

# **Creating a transit map in Tilemill for a city with transit, but no GTFS [and otherwise bad maps]**

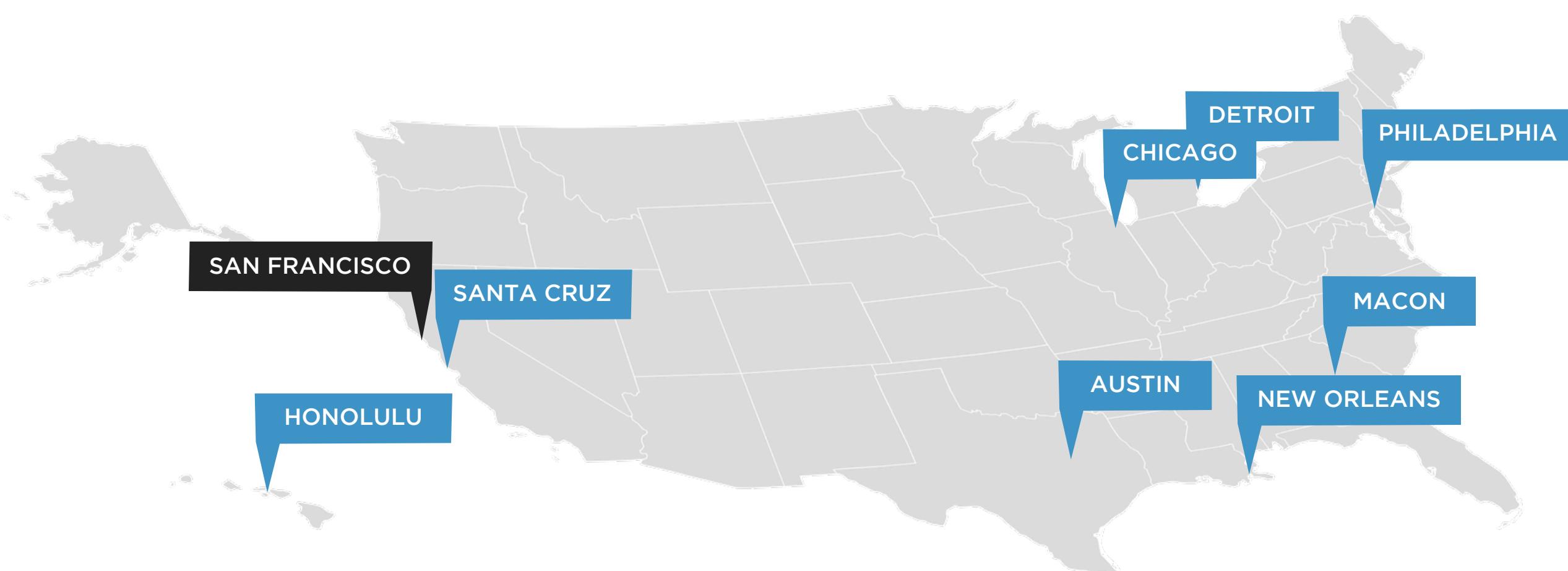
Jessica @jllord Lord

CODE *for*  
AMERICA

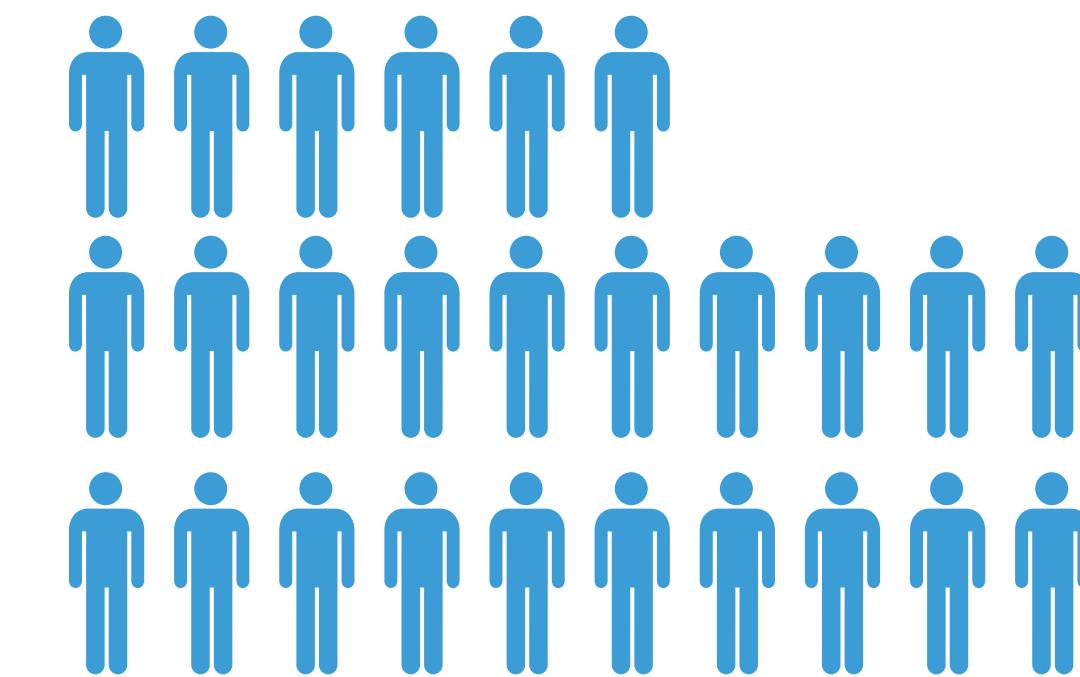
2012

# Code for America Fellow

8 cities



26 fellows





Peace Corps *for* Geeks

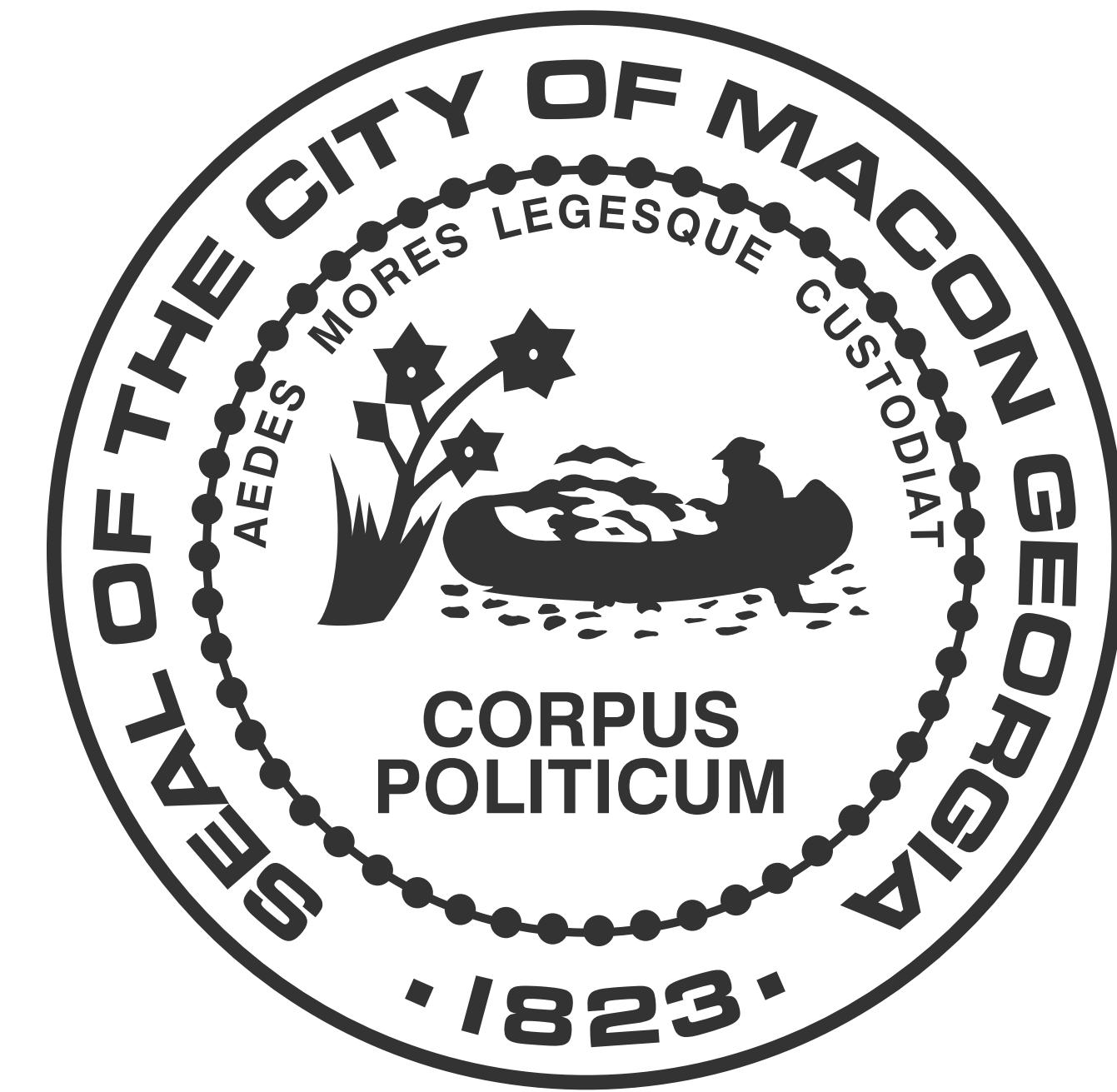
Code for America **sparks civic innovation** by bringing technology and design to cities so that government is more open, efficient and responsive.

like Denny's, we're

**ALWAYS OPEN**

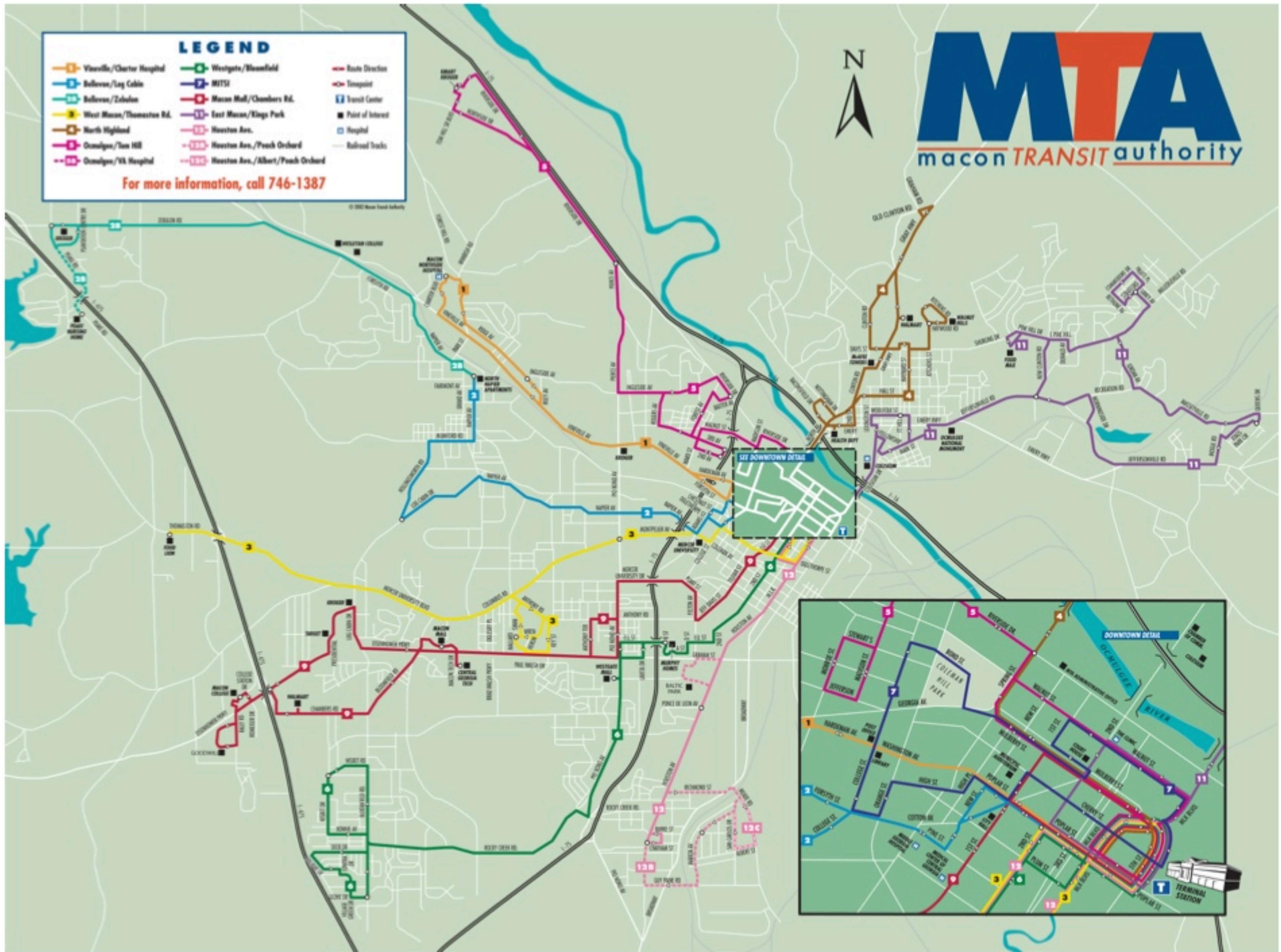
[github.com/codeforamerica](https://github.com/codeforamerica)

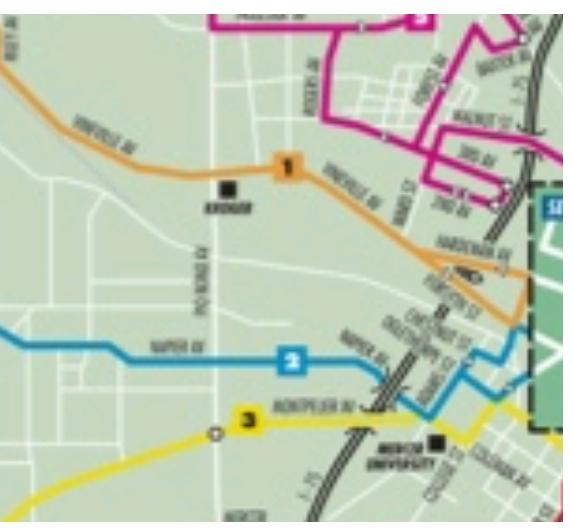
(and we're in America and sometimes there are pancakes)





N

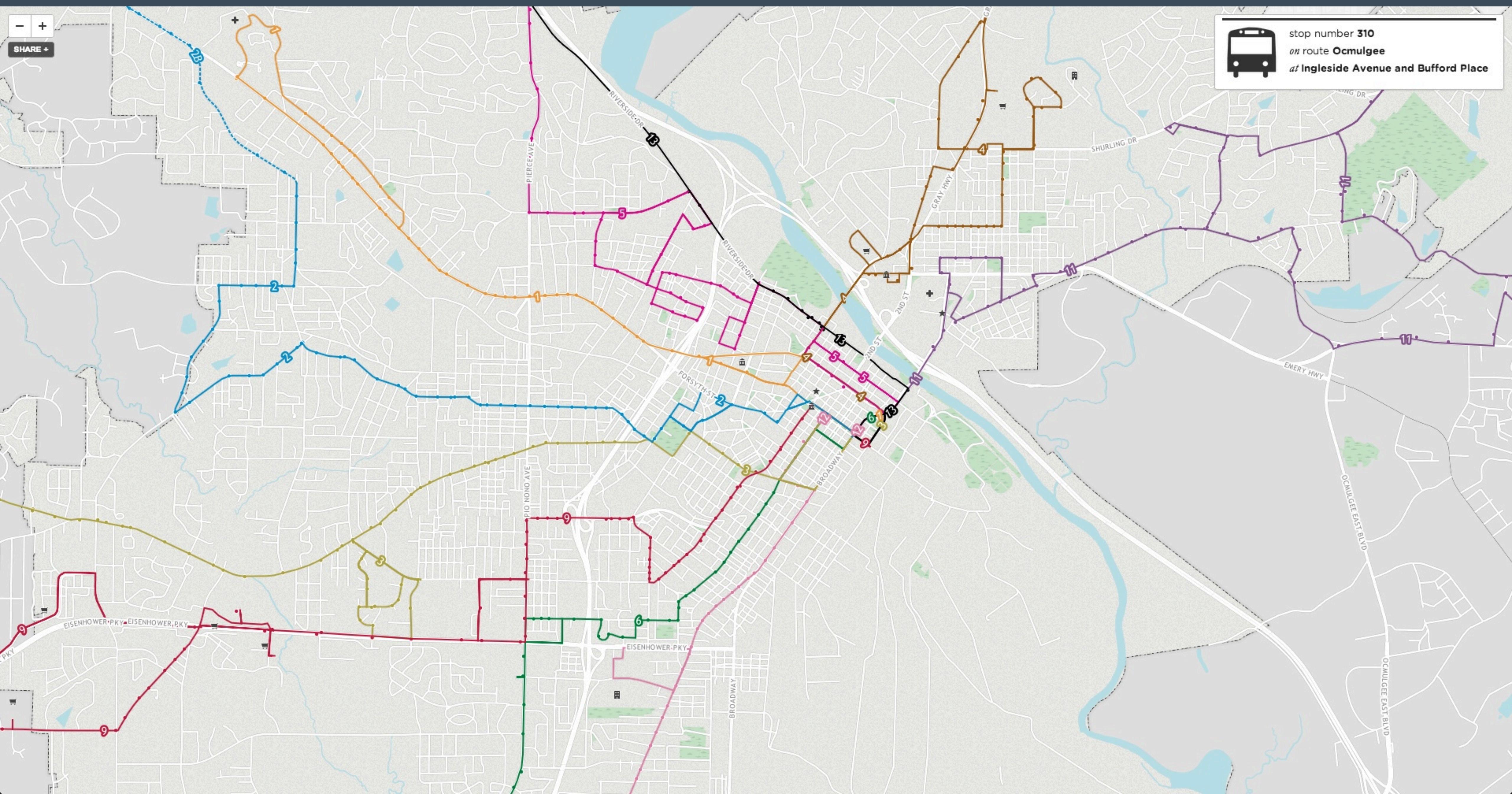






# MTA Transit Map by jllord

Map of Macon Bus Routes, github: <https://github.com/codeforamerica/Transit-Map-in-TileMill>



# **Everything I learned making the map.**

**MSS**

**ZOOM**

**DATA LAYERS**

**STYLING**

**TEASER**

**PRINT**

**MSS**

**It's CSS-y**

```
style.mss x +
```

```

77  ::shadow3 {
78    line-opacity: 0.12;
79    line-width: 2;
80  }
81  ::polygon {
82    polygon-pattern-file: url(greybg.png);
83  }
84    line-color:#333;
85    line-width: .5;
86    polygon-opacity:1;
87    polygon-fill:#E0E0E0;
88  }
89
90 /* -----STREETS----- */
91
92 #bbbSts[TYPE="primary"][zoom = 13] {
93   ::outline {
94     line-width: 2.5;
95     line-color: #acacac;
96   }
97   line-width: 2;
98   line-color: #fff;
99 }
100 #bbbSts[TYPE="trunk"][zoom = 13],
101 #bbbSts[TYPE="motorway_link"][zoom = 13],
102 #bbbSts[TYPE="motorway"][zoom = 13] {
103   ::outline {
104     line-width: 3;
105     line-color: #acacac;
106   }
107   line-width: 2;
108   line-color: #fff;
109 }
110 #bbbSts[TYPE="primary"][zoom >= 14] {
111   ::outline {
112     line-width: 4.5;
113     line-color: #acacac;
114   }
115   line-width: 4;
116   line-color: #fff;
117 }
118 #bbbSts[TYPE="residential"][zoom >= 14] {
119   ::outline {
120     line-width: 3;
121     line-color: #acacac;
122   }
123   line-width: 2.5;
124   line-color: #fff;
125 }
126 #bbbSts[TYPE="trunk"][zoom >= 14],
127 #bbbSts[TYPE="motorway_link"][zoom >= 14],
128 #bbbSts[TYPE="motorway"][zoom >= 14] {
129   ::outline {
130     line-width: 4.5;
131     line-color: #acacac;
132   }
133   line-width: 4;
134   line-color: #fff;
135 }

```

# Carto

Multiple sheets if your styles are lengthy.

Organize similar to CSS

You can use LESS

```

/* ----- BUS COLORS ----- */

@rt1color: #E99A3D;
@rt2color: #048FC8;
@rt3color: #b0a545;
@rt4color: #985C16;
@rt5color: #D40E89;

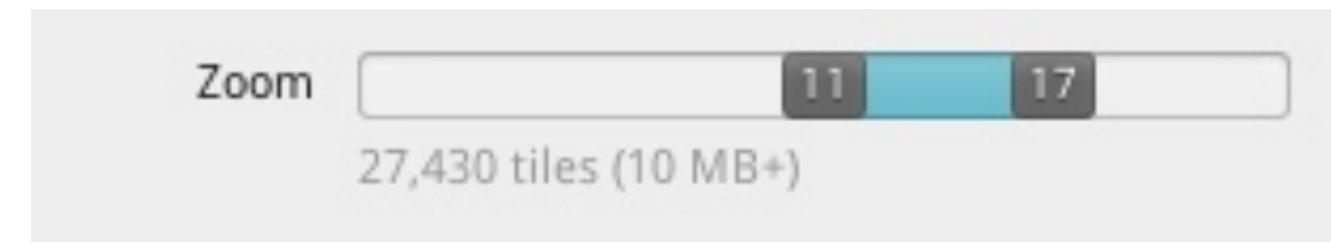
...

```

**ZOOM**

**All the things.**

Pick smallest zoom range necessary.

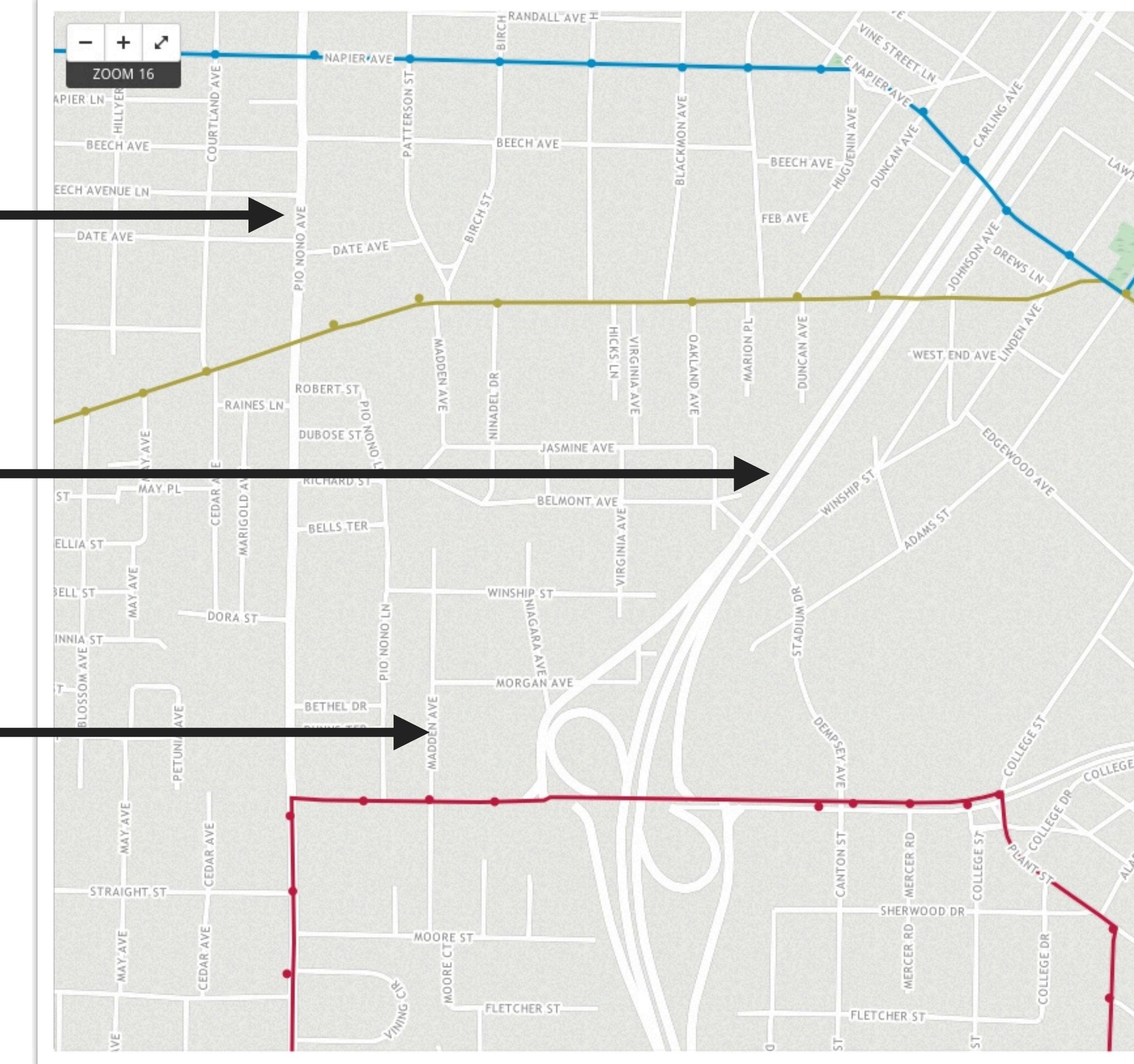


# Street types

Primary

Highway

Residential



# Use zoom to specify the first level you want data to appear.

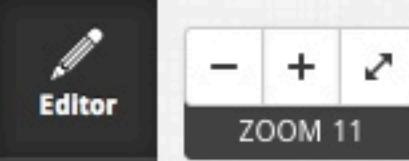
```
/* don't show streets until zoom 13 */
#bibbSts[TYPE="primary"][zoom = 13] {
  ::outline {
    line-width: 2.5;
    line-color: #acacac;
  }
  line-width: 2;
  line-color: #fff;
}
```

MTA Transit Map

style.mss

```
77  ::shadow3 {
78    line-opacity: 0.12;
79    line-width: 2;
80  }
81  ::polygon {
82    polygon-pattern-file: url(greybg.png);
83  }
84    line-color:#333;
85    line-width: .5;
86    polygon-opacity:1;
87    polygon-fill:#E0E0E0;
88  }
89
90 /* -----STREETS----- */
91
92 #bibbSts[TYPE="primary"][zoom = 13] {
93   ::outline {
94     line-width: 2.5;
95     line-color: #acacac;
96   }
97   line-width: 2;
98   line-color: #fff;
99 }
100 #bibbSts[TYPE="trunk"][zoom = 13],
101 #bibbSts[TYPE="motorway_link"][zoom = 13],
102 #bibbSts[TYPE="motorway"][zoom = 13] {
103   ::outline {
104     line-width: 3;
105     line-color: #acacac;
106   }
107   line-width: 2;
108   line-color: #fff;
109 }
110 #bibbSts[TYPE="primary"][zoom >= 14] {
111   ::outline {
112     line-width: 4.5;
113     line-color: #acacac;
114   }
115   line-width: 4;
116   line-color: #fff;
117 }
118 #bibbSts[TYPE="residential"][zoom >= 14] {
119   ::outline {
120     line-width: 3;
121     line-color: #acacac;
122   }
123   line-width: 2.5;
124   line-color: #fff;
125 }
126 #bibbSts[TYPE="trunk"][zoom >= 14],
127 #bibbSts[TYPE="motorway_link"][zoom >= 14],
128 #bibbSts[TYPE="motorway"][zoom >= 14] {
129   ::outline {
```

**What is the purpose of  
each level for the user?**



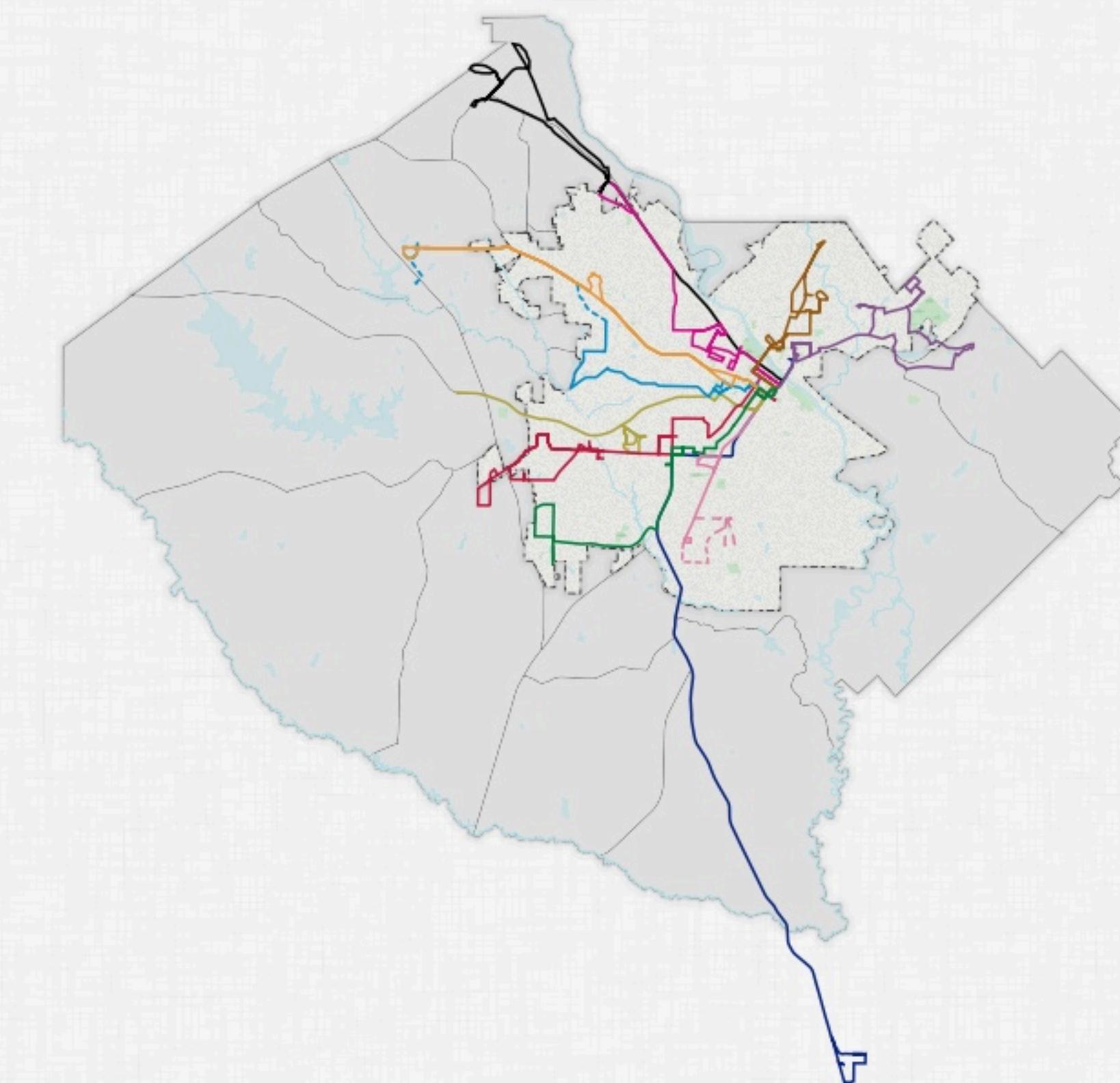
Editor

Projects

Manual

Plugins

Settings



# EXTENT OF SYSTEM

Editor

- + ↕

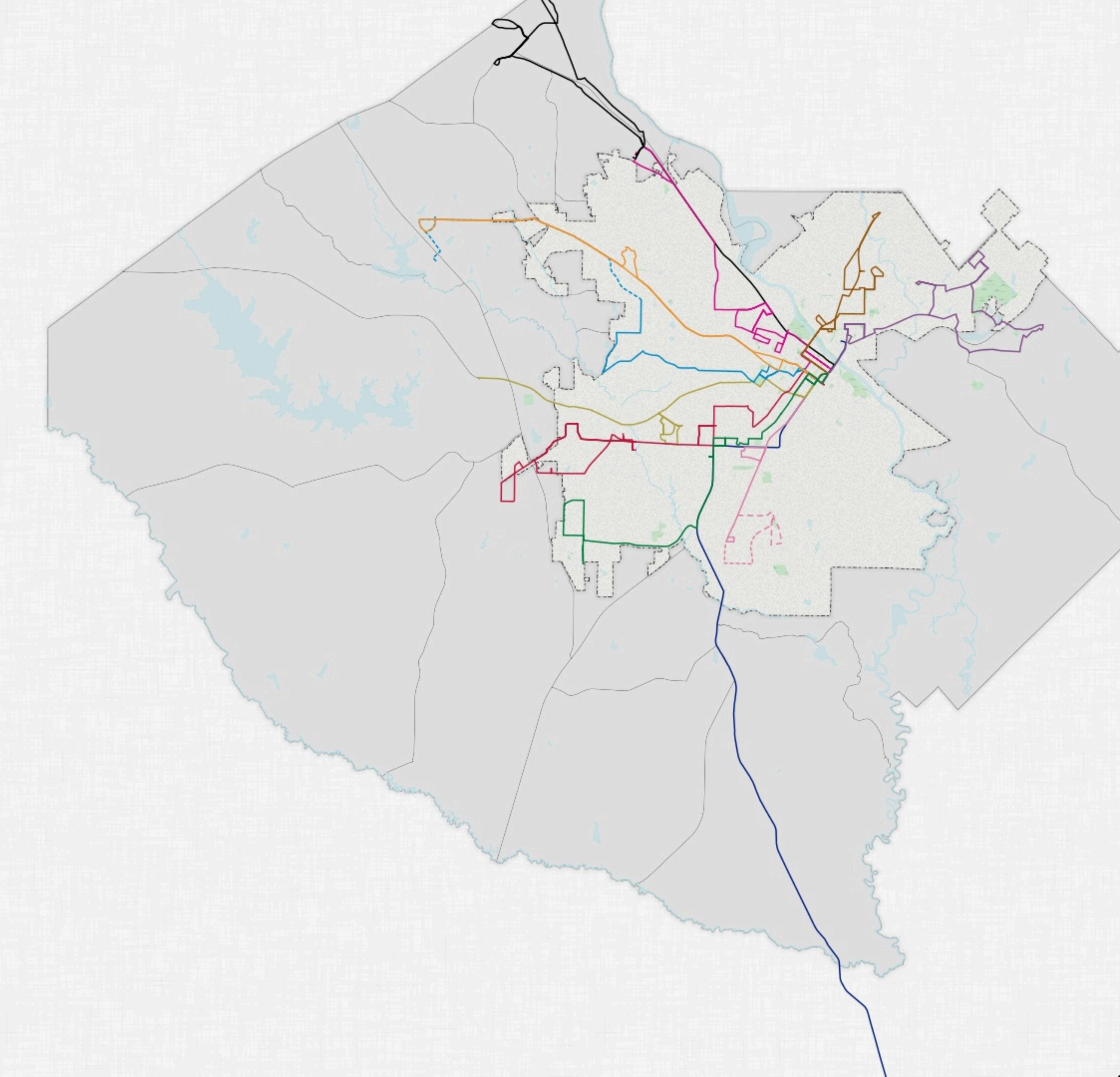
ZOOM 12

Projects

Manual

Plugins

Settings



# REGIONS

Editor

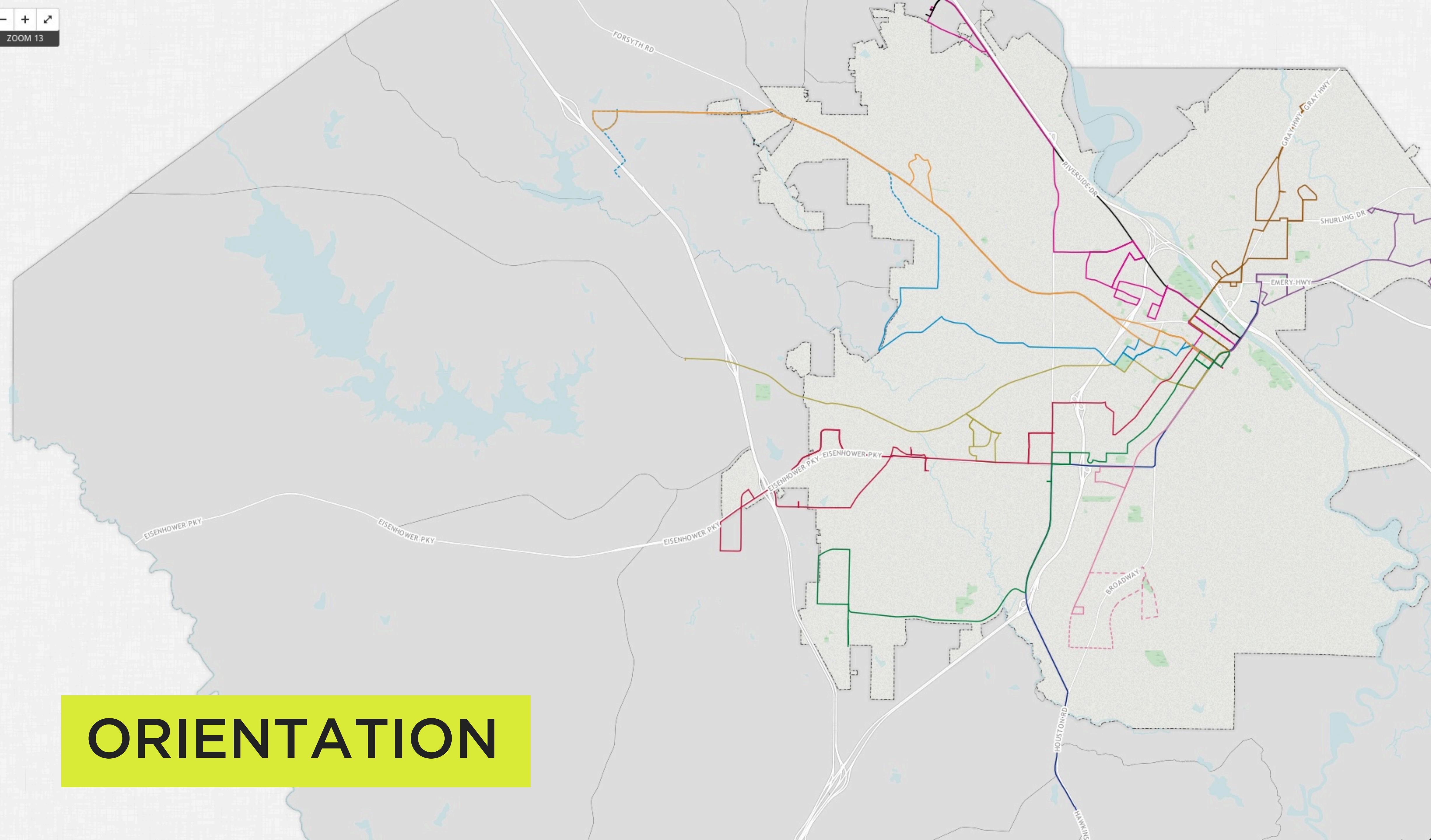
- + ↕  
ZOOM 13

Projects

Manual

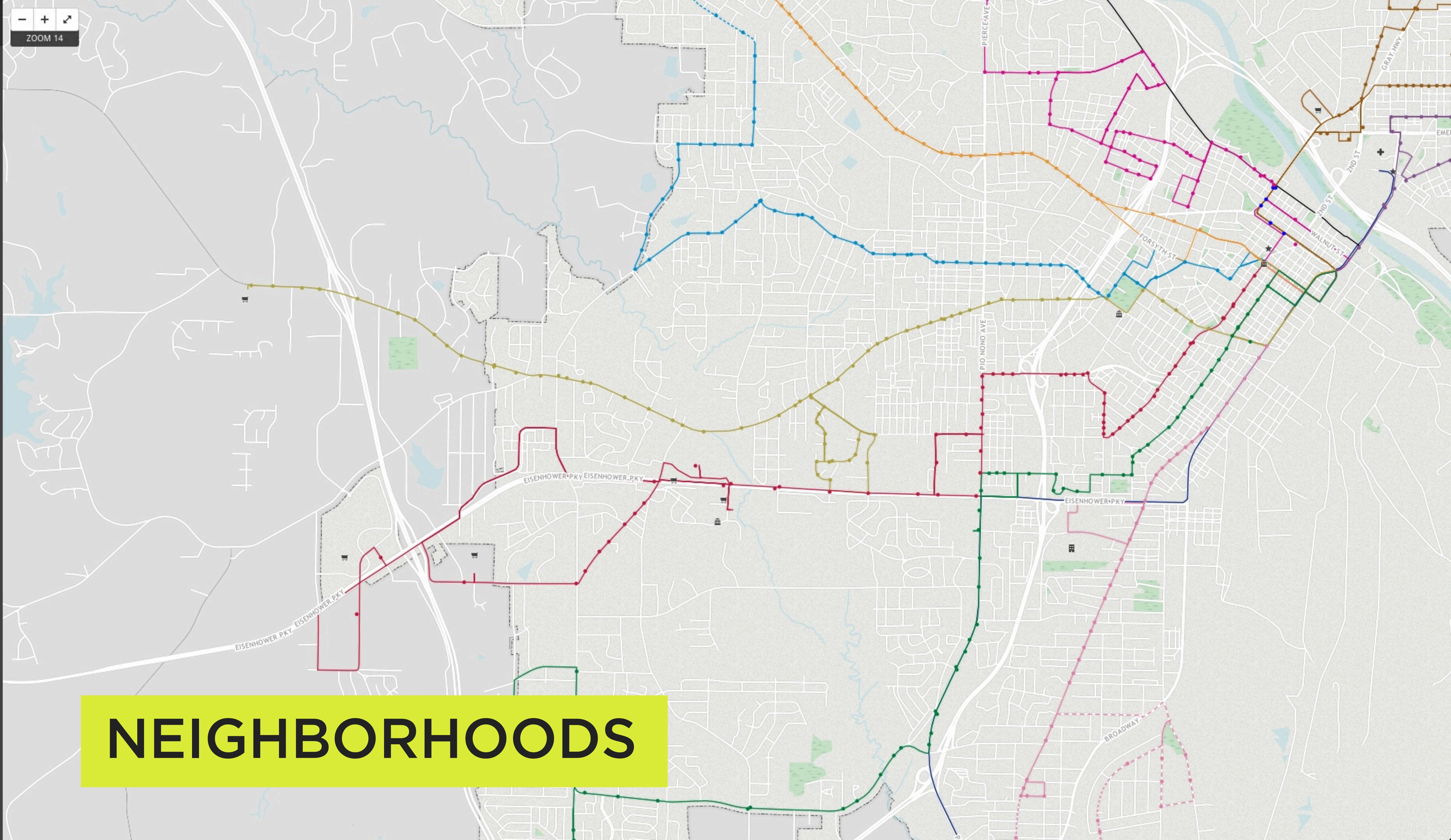
Plugins

Settings

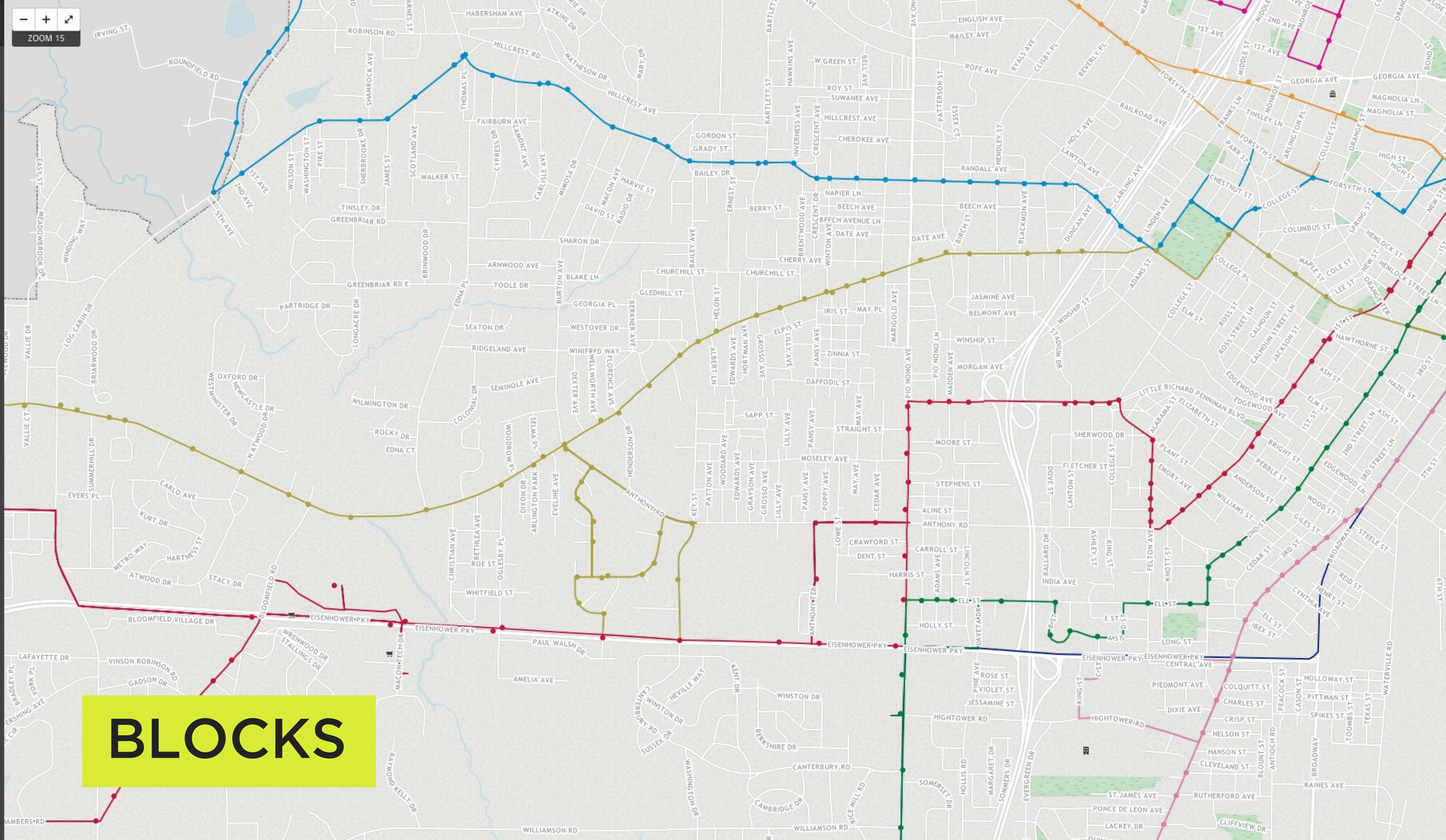


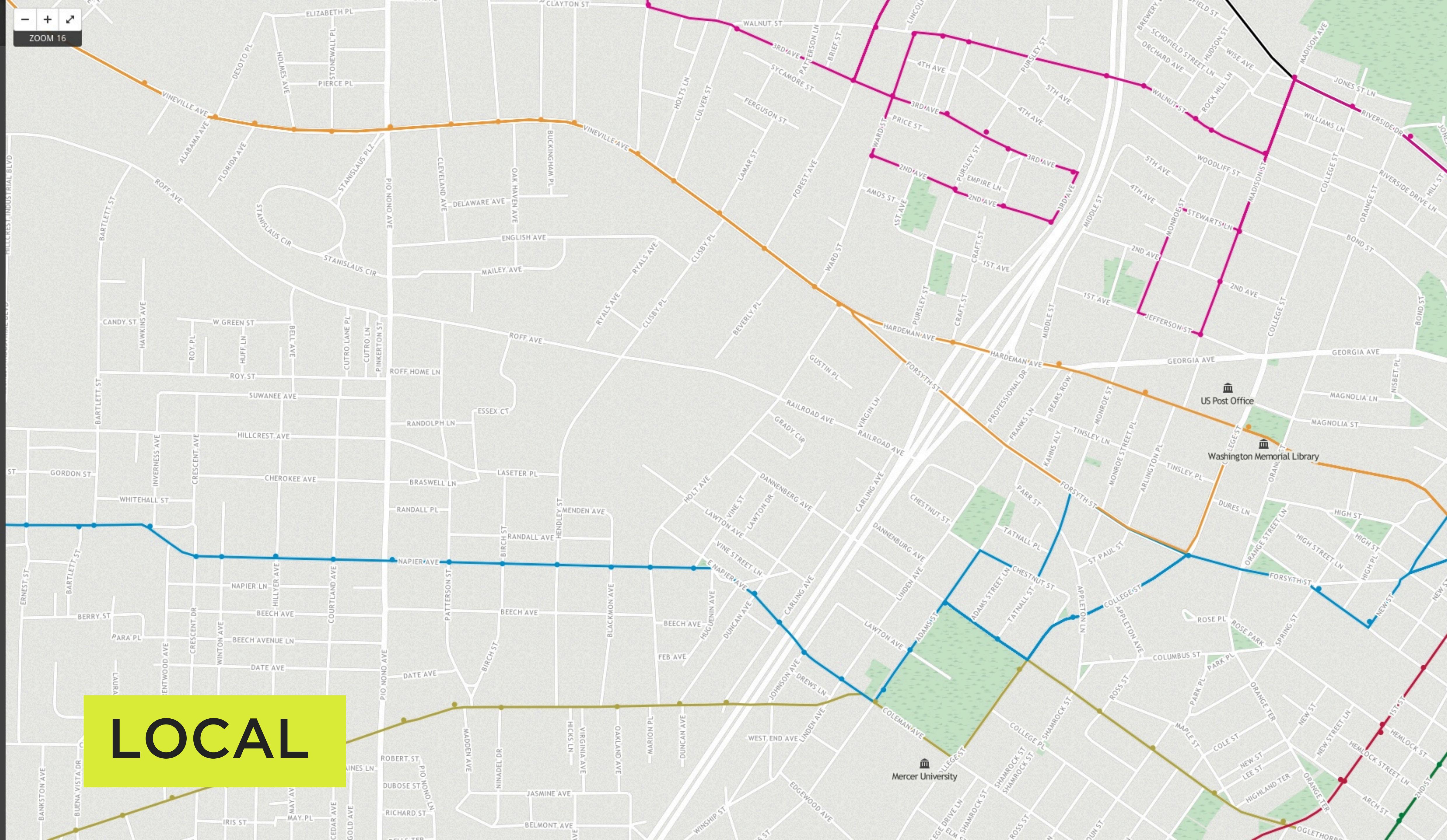
# ORIENTATION

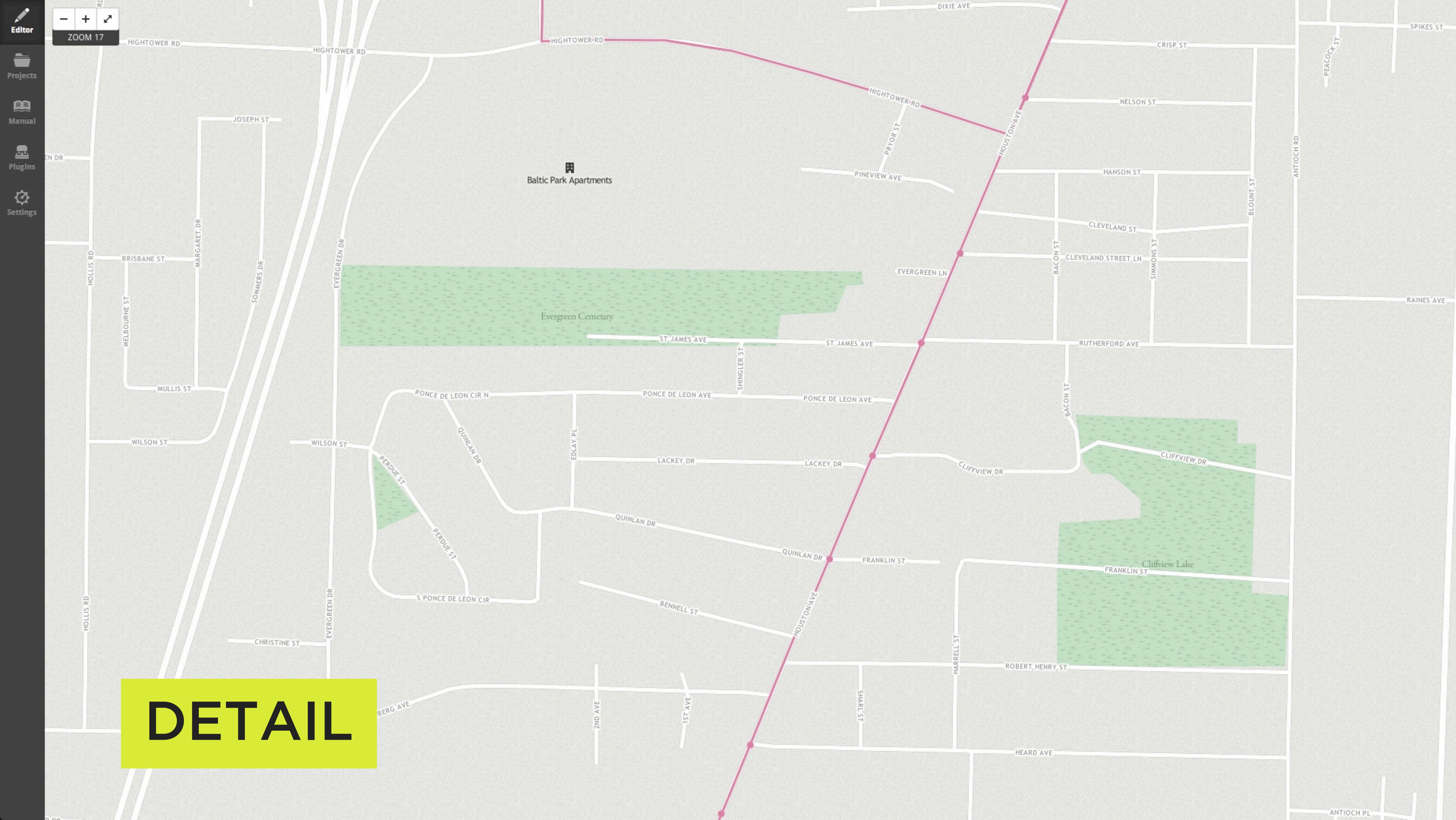
- + ↕  
ZOOM 14



# NEIGHBORHOODS





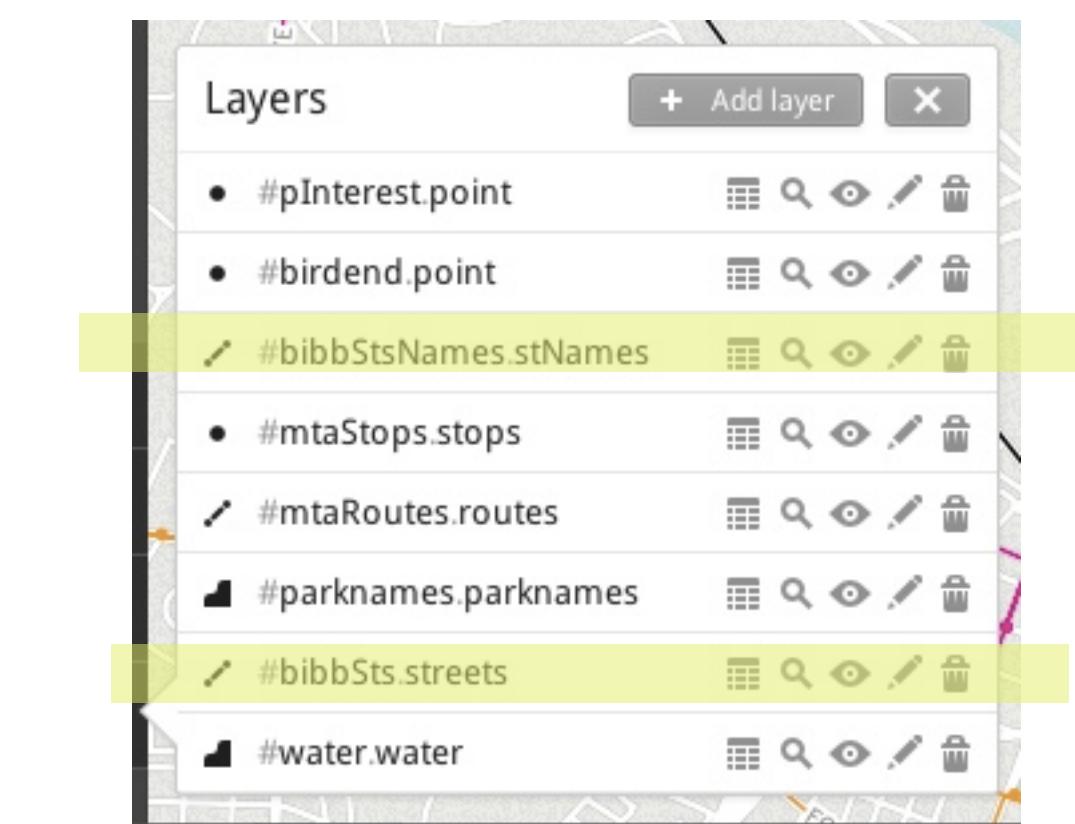
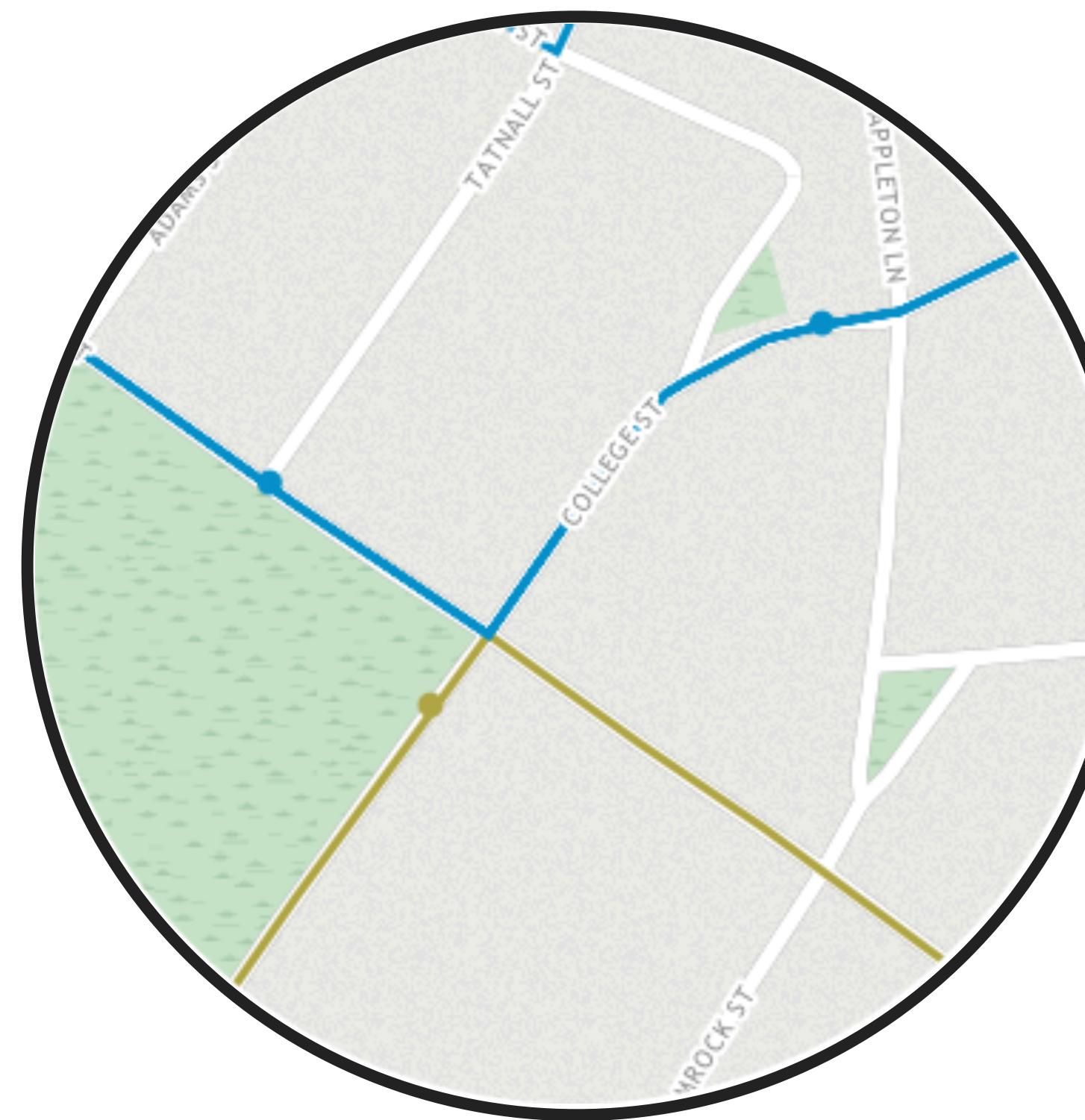


# DETAIL

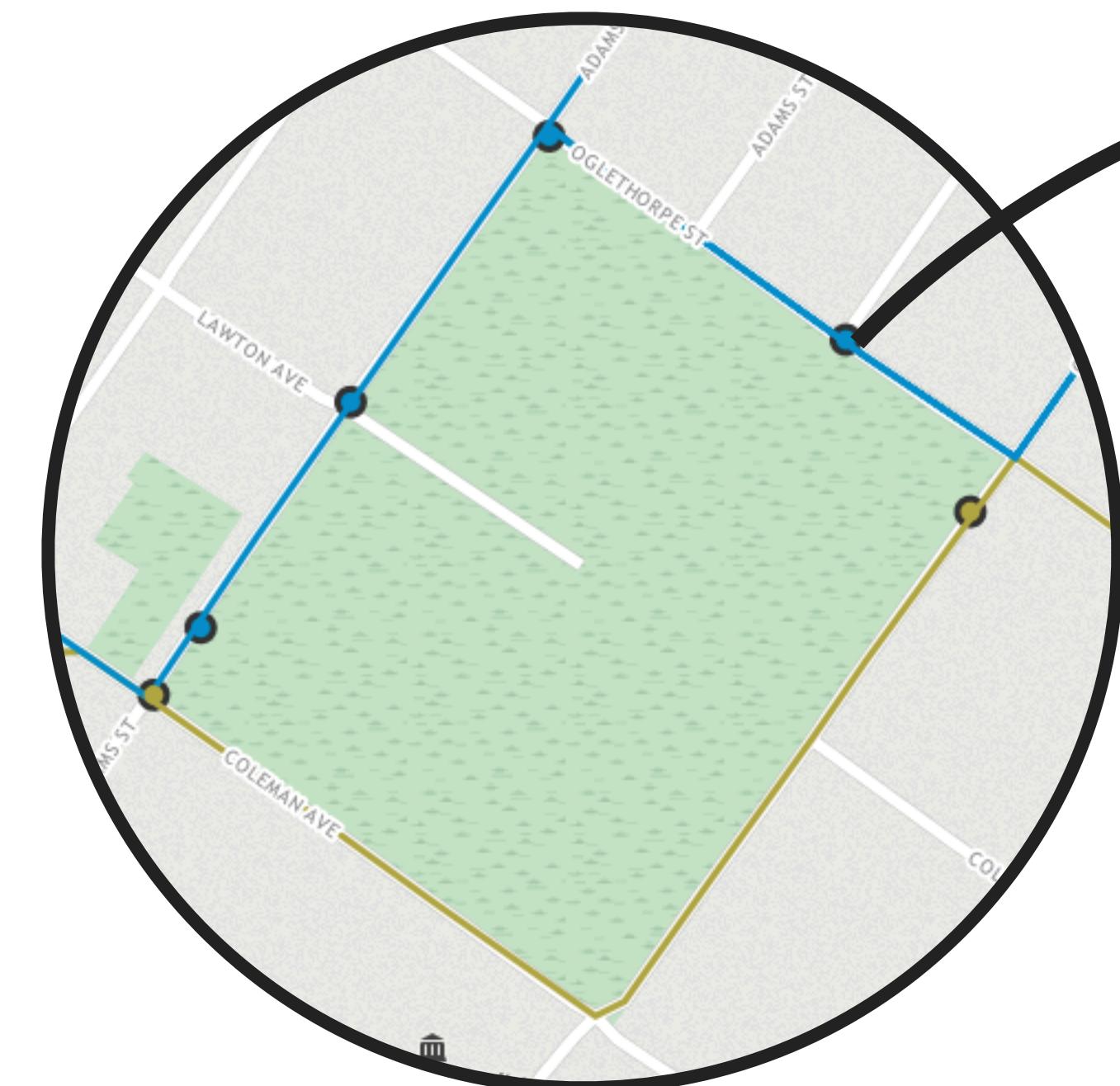
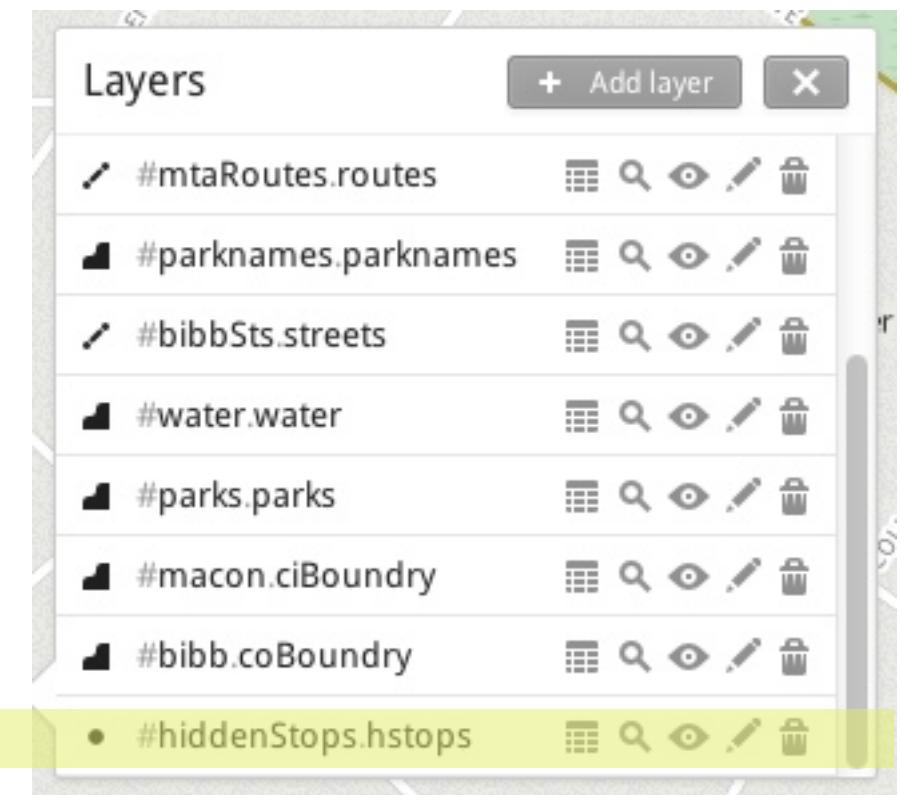
## **DATA LAYERS**

**Double up**

To have street names on top of routes.



Create a buffer for teaser, duplicate layers and stack them appropriately.



# Cleaning & Editing

Google Refine

QGIS

Google Earth

FileBakery.com



**STYLING**

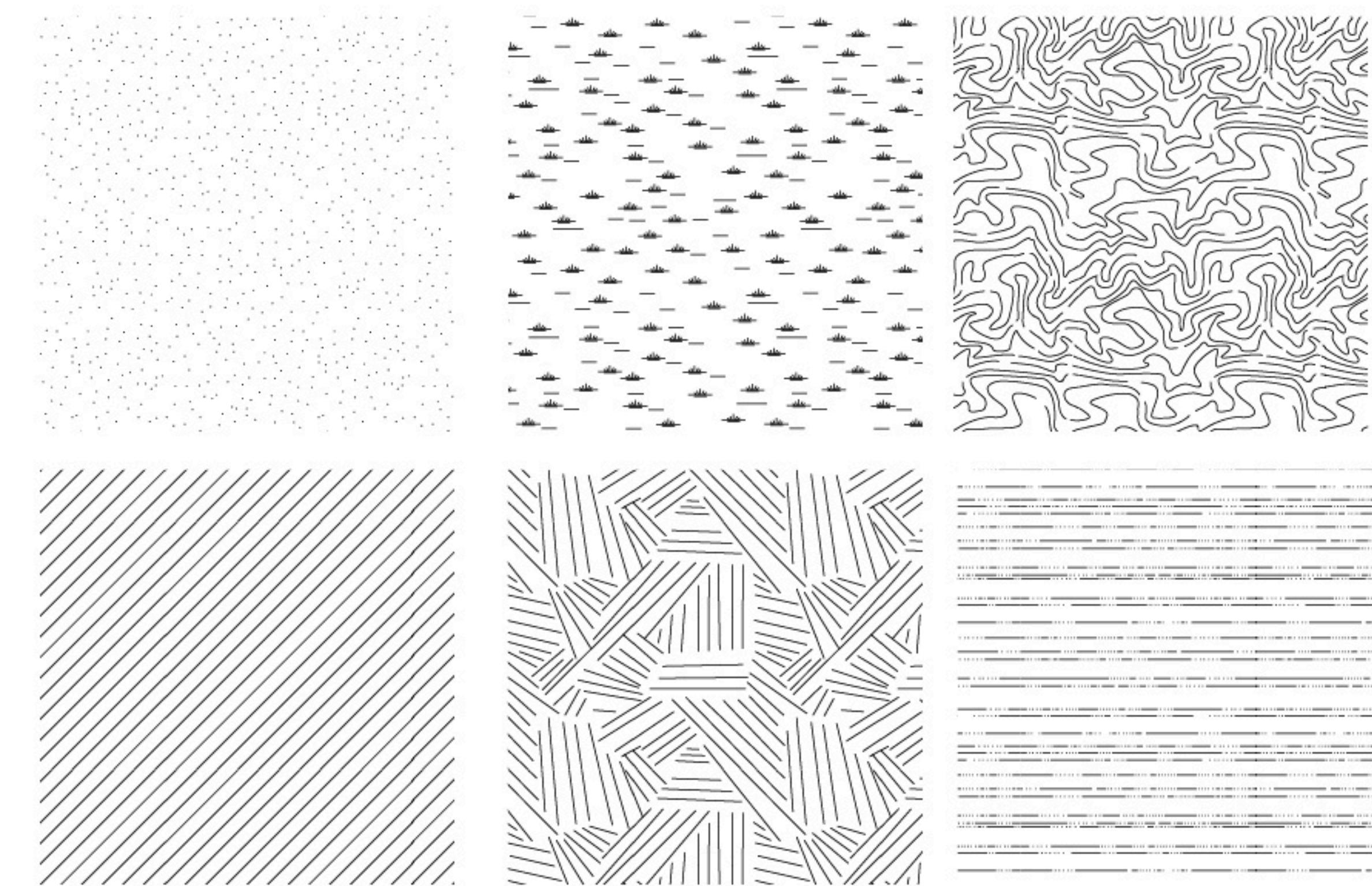
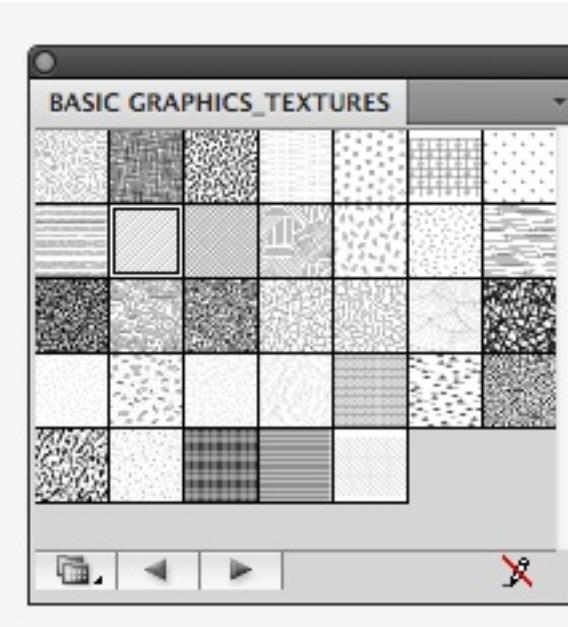
**Textures and Patterns**

# Patterns: [www.subtlepatterns.com](http://www.subtlepatterns.com)

or make your own

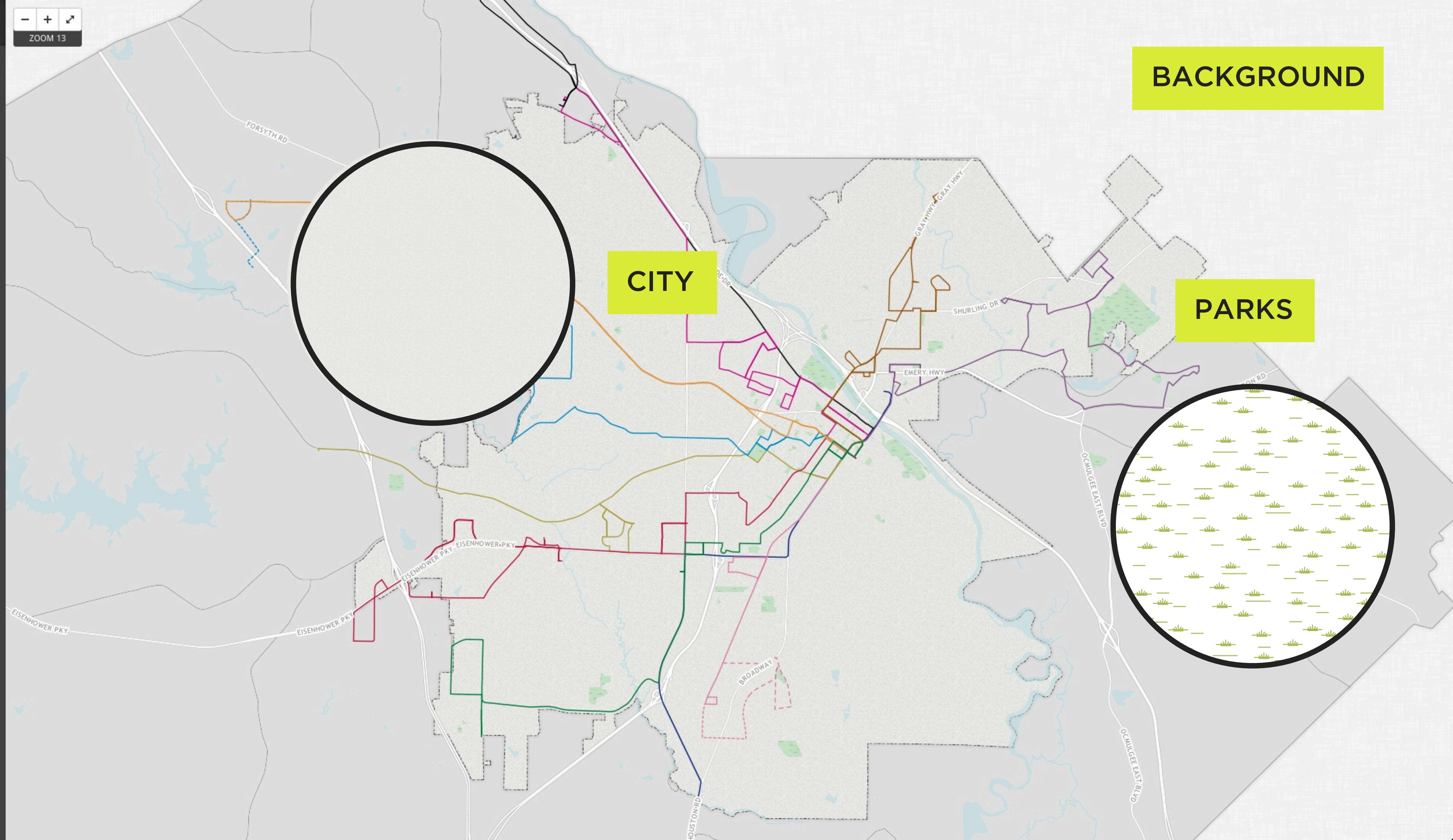
In Illustrator:

open swatch library >  
patterns > basic  
graphics > textures



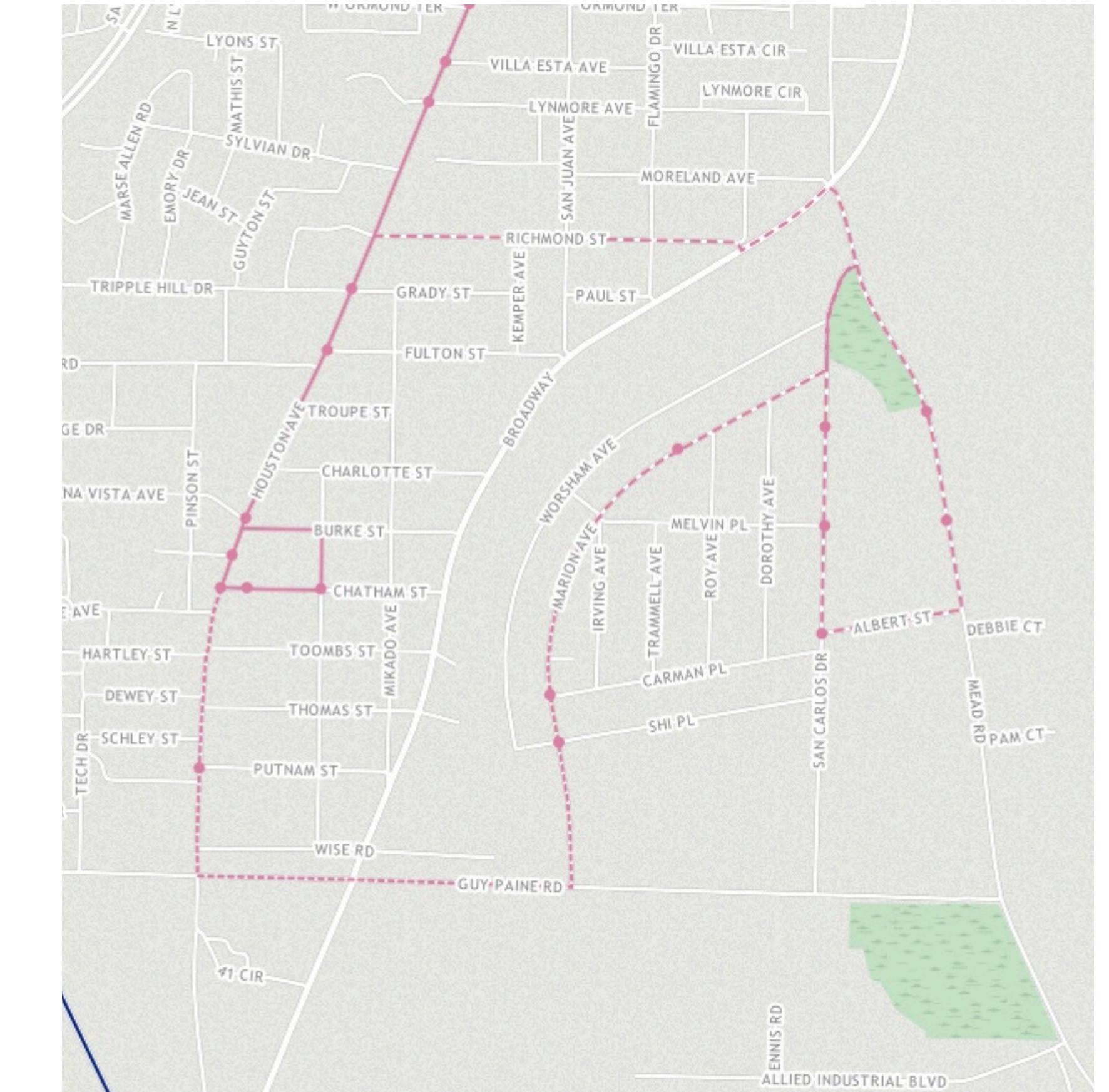
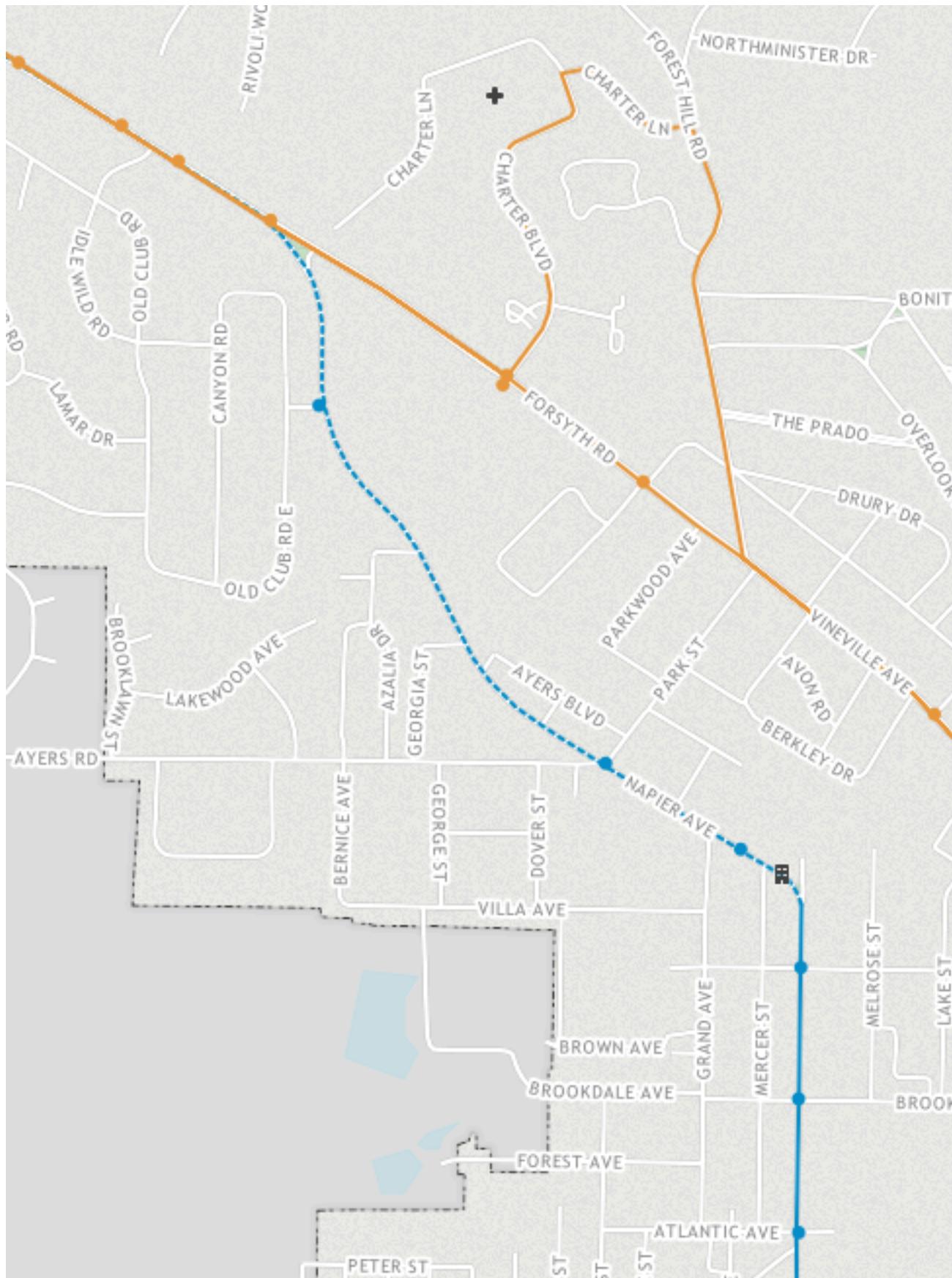
- + ↕  
Editor  
ZOOM 13

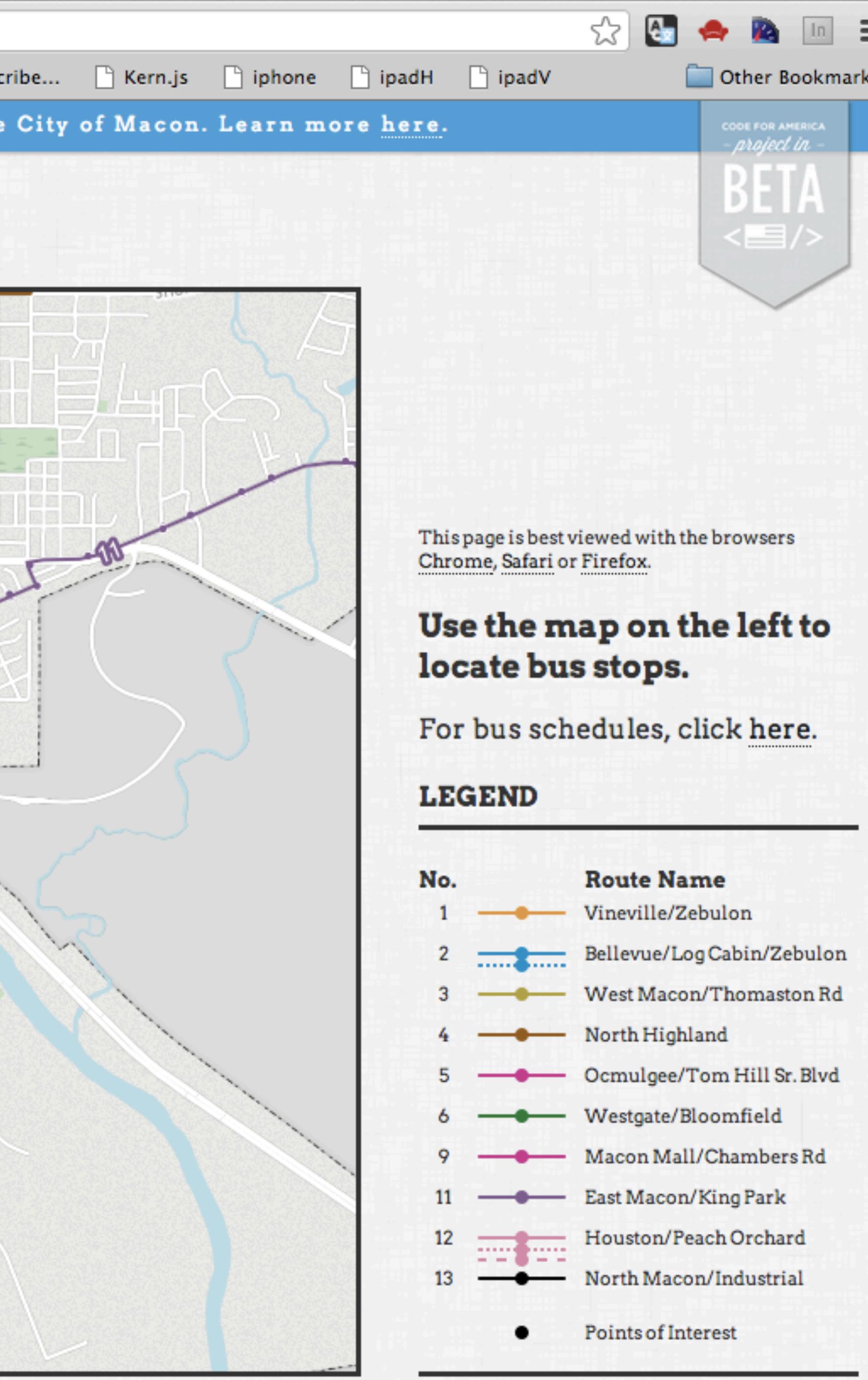
Projects  
Manual  
Plugins  
Settings



# Line Styles For different branches of routes

```
#mtaRoutes[Route_No="12B"]{  
    line-color: @rt12color;  
    line-dasharray: 3,3;  
    ::labels {  
        text-halo-fill: @rt12color;  
    }  
}  
  
#mtaRoutes[Route_No="12C"]{  
    line-color: @rt12color;  
    line-dasharray: 5,5;  
    ::labels {  
        text-halo-fill: @rt12color;  
    }  
}
```





## CSS Legend

Using TileMill's legend or embed map on a page and add legend separately.

[github.com/codeforamerica/  
Transit-Map-in-TileMill/  
tree/gh-pages](https://github.com/codeforamerica/Transit-Map-in-TileMill/tree/gh-pages)

warning! be safe, make your own CSS classes.

# Shadow

```
::shadow1, ::shadow2, ::shadow3 {  
  line-color: #333;  
  line-join: round;  
}  
  
::shadow1 {  
  line-opacity: 0.03;  
  line-width: 9;  
}  
  
::shadow2 {  
  line-opacity: 0.06;  
  line-width: 4;  
}  
  
::shadow3 {  
  line-opacity: 0.12;  
  line-width: 2;  
}
```

the rest of your element's style...

Create 3 lines

wide and subtle

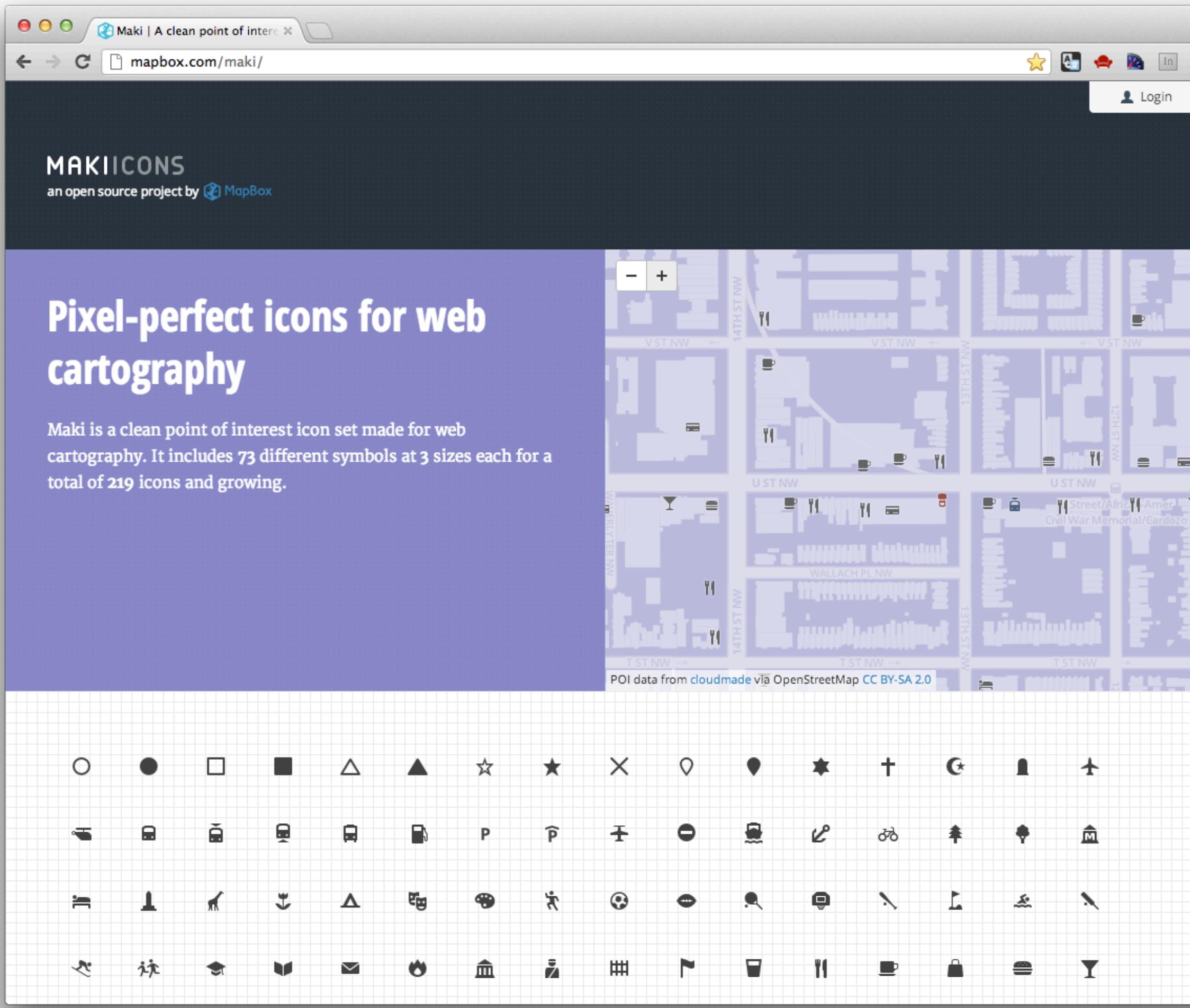
happy middle

narrow and dark



# Icons and symbols

## Maki icons



Make a points of interest map in Google Maps then export it as KML. If needed, Google Refine to edit it and export it as csv.

```
#pInterest[zoom > 15] {
    ::labels {
        text-name: "[name]";
        text-face-name: "Trebuchet MS Regular";
        text-placement: point;
        text-halo-radius: 3px;
        text-placement-type: simple;
        text-dy: 11;
        text-vertical-alignment: bottom;
        text-allow-overlap: true;
        text-halo-fill: #ecece6;
        text-fill: #333;
        text-size: 12;
    }
}

#pInterest[type="civic"][zoom >= 14]
{
    point-file: url(maki/town-hall-12.png);
}
#pInterest[type="civic"][zoom >= 16]
{
    point-file: url(maki/town-hall-18.png);
}
```

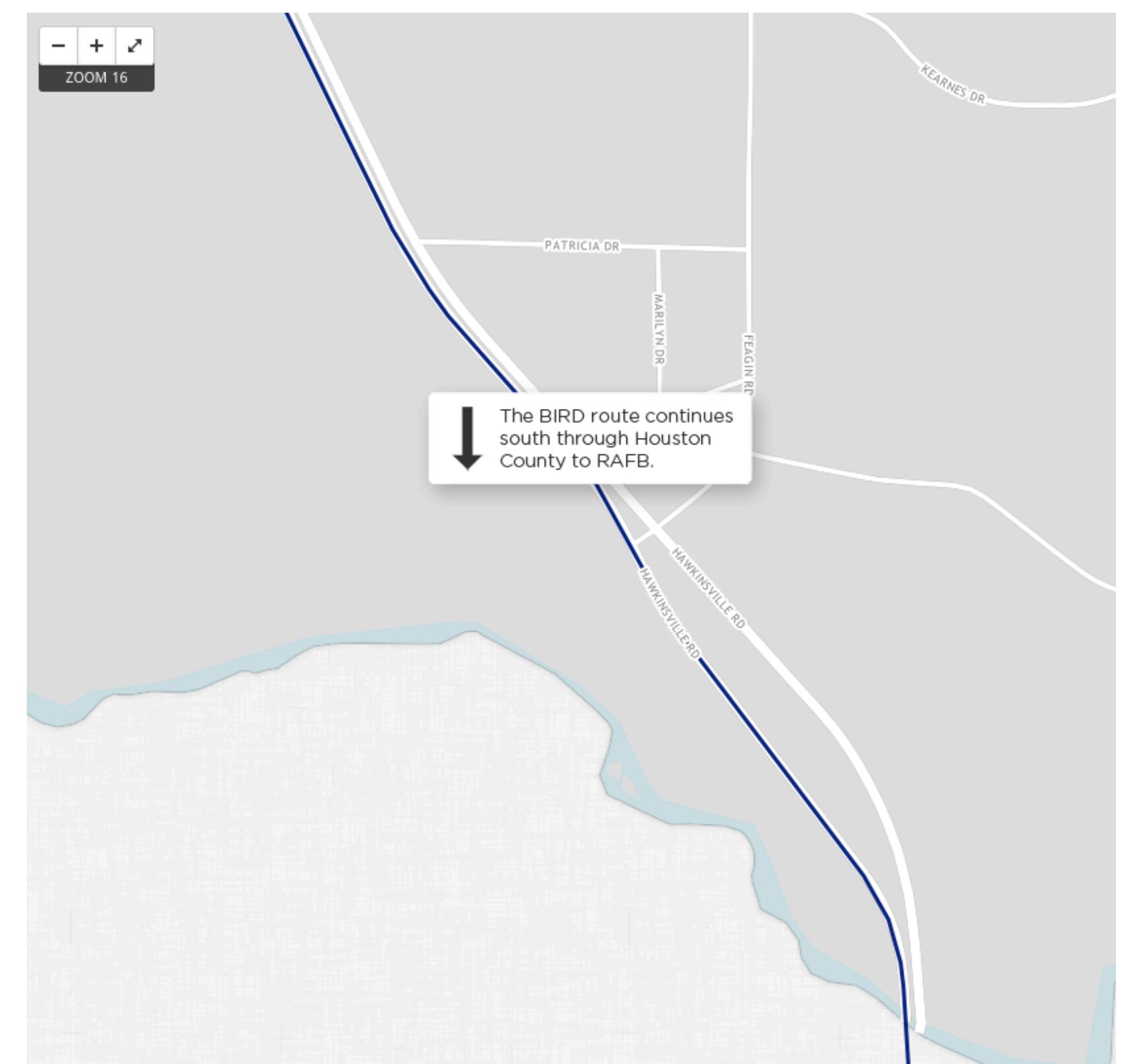
# make some!

## single point csv

Features (birdend)			
route name	lat	long	description
BIRD min	min	32.6721823730387	min -83.6246681213379 The BIRD route continues south through Houston County to RAFB.
BIRD max	max	32.6721823730387	max -83.6246681213379 The BIRD route continues south through Houston County to RAFB.
BIRD		32.6721823730387	-83.6246681213379 The BIRD route continues south through Houston County to RAFB.

## with image as point-file

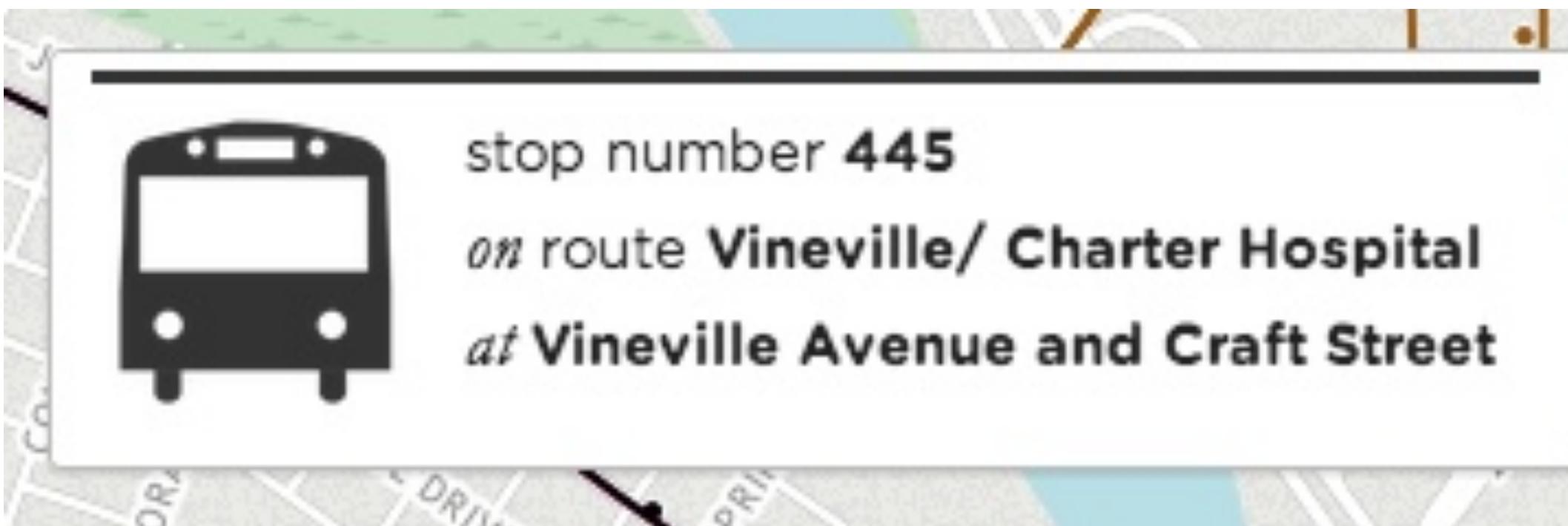
or no image, use  
description as label



**TEASER**

**Do it up!**

# using data from a layer in TileMill



Templates

Legend Teaser Full Location

Content to be shown on hover or first tap (mobile).

```
ml>
ad>
nk href='http://fonts.googleapis.com/css?family=Quicksand' rel='stylesheet' type='text/css'>
nk href='http://fonts.googleapis.com/css?family=IM+Fell+French+Canon:400italic' = 'stylesheet' type='text/css'>
ead>
yle>
.wax-tooltip {max-width: 600px !important;}
p {font-family: 'Quicksand', Gotham Rounded, Arial; font-size: 13px;}
i {font-family: 'IM Fell French Canon', Garamond, Baskerville, Times New Roman; font-style: italic; font-size: 16px; font-weight: 400;}

#teaserbox {border-top: 3px solid #333; }
#icon {float: left; margin: 2px 10px 0px 0px; }
#info {float: left; margin: 7px 10px 0px 0px; }

</style>
<body>
<div id="teaserbox">
<div id="icon"></div>
<div id="info">
<p>
    stop number <b>{{{{OBJECTID}}}</b><br/>
    <i>on</i> route <b>{{{{Route}}}</b><br/>
    <i>at</i> <b>{{{{Location}}}</b>
</p>

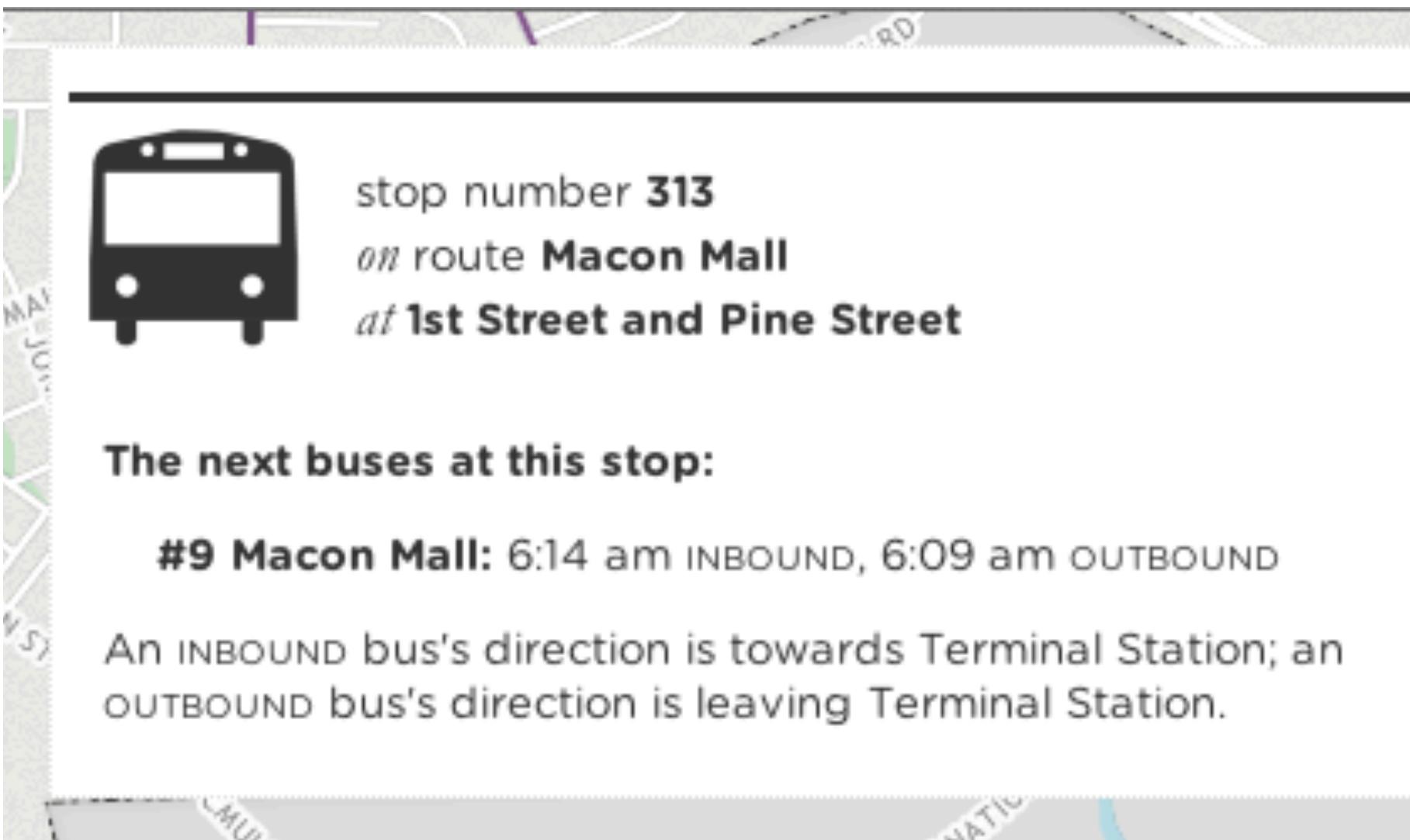
```

hiddenStops Layer to use for interaction data

```
 {{{OBJECTID}}} {{{Id}}} {{{Location}}} {{{Type}}} {{{Sidewalk}}} {{{Bike_Route}}} {{{Route}}} {{{Schedule}}} {{{RouteBIRD}}} {{{Route1}}} {{{Route2}}} {{{Route3}}} {{{Route4}}} {{{Route5}}} {{{Route6}}} {{{Route9}}} {{{Route11}}} {{{Route13}}} {{{Route12}}}
```

These Mustache tags will be replaced by data. You can also use the full Mustache template language to customize your tooltips.

## With data outside of TileMill

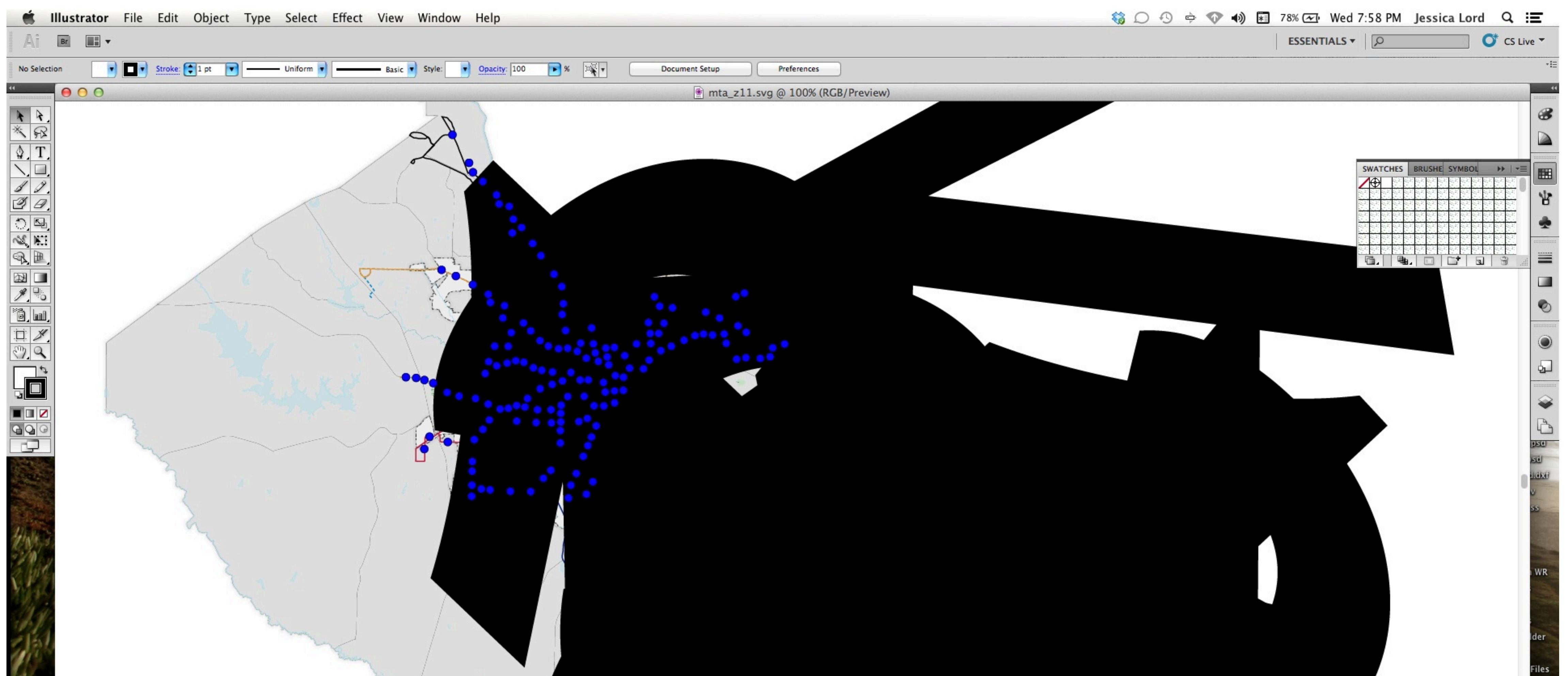


**PRINT**

**Oh, dang.**

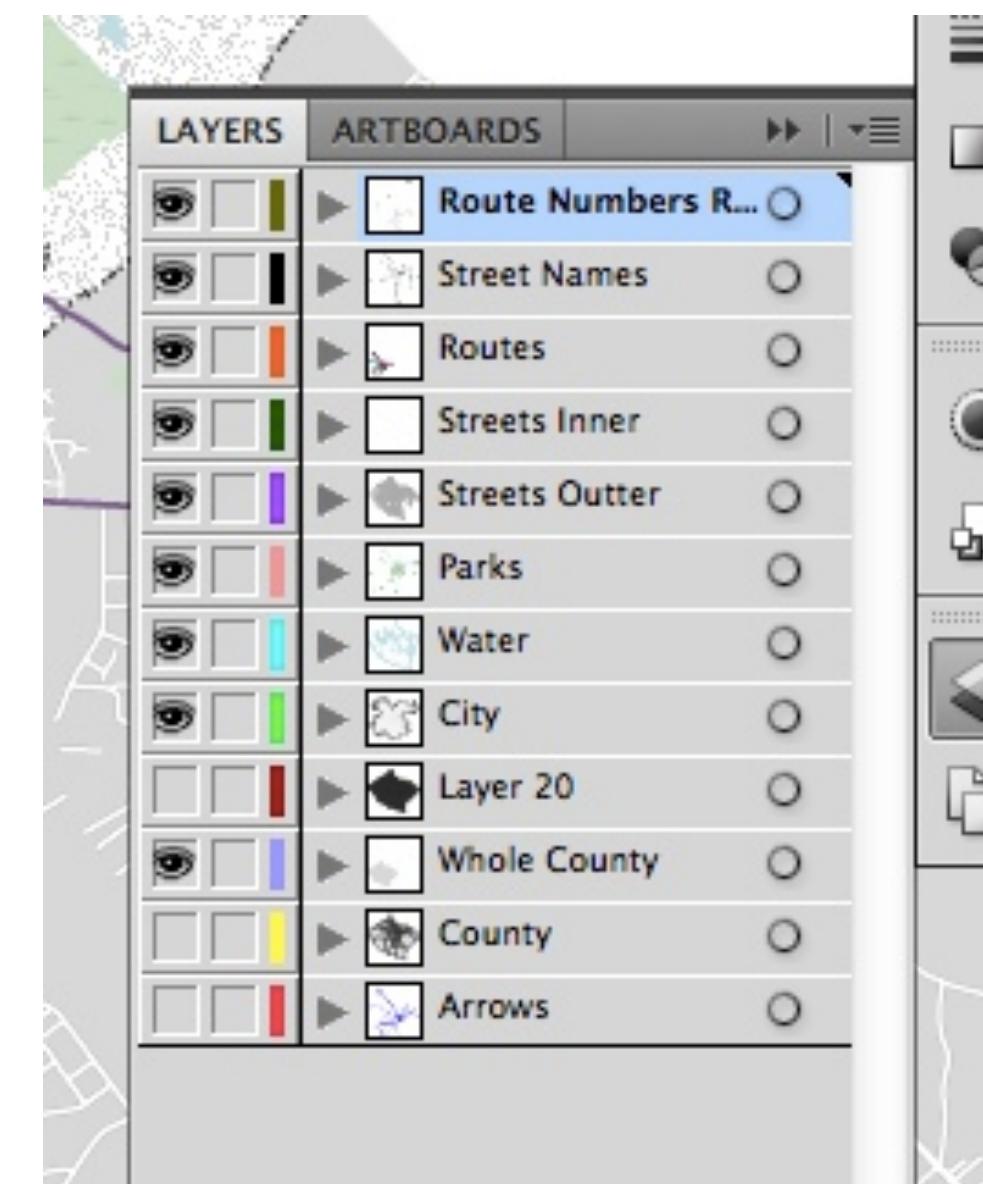
**Save a copy of your MSS, then  
take out everything you don't  
need and remove all zoom  
conditions, remove text if you can.**

# Export it as a PDF. Trust me, SVG won't work.



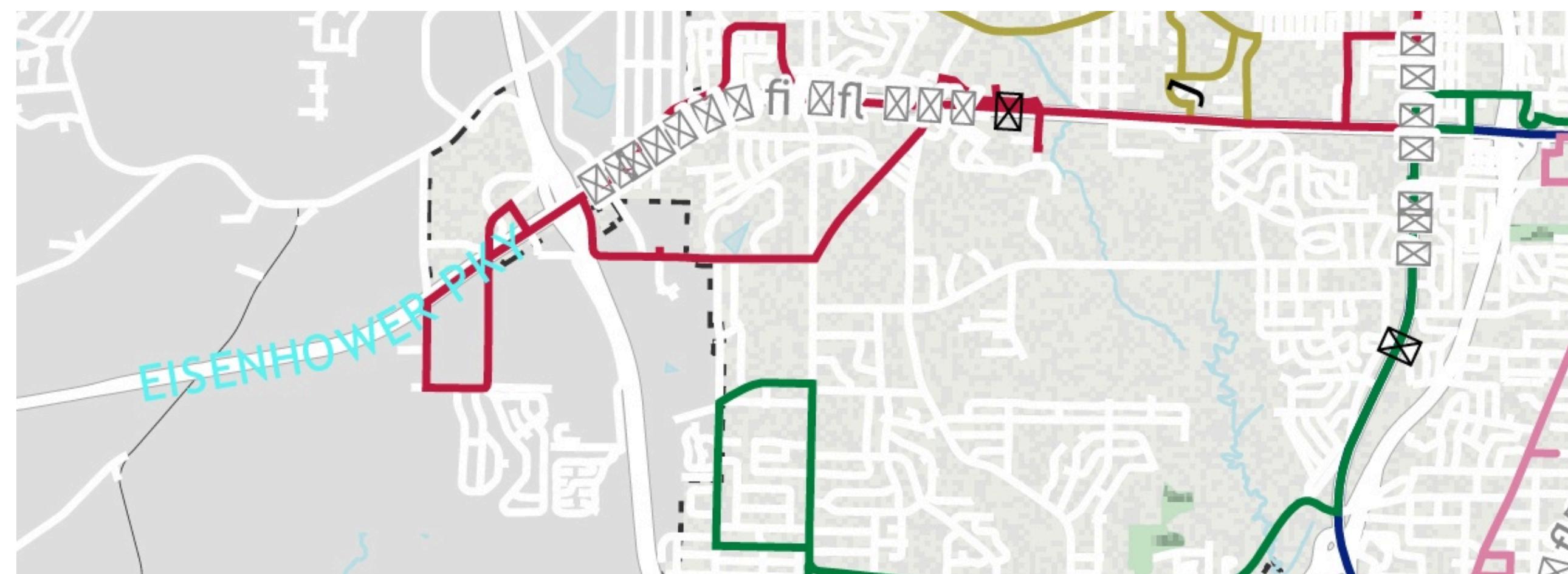
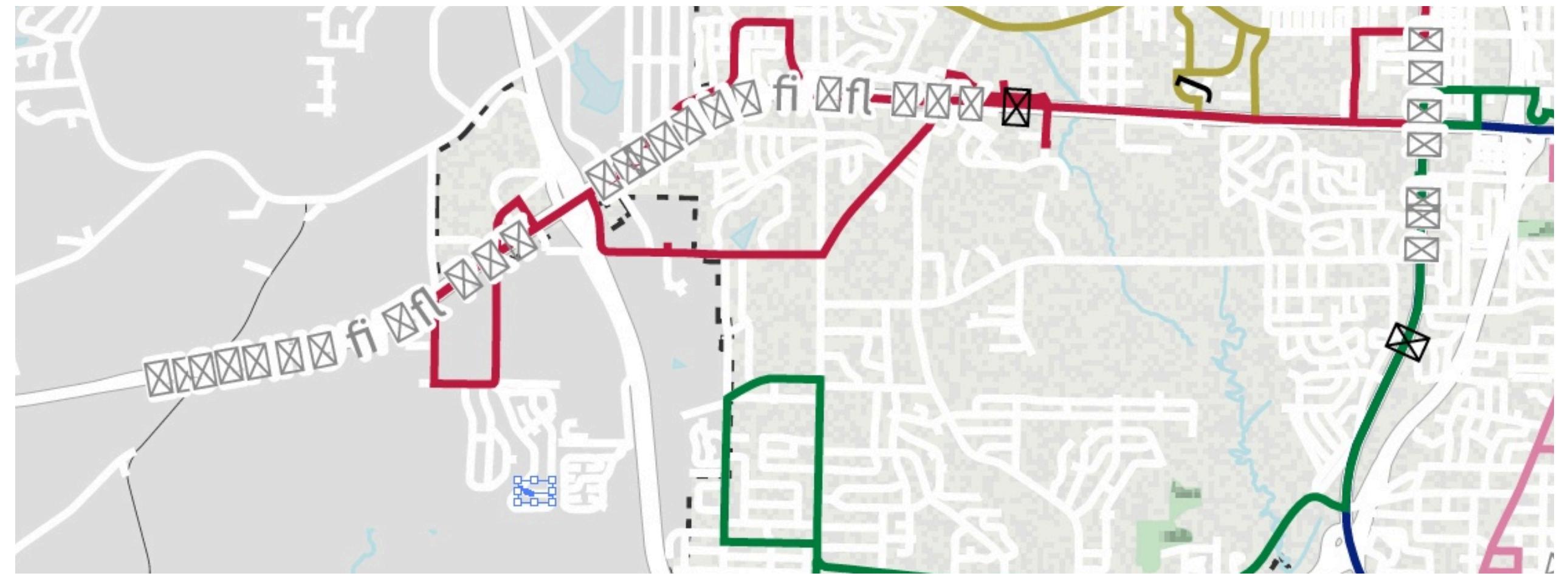
# Clean it up.

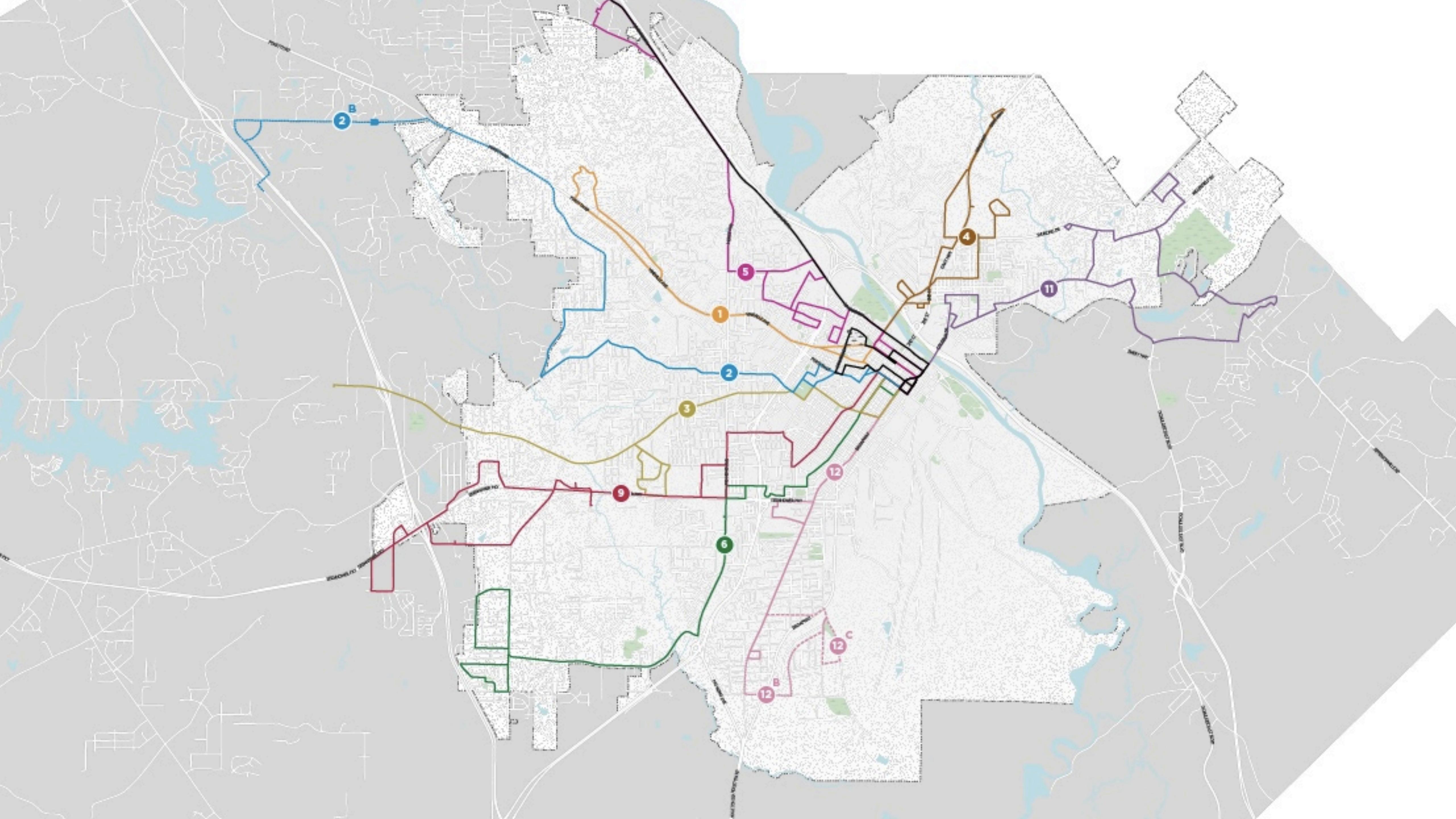
create layers, fill with content  
select same > fill or stroke..



# Text

If you must, get rid  
of gibberish, turn  
stroke to fill.





The Most Elegant Transit Maps Ever – Commute – The Atlantic Cities

**the Atlantic CITIES**  
PLACE MATTERS

JOB & ECONOMY COMMUTE HOUSING ARTS & LIFESTYLE DESIGN TECHNOLOGY POLITICS NEIGHBORHOODS FOCUS: RENEWAL

PHOTOS

## The Most Elegant Transit Maps Ever

ERIC JAFFE OCT 01, 2012 1 COMMENT



Blocked Plug-in

explore cities

Search site GO

Browse by city

Browse features

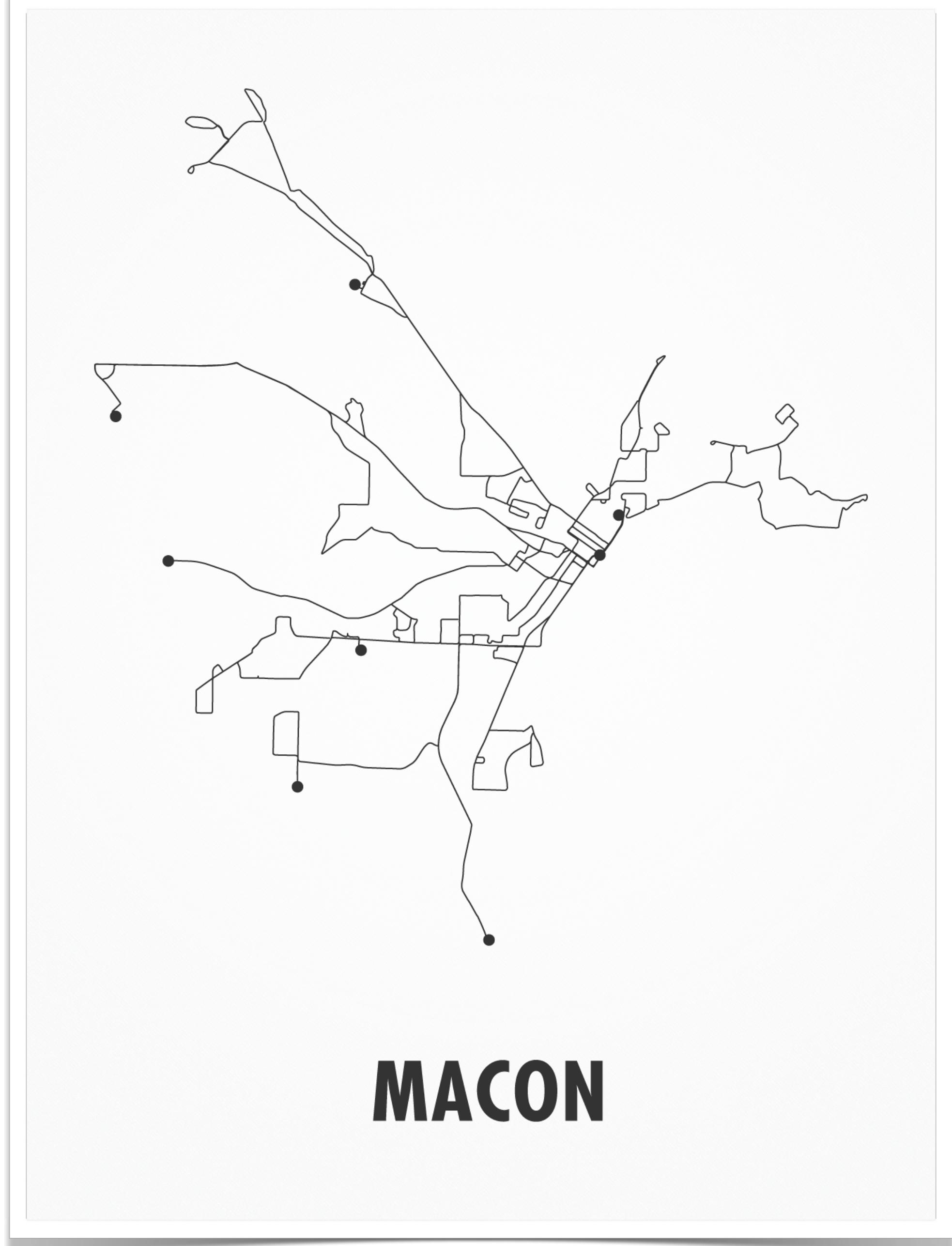
Forward Thinking on: Predictive Maintenance

"We used to fix things when they broke. Now we can fix things before they break." - Chris Conrad

Lineposters

Like 216 Tweet 107 +1 13 Share 3 + Share Print Email

There's a good deal of artistry that goes into designing public transit maps. Landmarks and city centers are enlarged, curves are straightened — all in the service of helping riders make



MTA Macon Bus System Map

www.mta-mac.com/map.html

Tumblr CfA CAL Read Later Google Bookmark Attribute! + Pocket [bl.ocks.org] Latitude and Longitu Subscribe... Kern.js iPhone iPadH » Other Bookmarks

**MTA**  
Macon-Bibb County Transit Authority  
We Keep Macon Moving!

Home Alerts How to Ride Paratransit Forms About MTA Contact Us Resources

### System Map

Use this map to locate bus stops. Pass your mouse over a stop to see the next bus time. Click here for [bus schedules](#).  
**Note:** The bus stops map may not display correctly on older browsers. If you are using an older system, [use this map](#).

The map displays the city of Macon, Georgia, with major roads like Emery Hwy, Ocmulgee East Blvd, and Broad St. Bus routes are shown as colored lines: Route 1 (orange) runs along the west side of the city; Route 2 (dotted blue) follows a more central path; Route 3 (yellow-green) runs along the east side; and Route 4 (dark red) follows a southern route. Numerous bus stops are marked with small circles along these routes. A note at the bottom right indicates "Roads © 2012 OpenStreetMap contributors".

**LEGEND**

No.	Route Name
1	Vineville/Zebulon
2	Bellevue/Log Cabin/Zebulon
3	West Macon/Thomaston Rd
4	North Highland



`github.com/  
codeforamerica/  
Transit-Map-in-Tilemill`

`@jllord`