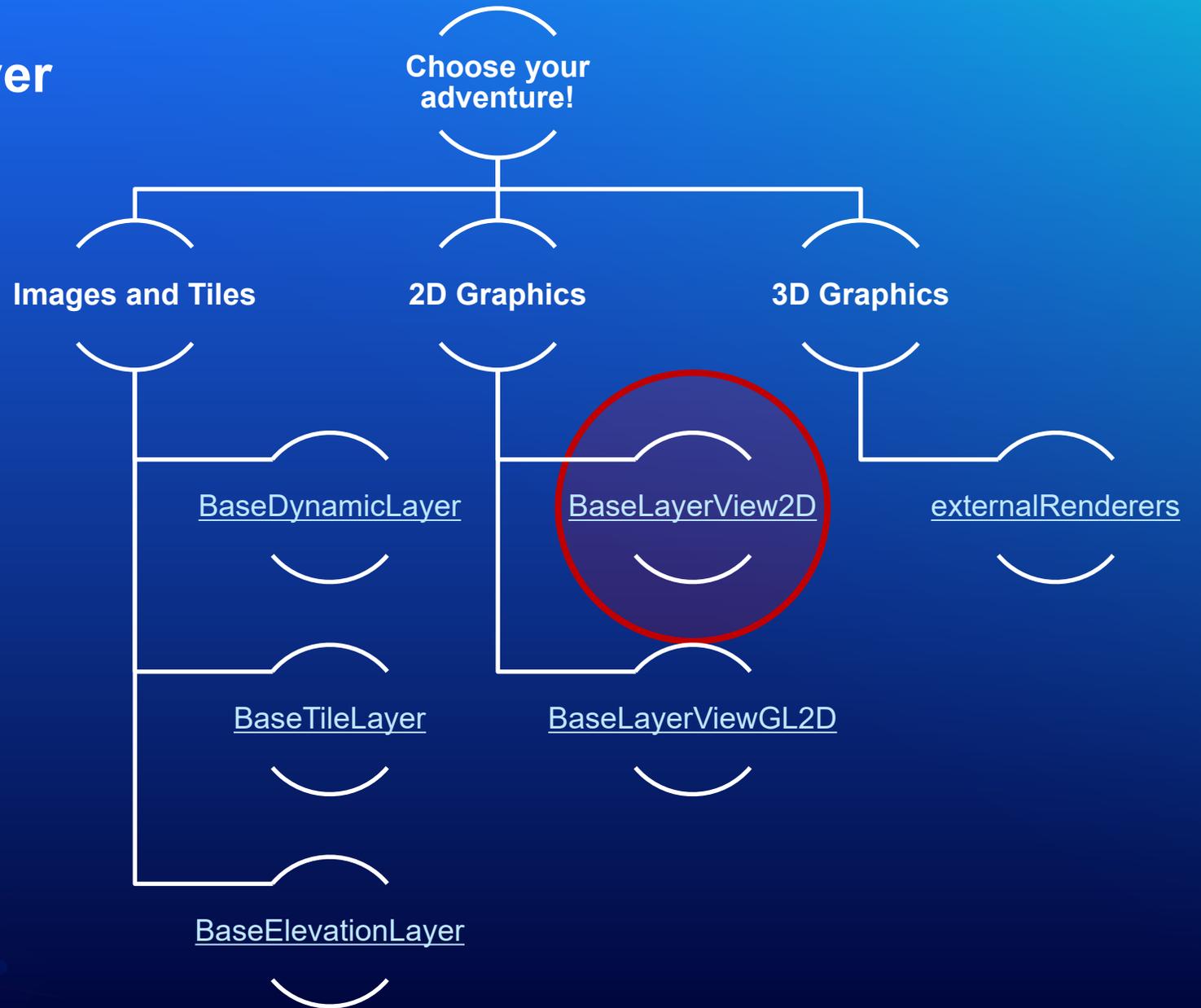


- Preprocess images
- Manipulate elevations
- Connect to a unique service(s)

*...OR YOU COULD...*



- Draw your own 2D or 3D graphics
- Bring your dreams to life with Canvas or WebGL





# Hello World!

A custom and animated  
`BaseLayerView2D`

1. Review a simple `GraphicsLayer`
2. Compare with a `BaseLayerView2D`
3. Animate it!

<https://github.com/jwasilgeo/esri-experiments>

# Custom Layer from Feature Layer – Animated points

```
const worldAirports = new FeatureLayer({...});

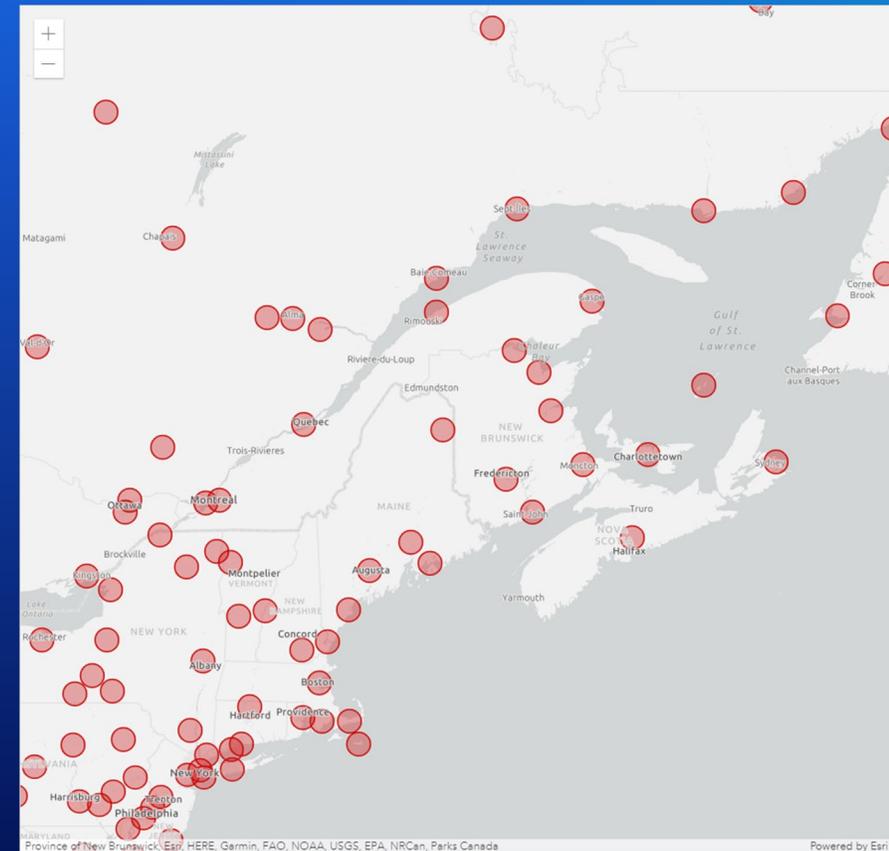
map.add(worldAirports);

function addArrayOfGraphicsToCustomLayer(arrayOfGraphics) {
  customLayerInstance.removeAll();

  arrayOfGraphics.features.forEach(function (feature) {
    customLayerInstance.add(new Graphic({
      geometry: feature.geometry
    }));
  });
};

view.whenLayerView(worldAirports).then(function (layerView) {
  layerView.queryFeatures({
    returnGeometry: true
  }).then(function (results) {
    addArrayOfGraphicsToCustomLayer(results);
  });

  layerView.watch("updating", function (value) {
    layerView.queryFeatures({
      returnGeometry: true
    }).then(function (results) {
      addArrayOfGraphicsToCustomLayer(results);
    });
  });
});
});
```

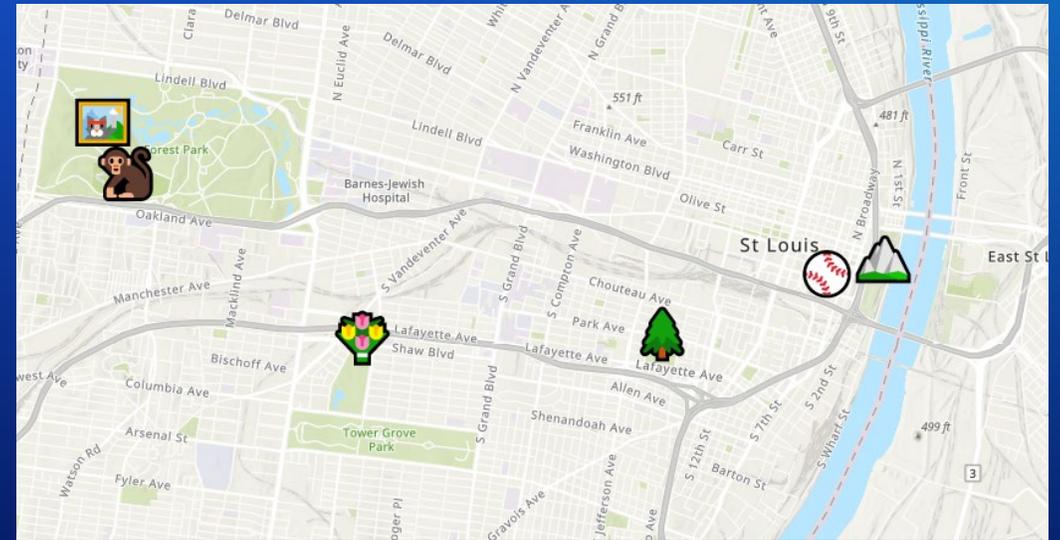


[codepen.io/hertswestuk/pen/mdOENve](https://codepen.io/hertswestuk/pen/mdOENve)

# Custom Layer from Feature Layer – Accessing attribute data



```
function addArrayOfGraphicsToCustomLayer(arrayOfGraphics) {  
  customLayerInstance.removeAll();  
  
  arrayOfGraphics.features.forEach(function (feature) {  
    customLayerInstance.add(new Graphic({  
      geometry: feature.geometry,  
      attributes: feature.attributes  
    }));  
  });  
};
```



 [@gavinrehkemper](https://twitter.com/gavinrehkemper)

[gavinr.github.io/emoji-map-layer](https://gavinr.github.io/emoji-map-layer)

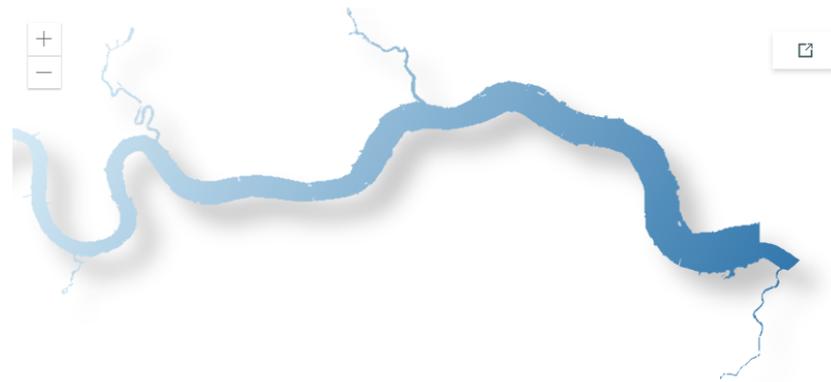
# The River Thames

All about the River Thames.

Sean McGee | February 9, 2021

The **River Thames**, known alternatively in parts as the **River Isis**, is a river that flows through southern England including London. At 215 miles (346 km), it is the longest river entirely in England and the second-longest in the United Kingdom, after the River Severn.

listen) *TEMZ*, known alternatively in parts as the **River Isis**, is a river that flows through southern England including London. At 215 miles (346 km), it is the longest river entirely in England and the second-longest in the United Kingdom, after the River Severn.

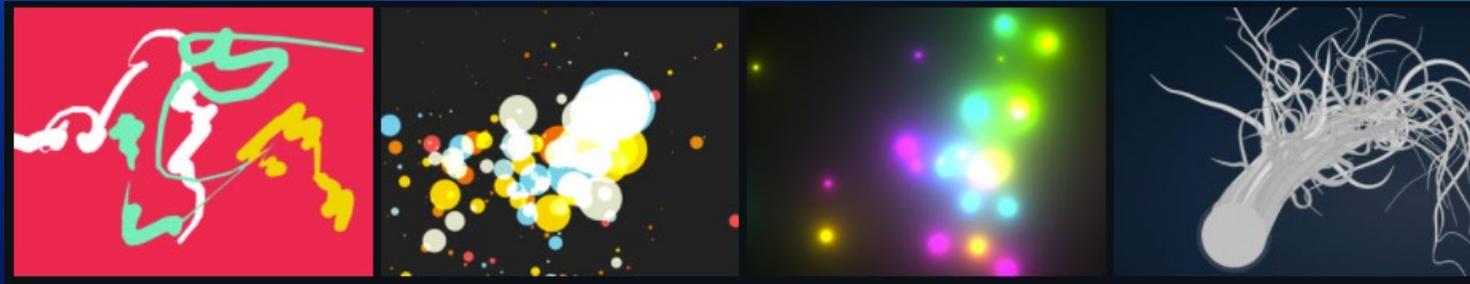


## Demo

Using canvas stylings made by  
Sean McGee

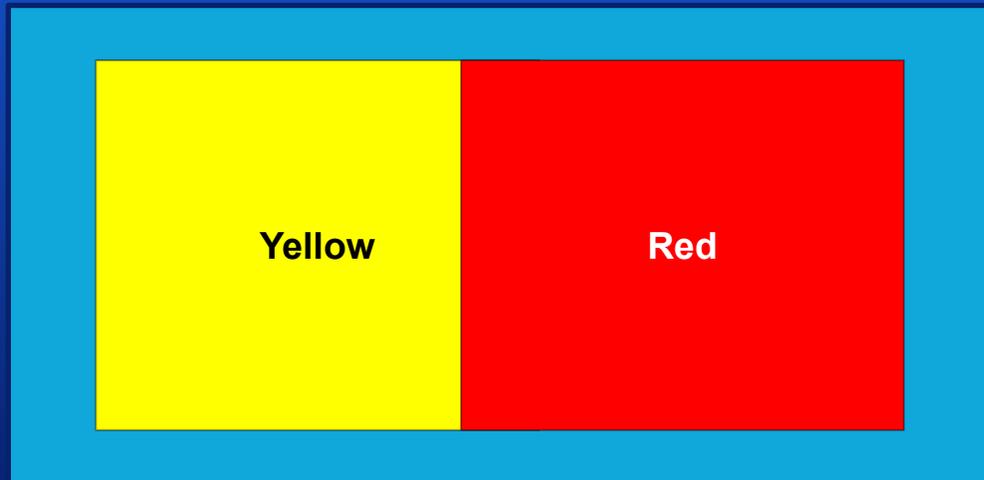
[codepen.io/hertswestuk/pen/LYbZwvK](https://codepen.io/hertswestuk/pen/LYbZwvK)

# Utilizing Canvas

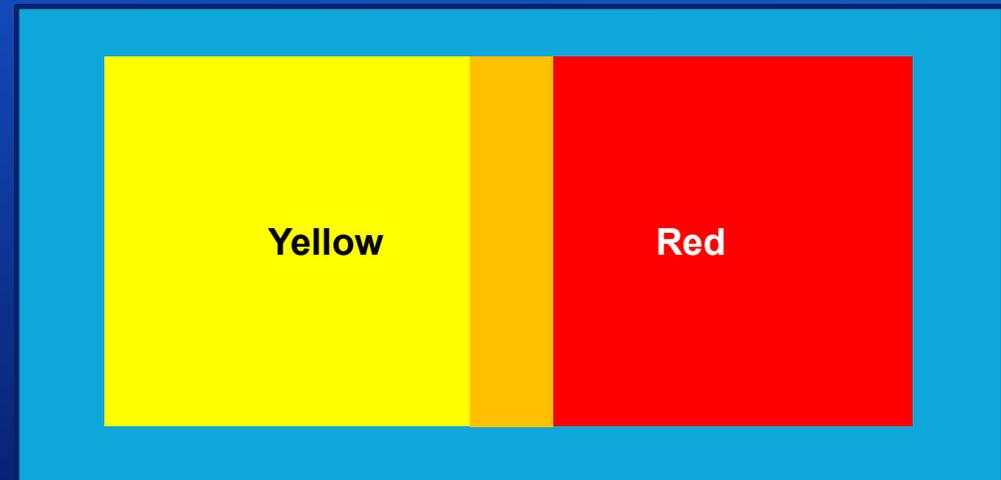


# Blending sample

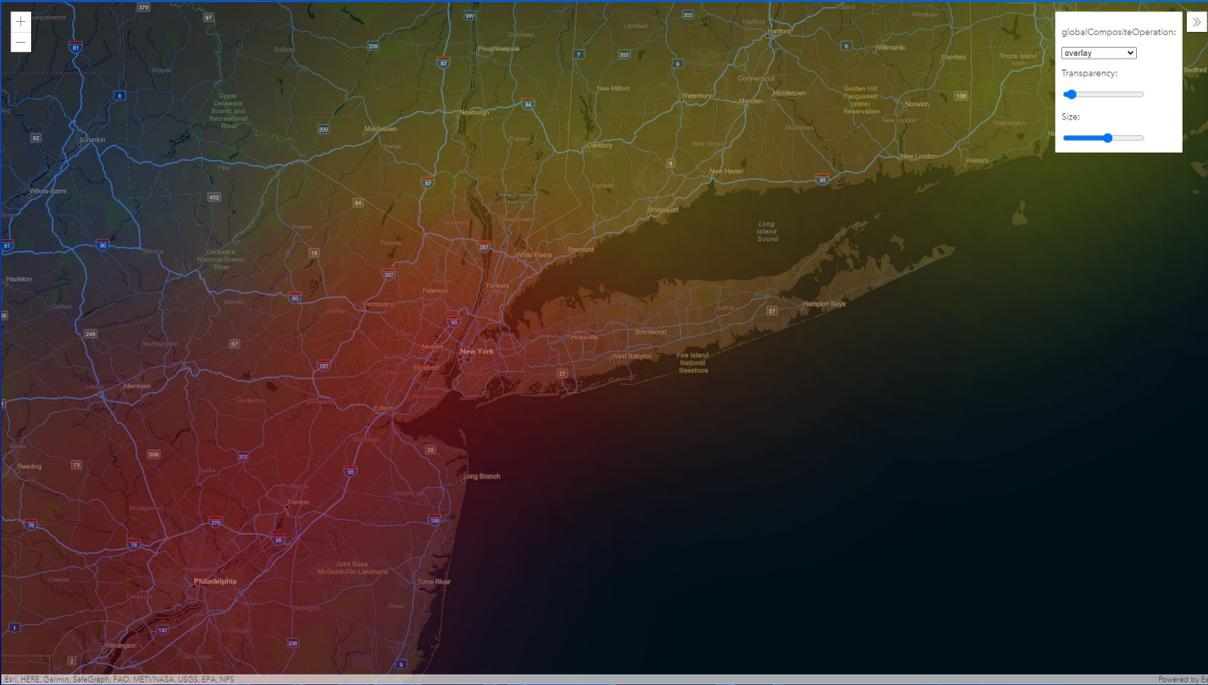
2 overlapping square symbols with a solid colour (yellow and red).



No blend option



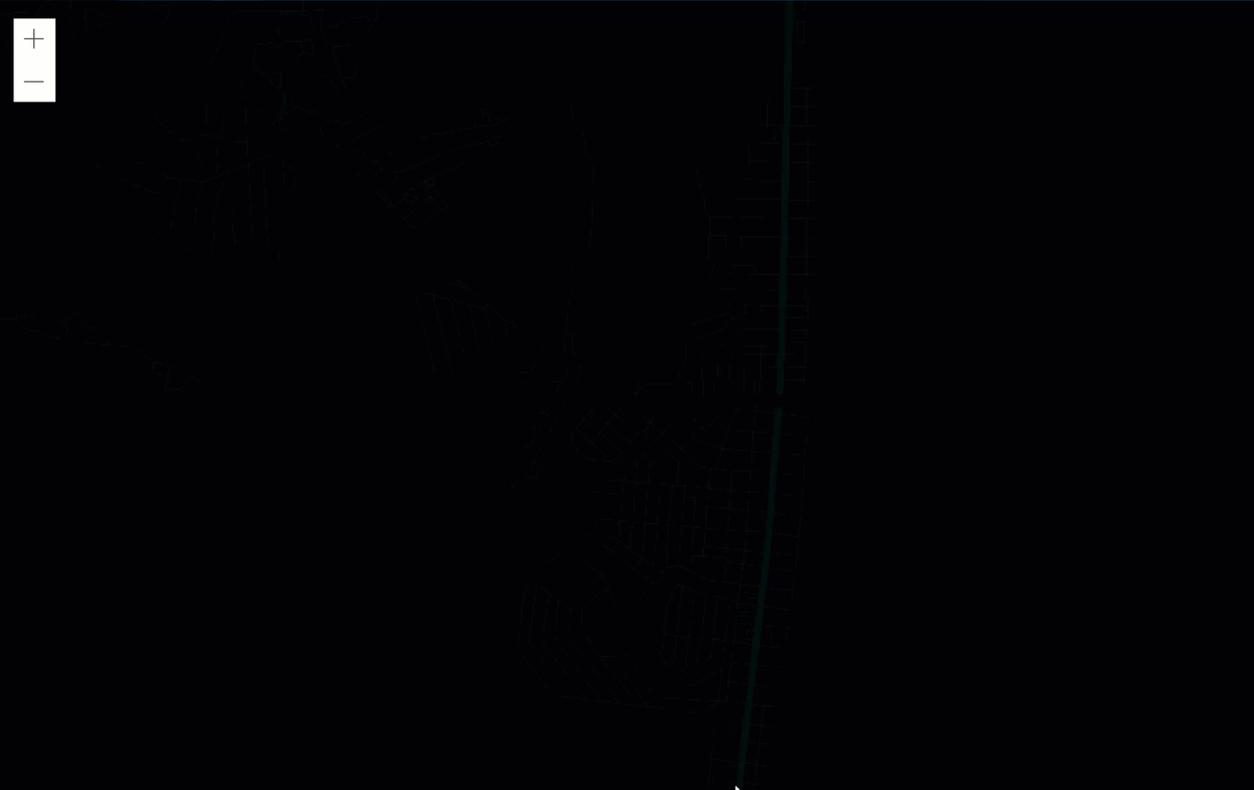
Symbol blend option enabled



# Demo

Using canvas blending made by  
Sean McGee

[codepen.io/hertswestuk/pen/LYbZwvK](https://codepen.io/hertswestuk/pen/LYbZwvK)



# Demo

A custom `BaseLayerView2D` made by Sean McGee

<https://codepen.io/smcgee/pen/KKpKPxW>



# Demo

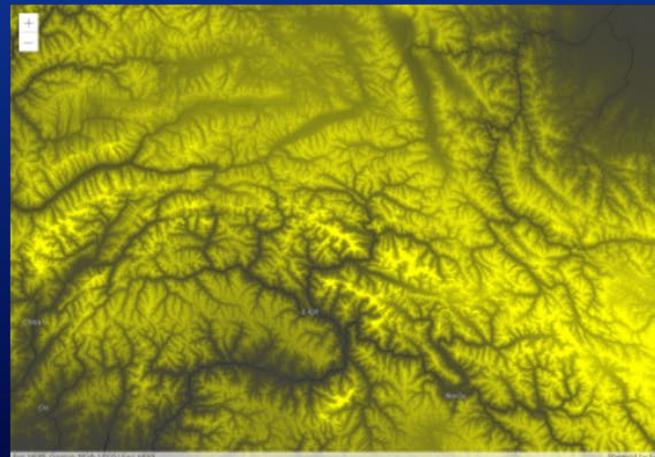
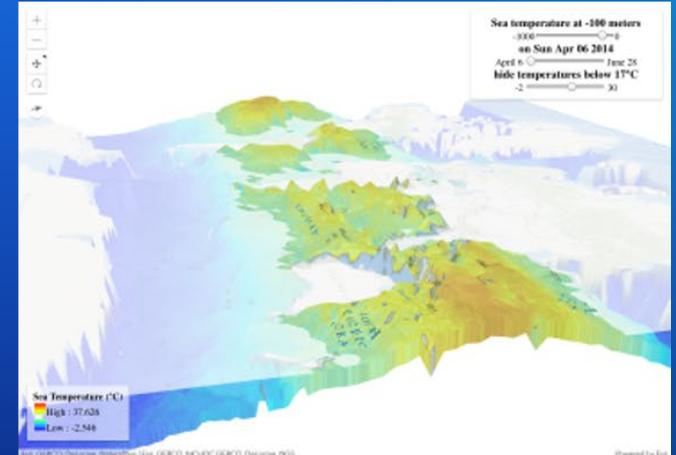
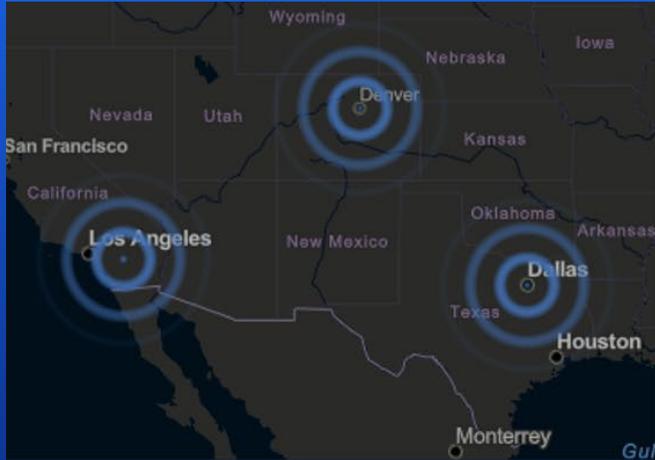
“Canvas-Flowmap-Layer”

A custom `BaseLayerView2D` made by Sarah Bell and Jacob Wasilkowski

 [@sarahbellmaps](https://twitter.com/sarahbellmaps)

<https://github.com/sarahbellum/Canvas-Flowmap-Layer>

# JSAPI Examples of What's Possible: <https://esriurl.com/jsCustomLayers>



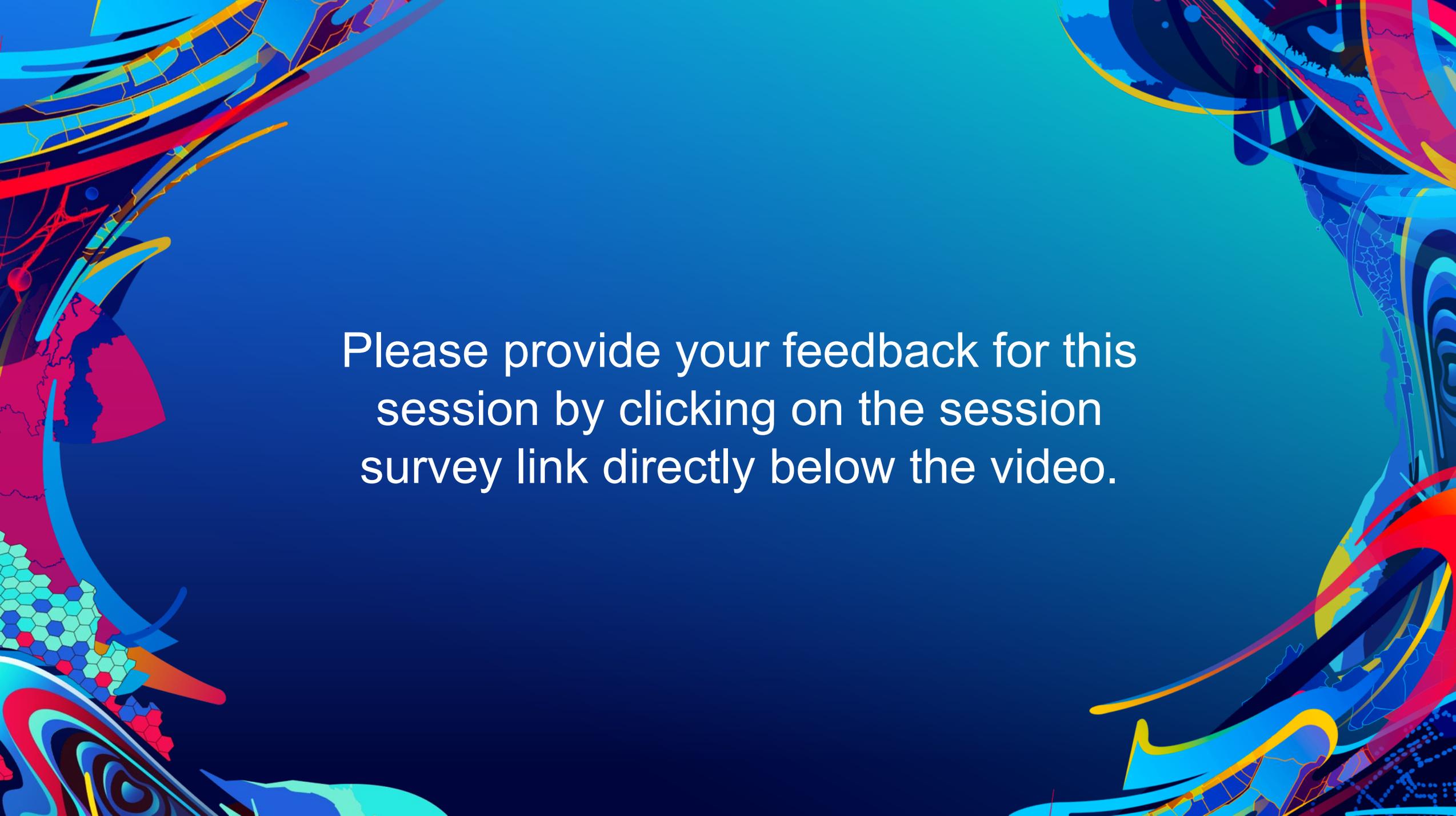
# Resources

- **These slides are available at**
  - <https://github.com/jwasilgeo/presentations>
- **Dev Summit 2019: “ArcGIS API for JavaScript: Creating Custom Layers and Layer Views”**
  - [https://proceedings.esri.com/library/userconf/devsummit19/papers/DevSummitPS\\_10.pdf](https://proceedings.esri.com/library/userconf/devsummit19/papers/DevSummitPS_10.pdf)
- **Dev Summit 2018: “ArcGIS API for JavaScript: Creating Custom Layers”**
  - <https://proceedings.esri.com/library/userconf/devsummit18/papers/dev-int-018.pdf>



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