NY GeoCon 2013

Mobile Apps

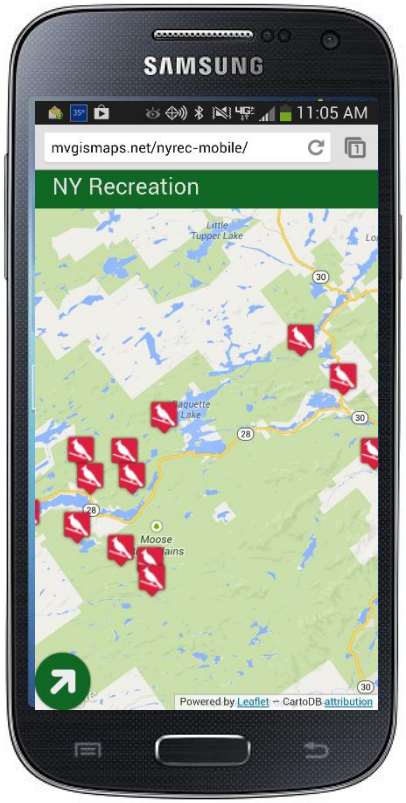
Mobile Apps

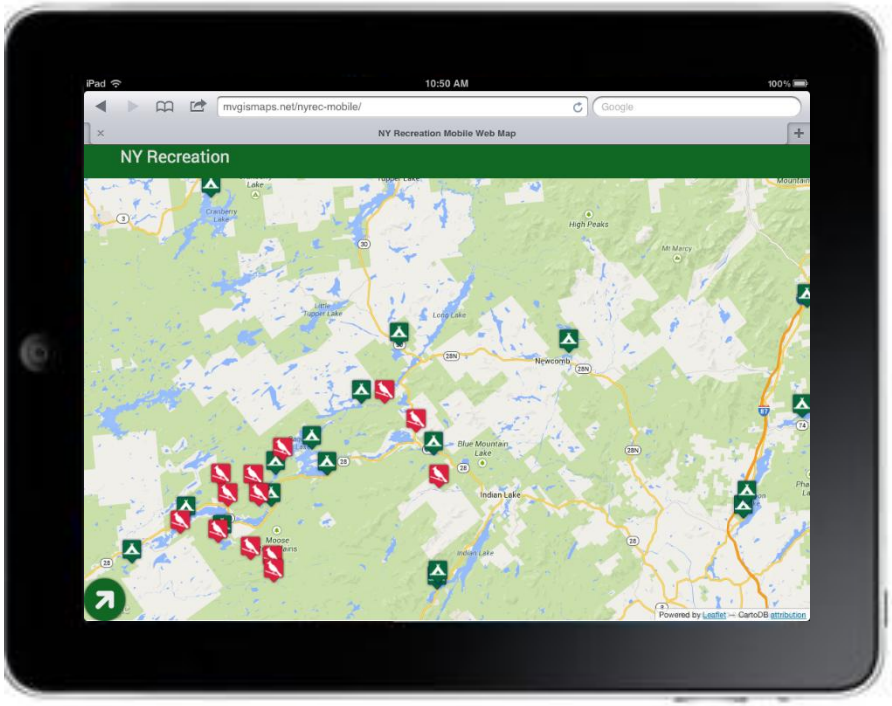
- What brought us to this approach
- Challenges
- Other approaches

Questions welcome

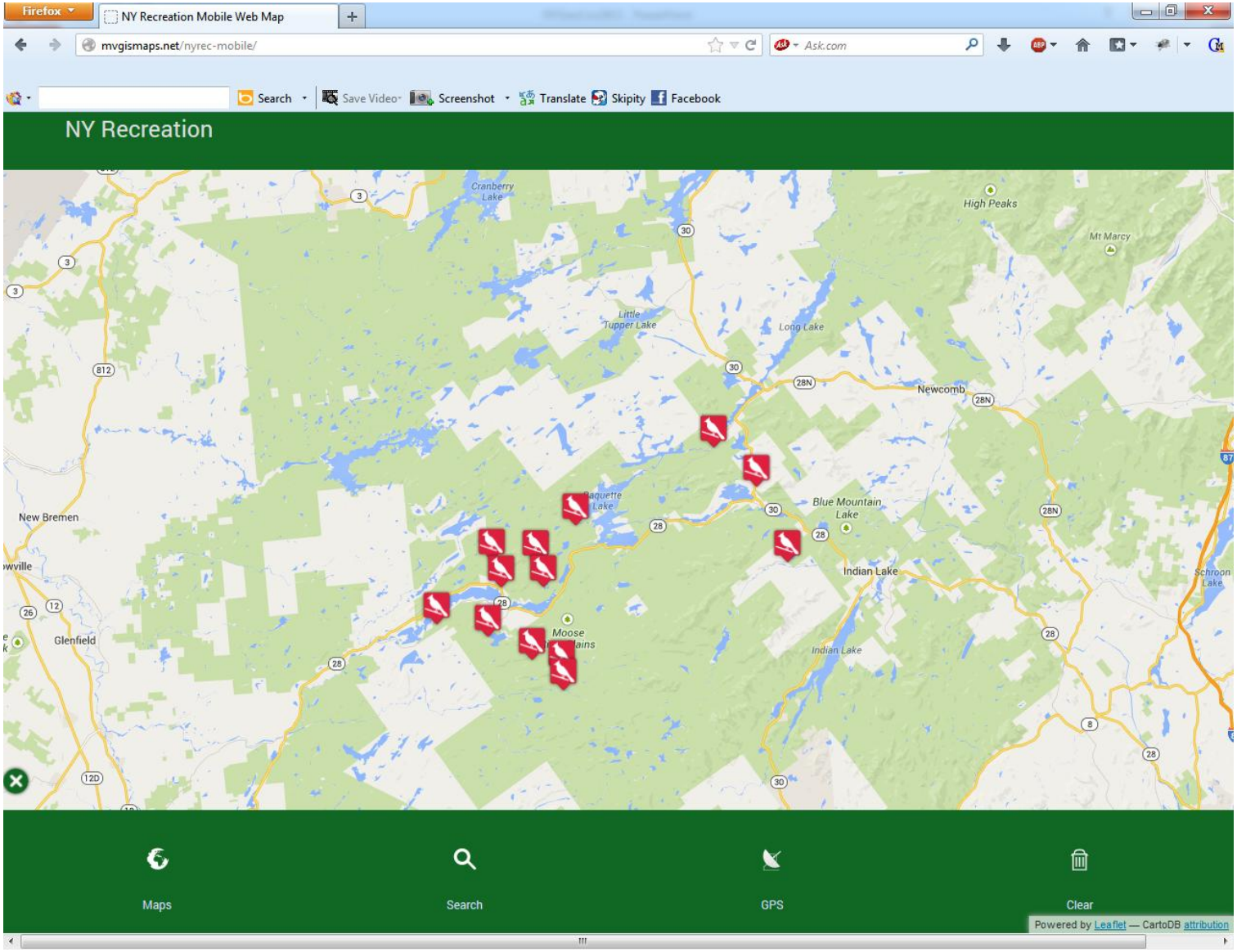
manifold.net

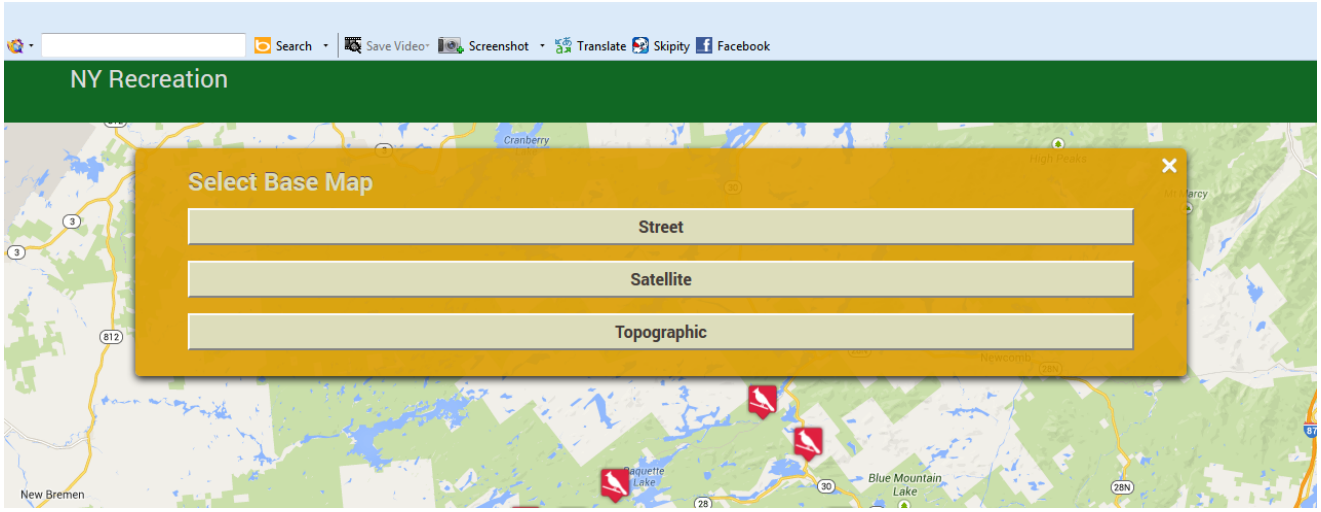
mvgismaps.net/nyrec

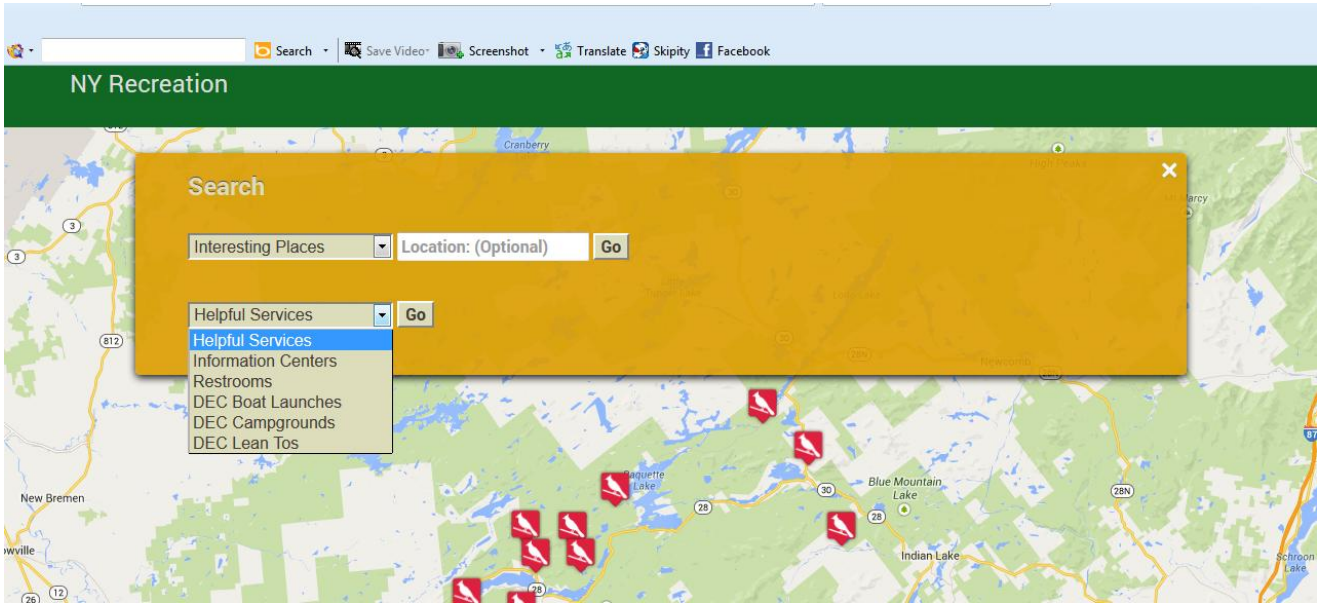


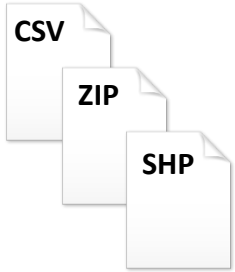


mvgismaps.net/nyrec-mobile


Firefox
NY Recreation Mobile Web Map
mvgismaps.net/nyrec-mobile/
Search
Save Video
Screenshot
Translate
Skipity
Facebook
NY Recreation
Cranberry Lake
High Peaks
Mt Marcy
Little Tupper Lake
Long Lake
Newcomb
New Bremen
Baquette Lake
Blue Mountain Lake
Indian Lake
Glenfield
Moose
Indian Lake
Schroon Lake
Maps
Search
GPS
Clear
Powered by Leaflet — CartoDB attribution


Search
Save Video
Screenshot
Translate
Skipity
Facebook
NY Recreation
Select Base Map
Street
Satellite
Topographic
Cranberry
Newcomb
Baquette Lake
Blue Mountain Lake
New Bremen


Search
Save Video
Screenshot
Translate
Skipity
Facebook
NY Recreation
Search
Interesting Places
Location: (Optional)
Go
Helpful Services
Go
Helpful Services
Information Centers
Restrooms
DEC Boat Launches
DEC Campgrounds
DEC Lean Tos
Cranberry
Newcomb
Baquette Lake
Blue Mountain Lake
Indian Lake
New Bremen


CSV
ZIP
SHP


CARTODB


PostGIS


Leaflet

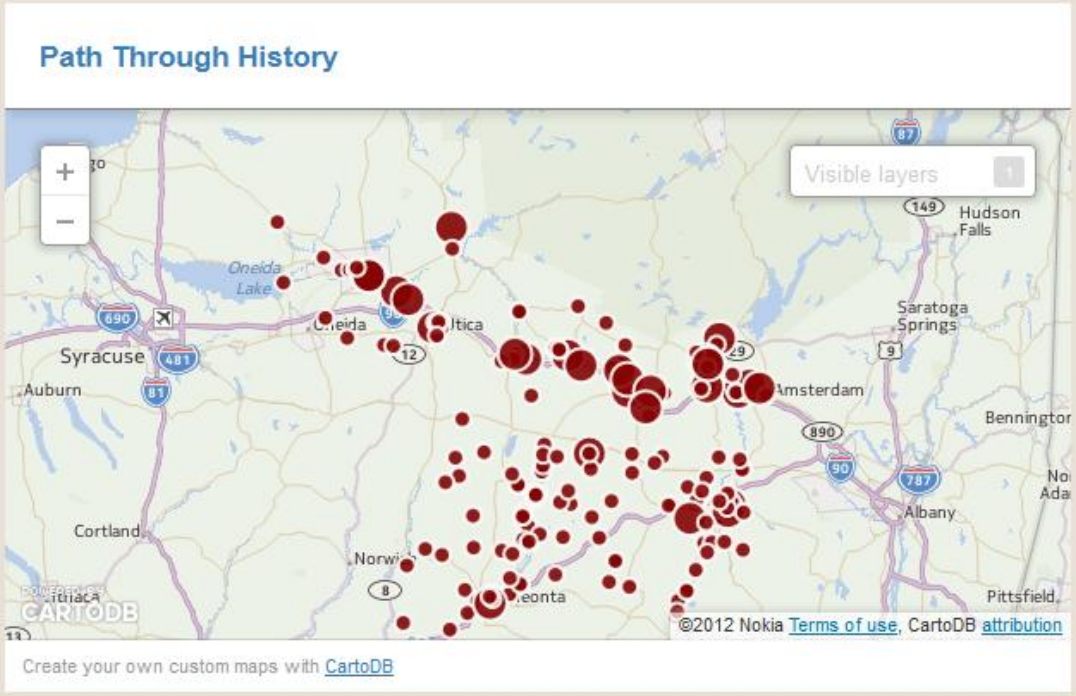

OpenStreetMap
Google maps

Live demo of CartoDB website

Path Through History Project

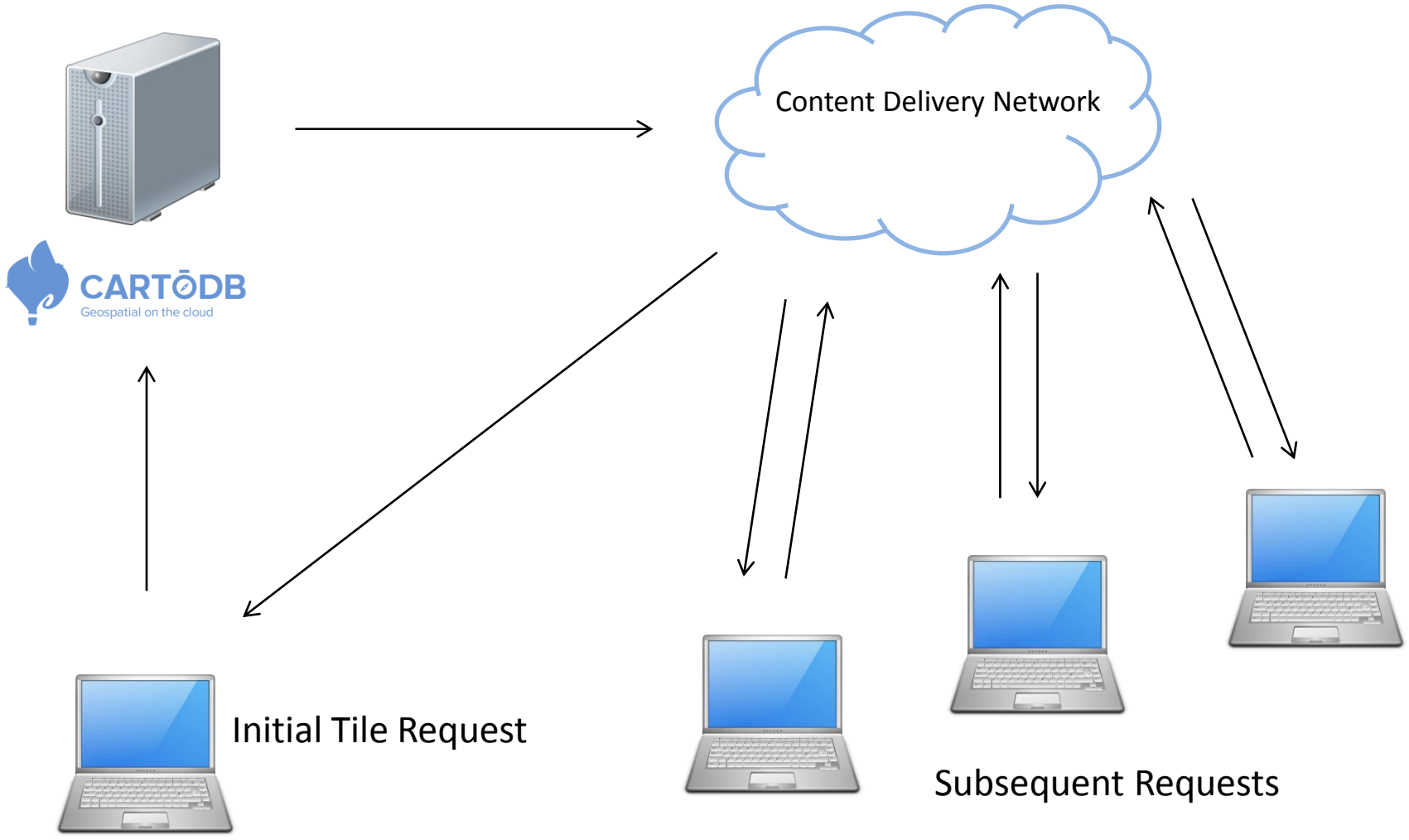
Mohawk Valley Region

Map includes all attractions in the 6 counties. Bigger dots are Rev War theme.
Click a dot to display its info. (Descriptions cut off at 254 characters, sorry).



www.mohawkvalleygis.com/PTHdata.htm

Cached tiles for increased performance

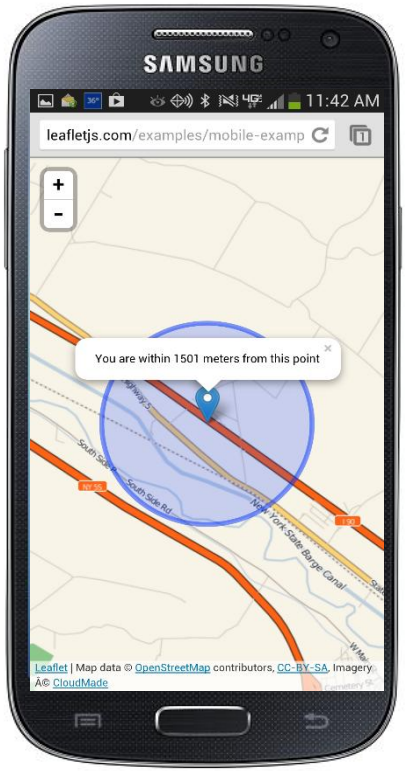


Open source JavaScript mapping library

Mobile friendly

Interfaces with CartoDB, Google Maps, more

Live demo of Leaflet website



Preparing the page

First we'll take a look at the HTML & CSS code of the page. To make our map `div` element stretch to all available space (fullscreen), we can use the following CSS code:

```
body {
    padding: 0;
    margin: 0;
}
html, body, #map {
    height: 100%;
}
```

Also, we need to tell the mobile browser to disable unwanted scaling of the page and set it to its actual size by placing the following line in the `head` section or our HTML page:

```
<meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0, user-scalable=no" />
```

Initializing the map

We'll now initialize the map in the JavaScript code exactly like we did in the quick start guide, but won't set the map view yet:

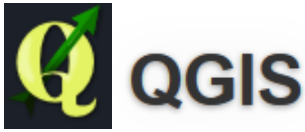
```
var map = L.map('map');

L.tileLayer('http://{s}.tile.cloudmade.com/API-key/997/256/{z}/{x}/{y}.png', {
    attribution: 'Map data &copy; […]',
    maxZoom: 18
}).addTo(map);
```

Geolocation

Leaflet has a very handy shortcut for zooming the map view to the detected location — `locate` method with the `setView` option,

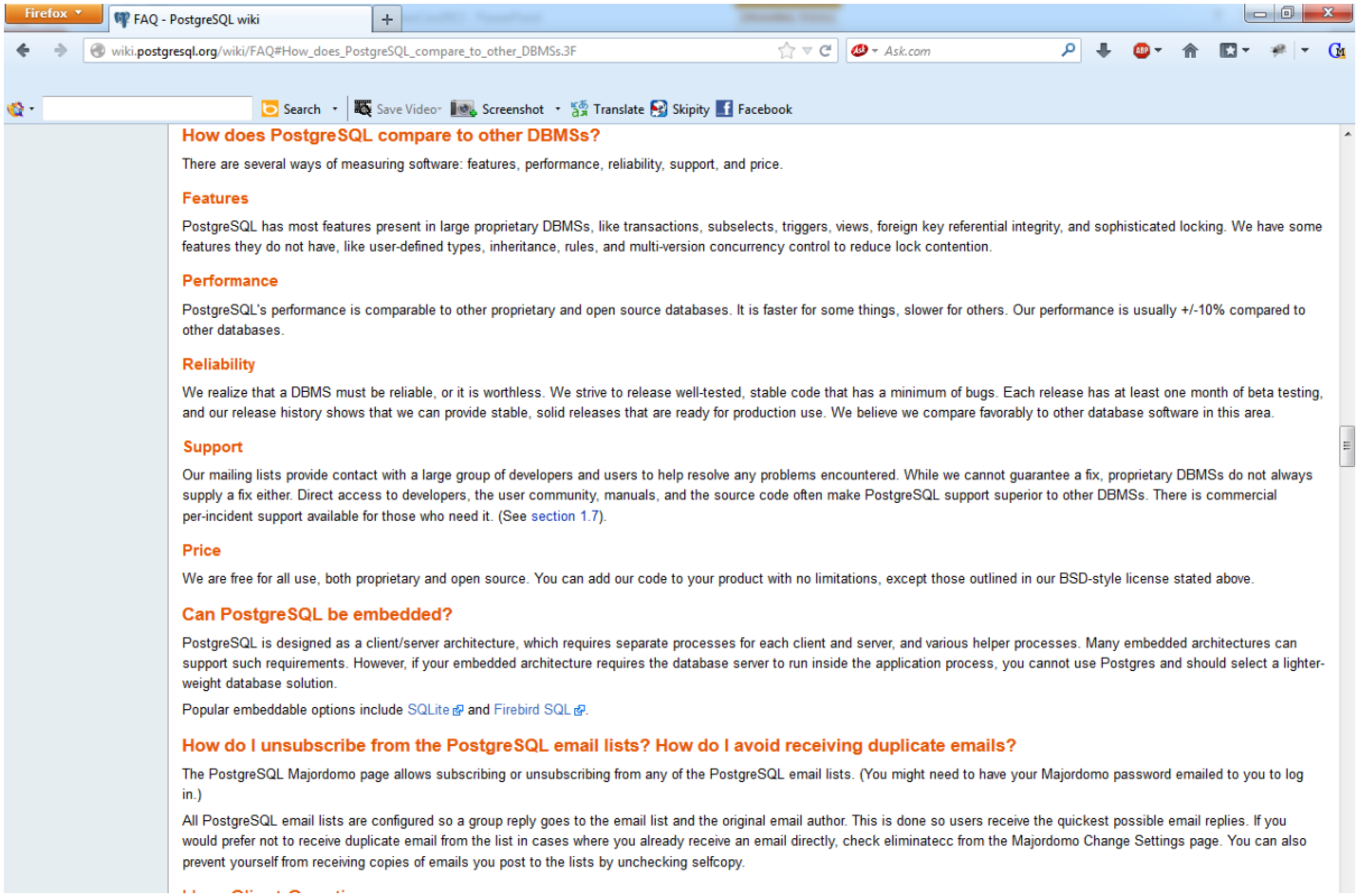
http://leafletjs.com/examples/mobile-example.html

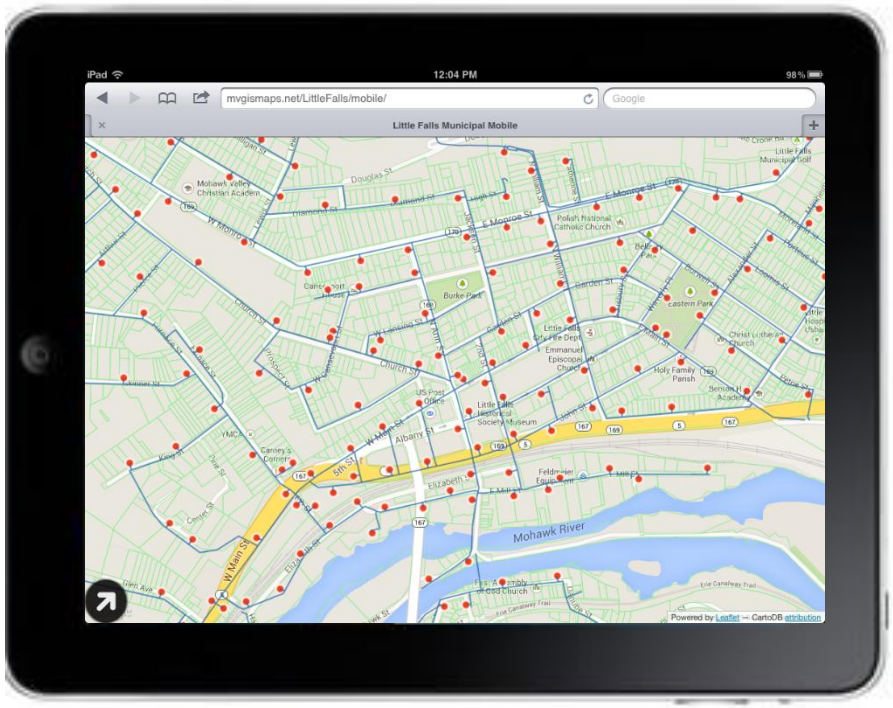
OpenSource Database with Spatial Data

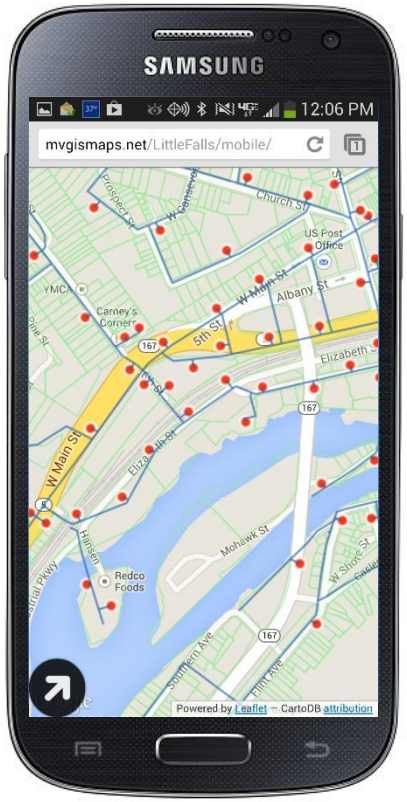


http://wiki.postgresql.org/wiki/FAQ#How_does_PostgreSQL_compare_to_other_DBMSs.3F

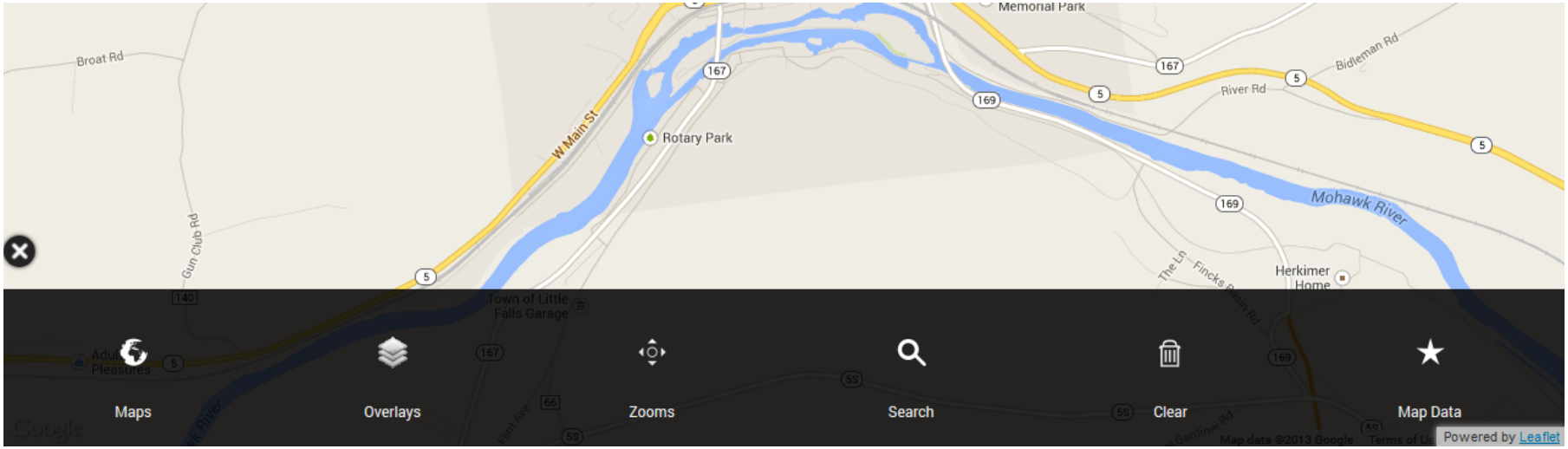
Just Google: compare postgresql other dbms

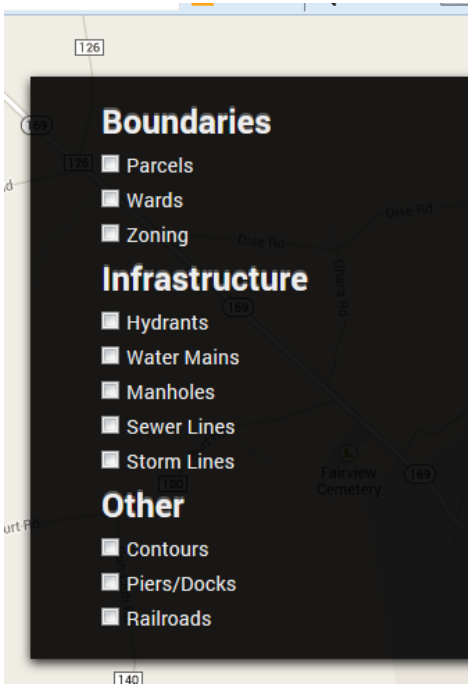


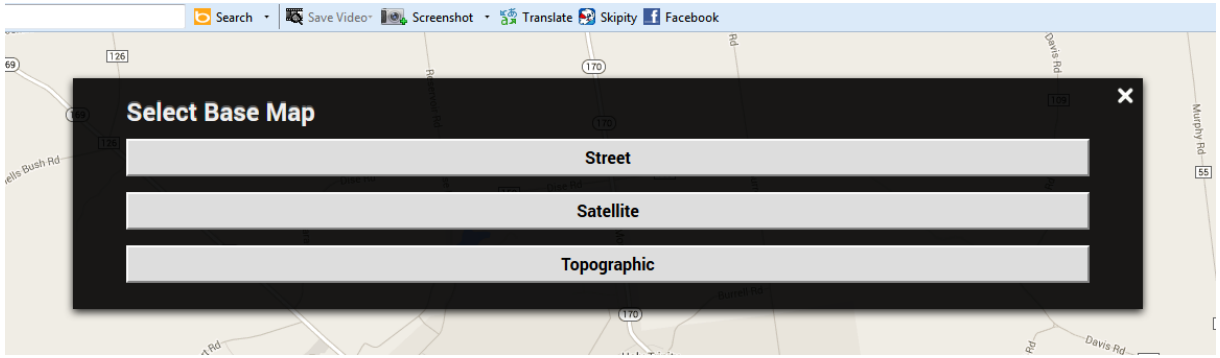


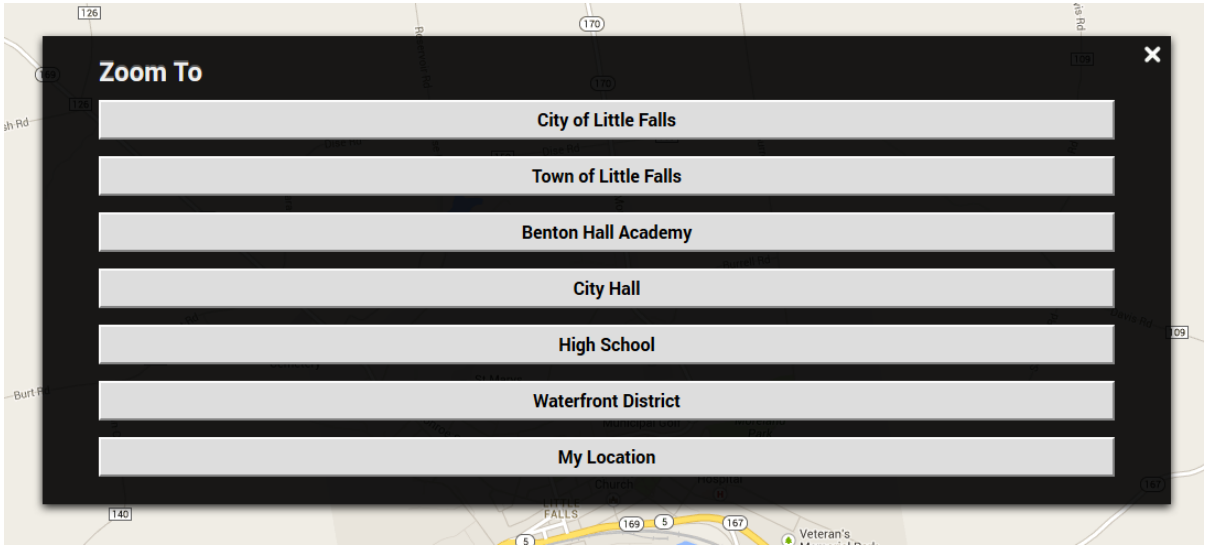


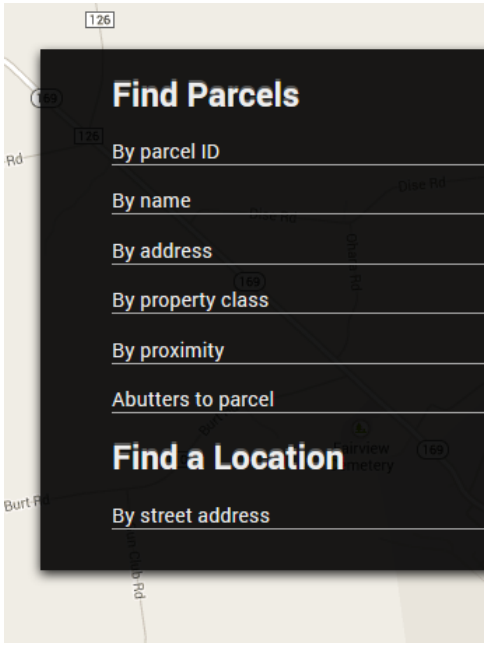
http://mvgismaps.net/LittleFalls/mobile

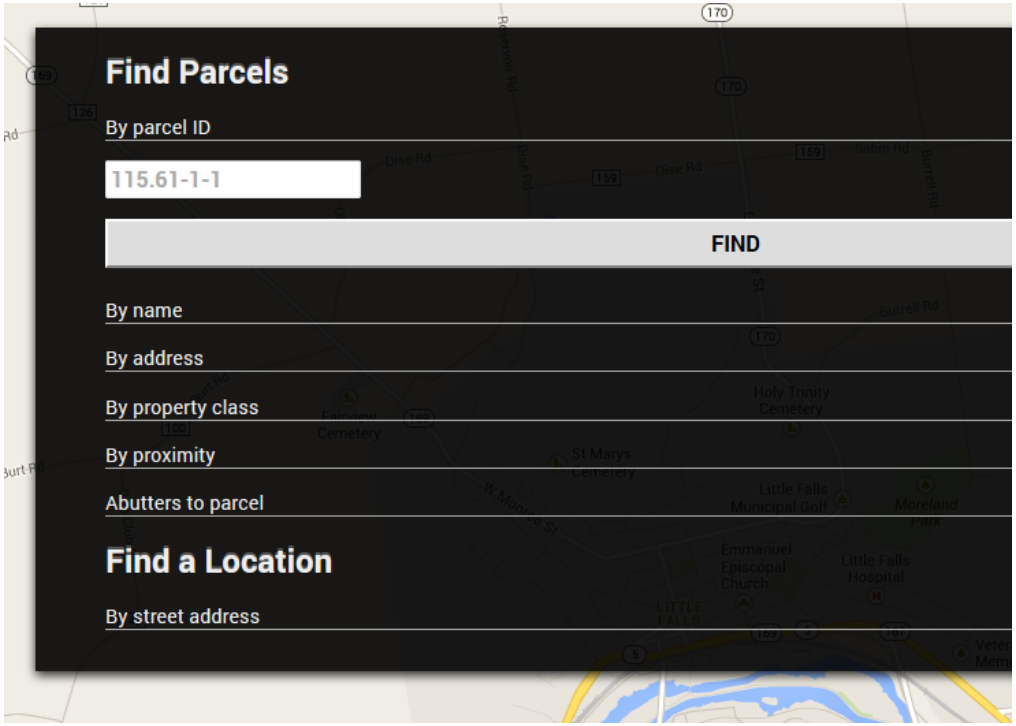

Memorial Park
Broat Rd
167
Bidleman Rd
River Rd
5
169
W Main St
Rotary Park
Mohawk River
Gun Club Rd
140
Town of Little Falls Garage
The Ln
Fincks Basin Rd
Herkimer Home
Maps
Overlays
Zooms
Search
Clear
Map Data
Powered by Leaflet


126
Boundaries
Parcels
Wards
Zoning
Infrastructure
Hydrants
Water Mains
Manholes
Sewer Lines
Storm Lines
Other
Contours
Piers/Docks
Railroads
Fairview Cemetery
140


Search
Save Video
Screenshot
Translate
Skipity
Facebook
Select Base Map
Street
Satellite
Topographic


Zoom To
City of Little Falls
Town of Little Falls
Benton Hall Academy
City Hall
High School
Waterfront District
My Location

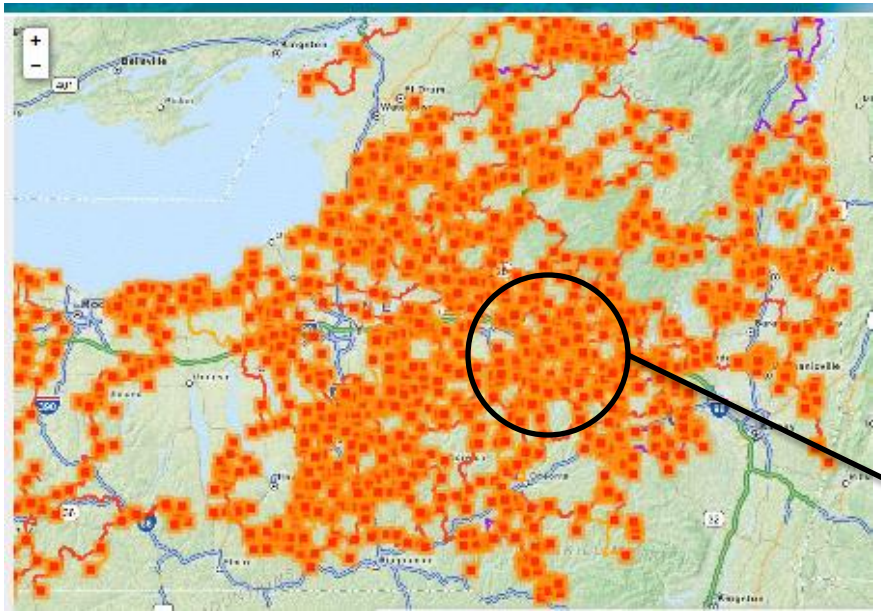

Find Parcels
By parcel ID
By name
By address
By property class
By proximity
Abutters to parcel
Find a Location
By street address


Find Parcels
By parcel ID
115.61-1-1
FIND
By name
By address
By property class
By proximity
Abutters to parcel
Find a Location
By street address

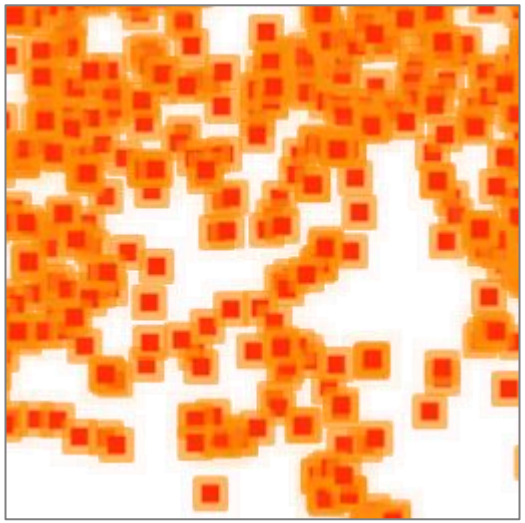
Challenges moving to Open Source

- Effective methods of displaying data
- Inaccurate data on open source maps
- Cached tiles show outdated data
- Open source bugs + support

Efficiently displaying data on the web

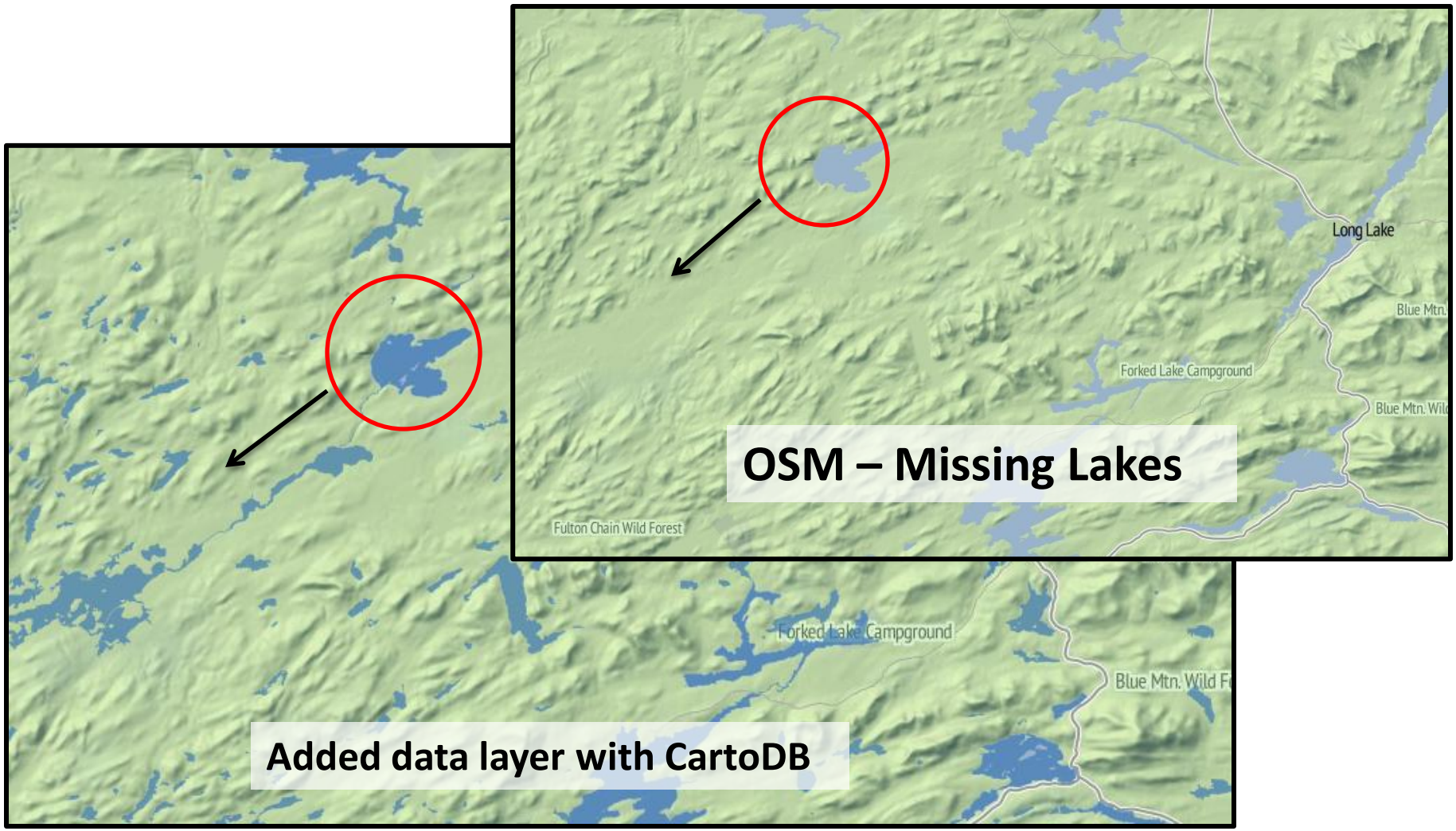


Large data sets rendered through Leaflet



Data rendered in the cloud as a map tile with CartoDB

OpenStreetMap data discrepancy



```
60      var topo_group = null;
61
62      var map = L.map('map', {
63        center: new L.LatLng(43.83975, -74.642316),
64        zoom: 8,
65        maxZoom: 17,
66        layers: [street]
67      });
68
69      var cartoWater = null;
70      cartodb.createLayer(map, "http://mvgis.cartodb.com/api/v1/viz/7237/viz.json", {
71        query: 'select *, ST_AsGeoJSON(the_geom) as geometry from {{table_name}}',
72        tile_style: "#{{table_name}} { polygon-fill: #3E7BB6; polygon-opacity: 0.7;} #{{tabl
    e_name}}::labels [zoom > 11] [name != 'Pond'] [name != 'Lake']  {text-name: [name]; text-f
    ace-name: 'DejaVu Sans Book'; text-size: 10; text-fill: #000; text-allow-overlap: true; te
    xt-halo-fill: #FFF; text-halo-radius: 1;}",
73        cartodb_logo: false
74      }).on('done', function(layer) {
75        cartoWater = layer;
76
77        topo_group = L.layerGroup([topo, layer, contours]);
78
79        var baseMaps = {
80          "Street": street,
81          "Satellite": sat,
82          "Topo": topo_group
83        };
84
85        var overlayMaps = {
86          "Contours": contours
87        };
88
89        L.control.layers(baseMaps, null, {
90          autoZIndex: false
91        }).addTo(map);
92      });
```

Basic Layer Display

```
465
466   /*/
467    * Cartodb tile layers
468   /*/
469
470   parcels = new CartoLayer({
471     cartoUser: 'mvgis',
472     map: map,
473     viz: 'lfparcels',
474     onByDefault: true,
475     interactivity: "printkey, address, zoning, prop_class, land_av, total_av, roll_secti, a
    cres, owner_name, po_box, street_add, city_state",
476     defStyle: "#{{table_name}} [subset='all'] {line-color: #90ee90; polygon-fill: rgba(255,
    255,255,0.1);} [subset='sub'] {line-color: #f00;polygon-fill: rgba(255,255,255,0.1);} #{{ta
    ble_name}}::labels [zoom > 17]{ text-name: [printkey]; text-face-name: 'DejaVu Sans Book';
    text-size: 8; text-fill: #000; text-allow-overlap: true; text-halo-fill: #FFF; text-halo-ra
    dius: 1;}",
477     popupText: function(data) {
478       var text = "<p>id: " + data.printkey + "</p>" + "<p>address: " + data.address + "</p>
    " + "<p>zoning: " + data.zoning + "</p>" + "<p>property class: " + data.prop_class + "</p>"
     + "<p>land av: " + data.land_av + "</p>" + "<p>total av: " + data.total_av + "</p>" + "<p>
    roll section: " + data.roll_secti + "</p>" + "<p>acres: " + data.acres + "</p>" + "<p>prima
    ry owner: " + data.owner_name + "</p>" + "<p>po box: " + data.po_box + "</p>" + "<p>mailing
    : " + data.street_add + "</p>" + "<p>city, state, zip: " + data.city_state + "</p>"
479       return text;
480     }
481   });
482
```

Queries

```
404
405   findName.on('click', function() {
406     var search = document.getElementById('searchName').value,
407       subset = "SELECT *, ST_AsGEOJSON(the_geom), 'sub' as subset FROM lfparcels WHERE owne
    r_name ilike '%" + search + "%' ";
408     applyParcelQuery(subset);
409   });
410
```

```
357   var applyParcelQuery = function(subset) {
358       var exception = subset.replace('sub', 'all');
359       var query = "(" + parcels.defQuery + " EXCEPT " + exception + ") UNION ALL " + subset
    ;
360
361       clearInterface();
362
363       document.getElementById('parcelsCheck').checked = 'checked';
364
365       // Set the query as a callback, to avoid the issue with layers not displaying
366       // when zooming.
367       setBounds(subset, function() {
368         if (parcels.layer) {
369           parcels.show();
370           parcels.setQuery(query);
371         } else {
372           parcels.init(function() {
373             parcels.setQuery(query);
374           });
```

Geolocation

```
154   gpsTool.on('click', function() {
155     map.locate({
156       setView: true,
157       maxZoom: 16
158     });
159
160     clearInterface();
161   });
```

```
19  <body>
20    <div id='map'></div>
21    <div id='toolbar' class='absolute'>
22  </body>
```

```
 9  html, body, #map {
10    height: 100%;
11  }
```

Desktop vs. mobile

```
88   map = L.map("map", {
89      center: [43.04582, -74.856],
90      zoom: 14,
91      maxZoom: 18,
92      zoomControl: false,
93      closePopupOnClick: false,
94      layers: street
95    });
96
```

Other Approaches

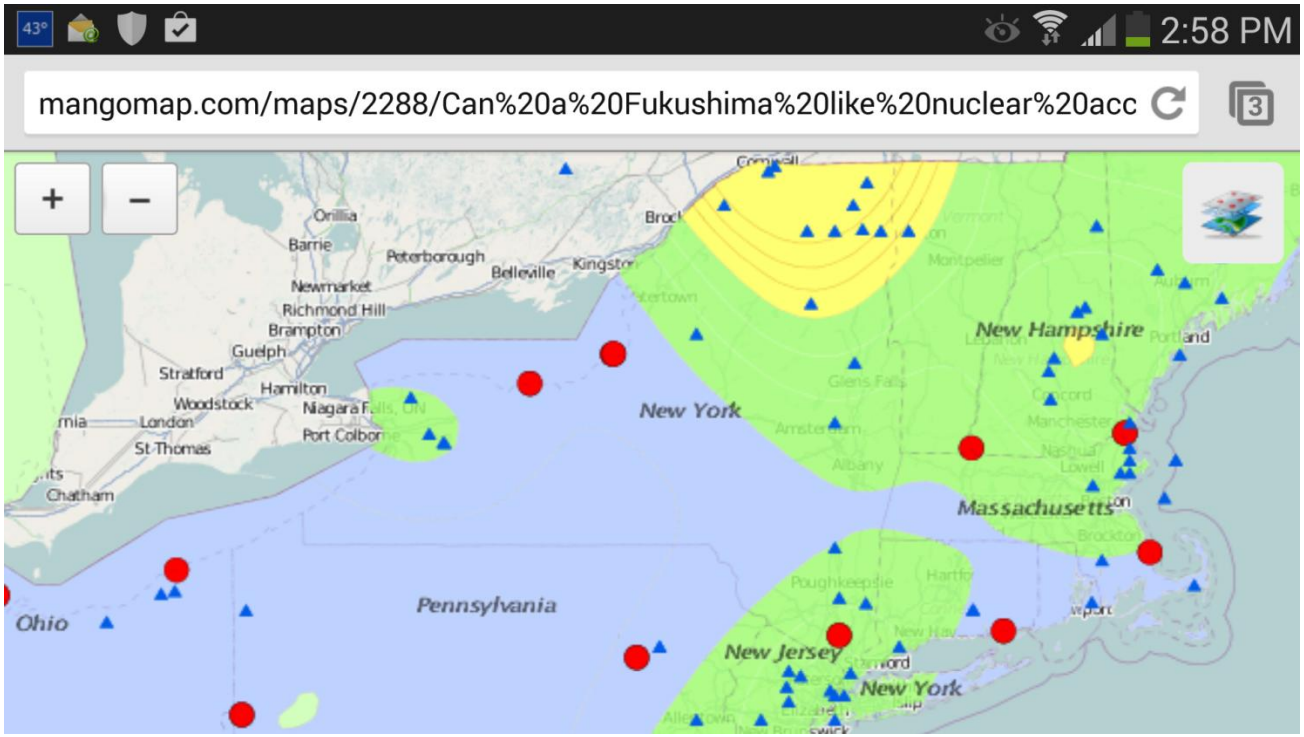
ArcGIS Online: Comprehensive feature list. Jack of all trades, master of none. Confusing pricing. Card carrying ESRI users will love it.
CartoDB: A GIS programmers wet dream. The power of PostGIS and Mapnik but none of the setup headache, all wrapped in attractive packaging.
GISCloud: Online alternative to traditional client/server GIS setup. Many features but hampered by a frustrating user interface.
GeoCommons: The place to share your data and use the data of others. No coding required. Slick UI, great visualisation tools.
MangoMap: The quickest way for GIS users to publish web maps. No coding required. Lots of map features, slick UI that's geared towards simplicity.
MapBox: Making maps sexy again. Programmer focused. Great for maps that need to fit a brand and be able to scale for high traffic.

http://www.onlinegis.com/

MangoMap CEO Offers Free e-Book on Online GIS

www.mangomaps.com

Sample maps, try on mobile device



fulcrum
mobile location leverage

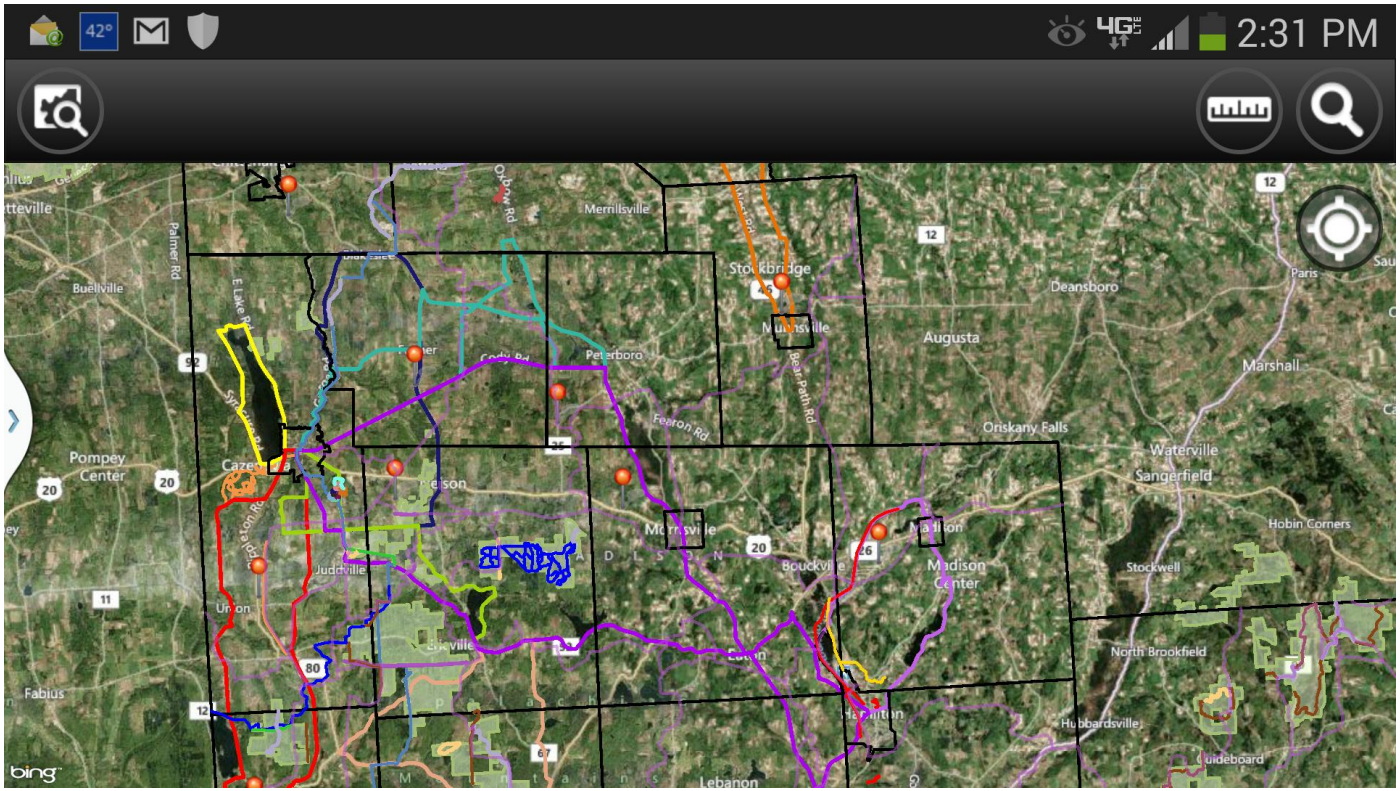
Collect data anywhere, even while offline
No network connection? Keep on collecting and sync when you get back online without losing a thing.

Basemaps + Layers + Photos
Satellite and Streets layers on mobile, along with custom offline maps. Take pictures and upload to the cloud with your data.

Generate reports in the field
Create printable PDF reports from data, in the field. Send reports straight from your mobile device.

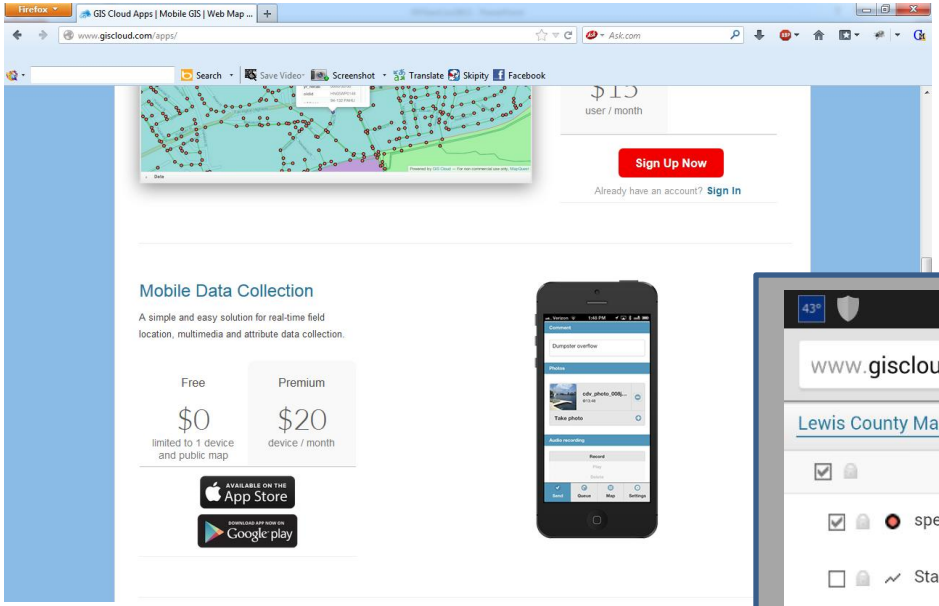
Try Fulcrum for 30 days!

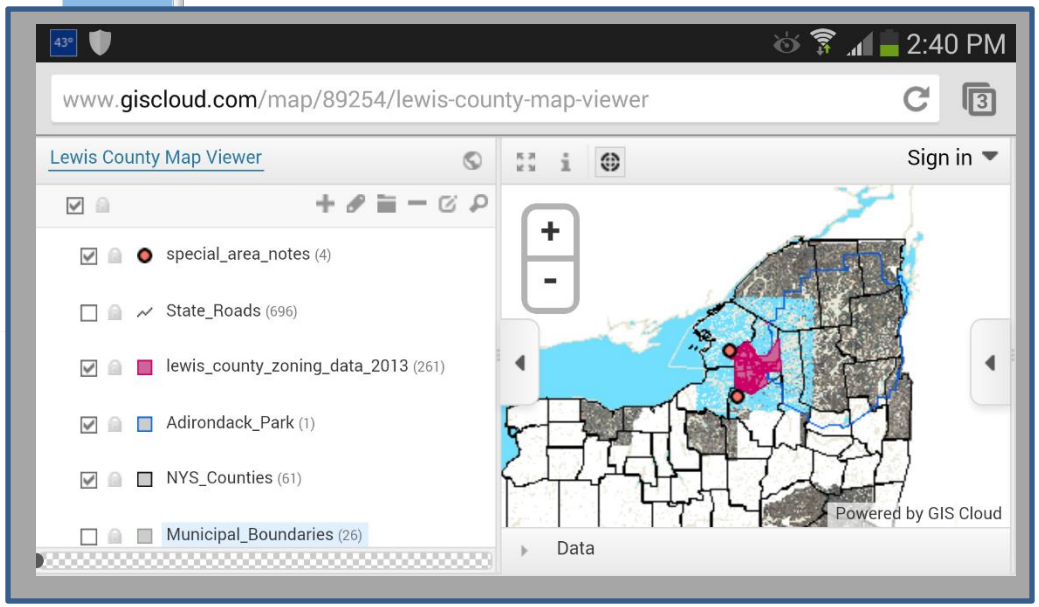
Search for: Trails of Madison County



www.lewiscountyny.org

Econ Dev & Planning, scroll down to Lewis County Mapping Program






JUST DO IT.