



# X MARKS THE SPOT

Creating Geo-Located Maps in ArcGIS Online  
ESRI | Tadeh Hakopian



Tadeh Hakopian  
(Todd-A)(Ha-co-pea-on)  
@tadeh\_hakopian

Presenter for Esri ArcGIS Developer Tools

Fun Fact: I have a collection of old maps from ancient to modern times because I love stories with cartography!

# AGENDA

- Learn about ArcGIS Online Developer Tools
- Build a Map App with ArcGIS JavaScript
- Make modifications to the App

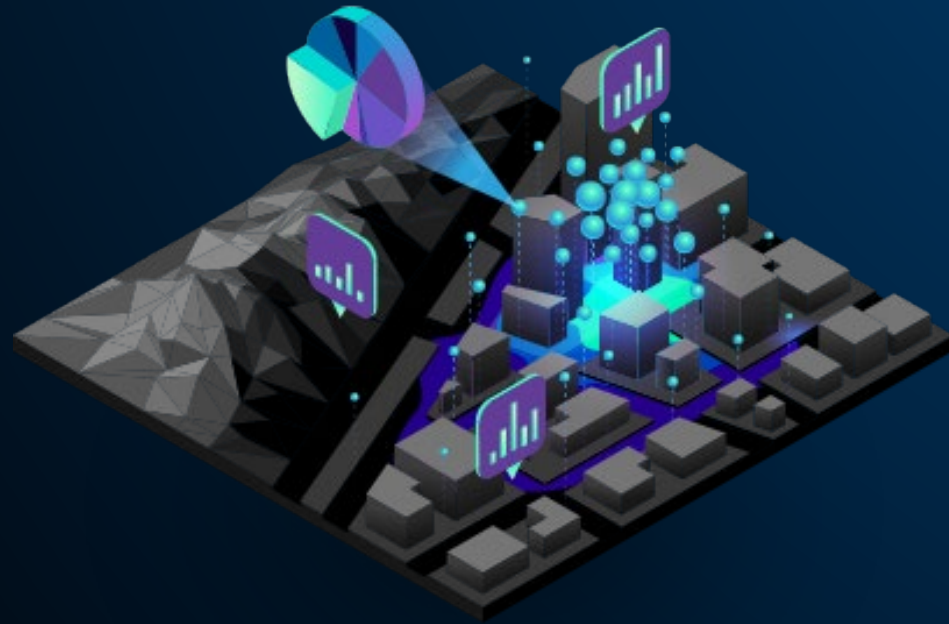
# About ESRI

- Esri focuses on The Science of 'Where'
- We pioneer problem solving with GIS to help you see what others can't



# About ArcGIS

- ArcGIS – Is a geographic information system for working with maps and geographic information. It is used for creating and using maps, compiling geographic data, analyzing mapped information, sharing and much more.



# ArcGIS Online

- Cloud-based software to create and share interactive web maps
- ArcGIS Online gives you the ability to make maps and apps to share your insights with your organization or the world.



What to do?



# ArcGIS Developer Tools

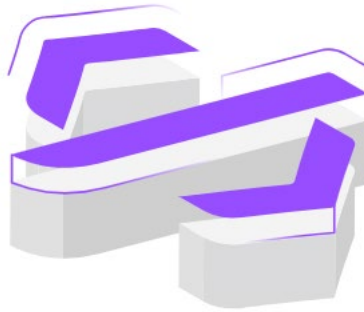




# Mapping APIs



Location Services

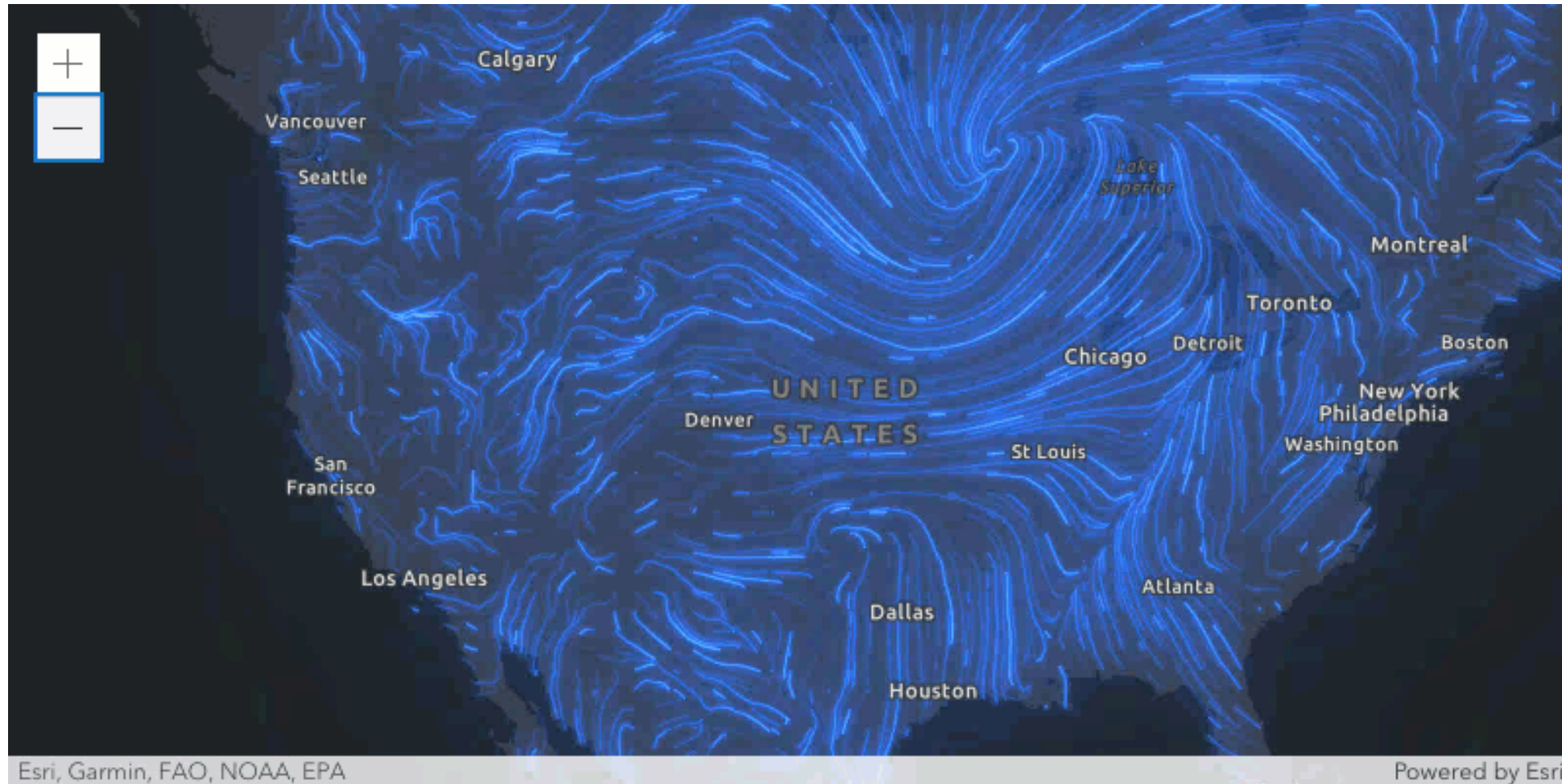


APIs

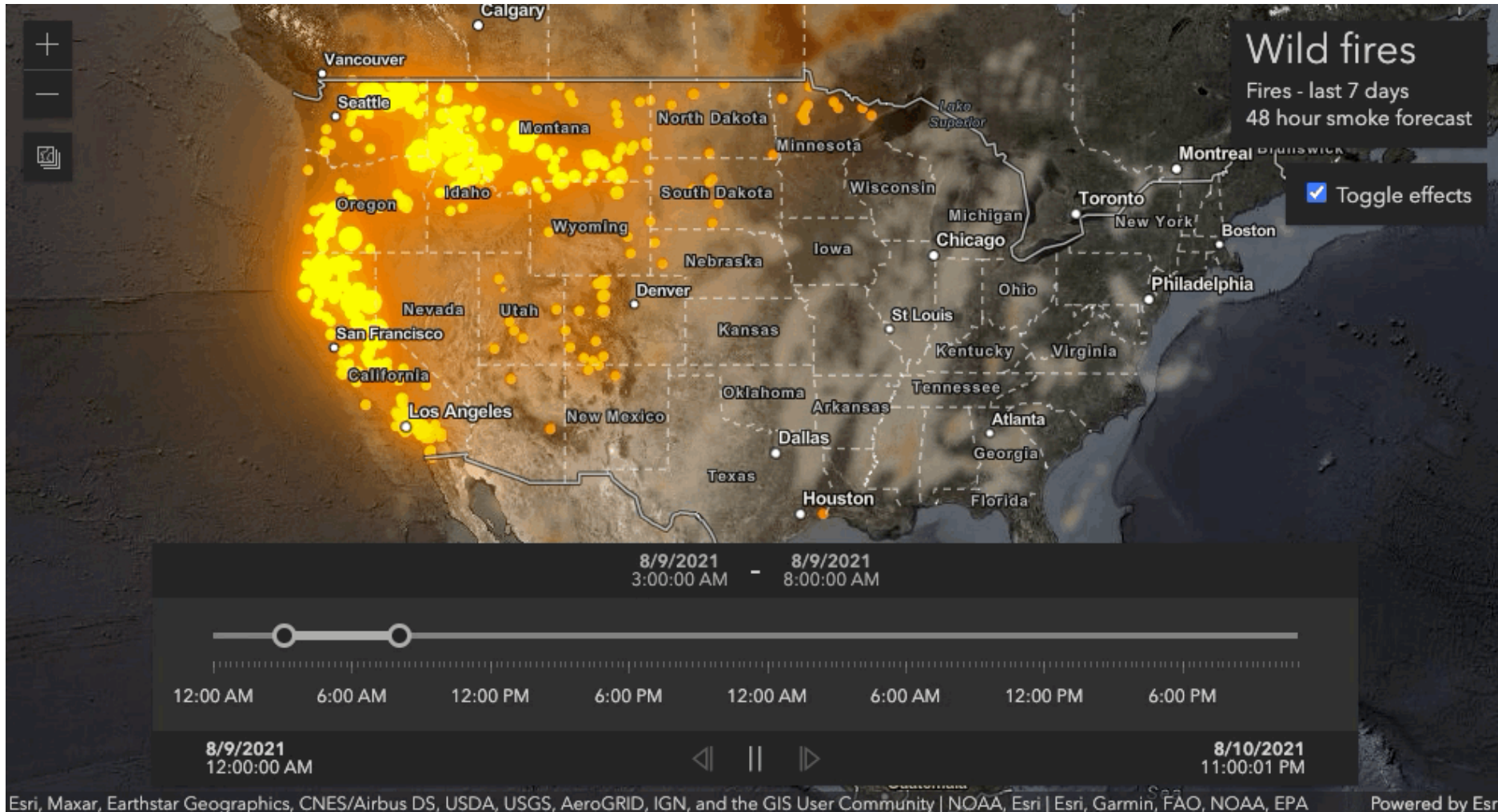


Tutorials

# ArcGIS for JavaScript - Vector



# ArcGIS for JavaScript - Timeline



# ArcGIS for JavaScript – It's Simple!





# Map Exercise

- ❑ We need to Show a Specific Map location
- ❑ Modify the map for additional functions
- ❑ Adjust Graphics to add context to the map

# Before you get started

1. Get a Developer Account (it's free!) -  
<https://developers.arcgis.com/sign-up/>
2. Get an API Key for your account -  
<https://developers.arcgis.com/documentation/mapping-apis-and-services/security/#api-keys>
3. Access the ArcGIS API for JavaScript -  
<https://developers.arcgis.com/javascript/latest/get-started/#1-install-and-set-up>



A dark blue world map with white dashed lines indicating the Arctic and Antarctic regions. The text "Let's Make our Map!" is centered over the map.

Let's Make our Map!

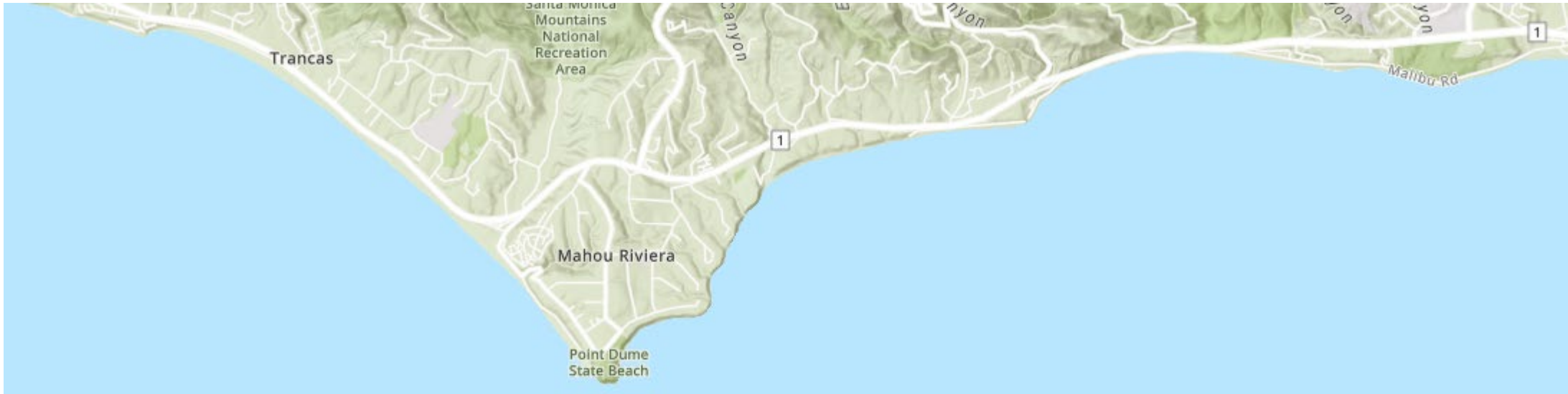
# Preview

1. Create a new CodePen
2. Add HTML BoilerPlate
3. Reference the API
4. Add modules
5. Create a map
6. Create a widget
7. Create a layer
8. Run the app



# Preview

- Documentation contains full featured code for starters:
- <https://developers.arcgis.com/javascript/latest/display-a-map/>
- Reference to code pen
- <https://codepen.io/thakopian/pen/ZExEZqg>



# Boiler Plate - HTML

```
<html>
  <head>
    <meta charset="utf-8" />
    <meta name="viewport" content="initial-scale=1, maximum-scale=1, user-scalable=no" />
    <title>ArcGIS API for JavaScript Tutorials: Display a map</title>

    <style>
      html,
      body,
      #viewDiv {
        padding: 0;
        margin: 0;
        height: 100%;
        width: 100%;
      }
    </style>

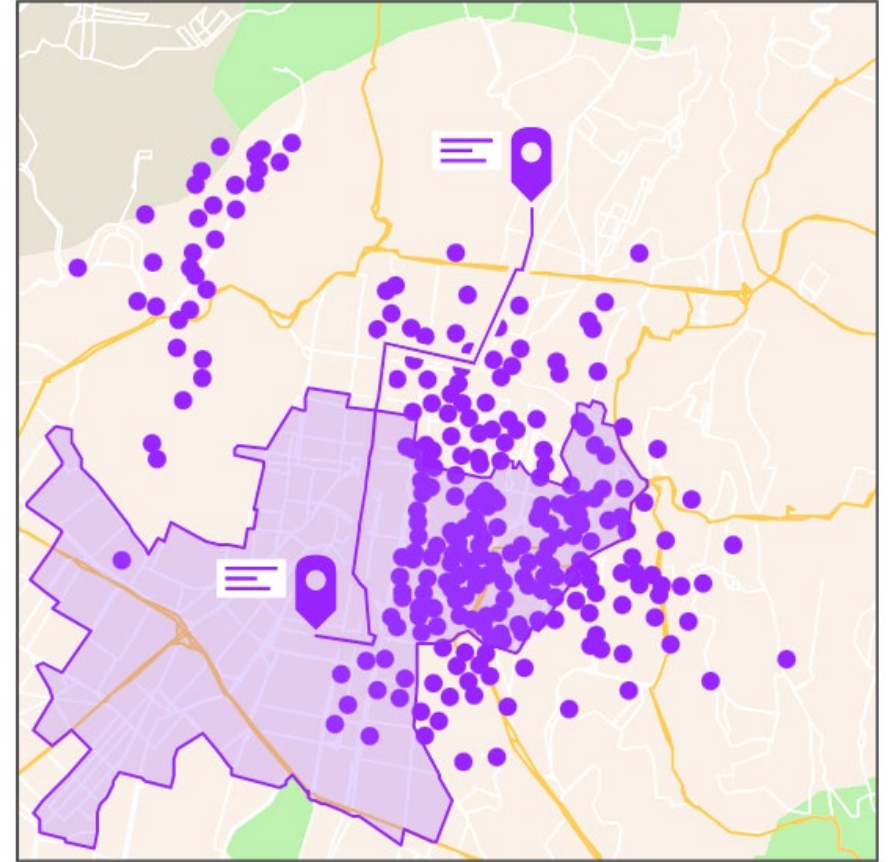
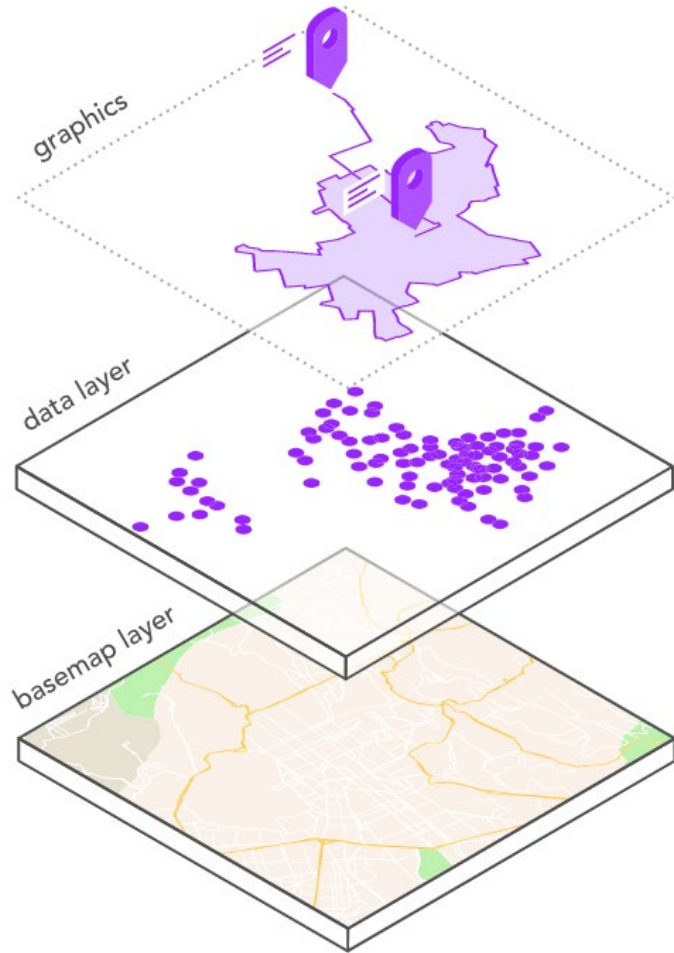
    <link rel="stylesheet" href="https://js.arcgis.com/4.24/esri/themes/light/main.css">
    <script src="https://js.arcgis.com/4.24/"></script>

  </head>
  <body>
    <div id="viewDiv"></div>
  </body>
</html>
```

# Boiler Plate – Functions

```
<script>  
  require(["esri/config","esri/Map", "esri/views/MapView"], function (esriConfig,Map, MapView) {  
  
    esriConfig.apiKey = "YOUR_API_KEY";  
  
  }  
</script>
```

# Concept – Basemap Layer



- A basemap layer provides visual context for a map or scene.

# Boiler Plate – Functions

```
<script>
  require(["esri/config","esri/Map", "esri/views/MapView"], function (esriConfig,Map, MapView) {

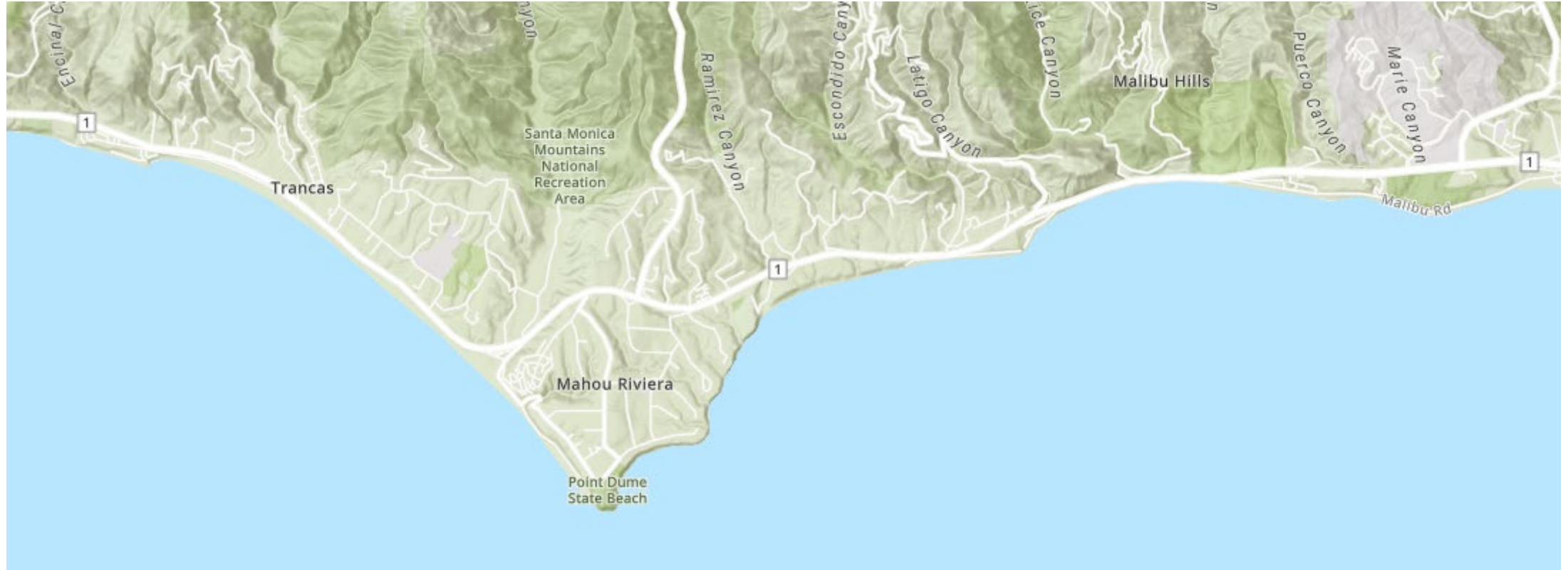
    esriConfig.apiKey = "YOUR_API_KEY";

    const map = new Map({
      basemap: "arcgis-topographic" // Basemap layer service
    });

    const view = new MapView({
      map: map,
      center: [-118.805, 34.027], // Longitude, latitude
      zoom: 13, // Zoom level
      container: "viewDiv" // Div element
    });

  });
</script>
```

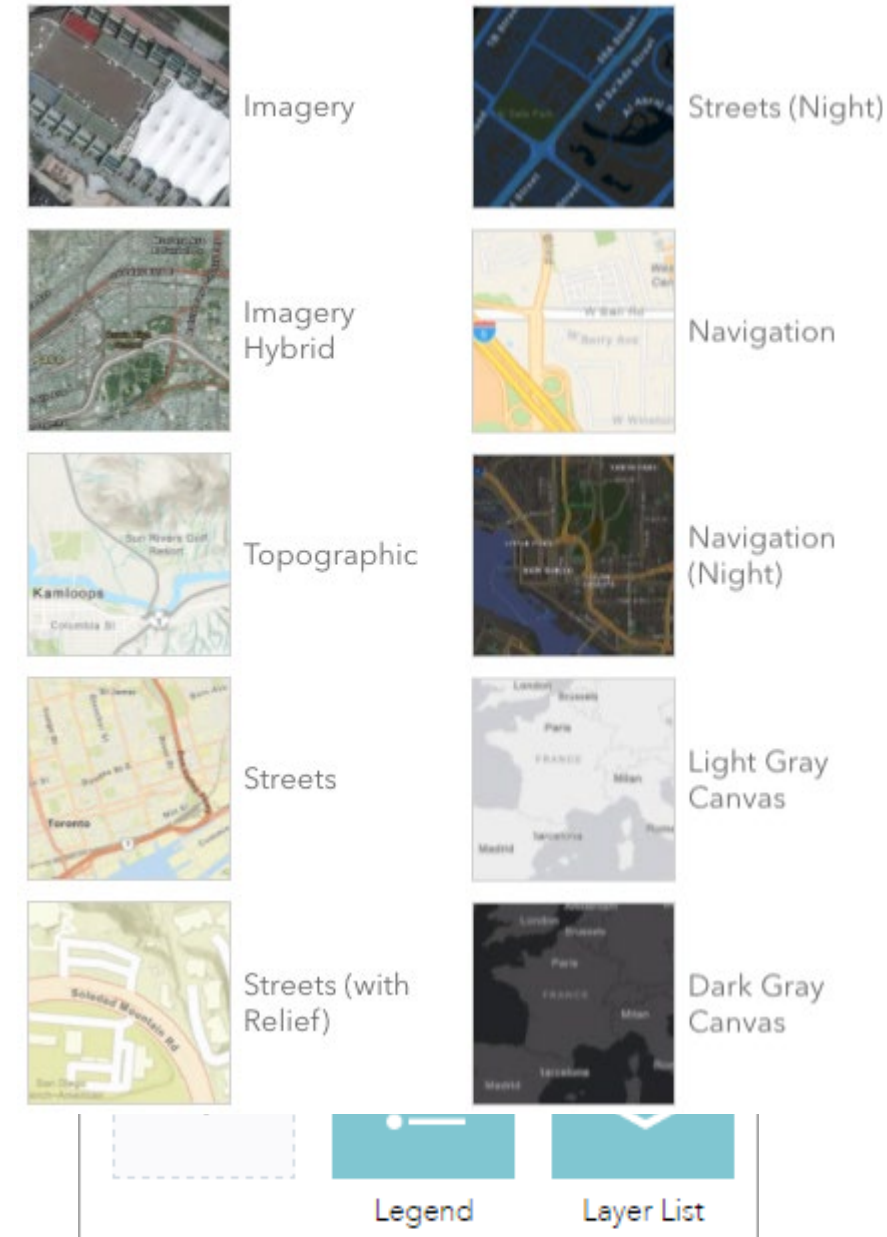
# Results



- Custom Location in your code

# Concept – Basemap Styles

- A basemap style is a set of visual properties such as fill colors, viewing levels, and fonts that define how the visual elements in a vector tile basemap layer are displayed.
- You use a basemap style to create a specific type of visualization for the entire extent of a map or scene.





# Custom Map - Functions

```
<script>
require(["esri/config","esri/Map", "esri/views/MapView", "esri/widgets/BasemapToggle",
"esri/widgets/BasemapGallery"], function (esriConfig,Map, MapView, BasemapToggle, BasemapGallery) {

    esriConfig.apiKey = "YOUR_API_KEY";

</script>
```



# Custom Map - Toggle

```
const basemapToggle = new BasemapToggle({
  view: view,
  nextBasemap: "arcgis-imagery"
});

view.ui.add(basemapToggle, "bottom-right");

const basemapGallery = new BasemapGallery({
  view: view,
  source: {
    query: {
      title: '"World Basemaps for Developers" AND owner:esri'
    }
  }
});

view.ui.add(basemapGallery, "top-right"); // Add to the view
```

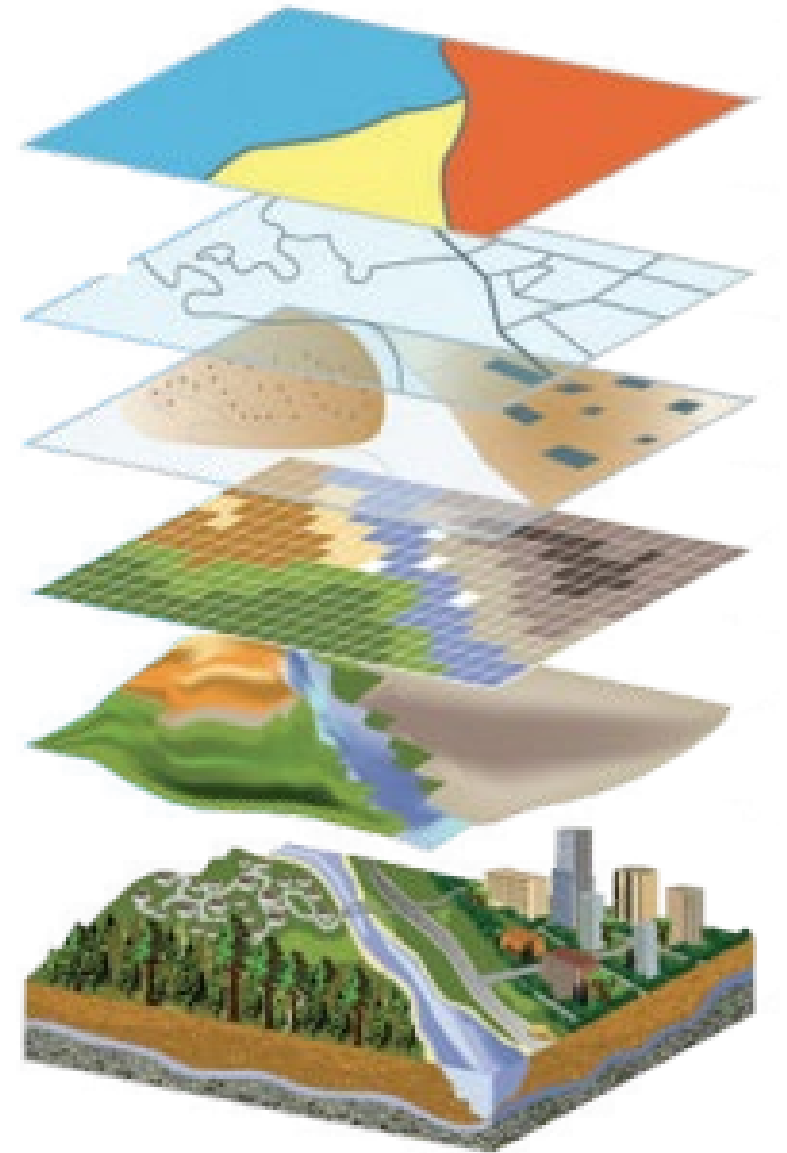
# Results



- Tool palette to change view and information graphically

# Concept – Layers

- A FeatureLayer is a single layer that can be created from a Map Service or Feature Service.
- The layer can be either a spatial (has geographic features) or non-spatial (table).



# Custom Map - Functions

```
<script>
    require(["esri/config","esri/Map", "esri/views/MapView", "esri/widgets/BasemapToggle",
"esri/widgets/BasemapGallery", "esri/layers/FeatureLayer"], function (esriConfig,Map, MapView,
BasemapToggle, BasemapGallery, FeatureLayer) {

        esriConfig.apiKey = "YOUR_API_KEY";

</script>
```

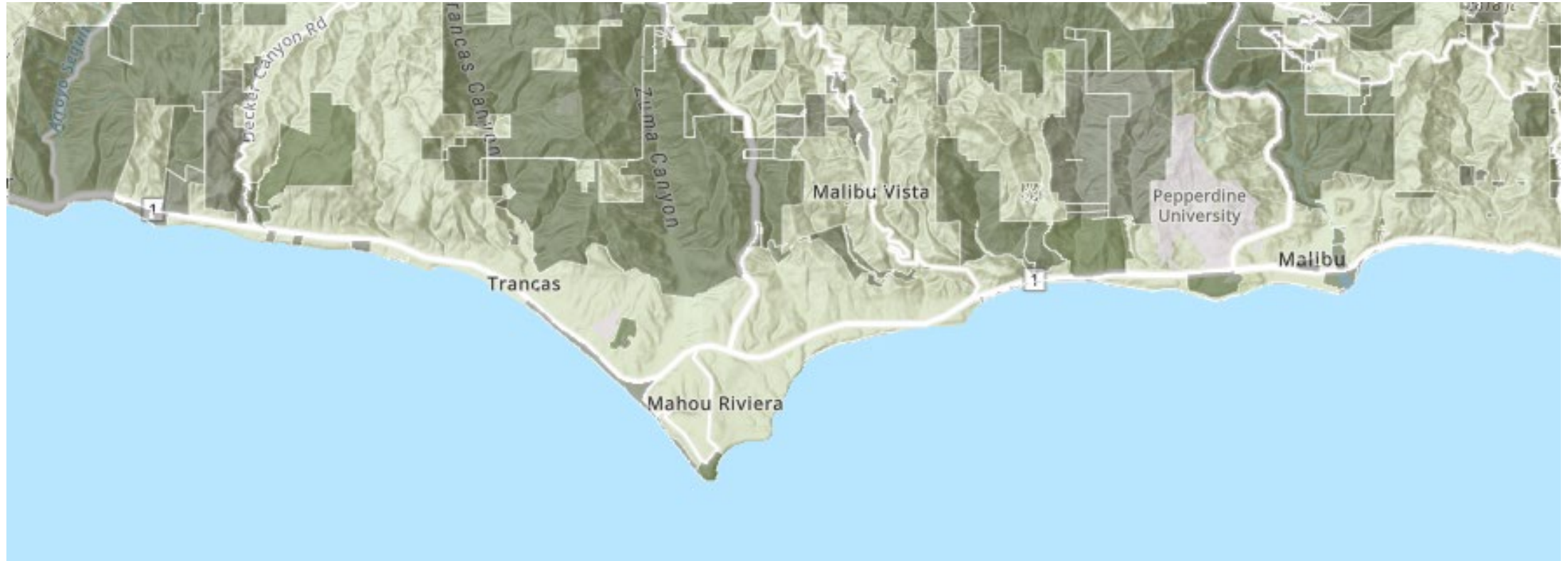
# Custom Map - Layer

```
// Parks and open spaces (polygons)
const parksLayer = new FeatureLayer({
  url: "https://services3.arcgis.com/GVgbJbqm8hXASVYi/arcgis/rest/services/Parks_and_Open_Space/FeatureServer/0"
});

map.add(parksLayer, 0);

});
```

# Results



- Layers added to your map for context

# Bonus! – Adventure

```
const view = new MapView({  
  map: map,  
  center: [-117.195, 34.056], // Longitude, latitude  
  zoom: 17, // Zoom level  
  container: "viewDiv" // Div element  
});
```

- Use these Coordinates to journey to the happiest place on Earth



# Congrats!

You made your first map with ArcGIS!

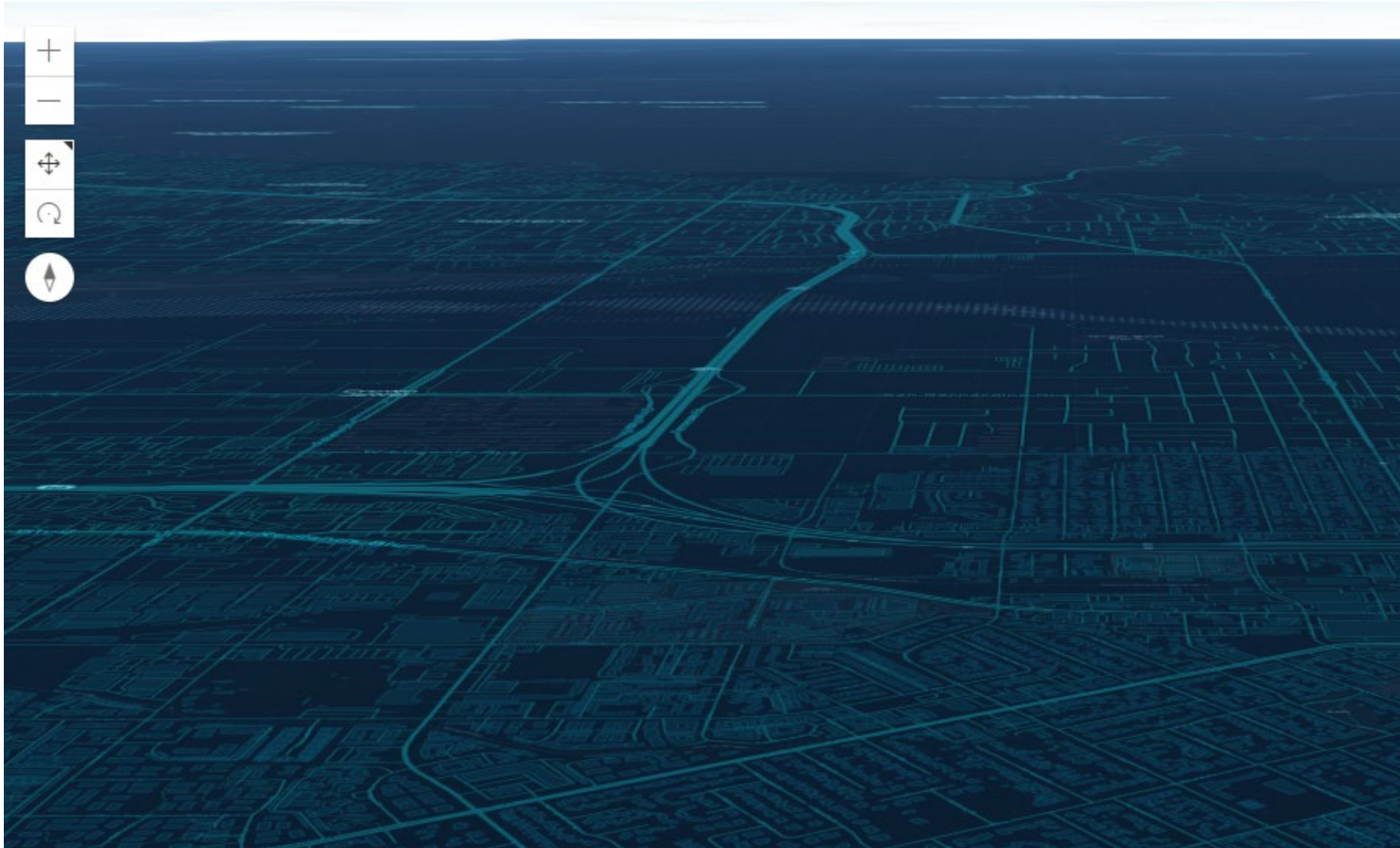




# What else can you do?

- What we did today
  - Modify the code
  - Zoom,
  - Gps, lat / long,
  - layers,
  - Colors and graphic change
- What's Possible
  - 3D perspective
  - Tell a story
  - Arcgis online data
  - Arcgis living atlas – <https://livingatlas.arcgis.com/>

# Show a Scene



- Homework – Extend the Content and make a 3D scene

# Go Further with Tutorials

Find a Route and Directions:

<https://developers.arcgis.com/javascript/latest/find-a-route-and-directions/>

Find Closest Facilities:

<https://developers.arcgis.com/documentation/mapping-apis-and-services/routing/closest-facility-routing/>

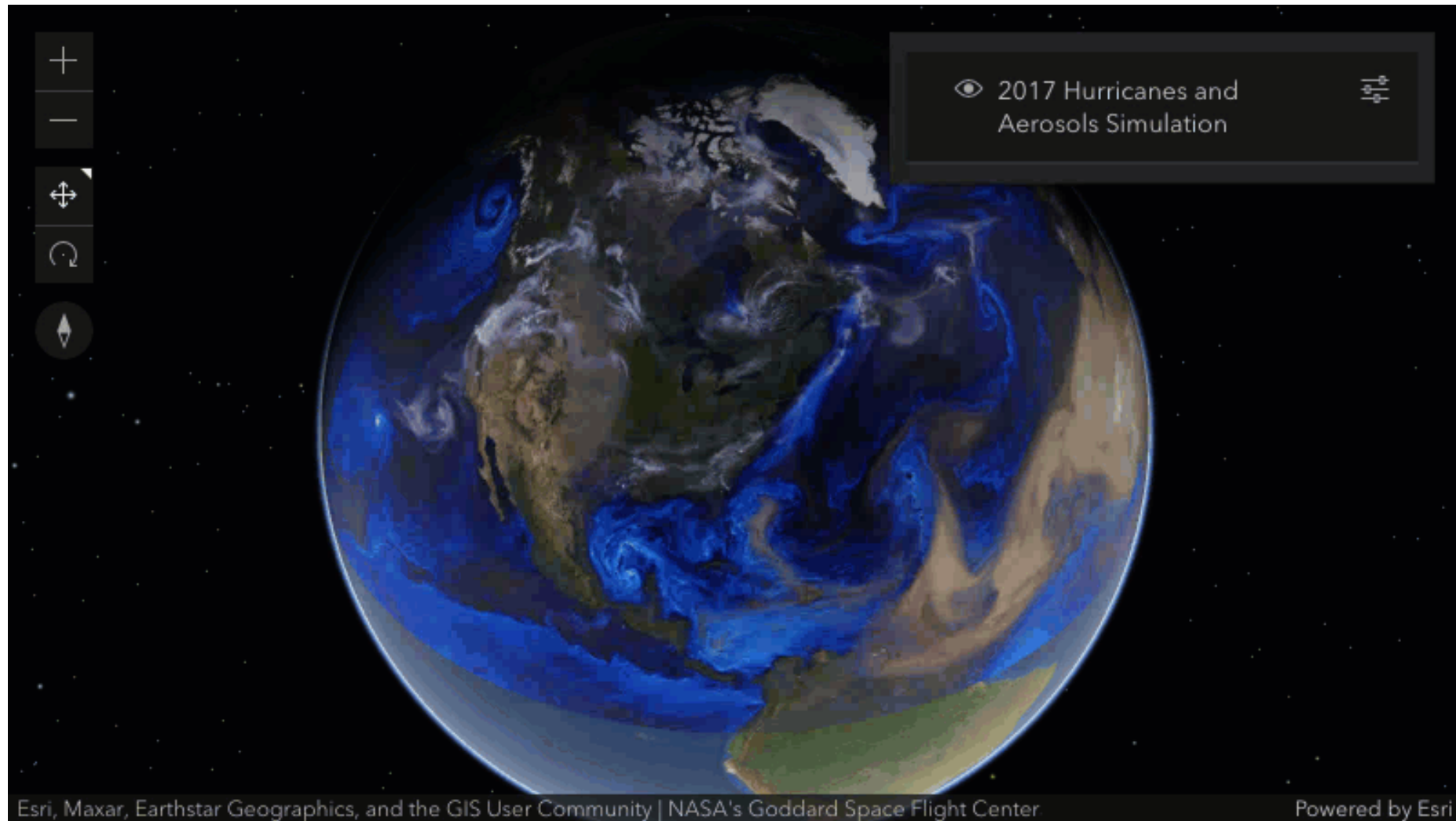
Get Demographic Data:

<https://developers.arcgis.com/javascript/latest/get-demographic-data/>

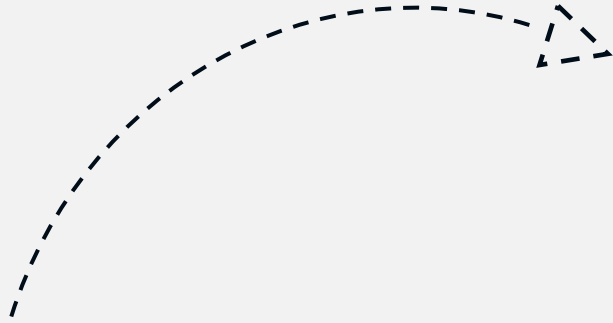
Custom Elevation Exaggeration:

<https://developers.arcgis.com/javascript/latest/sample-code/layers-custom-elevation-exaggerated/>

# ArcGIS Online



- The World is your oyster



But Wait!  
There's More!



# Choose your Flavor of ArcGIS Maps

## API support

	Point, line, and polygon styles	Data-driven visualization	3D visualization
ArcGIS API for JavaScript	✓	✓	✓
ArcGIS Runtime API for Android	✓	✓	✓
ArcGIS Runtime API for iOS	✓	✓	✓
ArcGIS Runtime API for Java	✓	✓	✓
ArcGIS Runtime API for .NET	✓	✓	✓
ArcGIS Runtime API for Qt	✓	✓	✓
ArcGIS API for Python	✓	⬤ <sup>1</sup>	⬤ <sup>2</sup>

1. Define renderers with JavaScript.

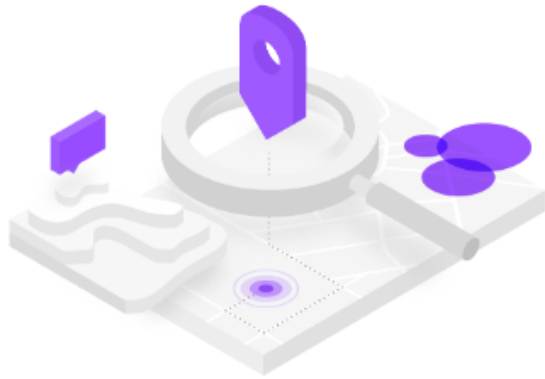
2. Supports web scenes only.

✓ Full support   ⬤ Partial support   ✕ No support



# Documentation

## Developer guides



ArcGIS Platform

### Mapping APIs and location services

Learn how to use ArcGIS, open source, and third-party APIs to access ArcGIS location services.

Get started



No/low code

### App templates and builders

Use interactive tools to quickly configure mapping and location applications.

Get started



Extend ArcGIS

### ArcGIS add-ins and automation

Extend and customize ArcGIS software with scripts and extensions.

Get started

- <https://developers.arcgis.com/documentation/>

# Give us Feedback!



Call us

5am - 5pm PT Monday–Friday

+1 888 377 4575 opt 3



Esri Training

Find classes and organize  
learning programs

[View training options](#)



Catalog

Explore all instructor-led  
classes and self-paced e-  
learning

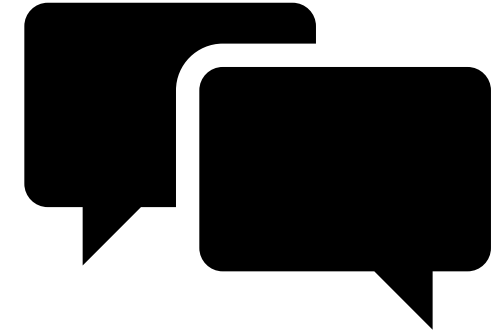
[Search the catalog](#)



Technical Certification

Certify that you are proficient in  
best practices for using ArcGIS

[Get certified](#)



Link to Github

<https://github.com/Esri/arcgis-js-api>

Link to stack overflow:

<https://stackoverflow.Com/questions/tagged/arcgis>



A dark blue world map is centered in the background of the slide. The continents are visible in a slightly lighter shade of blue against the darker background.

# Upcoming Events

[events.esri.com](https://events.esri.com)

**July**

Esri User  
Conferece

**Sept**

Rail  
Summit

**Oct**

GIS  
Conference

**Nov**

Esri  
European  
Developer  
Summit

# See you next time for more GIS adventures!



<https://github.com/thakopian>



@Tadeh Hakopian



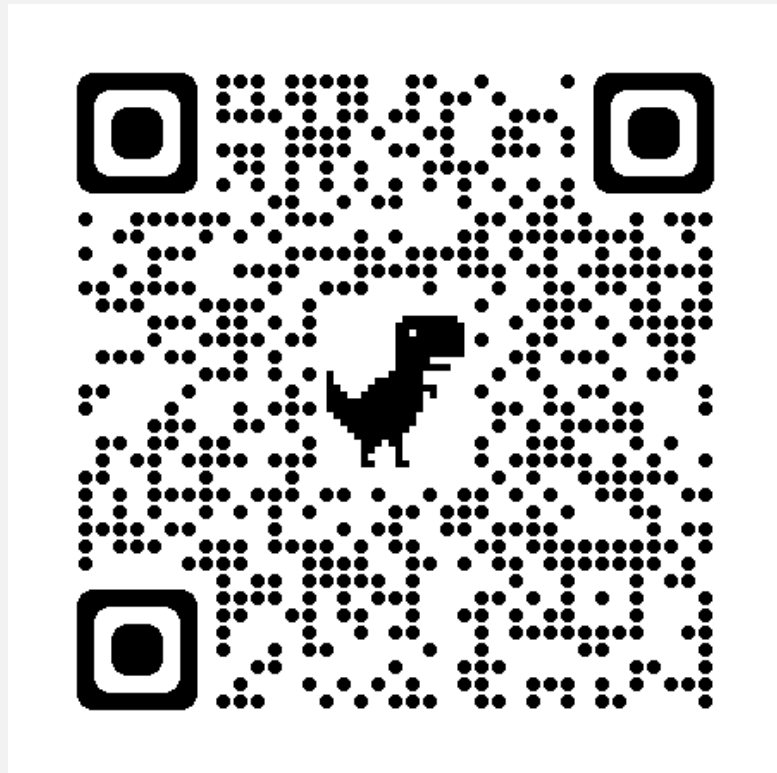
<https://www.linkedin.com/in/thakopian/>



@tadeh\_hakopian



(Homework Answer) [https://github.com/thakopian/ARCGIS\\_JS\\_DEMO\\_20220629/blob/main/DISPLAYSCENE.html](https://github.com/thakopian/ARCGIS_JS_DEMO_20220629/blob/main/DISPLAYSCENE.html)



(Full Slide Deck of this Talk)

# Thank you!



**esri**<sup>TM</sup>

@esri