

# METHODOLOGY

We used linear and spatial analytic techniques to provide a broad overview of the trends in domestic violence assaults between 2015 and 2021 in the City of St. Louis. While the data from 2015 to 2020 provided information on a variety of crimes related to domestic violence, 2021 data only contained domestic violence assaults; so, the earlier data were reduced to include only assaults (Table 1).

In addition to examining trends in the data, we used GIS to analyze the spatial distribution of these crimes. To help visualize the instances of intimate partner violence, the team took the aggregated data provided by the City of St. Louis and split it into individual, annual data sets. The annual data sets were layered onto a map in ESRI ArcGIS. The layers consist of annual pin maps that show the exact location of a call for service related to intimate partner violence.

Following this, each of the respective pin maps were converted into a heat or hotspot map using the function in ESRI ArcGIS. It should be noted that heat mapping is extremely sensitive to low-base rates, so a difference of a few number of assaults between two areas could result in a hot or cold spot being detected.

We analyzed a total of 4,884 domestic violence assaults over the seven-year period. In 2017, 4th degree assaults were added to the legislation, so this affected the trends in 3rd and 4th degree assaults presented. Only 2021 data contained information on victim offender relationships, so we could only report on relationship trends for that year.

Table 1: Data reduction to only include domestic violence assaults

<b>Year</b>	<b>Original Number of Incident</b>	<b>Assaults-Only Number of Incidents</b>
2015	1337	676
2016	1457	741
2017	1458	708
2018	1400	656
2019	1275	638
2020	1226	585
2021	880	880
<b>Total</b>	<b>9,033</b>	<b>4,884</b>