Acknowledgement

• The Complex Selection strategy was created by the Advanced Application team at the National Wetlands Research Center while working with the Coastal Protection and Restoration Authority.
Problem

- The ArcGIS API for JavaScript provides Feature Layers which can be used for simple selections in the Web Browser.
- High Record count Feature Layers cause performance issues in the Web Browser.
- The performance issues are even greater when user interaction is added to those high record count Feature Layers.
Solution

• The Advanced Applications Team at the USGS National Wetlands Research Center came up with a client-side strategy to:
  - Show high record count feature layers
  - Enable multi-select functionality
• While not sacrificing Web Browser performance
Implementation

- The Map will contain two layers for each Selection Capable Layer:
  - A Feature Layer ("esri/layers/FeatureLayer")
    - Invisible/not shown
    - For queries
  - A Visualization Layer
    - Dynamic Map Service Layer ("esri/layers/ArcGISDynamicMapServiceLayer")
    - Image Service Layer ("esri/layers/ArcGISImageServiceLayer")
Selection

- Selection uses the Draw API ("esri/toolbars/draw")
  - The Draw API lets us draw a shape on the map using mouse drag events
    - For my example, we will be using a rectangle ("extent")
  - The rectangle’s coordinates ("geometry") are used to select features from the invisible Feature Layer using a Query
Query

• A Query ("esri/tasks/query") is created using the geometry from the Draw Tool
  - This query is used to select features using the "selectFeatures" method on the Feature Layer
    - The resulting features are drawn on the Graphics Layer
Results

- The resulting dataset can then be used however it is needed
- For the example, we will just be showing the Primary ID which is unique for every feature
Demo
The code is Open Source and will be available on the USGS Github account.

https://github.com/usgs