

Bicycle-Involved Traffic Accidents in Greenville County, South Carolina

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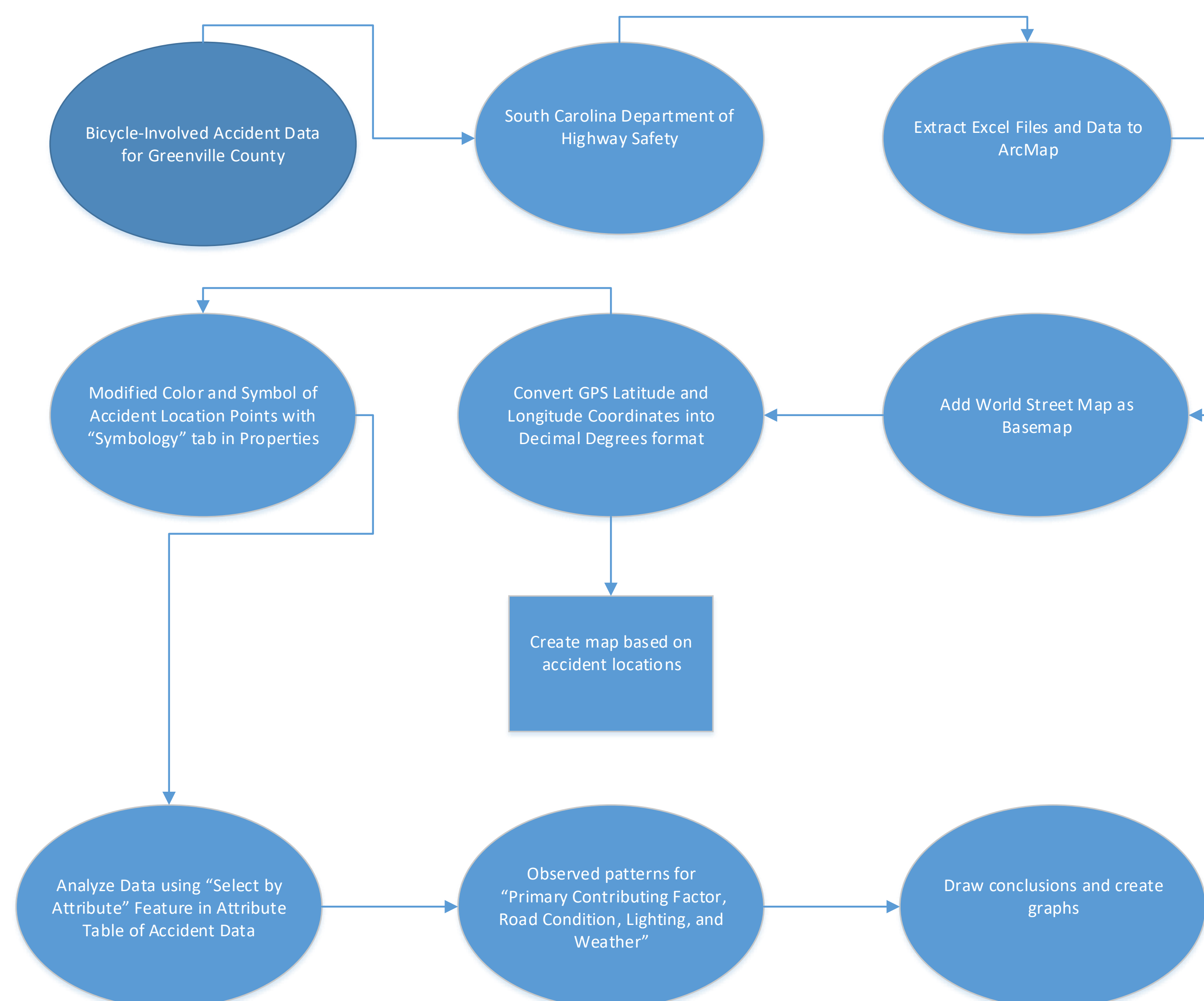
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Abstract

This GIS project is a representation and analysis concerned with Bicycle Safety in Greenville County, South Carolina. The purpose of this project was to look at bicycle-involved accidents in Greenville in order to look at the broader trends, analyze patterns, and draw conclusions. I set out with the goal of finding locations where multiple bicycle-involved collisions had happened since 2011. I mapped out the GPS coordinates of bicycle-involved traffic accidents with data provided by the South Carolina Department of Public Safety. To be more specific, the Office of Highway Safety and Justice Programs gave me most of the information I needed to complete my project and was very helpful. Once I had all the information I needed, I began to analyze the data through a program "ArcMap". I created a map with the locations of accidents plotted so as to create a visual representation and get a better understanding of the data in total. With thorough analysis regarding the attribute tables of information, I began to make productive analysis and see patterns. The attribute table gave me information such as the condition of the road, time of day, and the primary contributing factors to the traffic collision so I could draw conclusions.

Greenville County Bicycle-Involved Accidents: Summary by Year						
Year	Fatal Collision	Injury Collision	PDO* Collision	Total Collisions	Persons Killed	Persons Injured
2001	0	36	3	39	0	36
2002	0	24	2	26	0	24
2003	2	34	1	37	2	36
2004	1	31	2	34	1	33
2005	2	28	0	30	2	28
2006	2	31	3	36	2	36
2007	3	43	4	50	3	44
2008	3	42	7	52	3	45
2009	0	26	2	28	0	27
2010	0	47	3	50	0	47
2011	0	28	8	36	0	30
2012	3	39	3	45	3	44
2013	1	30	2	33	1	30
2014	2	46	2	50	2	47
2015	0	38	3	41	0	39
2016	1	37	0	38	1	38
2001-2016	20	560	45	625	20	584
2011-2016	7	218	18	243	7	228

Methodology



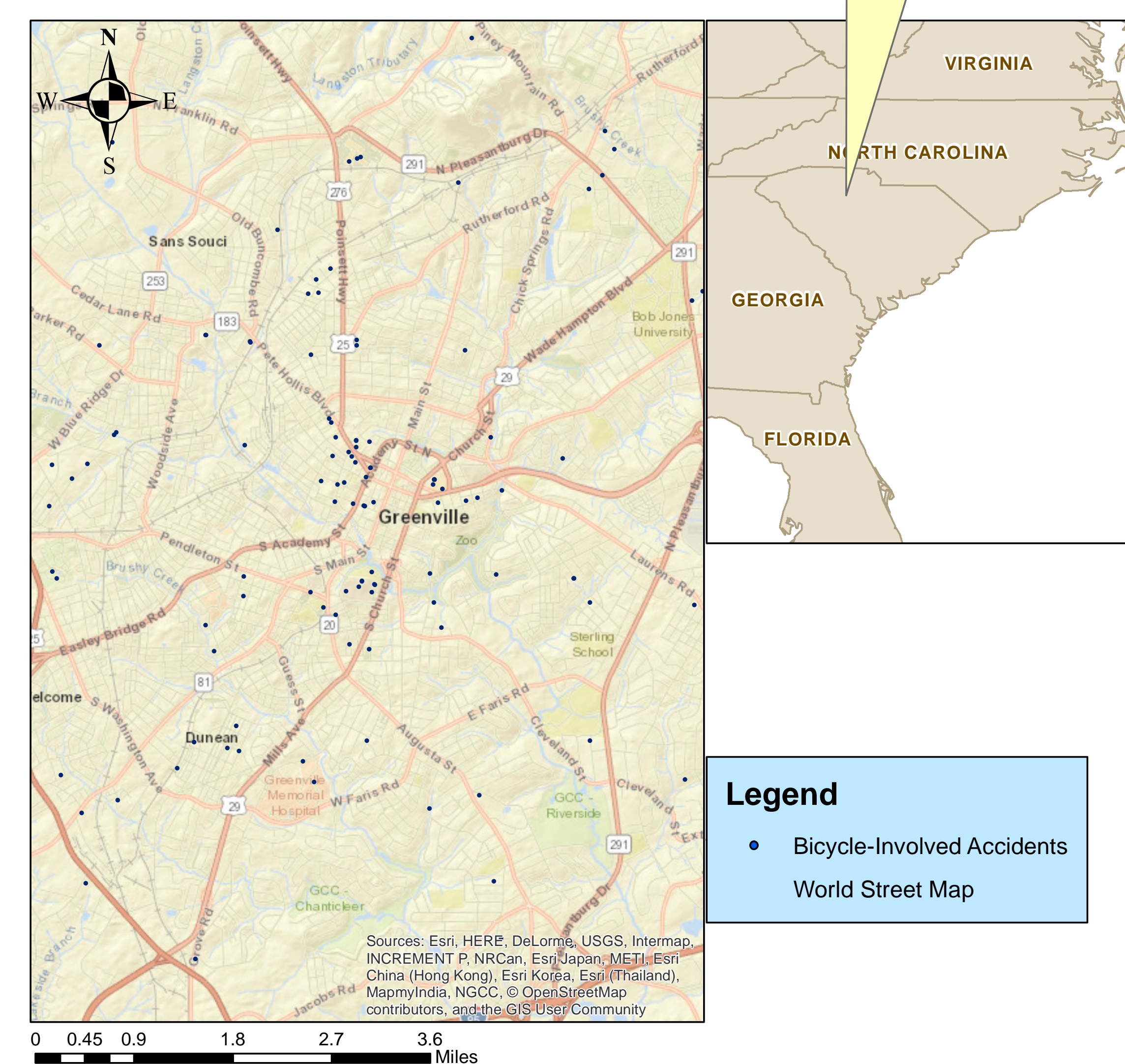
Summary by Road Surface Condition						
Road Surface Condition	Fatal Collision	Injury Collision	PDO* Collision	Total Collisions	Persons Killed	Persons Injured
Dry	19	520	41	580	19	544
Wet	0	39	4	43	0	39
Snow	0	0	0	0	0	0
Slush	0	1	0	1	0	1
Ice	0	0	0	0	0	0
Contaminant (Sand, Dirt, Oil, Etc.)	0	0	0	0	0	0
Water(Standing)	1	0	0	1	1	0
Other	0	0	0	0	0	0
Unknown	0	0	0	0	0	0

Summary by Weather Condition						
Weather Condition	Fatal Collision	Injury Collision	PDO* Collision	Total Collisions	Persons Killed	Persons Injured
Clear, No Adverse Conditions	18	480	36	534	18	503
Rain	1	26	4	31	1	26
Cloudy	1	51	5	57	1	52
Sleet Or Hail	0	0	0	0	0	0
Snow	0	1	0	1	0	1
Fog,Smog,Smoke	0	0	0	0	0	0
Blowing Sand, Soil, Dirt Or Snow	0	1	0	1	0	1
Severe Cross Winds, High Wind	0	0	0	0	0	0
Unknown	0	1	0	1	0	1

Summary by Time of Day						
Time of Day	Fatal Collision	Injury Collision	PDO* Collision	Total Collisions	Persons Killed	Persons Injured
12:01am - 3:00am	2	12	1	15	2	12
3:01am - 6:00am	4	3	1	8	4	3
6:01am - 9:00am	3	36	6	45	3	39
9:01am - Noon	1	64	3	68	1	65
12:01pm - 3:00pm	1	119	12	132	1	123
3:01pm - 6:00pm	2	162	9	173	2	168
6:01pm - 9:00pm	4	122	10	136	4	128
9:01pm - Midnight	3	42	3	48	3	46

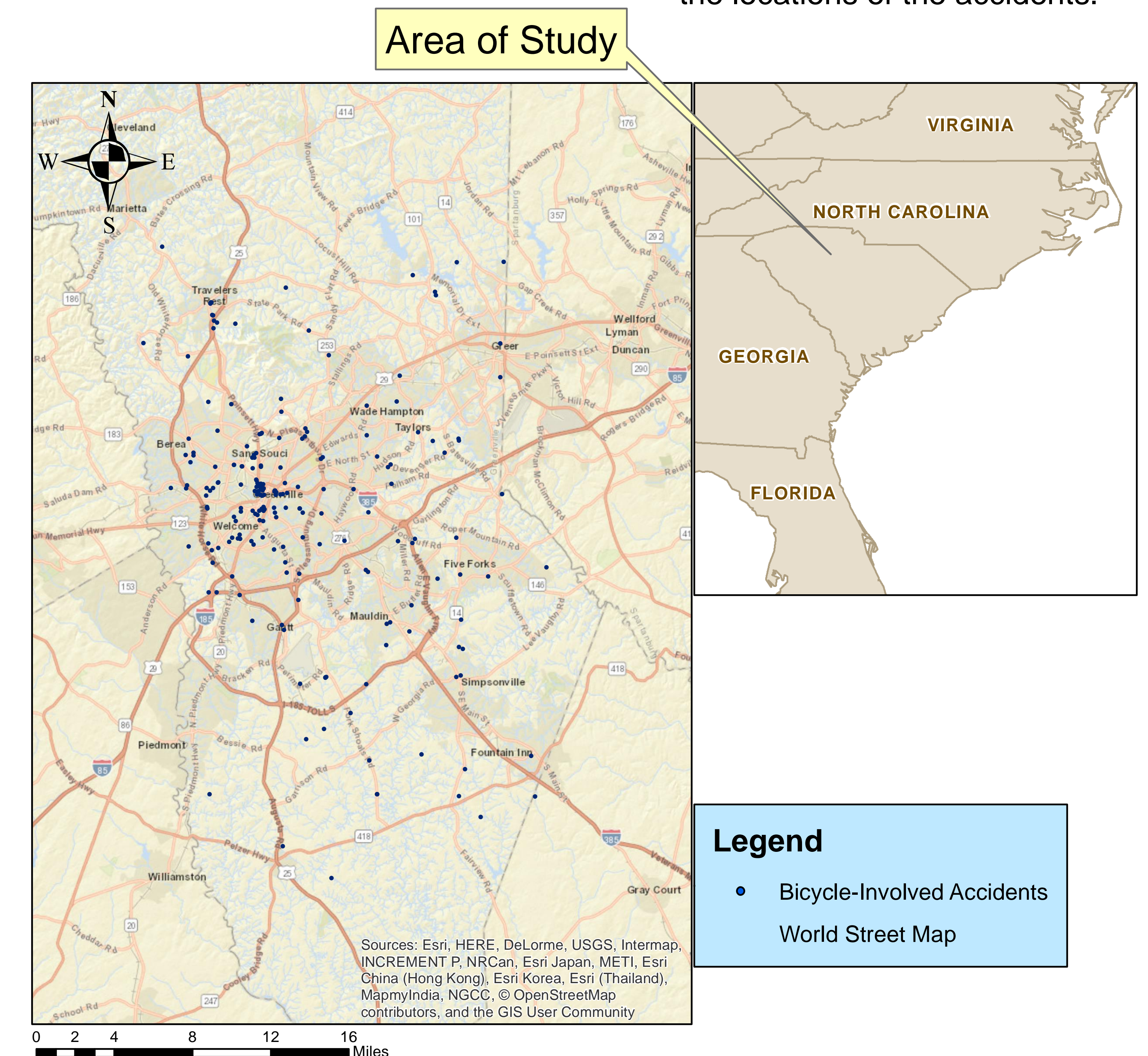
Downtown Greenville: Highest Concentration of Bicycle-Involved Accidents in Greenville County.

This map shows bicycle-involved accidents in Greenville County, SC. More specifically, this map focuses on the region with the highest concentration of accidents which is in Downtown Greenville.



Greenville County Bicycle-Involved Accidents: 2011-2016

This map is a visual display of bicycle-involved accidents in Greenville County, South Carolina. The blue dots on the map represent the locations of the accidents.



Conclusion

The majority of accidents from 2011-2016 which involved bicycles happened during the afternoon to late evening hours of the day, or from about 3:00PM to 9:00PM. In addition, I observed that most traffic collisions occurred when there were no adverse conditions in respect to weather. This surprised me at first because I expected to see a greater number of accidents in rainy or "bad" weather. However, I did some more research as well as logical thinking and realized that the weather in South Carolina mainly is clear and sunny so it is not absurd to assume that since the weather is relatively normal for most days, these accidents will happen in fine conditions. My conclusions for the weather were similar to those for road conditions; the majority of accidents occurred on days where the road condition was dry. But as I stated previously, since the roads are not encountering adverse conditions often therefore multiple accidents won't be observed in these types of conditions. One conclusion I did see was a high concentration of bicycle-involved traffic collisions in the Downtown area of Greenville. For the accidents that were within this downtown hot spot region, the primary contributing factors were either a non-motorist failing to yield the right of way or distracted, inattentive driving.

References and Data Sources

All data was provided by Kenneth L. Long Jr. of the South Carolina Department of Public Safety, Office of Highway Safety and Justice Programs