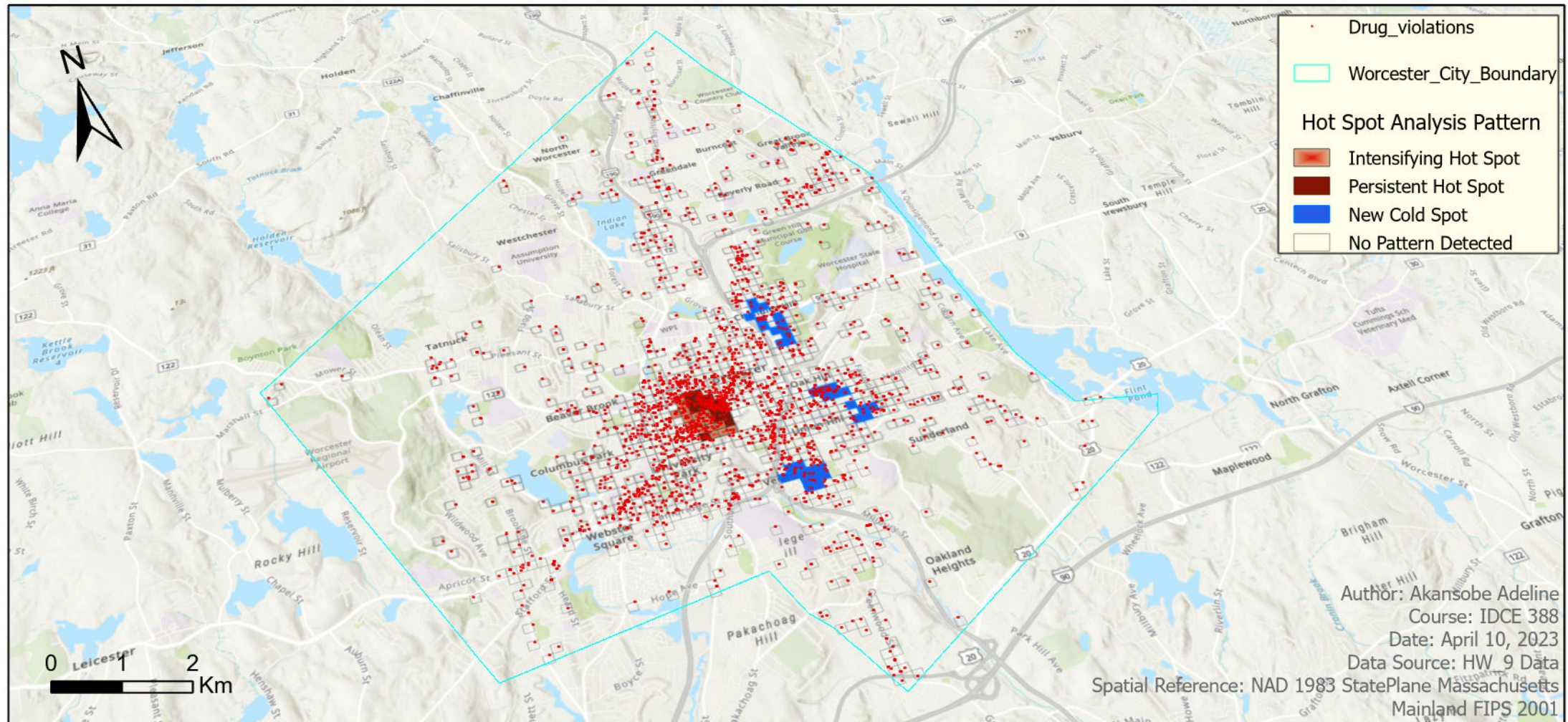


Emerging Hot spot Analysis of Drug violations, Worcester-MA , 2011-2019



The data represents geographic locations of 3,650 drug violations between time period; 2010 to 2019 in Worcester, Massachusetts. Majority of violations are centered around downtown of the Worcester, and disperses outwards of downtown. Peak violations (4 counts) were recorded on Wednesdays at 21:53.

A space time cube was created using a 6months Step interval and distance interval of 139m for each bin of the cube. The points were aggregated within each bin. There was a statistically significant increasing/decreasing trend in hot/cold emerging spots, with a maximum

of 36 violations recorded in central downtown from 3/19/2011 to 9/19/2011.

Additionally, an emerging hotspot analysis (EHS) was created using a conceptualization of spatial relationship as Contiguity edges corners and a Neighborhood Distance of 196.58m. The results from the analysis indicate 16 intensifying and 15 persistent hotspot locations around downtown, and 36 new cold spots in southeast, east and northeast of downtown.