

# WebApp Builder for ArcGIS

David Martinez  
John Gravois



# Topics

## Introduce Web AppBuilder

Quick introduction of ArcGIS  
WebApp Builder  
Configure a ready to use web  
application

## Web AppBuilder Architecture

Design principles  
WebApp Builder components  
Key concepts

## Create Your First Widget

Create a simple widget  
Configure the widget  
Package the widget

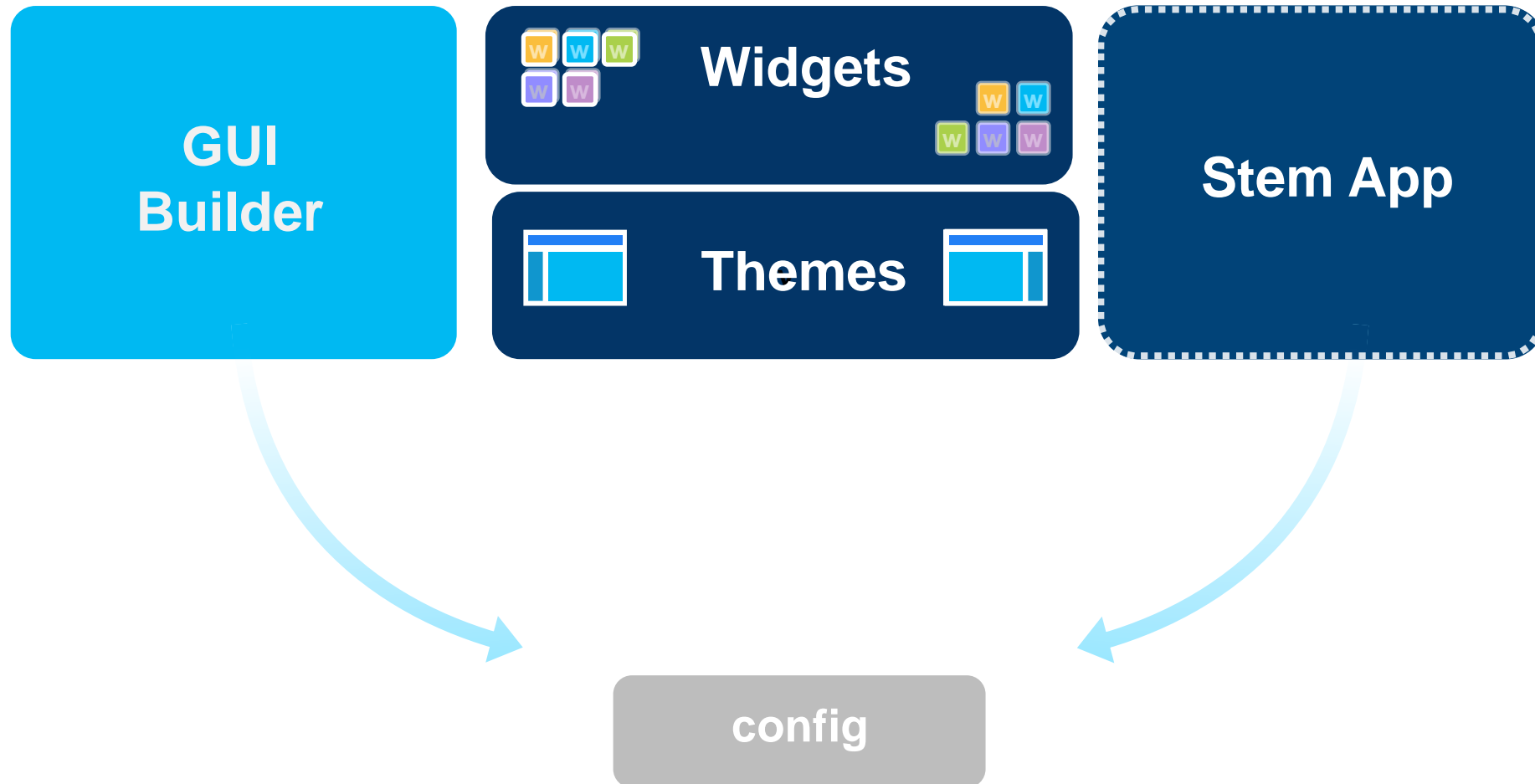
## Create a Theme

Define WebApp Builder theme  
Create a theme  
Package the theme

## Deploy

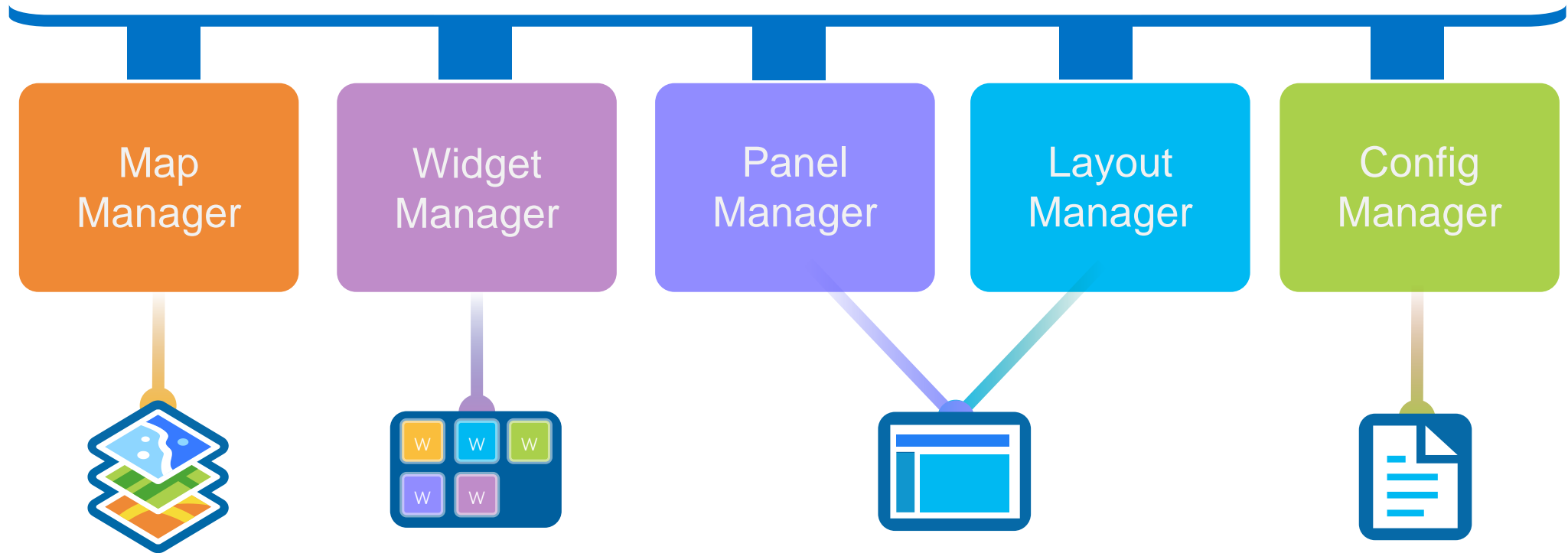
Options  
Frequently Asked Questions

# Web App Builder for ArcGIS Components



# Inside Stem App

**Messaging (publish/subscribe)**



# Widget

HTML/JavaScript/CSS

Specific task

Configuration in JSON

NLS support

Builder config UI

# Theme

HTML/JavaScript/CSS

Layout

Branding

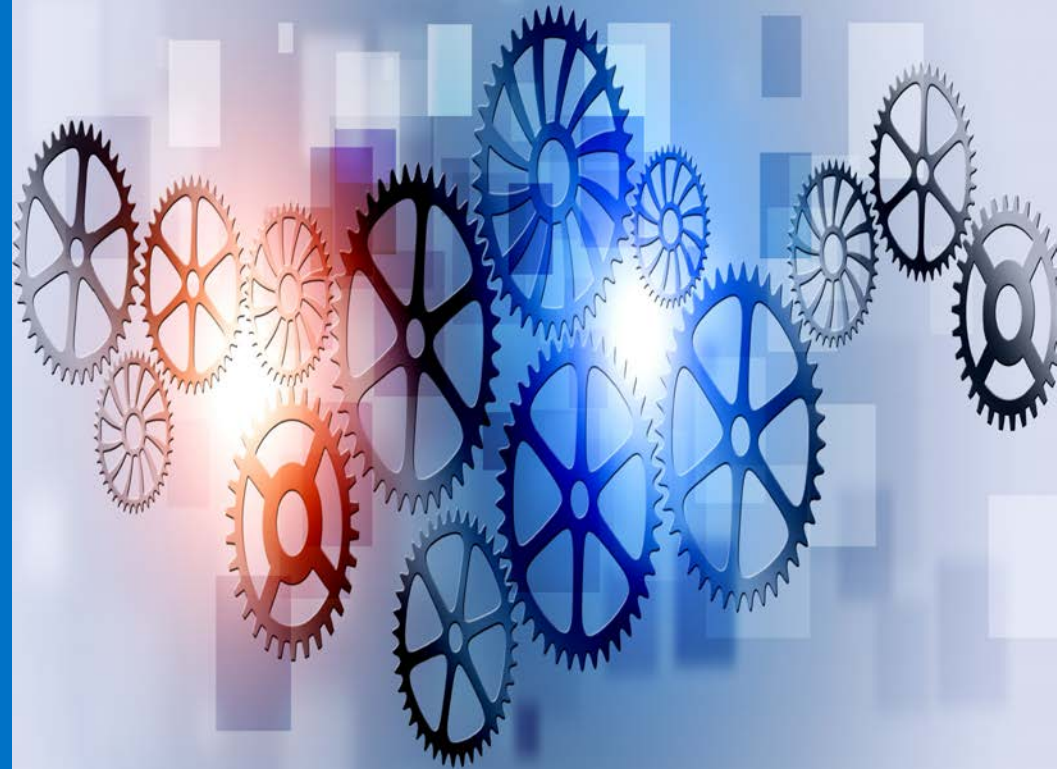
Widget panel and  
behavior

Style (Color, etc.)

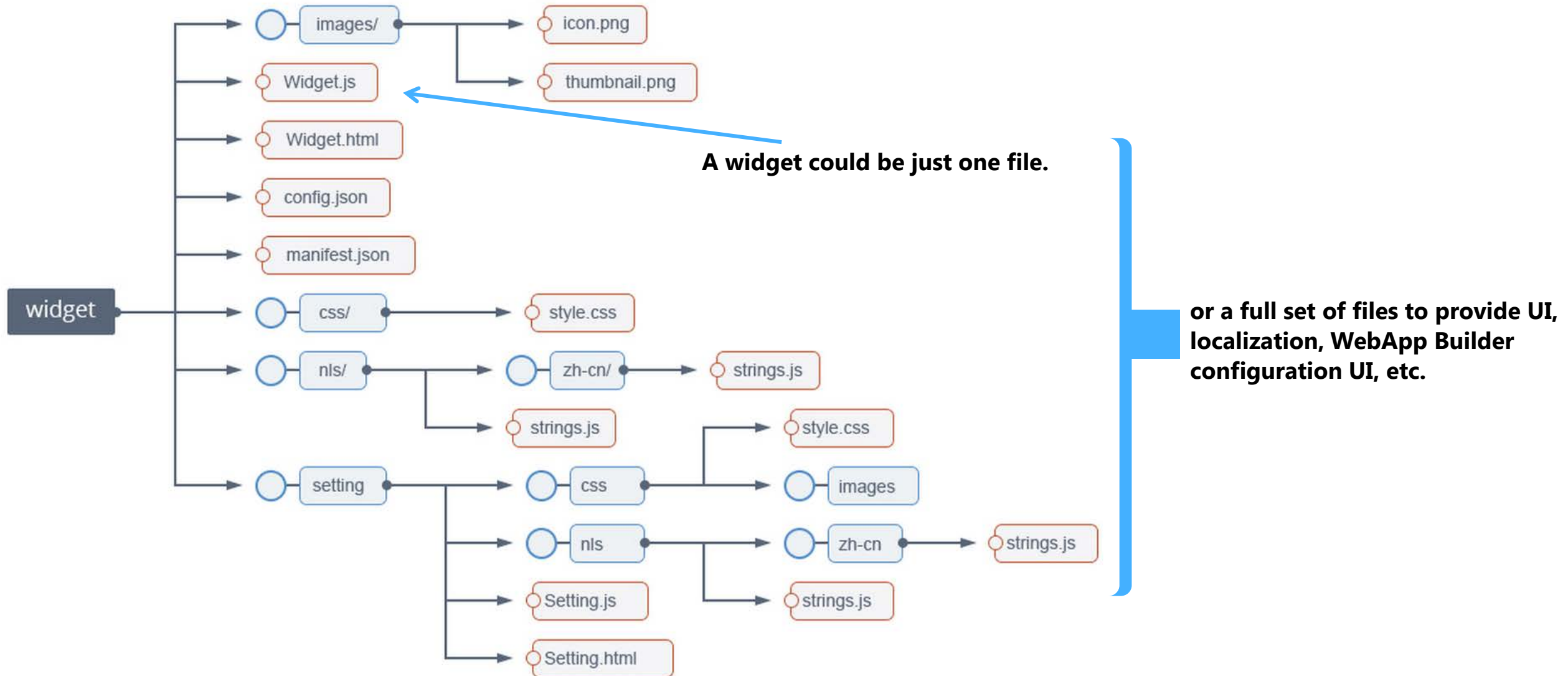
Theme widgets

# Web AppBuilder Widget

John Gravois



# Convention and Defaults



# A minimum Widget - Widget.js

```
define(['dojo/_base/declare',  
    'jimu/BaseWidget'  
],  
function(declare, BaseWidget) {  
    var clazz = declare([BaseWidget], {  
    });  
    return clazz;  
});
```

**All widgets are derived from the BaseWidget class**





# BaseWidget

## What do you get from BaseWidget?

App config properties (label, icon, location, etc)

App config data

Widget's config data

Map object

Widget state (open, closed, active...)

Events like open/signin

Sharing data (widget communication)

## Your job?

HTML Template

Widget config file

Widget name (for css)

The "guts" (i.e. business logic)

Localization



# Events

## Dijit lifecycle events

- postCreate
- startup
- ...



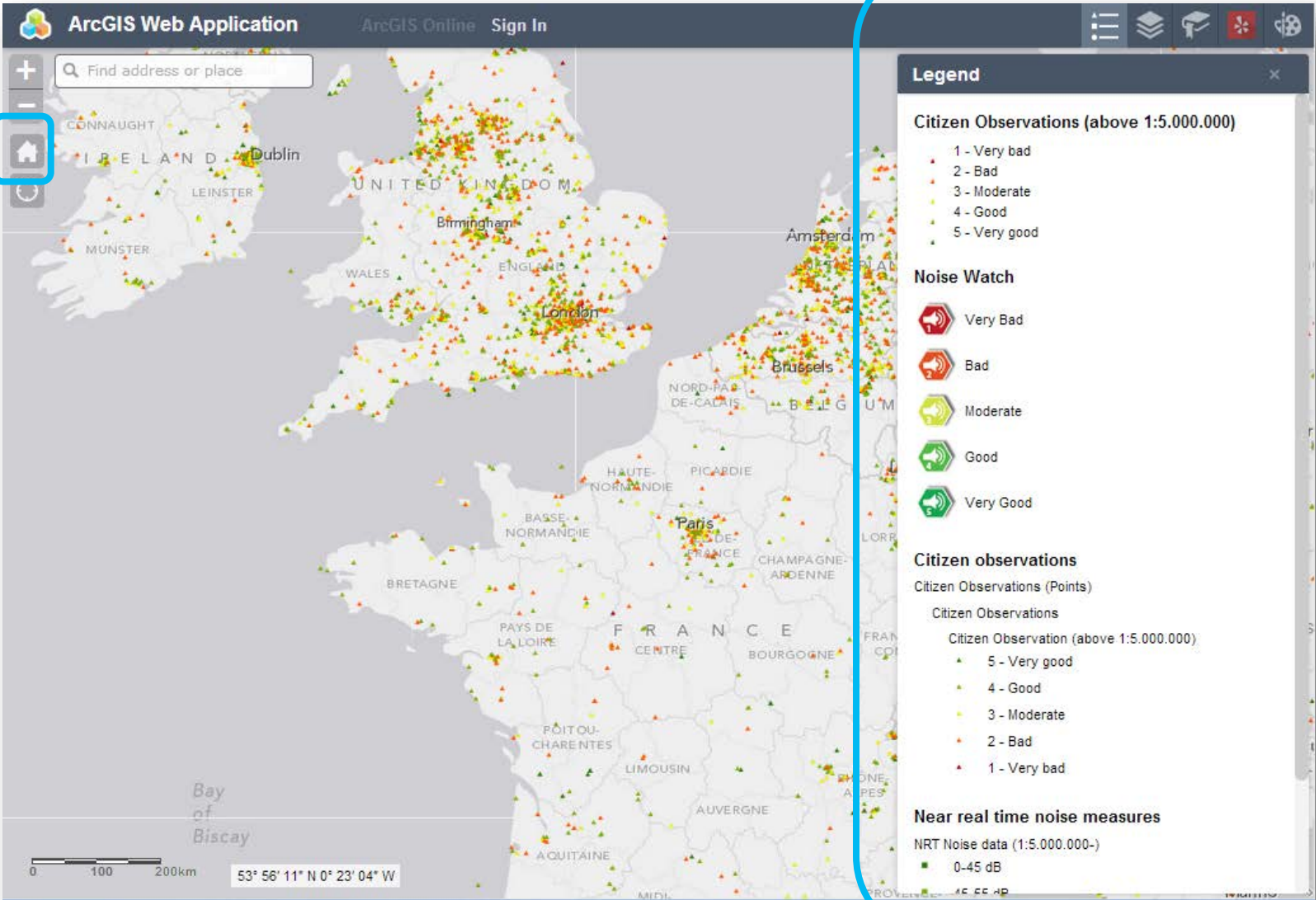
## Widget events

- onOpen, onSignIn
- publishData
- ...



# Widgets: Preloaded or in the Panel

"inPanel": false



"inPanel": true (default)

# Configurable custom widgets inside the builder

```
1- {
2-   "distanceUnits": [
3-     {
4-       "unit": "KILOMETERS",
5-       "abbr": "km"
6-     },
7-     {
8-       "unit": "MILES",
9-       "abbr": "mi"
10-    },
11-    {
12-      "unit": "METERS",
13-      "abbr": "m"
14-    },
15-    {
16-      "unit": "FEET",
17-      "abbr": "ft"
18-    },
19-    {
20-      "unit": "YARDS",
21-      "abbr": "yd"
22-    }
23-  ],
24-   "areaUnits": [
25-     {
26-       "unit": "SQUARE_KILOMETERS",
27-       "abbr": "sq km"
28-     },
29-     {
30-       "unit": "SQUARE_MILES",
31-       "abbr": "sq mi"
32-     },
33-     {
34-       "unit": "ACRES",
35-       "abbr": "ac"
36-     }
37-   ]
38- }
```

| Label      | Abbreviation | Conversion | Actions |
|------------|--------------|------------|---------|
| Kilometers | km           | 0.001      | ↑ ↓ ×   |
| Miles      | mi           | 0.000621   | ↑ ↓ ×   |
| Meters     | m            | 1          | ↑ ↓ ×   |
| Feet       | ft           | 3.2808     | ↑ ↓ ×   |
| Yards      | yd           | 1.0936133  | ↑ ↓ ×   |

## Building a UI for the user

### Setting.js

- Config info
- getConfig, setConfig

### Setting.html

Usual localization pattern

CSS

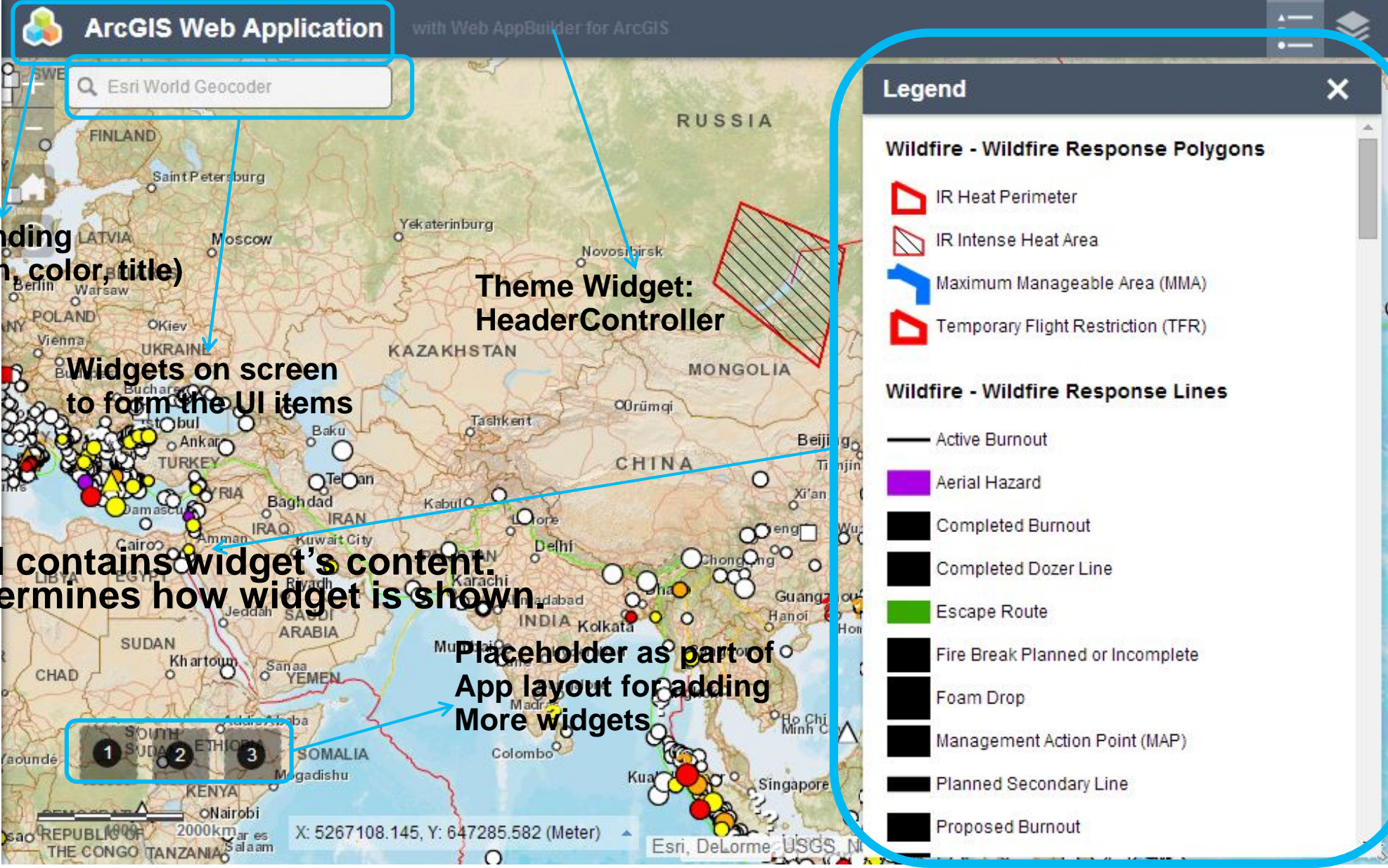
Add your First Widget  
(Demo)

# Web AppBuilder Theme

David Martinez







ArcGIS Web Application

Esri World Geocoder

Branding  
(icon, color, title)

Theme Widget:  
HeaderController

Widgets on screen  
to form the UI items

Panel contains widget's content.  
It determines how widget is shown.

Placeholder as part of  
App layout for adding  
More widgets

**Legend**

**Wildfire - Wildfire Response Polygons**


- IR Heat Perimeter
- IR Intense Heat Area
- Maximum Manageable Area (MMA)
- Temporary Flight Restriction (TFR)

**Wildfire - Wildfire Response Lines**

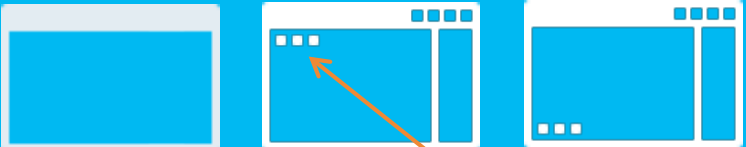
- Active Burnout
- Aerial Hazard
- Completed Burnout
- Completed Dozer Line
- Escape Route
- Fire Break Planned or Incomplete
- Foam Drop
- Management Action Point (MAP)
- Planned Secondary Line
- Proposed Burnout

# What's in a Theme


**Style**



**Layouts**



On screen widget place holder position **1**



An orange arrow points from the text 'On screen widget place holder position 1' to the circular icon.

**Theme Widget**

ArcGIS Web Application with Web AppBuilder for ArcGIS

**Panel (s)**

**Legend**

**Wildfire - Wildfire Response Polygons**

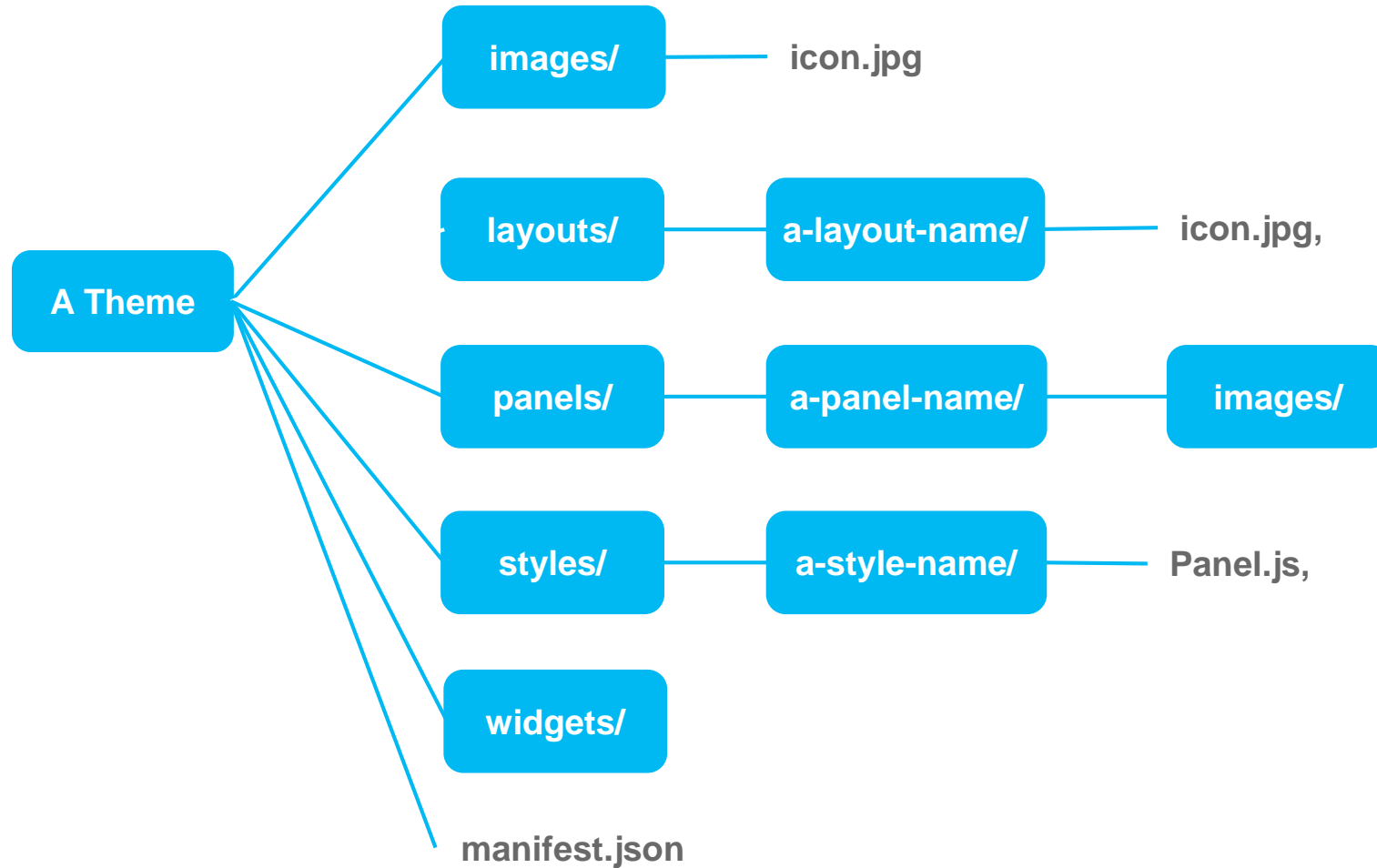
- IR Heat Perimeter
- IR Intense Heat Area
- Maximum Manageable Area (MMA)
- Temporary Flight Restriction (TFR)

**Wildfire - Wildfire Response Lines**

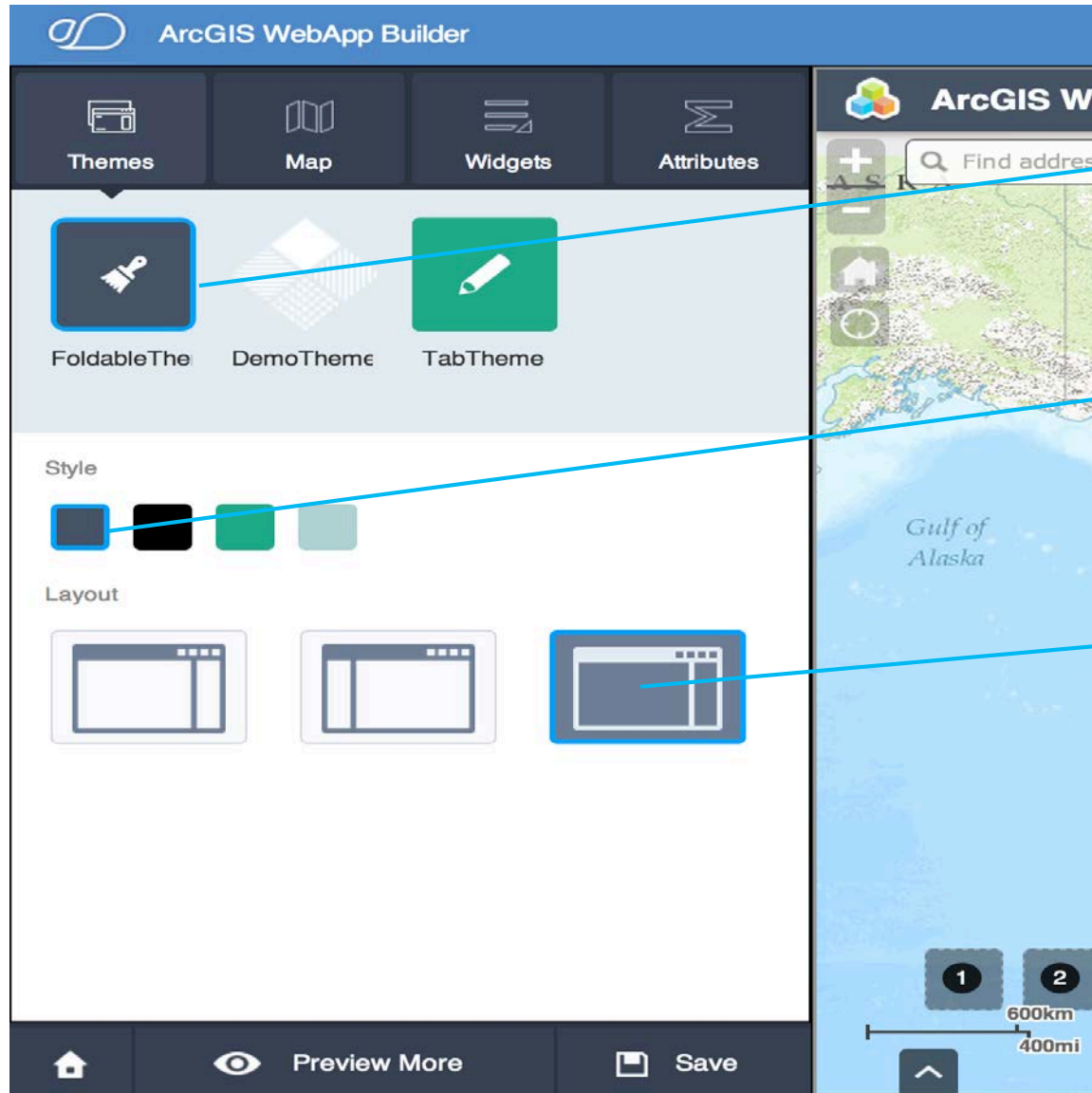
- Active Burnout
- Aerial Hazard
- Completed Burnout
- Completed Dozer Line
- Escape Route
- Fire Break Planned or Incomplete
- Foam Drop
- Management Action Point (MAP)
- Planned Secondary Line
- Proposed Burnout



# Theme Convention and Defaulting



# Theme Configuration inside the Builder



1

**Pick a theme**

2

**Pick a style of the theme**

3

**Pick a layout of the theme**

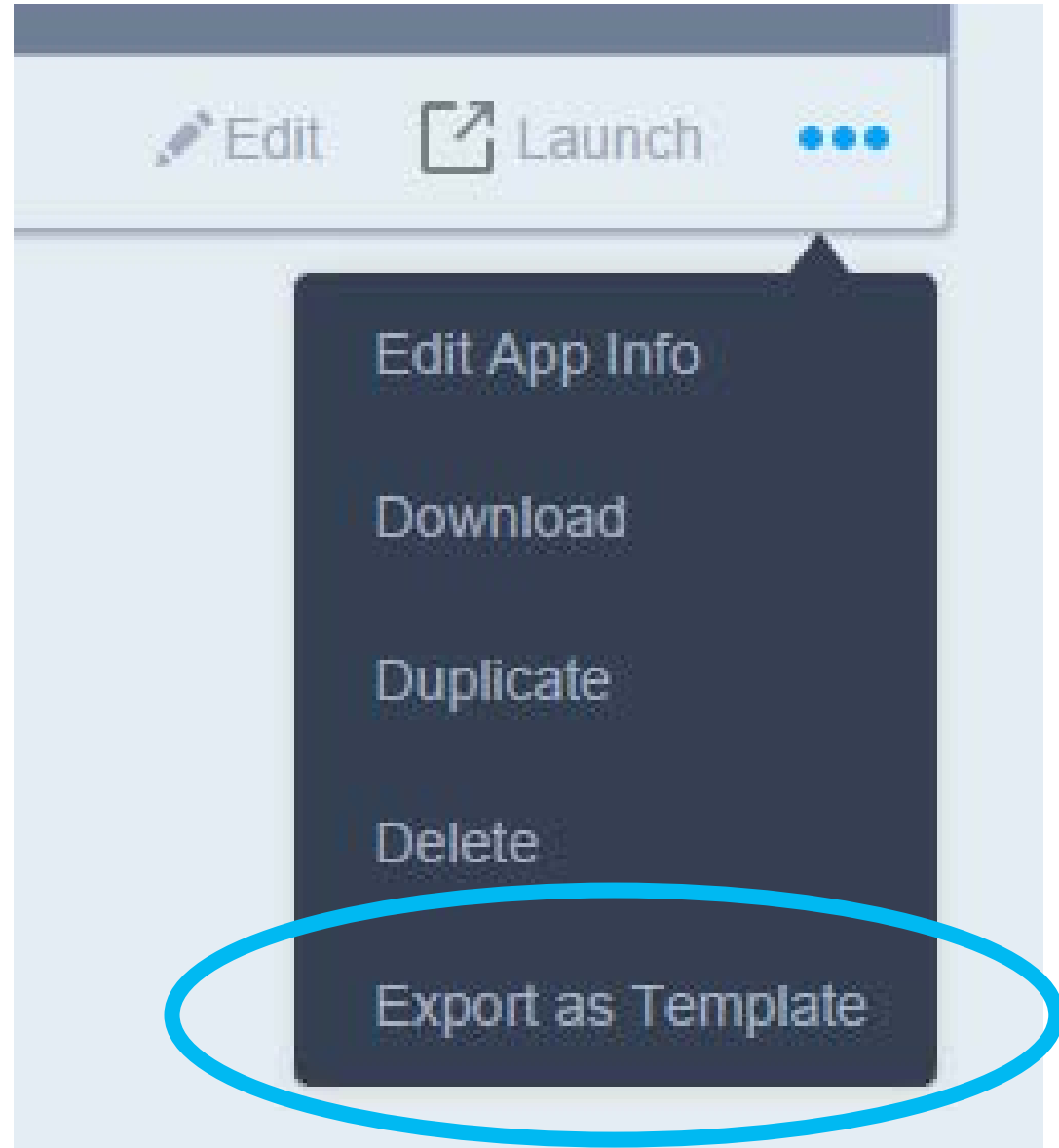
Create a new Theme  
(Demo)

# Deploy

John Gravois



From your local machine, to the cloud...



To be clear, we are not uploading our application...

### Export as Web App Template



You are going to export current parameter settings and create a new web app template item in your portal.

Exported template item will use the default app URL from Web AppBuilder. If you deploy this app to another web server, you need to change this URL in the item's details page.

Title:

my custom template

Tags:

template × Add tag(s)

Description:

A configurable application template generated by Web AppBuilder.

Save in folder:

johngesri

OK

Cancel

# ArcGIS Organizations show webmap authors templates that belong to a specific group

- General
- Home Page
- Gallery
- Map
- Item Details
- Groups
- Utility Services
- Roles
- Security
- Open Data

## Map

Configure the components people in your organization will use to author maps.

### Basemap Gallery



Select the group whose webmaps will be shown in the Basemap Gallery.

Esri Default

### Web App Templates



Web application templates contain sample layouts you can use to build web mapping group contains the web app templates you want to use.

custom-templates Sorted by: title Ascending

Share the Esri default web application templates to this group when you click Save

Share the item(s) with:

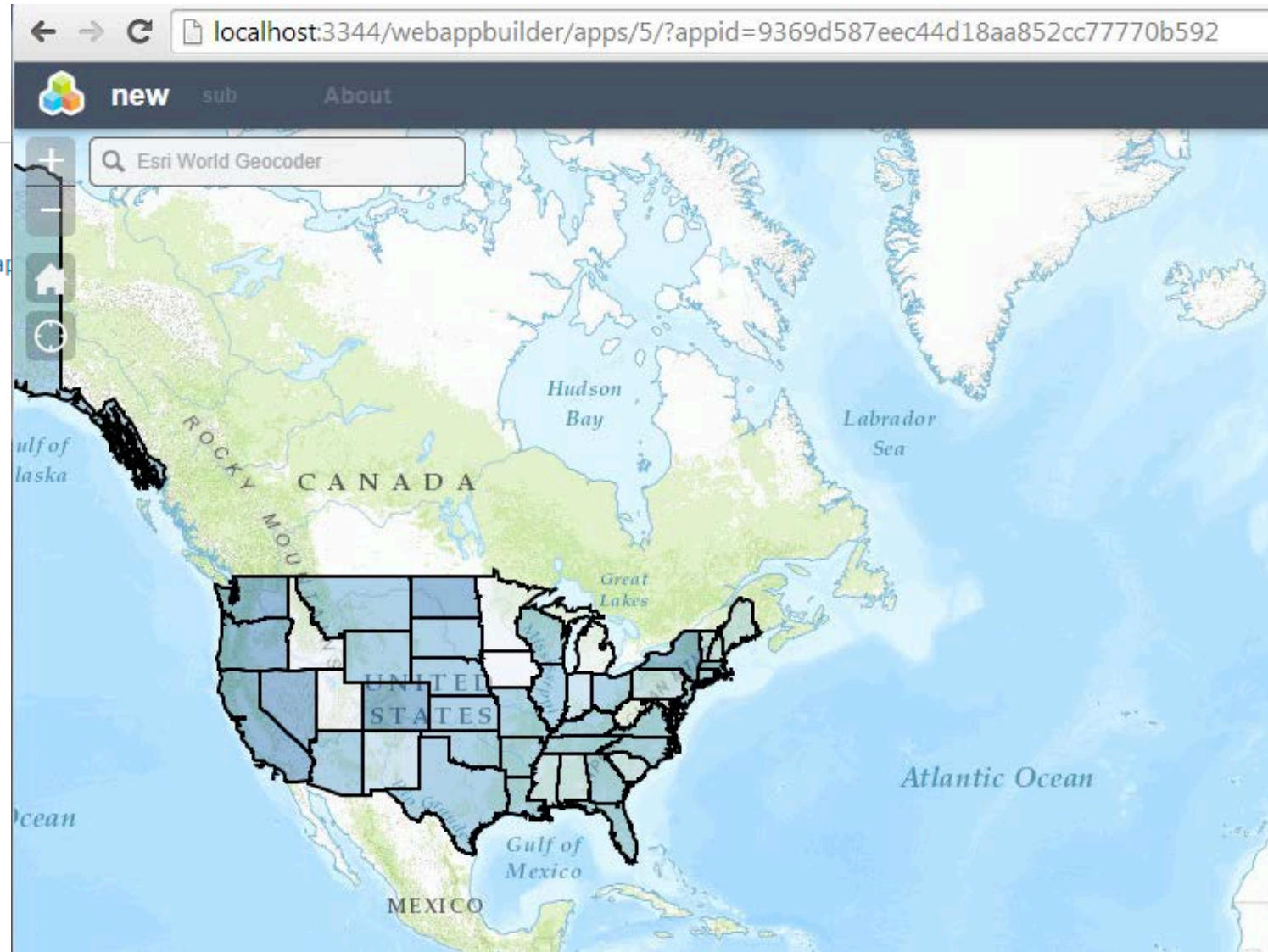
- Everyone (public)
- Esri Hackathons
- These groups:
  - Alameda County Apps (Data)
  - custom-templates
  - Hack for LA 2014
  - HackForPasadena



# But the template (and new apps) still run on your web server

## Properties

|                 |   |
|-----------------|---|
| URL             | <a href="http://kodos.esri.com:3344/webappbuilder/apps/5?appid=9369d587eec44d18aa852cc77770b592">http://kodos.esri.com:3344/webappbuilder/apps/5?appid=9369d587eec44d18aa852cc77770b592</a> |
| Code Attachment | None  |
| Purpose         |   |
| API             | JavaScript  |
| Shared with     | Everyone (public)   |
| Tags            | us, renters   |
| Credits         |   |





# Thank You

David Martinez  
dmartinez@esri.com

John Gravois  
jgravois@esri.com