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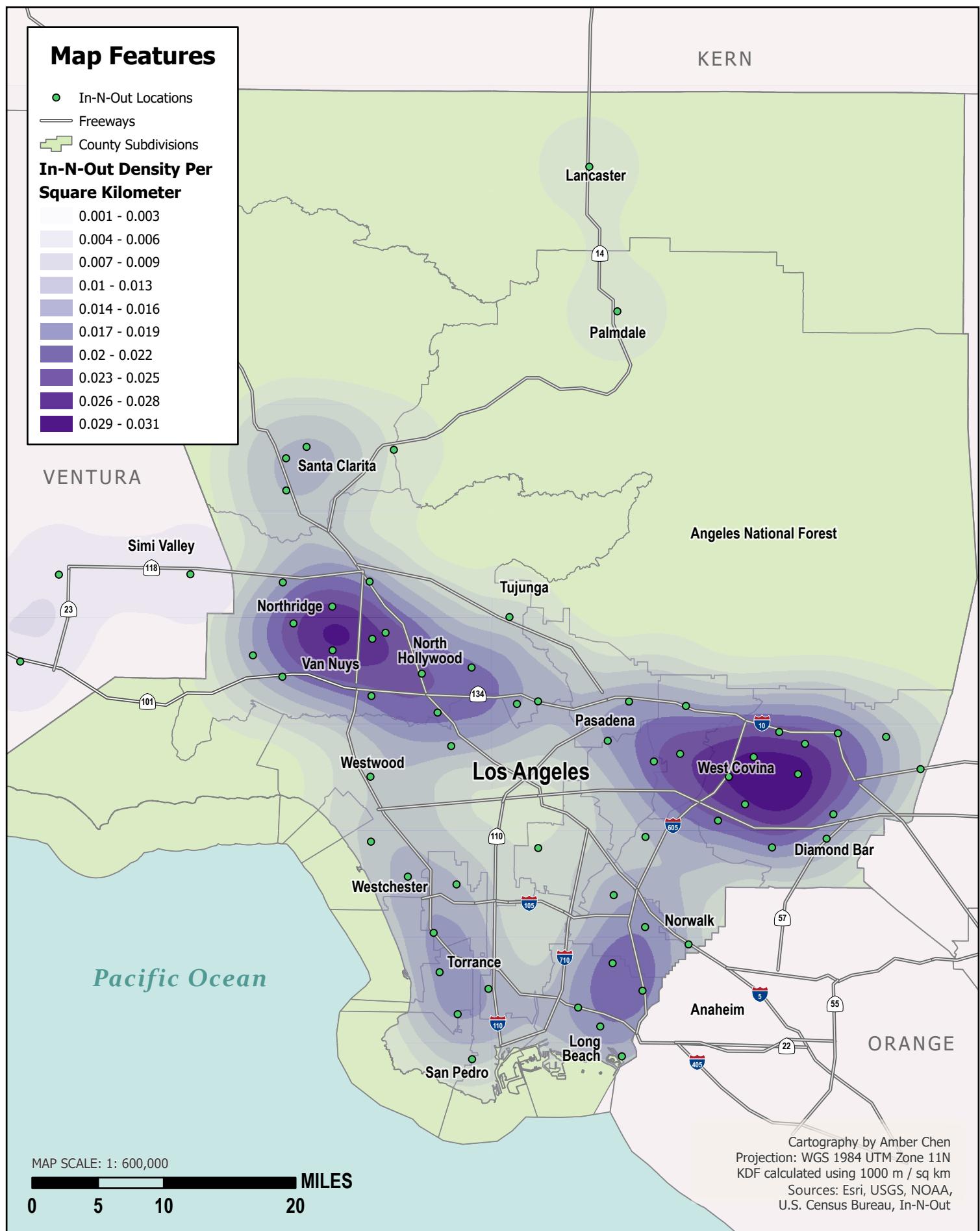
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### **Geocoding Write-Up (Assignment 3)**

1. *The problem you want to address with your analysis. Specifically why you select these addresses and what you have learned from your map. (Do we have more Starbucks in Westwood than in Santa Monica?)*
  - a. I selected everyone's favorite fast-food chain, In-N-Out Burger. I was curious as to how their stores were distributed across Los Angeles — their birthplace, after all. From this map, I learned that In-N-Out hotspots are located around West Covina and Van Nuys. West Covina has three In-N-Outs in the city itself, and many of its surrounding cities additionally contain one In-N-Out each. This isn't surprising, as the very first In-N-Out was located in Baldwin Park, which is near West Covina. In fact, the first store is still located right on Francisquito Avenue, in the most concentrated area of the hotspot!
2. *How can you use Geocoding for other applications? Imagine a scenario where you can apply Geocoding with other GIS techniques.*
  - a. Geocoding, paired with the kernel density tool and the spatial join tool, can help us analyze the distribution or density of many different topics. Examples include population density, the detection and distribution of certain environmental pollutants, and the presence of disease. For example, I could pair geocoding with the kernel density tool to display outbreak hotspots for COVID-19 or other illnesses.
  - b. Geocoding is also useful for mapping crime and analyzing crime-related issues. Reverse geocoding could potentially be used to locate a missing person, as long as their phone shows their latitude/longitude coordinates and their PCS. Reverse geocoding allows us to convert coordinate data into real addresses.
3. *Discuss your geocoding procedures and some issues you encountered. For all unmatched addresses, describe the rematching procedure and the possible reason.*
  - a. When geocoding my addresses, at first, 0 of the 66 of them matched. I realized it was because the ArcGIS World Geocoding Service wasn't working properly, so instead I ran the geocoder with the additional World locator that I had downloaded during discussion. After running that one, all 66 of them matched! However, I noticed that my one point that was supposed to be in Lancaster was super far east of Lancaster. I interactively rematched it. Turns out, that point had a 96% match accuracy instead of 100%, generating about 20 different locations as possible matches. I ended up just manually placing it using the “pick by point” feature, and checking for location accuracy by comparing it with Google Maps.

# In-N-Out Location Density in LA County



# LA County In-N-Out Burger Distribution, By County Subdivision

