

NY GeoCon 2013

Mobile Apps



Mobile Apps

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



Questions welcome

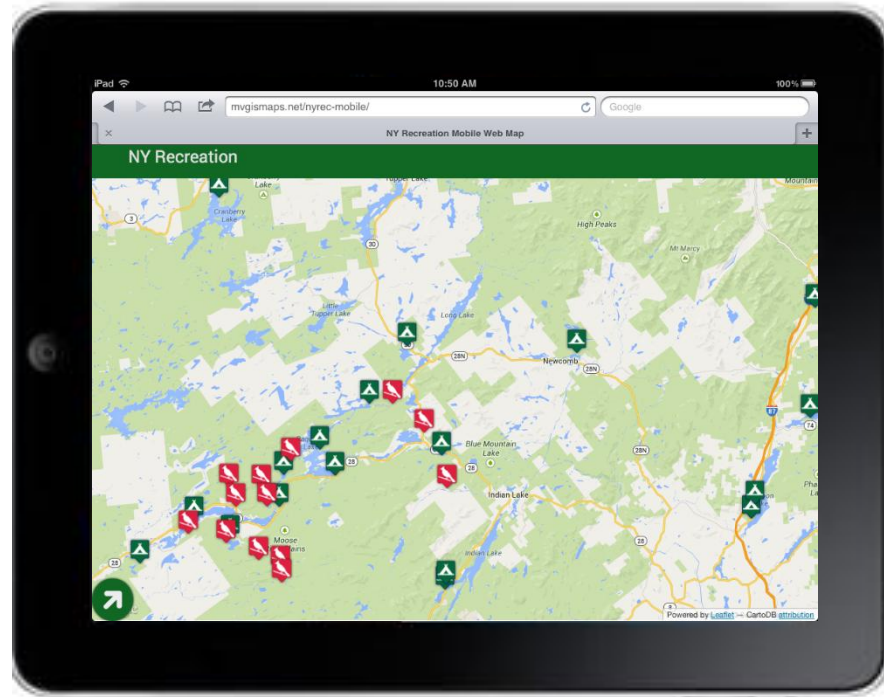
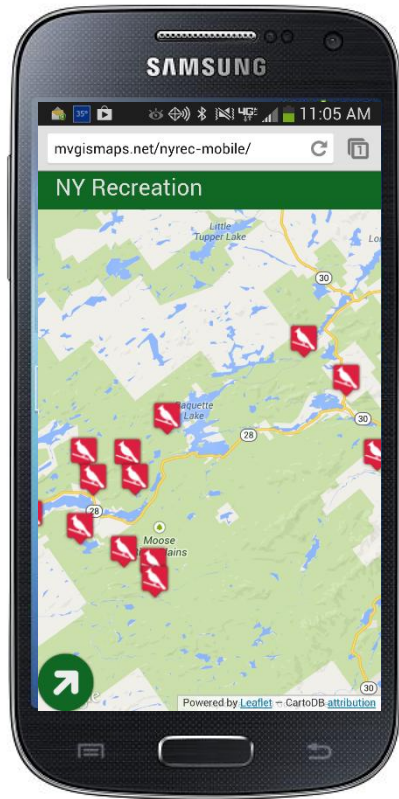


 manifold.net





mvgismaps.net/nyrec



mvgismaps.net/nyrec-mobile

Firefox NY Recreation Mobile Web Map

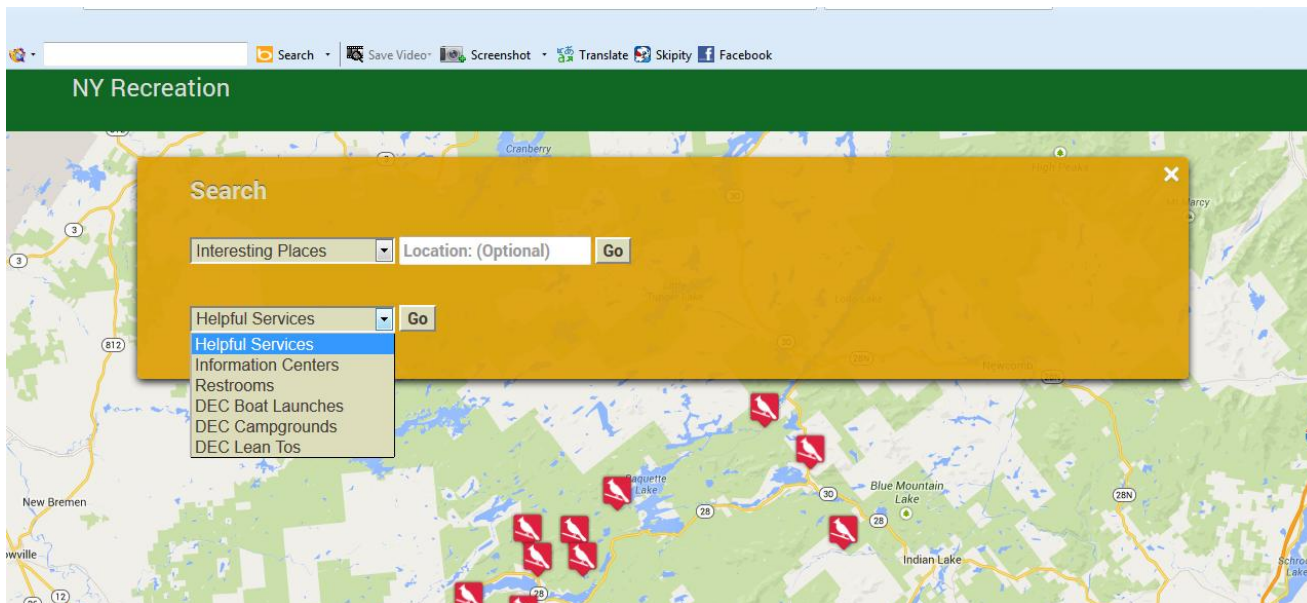
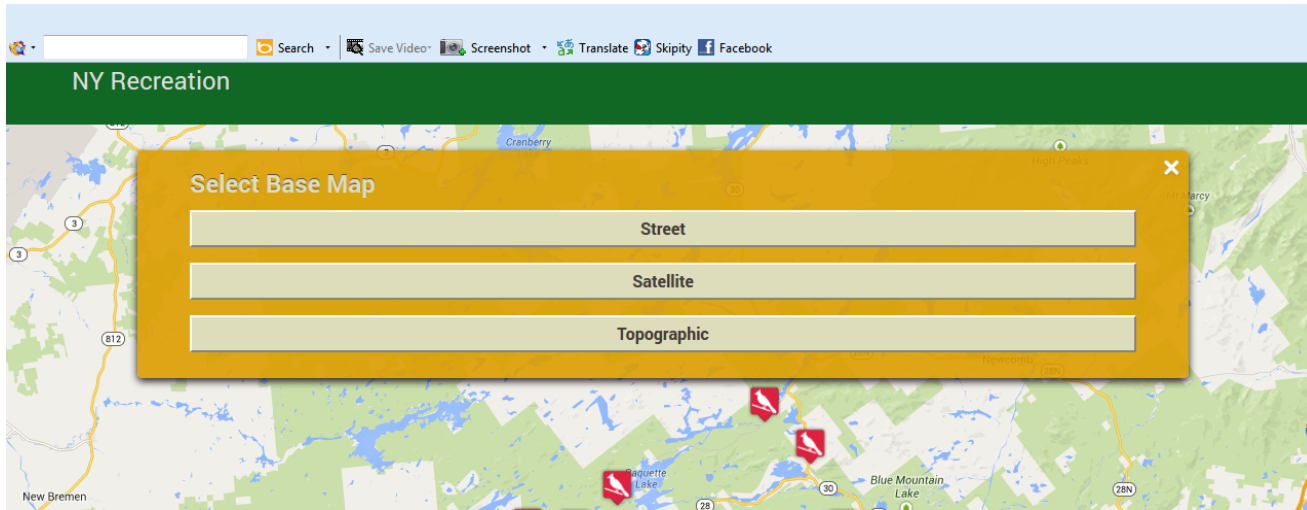
mvgismaps.net/nyrec-mobile/

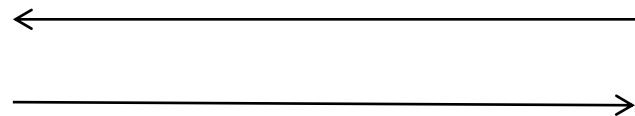
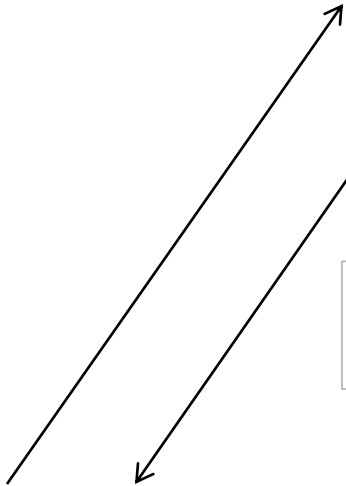
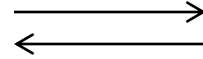
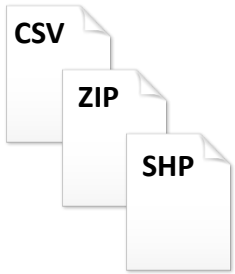
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NY Recreation

Map Search GPS Clear

Powered by [Leaflet](#) — [CartoDB](#) [attribution](#)



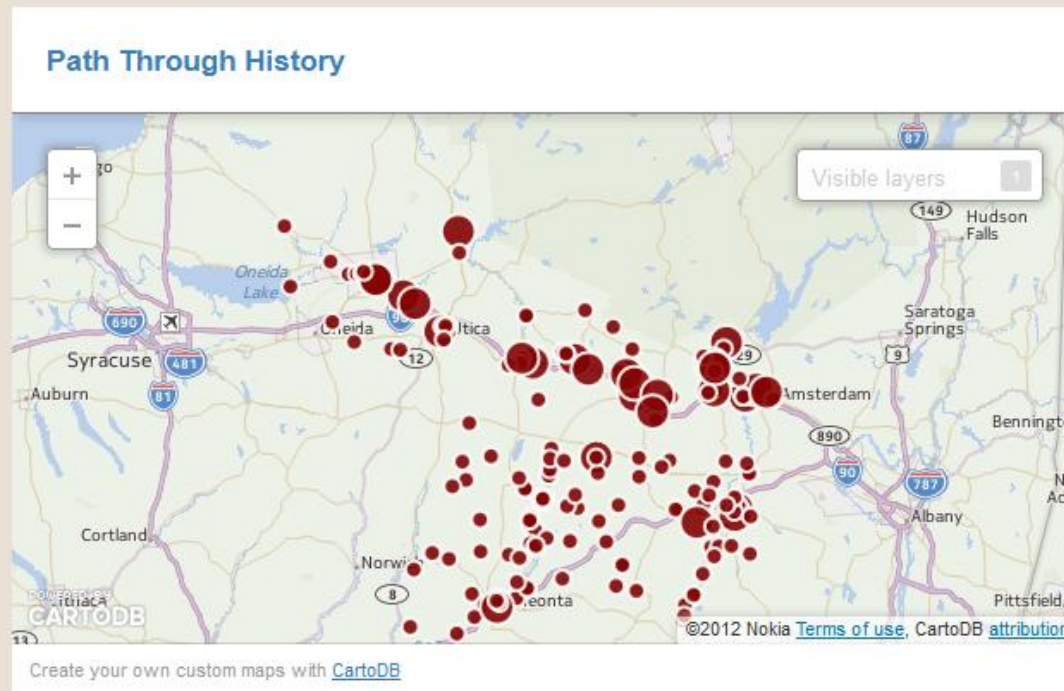


Live demo of CartoDB website

Path Through History Project

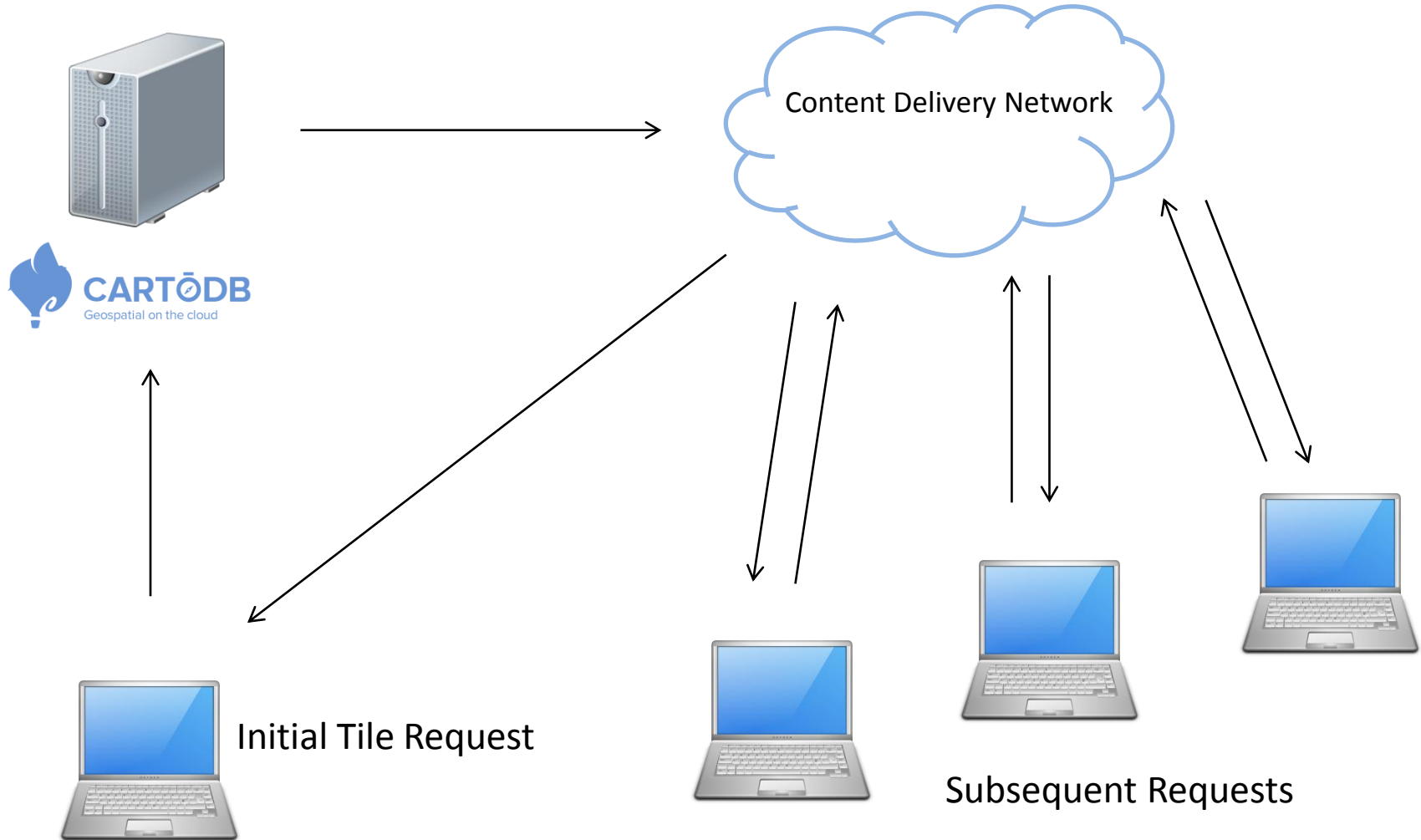
Mohawk Valley Region

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



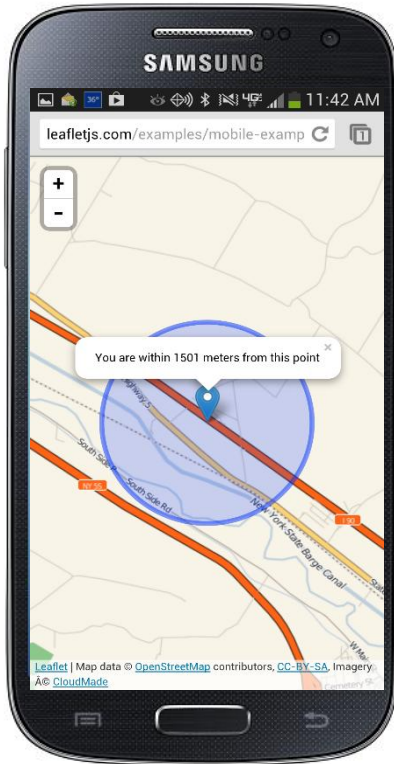


Open source JavaScript mapping library

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 of 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:

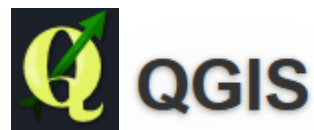
```
var map = L.map('map');  
  
L.tileLayer('http://{s}.tile.cloudmade.com/API-key/997/256/{z}/{x}/{y}.png', {  
  attribution: 'Map data &copy; [...]',  
  maxZoom: 18  
}).addTo(map);
```

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

The screenshot shows a Firefox browser window with the address bar displaying the URL: wiki.postgresql.org/wiki/FAQ#How_does_PostgreSQL_compare_to_other_DBMSs.3F. The page title is "FAQ - PostgreSQL wiki". The main content area contains the following sections:

- How does PostgreSQL compare to other DBMSs?**

There are several ways of measuring software: features, performance, reliability, support, and price.
- Features**

PostgreSQL has most features present in large proprietary DBMSs, like transactions, subselects, triggers, views, foreign key referential integrity, and sophisticated locking. We have some features they do not have, like user-defined types, inheritance, rules, and multi-version concurrency control to reduce lock contention.
- Performance**

PostgreSQL's performance is comparable to other proprietary and open source databases. It is faster for some things, slower for others. Our performance is usually +/-10% compared to other databases.
- Reliability**

We realize that a DBMS must be reliable, or it is worthless. We strive to release well-tested, stable code that has a minimum of bugs. Each release has at least one month of beta testing, and our release history shows that we can provide stable, solid releases that are ready for production use. We believe we compare favorably to other database software in this area.
- Support**

Our mailing lists provide contact with a large group of developers and users to help resolve any problems encountered. While we cannot guarantee a fix, proprietary DBMSs do not always supply a fix either. Direct access to developers, the user community, manuals, and the source code often make PostgreSQL support superior to other DBMSs. There is commercial per-incident support available for those who need it. (See [section 1.7](#)).
- Price**

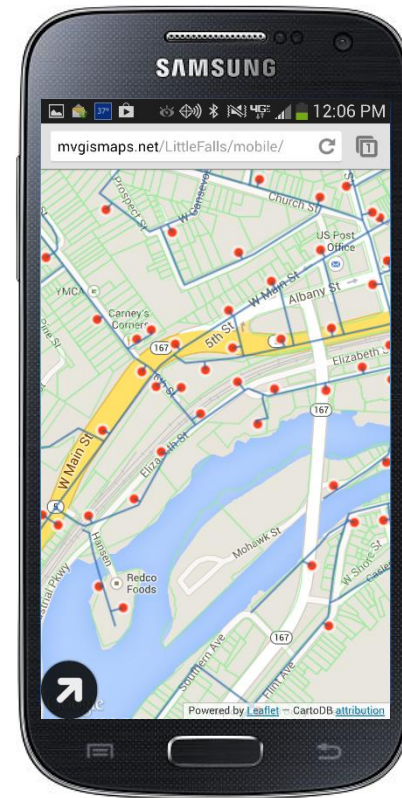
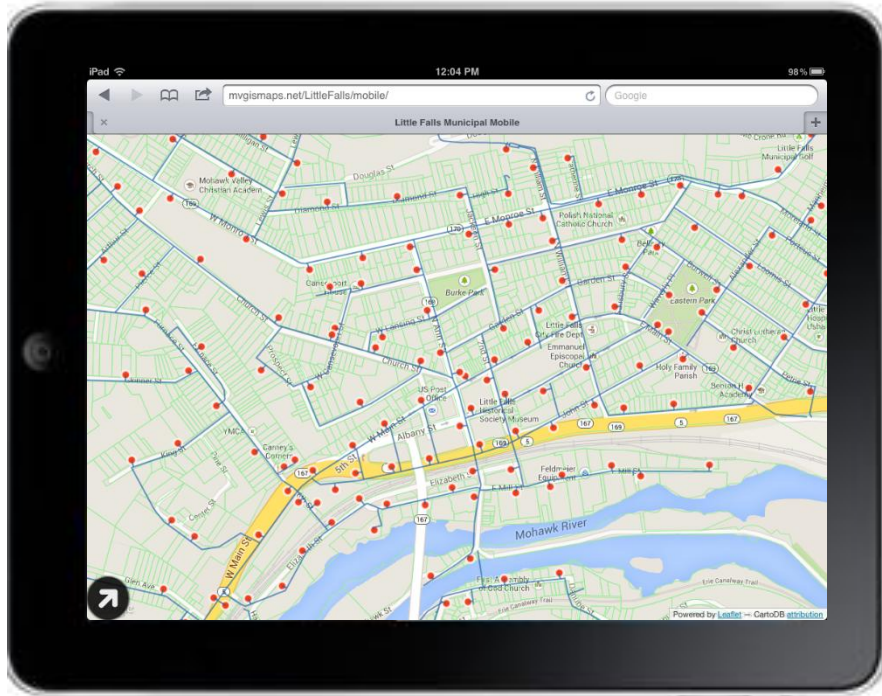
We are free for all use, both proprietary and open source. You can add our code to your product with no limitations, except those outlined in our BSD-style license stated above.
- Can PostgreSQL be embedded?**

PostgreSQL is designed as a client/server architecture, which requires separate processes for each client and server, and various helper processes. Many embedded architectures can support such requirements. However, if your embedded architecture requires the database server to run inside the application process, you cannot use Postgres and should select a lighter-weight database solution.

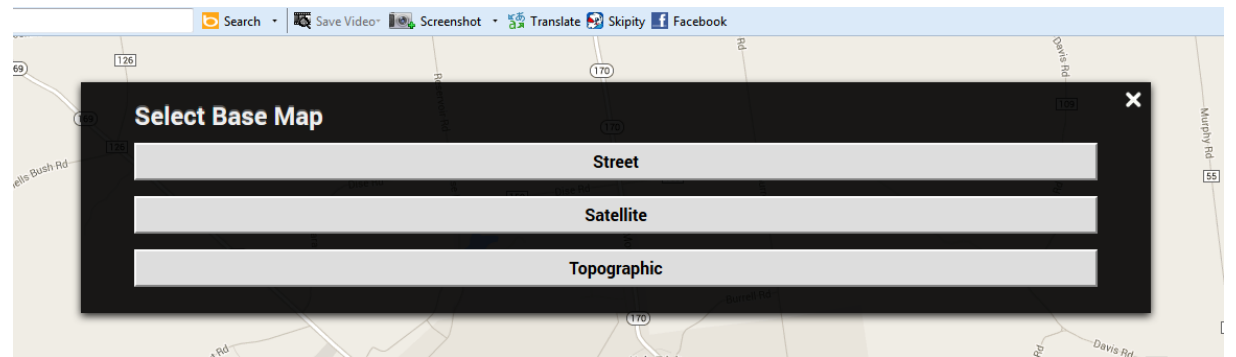
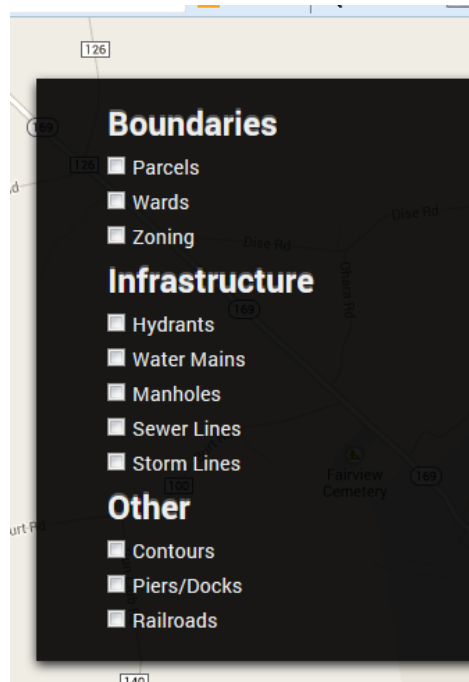
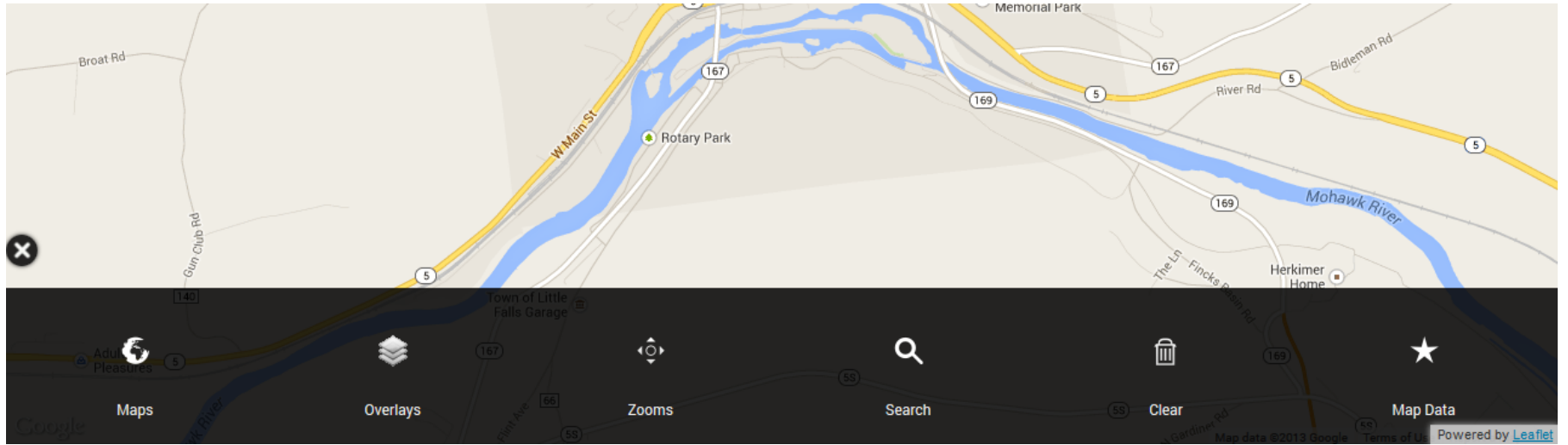
Popular embeddable options include [SQLite](#) and [Firebird SQL](#).
- How do I unsubscribe from the PostgreSQL email lists? How do I avoid receiving duplicate emails?**

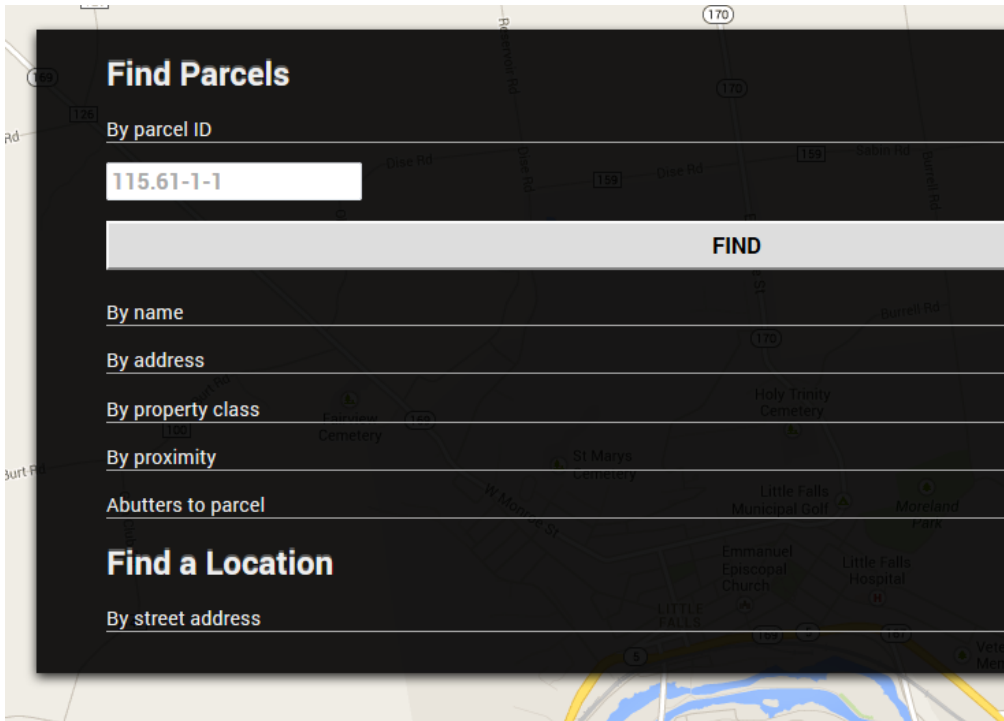
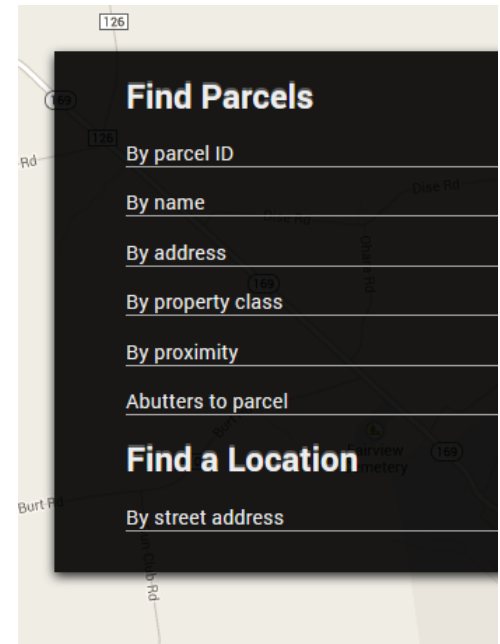
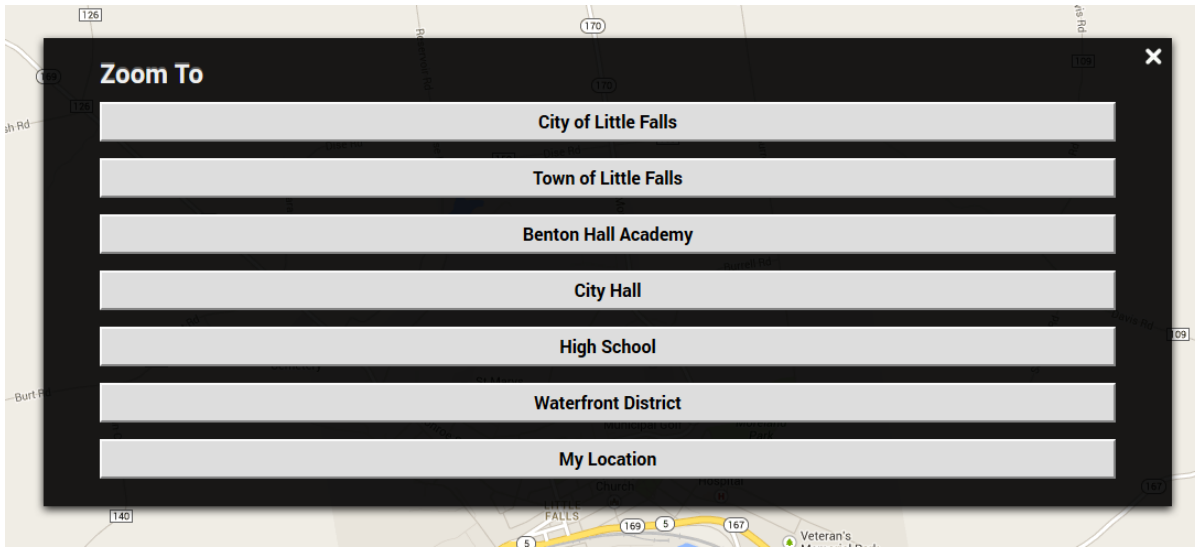
The PostgreSQL Majordomo page allows subscribing or unsubscribing from any of the PostgreSQL email lists. (You might need to have your Majordomo password emailed to you to log in.)

All PostgreSQL email lists are configured so a group reply goes to the email list and the original email author. This is done so users receive the quickest possible email replies. If you would prefer not to receive duplicate email from the list in cases where you already receive an email directly, check [eliminatecc](#) from the Majordomo Change Settings page. You can also prevent yourself from receiving copies of emails you post to the lists by unchecking [selfcopy](#).



<http://mvgismaps.net/LittleFalls/mobile>

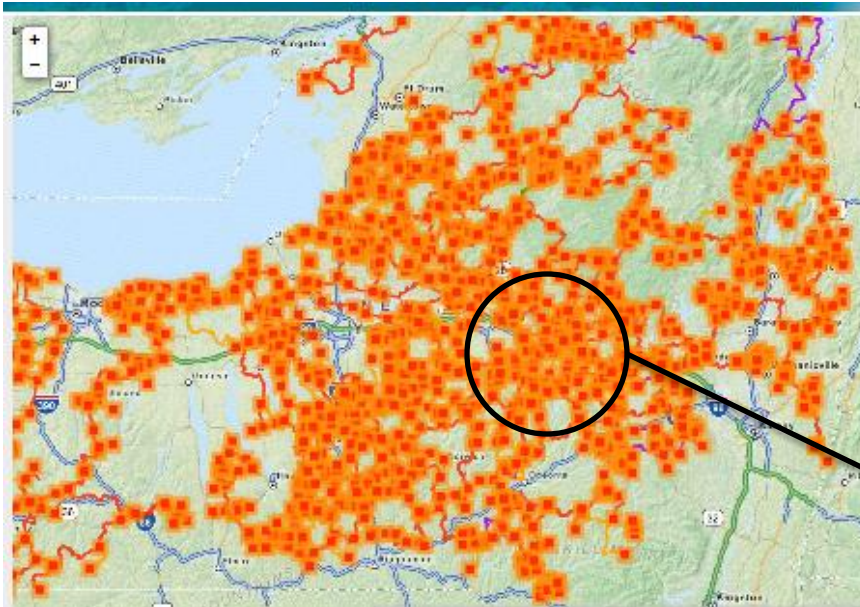




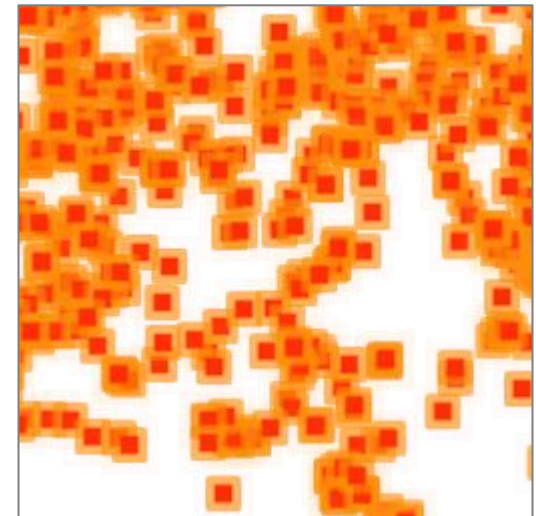
Challenges moving to Open Source

- 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

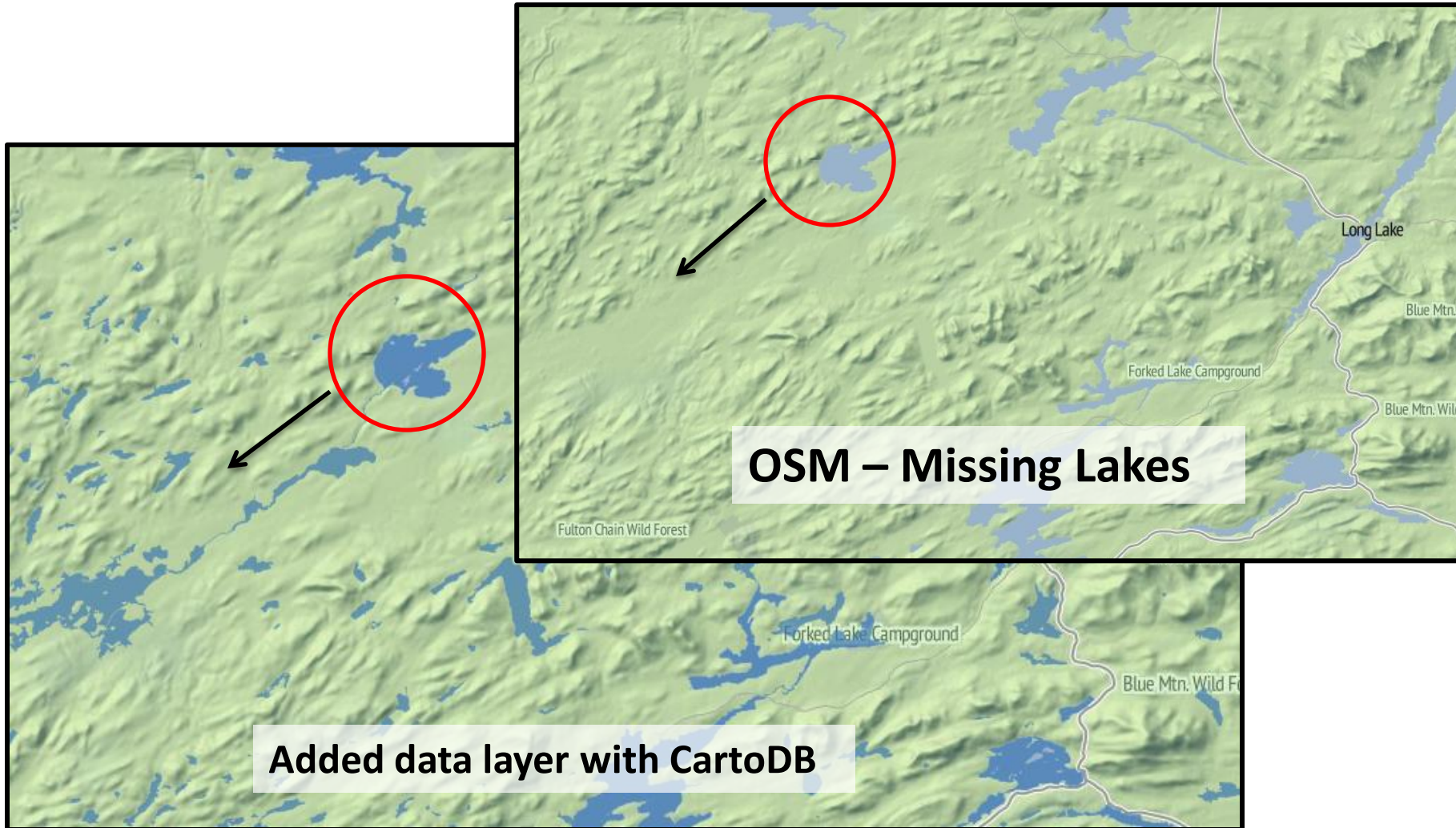


Large data sets rendered through Leaflet



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;} #{{table_name}}::labels [zoom > 11] [name != 'Pond'] [name != 'Lake'] {text-name: [name]; text-face-name: 'DejaVu Sans Book'; text-size: 10; text-fill: #000; text-allow-overlap: true; text-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 }
```

```
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
```

Desktop vs.
mobile

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.

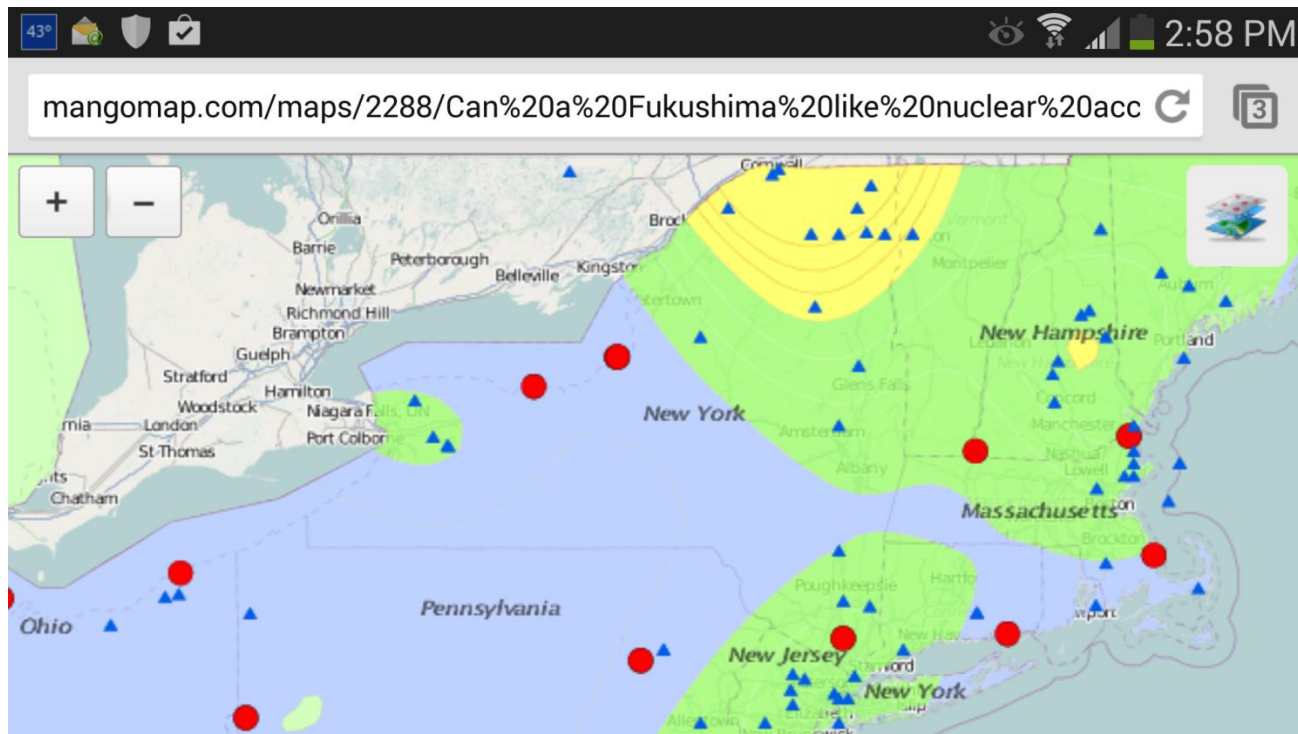
<http://www.onlinegis.com/>

MangoMap CEO Offers Free e-Book on Online GIS



www.mangomaps.com

Sample maps, try on
mobile device





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.



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

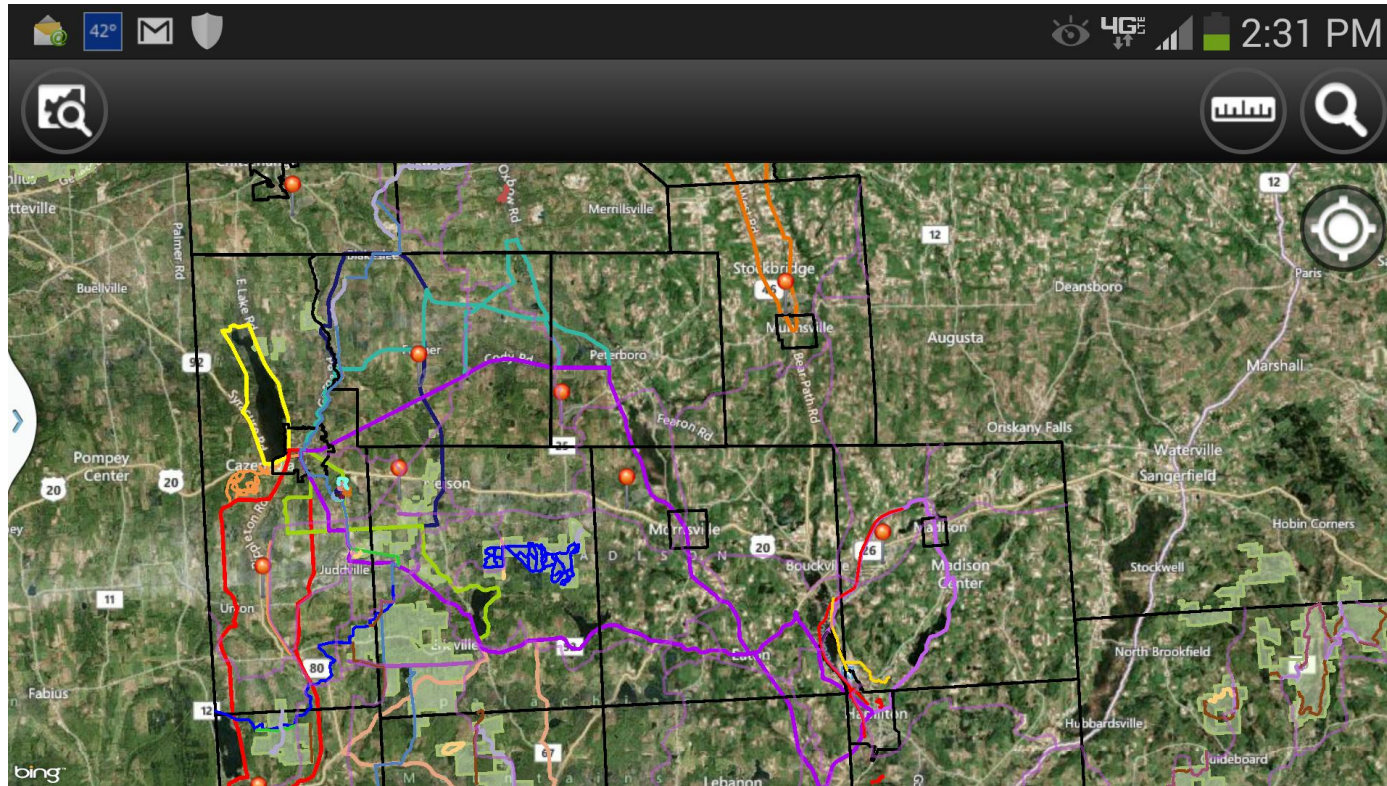
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www.lewiscountyny.org

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

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43° | 2:40 PM | www.giscloud.com/map/89254/lewis-county-map-viewer | Lewis County Map Viewer | Sign in

- special_area_notes (4)
- State_Roads (696)
- lewis_county_zoning_data_2013 (261)
- Adirondack_Park (1)
- NYS_Counties (61)
- Municipal_Boundaries (26)

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JUST DO IT.

