



DEVELOPER SUMMIT

March 10–13

ArcGIS API for JavaScript: Building Web Editing Applications

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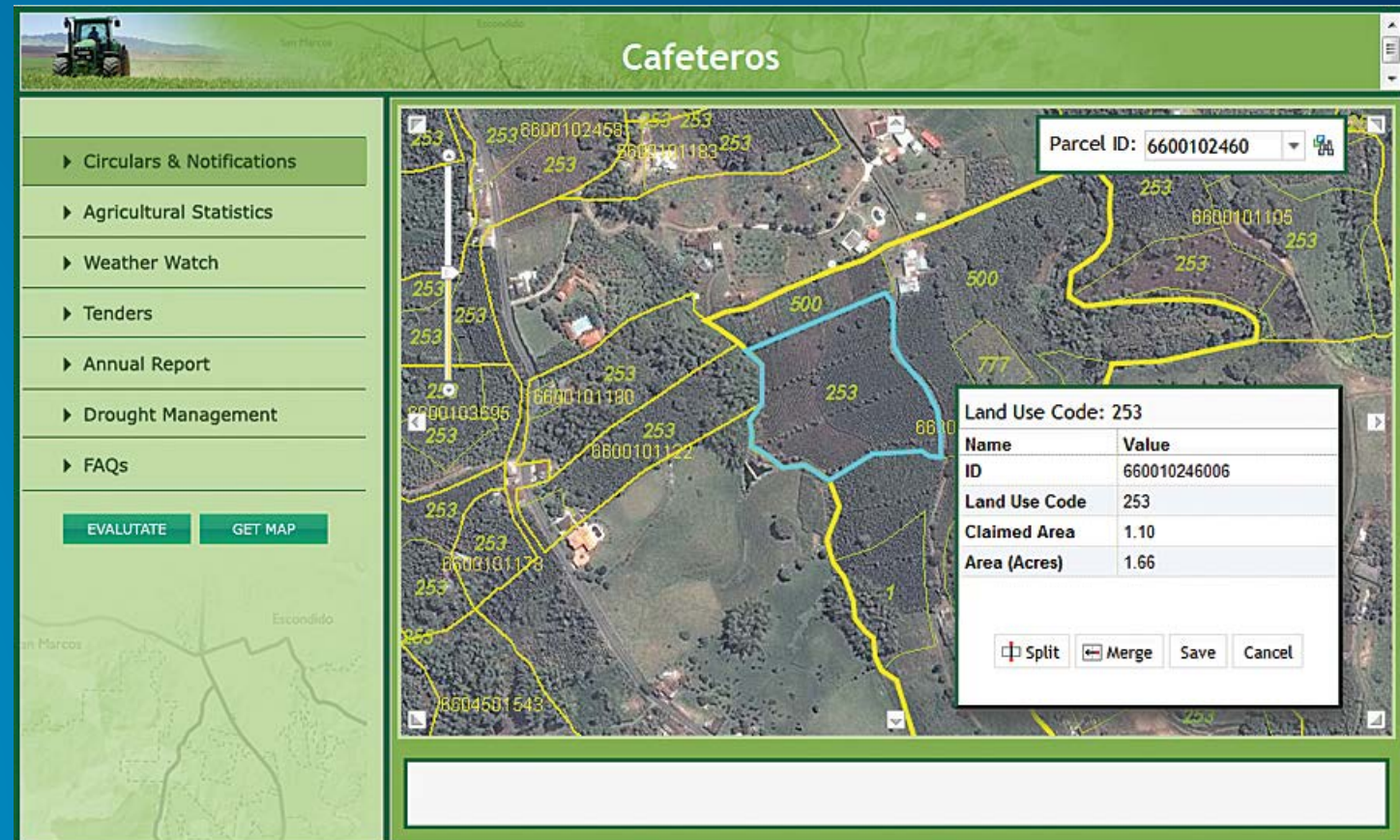
Scott Moore

Agenda

- Editing with widgets
- Editing without widgets
- Various tips and tricks throughout

Editing 101

- Simple feature editing
- Works with feature services (hosted or ArcGIS Server)
- Editing
- Editing Samples



Widgets – Editor Widget

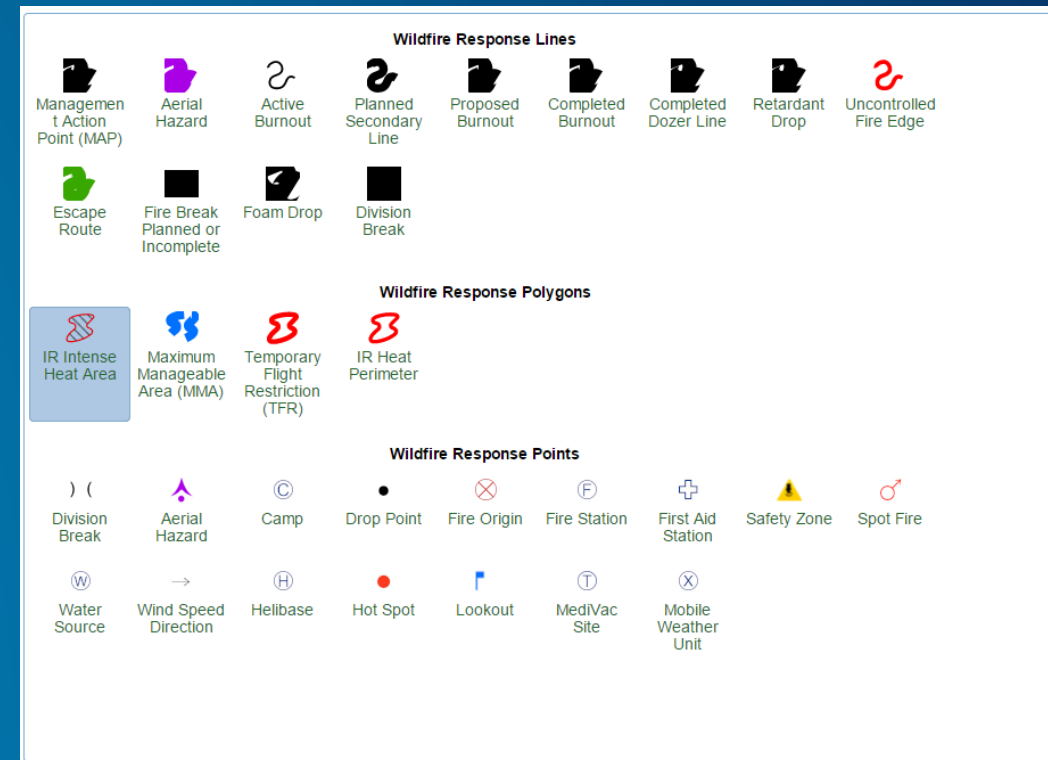
- Fastest way to get started
- Default editing interface with the API
- Combines TemplatePicker, AttachmentEditor, AttributeInspector, GeometryService
- Editor widget with simple toolbar

```
var settings = {map: map,  
    templatePicker: templatePicker,  
    geometryService: new esri.tasks.GeometryService("http:..."),  
    layerInfos: layers,  
    toolbarVisible: true,  
    createOptions: {polylineDrawTools: [ esri.dijit.editing.Editor.CREATE_TOOL_FREEHAND_POLYLINE ],  
        polygonDrawTools: [ esri.dijit.editing.Editor.CREATE_TOOL_FREEHAND_POLYGON ]},  
    toolbarOptions: {reshapeVisible: true}}  
  
var params = {settings: settings};  
var myEditor = new esri.dijit.editing.Editor(params, 'divFeatureServiceDijit');  
myEditor.startup();
```

Widgets – Template Picker

- Preconfigured feature choices for users
- Choices can come from the feature service or defined in your app
- Can be used with Editor widget or on its own as a legend
- Template picker widget

```
var widget = new TemplatePicker({  
    featureLayers: layers,  
    rows: "auto",  
    columns: 9,  
    showTooltip: true,  
    style: "height: 100%; width: 900px;"  
}, "templatePickerDiv");  
  
widget.startup();
```



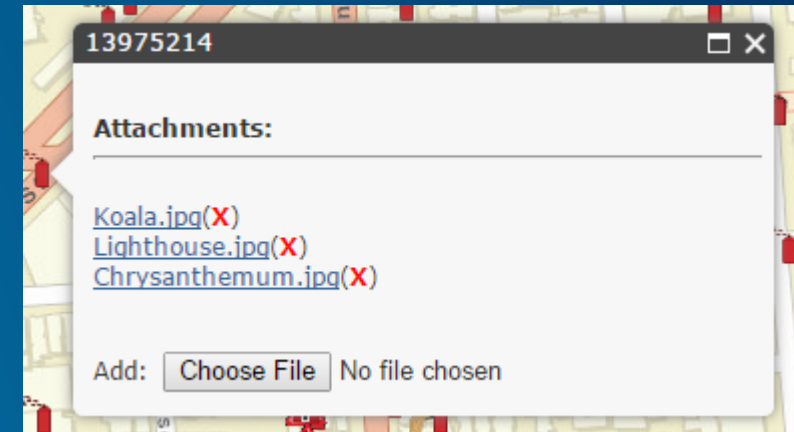
Widgets – Attribute Inspector

- Interface for users to edit attributes
- Ensures the data is valid
- Data type validation (text, number, date) as well as dropdowns for domains
- Exposes all attributes in the layer
- Included with Editor widget
- Using the attribute inspector

```
var layerInfos = [  
  {'featureLayer': petroFieldsFL, 'showAttachments': false, 'isEditable': true,  
    'fieldInfos': [  
      {'fieldName': 'activeprod', 'isEditable': true, 'tooltip': 'Current Status', 'label': 'Status:'},  
      {'fieldName': 'cumm_gas', 'isEditable': false, 'label': 'Cummulative Gas:'}  
    ]}  
];  
  
var attInspector = new AttributeInspector({  
  layerInfos: layerInfos  
}, domConstruct.create("div"));
```

Widgets – Attachment Editor

- Allows users to upload feature attachments (photos, documents, videos, etc.)
- Allows users to view and/or remove existing attachments
- Attachments must be enabled on the feature service
- Attachment Editor



```
var attachmentEditor = new AttachmentEditor({}, dom.byId("content"));
attachmentEditor.startup();

featureLayer.on("click", function(evt) {
    attachmentEditor.showAttachments(evt.graphic, featureLayer);
});
```


UndoManager

- Utility object to add undo/redo functionality
- Supports edits, navigation changes, graphics drawing
- Build custom operations that take advantage of undo/redo
- Using Editor, set enableUndoRedo: true, maxOperations: 10
- Editor with undo/redo

Snapping

- SnappingManager adds snapping to Editor, Draw & Edit toolbars, and Measure
- Graphics layers including feature layers can be snap targets
- Snap to point, vertex, and/or edge
- Snapping with Editor

Geometry Service

- ArcGIS Server Service
- Assists with common operations like creating, cutting, reshaping features
- Future: More Geometry Service capability built in to the JS API client side

Edit Toolbar

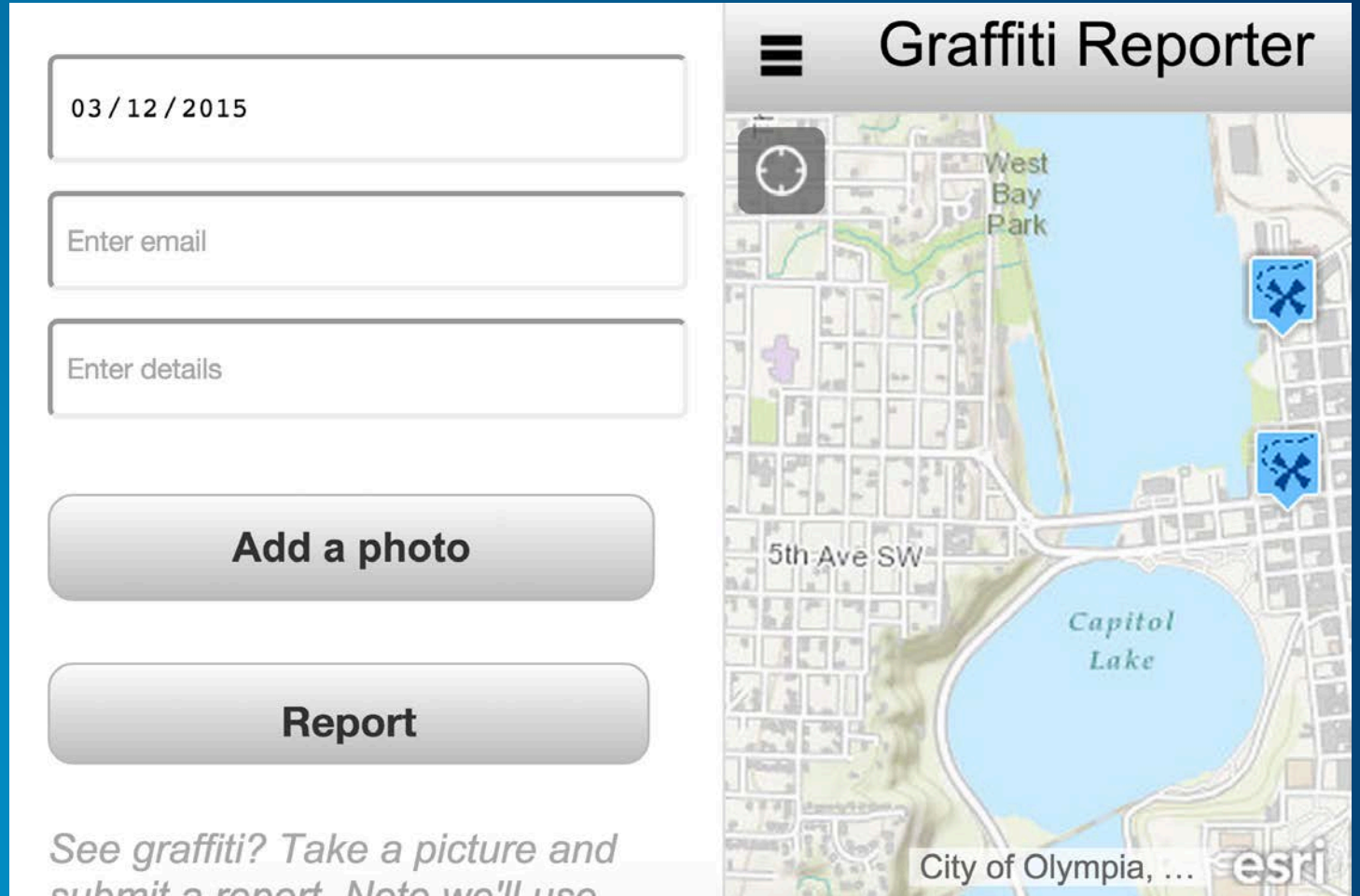
- Helper class to enable moving graphics or individual vertices/graphics
- Often used when not leveraging the Editor widget
- Many events to connect to so you can respond when the user performs actions
- [Editing Tools](#)

Draw Toolbar

- Functionality to create new geometries by drawing them on the map
- [Drawing Graphics on a Map](#)

Editing without the Editor

- Custom Editing App
 - Individual components
 - Feature Layer



The screenshot displays the 'Graffiti Reporter' app interface. On the left is a form with the following elements:

- A date input field containing '03 / 12 / 2015'.
- An email input field with the placeholder text 'Enter email'.
- A details input field with the placeholder text 'Enter details'.
- A button labeled 'Add a photo'.
- A button labeled 'Report'.
- At the bottom, a text prompt: 'See graffiti? Take a picture and submit a report. Note we'll use'.

On the right is a map view showing the area around Capitol Lake. The map includes labels for 'West Bay Park', '5th Ave SW', and 'Capitol Lake'. Two blue location pins with a crosshair icon are placed on the map. The map is attributed to 'City of Olympia, ...' and 'esri'.

FeatureLayer

- ApplyEdits
- Before Apply Edits
- Add Attachments

```
myFeatureLayer.on("before-apply-edits", function(evt) {  
    var toUpdate = evt.updates;  
    array.forEach(toUpdate, function(update) {  
        //debugger;  
        update.attributes.LAT = update.geometry.getLatitude();  
        update.attributes.LONG_ = update.geometry.getLongitude();  
    });  
});
```


Dates and Times

- Attribute Inspector
- Opt in to display time

| | |
|-------------|---|
| 3/11/2015 | ▼ |
| 5:00:00 PM | ▼ |
| 12:00:00 AM | |
| 12:15:00 AM | |
| 12:30:00 AM | |
| 12:45:00 AM | |
| 1:00:00 AM | |
| 1:15:00 AM | |
| 1:30:00 AM | |
| 1:45:00 AM | |

Info Window Conflicts

```
if (name === "edit") {  
    this.map.setInfoWindowOnClick(false);  
    this._createEditor();  
} else {  
    //activate the popup and destroy editor if necessary  
    this._destroyEditor();  
    this.map.setInfoWindowOnClick(true);  
}
```

HTML 5 input types

•

dl.dropboxusercontent.com

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Enter email

Enter details

Add a photo

Report

See graffiti? Take a picture and submit a report. Note we'll use your current location as the

Take Photo or Video

Choose Existing

Cancel

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Enter email

Enter details

Add a photo

< > Clear Done

| | | |
|----------|---|------|
| December | 1 | 2011 |
| January | 2 | 2012 |
| February | 3 | 2013 |
| March | 4 | 2014 |
| April | 5 | 2015 |
| May | 6 | 2016 |
| June | 7 | 2017 |

dl.dropboxusercontent.com

Mar 4, 2014

Enter email

Enter details

Add a photo

< > Done

Q W E R T Y U I O P

A S D F G H J K L

↑ Z X C V B N M ↵

123 globe space @ . return

File Upload

- **File upload example:**
- https://dl.dropboxusercontent.com/u/24627279/report_graffiti/index.html
-
- **This help topic also has info on file upload in the 'Additional Information and Use Cases' section:**
- https://developers.arcgis.com/javascript/jshelp/inside_esri_request.html

Proxy

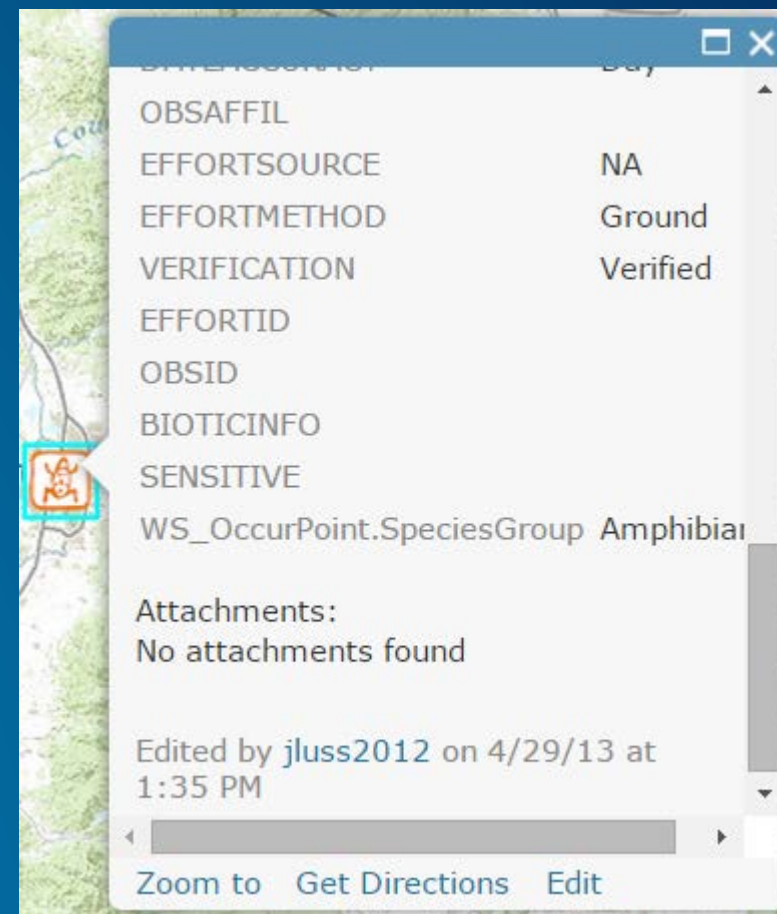
- Often used for security (hide token)
- Used for cross domain posting of data when CORS is not available
 - Older Servers
 - Non-CORS browsers
- Good idea to set it up and have it available

```
esriConfig.defaults.io.proxyUrl = "<url_to_proxy>"  
esriConfig.defaults.io.alwaysUseProxy = false;
```

Editor Tracking

- Enabled on feature services
- Track Create and Edit metadata (date/time and who)
- [Enabling Editor tracking \(Desktop/Server\)](#)
- [Enabling Editor tracking \(ArcGIS Online\)](#)

| | |
|-------------|---|
| Editing | <input checked="" type="checkbox"/> Enable editing and allow editors to: <ul style="list-style-type: none"><input checked="" type="radio"/> Add, update, and delete features<input type="radio"/> Update feature attributes only<input type="radio"/> Add features only |
| Export Data | <input type="checkbox"/> Allow others to export to different formats. |
| Sync | <input type="checkbox"/> Enable Sync (disconnected editing with synchronization). |
| Track Edits | <input checked="" type="checkbox"/> Keep track of who created and last updated features. <input type="checkbox"/> Editors can only update and delete the features they add. |



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