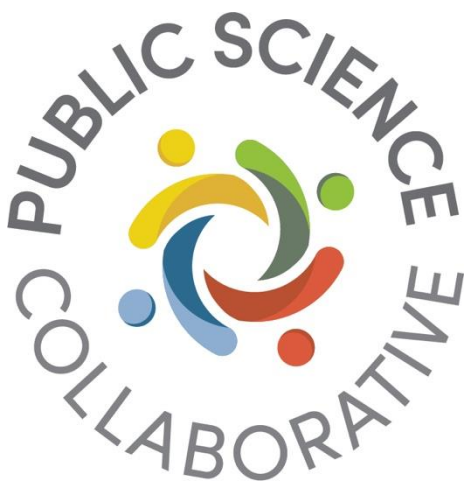




# The Alcohol Outlet Landscape in Alabama



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### Classifying Alcohol Licenses and Retail Outlets

PSC facilitated several collaborative meetings with the Alabama project team to share best practices in AOD research and provide examples of how alcohol licenses have been classified in other states. These meetings helped PSC co-develop a classification system that reflected the intricacies of Alabama's licensing data. A summary of team-identified inclusion and exclusion criteria is presented in Table 1.

Behind the scenes, the PSC team used a variety of data tools to standardize and geocode addresses, filter licenses according to inclusion and exclusion

criteria, classify outlets (e.g., on & off-premise), and convert the licensing data into an alcohol outlet dataset. When geocoding addresses, for example, we use the industry 'accuracy' benchmark: any address for which we were less than 90% confident of its location was excluded from analysis. A total of 1,578 licenses were excluded, reflecting 16% of the original license list. **We recommend efforts to improve address quality at the time of application to better support place-based reporting, monitoring, and evaluation activities.**

PSC also categorized each license by a classification scheme customized to Alabama licenses, including on-premise, off-premise, educational vendor, and off-premise delivery. Table 2 outlines the licenses included in each classification. On-premise licenses signal locations selling alcohol for consumption on the retailer's location, such as bars, restaurants, or clubs. The off-premise classification captures locations selling alcohol for consumption off-site, such as liquor stores, gas stations, and grocery stores. The category of educational vendor license reflects outlets participating in a responsible vendor educational program, and the off-premise delivery category indicates outlets that sell alcohol directly to consumers for delivery. Note that nine license types allow consumers to purchase alcohol for on-premise and off-premise consumption. These licenses are labeled as "on and off-premise" retail licenses in the following analysis.

**Table 1: License inclusion and exclusion criteria**

Included Licenses:

- Active Alabama retail licenses as of July 13<sup>th</sup> 2022
  - including manufacturer licenses with taprooms
- Licenses active for greater than 30 days
- Licenses with 90% confidence in their locations
- Educational vendor licenses
- Off-premise delivery licenses

Excluded Licenses:

- Licenses outside of Alabama
- Licenses active for less than 30 days
- Licenses with less than 90% confidence in their locations
- Wholesale, importing, shipper/carrier, & privilege specific licenses

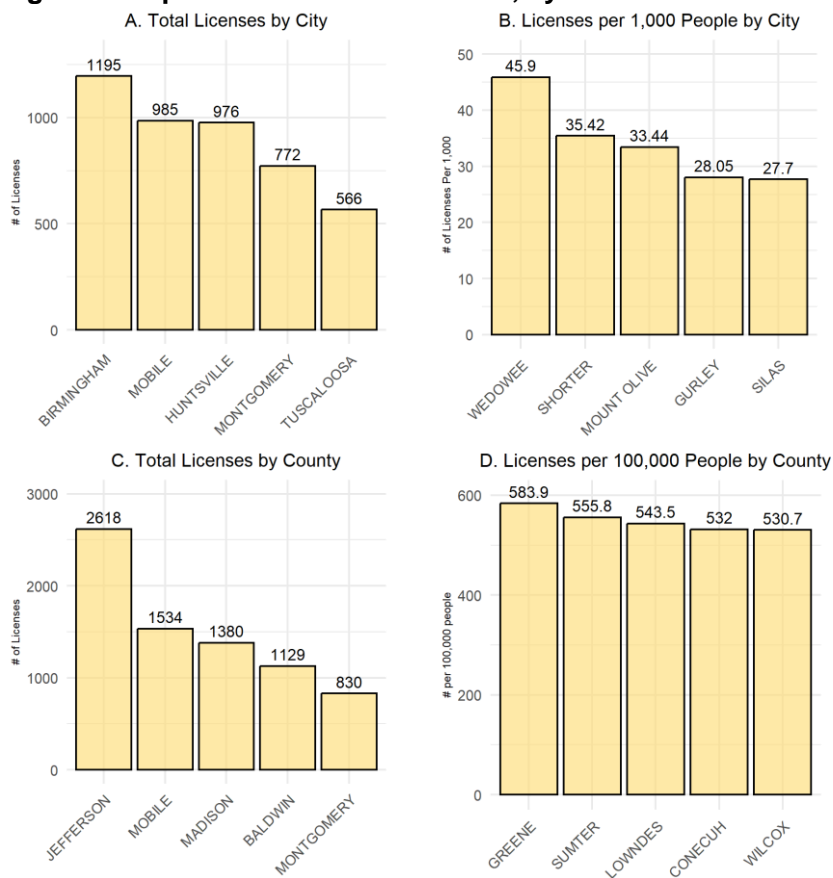
*Developed in coordination with Alabama Project Team, Summer 2022*

**Table 2: License Classifications**

On-Premise	Off-Premise
-Restaurant Retail Liquor	-Retail Beer (Off Premises Only)
-Retail Beer (On or Off Premises)	-Retail Table Wine (Off Premises Only)
-Retail Table Wine (On or Off Premises)	-Lounge Retail Liquor-Class II (Package)
-Lounge Retail Liquor-Class I	-Retail Beer (On or Off Premises)
-Special Retail-More than 30 Days	-Retail Table Wine (On or Off Premises)
-Manufacturer	-Lounge Retail Liquor-Class I
-Club Liquor-Class I	-Special Retail-More Than 30 days
-Club Liquor-Class II	-Manufacturer
-Brewpub	-Club Liquor-Class I
-International Motor Speedway	-Club Liquor-Class II
	-Brewpub
	-International Motor Speedway
Educational Vendor Licenses	Off-Premise Delivery
-Responsible Vendor One	-Direct Wine Shipper License
-Responsible Vendor Two	-Delivery Service License
-Responsible Vendor Three	

## Diving into Licensing Data

The following section provides an overview of the kinds of analytics that can be derived from the Alabama Alcoholic Control Board's (ABC) alcohol licensing data and illustrates the range of state-wide analytics the Alabama Mapping team may consider for a state-wide data dashboard.

**Figure 1: Top Five Cities and Counties, by Retail Licenses**

**We recommend state-level analytics include ranking cities and counties by number and type of licenses, ranking by per-person number of licenses (and by type) and maps to visualize the license locations and densities and different geographic scales (e.g., neighborhoods, cities, counties).** These are common ways of finding patterns in data and many different kinds of data users can make sense of them.

Figure 1 reports the top five cities with the highest number of retail licenses as of July 2022, including Birmingham (n=1195), Mobile (n=985), Huntsville (n=976), Montgomery (n=772), and Tuscaloosa (n=566). When we adjust the number of licenses of each city by total population (per capita measures), a slightly different top five ranking emerges (Figure 1b), with the cities of Wedowee, Shorter, Mount Olive, Gurley, and Silas having the highest licenses per 1,000 people. There are 45.9 alcohol licenses for every 1,000

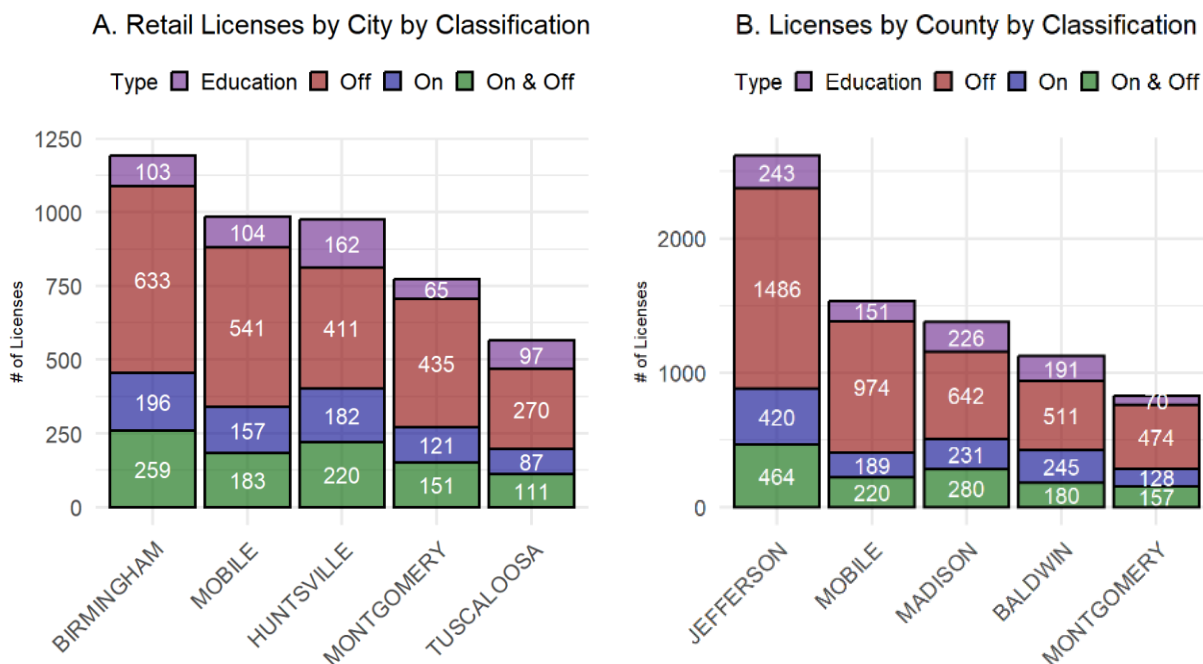
people in Wedowee, 35.4 per 1000 people in Shorter, and a rate of 27.7 in fifth-ranked Silas. The licensing density in Wedowee is relatively high in comparison the even the other four leading cities in per-person licenses, suggesting that this town is high value for interventions and resources to reduce alcohol exposure risk.

Zooming out to the county-level shows that Jefferson (n=2618), Mobile (n=1534), Madison (n=1380), Baldwin (n=1129), & Montgomery (n=830) were the top five counties by total number of licenses. While Jefferson County is the largest in the state in terms of population (about 670,000 people) it has a disproportionately large share of licenses compared to Mobile County and its more than 400,000 residents.

A deeper dive into population-adjusted license data shows that **Greene, Sumter, Lowndes, Conecuh, & Wilcox counties had the highest number of retail licenses per 100,000 county residents in 2022.** Greene had 584 alcohol licenses for every 100,000 people, and Sumter had 555.8 per 100,000 people. The key here is that it is advisable to monitor total licenses *and* licenses per person because each tells a slightly different but important part of the story.

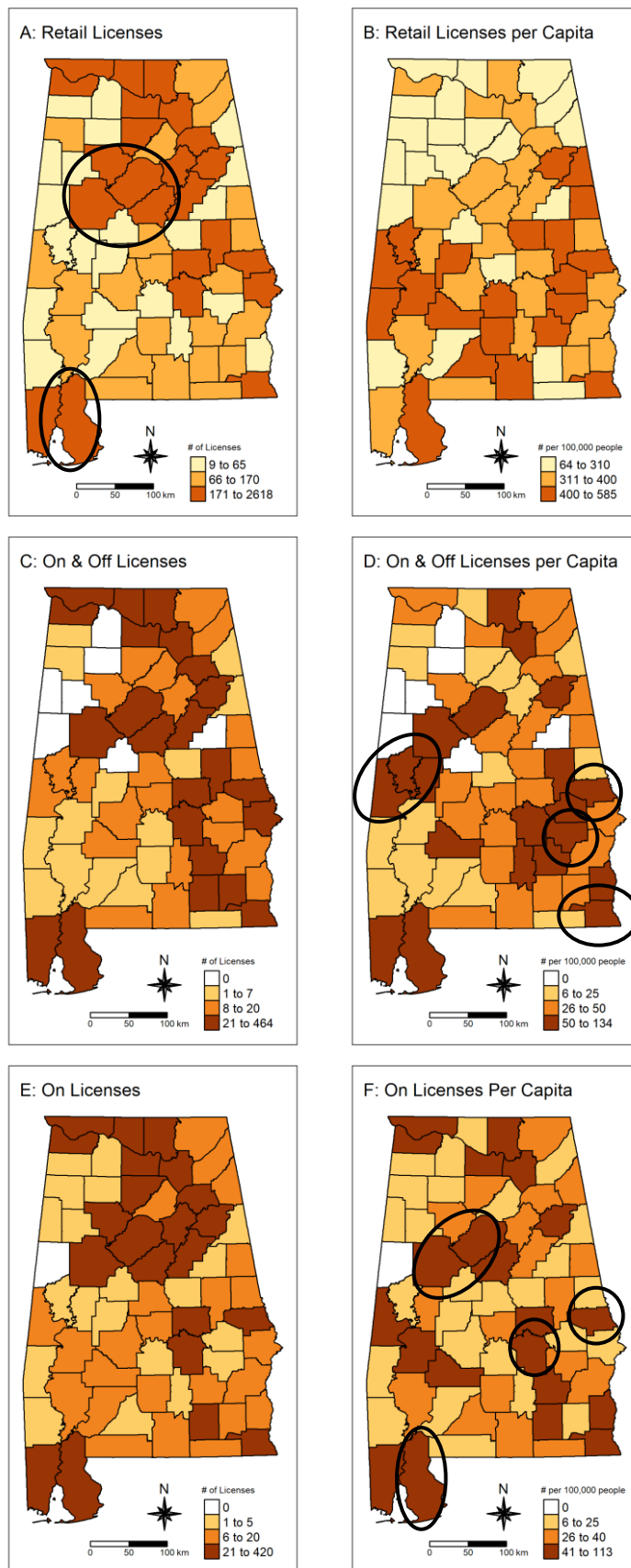
Figure 2 shows the type and number of licenses in these same cities and counties. This type of analysis can be incredibly valuable to the ABC because it identifies places with a higher concentration of alcohol licenses per population size. Figure 2a shows that while Mobile and Huntsville have a nearly identical number of total licenses, the composition of their licenses differs in important ways.

**Figure 2: Top Five Cities and Counties, by License Type**



In Mobile, half of all licenses are off-premise, whereas in Huntsville, just over 40% of licenses are off-premise. Huntsville also has a larger relative share of education, on-premise, and on-off-premise licenses, compared to Mobile. An even larger share of all licenses is of the off-premise classification in Birmingham (53%). Figure 2B shows that Jefferson County not only has the largest share of all state licenses but by a fairly wide margin over the second and third-ranked counties of Mobile and Madison. Inspection of the composition of licenses by county shows that **Madison has a relatively higher share of on-off-premise licenses compared to Mobile and Baldwin counties.** This sort of variation in alcohol licensing across cities and counties is a useful starting place for analyzing the alcohol landscape in Alabama. Keeping track of the composition of licenses for the state as a whole, and also for each county and city, is a recommended strategy.

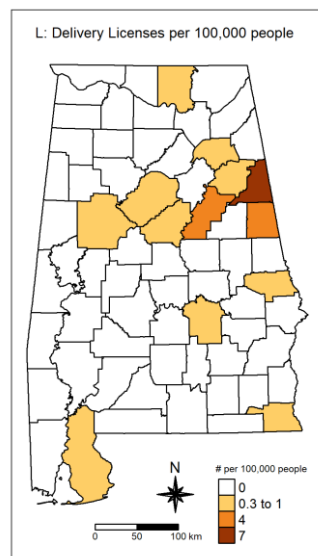
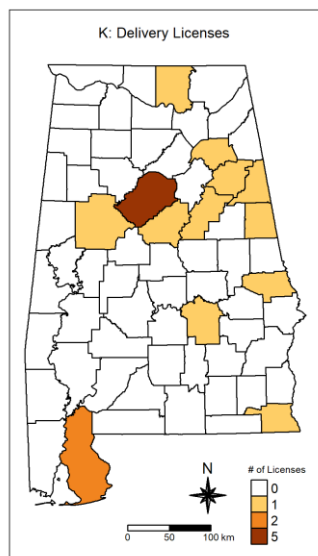
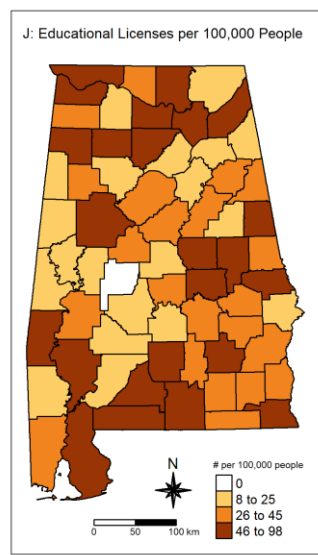
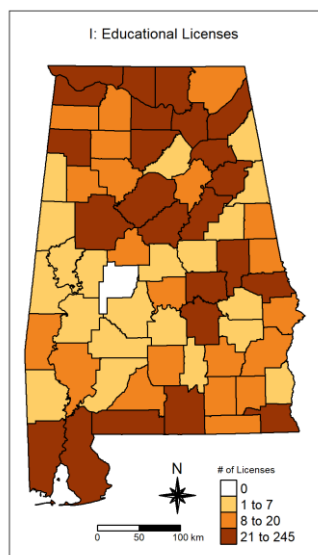
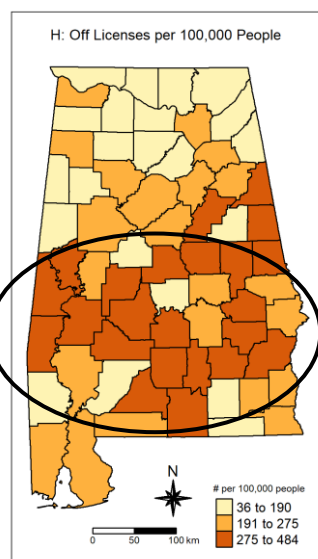
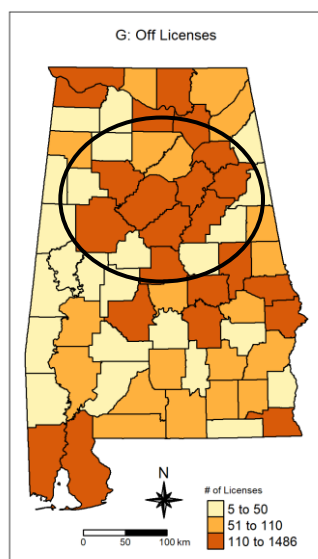
**Figure 3: Retail Licenses by Type**



Figures 3a through 3f map the number and type of license in each county. Maps like these can help organizations such as the ABC, public health, and community organizations to identify geographic patterns in alcohol licensure. To illustrate, we feature a set of visuals that show the total number of licenses in each county and the number of licenses per 100,000 county residents. Darker shades identify areas with a higher number of licenses and lighter shades identify counties with fewer alcohol retail licenses. Notice that Baldwin County, in the southwestern corner of the state, is shaded darker in Figures 3a through 3f, indicating that it has among the highest total number of licenses (retail, on, off) *and* the highest number of licenses per person. Tuscaloosa, Jefferson, and Shelby counties also had a high number of licenses across categories (highlighted with black circles in Figure 3a).

Figures 3c & 3d reveal that not all counties contain the license classification allowing an establishment to sell alcohol for both on and off-premise consumption. When standardized by population, the density of this license category shifts from the west-central to the southwestern part of the state. However, **Lee, Baldwin, Bullock, Sumter, and Greene counties have the highest concentration of on and off-premise licenses**. These counties are indicated with black circles in Figure 3d. These maps provide a roadmap for future analysis, with a deeper dive into the high-density counties being high-value targets for further study to better understand why these counties have the highest densities of on and off-premise establishments.

On-premise and off-premise licenses are more widely dispersed across the state. **Baldwin, Tuscaloosa, Jefferson, Madison, Lee, and Montgomery counties demonstrate consistently high density of on-premise alcohol licenses, even when adjusted for population size** (see Figures 3e and 3f).



A unique pattern can be viewed for off-premise licenses in Figures 3g and 3h. Here, we see off-premise licenses are the most popular license type in the state, being present in every Alabama county. However, when controlling for population size, the density of alcohol licenses shifts from the central to the southern part of the state. This shift, which is highlighted in the black circles, suggests that **per person alcohol exposure may be higher in the south-central area**, even though fewer people live in this area. More analysis is needed to understand why rural counties have more off-premise licenses than their more urban-populated counterparts. This geographic pattern matches the overall shift across retail categories seen in Figures 3a and 3b. Educational licenses are also found throughout the state, in all but Perry County, (see Figures 3i & 3j). This may be a protective factor for Baldwin County, which has among the highest density of alcohol licenses across multiple license categories. Because educational licenses signal alcohol retailers who have received responsible beverage training, **additional educational licenses may benefit the south-central part of the state**, as this area has a high per capita density of off-premise alcohol licenses. Alcohol establishments with an off-premise alcohol license and lacking responsible vendor training are at an increased risk of selling alcohol to minors.

Figures 3k and 3l show delivery licenses are limited to 12 Alabama's counties. **Jefferson County has the highest total number of delivery licenses**, but once we adjusted to the total population of each county, Jefferson has similar rates to most other counties. According to delivery licenses per person in the county, Cleburne County has the highest rate. This is primarily due to the very low population size in Cleburne and that it has just one delivery license in the whole county.

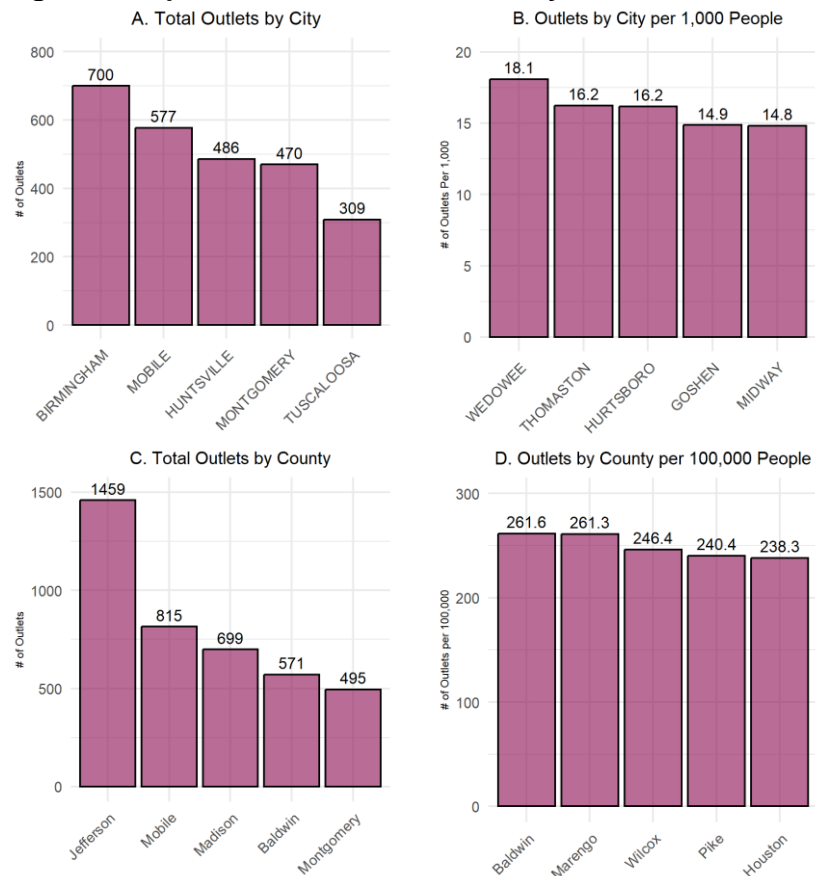
## Analyzing State Outlet Data

One of the most useful features of the ABC licensing data is the ability to measure and monitor outlets, by which we mean the physical establishments that hold one or more alcohol licenses. By combining the ABC's retail alcohol license data with state liquor store data with some matching on addresses, we were able to identify, analyze, and visualize the state's alcohol retailers, also known as alcohol establishments or outlets.

The classification strategies created this contract's first deliverable: to produce one cleaned and geocoded dataset of the project's inclusion criteria the Alabama Mapping Team could use to visualize in their state dashboard. Figures 4 and 5 are a series of static visualizations prepared with this dataset and examples of the analytics the Alabama team may consider visualizing in a future state dashboard.

Monitoring cities and counties according to highest and lowest levels (e.g., sales, on-premise outlets, educational licenses per person) is an informative feature of a state-wide monitoring system. Once time-series data are available, the state can also monitor changes too, such as counties and cities with the fastest and slowest growth in the number and density of outlets, for example. Figure 4, lists the top five cities and counties, first by the total number of retail outlets (Figures 4a and 4c) and then by total retail outlets *per person* in the city and county (Figures 4b and 4d).

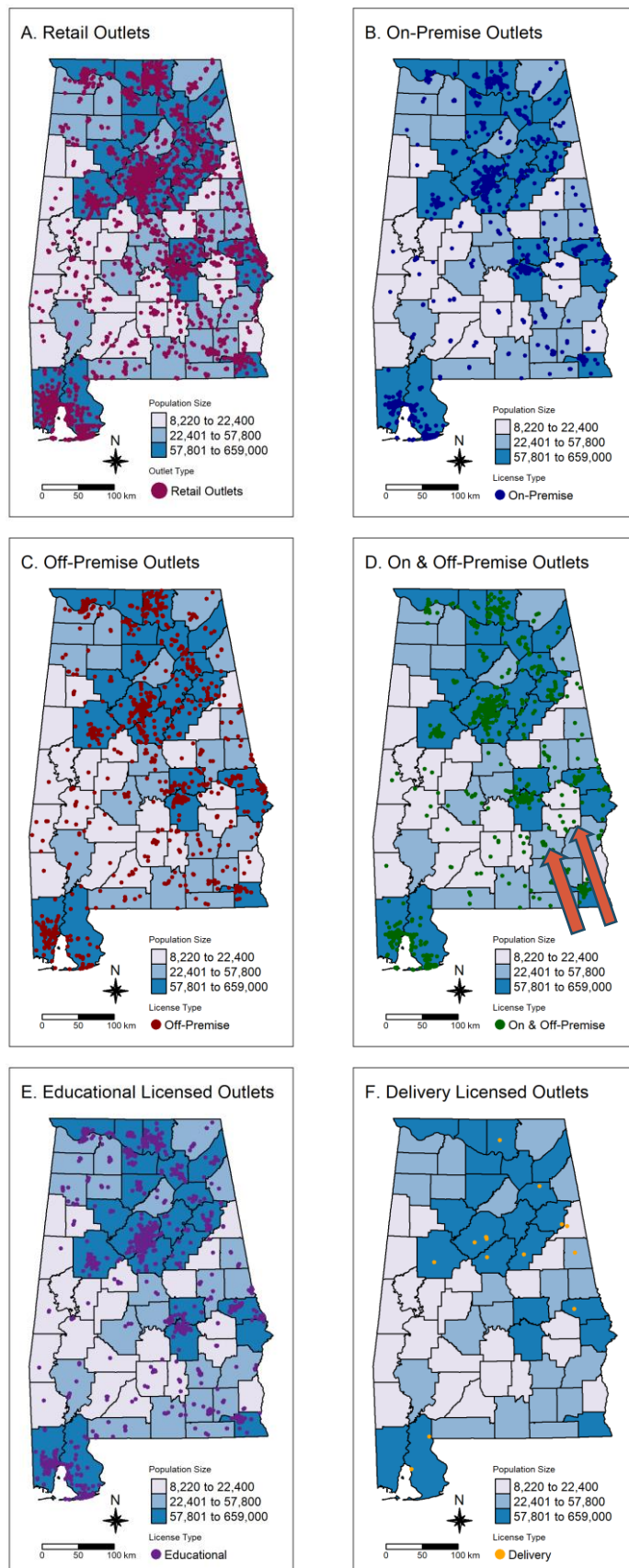
**Figure 4: Top Five Cities and Counties, by Retail Outlets**



These data show that **Birmingham, Mobile, Huntsville, Montgomery, and Tuscaloosa have the highest number of alcohol retailers**. These same cities also have the highest alcohol licenses, as evidenced earlier in Figures 1 & 2. The difference between first-ranked Birmingham (n=700) and fifth-ranked Tuscaloosa (n=309) is very large, suggesting Birmingham may be subjected to excess alcohol exposure, at least compared to many other cities in Alabama. Once we adjusted for the difference in the number of people in each city, Wedowee moved into the first-ranked position, followed by Thomaston, Hurtsboro, Goshen, and Midway. **High density of outlets (outlets per person) is a known health and safety risk factor and it is recommended by the CDC that states and local communities monitor accordingly.**

Figures 4c and 4d rank the counties with the highest number of retail outlets. This shows that Jefferson has the most outlets (1,459 outlets), followed by Mobile, Madison, Baldwin, and Montgomery counties. When we adjust the rankings to account for the size of the population in each county, Baldwin, Marengo, Wilcox, Pike, and Houston have the highest rate of alcohol outlets per 100,000 county residents, with each of these counties signaling at least 230 outlets per 100,000, that is 2.12 outlets for 1,000 people. Again, Baldwin County is distinctive in having the most outlets per capita, signaling a further exploration of the alcohol landscape in Baldwin County is needed.

**Figure 5: Outlets by County Population**



Figures 5a-5f map the locations of alcohol outlet retail locations overlaid on county-level population estimates. Darker-shaded counties identify counties with large and densely populated places, and light-shaded counties indicate rural places with low populations. The highest concentrations of alcohol outlets are found in the major population centers of Huntsville, Birmingham, Montgomery, and Mobile (purple marks identify the locations of alcohol retailers). This pattern corresponds with the fact that these are also the highest population counties, denoted by the darker shades of blue. With few exceptions, low-population counties have relatively few alcohol outlets (see Figure 5a for a closer look). Figure 5b shows a similar pattern but drilling down to show only those outlets licensed to sell alcohol for on-premise consumption, such as bars, restaurants, or clubs. According to the data in Figure 5b, several counties have few to no on-premise establishments.

Figures 5c and 5d signal that a majority of the alcohol retailer outlets are licensed to distribute alcohol for off-premise consumption, such as liquor stores, gas stations, or grocery stores, with a slightly smaller number of locations licensed to sell alcohol for both on and off-premise locations. These outlets include breweries, restaurants, or special event venues that allow consumers to take alcohol to go and consume alcohol on the retailer's property. Note that both of these categories also have high concentrations of outlets in counties with higher populations, with outlets licensed to sell for on & off-premise consumption scattered throughout lower population areas, as indicated by the red arrows to the left.

Figure 5e maps all known alcohol retailers certified as responsible vendors, where the more rural western part of the state appears to have few certified retailers. Figure 5f maps outlets with delivery licenses. This relatively uncommon license type is mostly concentrated in the north central part of the state.

## Dataset 2a: State-Level Container-Based Density Dataset

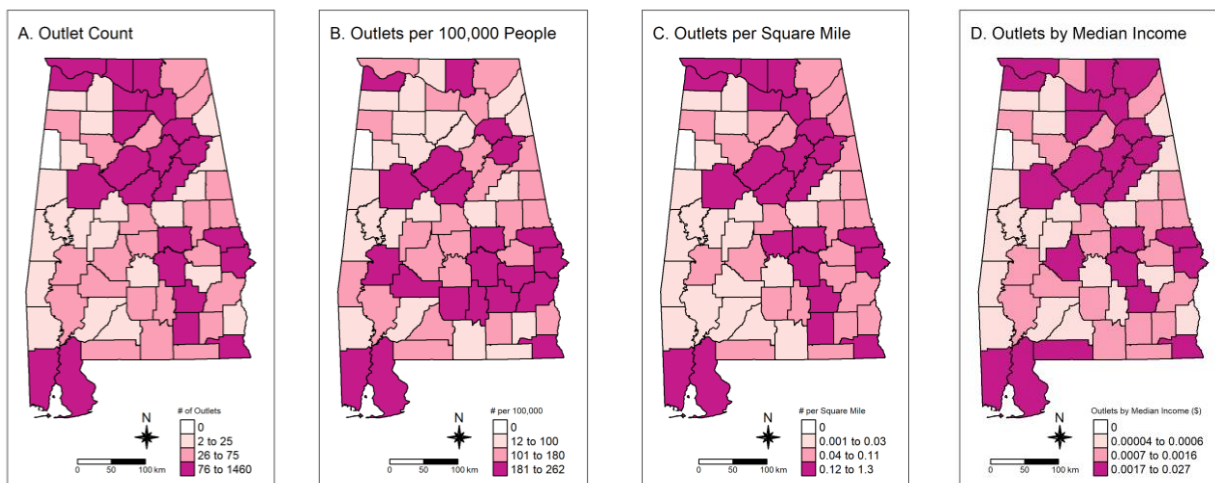
The outlet dataset was used to prepare this contract's second set of deliverables: one container-based alcohol outlet density (AOD) calculation for the state and one spatial accessibility AOD calculation for a city or town. In this case, we partnered with Montgomery for city-level analysis. There are many ways to measure the density of alcohol outlets, and no one way is perfect. Container-based measures count the number of outlets within a user-defined container, such as a neighborhood, a city, or a county. For the state-wide analysis, counties were chosen to represent the container. In the analysis that follows, we report the total number of outlets per county and several commonly used measures of density that standardize by the total population of each county, by the county's area in square miles, and by the county's median income levels. This analysis is provided for each of the five major license categories (see Figures 6-10).

Figures 6a-d show that irrespective of how outlet density is measured, a common set of counties tends to rank high and another set low on outlet density. By each of the four container-based outlet density measures, the southwestern corner of the state around the Mobile area is also ranked high on outlet density. The Huntsville and Birmingham area counties also feature a high density of outlets by each measure. This core pattern holds across the license categories and when standardized by population and income.

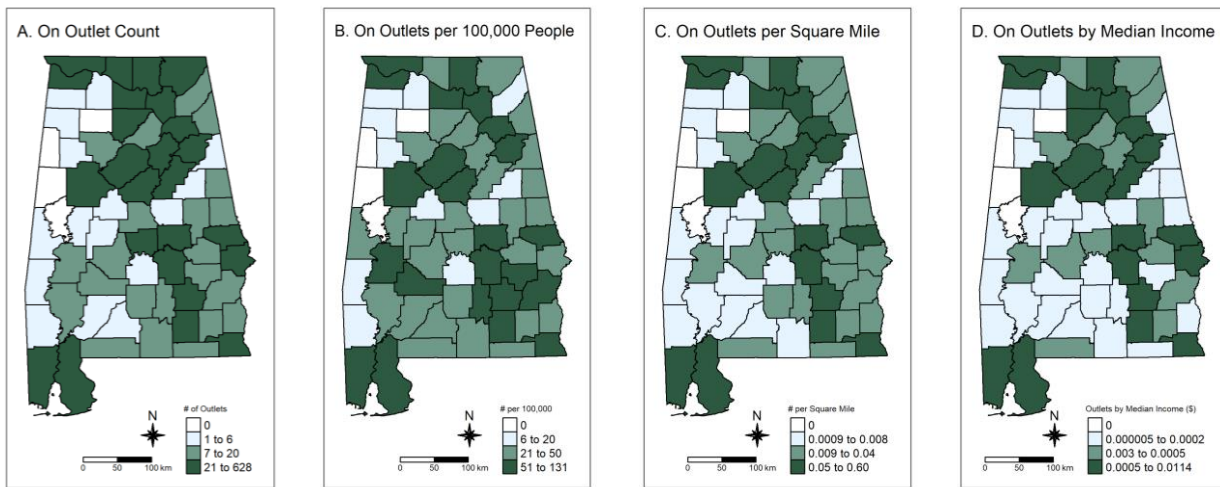
Across each state-wide container-based measure and outlet categories (all, on-premise, off-premise, etc.), the counties of Baldwin, Mobile, Tuscaloosa, Jefferson, Shelby, Houston, Montgomery, Elmore, and Lee are consistently ranked in the top 25% of counties with the largest number of outlets. This suggests these counties are more saturated with alcohol outlets than others in the state. It's worth noting that many of these counties are also among the top 25% of counties with educational licenses, which might be a protective factor for the responsible sales of alcohol in the state. There are a limited number of delivery licenses in the state that meet the project's inclusion criteria, however, Figures 10a-d indicate that Baldwin and Jefferson have some of the highest delivery licenses in the state.

**For this report, we have focused on counties, but we recommend that future work drill down to much lower levels of granularity.** The accumulated body of research indicates that alcohol outlet density harm is most commonly found at the hyper-local levels, which gets us looking to neighborhoods, thoroughfares, intersections, and street corners to understand the most likely harms to individuals, families, and communities.

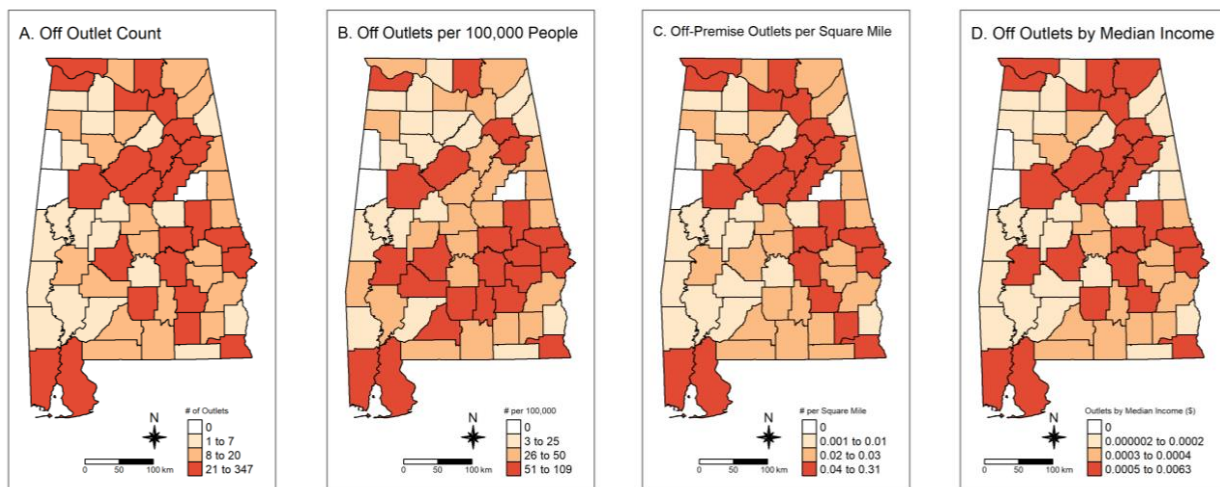
**Figure 6: Container-Based Measure: Alabama Outlets by County**



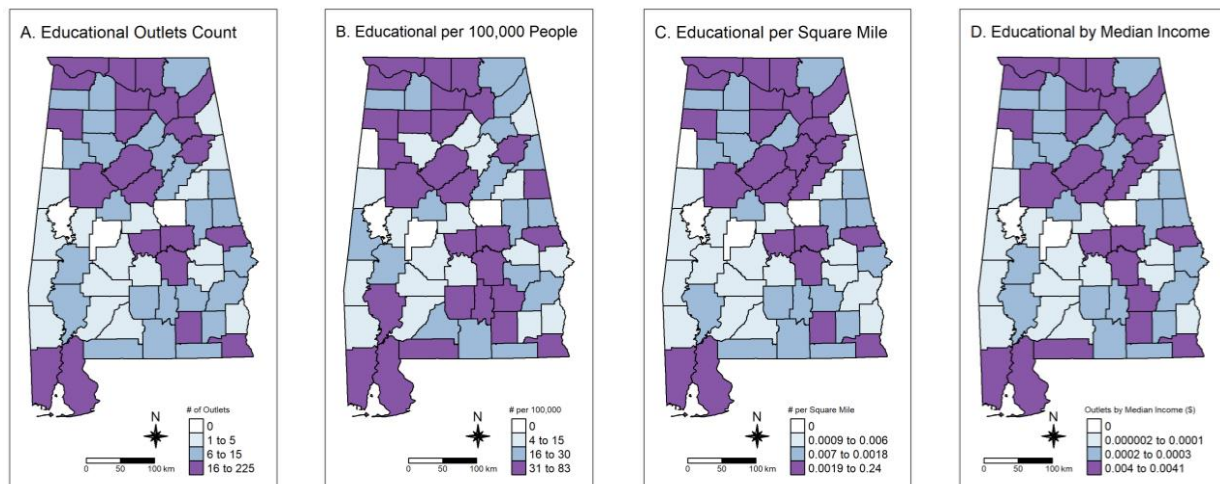
**Figure 7: Container-Based Measure: Alabama Outlets with On-Premise Privileges by County**



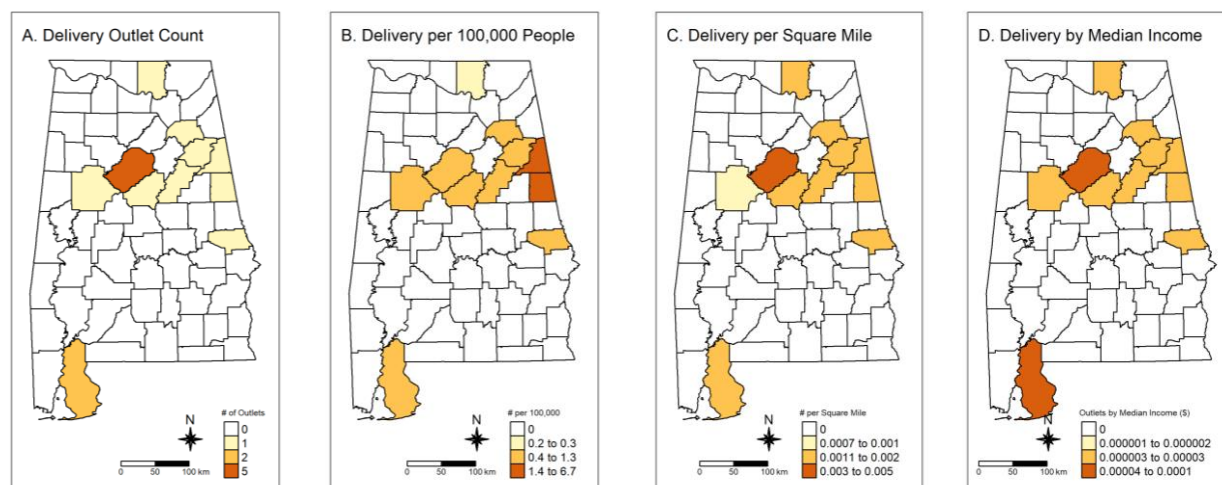
**Figure 8: Container-Based Measure: Alabama Outlets with Off-Premise Privileges by County**



**Figure 9: Container-Based Measure: Alabama Outlets with Educational Licenses by County**



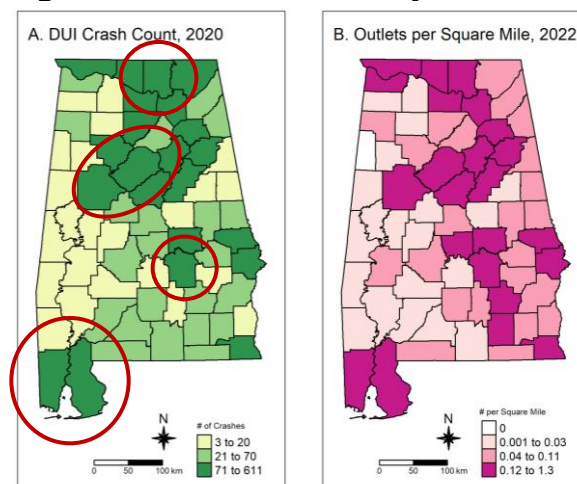
**Figure 10: Container-Based Measure: Alabama Outlets with Delivery Licenses by County**



The Alabama Mapping Team might also want to consider mapping the outlet and licensing data in the context of specific alcohol-related harms, such as driving under the influence (DUI) automobile crashes. Figure 11a maps the county-level DUI crashes in 2020. We contrast the county of total DUI crashes per county with the number of retail alcohol outlets per square mile in Figure 11b to facilitate comparisons between DUI crash density with outlet density.

Although the DUI crash data is for 2020, two years before the outlet data from 2022, testing for association between outlets and harms such as DUI crashes can provide powerful insights. For example, Baldwin and Mobile in the southwestern corner of the state, Tuscaloosa and Jefferson in the central part of the state, Montgomery in the southeastern part of the state, and Madison in the northern part of the state have among the highest number of DUI crashes of any counties in the state. These counties are highlighted with red circles in Figure 11a and rank as the top five counties with the highest alcohol retailers, as indicated in Figure 6. These counties remain high when standardizing by square miles, as seen in Figure 11b.

**Figure 11: DUI & Outlet Density**



## Dataset 2b: A Closer Look at Montgomery, Alabama

AOD measurement can aid in monitoring the geographic landscape of alcohol exposure across various scales, such as the state, counties, cities, or neighborhoods. AOD measurement can also be useful in assessing the characteristics of neighborhoods in close proximity to a high concentration of alcohol outlets, where many of the most serious community harms are likely to manifest. Extensive prior research shows that crime and nuisances tend to concentrate around clusters of off-premise alcohol outlets such as liquor stores and convenience stores. To illustrate the utility of locally monitoring outlet density and community health and safety, we analyzed several data features of the city of Montgomery. To do this, we derived several measures of alcohol density, including container-based and distance-based AOD measures, which we combined with reactive service call data shared by the Montgomery Police Department.

This project was contracted to provide at least one spatial access-based measure for a city or town in Alabama. Here, we delivered three container-based and two distance-based measures for alcohol outlets. The container-based measures for the city analytics include a 1) simple count of outlets, 2) outlets per 1,000 residents and 3) outlets per square mile. The container for this analysis was the census block group, which we use to approximate ‘neighborhoods.’ Our two distance-based measures include a mean-distance measure and the spatial accessibility index, or SAI. The former measure takes the average distance from the center of each neighborhood to the seven nearest outlets, following roadways to approximate automobile and pedestrian travel routes. The spatial-accessibility index also measures the average distance from the center of the neighborhood to the seven nearest outlets, but with a slightly different distance method such that high values of the SAI indicate alcohol outlets within close proximity to each other.

**Figure 12: Montgomery, Alabama Alcohol Outlets, 2022**

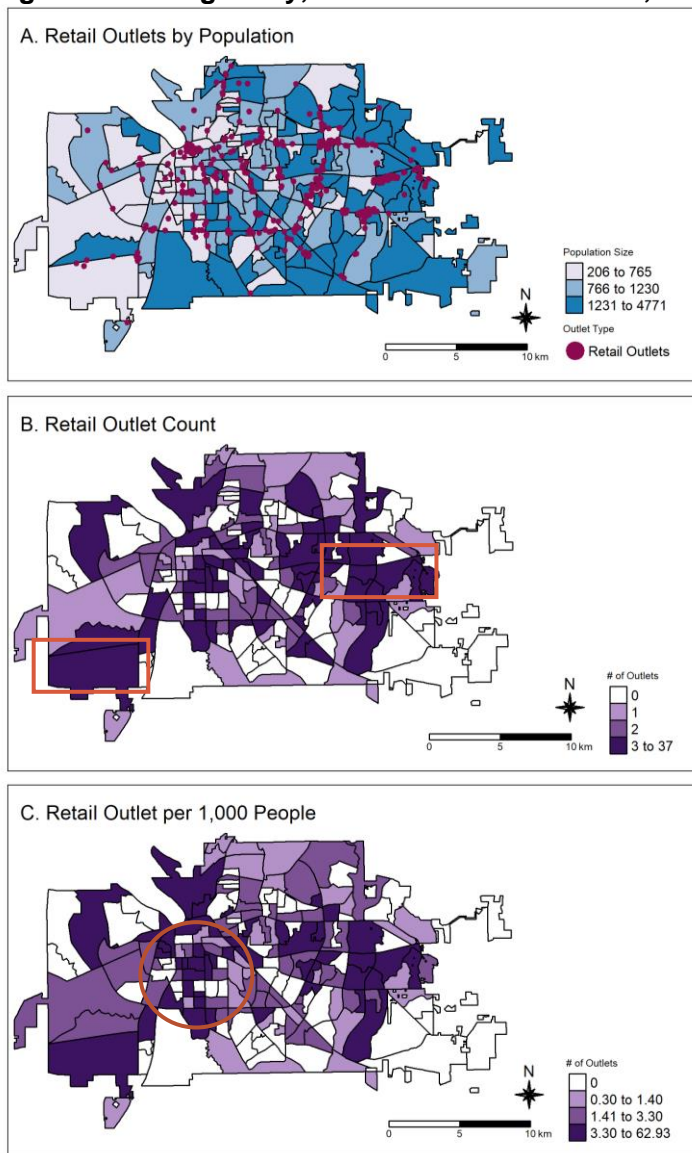


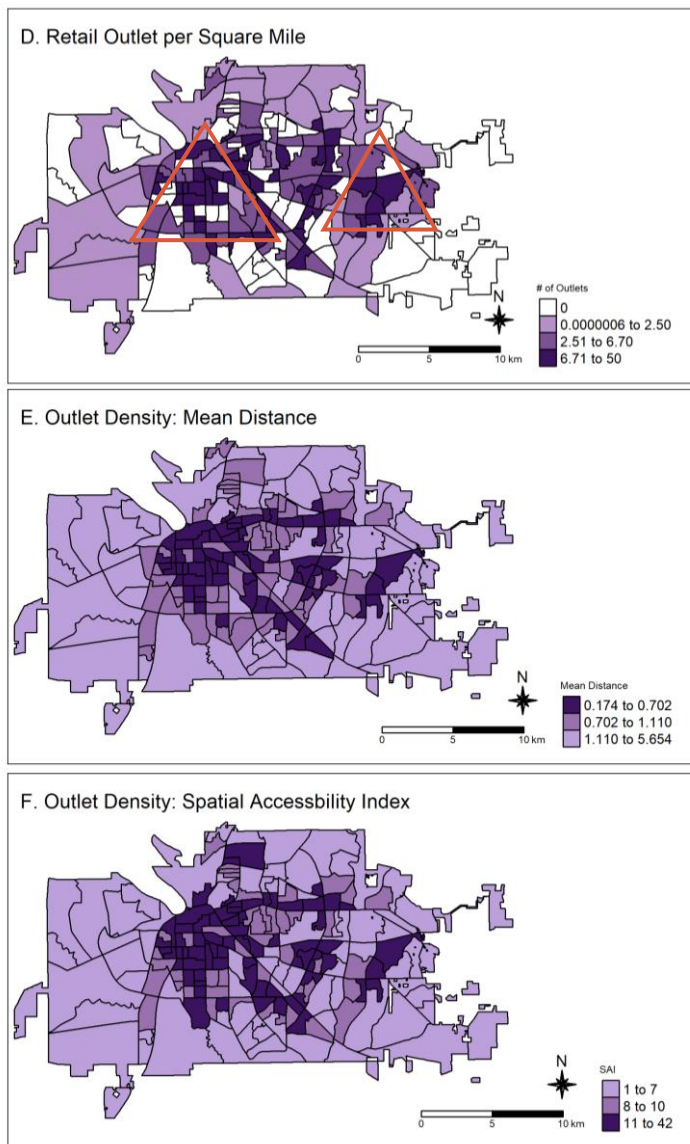
Figure 12a uses two layers, one to show the location of each retail outlet (purple circles) and another to show the population size of each neighborhood (blue-shaded areas). This map highlights a semicircle pattern of alcohol outlets consistent with highway 31, indicating a concentration of alcohol outlets along the highway corridor throughout much of the city. Similar patterns are seen along highway 80 and highway 85. The map also identifies several dense outlet clusters on the city’s east side.

Figures 12b through 12f display the alcohol outlet distribution in Montgomery across the five outlet density measures, with darker shaded colors identifying a high neighborhood-level concentration of alcohol outlets. Lighter shaded areas signify lower outlet concentration and white spaces identify areas with no alcohol outlets. Notice the high number of total alcohol outlets along the highway 80 and 85 neighborhoods, as indicated by the red squares in Figure 12b.

Figure 12c gives us a slightly different picture of outlet density by mapping neighborhoods according to outlets per 1,000 residents. Darker shades identify high-density neighborhoods, and lighter shades represent areas with fewer outlets per 1000 people. On a per capita basis, outlet density is higher in the downtown city center area, identified by the red circle. Note that the corridor along highway 80 and the western part of highway 85 remain darkly shaded.

In Figure 12d, the city center and the highway 85 corridor on the east side of town show high outlet concentration when measured as outlets per square mile (denoted by the red triangles). Between the two triangles is a narrow, north-south band of neighborhoods following highway 231. According to our analysis, this is another stretch of the city where outlet density is very high rate.

Figures 12e-f map neighborhood alcohol outlet density using distance-based measures that identify high outlet clustering in small geographic areas. According to both measures, outlets are concentrated in the city center, the eastern corridor of highway 85, and the narrow corridor between the city center and highway 85. Residents



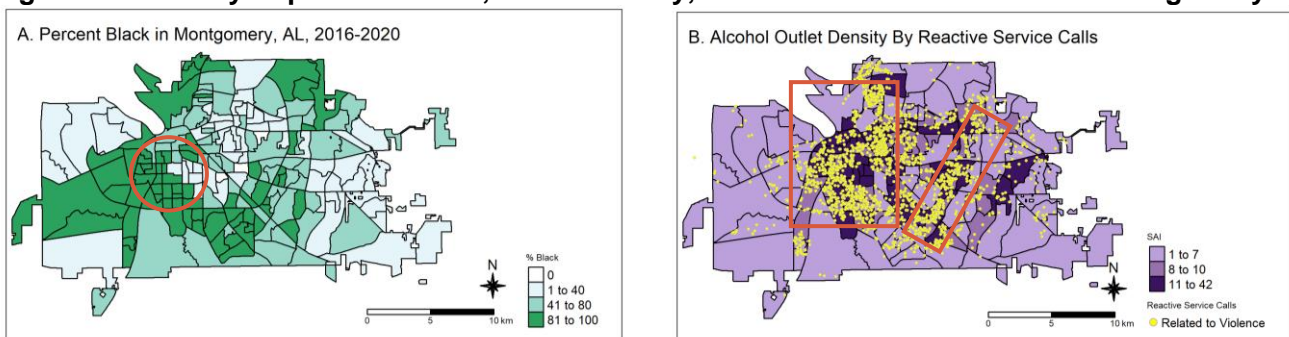
in the dark-purple neighborhoods have the easiest access and highest exposure to alcohol. Youth in these neighborhoods are more likely to engage in underage drinking.

Figures 13a and 13b illustrate how pairing ABC licensing data with Census data captures uneven exposure to subpopulations. Figure 13a maps the share of Black residents in each neighborhood. Comparing the distribution of minority populations to the outlet density maps shows that being black in Montgomery is associated with a higher risk of alcohol exposure. Put differently, it's easier for the average black resident of Montgomery to purchase alcohol than the average white resident, owing to the higher concentration of alcohol retailers in black neighborhoods. Black youth are also at greater risk of underage drinking by virtue of their above-average neighborhood exposure to alcohol marketing and products. In the map in Figure 13, the red oval identifies an area where Black residents are exposed to alcohol outlets and their harm at higher rates than in other neighborhoods.

Using data provided by the Montgomery Policy Department, we were also able to map reactive service call data related to alcohol outlet clustering. After cleaning and classifying the call logs, we created a map (Figure 13b) that visualizes reactive service calls related to violence, including shootings, stabbings, rapes, assaults, and domestic violence. Consistent with a similar analysis in other US cities, violence-related service calls are concentrated in and around high-AOD

neighborhoods in Montgomery (identified by red rectangles). Many of these kinds of service calls are directly related to excess alcohol consumption. High concentration of on-premise outlets also increases the likelihood of other forms of violence, such as shootings and stabbings. According to our analysis, there is a significant association between alcohol outlet density and violence-related reactive services in Montgomery County.

**Figure 13: Minority Population Share, Outlet Density, and Reactive Service Calls in Montgomery**



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## Recommendations

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The analysis and visualizations included in this report illustrate the kinds of analytics the Alabama project team may consider when designing a state alcohol monitoring dashboard. These examples can also be used by the ABC to assess the distribution of licenses in the state or by ALEA to assess community safety in the context of the alcohol landscape. To further expand its analytic capacity, the Public Science Collaborative recommends that the Alabama Mapping Team:



**Retain historical alcohol licensing data.** Retain prior years of licensing data to slowly create a time-series dataset. By expanding the number of years of licensing data in the state database, the Alabama Mapping Team will be able to conduct time-series analysis, which enables monitoring of how changes in outlet density (increases in off-premise density, decreases in on-premise density) relate to changes in community health and safety. Time-series licensing data will also enable assessment of the impact of alcohol policy on liquor sales, violent crime, and OWI crashes, for example. And finally, time-series data will improve the state's ability to detect relationships between alcohol outlets and community harms.



**Connect with local police departments and community groups.** By connecting with police departments, the Alabama Mapping Team can obtain more reactive calls for service data, including long time series and a larger number of communities. Police officers are on the front lines in communities throughout Alabama and have firsthand knowledge about problem establishments, high-risk neighborhoods, and chronic violators of the state liquor code (e.g., selling to minors). Partnerships between ABC and local police form the backbone of a responsible and responsive state liquor system. Reactive service data are readily available and hyperlocal, making them ideal for monitoring community risk factors associated with alcohol outlet clustering. We recommend continued outreach to Mobile and Autauga, Alabama, as these are police departments the Alabama Project Team has connected with in the past year.



**Create and publish an interactive dashboard.** Making this data available in an interactive format to the public allows a variety of community stakeholders to “drill down” into the data to create custom maps and analytics for their area of interest. Additional analytics that can be completed with the project data include assessing the type of alcohol license or alcohol sold, detection of differences between wet and dry counties, and identification of positive impacts of expanded educational licenses. We recommend use of additional Census data to identify the composition of neighborhoods with high AODs or identify vulnerable neighborhoods at greater risk of alcohol exposure, such as adolescents or young adults. We also recommend including schools, parks, churches and other culturally sensitive community infrastructure to understand the population exposure. Adding alcohol violation data will enable assessment of risks associated with repeat offenders of alcohol policy.



**Further investigate the data infrastructure.** The Alabama Mapping Team may consider investigating the following key findings in this project's analytics. See recommendations below:

- a. Baldwin is consistently among the counties with the highest alcohol licenses and outlets, including after adjusting for the size of the county's population and per square mile.
- b. Birmingham, Mobile, Huntsville, Montgomery, & Tuscaloosa are the cities with the highest retail licenses and alcohol outlets.
- c. Wedowee, Alabama, has the highest number of retail licenses and alcohol outlets per 1,000 people.
- d. In Montgomery, Alabama, reactive service calls related to violence are heavily concentrated in neighborhoods with a high density of alcohol establishments. This was true across measurement strategies, with the most vulnerable areas appearing in the city center and highway 231 corridor.
- e. The southwestern part of the state has the highest rates of off-premise alcohol per 100,000 people, signaling an area that is more vulnerable to underage drinking and unsupervised alcohol consumption occurring in homes or during events.