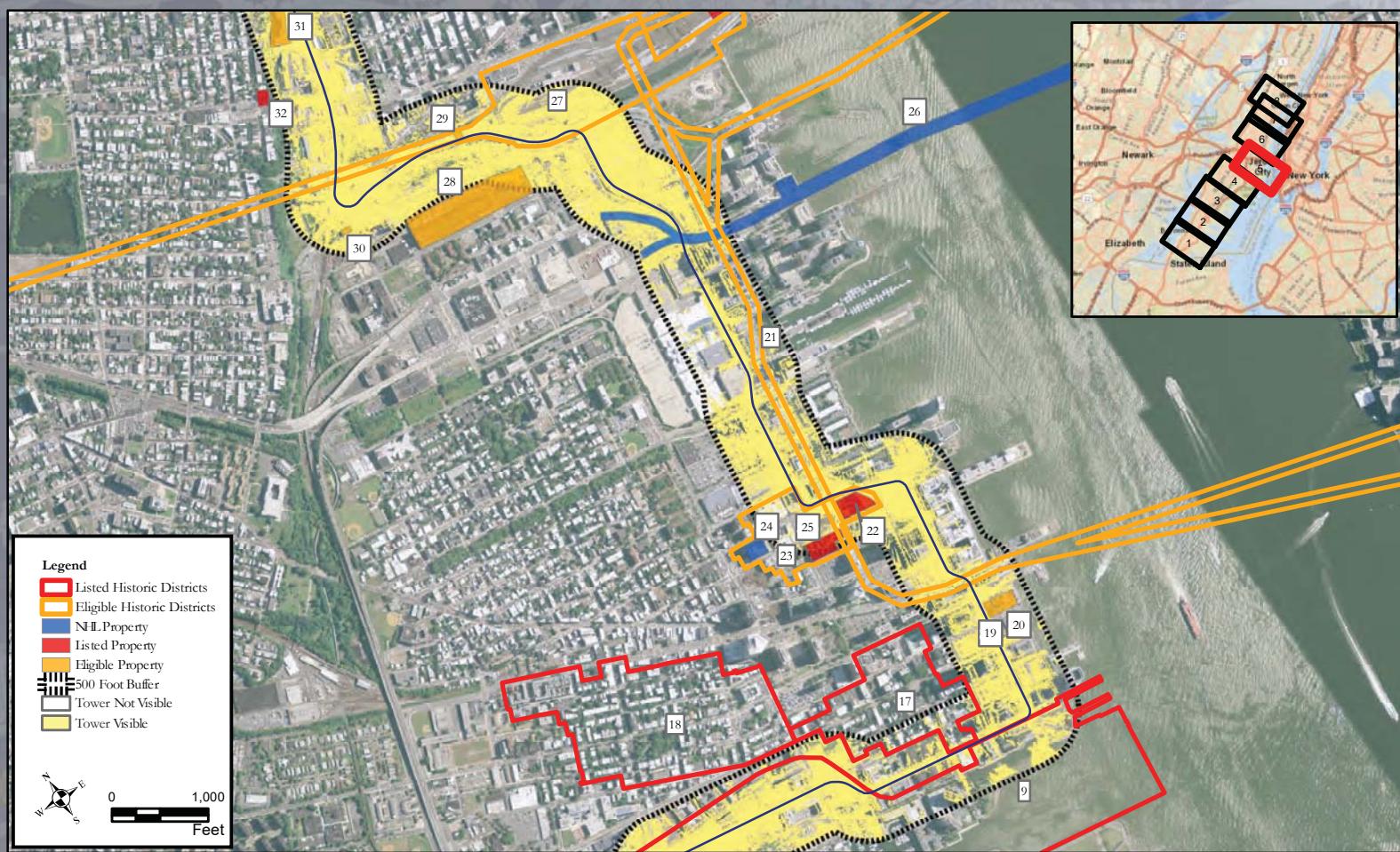
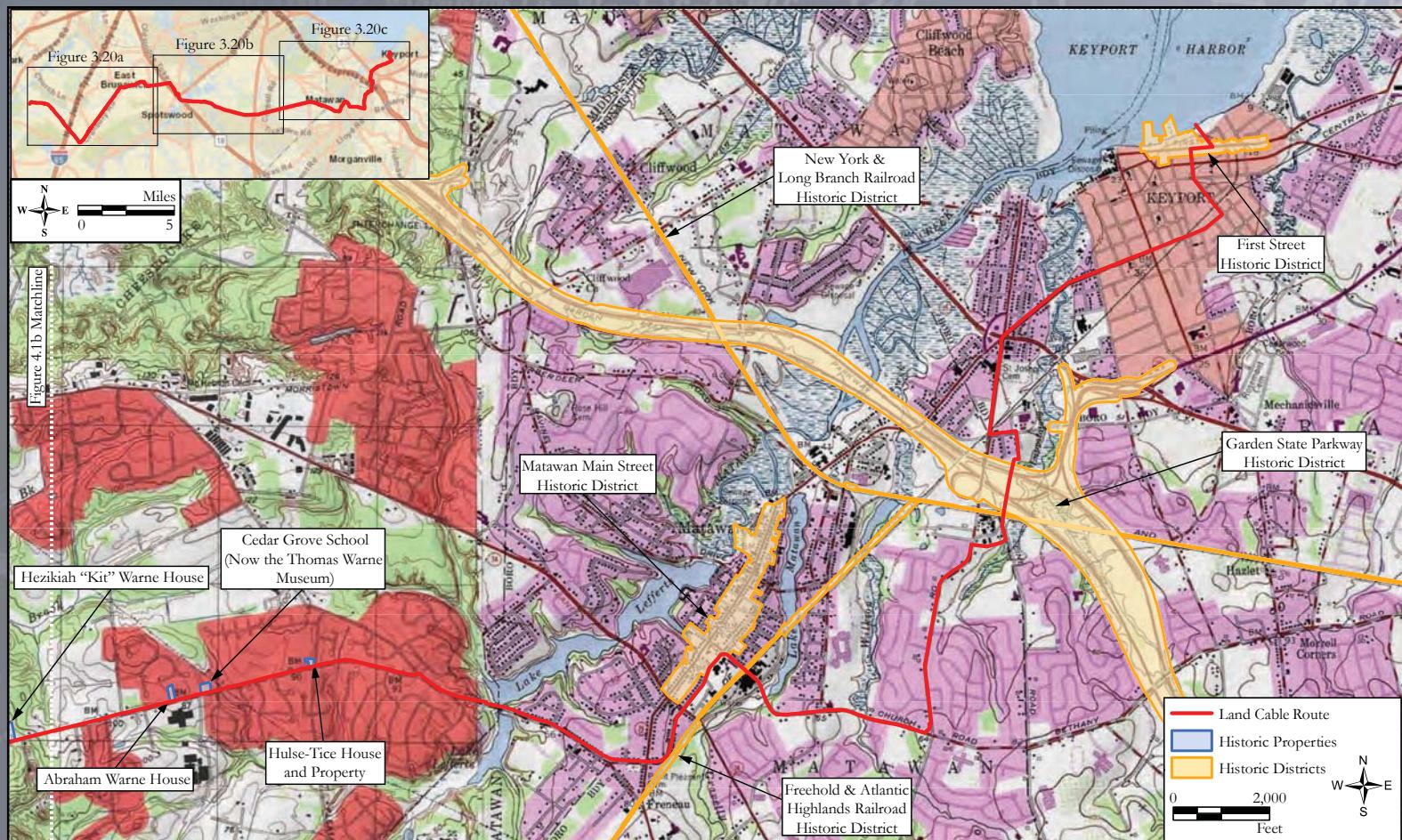


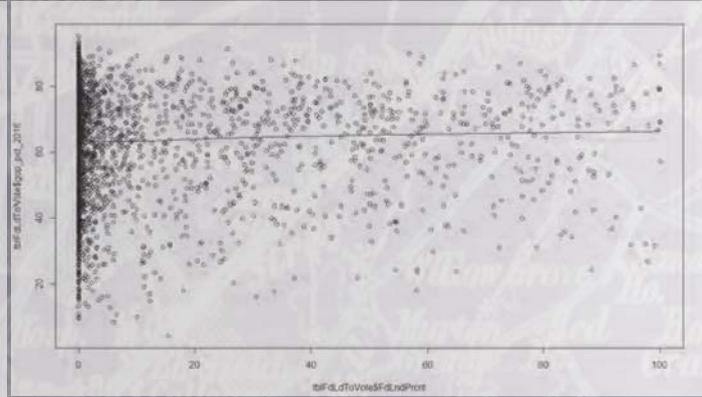
Portfolio of David C. Strohmeier



Charts & Graphs

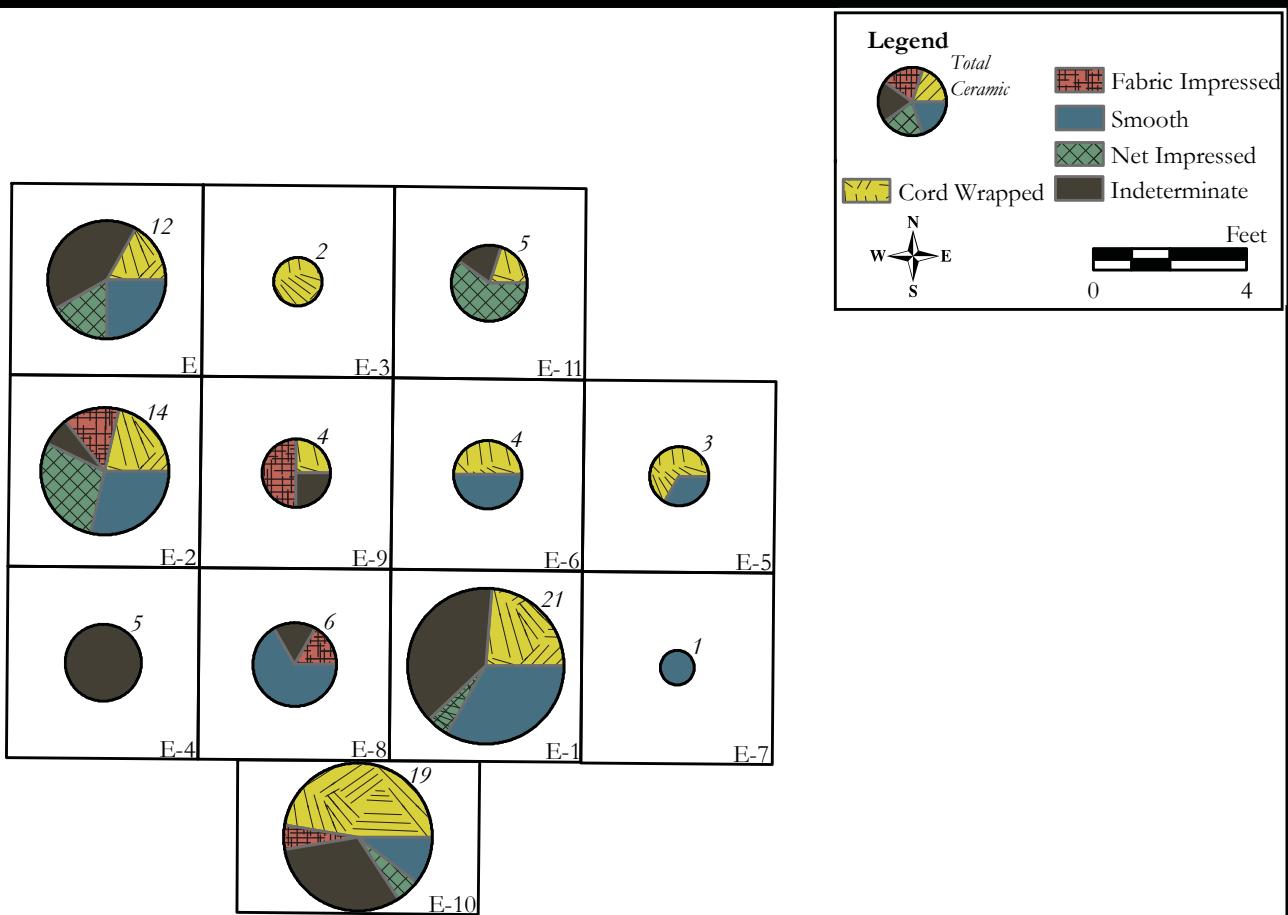
The use of graphical programming languages such as R can be a quick and easy way to produce graphic figures of your data.

```
LocCntyFedPer = "C:/Users/davestrohmeier/Desktop/Geoviz/CountyFedLandPer.csv"
tblCntyFedPer = read_csv(LocCntyFedPer)
tblCntyFedPer = rename(tblCntyFedPer, fips_code=GEOID)
tblFdLdTovote= left_join(tblCntyFedPer, tblElection, by= "fips_code")
plot(tblFdLdTovote$FdLndPrct, tblFdLdTovote$gop_pct_2016)
tempfed=filter(tblFdLdTovote, FdLndPrct > 80)
plot(tempfed$FdLndPrct, tempfed$gop_pct_2016)
calibound= left_join(tblFdLdTovote, tblHealthoriginal, by= "fips_code")
nocal= select(calibound, State, fips_code)
no_WestCoast= filter(calibound, state != "CA", state != "OR", state != "WA")
plot(no_WestCoast$FdLndPrct, no_WestCoast$gop_pct_2016)
california= filter(calibound, state=="CA")
plot(california$FdLndPrct, california$gop_pct_2016)
washington= filter(calibound, state=="WA")
plot(washington$FdLndPrct, washington$gop_pct_2016)
tenpct= filter(tblFdLdTovote, FdLndPrct < 10)
plot(tenpct$FdLndPrct, tenpct$gop_pct_2016)
pointfive=filter(tblFdLdTovote, FdLndPrct < .5)
plot(pointfive$FdLndPrct, pointfive$gop_pct_2016)
zeros=filter(tblFdLdTovote, FdLndPrct < .001)
```

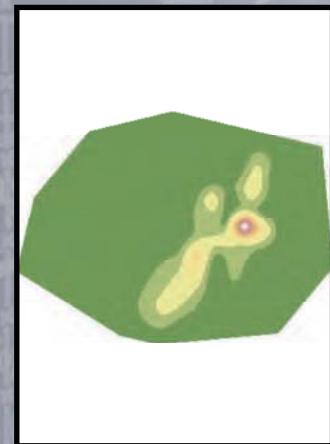


Information regarding counts of specific attribute types obtained from artifact catalogs can be joined with correlated spatial data to create proportional symbol pie charts such as the one seen below as a way to represent the distribution of multiple multiple attributes in a single figure.

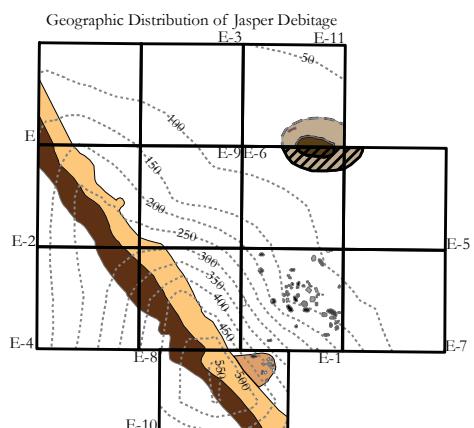
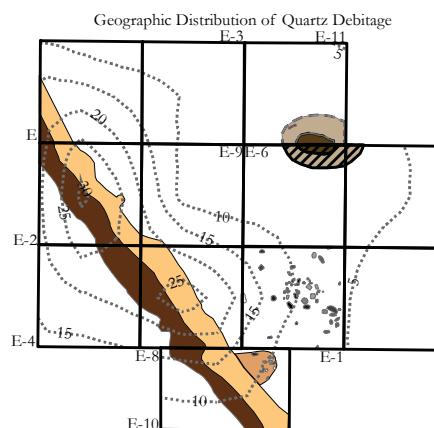
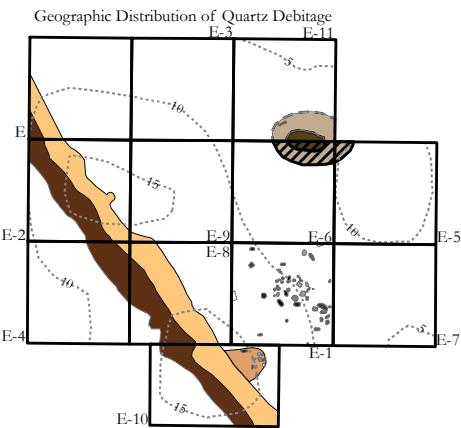
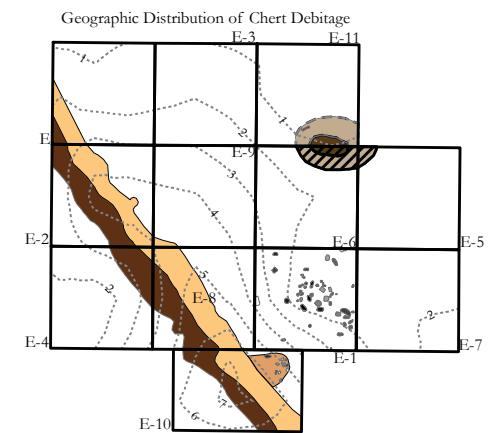
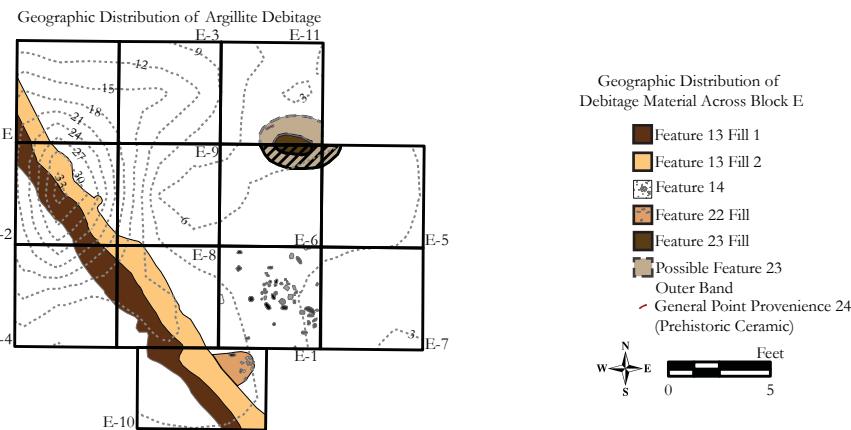
Distribution of Exterior Treatment of Prehistoric Ceramic
Across Excavation Unit Block E



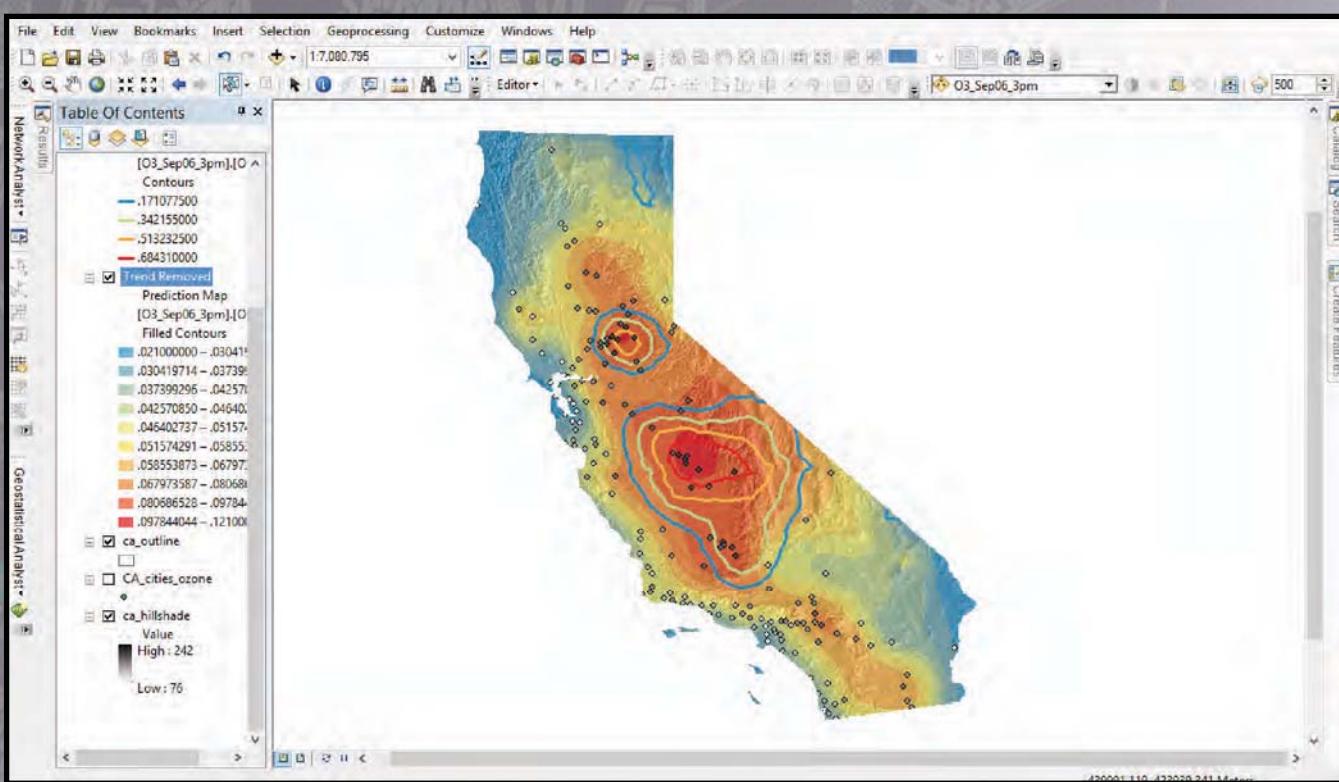
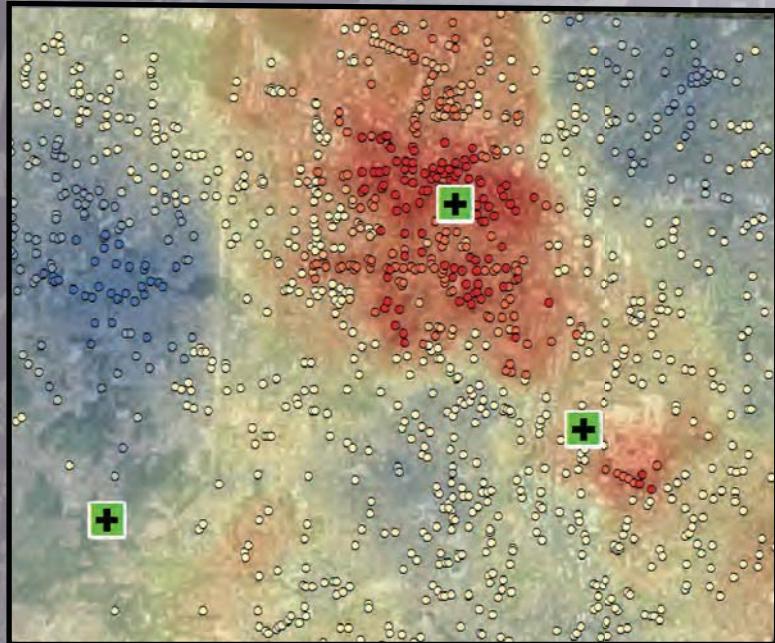
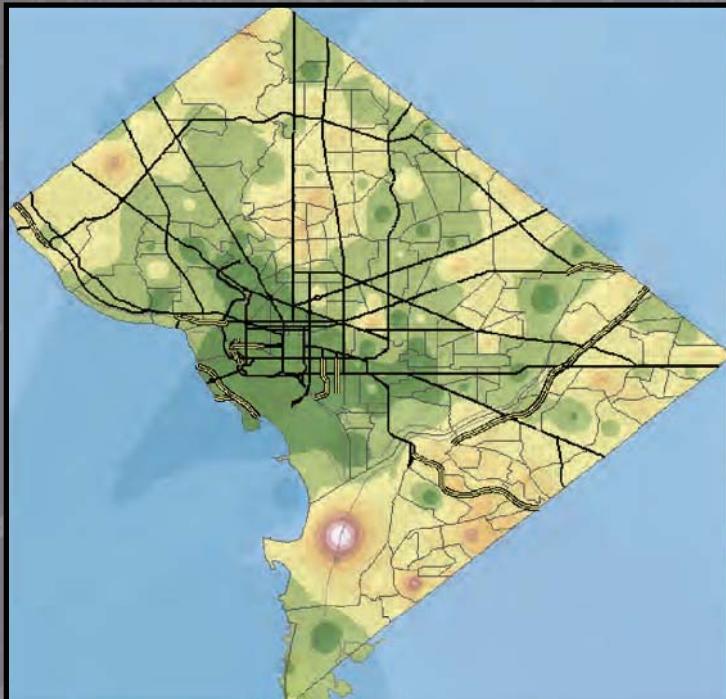
Interpolation..



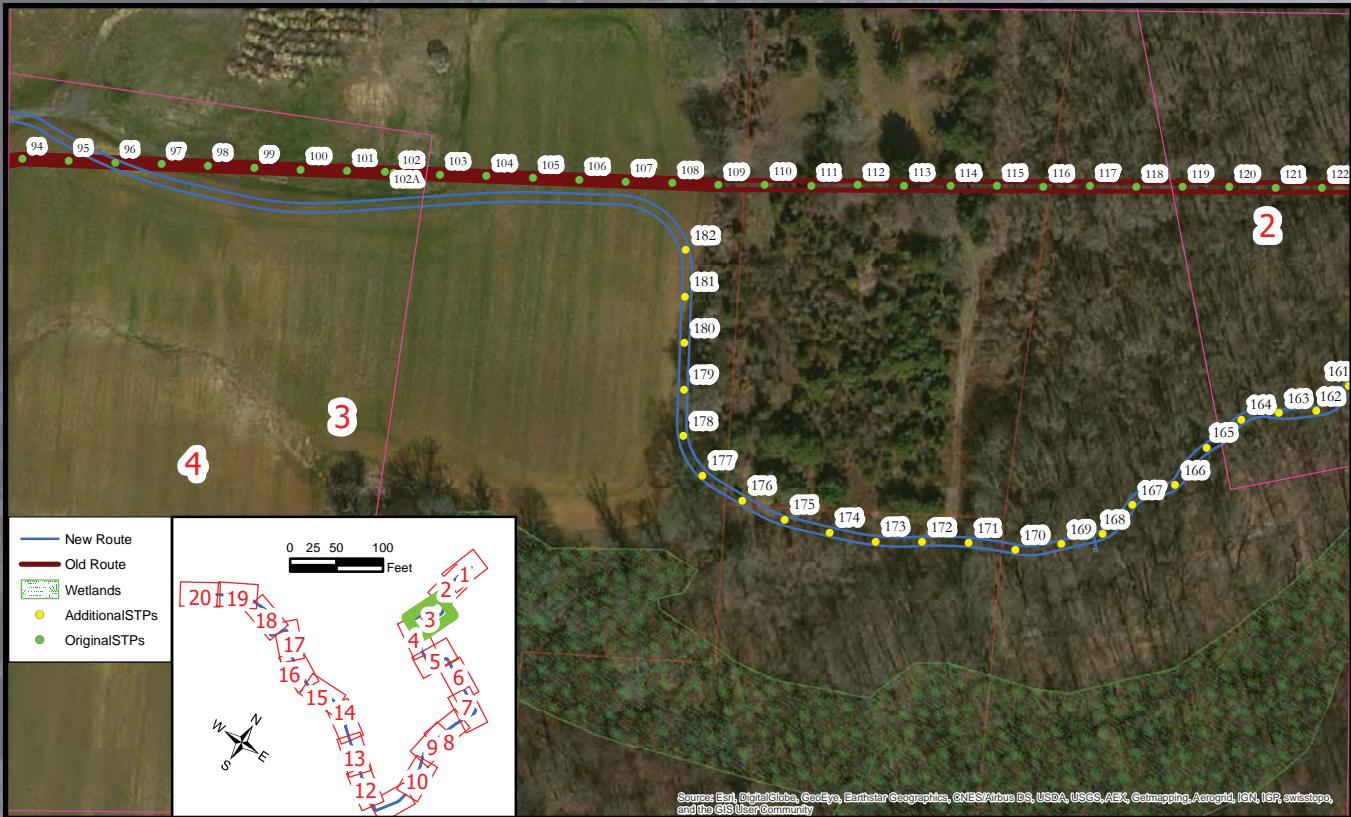
Interpolations can be used as an easy way to convey meaning to spatial data. By designing large attribute tables form artifact catalogs, archaeologists can reveal hot spots and create interpolated isopleths based on any attribute and and attacing it to its relative collection point.



Interpolation



Map Books



Many project areas are not contained to a single contiguous parcel of land but rather are linear in nature spanning several thousand feet or perhaps even miles. In cases like these map books are required using ESRI's Data Driven Pages to produce overlapping indexed maps for better scalability and overall easier use.



HTML, CSS & JavaScript

Using web GIS tools like Mapbox and Cartodb and APIs such as leaflet I have learned to develop HTML code using CSS and JavaScript to create interactive webmaps.

```
<div id="map"></div>

<script>

// initialize the map
var map = L.map('map').setView([39.952584, -75.165222], 13);

// load a tile layer
L.tileLayer('https://s1.tiles.mapbox.com/v4/davestrohmeier.a4fe2e7a/{z}/{x}/{y}.png?access_token=pk.eyJ1IjoicGF2ZXN0cm9obWVpZXIiLCJhIjoiZGYxOWI2Nj1nNWU5YTM2NTFlM2UxZjMxNjQ2YTNhZGYifQ.h6K9YfvzwcFg2jD92xjY1Q').addTo(map);

// load GeoJSON from an external file

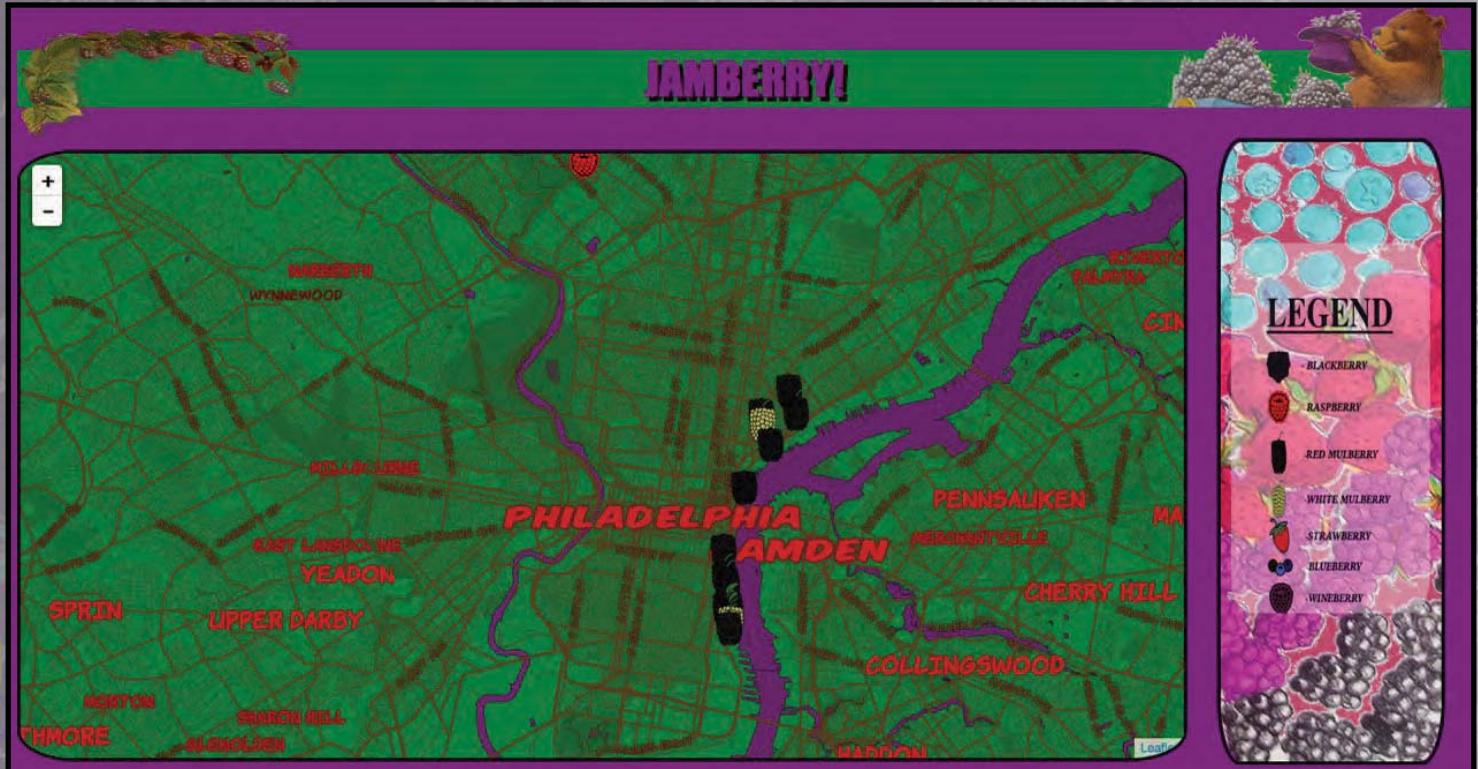
$.getJSON("Redmulb.js",function(data){
  var berryIcon = L.icon({
    iconUrl: 'redmulberry.png',
    iconSize: [40,40]
  });

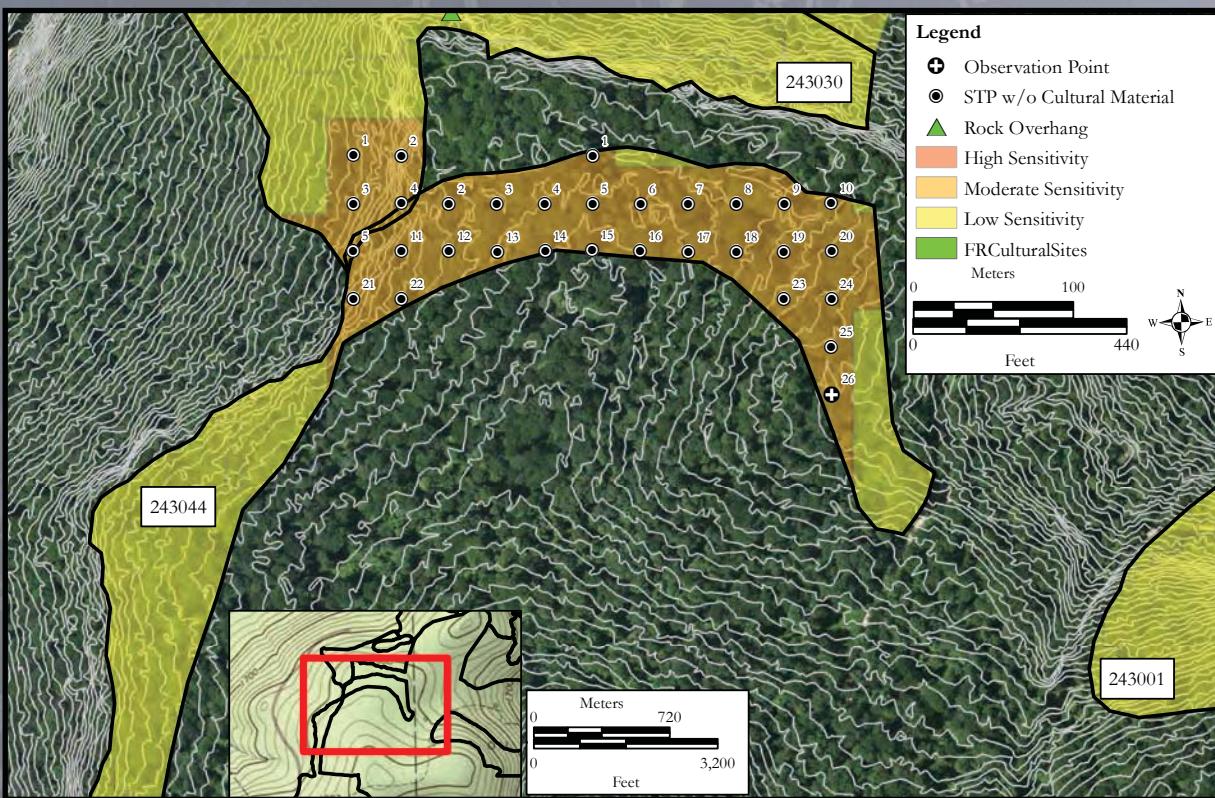
  // add GeoJSON layer to the map once the file is loaded
  L.geoJson(data,{
    pointToLayer: function(feature,latlng){
      var marker = L.marker(latlng,{icon: berryIcon});
      marker.bindPopup("<strong>" + feature.properties.Berry_type + "</strong><br/>" + feature.properties.Ripe_ + '<br/>' + feature.properties.Comments + '<br/>' + feature.properties.Refereenc + '<br/>' + feature.properties.Locale + '<br/>' + feature.properties.Description + '<br/>' + feature.properties.Accessible
    };
    return marker;
  }).addTo(map);
});

$.getJSON("Whitemulb.js",function(data){
  var berryIcon = L.icon({
    iconUrl: 'whitemulberry.png',
    iconSize: [40,40]
  });

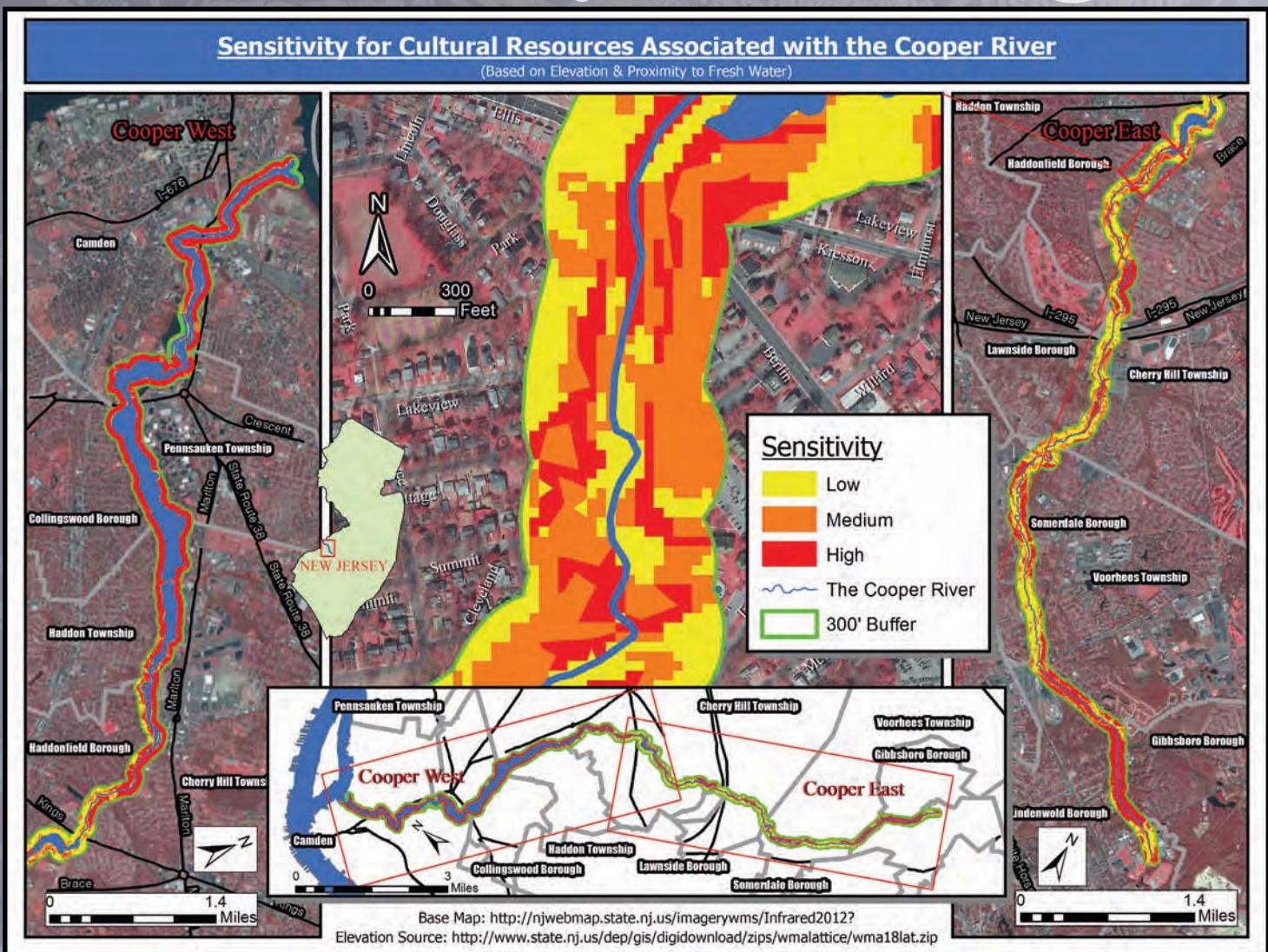
  // add GeoJSON layer to the map once the file is loaded
  L.geoJson(data,{
    pointToLayer: function(feature,latlng){
      var marker = L.marker(latlng,{icon: berryIcon});
      marker.bindPopup("<strong>" + feature.properties.Berry_type + "</strong><br/>" + feature.properties.Ripe_ + '<br/>' + feature.properties.Comments + '<br/>' + feature.properties.Refereenc + '<br/>' + feature.properties.Locale + '<br/>' + feature.properties.Description + '<br/>' + feature.properties.Accessible
    }
  }).addTo(map);
});


```

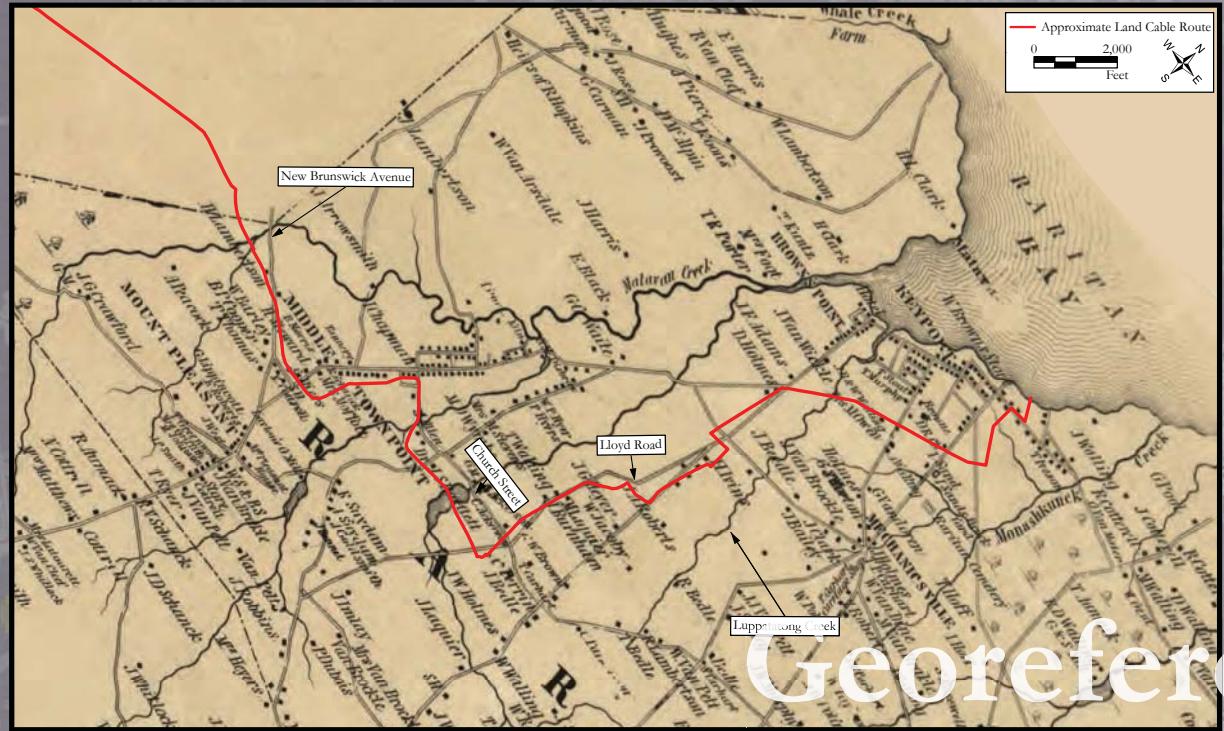
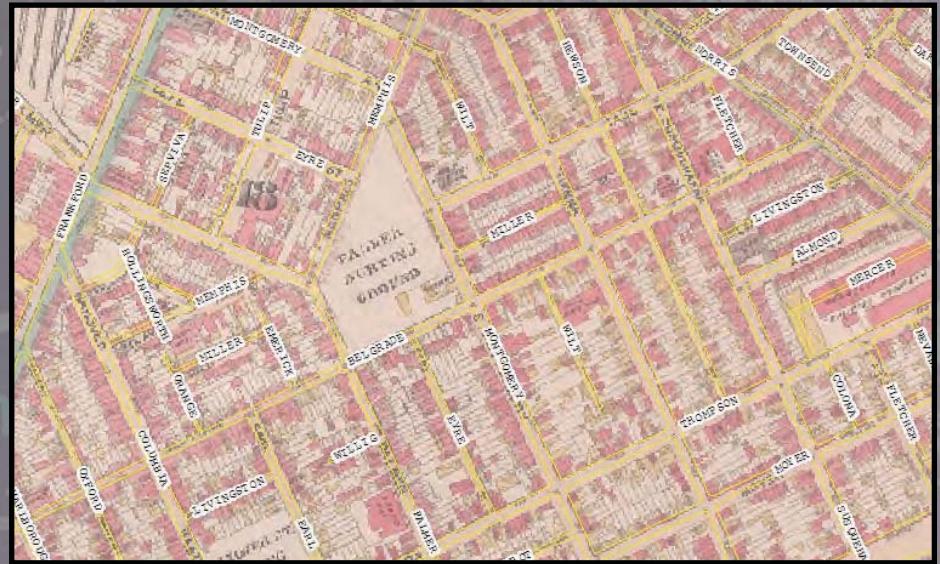




Sensitivity Modeling



From PDF project plans to .dwg files, assigning spatial information to data and images are tasks I regularly perform. In Cultural Resource Management, there is also the tricky task of georeferencing historic maps so that project areas can be represented in historical context.



Python

```
21 def rotate_word():
22     a= input(str("Enter a word:\n"))
23     b= input("Enter a number:\n")
24     x= [chr(ord(i)+int(b)) for i in list(a)]
25     result= ''.join(x)
26     print("Your new word is", (result))
27
28 def main():
29     rotate_word()
30
31 if __name__ == "__main__":
32     main()
33
```

File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help

Editor Schools

Table Of Contents

Catalog

Location: Newark.gdb

```
> Y:\CCP\Intro to GIS Spring 2015\GIST1\Da
> Y:\CCP\Intro to GIS Spring 2015\Xtra Cred
> Y:\CCP\Intro to GIS Spring 2015\Xtra Cred
> \\\psf\Home\Desktop\CCP\GIS 201
> hotspots
> newhotspot
> partiasters
> partiisshapefiles
> Week1(5-2)
> Week2(5-29)
> Week3(6-4)
> Week4(6-12)
> Week5(6-19)
> Exercise5
> Exercise5
> Tahoe
> LasVegas.gdb
> Newark.gdb
> Final
> Lecture5
```

Python

```
>>> import arcpy
>>> arcpy.env.workspace = r"\\psf\\Home\\Desktop\\Newark.gdb"
>>> arcpy.Buffer_analysis("Schools", r"\\psf\\Home\\Desktop\\Newark.gdb", 4000)
<Result '\\\\psf\\\\Home\\\\Desktop\\\\Newark.shp'>
>>>
>>> import arcpy
... arcpy.env.workspace = r"\\psf\\Home\\Desktop\\Newark.gdb"
... arcpy.Buffer_analysis("Schools", r"\\psf\\Home\\Desktop\\Newark.gdb\\SchoolBuff", 4000)
...
>>>
```

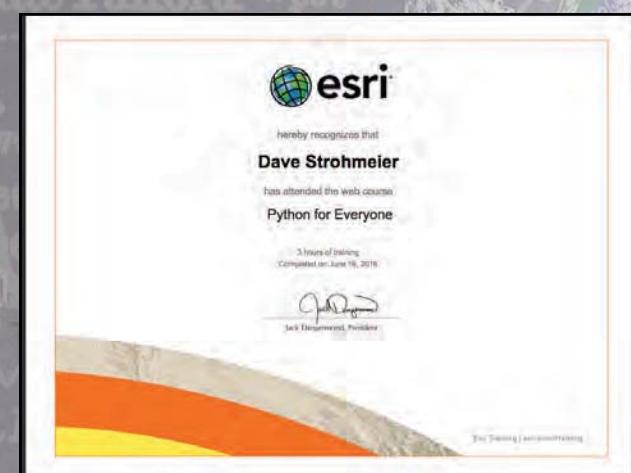
File Edit Search View Project Run Tools Help

File Explorer

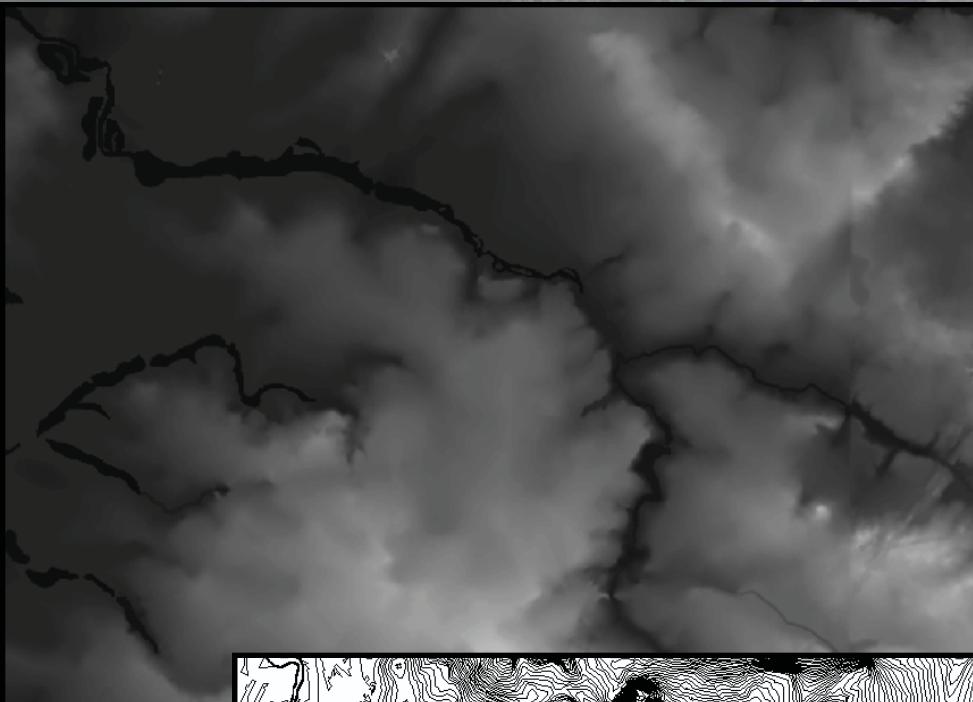
```
# Name: module2
# Purpose:
#
# Author: davestrohmeier
# Created: 17/06/2016
# Copyright: (c) davestrohmeier 2016
# Licence: (your licence)
#
# -----
# Import arcpy
# arcpy.env.workspace = r"\\psf\\Home\\Desktop\\Newark.gdb"
# fc_list = arcpy.ListFeatureClasses()
# for NewarkStreets in fc_list:
#     desc = arcpy.Describe(NewarkStreets)
#     print "Shape: {} Feature: {} Index: {} Extent: {}".format(desc.shapeType,
#     desc.featureType, desc.spatialIndex, desc.extent)
#
# print "Complete!"
```

Python Interpreter

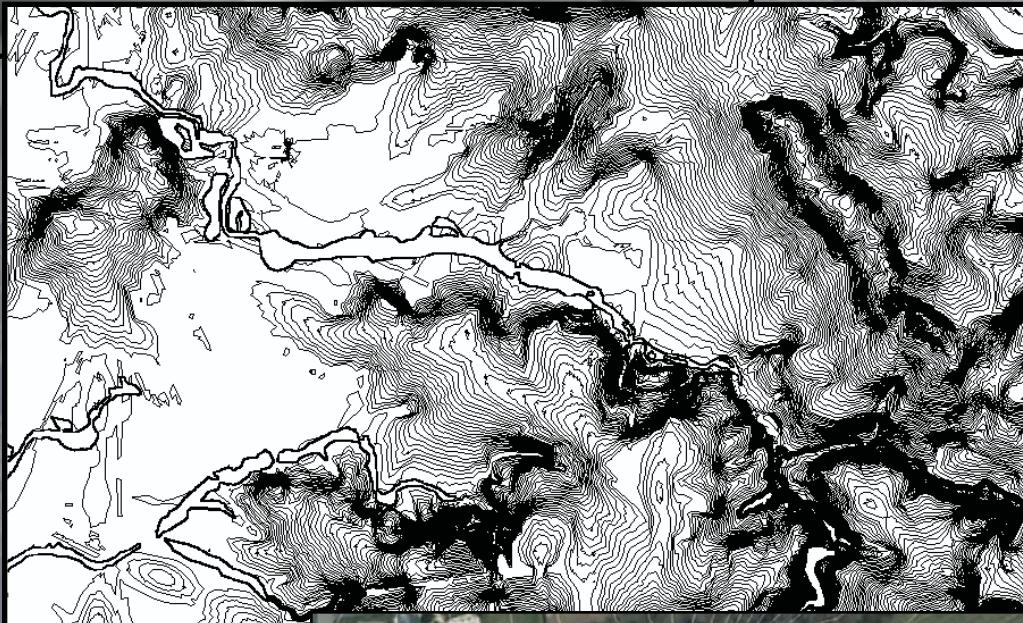
```
Shape: Point Feature: Simple Index: True Extent: 554862.174388672 609472.365701012 565569.843570087 617771.919968009 Null Null Null Null
Shape: Point Feature: Simple Index: True Extent: 558740.060020006 605113.96857927 562830.79261753 614079.85173677 Null Null Null Null
Shape: Polyline Feature: Simple Index: True Extent: 551459.091279038 598630.968892049 569772.32368217 624797.735968843 Null Null Null Null
Shape: Polygon Feature: Simple Index: True Extent: 550862.174494676 605472.365827817 569569.8434489 621771.919642612 Null Null Null Null
Complete!
```



Elevation

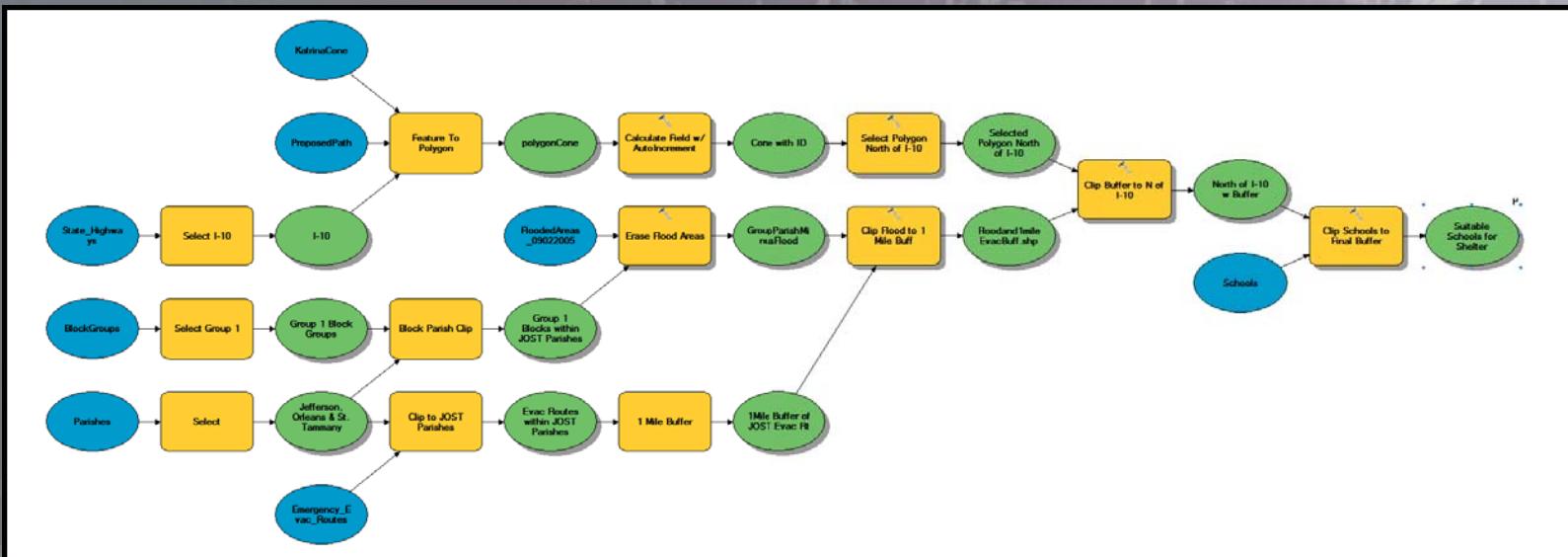


Contours

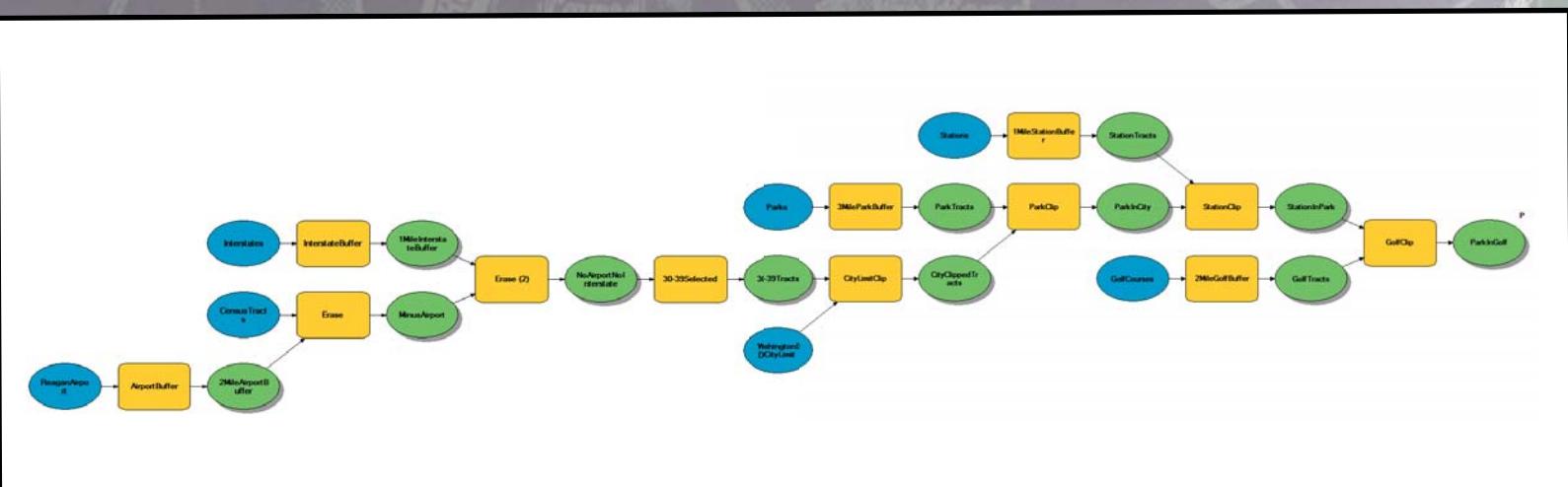


Isopleths



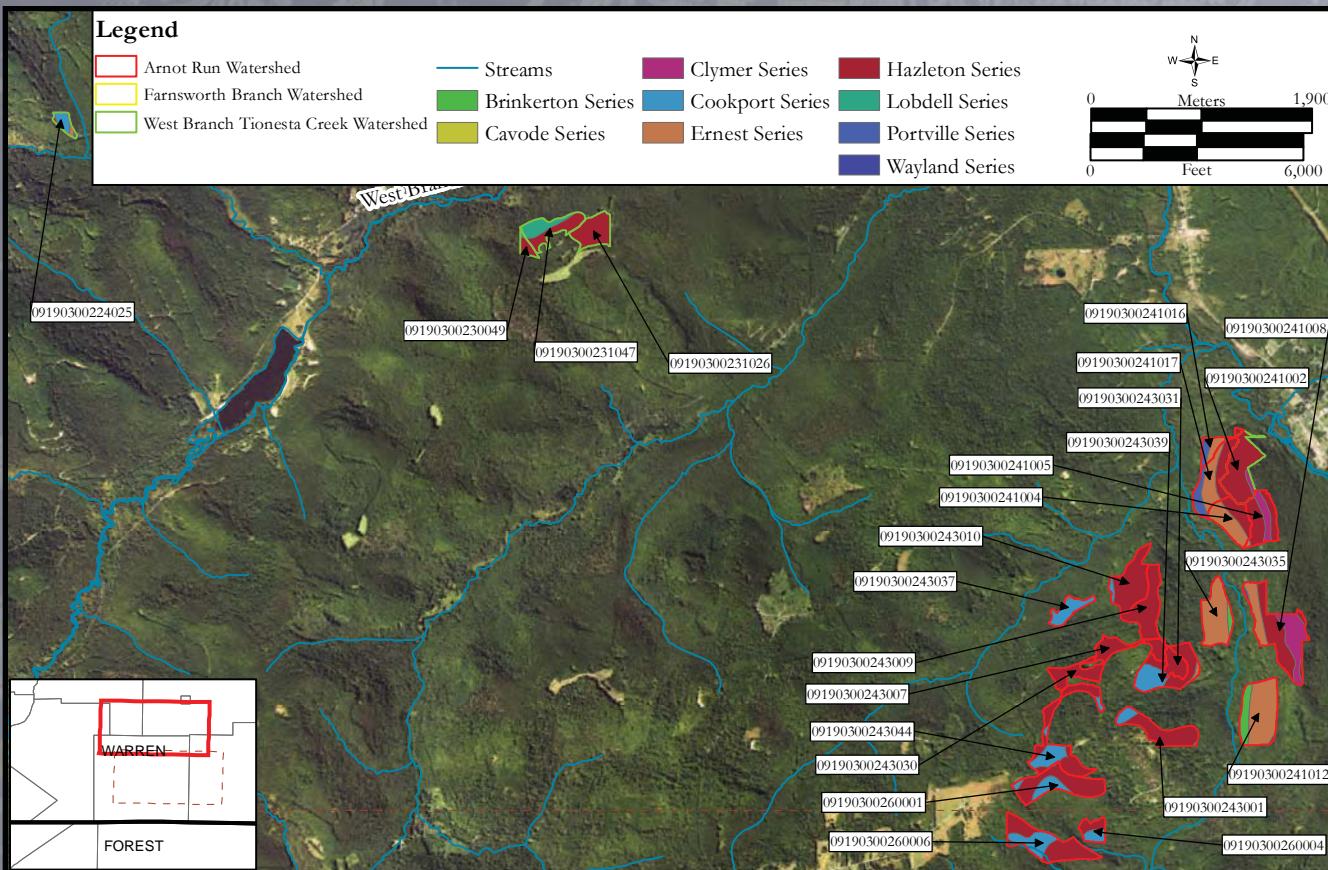
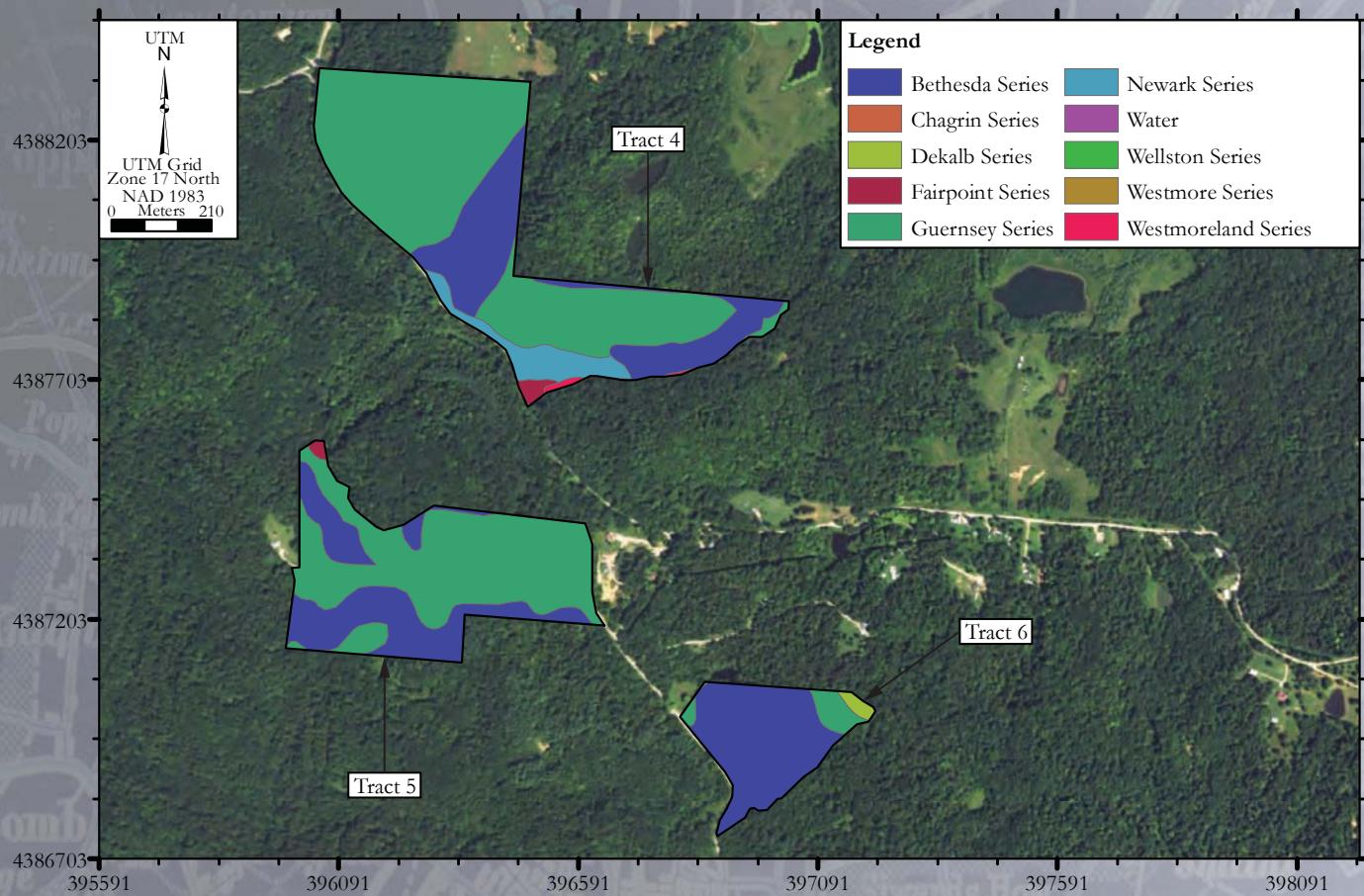


Model Builder



Data Joins

Joining publicly provided data, such as soil data from SSURGO, to local project data.



SQL/RDBMS

```
CREATE TABLE complete_crime_data.tract_thefts AS
(With st as (SELECT tracts.object_id, count(thefts.geom) AS theft_count
FROM complete_crime_data.theft_from_vehicle as thefts
LEFT JOIN complete_crime_data.census_age_2010 as tracts
ON st_within(thefts.geom,tracts.wkt)
GROUP BY tracts.object_id)
Select bt.* ,theft_count
FROM complete_crime_data.census_age_2010 as bt
RIGHT Join st
on bt.object_id= st.object_id);
```

```
/*Theft From Vehicle*/
create table complete_crime_data.theft_from_vehicle
(wkt geometry(point, 0),district text, psa varchar(1),
dispatch_date date, dispatch_time text, hour numeric,
location_block text, ucr_Code text,
general_crime_category text, police_districts text);

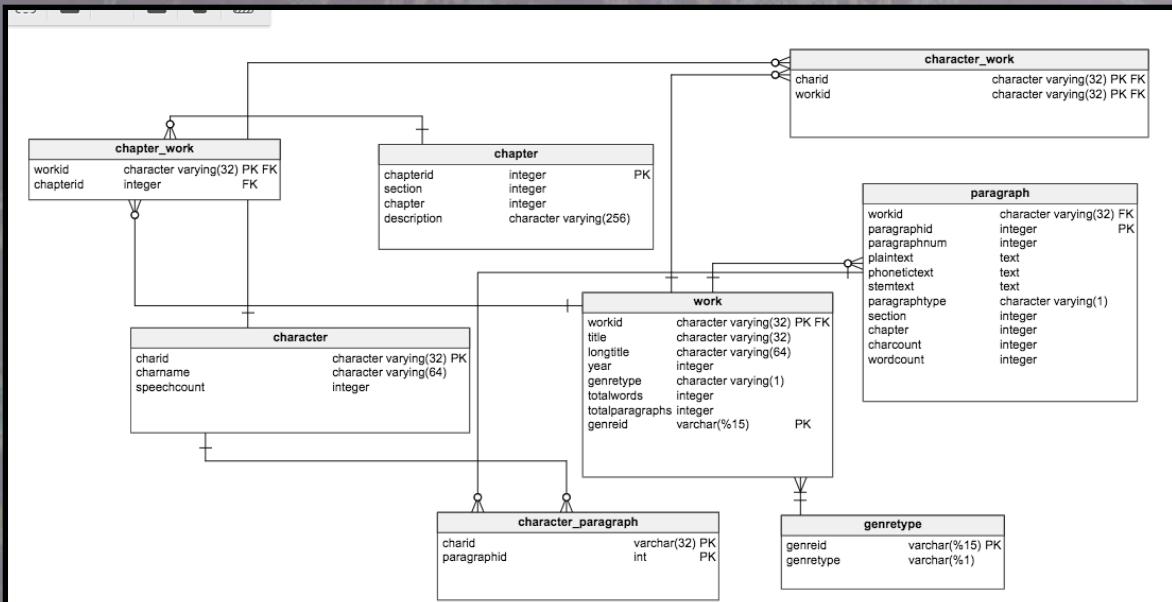
COPY complete_crime_data.theft_from_vehicle
(wkt, district, psa,
dispatch_date, dispatch_time, hour,
location_block, ucr_Code,
general_crime_category, police_districts)
FROM 'C:\Users\davestrohmeier\Desktop\Spatial Database Design\CSV\theft_from_vehicle.csv'
WITH CSV HEADER;

UPDATE complete_crime_data.theft_from_vehicle
SET wkt = ST_SetSRID(ST_GeomFromWKB(wkt),2272);

CREATE INDEX theft_from_vehicle_geom_idx
ON complete_crime_data.theft_from_vehicle
USING GIST (wkt);

ALTER TABLE complete_crime_data.theft_from_vehicle
ADD COLUMN pk BIGSERIAL PRIMARY KEY;

ALTER TABLE complete_crime_data.theft_from_vehicle
RENAME COLUMN wkt TO geom;
```



Network Analysis

