



# Web AppBuilder for ArcGIS: Advanced Development Tools and Techniques

GEORGE BOCHENEK AND GAVIN REHKEMPER

[ESRIURL.COM/WABTOOLS2018](http://ESRIURL.COM/WABTOOLS2018)

# George Bochenek and Gavin Rehkemper

[gbochenek@esri.com](mailto:gbochenek@esri.com)

 /gbochenek  
 /bosshenek

[grehkemper@esri.com](mailto:grehkemper@esri.com)

 /gavinr  
 /gavinrehkemper

# Agenda

- Web AppBuilder as a Framework
- Web AppBuilder Widget Generator
- Web AppBuilder - Builds
- Best Practices
- Q & A

# Web AppBuilder

3D App with Web AppBuilder for ArcGIS

Esri World Geocoder

+

-

Home

Search

+

Billboard Theme

Box Theme

Dart Theme

Foldable Theme

Jewelry Box Theme

Launchpad Theme

Tab Theme

Style

#d07d0e

Layout

Launch

Saved

eye alt 25,512.55 Kilometers

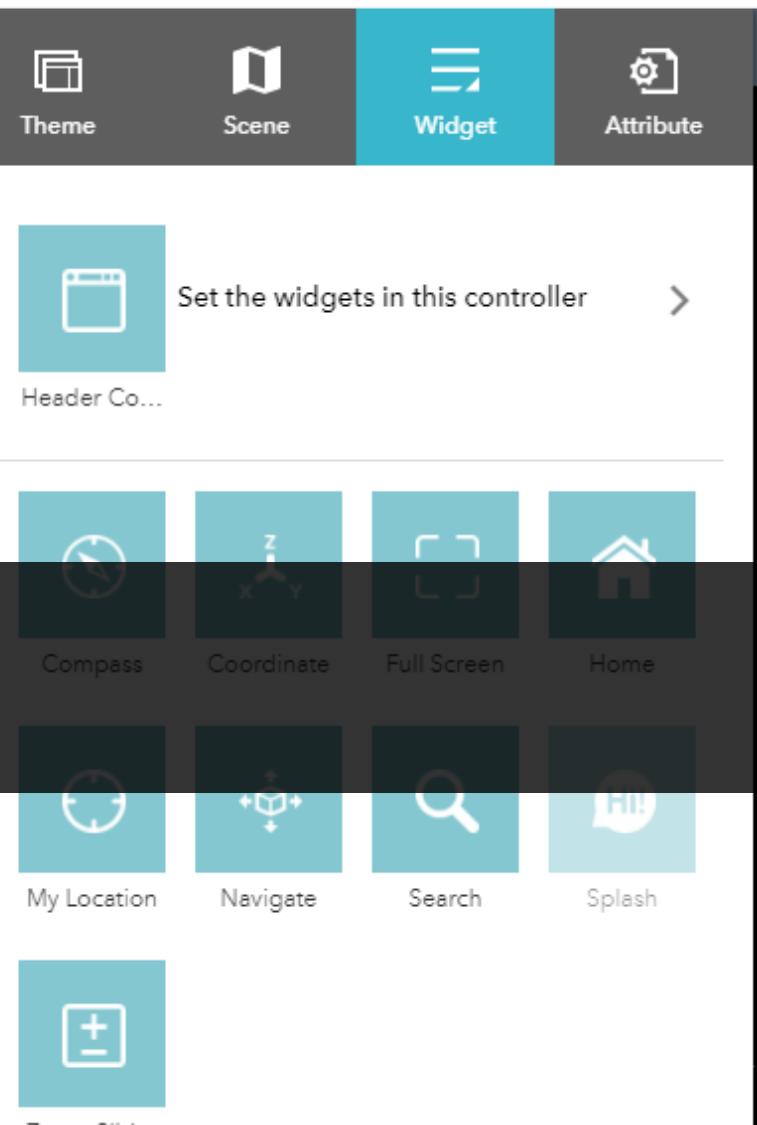
Earthstar Geographics | Source: USGS, NGA, NASA, CGIAR, GEBCO, N Robinson, NCEAS, NLS, OS, NIMA, Geodatastyrelsen and the GIS User Community

Powered by Esri







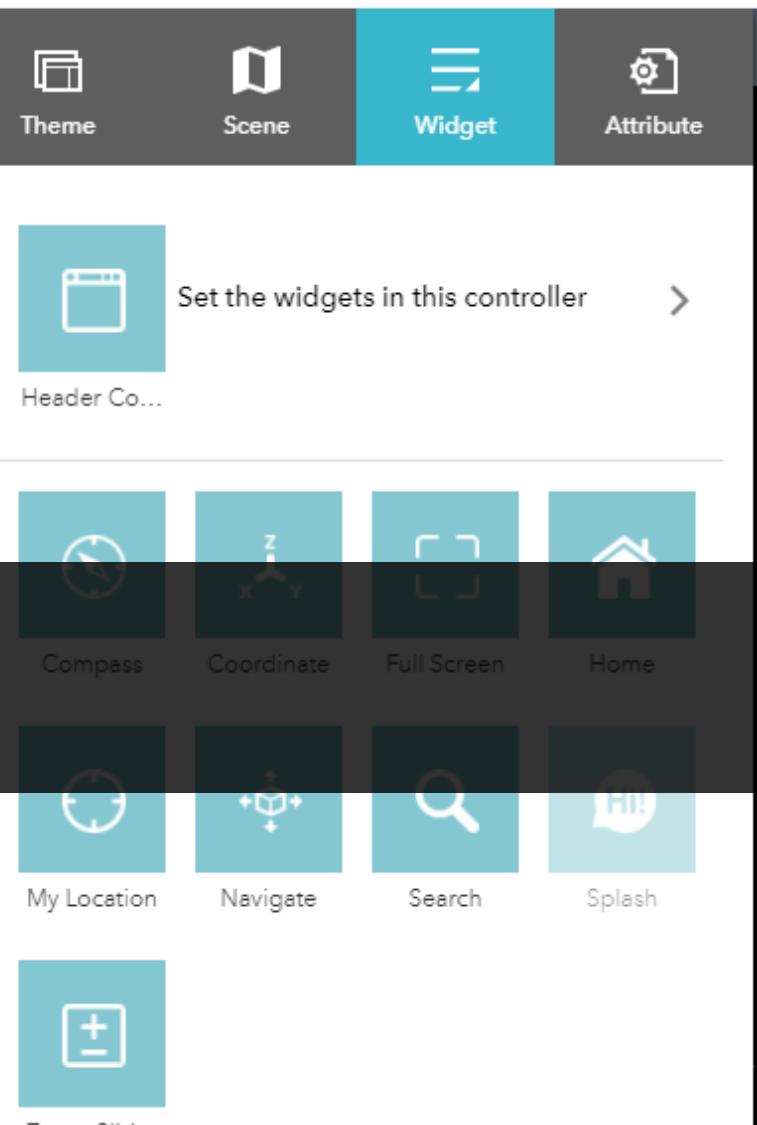


3D App with Web AppBuilder for ArcGIS

Esri World Geocoder

Builder experience is powerful

A large 3D globe is centered on the Middle East, showing a detailed satellite view of the region. The globe is set against a dark background with visible stars. A search bar at the top left contains the text 'Esri World Geocoder'. To the right of the globe, the text 'Builder experience is powerful' is displayed in a large, white, sans-serif font. The top right corner of the screen features a small user interface icon.



3D App with Web AppBuilder for ArcGIS

Esri World Geocoder

WYSIWYG builder adds complexity

A large 3D globe is centered on the continent of Africa, showing a detailed satellite rendering of the landmasses. The globe is set against a dark background with visible stars. At the top of the globe, there is a search bar containing the text 'Esri World Geocoder'. To the left of the globe, there is a vertical toolbar with zoom controls (+, -, home, location, orientation) and a search icon. The title '3D App with Web AppBuilder for ArcGIS' is at the top, and the subtitle 'WYSIWYG builder adds complexity' is overlaid in large white text across the middle of the globe view. The bottom of the screen shows a navigation bar with 'Launch', 'Saved', and a status message 'rove alt 25.512.55 Kilometers'.



Easy for configurators = harder for developers

A high-contrast silhouette photograph of several construction workers on a large steel framework against a clear blue sky. One worker is visible on the left side, another is on the right side, and others are partially visible in the background. The steel beams form a complex grid structure.

Generators automate this extra work for us

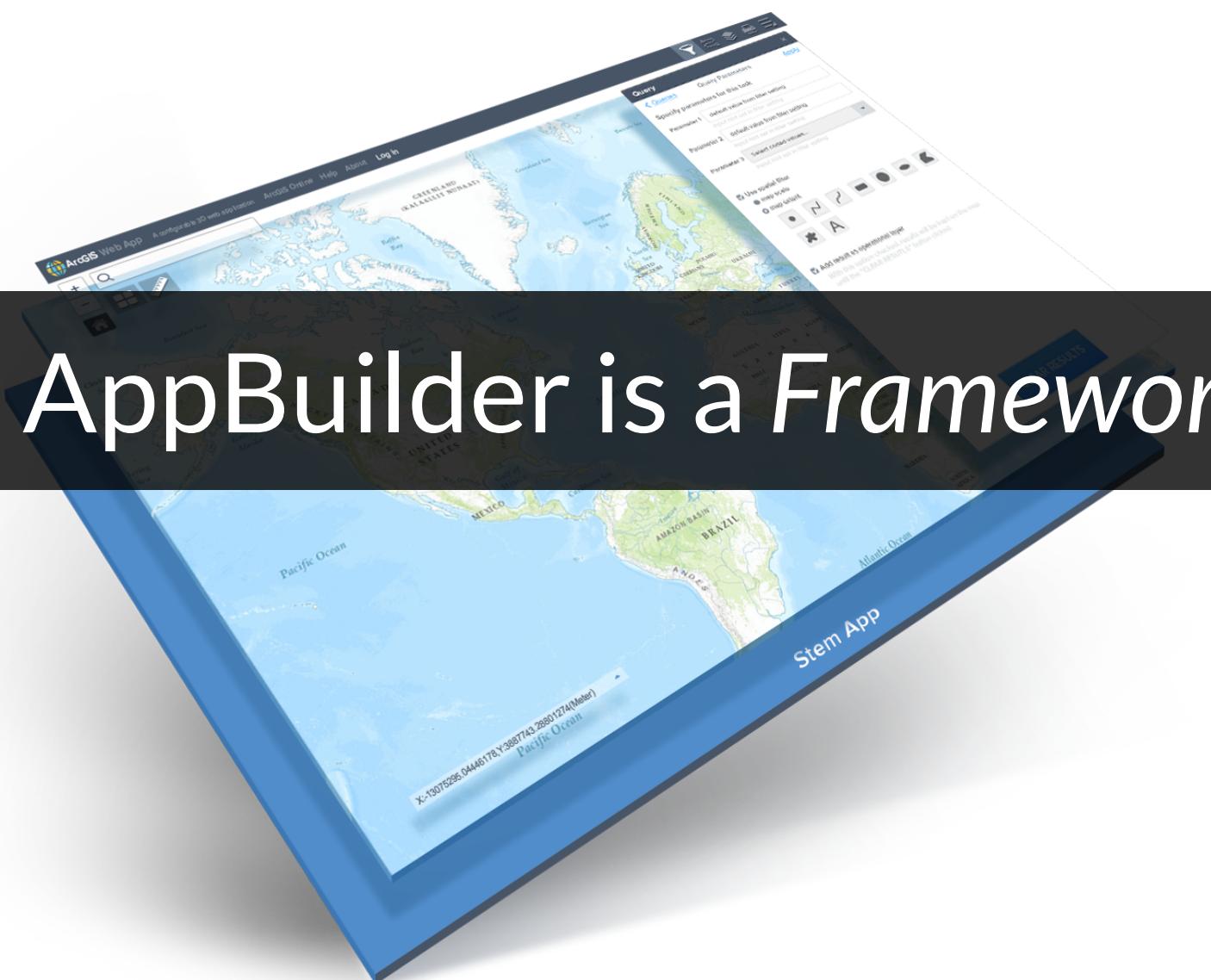
A photograph showing the dark silhouettes of several construction workers against a bright blue sky. They are working on a large-scale steel framework, which appears as a complex network of dark lines. One worker is visible at the top left, another is on a horizontal beam in the center, and others are further down the structure. The lighting creates a strong contrast between the workers and the sky.

Scaffold out boilerplate code

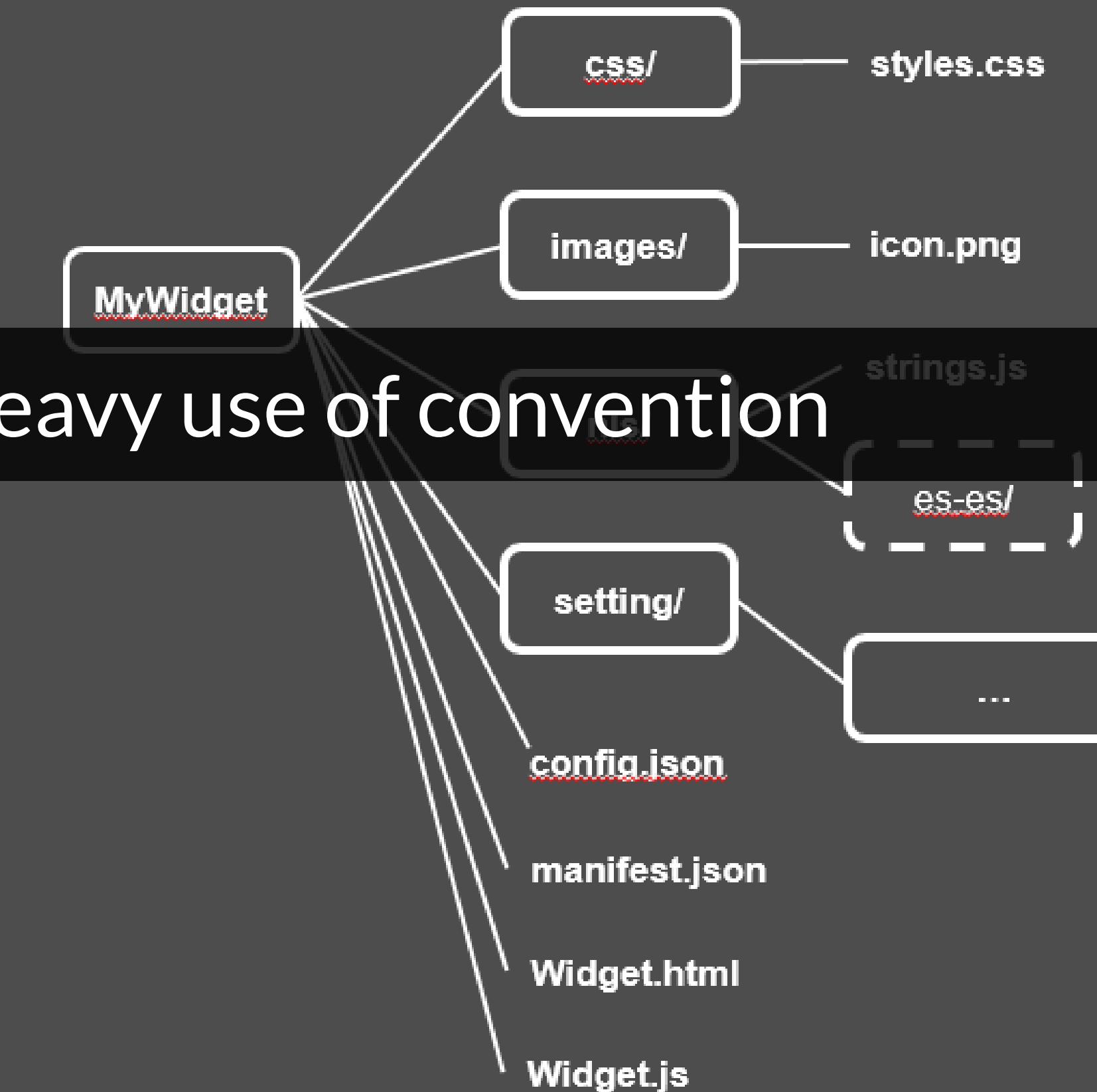
A photograph showing the dark silhouettes of several construction workers against a bright blue sky. They are working on a large-scale steel framework, likely for a bridge or industrial building. One worker is at the top left, another is on a horizontal beam in the center, and others are further down the structure. The steel beams form a complex grid pattern.

Install / configure tools to automate tasks

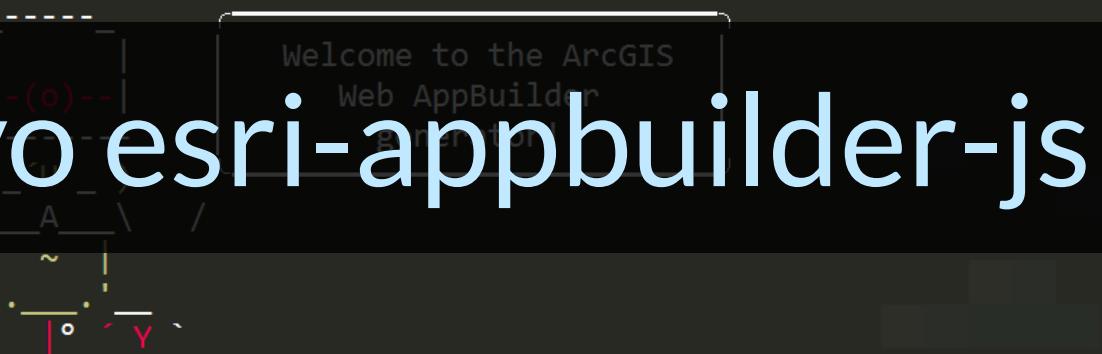
# Web AppBuilder is a *Framework*



# Heavy use of convention



```
λ yo esri-appbuilder-js
```



```
These generators should be run in the root folder of your project.  
? Type of widget(s) to be generated: 2D  
? Web AppBuilder install root: C:\Users\gavi6895\Documents\Projects\  
? Web AppBuilder application: 6  
? Would you like to use SASS for CSS preprocessing? Yes  
  create .editorconfig  
  create .babelrc
```

# Installs tools to transpile and copy to WAB folder

```
λ yo esri-appbuilder-js
```



```
These generators should be run in the root folder of your project.  
? Type of widget(s) to be generated: 2D  
? Web AppBuilder install root: C:\Users\gavi6895\Documents\Projects\  
? Web AppBuilder application: 6  
? Would you like to use SASS for CSS preprocessing? Yes  
  create .editorconfig  
  create .babelrc
```

# Subgenerator to scaffold out widget files

```
λ yo esri-appbuilder-js
```



```
These generators should be run in the root folder of your project.
? Type of widget(s) to be generated: 2D
? Web AppBuilder install root: C:\Users\gavi6895\Documents\Projects\
? Web AppBuilder application: 6
? Would you like to use SASS for CSS preprocessing? Yes
  create .editorconfig
  create .babelrc
```

# New Features

- TypeScript widgets
- Builds
- LiveReload
- Bug Fixes and Minor improvements

# Demo

# Build for Production

<https://github.com/gbochenek/esri-wab-build>

# Demo



# Best Practices

## Become a WAB All Star

# Source Control

## Save your code

Only save your code

# Test Your Code



# ...but its hard, and I don't have time

- Write tests before features
- Estimate test writing as part of your design process
- Start small
- Only test your code

# Wrapping Your Widgets

- More Portability
- Better Tests
- Easier Tests
- More Sanity

# Demo

<https://github.com/gbochenek/wab-test-example>

# Related Talks

## *Javascript Applications for the Enterprise: Building for Production*

- Thursday // 5:30 - 6:30
- Pasadena / Sierra / Ventura
- George Bochenek / Randy Jones

## *Web Development: The Road Ahead*

- Friday // 10:00 - 11:00
- Primrose B
- Jeremy Bartley / Andy Gup

# Resources

- Widget Generator: <https://github.com/Esri/generator-esri-appbuilder-js>
- Build Tool: <https://github.com/gbochenek/esri-wab-build>
- Unit Testing Example: <https://github.com/gbochenek/wab-test-example>
- Finding Great Widgets
  - Geonet: Web AppBuilder Custom Widgets Group
  - WAB Widget Search
  - ArcGIS CodeSharing
- Documentation, Download, and Support:
  - [developers.arcgis.com/web-appbuilder](http://developers.arcgis.com/web-appbuilder)
  - [developers.arcgis.com/javascript](http://developers.arcgis.com/javascript)

# Thank You! Any Questions?

grehkemper@esri.com - @gavinrehkemper  

gbochenek@esri.com - @bosshenek  

These slides, sample code, and links are at:

[esriurl.com/wabtools2018](http://esriurl.com/wabtools2018)

Please rate this session in the Esri Events mobile app!



esri

THE  
SCIENCE  
OF  
WHERE