



ArcGIS API for JavaScript: What's New

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Technical Workshop



ArcGIS API for JavaScript: What Have You Done for Me Lately?

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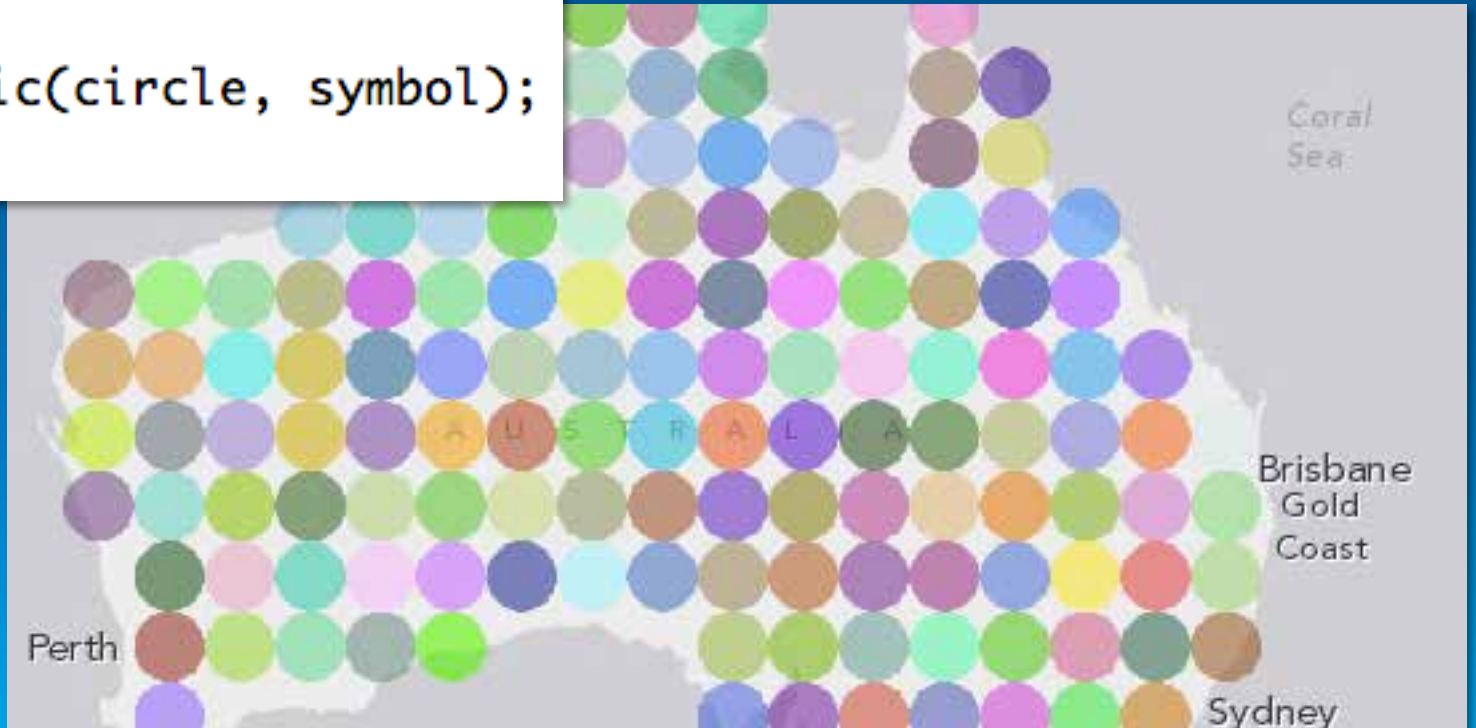
Technical Workshop

Overview

- Simplifying workflows
- Better data visualization tools

Simpler – Circles (3.8)

```
var circle = new Circle({
  center: point,
  geodesic: true,
  radius: 1000
});
var graphic = new Graphic(circle, symbol);
gl.add(graphic);
```



Circles can be hard



Simpler – events (3.5)

on-event-snippet.js *

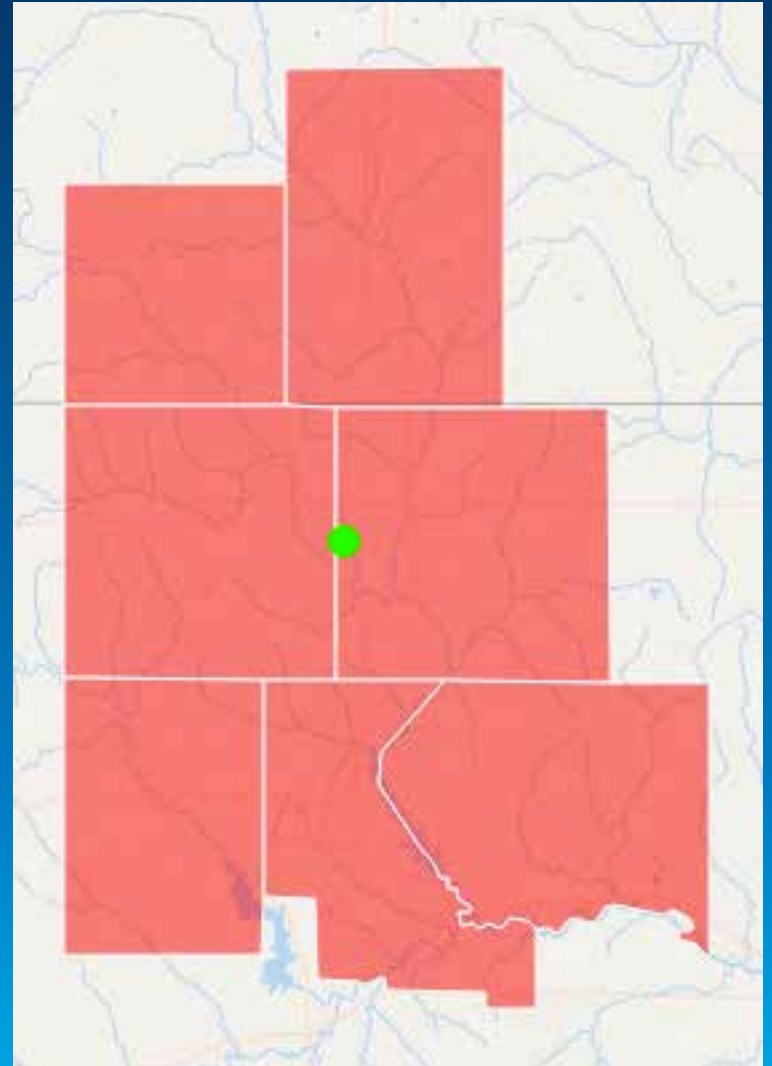
```
1 // pre-3.5 style of event listener
2 dojo.connect(map, "onExtentChange", function(extent, delta, levelChange, lod) {
3   console.log("old style: ", extent);
4 });
5
6 // 3.5 style event listener
7 map.on("extent-change", function(event) {
8   console.log("new style: ", event.extent);
9 })
```

Simpler – events (3.9)

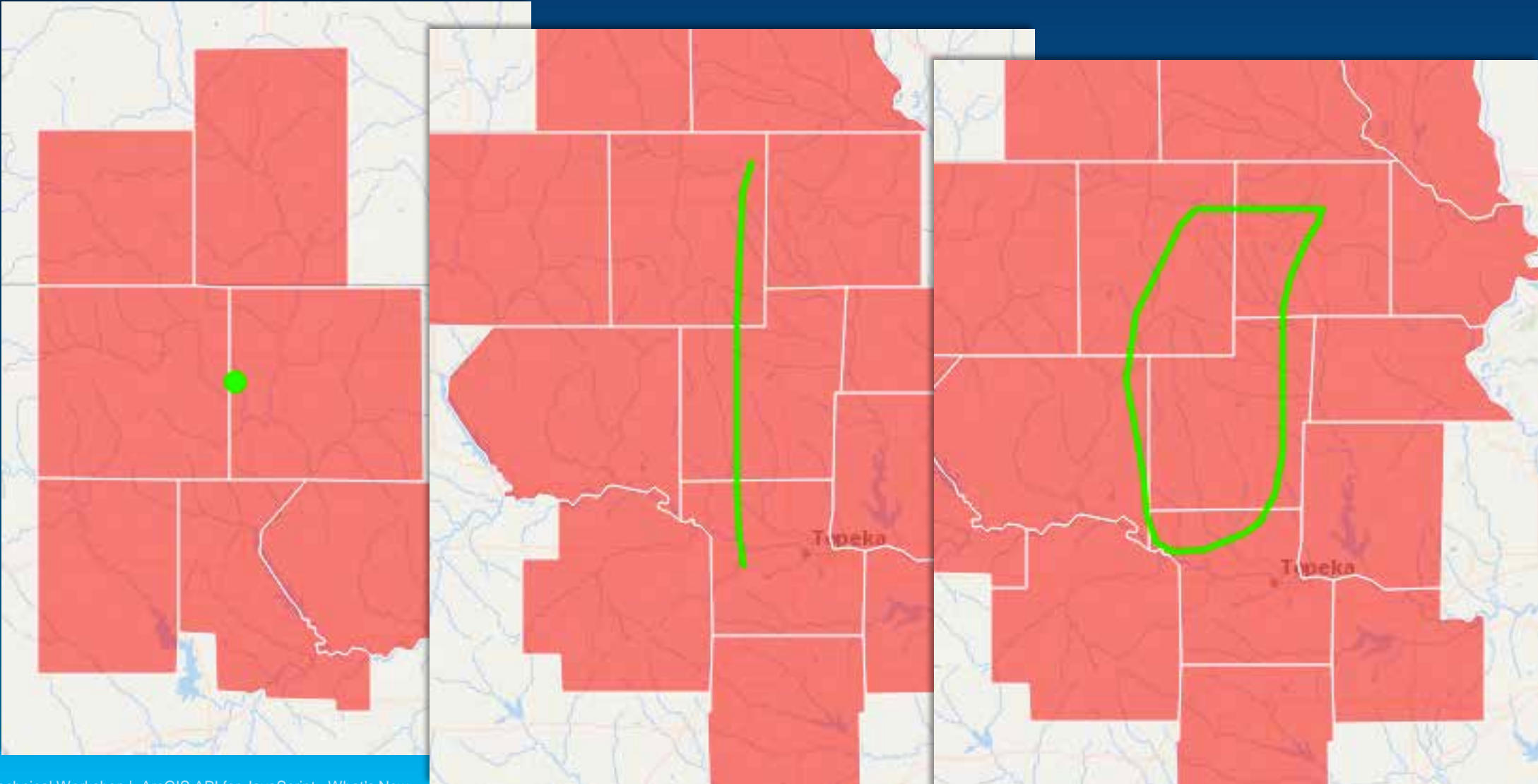
```
on-multiple-events-snippet.js ✖  
1 // pre-3.9: one event name per call to .on()  
2 map.on("pan-end", function(e) {  
3   console.log("pan end", e);  
4 });  
5 map.on("zoom-end", function(e) {  
6   console.log("zoom end", e);  
7 });  
8  
9 // 3.9 and later: can pass multiple strings to .on()  
10 map.on("pan-end, zoom-end", function(e) {  
11   console.log("map panned or zoomed", e);  
12 });
```

Querying – point and distance (3.9)

```
// Distance query  
var dq = new Query();  
dq.returnGeometry = true;  
dq.geometryPrecision = 0;  
dq.outFields = ["NAME"];  
var dqt = new QueryTask(url);  
dq.geometry = p;  
dq.distance = distance;  
dq.units = "miles";  
dqt.execute(dq).then(show);
```



Querying – *geometry* and distance (3.9)

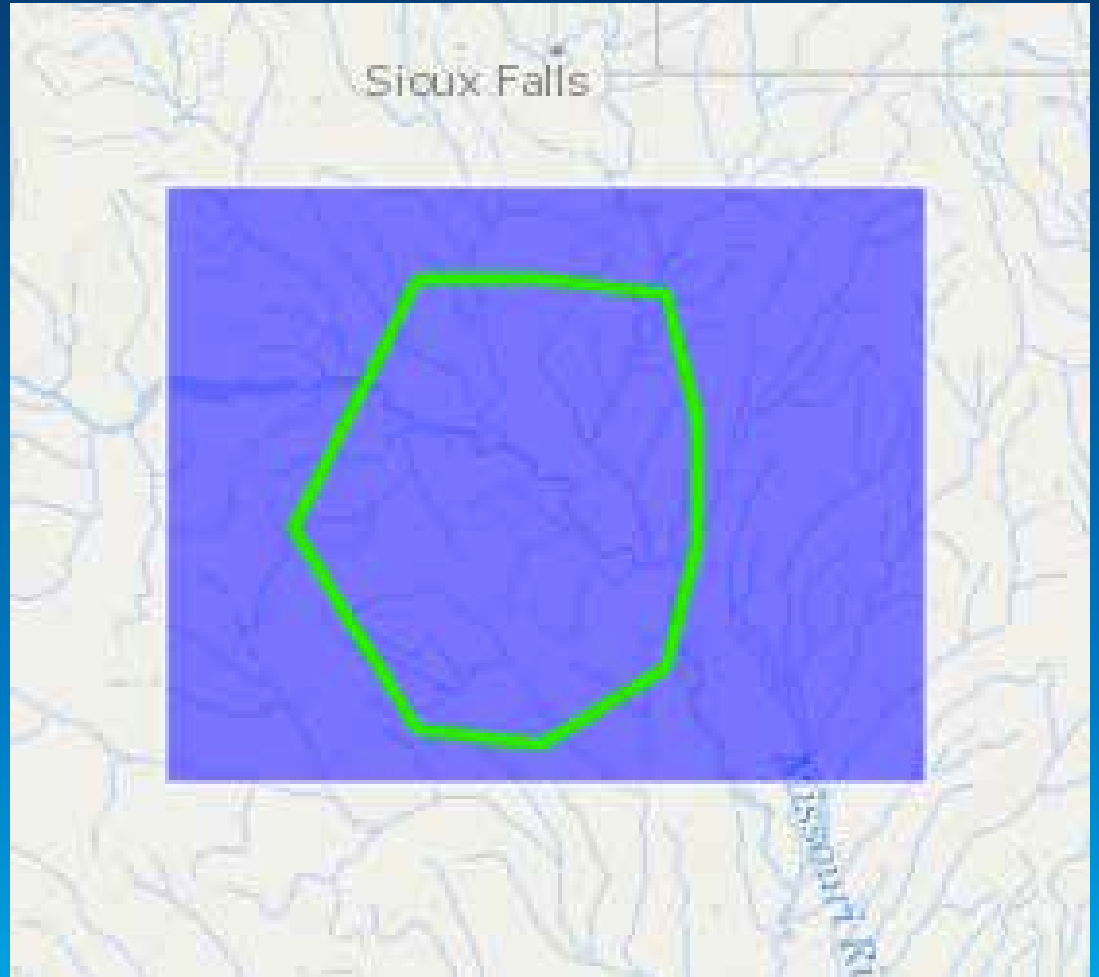


Querying – extent of results (3.9)

```
qt.executeForExtent(q).then(show);
```

```
// Response:
```

```
{  
  "count": 12,  
  "extent": {  
    "xmin": -10890961.866111942,  
    "ymin": 5163660.09687971,  
    "xmax": -10650861.96420725,  
    "ymax": 5352182.790255278,  
    "spatialReference": {  
      "wkid": 102100,  
      "latestWkid": 3857  
    }  
  }  
}
```



Query Paging (3.9)

```
var url = "http://services.arcgis.com/.../ArcGIS/re
var qt = new QueryTask(url);
var q = new Query();
// q.where = "STATE_NAME = 'Indiana'";
q.outFields = ["NAME", "STATE_NAME", "AVG_SALE87"];

domAttr.set("source", "href", url);

on(dom.byId("pages"), "submit", function(e) {
  event.stop(e);
  var s = dom.byId("start").value;
  var n = dom.byId("num").value;
  var w = dom.byId("where").value;
  q.start = parseInt(s) || 0;
  q.num = parseInt(n) || 1;
  q.where = w;
  qt.execute(q).then(success, failure);
});
```

start:	<input type="text" value="30"/>
num:	<input type="text" value="10"/>
where:	<input type="text" value="STATE_NAME='Indiana'"/>
<input type="button" value="Go"/>	

[Layer in a hosted feature service being queried.](#)

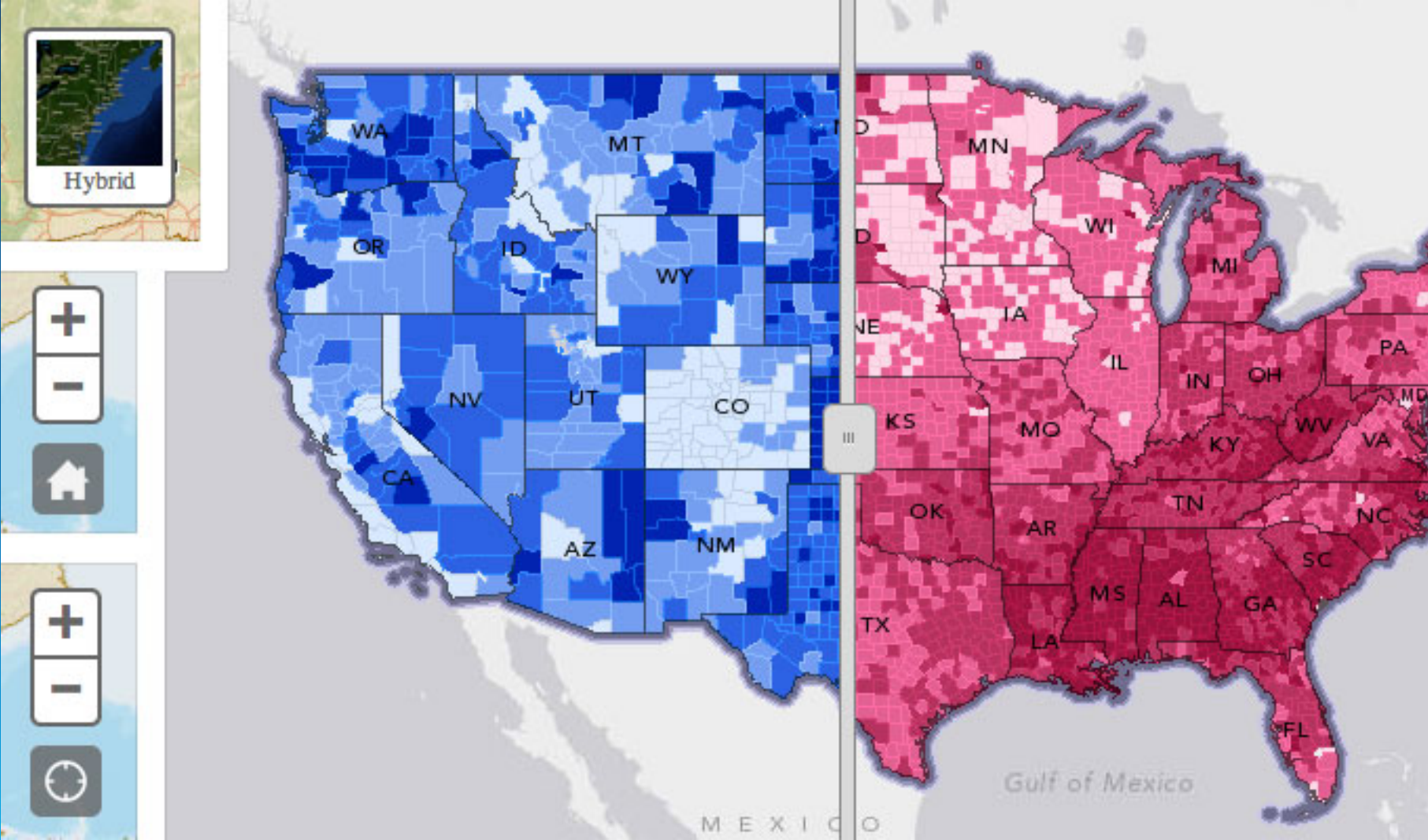
10 features.

```
[
  {
    "geometry": null,
    "attributes": {
      "NAME": "Grant",
      "STATE_NAME": "Indiana",
      "AVG_SALE87": 69718
    }
  },
]
```

Simpler – LabelLayer (3.7, 3.10)

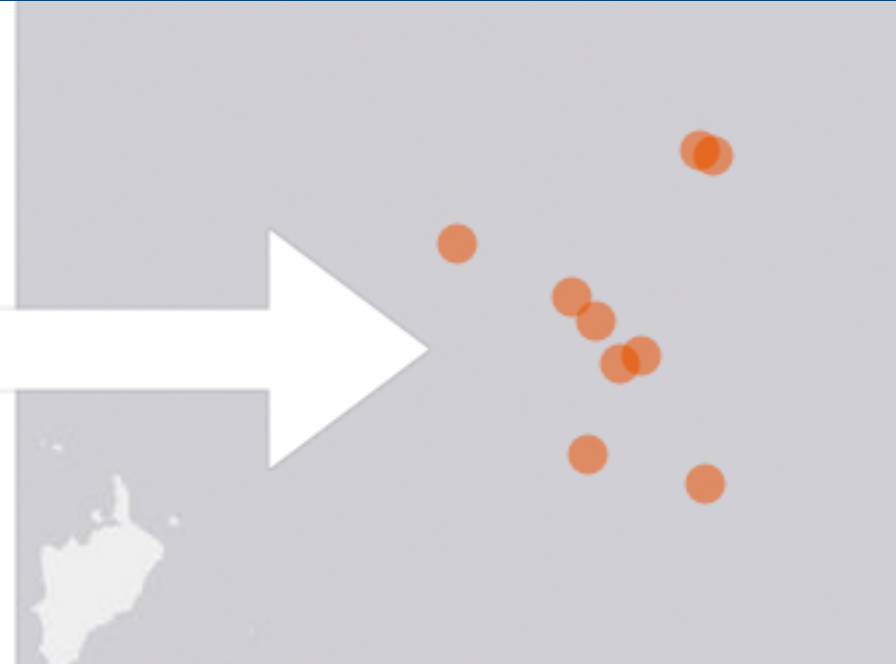


Map Widgets



CSV Layer

```
1 time,latitude,longitude,depth,mag,mag
2 2014-03-21T16:33:05.430Z,7.5363,94.33
3 2014-03-21T15:48:24.320Z,7.6791,94.06
4 2014-03-21T15:43:26.030Z,7.624,94.179
5 2014-03-21T14:49:59.500Z,7.7751,94.31
6 2014-03-21T14:45:51.830Z,7.5645,94.25
7 2014-03-21T14:36:04.800Z,7.4345,9
8 2014-03-21T14:25:08.860Z,7.4634,9
9 2014-03-21T14:11:13.720Z,7.5569,94.22
10 2014-03-21T13:41:07.500Z,7.7686,94.32
11 2014-03-21T11:20:54.070Z,35.9701,-97.
12 2014-03-21T10:59:51.880Z,34.1558,26.0
13 2014-03-21T10:58:35.700Z,40.3982,-124
```



Simpler

OAuth



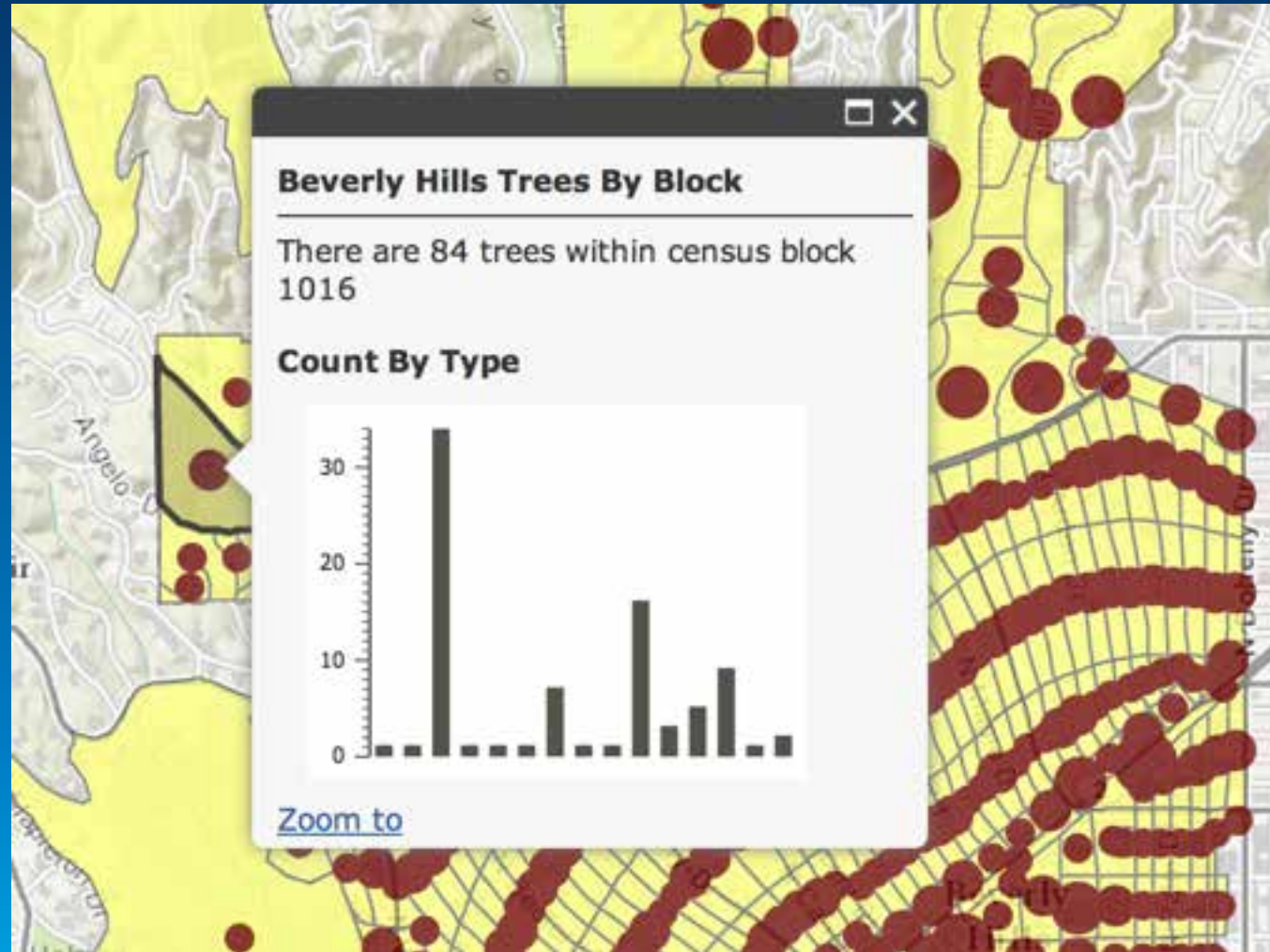
Smarter map navigation

```
1 require(["esri/map"], function(Map) {
2     var map = new Map("map", {
3         center: cities.Boise.xy,
4         zoom: 10,
5         optimizePanAnimation: true,
6         slider: false,
7         showAttribution: false
8     });
9 });
```


setInfoTemplates()

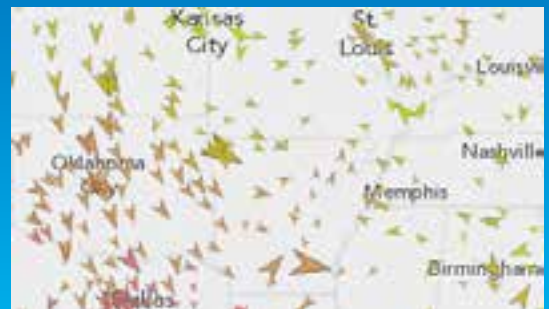
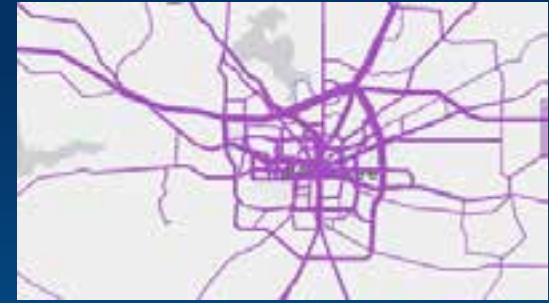
```
1  require([
2  |  "esri/layers/ArcGISDynamicMapServiceLayer"
3  | ], function(
4  |  ArcGISDynamicMapServiceLayer
5  | ) {
6  |   var demographicsLayer = new ArcGISDynamicMapServiceLayer(url, options);
7  |   demographicsLayer.setInfoTemplates({
8  |     1: { infoTemplate: _blockGroupInfoTemplate },
9  |     2: { infoTemplate: _countyCensusInfoTemplate }
10 |   });
11 |   demographicsLayer.setVisibleLayers([1, 2]);
12 |   map.addLayer(demographicsLayer);
13 | });
```

Popup with related fields

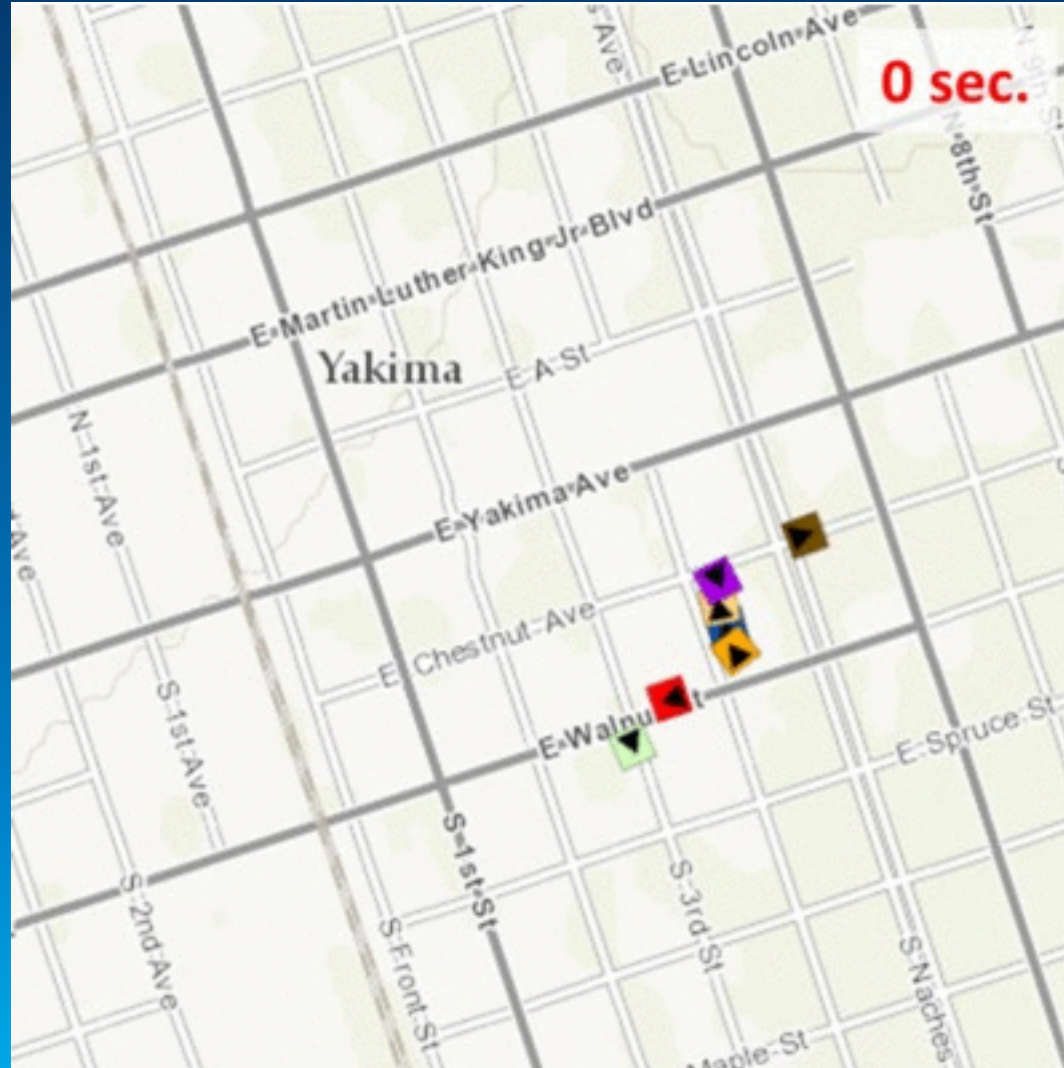


Data Visualization

- Three new properties on renderer
 - Rotation
 - Proportional symbol
 - Color (ramp)
- Dot density renderer
- Scale dependent renderer
- Stylize features with CSS



Layer refresh (3.7)



Rotation



```
layer.renderer.setRotationInfo({  
  field: "heading",  
  type: "geographic"  
});
```

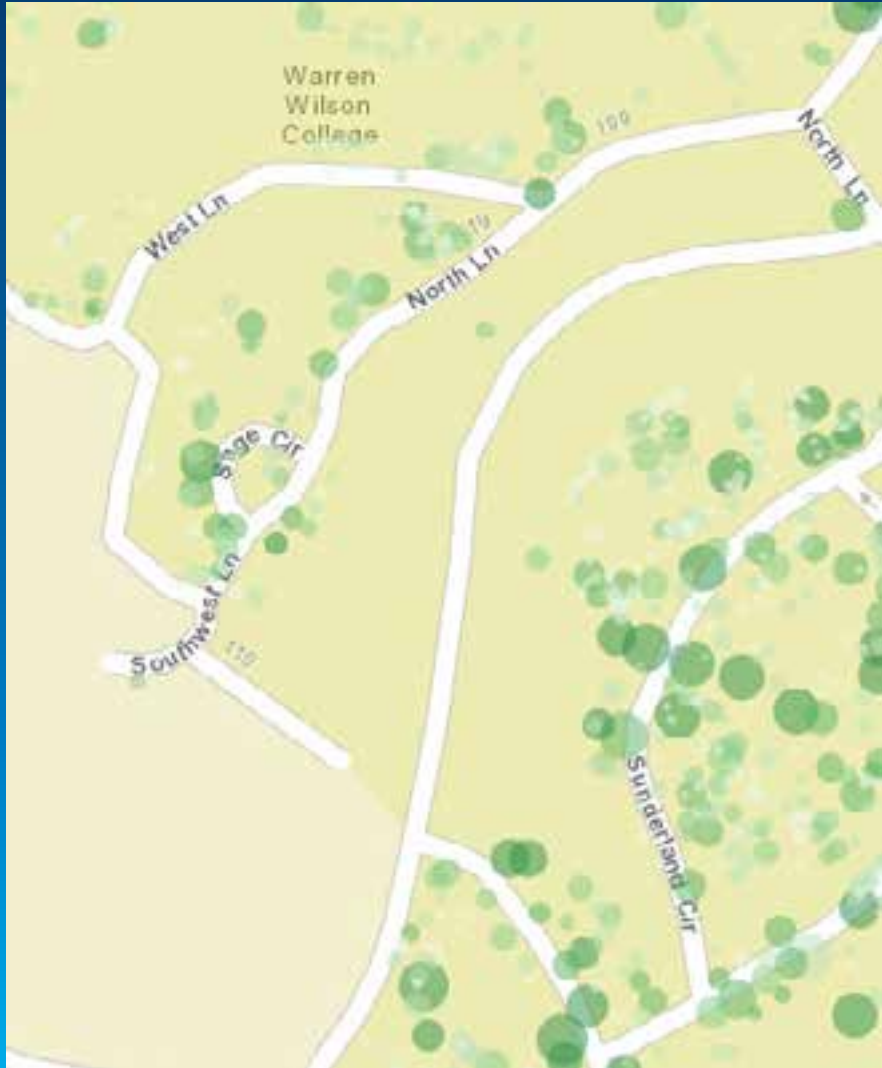


Geographic



Arithmetic

Proportional Symbol



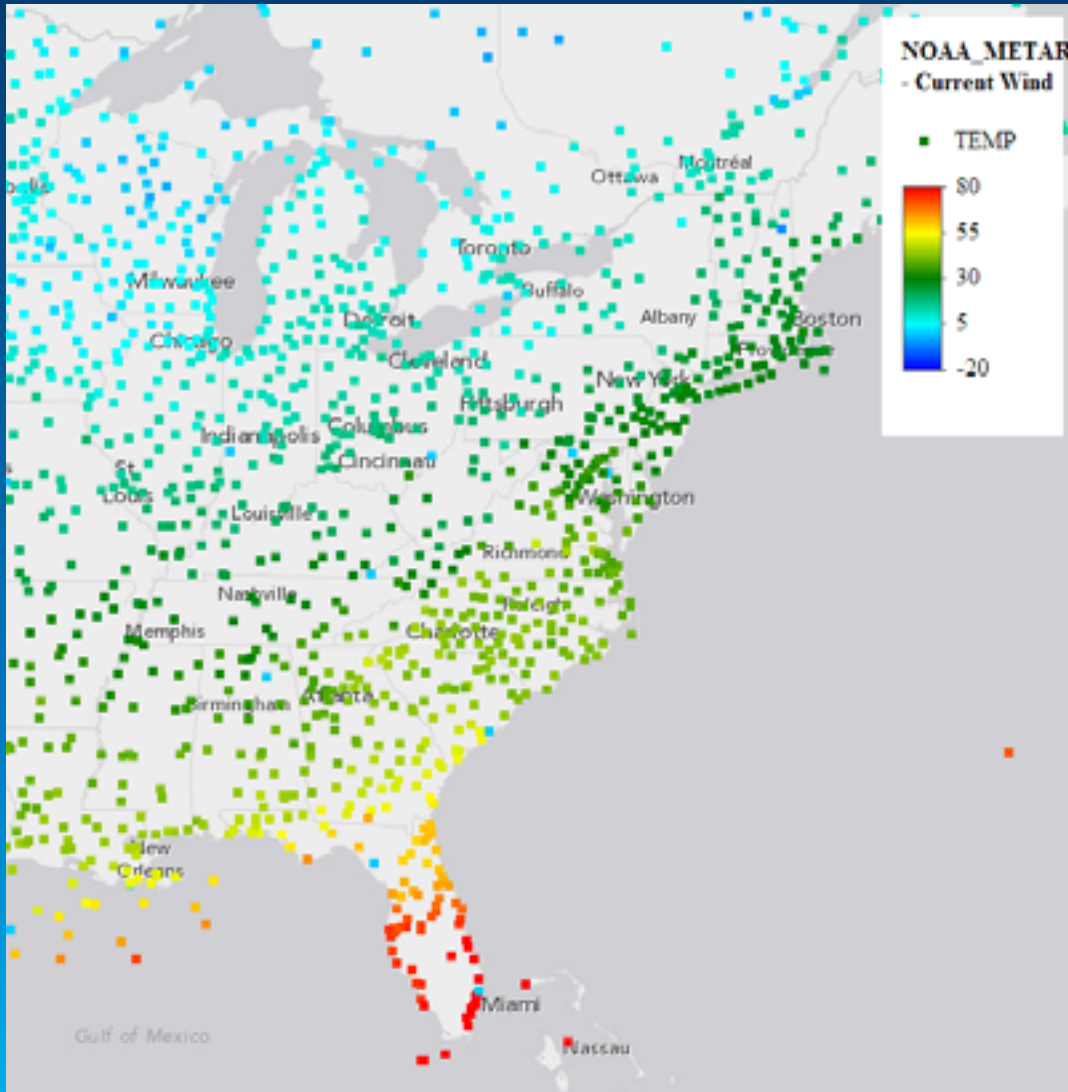
Distance-based quantity

```
layer.renderer.setProportionalSymbolInfo({  
  field: "GroundArea",  
  valueUnit: "feet",  
  valueRepresentation: "area"  
});
```

Non-distance-based quantity

```
layer.renderer.setProportionalSymbolInfo({  
  field: "value",  
  minDataValue: 1,  
  minSize: 2,  
  maxDataValue: 100,  
  maxSize: 8  
});
```

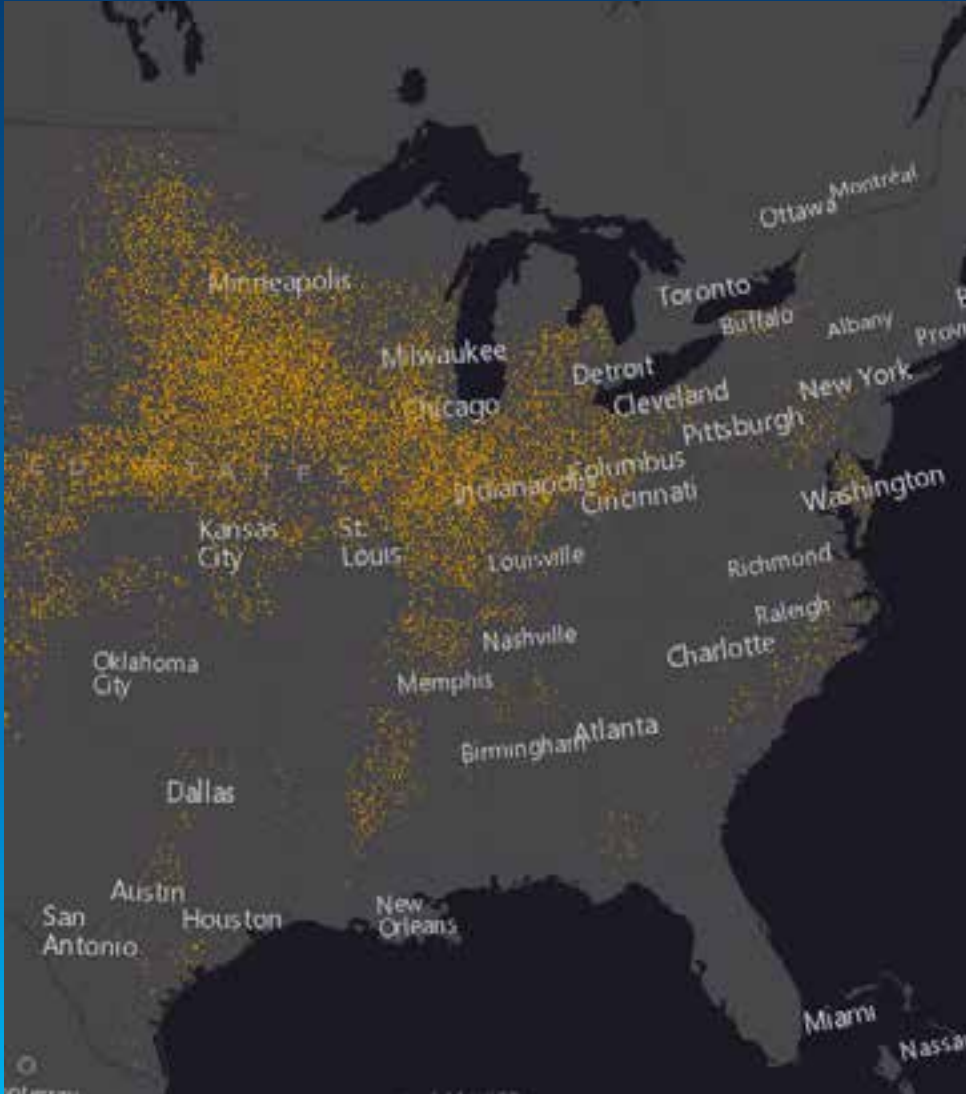
Continuous Color (color ramp)



```
renderer.setColorInfo({  
  field: "TEMP",  
  minDataValue: -20,  
  maxDataValue: 80,  
  colors: [  
    new Color([0, 0, 255]),  
    new Color([0, 255, 255]),  
    new Color([0, 127, 0]),  
    new Color([255, 255, 0]),  
    new Color([255, 0, 0])  
  ]  
});
```

```
renderer.setColorInfo({  
  field: "X15001_A",  
  minDataValue: 2684,  
  maxDataValue: 83313.54,  
  stops: [  
    { value: 2684, color: new Color("#00f") },  
    { value: 22896, color: new Color("#fff") },  
    { value: 83313.54, color: new Color("#f00") }  
  ]  
});
```

Dot Density



```
var renderer = new DotDensityRenderer({
  fields: [{
    name: "Total_Emp",
    color: new Color([52, 114, 53])
  }],
  dotValue: 4000,
  dotSize: 2
});
layer.setRenderer(renderer);
```


Scale Dependent Renderer

```
var scaleDependentRenderer = new ScaleDependentRenderer({
  rendererInfos: [{
    renderer: renderer1,
    maxScale: 100000000,
    minScale: 200000000
  }, {
    renderer: renderer2,
    maxScale: 50000000,
    minScale: 100000000
  }]
});

layer.setRenderer(scaleDependentRenderer);
```

Stylize Features with CSS



JavaScript

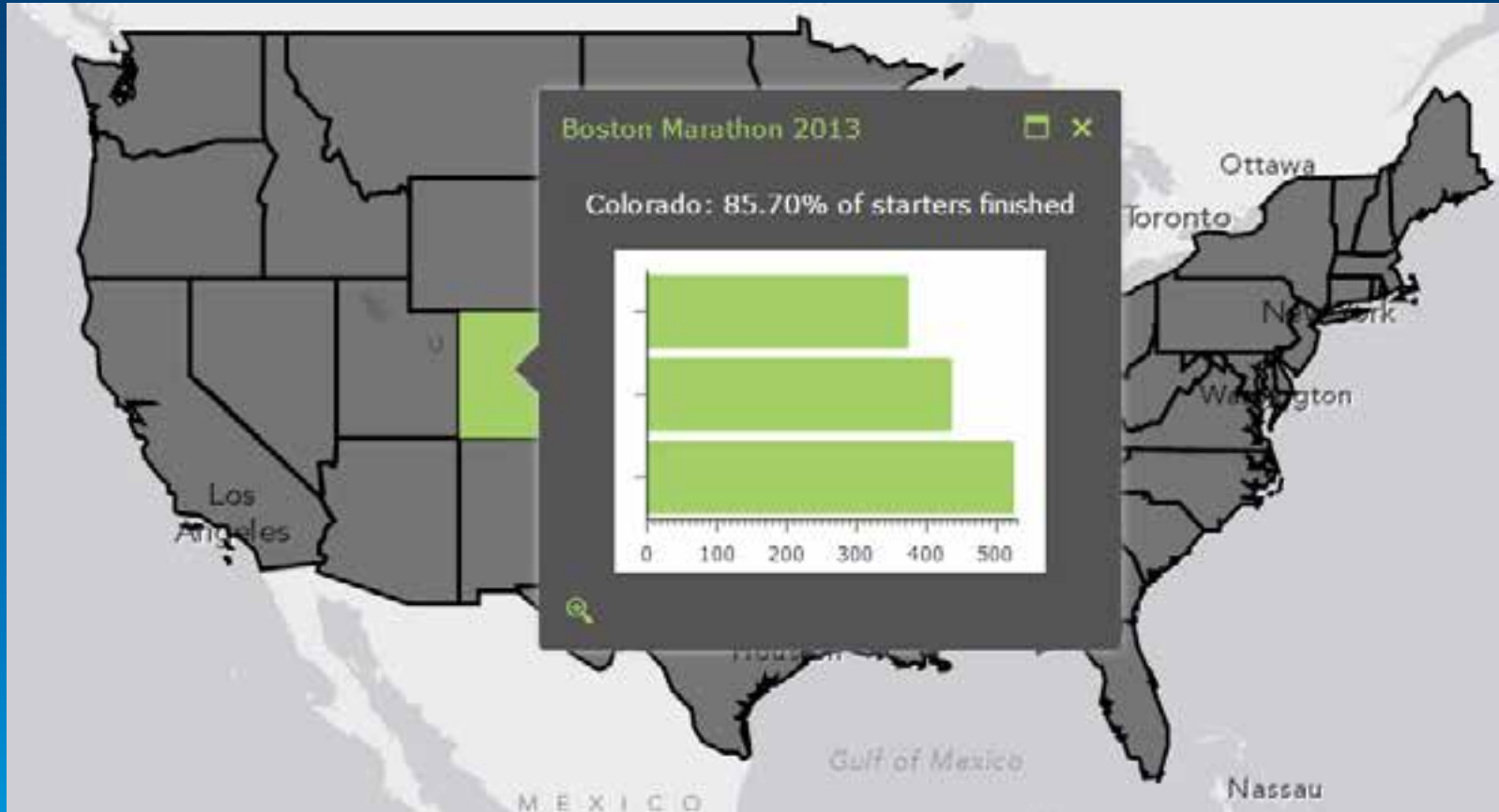
```
var layer = new FeatureLayer("...", {  
  styling: false,  
  dataAttributes: [ "name" ]  
});
```

CSS

```
path[data-name="Washington"] {  
  stroke: rgb(54, 93, 141);  
  stroke-width: 1pt;  
  stroke-opacity: 1;  
  fill: rgb(54, 93, 141);  
  fill-opacity: 0.7;  
}
```

New themes for Popup

Light and Dark



```
/* Change color of icons to match bar  
chart and selection symbol */  
.esriPopup.dark div.titleButton,  
.esriPopup.dark div.titlePane .title,  
.esriPopup.dark div.actionsPane .action {  
  color: #A4CE67;  
}  
/* Additional customizations */  
.esriPopup.dark .esriPopupWrapper {  
  border: none;  
}
```

```
domClass.add(popup.domNode, "dark");
```

Analysis

Select Feature Layer

Active Scenario - LandUse

Create Buffers

Create buffers from **Active Scenario - LandUse**

1. Enter buffer size

Distance Field

.25 .5 .75 1 2 3 5 Miles

To create multiple buffers, enter distances separated by spaces (7 3 5)

Options

2. Result layer name

Distance to Parks

Analysis

Select Feature Layer

Active Scenario - Points of Interest

Create Drive-Time Areas

Create areas around **Active Scenario - Points of Interest**

1. Measure:

Driving time Driving distance

3 5 7 10 Minutes

To output multiple areas for each point, type sizes separated by spaces (2 3.5 5).

Use traffic

Live traffic

Now -3 +6 +9 +12 hr

Traffic based on typical conditions for

Monday 12:00 PM

Guide | ArcGIS API for Java... x

https://developers.arcgis.com/javascript/jshelp/intro_analysiswidgets.html

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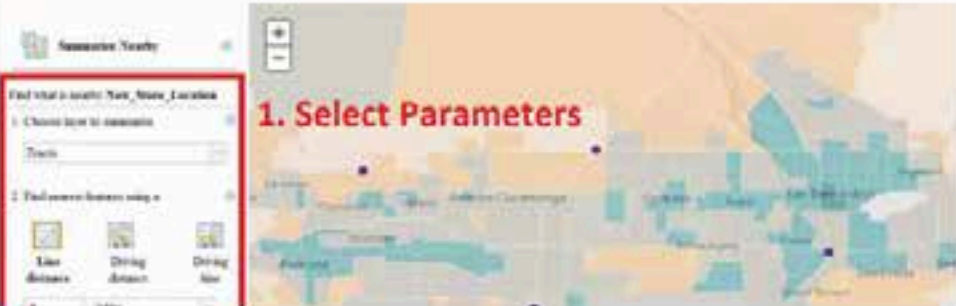
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Working with Analysis Widgets

The **Analysis Widgets** provide access to the [ArcGIS Spatial Analysis Service](#), which allows you to perform common spatial analyses on your hosted data, via the ArcGIS API for JavaScript. The analysis widgets feature:

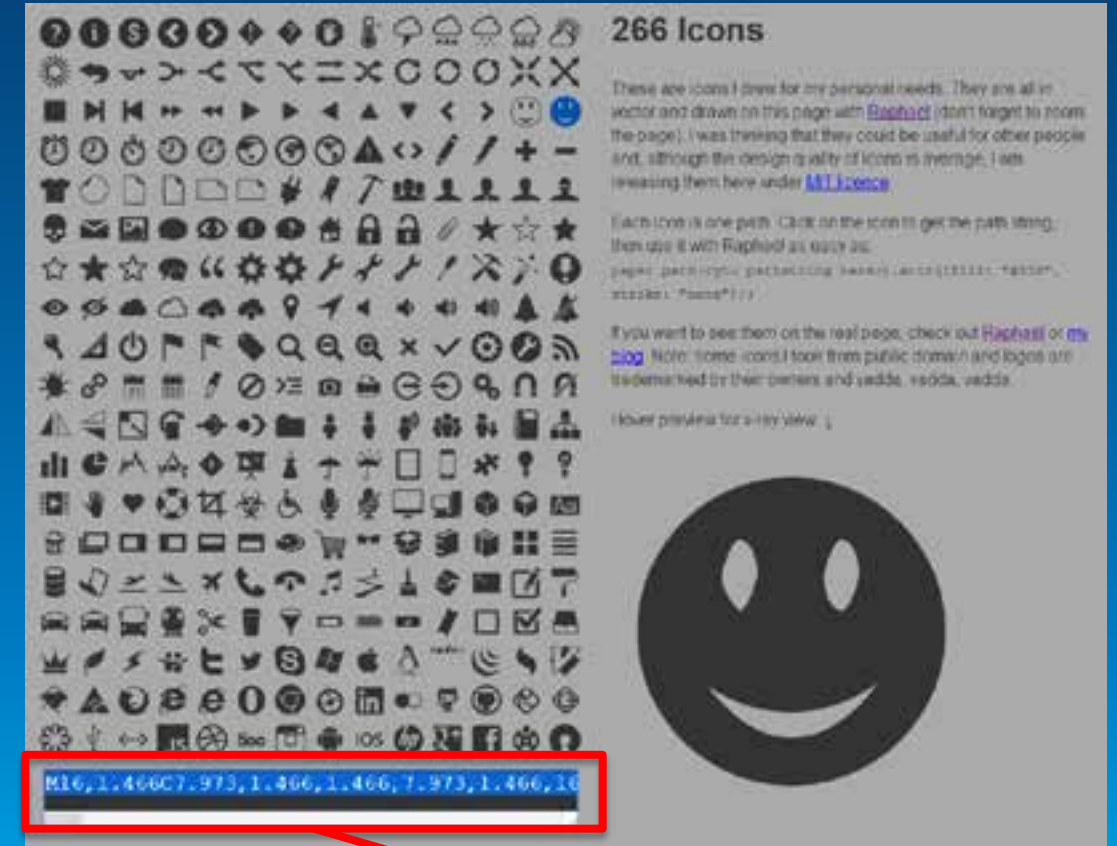
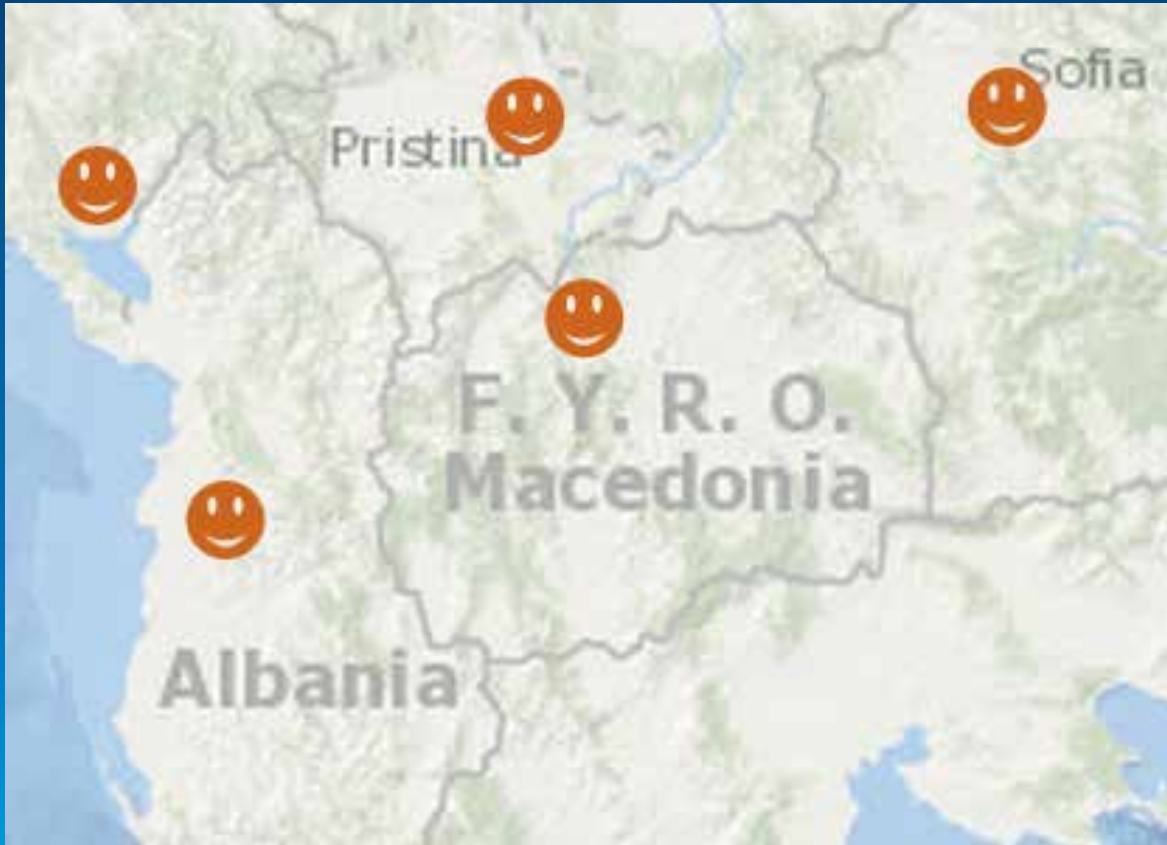
- Well-designed user interface where users can select parameters and submit an analysis job.
- Event triggering as analysis job progresses – when a job starts, ends and succeeds. Error messages are provided when a job fails. This helps you monitor an analysis tasks from your JavaScript apps.
- Result display on the map. You have the option to save the output data as a hosted feature service, or return as a feature collection.



The screenshot shows the ArcGIS Analysis Widgets interface. On the left, there is a task configuration panel with a red box highlighting the '1. Select Parameters' section. The panel includes a search bar, a 'Find what is nearby' dropdown, and a list of analysis tasks: 'Line Distance', 'Driving Distance', and 'Driving Time'. On the right, a map displays the results of the analysis, with a red text overlay '1. Select Parameters' pointing to the map area.

Set SVG Path for SimpleMarkerSymbol

<http://raphaeljs.com/icons/>



```
var symbol = new SimpleMarkerSymbol().setPath("M0,-15 12.5,-2.5 ... 0 1,0 -36,0")
```



Thank you...

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

Offering ID: 13353

Online – www.esri.com/ucsessionsurveys

Paper – pick up and put in drop box



Understanding our world.