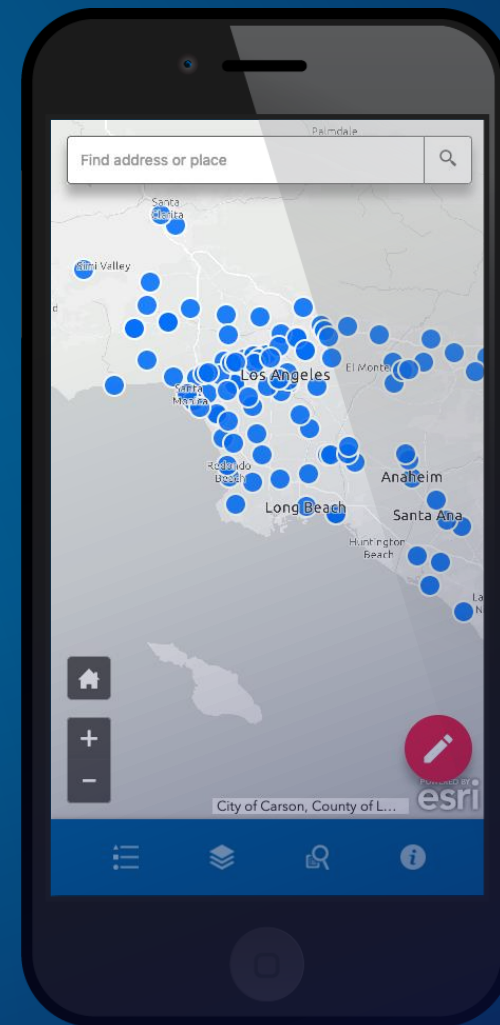
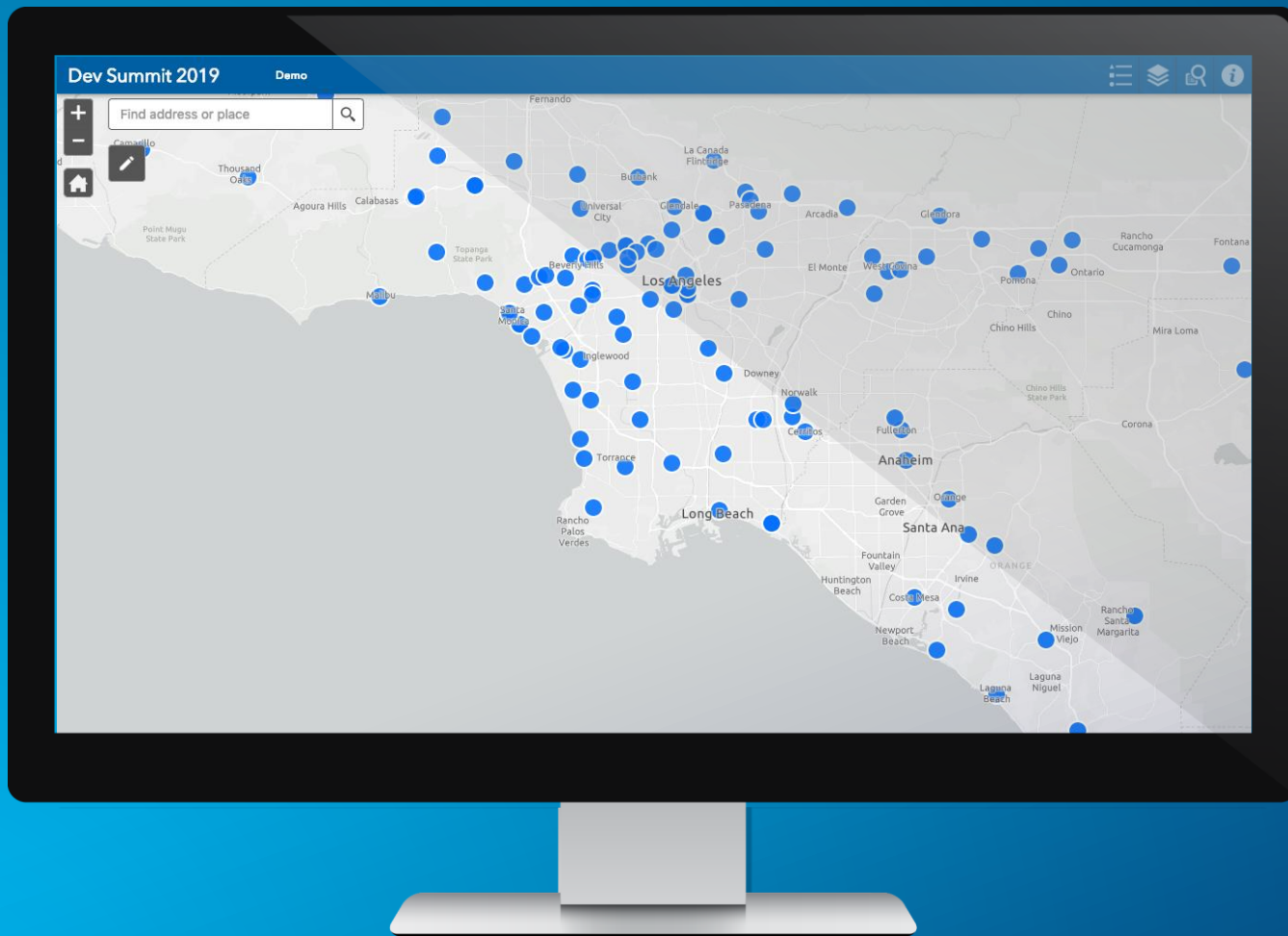




Web AppBuilder for ArcGIS: Developing for Mobile

Yiwei Ma
Gavin Rehkemper



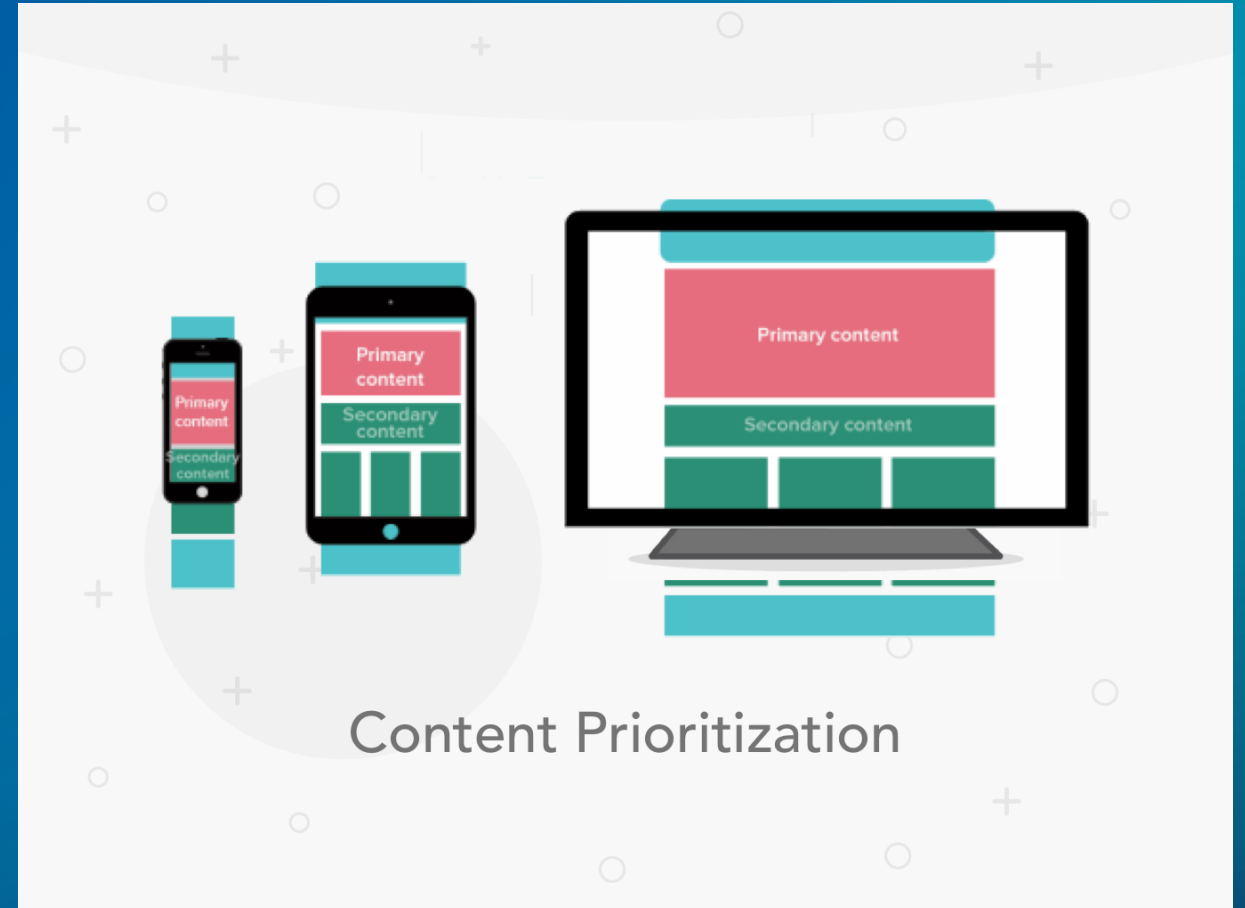


Basic Mobile Design Principles

You can Implement in Your App

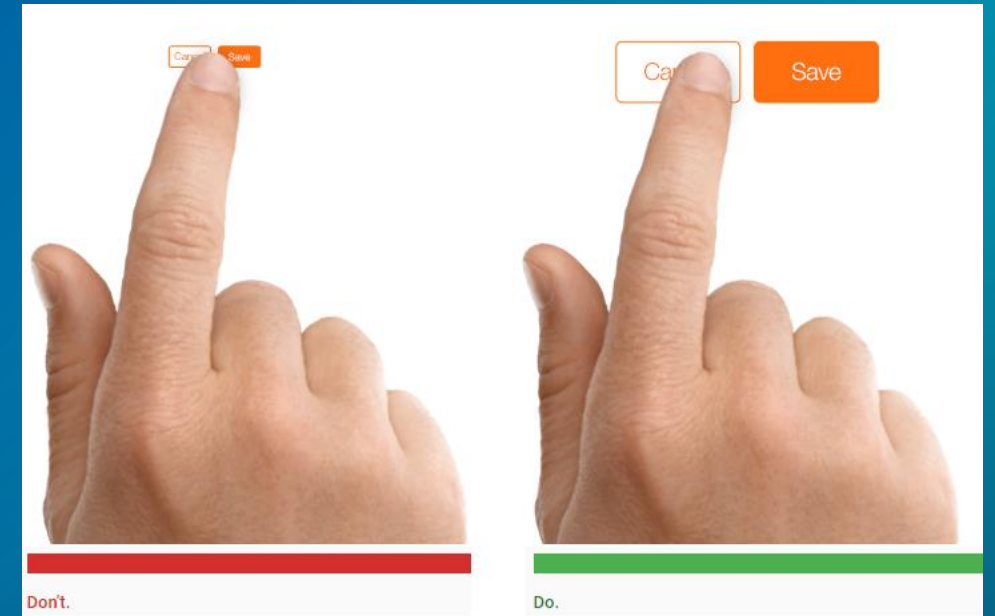
Less is More

- Display only the essential content
- Remove any unnecessary UI elements if possible
- Minimal UI design



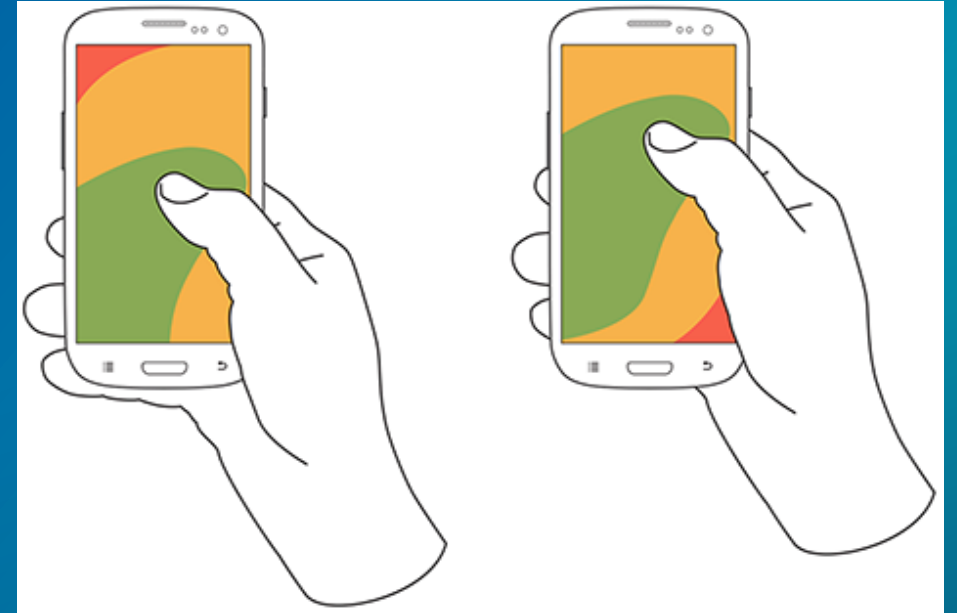
Finger-Friendly Target Sizes

- Make the targets big enough
 - Greater than 40px (size of an adult's index finger)
- Leave enough spacing between UI elements



Design Controls That Are Easy to Reach

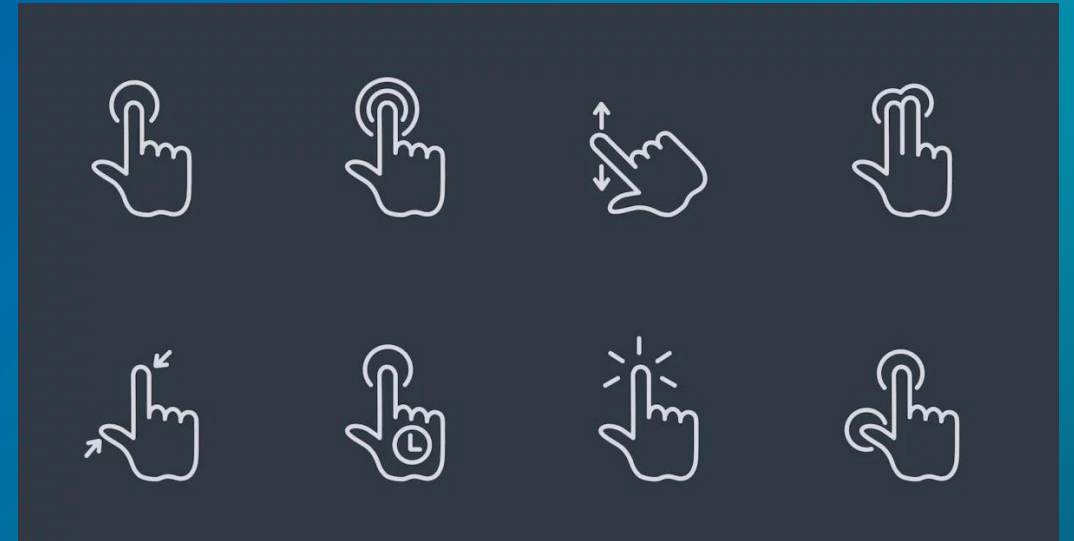
- Position UI elements wisely based on their:
 - Priorities
 - Frequency of use



Thumb comfort zones for one-handed use

Utilize Gestures

- Include gestures for smoother interactions, such as:
 - Pinch, drag, swipe for map navigation (supported by API)
 - Swipe to navigate



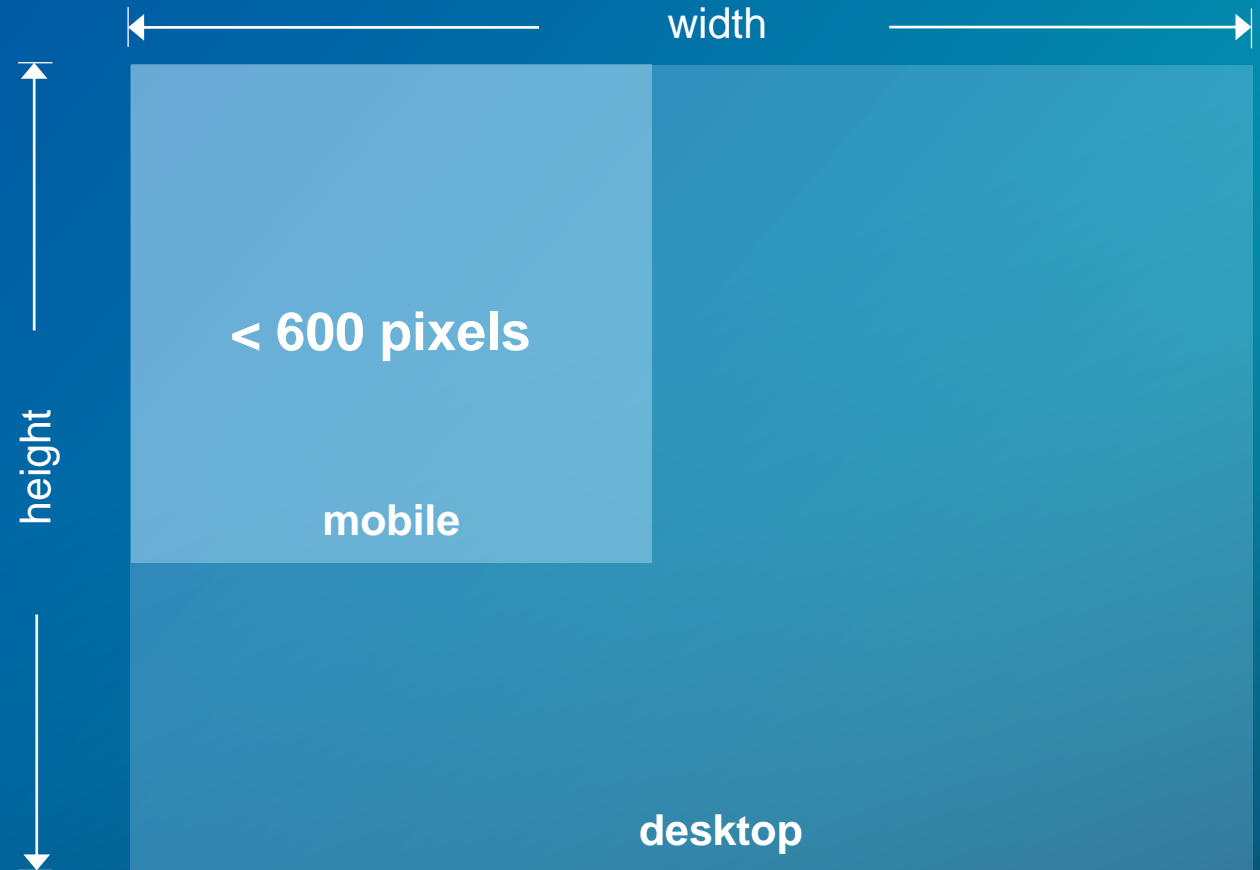


How Web AppBuilder handles Mobile

Mobile Breakpoint

- The default breakpoint for mobile is 600px (either in width or height)
- The number is stored in *window.jimuConfig.breakPoints* which can be reset

```
window.jimuConfig.breakPoints  
► (2) [600, 1280]
```



Mobile Specific Properties Provided by WAB

- A class name “jimu-ismobile” is add to the *jimu-layout-manager* element in the dom tree

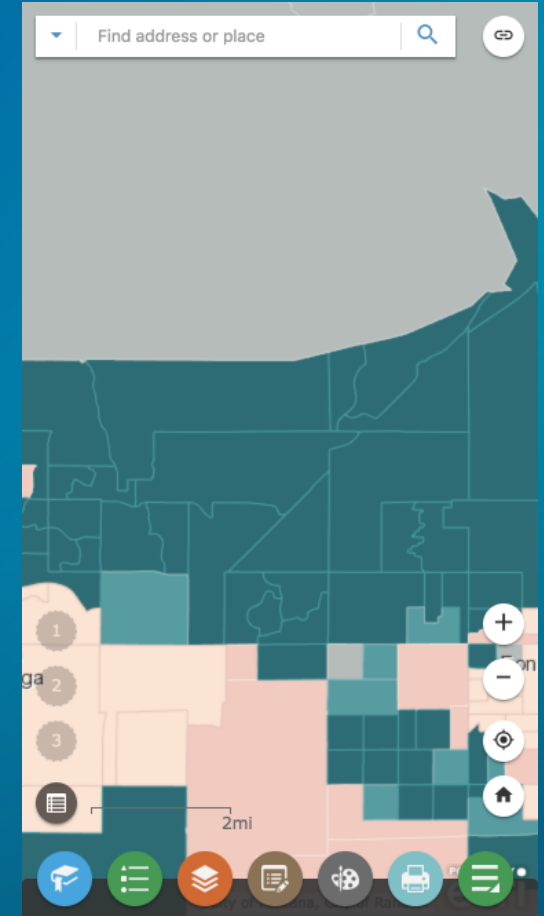
```
▼ <div id="jimu-layout-manager" widgetid="jimu-layout-manager" class="jimu-ismobile LaunchpadTheme default">
```

- A global property “appInfo.isRunInMobile” is turned to true

```
> appInfo.isRunInMobile  
◀ true
```

Out-of-Box Solutions

- Each theme in WAB provides mobile optimizations in some degree, such as:
 - Displaying widgets at the bottom half of the screen
 - The panel containing widgets can be maximized / minimized
 - Re-positioned on-screen widgets for better finger reachability
 - Mobile-first UI design (available in certain themes)



Mobile view of an app with LaunchPad theme applied



How to: Create Mobile Layout

“MobileLayout” Property in Layout Config File:

- Defines the app layout on a mobile device
- Works only for on-screen widgets and map
- Only includes the layout settings that are different from the default (desktop) ones
 - others will inherit the default settings

What You Can Do and Cannot Do:

YES:

- Change size
- Change position
- Change the parent a widget's position is relative to (map or browser)
- Change stacking order (z index)

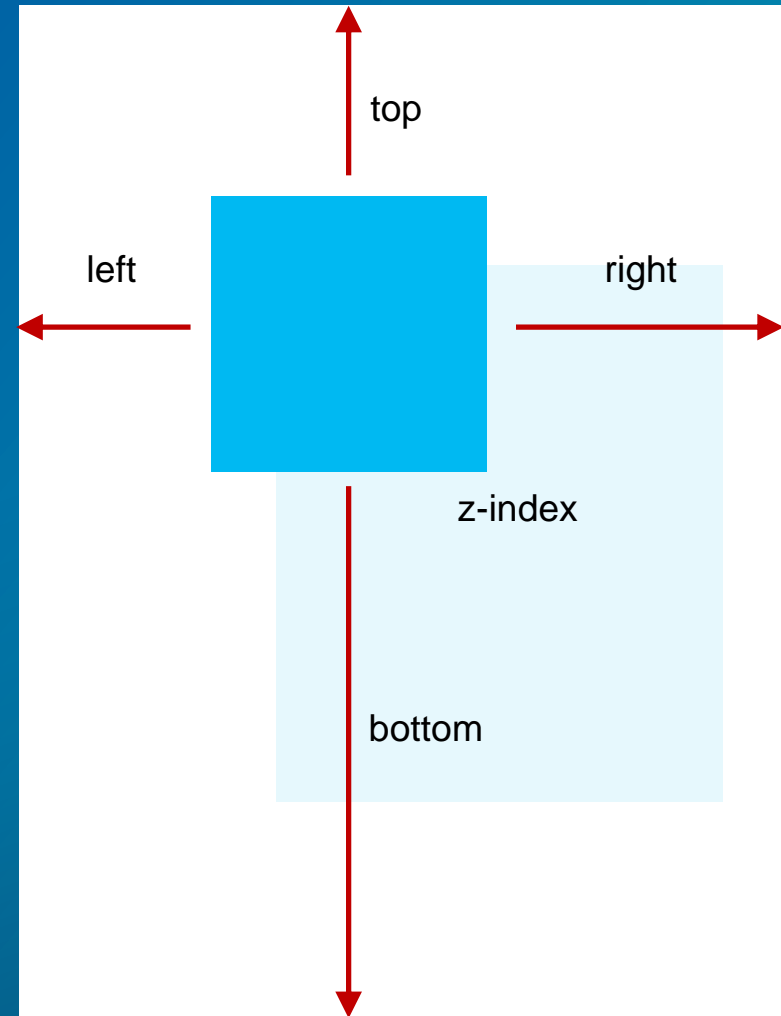
NO:

- Remove a widget
- Add a widget
- Hide a widget

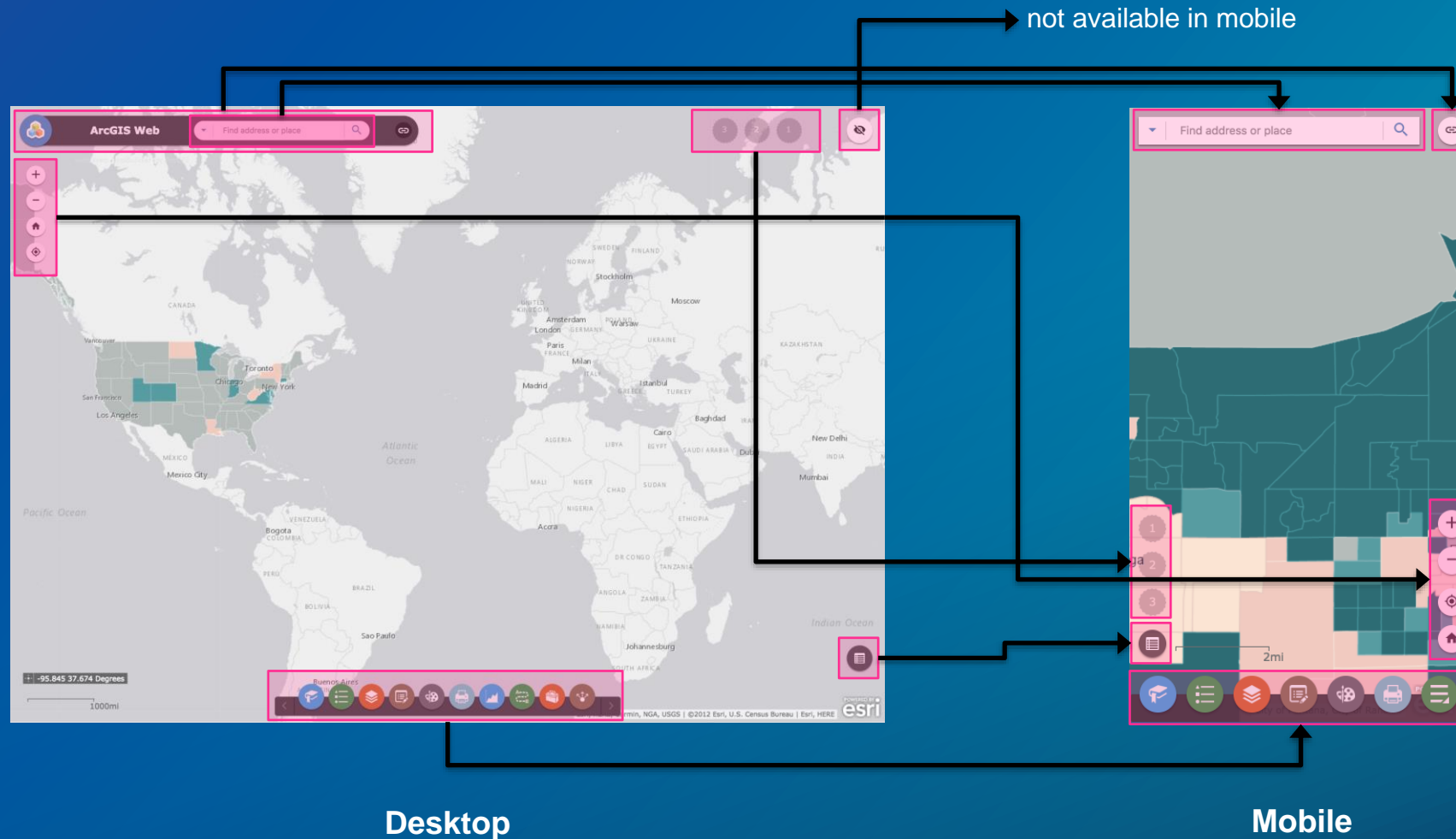
All on-screen widgets are absolute positioned

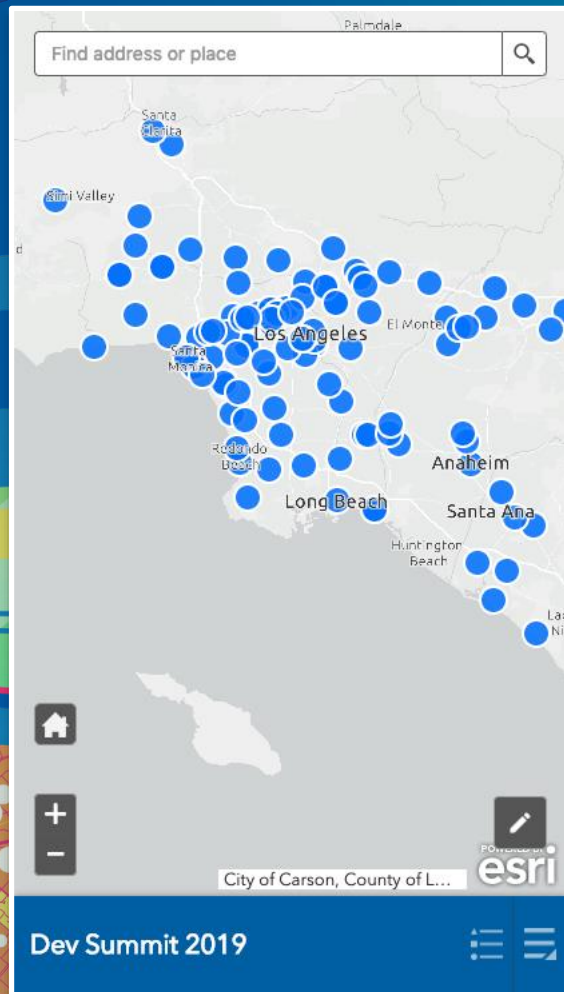


Absolute position properties can be defined in a layout config file



“MobileLayout” in LaunchPad Theme:





Mobile Layout Demo

Create a new mobile layout for Foldable theme



How to: Create Mobile Specific Styles

“jimu-ismobile” Class

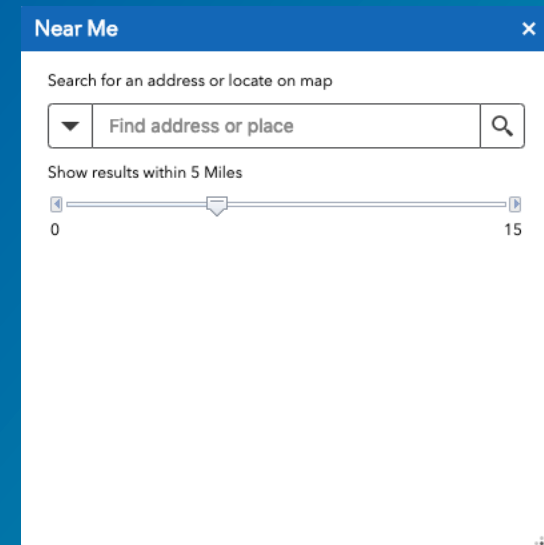
- “jimu-ismobile” is the extra class name added to the root element of the app running in mobile
- Add it in front of the CSS rules to gain higher specificity
- Recommendation: Use a CSS preprocessor (SASS or LESS) to a better development experience

```
.jimu-ismobile {  
  
  // your override styles  
  
}
```

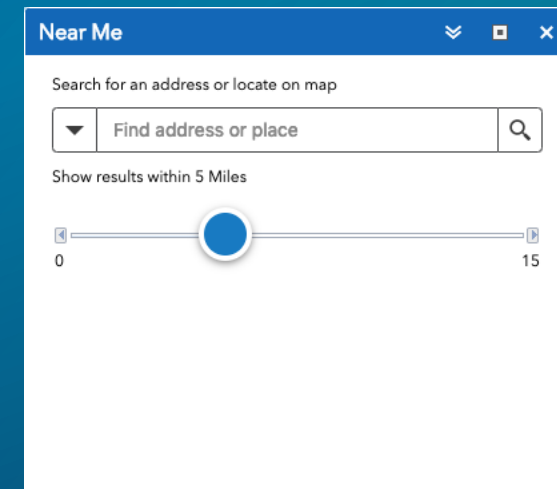
CSS preprocessor: wrap all CSS override rules inside of “.jimu-ismobile”

```
.jimu-ismobile .dijitSliderImageHandleH {  
  width: 40px;  
  height: 40px;  
  background-image: none;  
  background-color: #008dcc;  
  border-radius: 50%;  
  border: 4px solid #fff;  
  top: -20px;  
  box-shadow: 0 2px 9px rgba(0,0,0,0.5);  
}
```

Desktop

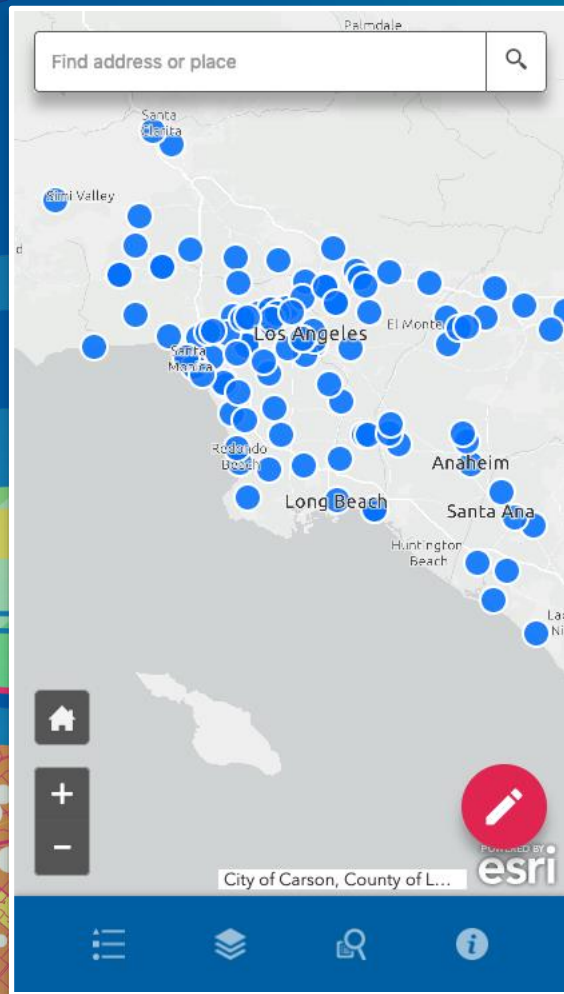


Mobile



Where to Put the CSS Override Styles?

- | | |
|---|---|
| 1. common.css in the theme folder | Effective to <u>all</u> styles in <u>one</u> theme |
| 2. style.css in a style folder in a theme | Effective to <u>one</u> style in <u>one</u> theme |
| 3. style.css in a widget's folder | Effective <u>only to that one widget</u> regardless which theme is selected |



Mobile Specific Styles

Create custom CSS to restyle UI elements



Mobile Responsive Custom Widgets

Style and Markup

- (no) Tables
- Width attributes
- Image sizes





Demo: Mobile Responsive Layout in Custom Widgets



Mobile handling in Web Appbuilder Next Gen

A Sneak Peek

A Major Change in Theme

- Theme ONLY refers to the styling part (CSS)
- Layout will be no longer part of a theme. It will follow a similar pattern but with more capabilities, such as:
 - Flexbox layout model
 - Multiple pages support
 - Does not have to be map-centric
 - More configurable properties (background, border, shadow, margin, padding, etc.)

For Mobile

- Flexbox layout will offer a default responsive handling
- Still have breakpoints and their corresponding class names and properties
- Still have `mobileLayout` in layout configuration



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