An Analysis of MNPD's Full License Plate Reader Pilot Program

Prepared by the Metro Nashville Community Oversight Board

Introduction:

The Metro Nashville Police Department (MNPD) concluded its 6 month License Plate Reader (LPR) pilot program in Nashville on July 22nd, 2023. Metro Nashville Community Oversight (MNCO) has created this report to analyze the data from the full, 6 month duration of the LPR pilot program. This report is the second and final half of the "LPR Heatmap Update" report released in June, which explored the first 3-months of MNPD's LPR pilot program. The previous report can be found at the "Policy Advisory Reports" section of MNCO's website at nashville.gov/cob. The full LPR pilot data comes from MNPD's publicly posted LPR data page on MNPD's data dashboard and was downloaded on July 26th. A full table of the LPR pilot program data can be found on page 21.

Using the full LPR pilot data, MNCO has made a series of heatmaps that depict the concentration of LPR activity across Nashville over five categories: verified hits, vehicle stops, driver or vehicle searches, arrests, and vehicle recoveries. Each LPR category includes a heatmap over a base map of Nashville alongside a table, to showcase the data and make identifying each individual LPR easier (pages 9, 11, 13, 15, 17). Additionally, each category includes heatmaps over a set of racial and income base maps that depict the percentages of residents of Nashville who are non-white and who are under the poverty threshold according to 2020 US census tracts (pages 10, 12, 14, 16, 18). Furthermore, an additional set of heatmaps visualizes and compares LPR-initiated vehicle stops against MNPD's general vehicle stops, as a form of base rate analysis. Those maps are then displayed over a base map of Nashville, and base maps that display the income and racial breakdown of Nashvillians to display how both of those categories relate to the demographic makeup of Nashville (pages 19, 20).

Photo 1: A LPR camera and its signage in use in Nashville, captured by MNCO staff.

LPR Terms:

LPRs: License Plate Readers, or LPRs, are automatic cameras that take pictures of a vehicle, identify a license plate in that image, turn the license plate image into letters and numbers using computer software, and then run the license plate through a law enforcement database. If it matches a plate in the database, this is considered a 'hit'.

The NCIC: The National Crime Information Center, or NCIC, is a nation-wide law enforcement database that compiles information from several different criminal justice circuits, including information shared between local, state, federal, and tribal law enforcement agencies regarding criminal histories, missing persons, stolen property, the sex offender registry, etc.

LPR Program Administrator: A command level sworn officer position in MNPD who manages the LPR program, including the technology, data, training, and the officers who are authorized to work with LPR data.

Heatmap: A two-dimensional way to visualize the frequency of data over a chosen geographic area. In this case, we display the effects of the LPRs across Nashville.

Base Rate Analysis: An analysis that factors in the base rate of broad data when looking at the specific rates of investigatory data.

MNPD General Vehicle Stop: MNPD officers pulling individuals over for traffic violations, vehicle violations, investigations, regulations, inspections, safety, etc.

LPR Categories:

Total Hits: License plates that an LPR has scanned that had a match in the NCIC.

Verified Hits: Hits that two MNPD officers and the LPR Program Administrator have verified as a valid hit in the NCIC, and has been sent to dispatch for enforcement action. Verified hits are a subset of total hits. A verified hit can lead to one or more of the following four LPR enforcement categories.

Vehicle Stops: MNPD officers pulling over a vehicle from a verified hit.

Driver or Vehicle Searches: MNPD offices conducting a search inside the vehicle and/or of the driver(s) from a verified hit.

Arrests: MNPD officers arresting an individual or individuals from a verified hit.

Vehicle Recoveries: Vehicles that MNPD officers recover from a verified hit.

Full LPR Pilot Program Data Overview:

There were 1,316 verified hits across the four quadrants during the full 6 months of the pilot program. From those verified hits, there have been: 79 vehicle stops (6.00% of verified hits), 70 driver or vehicle searches (5.32% of verified hits), 63 arrests (5.55% of verified hits), and 80 vehicle recoveries (6.08% of verified hits). Of the 79 LPR-initiated vehicle stops, 63 (or 79.75%) led to an arrest.

Table One: LPR Category Values

LPR Category	Total	Rate of Verified Hits
Verified Hits	1316	-
Vehicle Stops	79	6.00%
Driver or Vehicle Searches	70	4.79%
Arrests	63	5.55%
Vehicle Recoveries	80	6.08%

Quadrant A, which covers parts of North Nashville, East Nashville, and Madison, accounts for the majority of the LPR verified hits with 42.78%. The percentage of verified hits in Quadrant B, which covers South Nashville, Antioch, Donelson, Hermitage, and Old Hickory, remained constant between this report and the prior report, as it accounts for 34.12% of the verified hits. While Quadrants A and B had a reduced share of the verified hits, Quadrant C, which covers Downtown, Wedgewood Houston and part of South Nashville has increased to 17.10%. Additionally, Quadrant D, which covers West Nashville, Midtown, Charlotte Pike, and part of North Nashville, has increased to 6.00%. These trends followed the same general patterns that were revealed in the MNCO report at the half-way point of the LPR pilot program.

Table Two: Verified Hits By Quadrant

Quadrant	Verified Hits	Portion of Verified Hits
Full	1316	-
A	563	42.78%
B	449	34.12%
C	225	17.10%
D	79	6.00%

Full LPR Pilot Program Data Overview (cont.):

The highest density area of LPR verified hits activity is between the LPRs at West Trinity Lane & Brick Church Pike (5), Dickerson Pike & Trinity Lane (1) and Gallatin Pike & East Trinity Lane (4), all in Quadrant A, which covers parts of North Nashville, East Nashville, and Madison. The next highest areas are between LPR 2 and 3 in Quadrant A, between the at LPR Bell Road & the I-24 Westbound entrance ramp (7) and Murfreesboro Pike & Bell Road (10) in Quadrant B, and around LPR Old Hickory Boulevard & Nolensville Pike (17) in Quadrant C. Between reports, the verified hit count of those three LPRs increased by 133.33%, 98.53%, and 692.31%, respectively. LPR 7 and 10 account for 53.45% of all of Quadrant B's verified hits, with an average of 120 verified hits across both LPRs compared to the average of 51 verified hits across the other four LPRs in the quadrant. LPR 17 accounts for 45.78% of all verified hits within Quadrant C, with 103 verified hits compared to an average of 24 verified hits across the other five LPR sites in Quadrant C.

Despite having low density, it is still worth noting that the LPRs The LPRs at 1st Avenue S & Korean Veterans Boulevard (19) and Clarksville Pike & Rosa Parks Boulevard/Ed Temple Boulevard (23) have increased from 2 to 22 verified hits (up 1,000%) and 5 to 20 verified hits (up 300%) respectively. Furthermore, after the inclusion of the full pilot data, every LPR had at least 1 verified hit. Heat maps of verified hits can be found on page 9. Other LPR categories, vehicle stops, driver or vehicle searches, arrests, and vehicle recoveries follow similar spatial trends and can be found on pages 11, 13, 15, and 17 respectively.

Noteworthy Trends:

While Quadrant A's share of verified hits has decreased slightly since the last report, Quadrant A still accounts for a disproportionate portion of all four categories of LPR enforcement activity. Quadrant A accounts for 58 of the 79 vehicle stops (73.42%), 53 out of 70 driver or vehicle searches (75.71%), 48 out of 63 arrests (76.19%), and 55 out of 80 vehicle recoveries (68.75%). These values remain consistent with Quadrant A's over-representation in LPR enforcement activity from the prior report.

Table Three: LPR Enforcement Data

Quadrant	Vehicle Stops	% of Vehicle Stops	Driver/ Vehicle Searches	% of Driver/ Vehicle Searches	Arrests	% of Arrests	Vehicle Recoveries	% of Vehicle Recoveries
Total	79	-	70	-	63	-	80	-
A	58	73.42%	53	75.71%	48	76.19%	55	68.75%
B	8	10.13%	6	8.57%	5	7.94%	12	15.00%
C	3	3.80%	3	4.29%	3	4.76%	5	6.25%
D	10	12.66%	8	11.43%	7	11.11%	8	10.00%

Noteworthy Trends (cont.):

When examining LPR activity across the five categories (verified hits, vehicle stops, driver or vehicle searches, arrests, and vehicle recoveries) over base maps that measure the racial and income distributions of residents across the city, the most concentrated areas of LPR activity still line up with the areas that have the highest concentration of non-white and low-income Nashvillians (pages 10, 12, 14, 16, 18). In line with prior reports from the COB, the LPR locations are almost exclusively in areas that have the highest concentration of non-white and low-income Nashvillians (page 8). The fixed LPRs have been installed in permanent locations for the entire duration of the LPR pilot program. Within Quadrant A, the LPR at Gallatin Pike & East Trinity Lane (4) has the highest values in all categories aside from verified hits, with 14 vehicle stops, 12 driver or vehicle searches, 11 arrests, and 13 vehicle recoveries despite it only having 79 verified hits. While the LPRs at Dickerson Pike & Trinity Lane (1) and Gallatin Pike & Old Hickory Boulevard/State Route 45 (3) still lead the count in verified hits, they do not stand out compared to the values of other Quadrant A sites across the other categories.

Additionally, MNCO received comprehensive private LPR data from MNPD for a 10-day period between May 7 and May 17, 2023. During that 10-day stretch, 3,556,339 license plate scans were performed across all the LPRs. From those license plate scans, there were 1,458 total hits, for a hit rate of 0.041%. From those total hits, there were 119 verified hits, for a verified hit rate of 0.0033%. Finally, from those verified hits, there were 9 recovery/apprehensions, for a recovery/apprehension rate of 0.00025%. MNPD could calculate these values for the entirety of the LPR program, but Department has not released the full data to either the public or MCNO.

Table Four: 10-Day Stretch Data

Category	10-Day Value	Rate of License Plate Scans
License Plate Scans	3,556,339	-
Total Hits	1,458	0.041%
Verified Hits	119	0.0033%
Recoveries/Apprehensions	9	0.00025%

Base Rate Analysis:

To put MNPD's LPR enforcement data in context with the rest of their enforcement activity, a base rate analysis is useful to evaluate how MNPD uses LPRs in comparison to existing forms of policing by MNPD. Since LPRs naturally deal with vehicle-related enforcement, MNCO has created a map displaying the LPR vehicle stops against MNPD's general vehicle stops data from the duration of the LPR pilot program.

Base Rate Analysis (cont.):

Based on these maps, MNPD's general vehicle stops and the LPR-initiated vehicle stops continue to follow very different patterns (page 19). MNPD's general vehicle stops demonstrate a consistent distribution across Nashville, with the highest concentration in the city center and extending out along major roadways. Importantly, MNPD general vehicle stops are prevalent even in areas that are predominately higher income and less racially diverse (page 20). However, there is limited LPR vehicle stop activity in areas where there are many general MNPD vehicle stops, particularly in the center of the city and along the major roadways that extend out of the central hub. West Nashville demonstrates this disparity the most. While there are far fewer LPR-initiated vehicle stops than general MNPD vehicle stops, the trend remains throughout the 6 month duration of the pilot program.

To place these trends in context, the 2016 "Driving While Black" report found that MNPD conducted 7.7 times more traffic stops than the national average, and stopped Black drivers at a rate 11.7% higher than the percentage of Black residents in the city. Following that report, MNPD significantly changed its approach by attempting to reduce both the overall number of vehicle stops and the rate at which non-white residents are stopped. This trend is commendable and evident in MNPD's data from the past five years. According to the 2020 Census, 54.04% of Nashville residents are white and 45.96% of Nashville residents are non-white. Based on all MNPD general vehicles stops for the past since 2018, MNPD stops white individuals at a rate of 59.74%, and non-white individuals at a rate of 40.26%. Thus, MNPD has managed to bring the rate at which they stop non-white residents down 5.70% below the non-white makeup of Nashville.

LPR-initiated stops appear to paint a different picture. MNCO was provided with data from MNPD on May 30 that spanned the 10-day period between May 7 and May 17 and included arrest data from the beginning of the pilot program until May 17. From this arrest data, MNCO was able to obtain arrest records for 35 individuals who were arrested as the result of LPR activity up until May 17. From those arrests, 48.57% were Black (the entirety of the non-white arrestees). Additionally, 3 of the 35 arrested were listed as "homeless" or provided an address of a local shelter.

Additionally, of those 35 individuals arrested, 21 had force used against them. Types of force used included 16 firearm displays, 5 uses of soft empty hand control, and 1 unspecified. In one incident, both firearm display and soft empty hand control were used, and in two instances, multiple officers used force against the arrestee. Of those on whom force was used, 61.90% were Black, a slight overrepresentation of MNPD's overall arrest data and the overall LPR arrestee data. Future inquiry is necessary to provide more context into the nature of these interactions.

Conclusion:

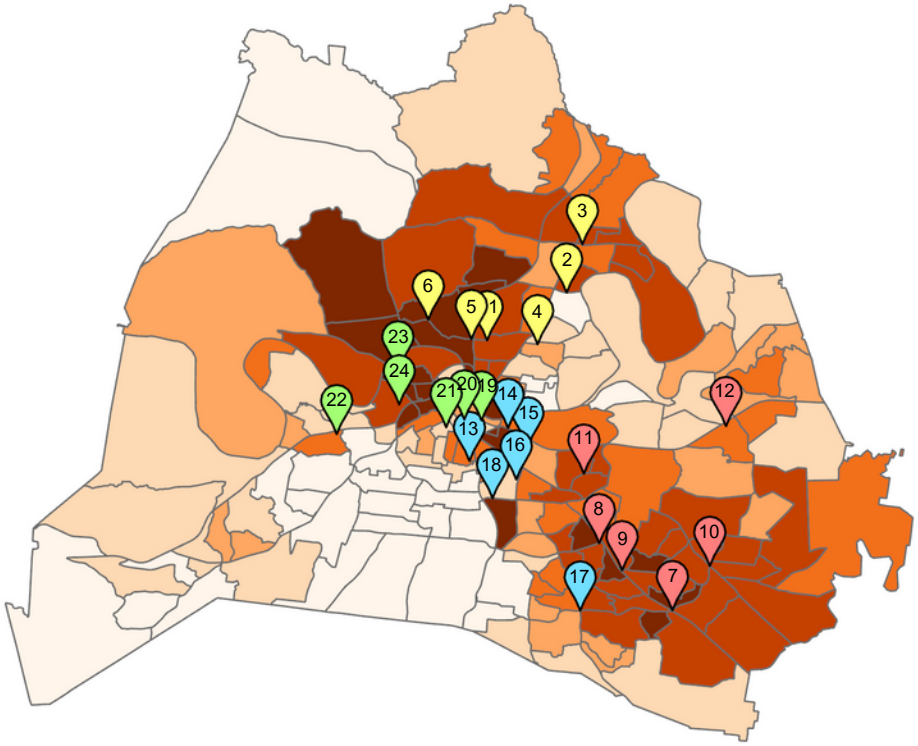
Despite the wealth of data generated by the 6-month LPR pilot program, significant questions remain around inequitable outcomes and the costs of the program.

First, some troubling trends have emerged from analyzing this data. MNPD has stated that the LPRs would be 'equitably distributed,' however both the locations of the LPRs and the areas with the highest concentration of LPR enforcement activity are overwhelmingly in low-income and non-white areas. Quadrant A, which covers parts of North Nashville, East Nashville, and Madison, is still disproportionately over-represented in verified hits, and especially in the four categories of LPR enforcement. Given these concerns, MNPD should provide detailed information about the intended placement of all LPR cameras prior to council's approval of this resolution.

The vote to establish a permanent LPR program is going before Metro Council on August 1st, only 9 days after the program has commenced. There has not been enough time for the community to process the data from the pilot program or to gather community feedback from the LPR pilot. Data that could be examined further includes the reasons that individuals were placed on the LPR hit list, the types of crimes that arrestees were booked on, whether those being apprehended through the LPR program are residents of Nashville, how LPR roll-out has affected houseless residents, rates of false hits, among many other topics. Additionally, narrative from individuals who have been affected by LPR roll-out would provide important context about the program.

Finally, MNPD has not disclosed how much a full LPR program would cost the taxpayers of Nashville, due to procurement ambiguity. While the LPR pilot program was at no cost to the city, a full implemented LPR program would not be free. A cost-effectiveness audit would be imperative to conduct and provide to Metro Council before approving widespread roll out of a costly surveillance technology, especially given the low verified hit rate of 0.041% and recovery/apprehension rate of 0.00025%. Such a cost-benefit analysis appears to be required prior to adoption by Metro Ordinance 13.08.080(D), which governs "deployment of surveillance or electronic data gathering devices onto public rights-of-way." For the sake of transparency and accountability, MNPD should allow MNCO to conduct audits, analysis, and reviews of LPRs in the event that a full LPR program is implemented in Nashville.

Nashville LPR Locations by Race and Poverty



Non-White Percentage

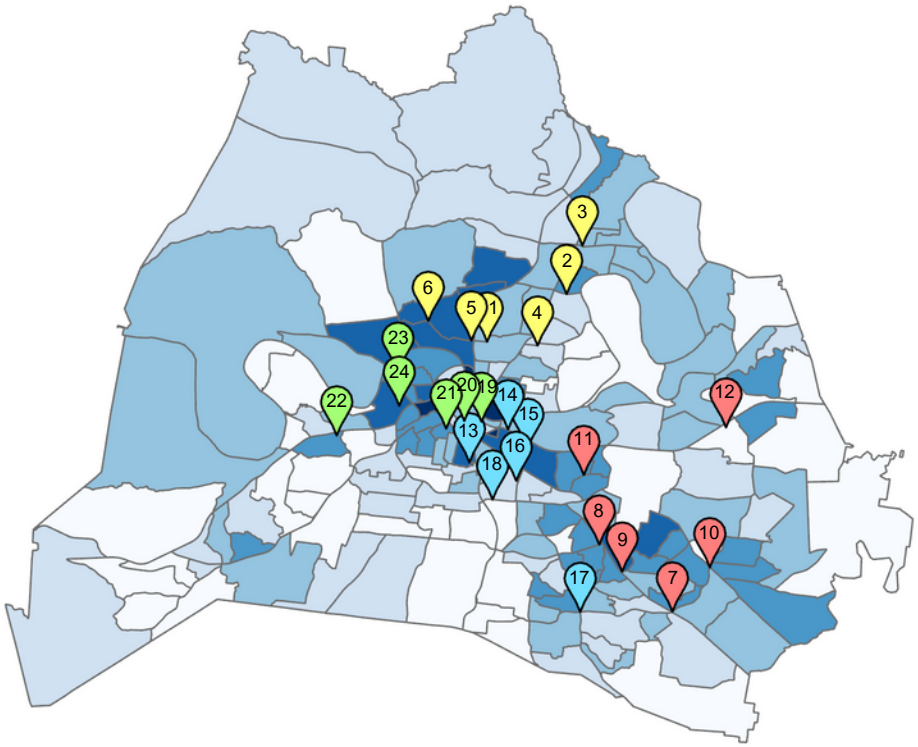
Non-White Percentage of Population

- 6.55% - 19.84%
- 19.85% - 32.53%
- 32.54% - 46.01%
- 46.02% - 59.08%
- 59.09% - 75.92%
- 75.93% - 100%

LPRs

Quadrant

- A
- B
- C
- D

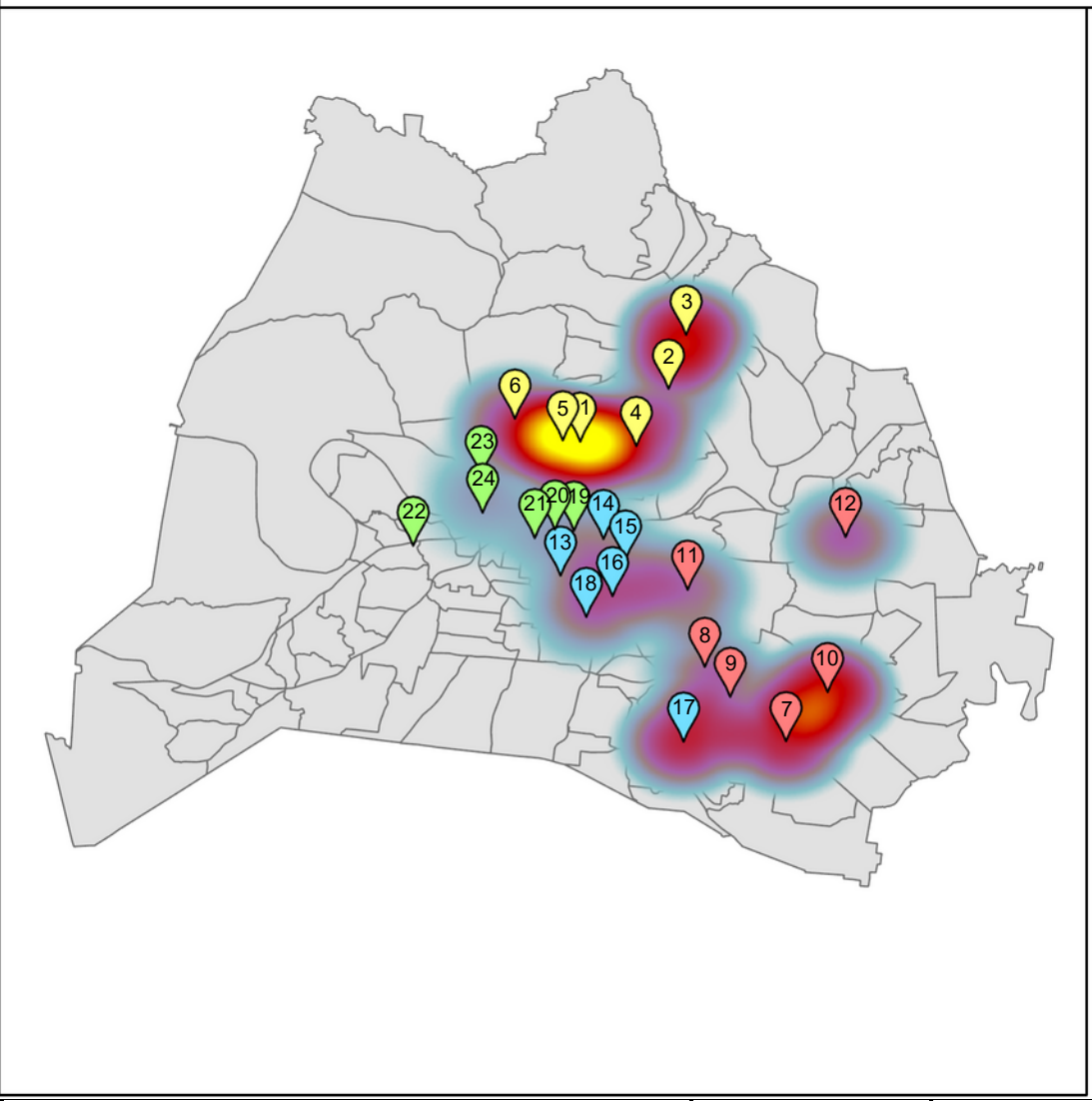


Poverty Percentage

Poverty Percentage of Population

- 0% - 5.73%
- 5.74% - 10.82%
- 10.83% - 18.04%
- 18.05% - 29.05%
- 29.06% - 44.79%
- 44.8% - 82.62%

License Plate Reader 'Verified Hits'



Legend

Quadrant

- A
- B
- C
- D

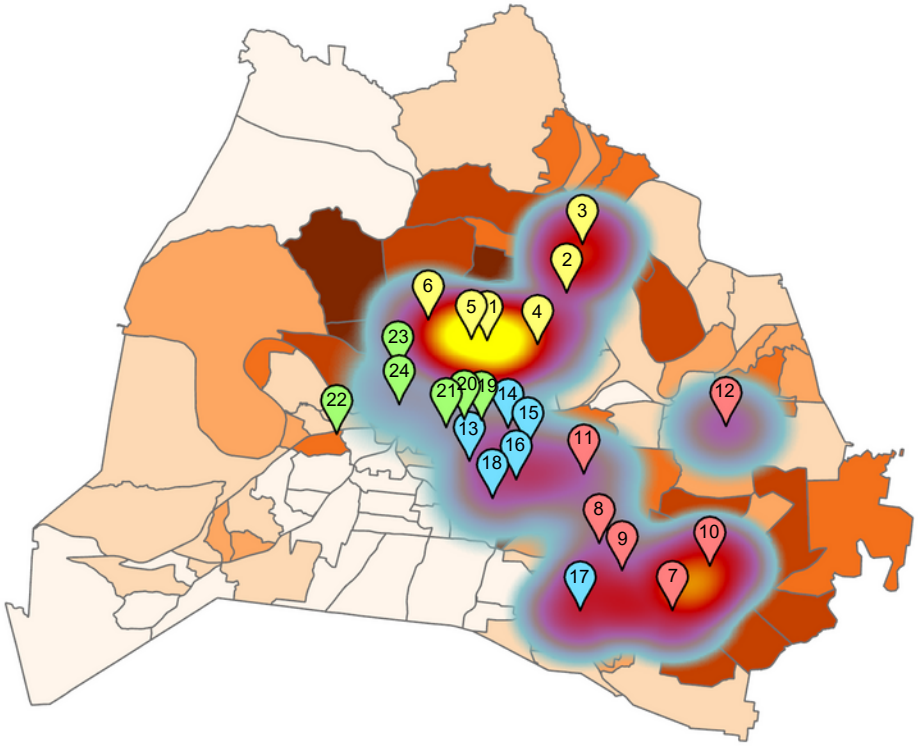
LPR Hits Heatmap

Verified Hits

- Sparse
- Dense

LPR	Identifier	Quadrant	Time Point	Verified Hits
Dickerson Pk & Trinity Ln	1	A	6 Months	137
Gallatin Pk & Briley Pkwy East	2	A	6 Months	50
Gallatin Pk & Old Hickory Bv / St Rt 45	3	A	6 Months	124
Gallatin Pk & E Trinity Ln	4	A	6 Months	83
W Trinity Ln & Brick Church Pk	5	A	6 Months	80
Whites Creek Pk & Moormans Arm Rd	6	A	6 Months	75
Bell Rd & I-24 Westbound Entrance ramp	7	B	6 Months	105
Harding Pl & I-24 Eastbound Entrance ramp	8	B	6 Months	43
Haywood Ln & I-24 Westbound Entrance ramp	9	B	6 Months	34
Murfreesboro Pk & Bell Rd	10	B	6 Months	135
Murfreesboro Pk & Thompson Ln	11	B	6 Months	60
Stewarts Ferry & I40 Eastbound Entrance ramp	12	B	6 Months	67
8th Ave S & Wedgewood Av	13	C	6 Months	14
Hermitage Ave & Fairfield Av	14	C	6 Months	7
Murfreesboro Pk & Fesslers Ln	15	C	6 Months	27
Nolensville Pk & I440 Westbound	16	C	6 Months	33
Old Hickory Bv & Nolensville Pk	17	C	6 Months	103
Thompson Ln & 100 Oaks	18	C	6 Months	39
1st Av S & Korean Veterans Bv	19	D	6 Months	22
Broadway & Rosa Parks Bv / 8th Av S	20	D	6 Months	5
Broadway & West End Av & 16th Av	21	D	6 Months	5
Charlotte Pk & Whitebridge Pk	22	D	6 Months	1
Clarksville Pk & Rosa Parks Bv / Ed Temple Bv	23	D	6 Months	20
Jefferson St / John Merritt Bv & Ed Temple Bv / 28th Av N	24	D	6 Months	22

License Plate Reader 'Verified Hits' by Race and Poverty



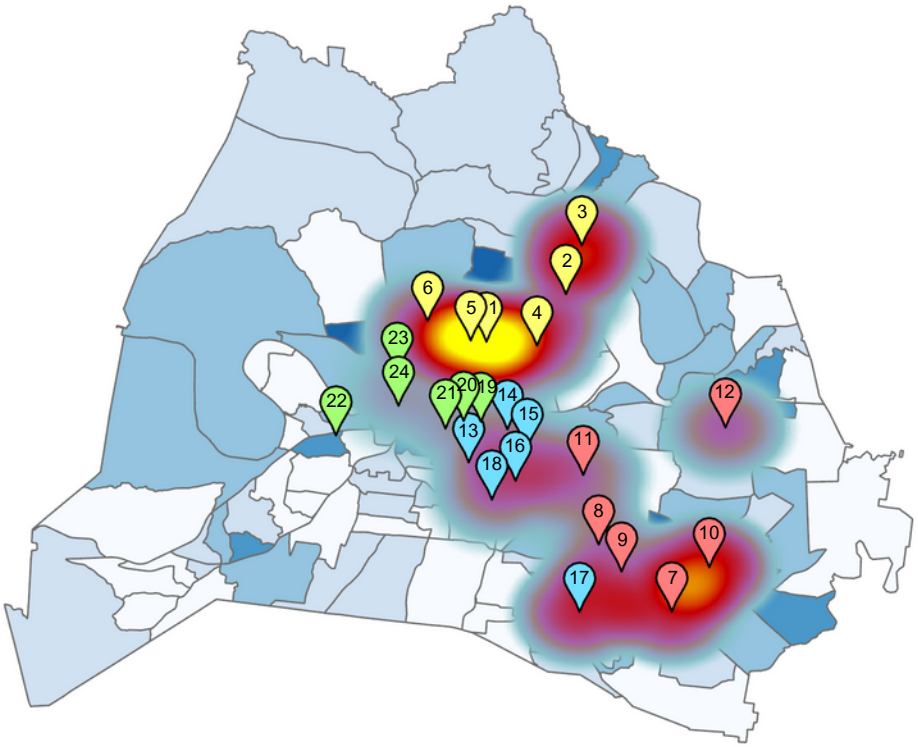
Non-White Percentage

Non-White Percentage of Population

- 6.55% - 19.84%
- 19.85% - 32.53%
- 32.54% - 46.01%
- 46.02% - 59.08%
- 59.09% - 75.92%
- 75.93% - 100%

Quadrant

- A
- B
- C
- D



Poverty Percentage

Poverty Percentage of Population

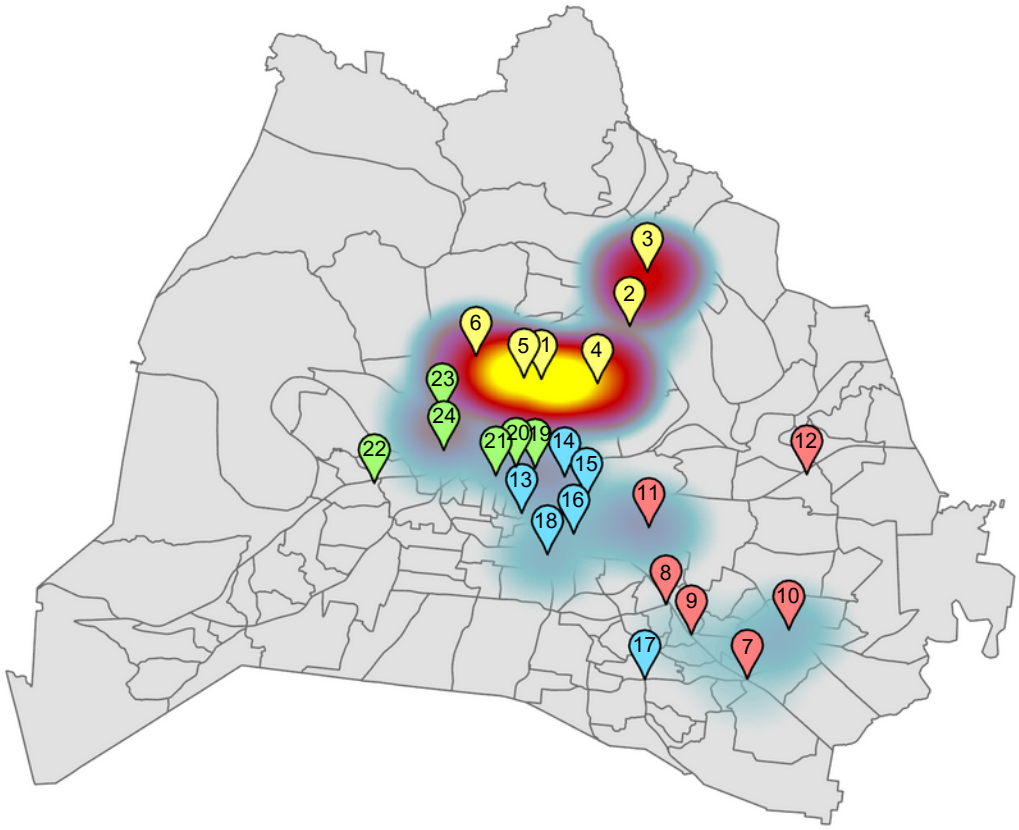
- 0% - 5.73%
- 5.74% - 10.82%
- 10.83% - 18.04%
- 18.05% - 29.05%
- 29.06% - 44.79%
- 44.8% - 82.62%

LPR Hits Heatmap

Verified Hits

- Sparse
- Dense

License Plate Reader 'Vehicle Stops'



Legend

Quadrant

- A
- B
- C
- D

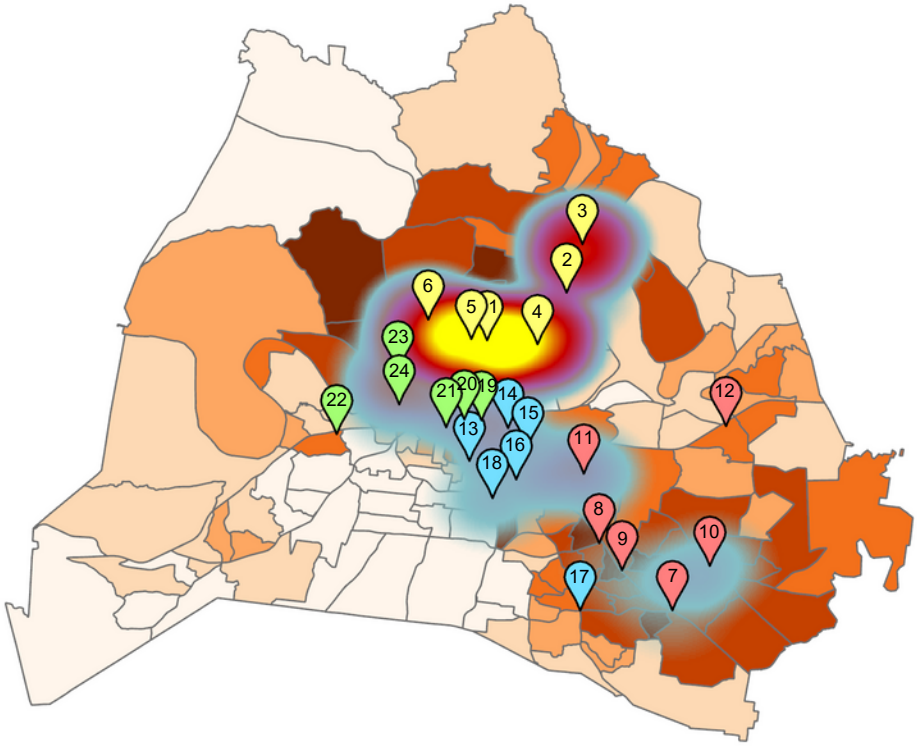
LPR Stops Heatmap

Vehicle Stops

- Sparse
- Dense

LPR	Identifier	Quadrant	Time Point	Vehicle Stops
Dickerson Pk & Trinity Ln	1	A	6 Months	8
Gallatin Pk & Briley Pkwy East	2	A	6 Months	3
Gallatin Pk & Old Hickory Bv / St Rt 45	3	A	6 Months	11
Gallatin Pk & E Trinity Ln	4	A	6 Months	14
W Trinity Ln & Brick Church Pk	5	A	6 Months	11
Whites Creek Pk & Moormans Arm Rd	6	A	6 Months	8
Bell Rd & I-24 Westbound Entrance ramp	7	B	6 Months	1
Harding Pl & I-24 Eastbound Entrance ramp	8	B	6 Months	0
Haywood Ln & I-24 Westbound Entrance ramp	9	B	6 Months	1
Murfreesboro Pk & Bell Rd	10	B	6 Months	2
Murfreesboro Pk & Thompson Ln	11	B	6 Months	3
Stewarts Ferry & I40 Eastbound Entrance ramp	12	B	6 Months	0
8th Ave S & Wedgewood Av	13	C	6 Months	0
Hermitage Ave & Fairfield Av	14	C	6 Months	0
Murfreesboro Pk & Fesslers Ln	15	C	6 Months	1
Nolensville Pk & I440 Westbound	16	C	6 Months	0
Old Hickory Bv & Nolensville Pk	17	C	6 Months	0
Thompson Ln & 100 Oaks	18	C	6 Months	2
1st Av S & Korean Veterans Bv	19	D	6 Months	3
Broadway & Rosa Parks Bv / 8th Av S	20	D	6 Months	0
Broadway & West End Av & 16th Av	21	D	6 Months	0
Charlotte Pk & Whitebridge Pk	22	D	6 Months	0
Clarksville Pk & Rosa Parks Bv / Ed Temple Bv	23	D	6 Months	3
Jefferson St / John Merritt Bv & Ed Temple Bv / 28th Av N	24	D	6 Months	2

License Plate Reader 'Vehicle Stops' by Race and Poverty



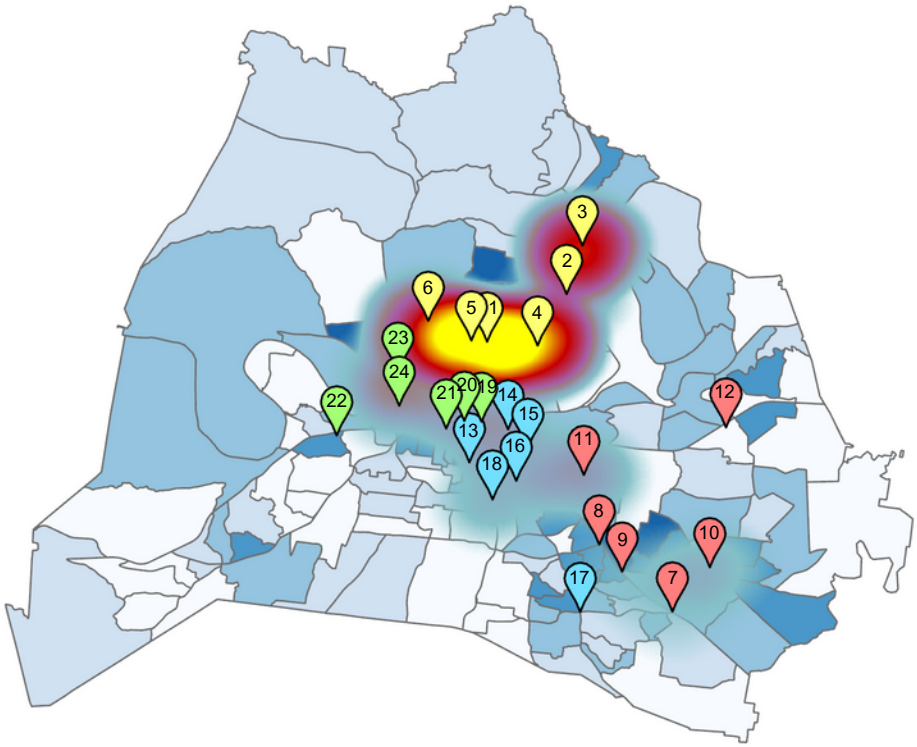
Non-White Percentage

Non-White Percentage of Population

- 6.55% - 19.84%
- 19.85% - 32.53%
- 32.54% - 46.01%
- 46.02% - 59.08%
- 59.09% - 75.92%
- 75.93% - 100%

Quadrant

- A
- B
- C
- D



Poverty Percentage

Poverty Percentage of Population

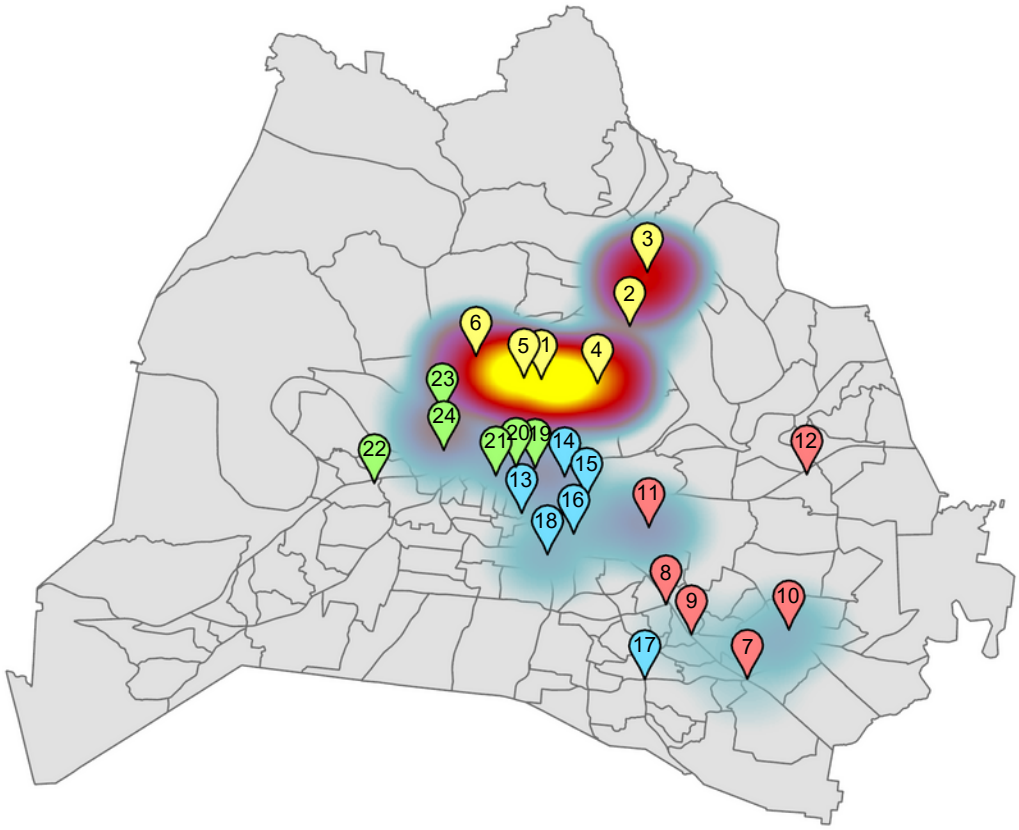
- 0% - 5.73%
- 5.74% - 10.82%
- 10.83% - 18.04%
- 18.05% - 29.05%
- 29.06% - 44.79%
- 44.8% - 82.62%

LPR Stops Heatmap

Vehicle Stops

- Sparse
- Dense

License Plate Reader 'Driver or Vehicle Searches'



Legend

Quadrant

- A
- B
- C
- D

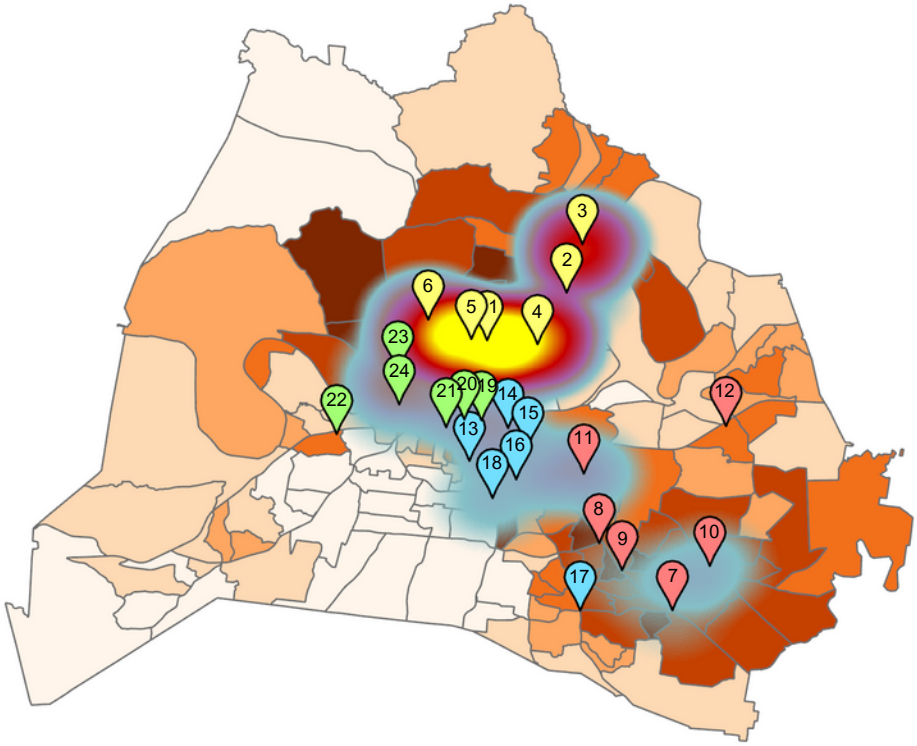
LPR Searches Heatmap

Vehicle Stops

- Sparse
- Dense

LPR	Identifier	Quadrant	Time Point	Driver or Vehicle Searches
Dickerson Pk & Trinity Ln	1	A	6 Months	7
Gallatin Pk & Briley Pkwy East	2	A	6 Months	2
Gallatin Pk & Old Hickory Bv / St Rt 45	3	A	6 Months	10
Gallatin Pk & E Trinity Ln	4	A	6 Months	12
W Trinity Ln & Brick Church Pk	5	A	6 Months	9
Whites Creek Pk & Moormans Arm Rd	6	A	6 Months	7
Bell Rd & I-24 Westbound Entrance ramp	7	B	6 Months	1
Harding Pl & I-24 Eastbound Entrance ramp	8	B	6 Months	0
Haywood Ln & I-24 Westbound Entrance ramp	9	B	6 Months	1
Murfreesboro Pk & Bell Rd	10	B	6 Months	2
Murfreesboro Pk & Thompson Ln	11	B	6 Months	2
Stewarts Ferry & I40 Eastbound Entrance ramp	12	B	6 Months	0
8th Ave S & Wedgewood Av	13	C	6 Months	0
Hermitage Ave & Fairfield Av	14	C	6 Months	0
Murfreesboro Pk & Fesslers Ln	15	C	6 Months	1
Nolensville Pk & I440 Westbound	16	C	6 Months	0
Old Hickory Bv & Nolensville Pk	17	C	6 Months	0
Thompson Ln & 100 Oaks	18	C	6 Months	2
1st Av S & Korean Veterans Bv	19	D	6 Months	3
Broadway & Rosa Parks Bv / 8th Av S	20	D	6 Months	0
Broadway & West End Av & 16th Av	21	D	6 Months	0
Charlotte Pk & Whitebridge Pk	22	D	6 Months	0
Clarksville Pk & Rosa Parks Bv / Ed Temple Bv	23	D	6 Months	1
Jefferson St / John Merritt Bv & Ed Temple Bv / 28th Av N	24	D	6 Months	2

License Plate Reader 'Driver or Vehicle Searches' by Race and Poverty



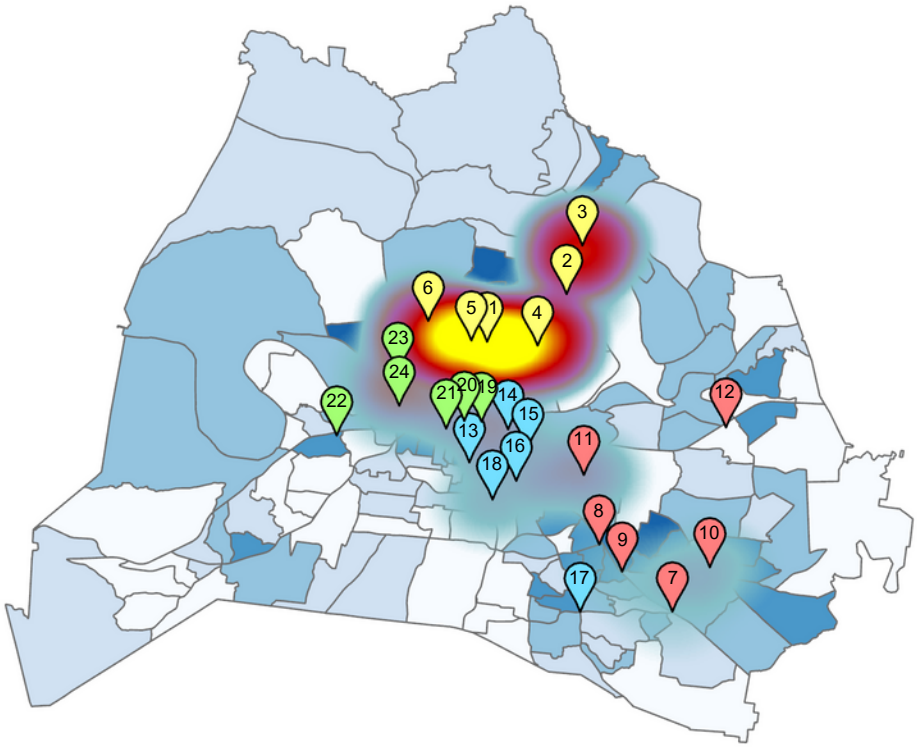
Non-White Percentage

Non-White Percentage of Population

- 6.55% - 19.84%
- 19.85% - 32.53%
- 32.54% - 46.01%
- 46.02% - 59.08%
- 59.09% - 75.92%
- 75.93% - 100%

Quadrant

- A
- B
- C
- D



Poverty Percentage

Poverty Percentage of Population

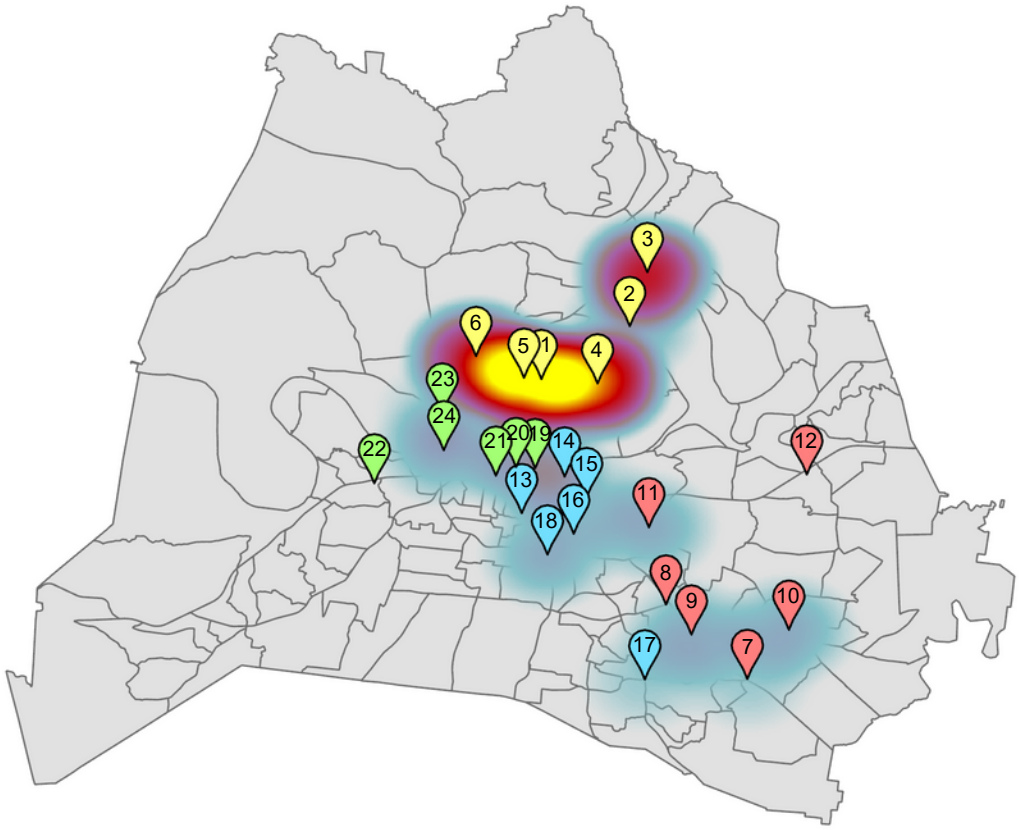
- 0% - 5.73%
- 5.74% - 10.82%
- 10.83% - 18.04%
- 18.05% - 29.05%
- 29.06% - 44.79%
- 44.8% - 82.62%

LPR Searches Heatmap

Vehicle Stops

- Sparse
- Dense

License Plate Reader 'Arrests'



Legend

Quadrant

- A
- B
- C
- D

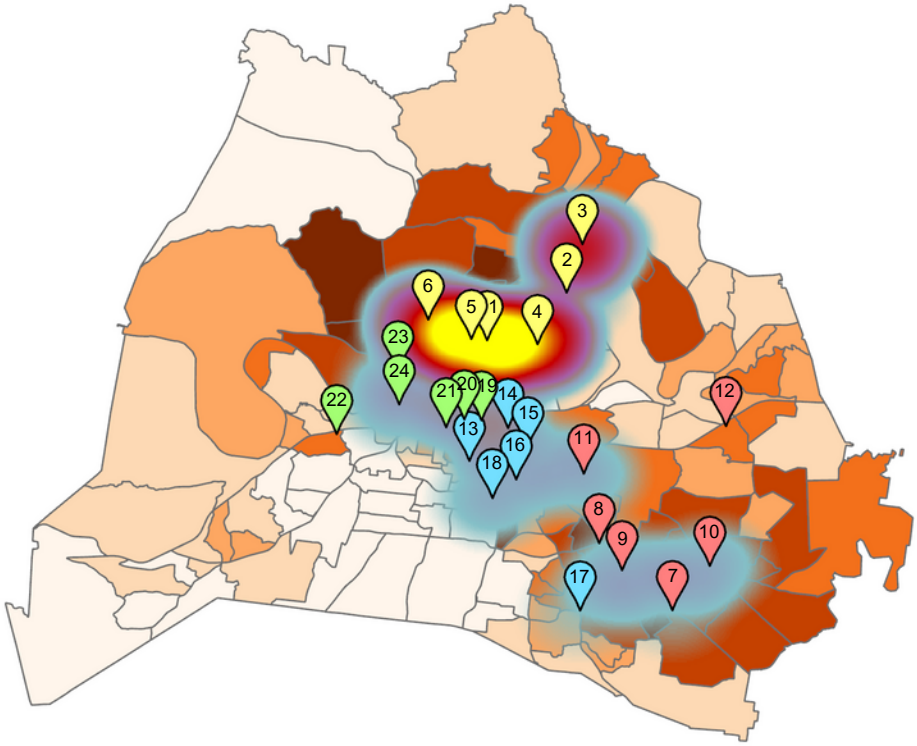
LPR Arrests Heatmap

Arrests

- Sparse
- Dense

LPR	Identifier	Quadrant	Time Point	Arrests
Dickerson Pk & Trinity Ln	1	A	6 Months	7
Gallatin Pk & Briley Pkwy East	2	A	6 Months	2
Gallatin Pk & Old Hickory Bv / St Rt 45	3	A	6 Months	8
Gallatin Pk & E Trinity Ln	4	A	6 Months	11
W Trinity Ln & Brick Church Pk	5	A	6 Months	9
Whites Creek Pk & Moormans Arm Rd	6	A	6 Months	8
Bell Rd & I-24 Westbound Entrance ramp	7	B	6 Months	1
Harding Pl & I-24 Eastbound Entrance ramp	8	B	6 Months	0
Haywood Ln & I-24 Westbound Entrance ramp	9	B	6 Months	2
Murfreesboro Pk & Bell Rd	10	B	6 Months	2
Murfreesboro Pk & Thompson Ln	11	B	6 Months	2
Stewarts Ferry & I40 Eastbound Entrance ramp	12	B	6 Months	0
8th Ave S & Wedgewood Av	13	C	6 Months	0
Hermitage Ave & Fairfield Av	14	C	6 Months	0
Murfreesboro Pk & Fesslers Ln	15	C	6 Months	1
Nolensville Pk & I440 Westbound	16	C	6 Months	0
Old Hickory Bv & Nolensville Pk	17	C	6 Months	1
Thompson Ln & 100 Oaks	18	C	6 Months	2
1st Av S & Korean Veterans Bv	19	D	6 Months	3
Broadway & Rosa Parks Bv / 8th Av S	20	D	6 Months	0
Broadway & West End Av & 16th Av	21	D	6 Months	0
Charlotte Pk & Whitebridge Pk	22	D	6 Months	0
Clarksville Pk & Rosa Parks Bv / Ed Temple Bv	23	D	6 Months	1
Jefferson St / John Merritt Bv & Ed Temple Bv / 28th Av N	24	D	6 Months	2

License Plate Reader 'Arrests' by Race and Poverty



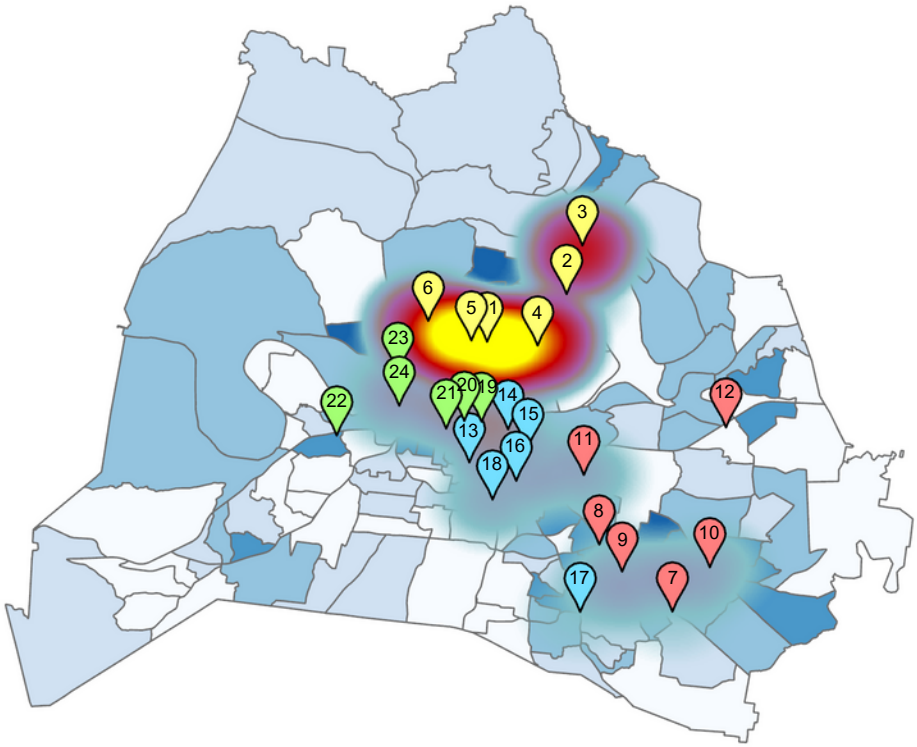
Non-White Percentage

Non-White Percentage of Population

- 6.55% - 19.84%
- 19.85% - 32.53%
- 32.54% - 46.01%
- 46.02% - 59.08%
- 59.09% - 75.92%
- 75.93% - 100%

Quadrant

- A
- B
- C
- D



Poverty Percentage

Poverty Percentage of Population

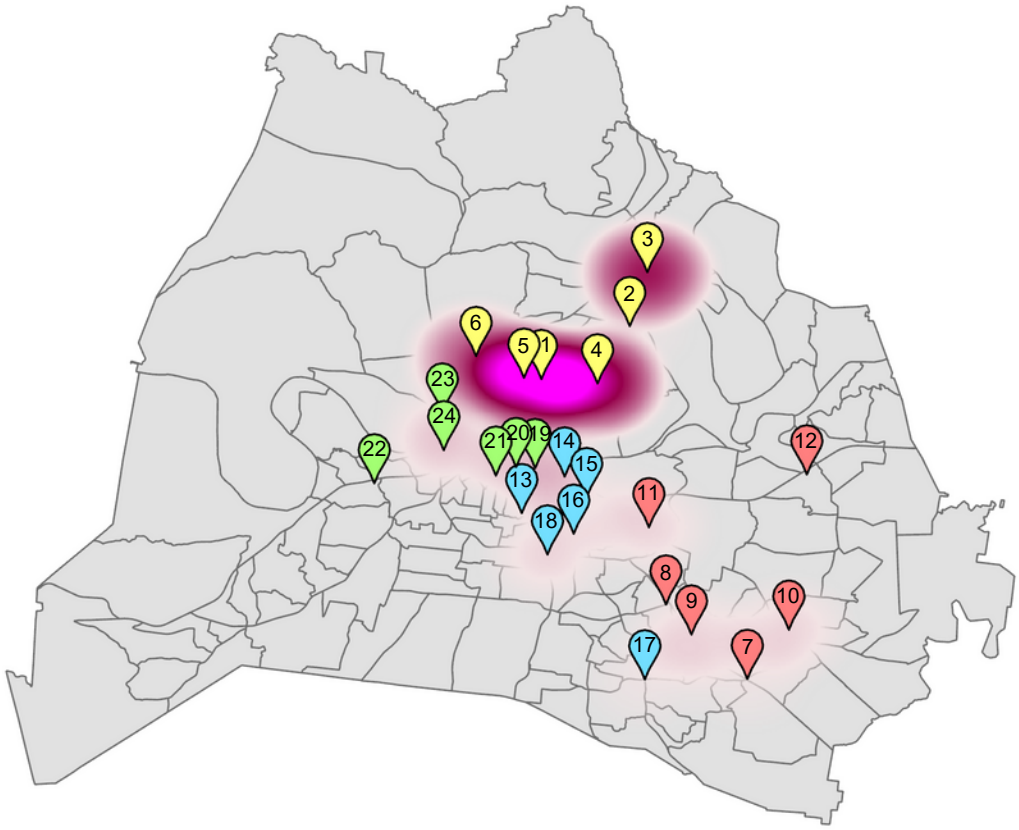
- 0% - 5.73%
- 5.74% - 10.82%
- 10.83% - 18.04%
- 18.05% - 29.05%
- 29.06% - 44.79%
- 44.8% - 82.62%

LPR Arrests Heatmap

Arrests

- Sparse
- Dense

License Plate Reader 'Vehicle Recoveries'



Legend

Quadrant

- A
- B
- C
- D

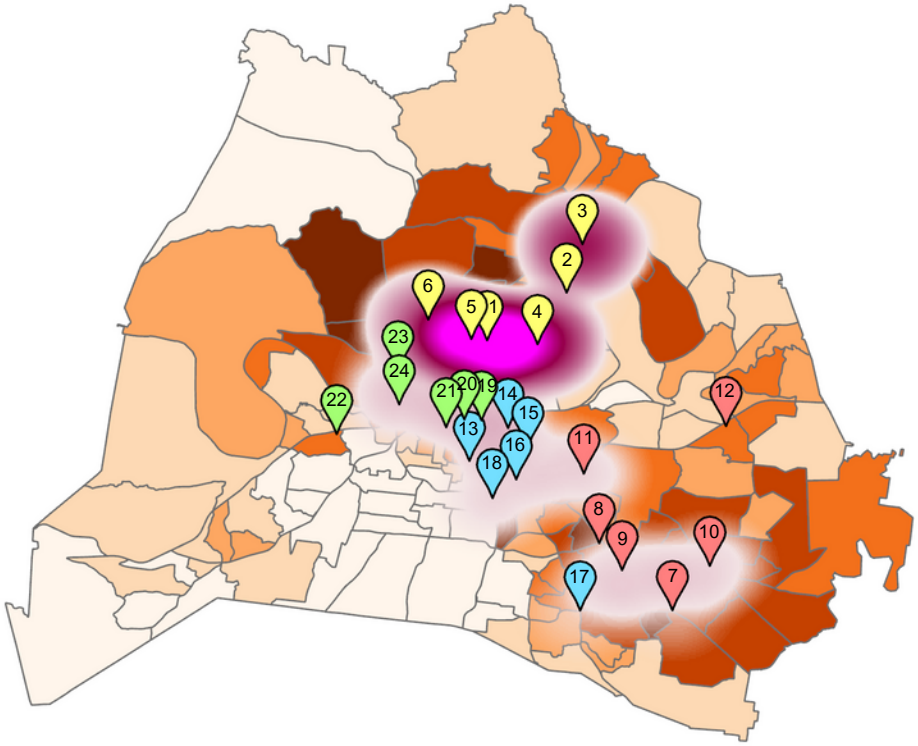
LPR Recoveries Heatmap

Vehicle Recoveries

- Sparse
- Dense

LPR	Identifier	Quadrant	Time Point	Vehicle Recoveries
Dickerson Pk & Trinity Ln	1	A	6 Months	10
Gallatin Pk & Briley Pkwy East	2	A	6 Months	1
Gallatin Pk & Old Hickory Bv / St Rt 45	3	A	6 Months	10
Gallatin Pk & E Trinity Ln	4	A	6 Months	13
W Trinity Ln & Brick Church Pk	5	A	6 Months	9
Whites Creek Pk & Moormans Arm Rd	6	A	6 Months	7
Bell Rd & I-24 Westbound Entrance ramp	7	B	6 Months	1
Harding Pl & I-24 Eastbound Entrance ramp	8	B	6 Months	0
Haywood Ln & I-24 Westbound Entrance ramp	9	B	6 Months	2
Murfreesboro Pk & Bell Rd	10	B	6 Months	2
Murfreesboro Pk & Thompson Ln	11	B	6 Months	2
Stewarts Ferry & I40 Eastbound Entrance ramp	12	B	6 Months	0
8th Ave S & Wedgewood Av	13	C	6 Months	0
Hermitage Ave & Fairfield Av	14	C	6 Months	0
Murfreesboro Pk & Fesslers Ln	15	C	6 Months	1
Nolensville Pk & I440 Westbound	16	C	6 Months	0
Old Hickory Bv & Nolensville Pk	17	C	6 Months	1
Thompson Ln & 100 Oaks	18	C	6 Months	2
1st Av S & Korean Veterans Bv	19	D	6 Months	3
Broadway & Rosa Parks Bv / 8th Av S	20	D	6 Months	0
Broadway & West End Av & 16th Av	21	D	6 Months	0
Charlotte Pk & Whitebridge Pk	22	D	6 Months	0
Clarksville Pk & Rosa Parks Bv / Ed Temple Bv	23	D	6 Months	1
Jefferson St / John Merritt Bv & Ed Temple Bv / 28th Av N	24	D	6 Months	2

License Plate Reader 'Vehicle Recoveries' by Race and Poverty



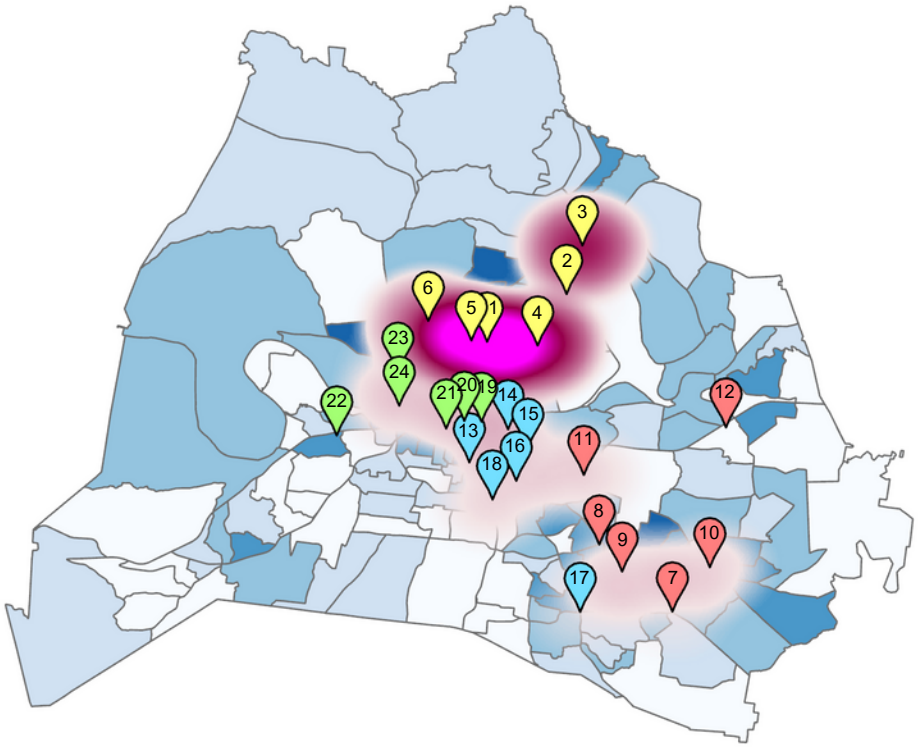
Non-White Percentage

Non-White Percentage of Population

- 6.55% - 19.84%
- 19.85% - 32.53%
- 32.54% - 46.01%
- 46.02% - 59.08%
- 59.09% - 75.92%
- 75.93% - 100%

Quadrant

- A
- B
- C
- D



Poverty Percentage

Poverty Percentage of Population

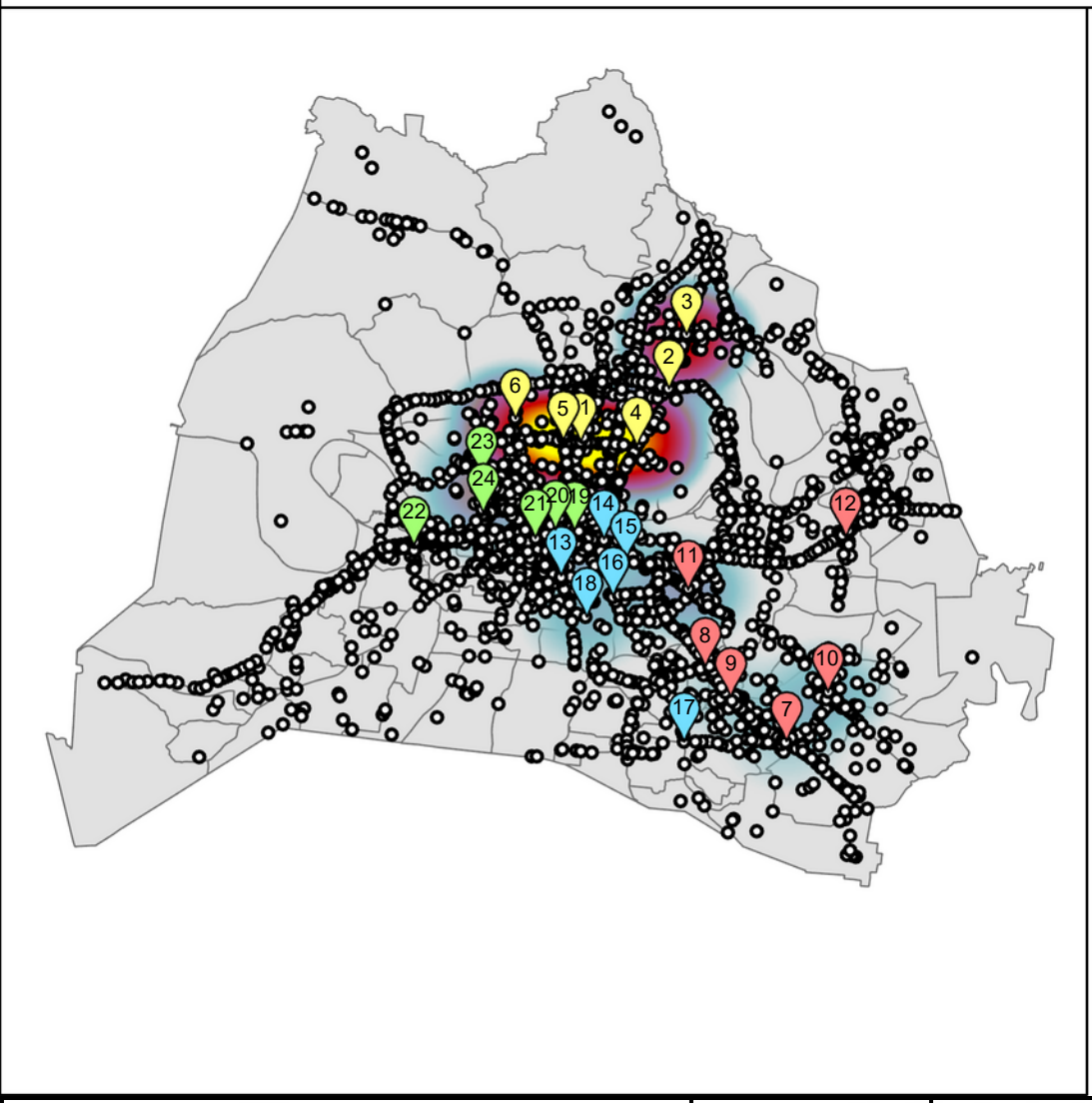
- 0% - 5.73%
- 5.74% - 10.82%
- 10.83% - 18.04%
- 18.05% - 29.05%
- 29.06% - 44.79%
- 44.8% - 82.62%

LPR Recoveries Heatmap

Vehicle Recoveries

- Sparse
- Dense

MNPD General Vehicle Stops vs LPR 'Vehicle Stops'



Legend

Quadrant

- A
- B
- C
- D

LPR Stops Heatmap

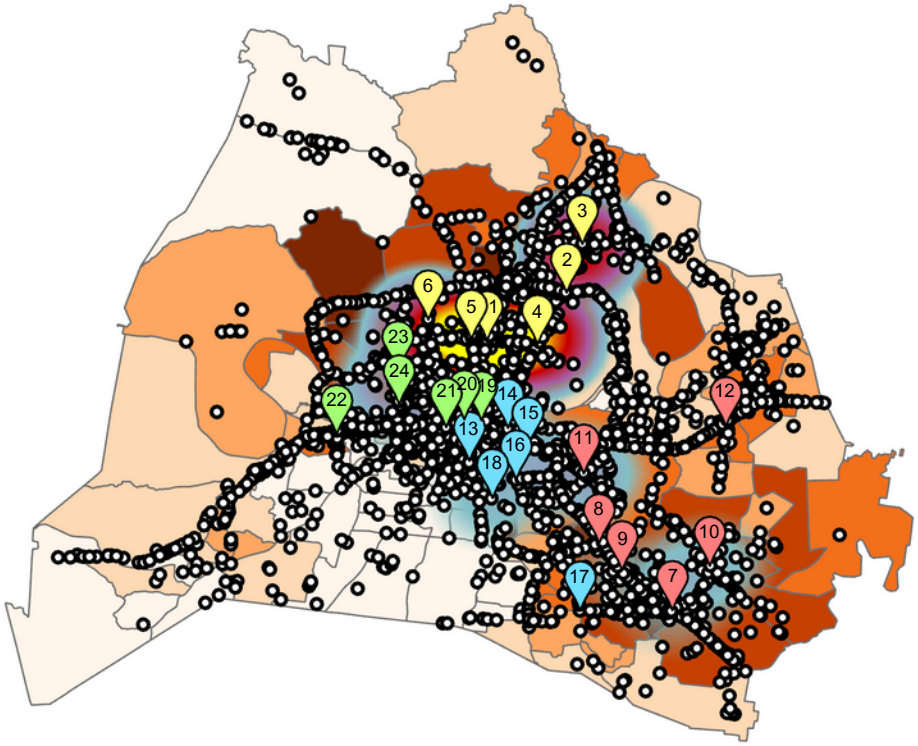
Vehicle Stops

- Sparse
- Dense

MNPD Vehicle Stops

LPR	Identifier	Quadrant	Time Point	LPR Vehicle Stops
Dickerson Pk & Trinity Ln	1	A	6 Months	8
Gallatin Pk & Briley Pkwy East	2	A	6 Months	3
Gallatin Pk & Old Hickory Bv / St Rt 45	3	A	6 Months	11
Gallatin Pk & E Trinity Ln	4	A	6 Months	14
W Trinity Ln & Brick Church Pk	5	A	6 Months	11
Whites Creek Pk & Moormans Arm Rd	6	A	6 Months	8
Bell Rd & I-24 Westbound Entrance ramp	7	B	6 Months	1
Harding Pl & I-24 Eastbound Entrance ramp	8	B	6 Months	0
Haywood Ln & I-24 Westbound Entrance ramp	9	B	6 Months	1
Murfreesboro Pk & Bell Rd	10	B	6 Months	2
Murfreesboro Pk & Thompson Ln	11	B	6 Months	3
Stewarts Ferry & I40 Eastbound Entrance ramp	12	B	6 Months	0
8th Ave S & Wedgewood Av	13	C	6 Months	0
Hermitage Ave & Fairfield Av	14	C	6 Months	0
Murfreesboro Pk & Fesslers Ln	15	C	6 Months	1
Nolensville Pk & I440 Westbound	16	C	6 Months	0
Old Hickory Bv & Nolensville Pk	17	C	6 Months	0
Thompson Ln & 100 Oaks	18	C	6 Months	2
1st Av S & Korean Veterans Bv	19	D	6 Months	3
Broadway & Rosa Parks Bv / 8th Av S	20	D	6 Months	0
Broadway & West End Av & 16th Av	21	D	6 Months	0
Charlotte Pk & Whitebridge Pk	22	D	6 Months	0
Clarksville Pk & Rosa Parks Bv / Ed Temple Bv	23	D	6 Months	3
Jefferson St / John Merritt Bv & Ed Temple Bv / 28th Av N	24	D	6 Months	2

MNPD General Vehicle Stops vs LPR 'Vehicle Stops' by Race and Poverty



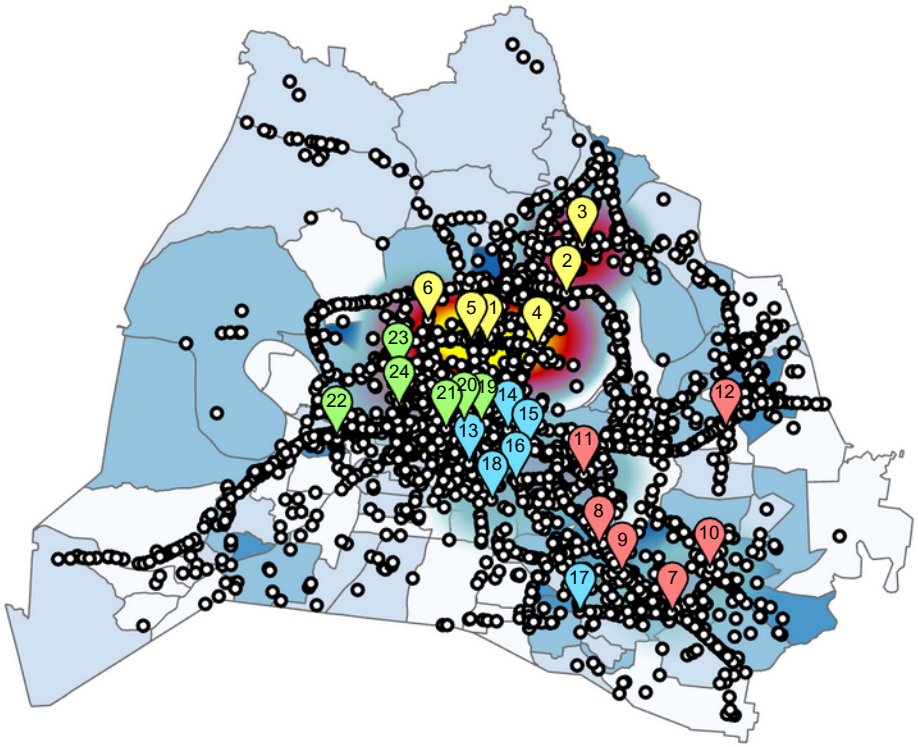
Non-White Percentage

Non-White Percentage of Population

- 6.55% - 19.84%
- 19.85% - 32.53%
- 32.54% - 46.01%
- 46.02% - 59.08%
- 59.09% - 75.92%
- 75.93% - 100%

Quadrant

- A
- B
- C
- D



Poverty Percentage

Poverty Percentage of Population

- 0% - 5.73%
- 5.74% - 10.82%
- 10.83% - 18.04%
- 18.05% - 29.05%
- 29.06% - 44.79%
- 44.8% - 82.62%

LPR Stops Heatmap

Vehicle Stops

- Sparse
- Dense

- MNPD Vehicle Stops

LPR	Identifier	Quadrant	Time Point	Verified Hits	Vehicle Stops	Driver or Vehicle Searches	Arrests	Vehicle Recoveries
Dickerson Pk & Trinity Ln	1	A	6 Months	137	8	7	7	10
Gallatin Pk & Briley Pkwy East	2	A	6 Months	50	3	2	2	1
Gallatin Pk & Old Hickory Bv / St Rt 45	3	A	6 Months	124	11	10	8	10
Gallatin Pk & E Trinity Ln	4	A	6 Months	83	14	12	11	13
W Trinity Ln & Brick Church Pk	5	A	6 Months	80	11	9	9	9
Whites Creek Pk & Moormans Arm Rd	6	A	6 Months	75	8	7	8	7
Bell Rd & I-24 Westbound Entrance ramp	7	B	6 Months	105	1	1	1	1
Harding Pl & I-24 Eastbound Entrance ramp	8	B	6 Months	43	0	0	0	0
Haywood Ln & I-24 Westbound Entrance ramp	9	B	6 Months	34	1	1	2	2
Murfreesboro Pk & Bell Rd	10	B	6 Months	135	2	2	2	2
Murfreesboro Pk & Thompson Ln	11	B	6 Months	60	3	2	2	2
Stewarts Ferry & I40 Eastbound Entrance ramp	12	B	6 Months	67	0	0	0	0
8th Ave S & Wedgewood Av	13	C	6 Months	14	0	0	0	0
Hermitage Ave & Fairfield Av	14	C	6 Months	7	0	0	0	0
Murfreesboro Pk & Fesslers Ln	15	C	6 Months	27	1	1	1	1
Nolensville Pk & I440 Westbound	16	C	6 Months	33	0	0	0	0
Old Hickory Bv & Nolensville Pk	17	C	6 Months	103	0	0	1	1
Thompson Ln & 100 Oaks	18	C	6 Months	39	2	2	2	2
1st Av S & Korean Veterans Bv	19	D	6 Months	22	3	3	3	3
Broadway & Rosa Parks Bv / 8th Av S	20	D	6 Months	5	0	0	0	0
Broadway & West End Av & 16th Av	21	D	6 Months	5	0	0	0	0
Charlotte Pk & Whitebridge Pk	22	D	6 Months	1	0	0	0	0
Clarksville Pk & Rosa Parks Bv / Ed Temple Bv	23	D	6 Months	20	3	1	1	1
Jefferson St / John Merritt Bv & Ed Temple Bv / 28th Av N	24	D	6 Months	22	2	2	2	2