

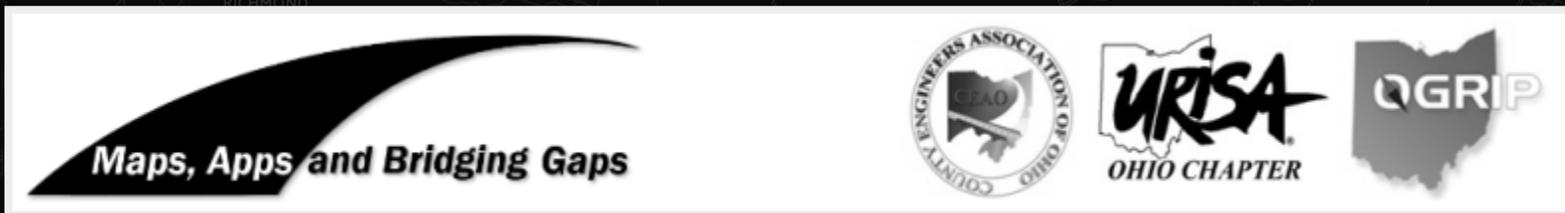
Beyond the Desktop

Open Source Experiments in Web Mapping

Malcolm Meyer | Nick Kroncke

Ohio Valley Regional Development Commission

Ohio GIS Conference September 30, 2016



Interactive Data Visualizations

Select a State ▾



Republican

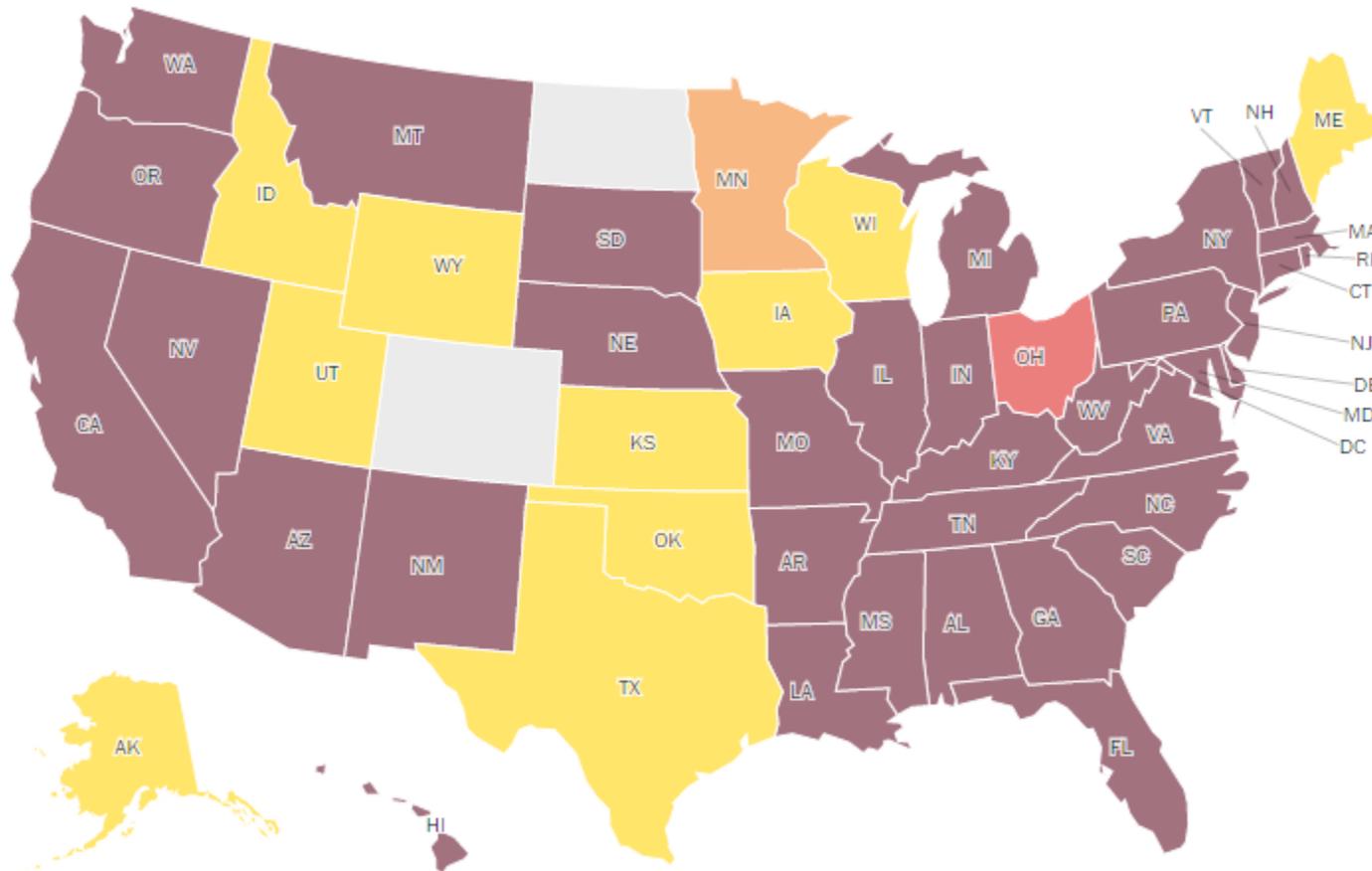
Trump 1,543 DEL



Democratic

Clinton 2,807 DEL

■ Leader ■ Winner ■ Trump ■ Kasich ■ Rubio ■ Cruz



Source: AP

Native Mobile Apps



Cleveland Metroparks

Cleveland Metroparks Health & Fitness

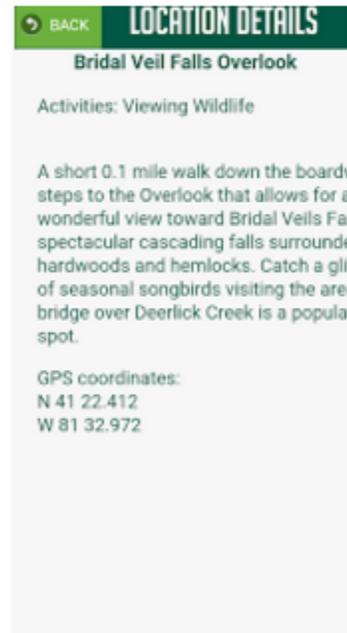
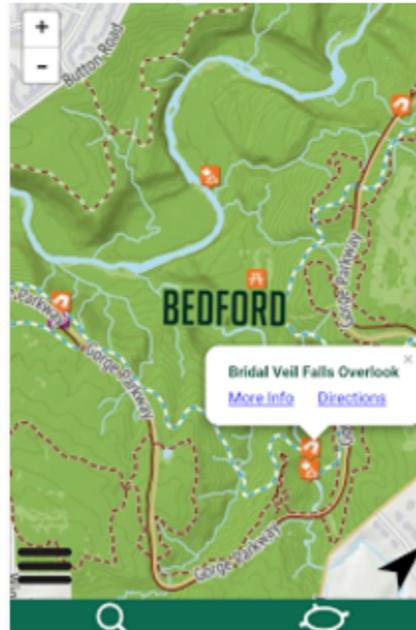
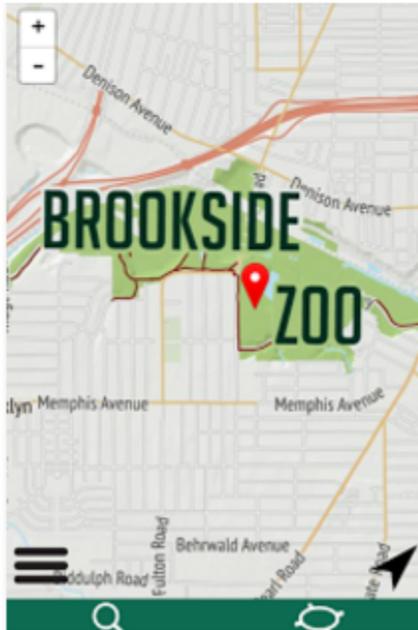
★★★★★ 36

E Everyone

i This app is compatible with your device.

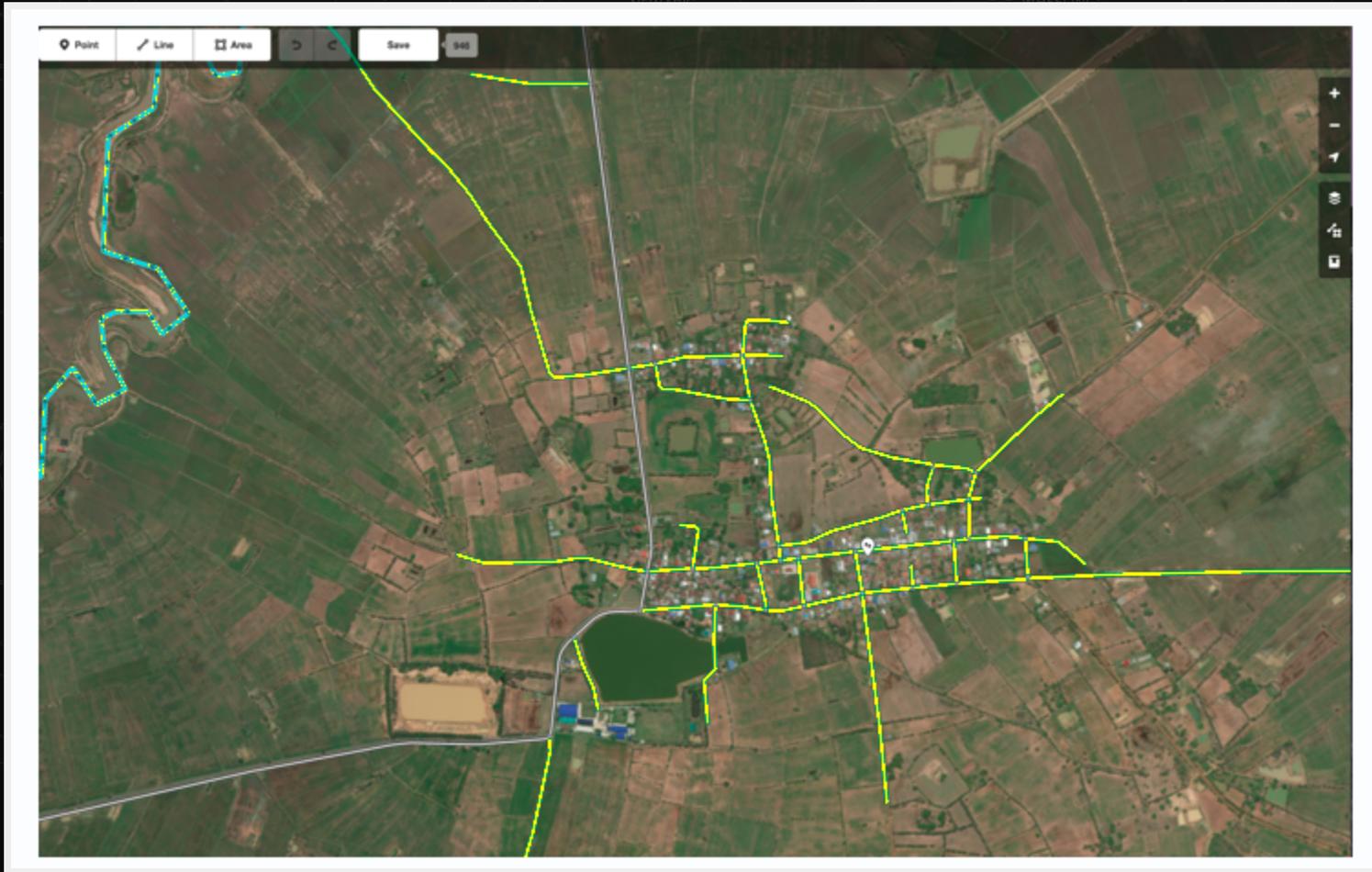
Add to Wishlist

Install

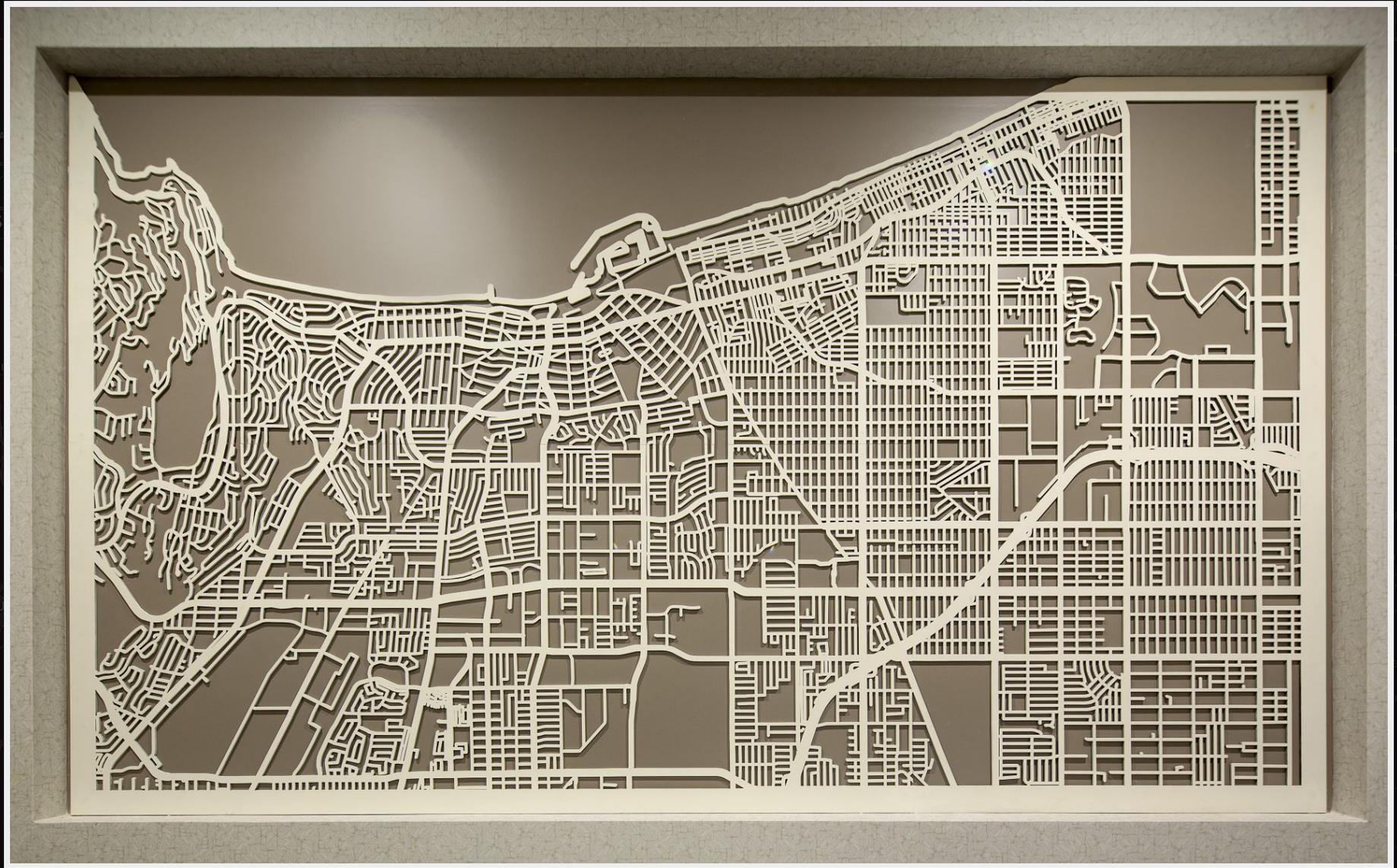


Machine Learning

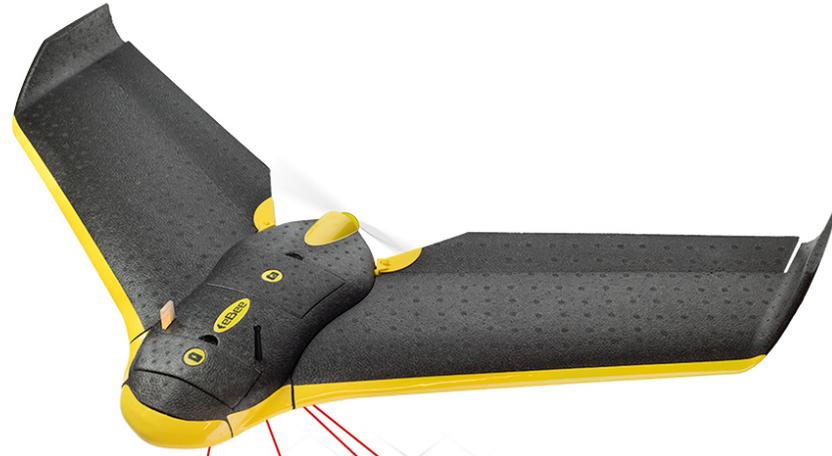
Yellow roads were programatically mapped by Facebook.



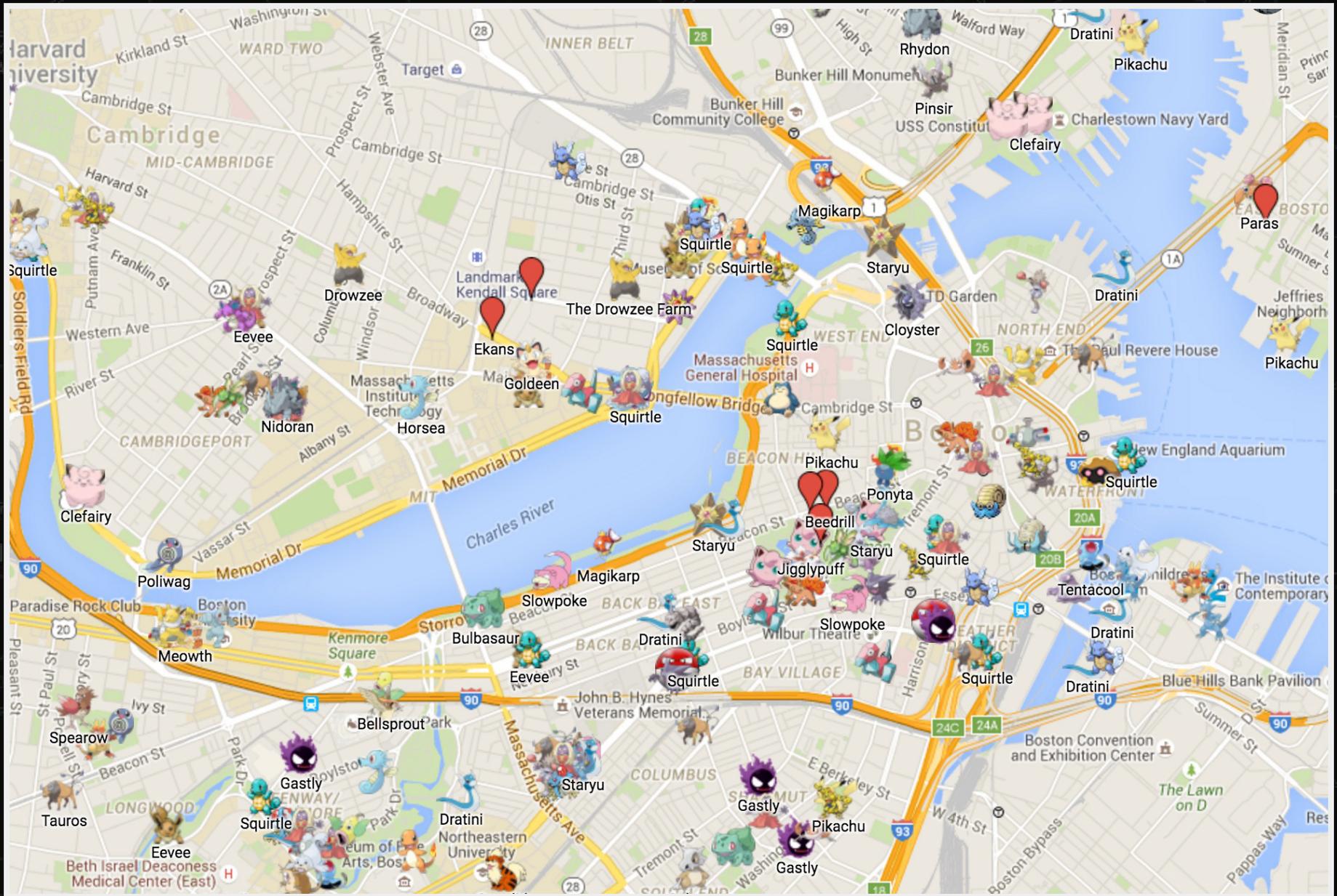
Cartography as Art



UAV Mapping



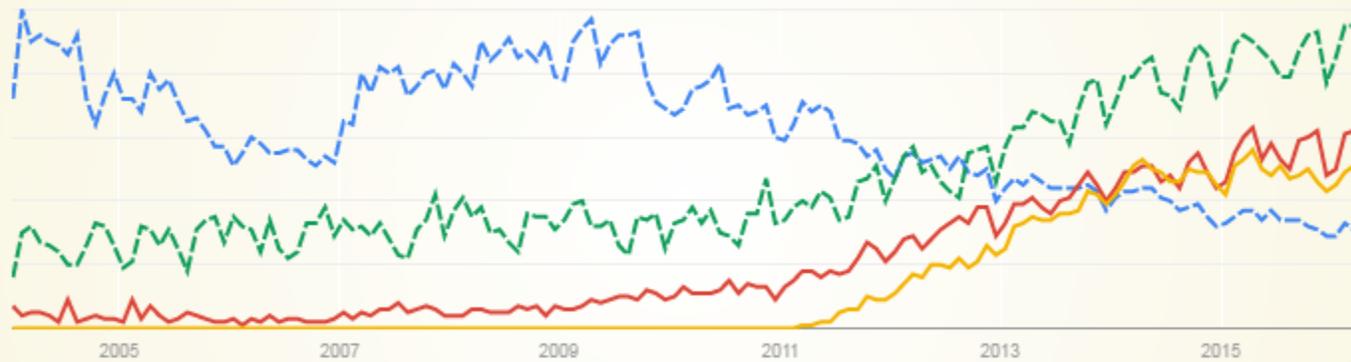
Of Course...



Web GIS Trends

Interest over time. Web Search. Worldwide, 2004 - present.

— ArcGIS Server — arcgis online — d3.js — Leaflet



Google

[View full report in Google Trends](#)

So You want a Web Application?

- In-House vs Third Party Developer
- Free Open Source Software (FOSS) vs Proprietary Solutions

Issue: "Out of the box" solutions can limit your capabilities while open source development appears too complex

Solution: Understand the limitations and use the best tool for the job

Rolling Your Own Solution

Modern GIS Toolkit

ArcGIS Desktop | Python | QGIS | And Many More...



What Tools does **OVRDC** Use?

- ArcMap & QGIS
- Leaflet & Chart.js
- Atom & Sublime Text (Text Editors)
- Jekyll (www.ovrdc.org/apps)
- GitHub (Code Repository)
- Google Drive & Google APIs
- Wordpress (www.ovrdc.org)
- ArcGIS Online & Carto

In **FOSS** There is No Help Desk!!

Resources to Get Started

- Codecademy, Khan Academy, CodePin (Javascript)
- YouTube!!
- Jekyll Website Templates (HTML)
- Formal Training

Troubleshooting

- Official Forums, Documentation & Examples
- GitHub/Code Repository Issue Trackers
- Interact Directly with the Developers
- Stack Exchange/Overflow & Reddit
- Misc Forums, Blogs & Tutorials

Considerations for Web Apps

If you have...

- Extremely Large Data Sets
- Need Complex Online Editing Capabilities

Look into a GIS Server or Hosted Solution (Carto/Mapbox)

IS A GIS SERVER REALLY NECESSARY?

OVRDC Client-Side Use Case

FOSS JavaScript APIs: **Leaflet & TurfJS**

- Run on any Web Server
- Free & Open Source
- Strong Online Community
- HTML5: Windows/Android/iOS

&

Cloud-Based Storage/APIs

(Google, Dropbox, Firebase, Others...)

- User Feedback
- Image/Asset Storage
- Freemium Model

Caution

Short List of Deprecated Web Services 2014-Present

Web Hosting in Google Drive

Google Maps Engine

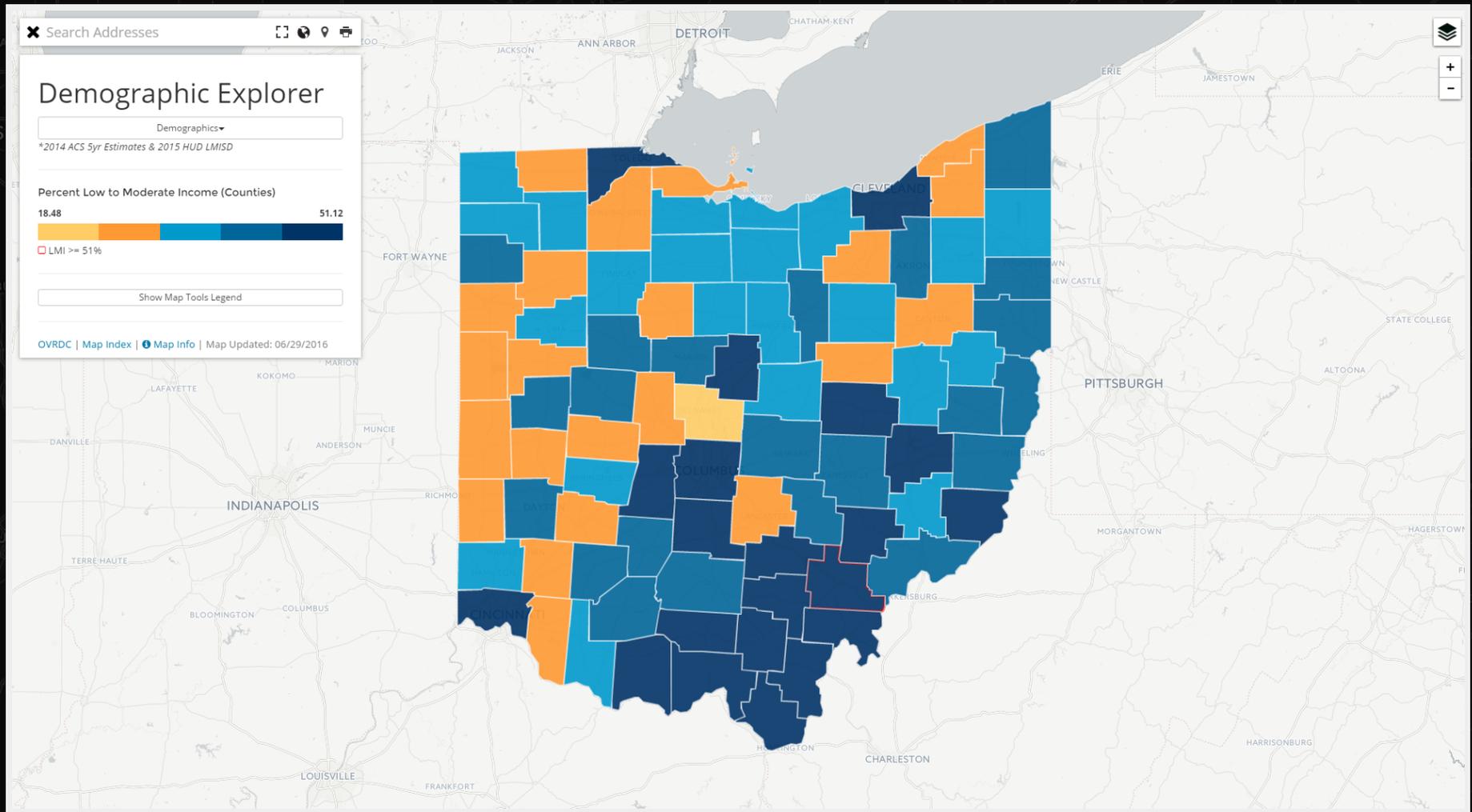
Google's Android App My Tracks

Copy Cloud Storage

Dropbox Public Folder Hosting

Demographic Explorer

Simple, Targeted App - Inspired by the NACO County Explorer



Cloud Based Collection Apps

Google Scripts with Image Upload | Google Firebase Version

This application was created by another user, not by Google.

[Report abuse](#) - [Terms of Service](#)

Leaflet Collect Form Beta 1

Name

Email *

Description

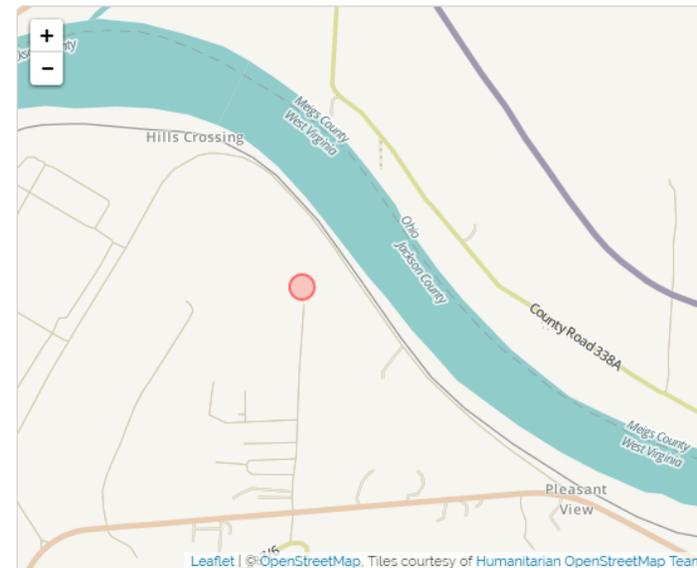
Latitude

Longitude

 Choose Image 1

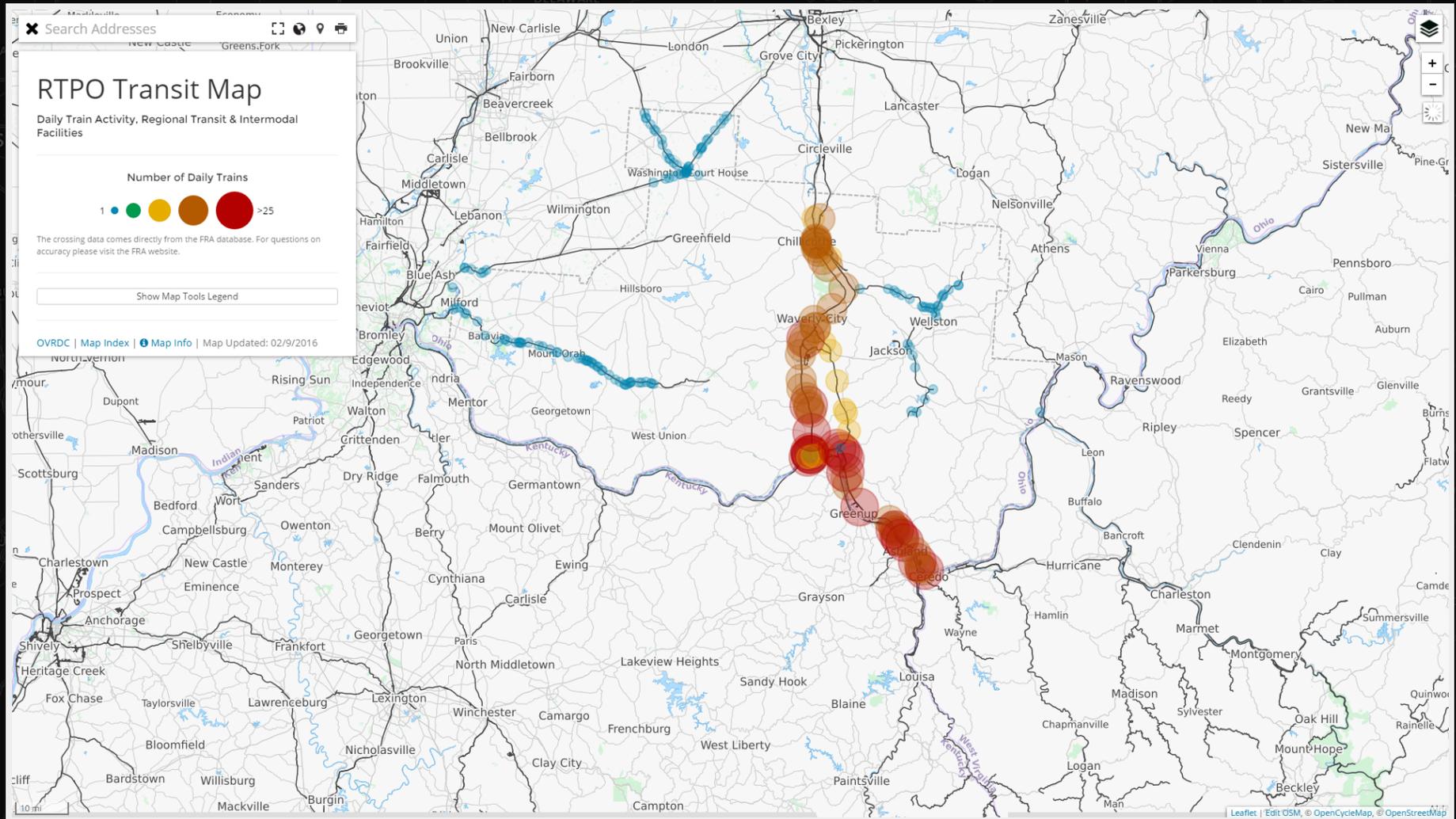
Submit

Select Location



FRA Transit Data

Using Public APIs: Current Data & Real-Time Apps



Parcel Viewer

A Client-Side Parcel Viewer with Feature Search

Search Owner/Parcel ID

GeoJson Tile Test Map

This map demonstrates the capability of [Leaflet](#) to render thousands of polygons using [Geojson Tiles](#) on both desktop and mobile devices. Rendering, search and identify are handled by the browser, so there is no need for [GeoServer/ArcGIS Server](#), etc., to push data to the client. The original shapefile has been simplified using [mapshaper](#), and the [geojson-vt](#) plugin provides additional simplification. To identify the underlying polygons, the [point in polygon](#) plugin is used. Parcels with null parcel and owner fields have been removed.

Use zoom controls to navigate the map. Pinch & zoom and double tap to zoom have been disabled.

The parcels shown are for demonstration purposes only and are not intended to represent legal boundaries and/or current ownership.

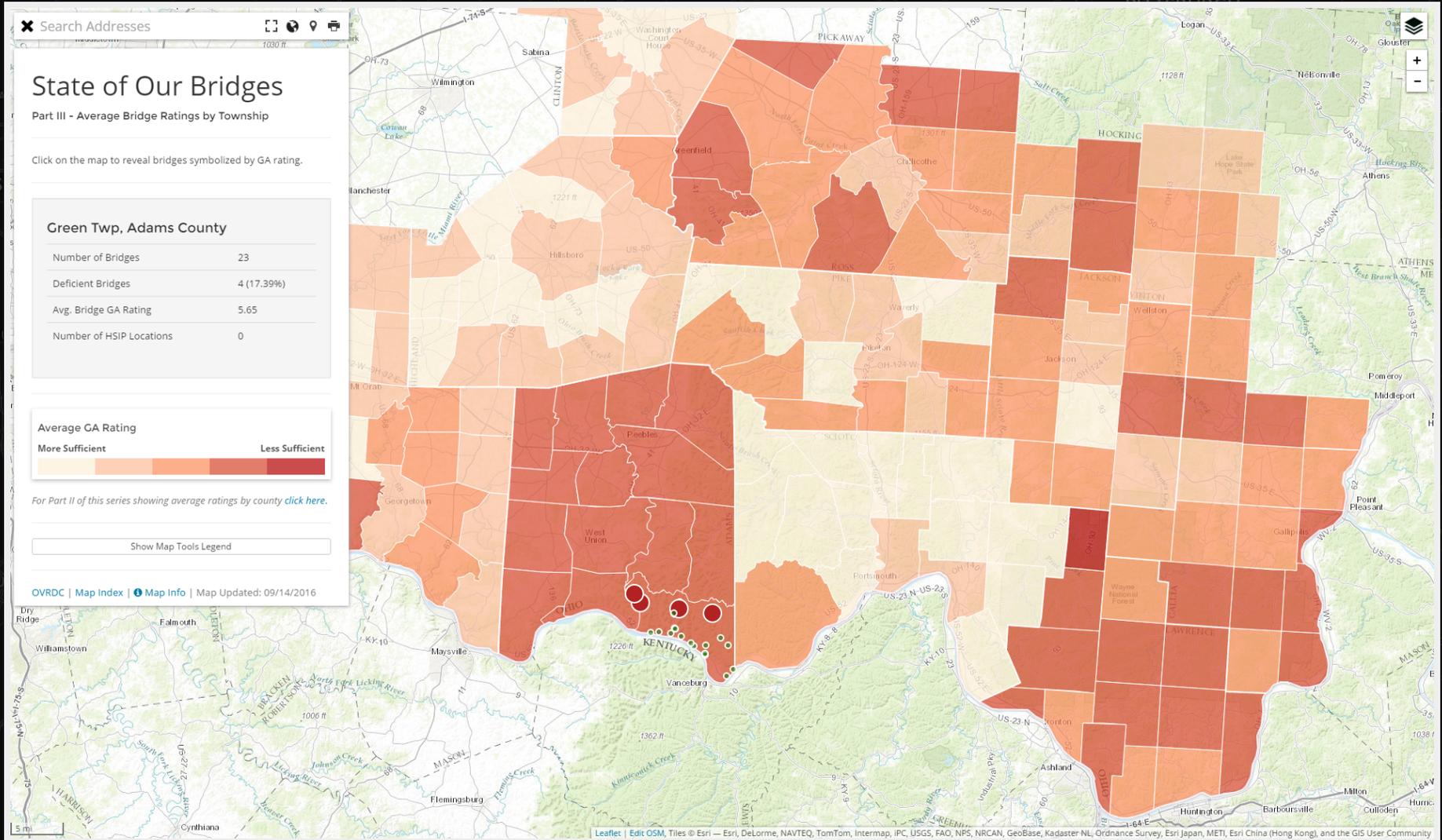
Show Map Tools Legend

OVRDC | Map data updated 12/2015.

Parcel ID: 210046000000
4 C VENTURES

Leaflet | Edit OSM, MapBox — Map data © OpenStreetMap

Bridge Analysis with TurfJS





Looking Forward

Cloud-Hosted PostGIS

Vector Tile Server

OVRDC Custom Basemaps

Utilize QGIS in New Projects



Thanks!

Ohio Valley Regional Development Commission

OVRDC on GitHub | Web Map Templates

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