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DECLARATION OF ALIX ROSENTHAL IN SUPPORT OF REQUEST OF LYFT, INC. FOR CONFIDENTIAL TREATMENT OF CERTAIN DATA IN ITS 2022 ANNUAL REPORT

I, Alix Rosenthal, declare and state as follows:

1. I make this declaration in support of Lyft, Inc.'s ("Lyft") request for confidential treatment of certain data included in its Transportation Network Company ("TNC") 2022 Annual Report ("2022 Annual Report"). This declaration is submitted pursuant to Decision (D.) 20-03-014, as modified by D. 21-06-023, and consistent with General Order 66-D. Lindsay Llewellyn, General Counsel and officer of Lyft, has delegated signing authority for this declaration to me.

2. I am Vice President of Regulatory Compliance for Lyft. In my capacity as Vice President of Regulatory Compliance, I am familiar with Lyft's operations, its data collection, storage, and analysis policies and practices, and the processes employed in preparing its Annual Report. Having worked in the TNC field for a number of years, and based upon my prior experience working with Zendrive, a mobile data analytics firm, I have become knowledgeable regarding the collection of and uses for vehicle mobility data, such as the trip data collected by Lyft, as well as the utility of that data for a variety of purposes and the economic value that flows from that utility.

3. I have personal knowledge of the truth of all matters set forth herein, except those matters which constitute legal argument or rely upon third party sources, and as to those matters, I believe them to be legally supported and/or true and accurate, as appropriate. In addition, I hereby incorporate by reference and rely upon the Motion Of Lyft, Inc. For Confidential Treatment Of Certain Data In Its 2021 Annual Report, filed on June 21, 2021 ("2021 Motion for Confidential Treatment"), as support for Lyft's request for confidential treatment here.[1]

4. Consumer Protection and Enforcement Division ("CPED") staff has provided Lyft with data templates and a "Data Dictionary" in the form of Excel spreadsheets with multiple tabs, to be used in preparing the Annual Report for 2022. Each of the Excel spreadsheets represents a separate report to be submitted to CPED, which contains multiple data fields. Below, I identify the specific data fields for which Lyft seeks confidential treatment by identifying the Report Name for each spreadsheet and the Field Name for each field within a given report assigned by CPED in the Data Dictionary.

5. I am aware that on or about December 21, 2020, Administrative Law Judge Robert Mason issued an order on Lyft's motion for confidential treatment of portions of its 2020 Annual Report, granting the motion in part and denying in part.[2] In his ruling, Judge Mason agreed that certain fields should be treated as confidential and ordered that such fields may be

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[1] Lyft's 2021 Motion for Confidential Treatment may be accessed here. https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M389/K142/389142361.PDF

[2] Assigned Administrative Law Judge's Ruling on Uber Technologies, Inc.'s and Lyft's Motion for Confidential Treatment of Certain Information in their 2020 Annual Reports ("Confidentiality Ruling").

redacted in filing the Annual Report. As no party has challenged that aspect of his ruling, and the fields that Judge Mason ruled to be confidential are essentially unchanged in the 2022 Annual Report templates, I rely upon the December 21, 2020 Ruling, and the evidence and argument submitted by Lyft in connection with its motion for confidential treatment of its 2020 Annual Report, in seeking confidential treatment as to those fields the Commission has deemed confidential.

6. The fields that Judge Mason ruled are subject to confidential treatment are set forth in Appendices A and B to his ruling, and include the following fields as they are identified in the 2022 Annual Report templates provided by CPED:[3]

Report	Field
Requests Accepted	
	Waybill1; Waybill2; Waybill3; Waybill4; Waybill5; Waybill6; Waybill7[4]
	DriverID
	VIN
	AppOnOrPassengerDroppedOffLat; AppOnOrPassengerDroppedOffLong
	TripReqRequesterLat; TripReqRequesterLong
	TripReqDriverLat; TripReqDriverLong
	ReqAcceptedLat; ReqAcceptedLong
	PassengerPickupLat; PassengerPickupLong
	PassengerDropoffLat; PassengerDropoffLong
Requests Accepted Periods	
	DriverID
	VIN
	PeriodStartLat
	PeriodStartLong
	PeriodEndLat
	PeriodEndLong
Requests Not Accepted	
	DriverID
	VIN
	TripReqRequesterLat
	TripReqRequesterLong

[3] The appendices to the Confidentiality Ruling do not consistently track the descriptions given those fields by CPED. For clarity, Lyft has identified each specific field using the nomenclature provided by CPED in the 2022 templates.
[4] The Commission subsequently determined that the Waybill fields should not be treated as confidential. *See* Ruling Granting, In Part, The Motions Of Uber Technologies, Inc., Lyft, Inc., Hopskipdrive, Inc., And Nomad Transit, LLC For Confidential Treatment Of Portions Of Their 2021 Annual Transportation Network Company Reports, p. 5-6. Lyft does not seek confidential treatment of these fields.

	TripRequesterDestinationLat
	TripRequesterDestinationLong
	NotAcceptedDriverLat
	NotAcceptedDriverLong
Assaults & Harassments	
	Waybill1; Waybill2; Waybill3; Waybill4; Waybill5; Waybill6; Waybill7
	DriverID
	VIN
	AssaultHarassLat
	AssaultHarassLong
	AssaultHarassType; AssaultHarassDef
	AssaultHarassDescr
Accidents & Incidents	
	Waybill1; Waybill2; Waybill3; Waybill4; Waybill5; Waybill6; Waybill7
	DriverID
	VIN
	IncidentAccidentLat
	IncidentAccidentLong
	AmountPaidAnyParty
	AmountPaidDriverIns
	AmountPaidTNC
	AmountPaidOther
Driver Names & IDs	
	DriverID
	DriverFirstName
	DriverMI
	DriverLastName
	DriverLicNum
	DriverLicState
	DriverLicExp
Accessibility Complaints	
	DriverID
50,000+ Miles	
	DriverID
	VIN
Number of Hours	
	DriverID
Number of Miles	
	DriverID
Law Enforcement Citations	
	Waybill1; Waybill2; Waybill3; Waybill4; Waybill5; Waybill6; Waybill7
	DriverID

	VIN
Off-platform Solicitation	
	DriverID
	VIN
	OffPlatformSolicitationLat
	OffPlatformSolicitationLong
Suspended Drivers	
	DriverID
Zero Tolerance	
	Waybill1; Waybill2; Waybill3; Waybill4; Waybill5; Waybill6; Waybill7
	DriverID
	VIN
	ZeroToleranceLat
	ZeroToleranceLong

7. In addition to the fields referenced in paragraph 6 above, Lyft seeks confidential treatment of the fields below, which include detailed information concerning individual trips completed on the Lyft platform over the preceding year down to the Census Block level. Specifically, Lyft seeks confidential treatment for the following additional fields in the 2022 Annual Reports:

Report	**Field**
Requests Accepted	
	VehicleMake
	VehicleModel
	VehicleYear
	AppOnOrPassengerDroppedOffZip
	AppOnOrPassengerDroppedOffTract
	AppOnOrPassengerDroppedOffCB
	AppOnOrPassengerDroppedOffDate
	TripReqRequesterZip
	TripReqRequesterTract
	TripReqRequesterCB
	TripReqDriverZip
	TripReqDriverTract
	TripReqDriverCB
	TripReqDate
	ReqAcceptedDate
	ReqAcceptedZip
	ReqAcceptedTract
	ReqAcceptedCB
	PassengerPickupDate
	PeriodTwoMilesTraveled
	PassengerPickupZip

	PassengerPickupTract
	PassengerPickupCB
	PassengerDropoffDate
	PassengerDropoffZip
	PassengerDropoffTract
	PassengerDropoffCB
	PeriodThreeMilesTraveled
	TotalAmountPaid
	PassengerPickupDatePrescheduled
	RideIDMilesTraveledP23
	RideIDMilesTraveledP3
Requests Accepted Periods	
	VehicleMake
	VehicleModel
	VehicleYear
	PeriodStartZip
	PeriodStartTract
	PeriodStartCB
	PeriodEndDate
	PeriodEndZip
	PeriodEndTract
	PeriodEndCB
	PeriodMilesTraveled
Requests Not Accepted	
	VehicleMake
	VehicleModel
	VehicleYear
	TripReqDate
	TripReqRequesterZip
	TripReqRequesterTract
	TripReqRequesterCB
	TripRequesterDestinationZip
	TripRequesterDestinationTract
	TripRequesterDestinationCB
	NotAcceptedDate
	NotAcceptedDriverZip
	NotAcceptedDriverTract
	NotAcceptedDriverCB
Assaults & Harassments	
	VehicleMake
	VehicleModel
	VehicleYear

8. For convenience, Lyft refers to this data collectively as "Trip Data." Lyft seeks confidential treatment of the Trip Data on two primary grounds: (1) the data constitutes a trade

secret; and (2) disclosure would constitute an unwarranted invasion of privacy. As explained below, both grounds exempt the data from the disclosure under the California Public Records Act.

THE TRIP DATA CONSTITUTES A TRADE SECRET EXEMPT FROM DISCLOSURE UNDER GOVERNMENT CODE §6254(k)

9. Because the Trip Data has independent commercial value apart from its value in allowing Lyft to comply with regulatory requirements, and is subject to reasonable efforts to maintain its confidentiality, it is protected from disclosure as a trade secret pursuant to Government Code §6254(k), Civil Code §3426.1(d),[5] and Evidence Code §1060.

10. The Trip Data includes an array of information regarding ***every*** ride request on the Lyft platform during the reporting period. The Trip Data is among the most sensitive and valuable data collected and maintained by Lyft. Trip data is captured using data collection, analysis and reporting processes developed by Lyft over time and at great effort and expense. These processes continually capture events occurring across the Lyft platform and store the resulting data in Lyft's proprietary databases. The data is used in Lyft's operations and is compiled for both regulatory reporting ***and*** business analytics purposes. In addition to enabling Lyft to adapt to continually-evolving regulatory requirements, the data provides Lyft with critical insights into the effectiveness of its services, features, and marketing and promotional efforts, and helps Lyft to create an exceptional user experience for passengers and drivers.

11. Importantly, although Lyft formats the Trip Data (and other trip data, which includes precise latitude and longitude and other details) to conform to CPED data reporting requirements when submitting its Annual Reports, that very same data has substantial value wholly apart from its value in allowing Lyft to comply with regulatory requirements. The data is continually collected, compiled, and analyzed as an integral aspect of Lyft's business operations, as the success of Lyft's business model depends upon continually optimizing the balance between ride demand and vehicle supply. Lyft endeavors to optimize supply and demand by using competitive pricing and promotions, such as ride credits and other discounts, to stimulate passenger demand, while increasing the supply of vehicles to areas with high demand by offering drivers minimum hour guarantees, bonuses, and other driver incentives. Lyft is continually adjusting these two levers to ensure, on the one hand, that fares and/or discounts are sufficiently enticing to attract passengers, and, on the other hand, that fares and driver promotions and incentives are sufficiently enticing to attract enough drivers to meet demand at any given time. This delicate balance is central to Lyft's competitiveness in California and in markets nationwide and the Trip Data allows Lyft to dynamically evaluate the effectiveness of its promotional, advertising, and incentive campaigns used to balance supply and demand. For example, by comparing the number and variety of rides completed during a particular time period in a particular area (e.g., a zip code, census block, city, or county) against the driver incentive programs deployed during that period for that area, Lyft can gauge the

[5] Pursuant to Civil Code §3426.1(d), a trade secret is "information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy."

effectiveness of those incentives in increasing the supply of drivers and can adjust its incentive programs going forward. Similarly, by cross-referencing the number and variety of rides against the particular passenger promotions run at that time, Lyft can track, assess, and understand the efficacy of its passenger-directed promotions, and can adjust them accordingly. Equally important, Lyft can identify those promotions that are ineffective and can avoid further expenditures on ineffective promotions. The ability to effectively measure the real-world effectiveness of its promotions and incentives using metrics collected during each individual trip allows Lyft to save a tremendous amount of time and effort on ineffective campaigns or promotions. To the best of my knowledge, no other company or individual has the ability to collect the same data from rides completed on the Lyft platform, making Lyft's Trip Data unique and distinct from data sets that may be collected by other TNCs concerning rides on their platforms, or by other companies from vehicle-connected GPS systems or processes. There is no other source of this extremely valuable data and to Lyft's knowledge, no one else maintains or is capable of generating the same compilation of data elements as those contained in Lyft's Trip Data.

12. If Lyft's competitors, including Uber, HopSkipDrive, Wings, Silver Ride, Nomad Transit, and any other company that has obtained or might wish to obtain a TNC permit from the Commission, were provided access to Lyft's Trip Data, they could and would analyze and manipulate that data to gain insights into Lyft's market share, its pricing practices, its marketing strategies, its route optimization algorithms, and other critical aspects of its business that it does not publicly disclose. For example, the Trip Data would allow competitors to identify neighborhoods or portions of neighborhoods (defined by census block or zip code) in which Lyft drivers complete the greatest numbers of rides, allowing them to target these passenger rich areas. Alternatively, such competitors could identify areas of low activity, allowing them to profitably avoid such areas. Without access to Lyft's data, it would be extremely difficult and costly to obtain the same insight into these important commercial realities. Furthermore, because Lyft's fares and promotions are, by their nature, publicly accessible, if competitors had access to the Trip Data they could track those fares and promotions and analyze how the number or variety of rides fluctuated in response to changes in fares or promotional activities. They could then adjust their fares, or copy those promotions that the data shows were successful, in order to drive new customers to their platforms. Such insights would be enormously valuable to a competitor, who would not need to invest the significant resources that Lyft has invested to test these programs and analyze the data to understand the market and optimize revenue generation. A new competitor could enter the market with a substantially reduced investment in money and human resources, while existing competitors could use the data to increase their market share, reduce their costs, or undercut Lyft's marketing campaigns, by "free-riding" on Lyft's data. I am confident in these assessments as I know that if Lyft were to obtain access to the trip data of its competitors, Lyft would analyze the data to assess the competitor's market share, its promotional initiatives, and other aspects of its business operations to gain insights that might be useful to Lyft in modifying its promotions or operations.

13. It is my opinion, based upon my years of experience in the TNC field and prior work with vehicle data analytics, that mobility data collected from GPS-connected vehicles or mobile devices in vehicles, such as the Trip Data here, has enormous commercial value for a variety of purposes and organizations, not just TNCs. In fact, I am aware that an active market

has developed for the sale or licensing of such data. For example, a company called Datarade hosts an online marketplace to facilitate the sale or licensing of GPS mobility data. The website and online marketplace can be found here: https://datarade.ai/data-categories/mobility-data. I am also aware of another company called Streetlight Data, which is focused on selling "anonymized location records from smart phones and navigation devices in connected cars and trucks." The website for Streetlight Data can be found here. https://www.streetlightdata.com/our-data/. In addition, I am aware that consulting firms, such as McKinsey & Co, have issued reports analyzing the monetary value of mobility data collected from smart phones and GPS connected vehicles – essentially the same data at issue here. See "Unlocking the Full Life-Cycle Value from Connected Car Data," at https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/unlocking-the-full-life-cycle-value-from-connected-car-data#; see also "Car Data: Paving the Way to Value-Creating Mobility," at https://www.the-digital-insurer.com/wp-content/uploads/2016/05/704-mckinsey_car_data_march_2016.pdf. McKinsey & Co, is a well-known and highly regarded consulting firm. Each of the foregoing authorities helps to confirm my own view that vehicle–connected mobility data, such as Lyft's Trip Data, has tremendous economic value for a variety of purposes wholly apart from Lyft's use of the data for its own operations or for compliance purposes. In fact, I am aware that at least one non-TNC entity has inquired of Lyft regarding the purchase or licensing of Lyft's Trip Data. The fact that third parties would be willing to pay Lyft for the right to access or license its Trip Data is alone sufficient to satisfy the second requirement of Civil Code §3426.1(d), that it is information that derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use.

14. Lyft stores the Trip Data on a secure software network protected by appropriate computer security controls, access to which is limited to a subset of Lyft employees who have been individually approved and use such information only to fulfill their job functions. Lyft also requires, as a condition of employment, that all new employees sign a confidentiality agreement. This agreement is put in place to protect Lyft's proprietary information from being disclosed by employees or former employees to unauthorized outside parties. The company also requires all employees to sign Lyft's employee handbook, which describes in detail each employee's obligations regarding technology use and security and protection of Lyft's confidential and proprietary information; and requires all visitors to Lyft headquarters to read and sign a non-disclosure agreement before proceeding past the reception desk. Furthermore, since the Commission issued General Order 66-D, Lyft has consistently complied with that order in seeking confidential treatment for the data it has identified as confidential herein, and otherwise vigorously protects such information from public disclosure. Significantly, although an individual driver or passenger would be aware of the location where a given ride commenced and terminated, individual drivers and passengers are not given access to rides completed by other drivers or passengers, or to the larger compilation of millions of rides completed over the course of a year that is included in the Annual Report.

DISCLOSURE OF THE TRIP DATA WOULD CONSTITUTE AN UNWARRANTED INVASION OF PRIVACY UNDER GOVERNMENT CODE §6254(c)

15. Because public disclosure of the Trip Data may allow third parties to identify particular individuals and track their movements, potentially exposing them to danger, embarrassment, ridicule, liability, or other negative consequences, the data is protected from disclosure pursuant to Government Code §6254(c) as a file the disclosure of which would constitute an unwarranted invasion of privacy, as well as § 6254(k) and the Right of Privacy guaranteed by Article I, Sect. 1, of the California Constitution.

16. The ruling on Lyft's 2020 motion for confidential treatment (2020 Ruling) agreed that to the extent TNC trip data includes driver names, vehicle identification numbers, and precise latitude and longitude data, that data is protected from disclosure pursuant to §6254(c), finding "support for the proposition that this information might be engineered to identify the exact starting and ending addresses of a trip, which can then be combined with other information to identify a driver and/or passenger." The 2020 Ruling determined that Lyft and Uber failed to meet their burden to support confidential treatment for "the balance of the geolocational data (date and time, census block and zip code of both the driver and rider; when the rider is picked up and dropped off; when the driver's app is turned on or the last rider dropped off; time a trip request was made; and when the trip request was accepted on the TNC's app)." By this Declaration, and Lyft's 2022 Motion for Confidential Treatment (incorporated by reference herein), Lyft supplements its legal and evidentiary showing to address the issues identified in the 2020 Ruling.

17. Trip Data includes a wealth of information concerning millions of rides completed on the Lyft platform over the preceding year, including the precise date and time of pick-up and drop-off, and the location of the requester, pick-up location of the passenger, and drop off location of the passenger, by zip code and census block, as well as the miles traveled. Mobility data of this level of granularity can be readily used to identify specific individuals and track their movements, potentially revealing intimate personal details, such as medical visits, political affiliations, personal relationships, sexual orientation, etc.

18. According to the US Census Bureau, the census block is the "smallest level of geography you can get basic demographic data for, such as total population by age, sex, and race" and is "[g]enerally small in area. In a city, a census block looks like a city block bounded on all sides by streets."[6] The Census Bureau's own documents emphasize that a census block may include as few as ***five*** individuals.[7]

19. The Census Office of the State of California has created an interactive map which identifies census tracts and census blocks within California, along with a variety of statistics and demographic information related to such blocks and tracts. The map can be found at https://census.ca.gov/htc-map/. The map itself is located at https://cacensus.maps.arcgis.com/apps/webappviewer/index.html?id=48be59de0ba94a3dacff1c9

[6] https://www.census.gov/newsroom/blogs/random-samplings/2011/07/what-are-census-blocks.html
[7] Exhibit A..

116df8b37. Each census tract and block is assigned a unique GEOID. The Census Office map allows users to isolate each census block and to examine various statistics and demographic information. The map reveals that California has numerous census blocks which include only a handful of individuals.[8]

20. For example, Census Bloc GEOID 06059021813, in Placentia, California, in Orange County and only six miles from Anaheim, has a population of three individuals.[9] Census Block GEOID 06037980009, located in Los Angeles, halfway between Hollywood and Glendale, has a population of five individuals.[10] Census Block GEOID 06037980034, located in Los Angeles County, near Buena Park, has a population of nine individuals.[11] Census Block GEOID 06083980500, in Santa Barbara County, just north of the Vandenburg Airforce base, has a population of nineteen individuals.[12] Census Block GEOID 06001982000, in Alameda, has a population of twenty-six individuals.[13] Census Block GEOID 06075980300, in San Francisco, has a population of thirty-two individuals.[14] Lyft's rideshare service is available in each of these census blocks. The foregoing are examples of census blocks with few individuals, but the Census Office data indicates that there are many other census blocks in which only a small number of individuals live.

21. Furthermore, although the above-cited census blocks present a particularly compelling demonstration of the lack of anonymity provided by census block reporting, it must also be acknowledged that even densely populated city blocks implicate similar privacy concerns. Consider the revealing information one can learn with just a few details regarding an individual and the time and location at which a ride commenced. An individual standing on a street corner in his San Francisco neighborhood who happens to see his neighbor get into a Lyft or Uber could, by reference to the Trip Data, ascertain the person's destination by simply sorting the data by date, time and census block; whether to her office located in one census block or zip code, to a suspected paramour's residence, to a healthcare or psychiatric facility, to an AIDS clinic, to a political rally, or to another suspected location known to be in a different census block or zip code. Indeed, given the modern day ubiquity of third party surveillance video outside many office and apartment buildings, restaurants, private residences, and other locations in densely populated cities, one would not need to be standing on a street corner to acquire the information necessary to identify a specific individual and track their movements, as the combination of the video and the Trip Data would effectively create a persistent historical record of the data necessary to do so. Likewise, using a combination of surveillance video and Trip Data, law enforcement could effectively travel back in time to ascertain an individual's whereabouts without the necessity of obtaining a warrant or otherwise gaining lawful access to geolocation data for a suspect. As the above examples illustrate, with only a few additional details, acquiring private and personally revealing information regarding specific individuals is a rather rudimentary exercise, even without knowledge of advanced data re-identification techniques. Put simply, the Commission can provide no assurances to the TNC-using public

[8] Exhibit B.
[9] Exhibit C.
[10] Exhibit D.
[11] Exhibit E.
[12] Exhibit F.
[13] Exhibit G.
[14] Exhibit H.

that such a massive, detailed, and content-rich database will not be misused for a variety of nefarious purposes.

22. Studies with which I am familiar show that redacting latitude and longitude does ***not*** eliminate the risk of re-identification. For example, a paper entitled *The Tradeoff between the Utility and Risk of Location Data and Implications for Public Good* found that even geolocation data aggregated to the census block level presents a serious risk of de-identification.[15] As the study explained:

> Mere observation of this data reveals the movements of individuals between neighborhoods. With simple tooling, mobility data at this resolution is detailed enough to describe traffic flows, geographic areas that an individual frequents, and a person's daily routines [citation]. [Cell Data Records] with this type of location data have been used in machine learning models to correctly infer the professions and unemployment status of individuals, as well as other socio economic characteristics.[16]

As the authors explain, "[t]his data no longer reports people's precise locations, making it more difficult to infer home addresses or the sensitive places they may have visited[, h]owever, understanding the daily mobility traces of individuals still provides valuable information to skip-tracing firms and law enforcement agencies … to track suspects' movements and using their locations to implicate them at the time of trial has become common."[17] The study further finds that even when census block data is fully aggregated, "with advanced methods, the likely trajectories of neighborhood residents can be estimated" and "[r]ecent research has shown that in ideal scenarios, user trajectories can be recovered with up to 91% accuracy from aggregated location data that was collected from mobile applications."[18] The study ultimately concludes that the "[t]he re-identifiability risk in this data is high."[19]

23. Similar concerns have been expressed regarding the release of data by zip code.[20] This is not surprising. As of the 2010 census, California had thirty-six zip codes with fewer than one-hundred residents and eighty-three zip codes with fewer than two-hundred residents.[21] By comparison, rules adopted to implement the Health Insurance Portability and Accountability Act (HIPAA) recognize that where data is linked to zip codes with fewer than 20,000 residents, additional de-identification measures must be taken to prevent re-identification of medical data.[22] Courts have also held that a consumer's zip code constitutes personally identifiable

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[15] https://arxiv.org/pdf/1905.09350.pdf
[16] Id. at p. 10.
[17] *Id.* at p. 11.
[18] *Id.* at p. 13.
[19] Id. at p. 11.
[20] "Do Data Releases Based on ZIP Codes Endanger Patient Privacy?" at https://www.govtech.com/health/releasing-covid-19-case-numbers-in-zip-codes-may-violate-patient-privacy.html; "Open Police Data Re-identification Risks," Lorrie Cranor, FTC Chief Technologist, at https://www.ftc.gov/news-events/blogs/techftc/2016/04/open-police-data-re-identification-risks (zip codes with homogeneous populations present higher risks of re-identification for heterogeneous residents).
[21] https://www.california-demographics.com/zip_codes_by_population.
[22] 45 CCR §164.514 (de-identification safe harbor requires masking zip code for zip codes with fewer than 20,000 people); "Simple Demographics Often Identify People Uniquely," (individuals can be identified with only zip code,

information.[23] And, as explained above, rich datasets which include numerous spatio-temporal data points, particularly over time, allow for ready re-identification of individuals and their movements, even without precise geolocation coordinates.

VEHICLE IDENTIFIERS IN ASSAULT AND HARASSMENT REPORTS SHOULD BE REDACTED PURSUANT TO GOVERNMENT CODE §6254(c)

24. In addition to the Trip Data for which Lyft seeks confidential treatment, Lyft also seeks confidential treatment of the following fields in the report entitled Assaults and Harassment: Vehicle Make; Vehicle Model; and Vehicle Year. The 2020 Ruling ruled that the following fields may be redacted from the Assaults and Harassment Report on the grounds the disclosure would implicate a significant privacy interest: DriverID; VIN; AssaultHarassLat; AssaultHarassLong; AssaultHarassType; AssaultHarassDef; AssaultHarassDescr. Lyft believes that the fields for Vehicle Make, Vehicle Model, and Vehicle Year should be treated confidentially for the same reason. Although in the vast majority of instances, disclosure of the make, model, and year would not allow a third party to identify a particular owner of a vehicle, there may be instances in which disclosure of these fields might allow identification of a particular individual, including the fact that the individual was subject to an unverified and unsubstantiated allegation of harassment or sexual assault or a victim of the same; for instance, where a particularly unique or rare vehicle model or year is involved. Furthermore, there is no substantial public interest in disclosing this information. Thus, these fields should be protected from disclosure pursuant to Government Code §6254(c), § 6254(k), and the Right of Privacy guaranteed by Article I, Sect. 1, of the California Constitution, as public disclosure would constitute an unwarranted invasion of privacy. They should also be protected from disclosure under the public interest exception of Government Code §6255, in that the public interest in disclosure is significantly outweighed by the privacy implications of disclosure.

25. Lyft reserves its rights to assert other bases for confidential treatment and expressly reserves its rights under California law to file a lawsuit on the foregoing grounds, or on other grounds, to prevent disclosure of this information.

gender and age) at https://dataprivacylab.org/projects/identifiability/paper1.pdf

[23] *Pineda v. Williams-Sonoma Stores, Inc*. (2011) 51 Cal.4th 524, 531; Tyler v. Michaels Stores, Inc. (2013) 464 Mass. 492, 506 ("a zip code constitutes personal identification information").

I declare, under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct.

Executed on June 21, 2022 at Oakland, California.

Alix Rosenthal
Vice President, Compliance
Lyft, Inc.

Exhibit A

US Census Bureau Geographic Entities and Concepts

Geography Division

United States Census Bureau

Geographic Concepts

- Legal/Administrative vs. Statistical
- Nesting relationships (or the lack of)
- Addresses vs. Geographic features and entities
- Small area geography (tracts, block groups, blocks)
- Dangers of definitions (boundaries vs. perceptions)
- Products and Resources - find more information

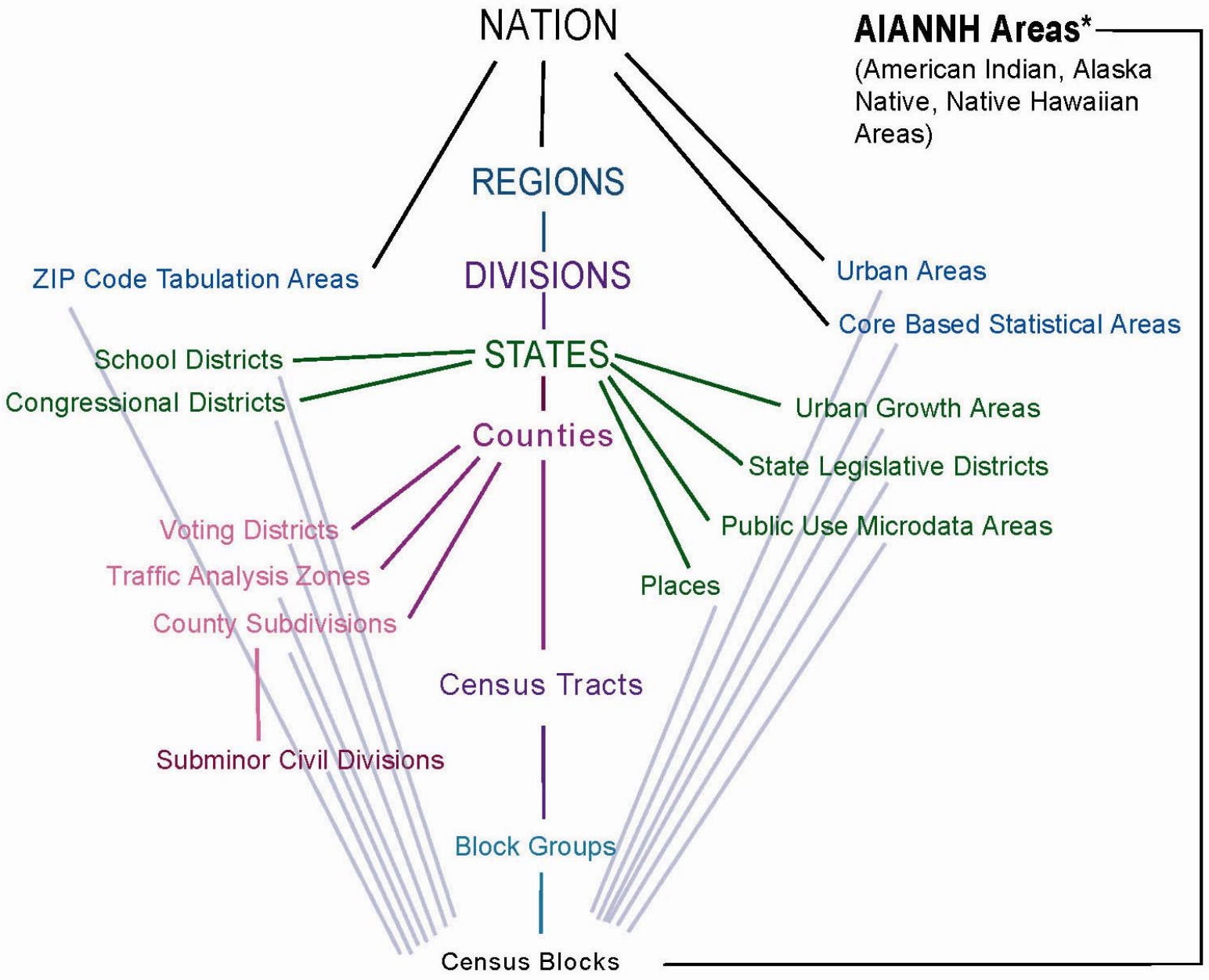
Geographic Entities

Legal/Administrative

- States
- Counties
- Minor civil divisions
- Congressional districts
- School districts
- Incorporated places

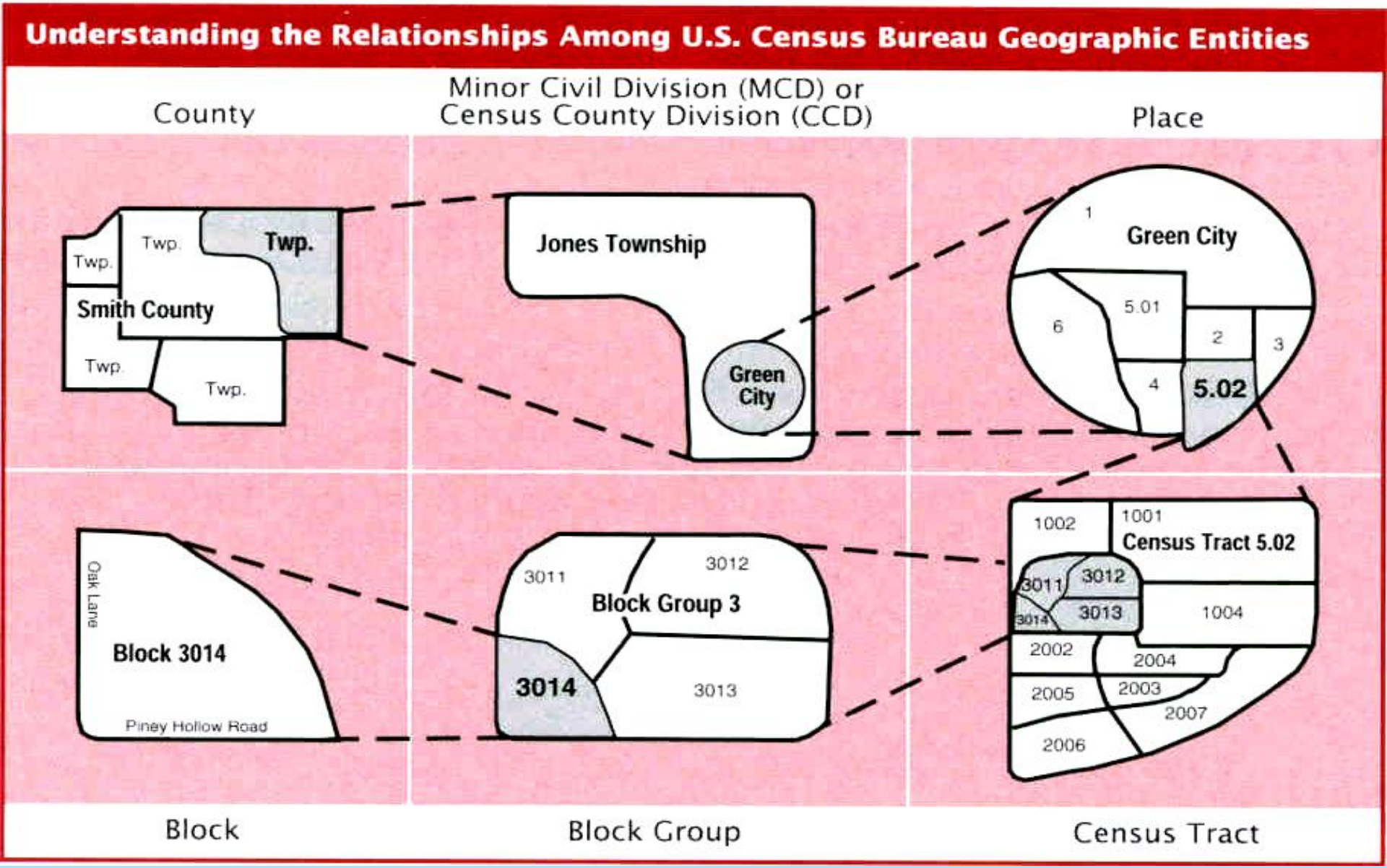
Statistical

- Census tracts
- Metropolitan/Micropolitan statistical areas
- Urban areas
- Census designated places

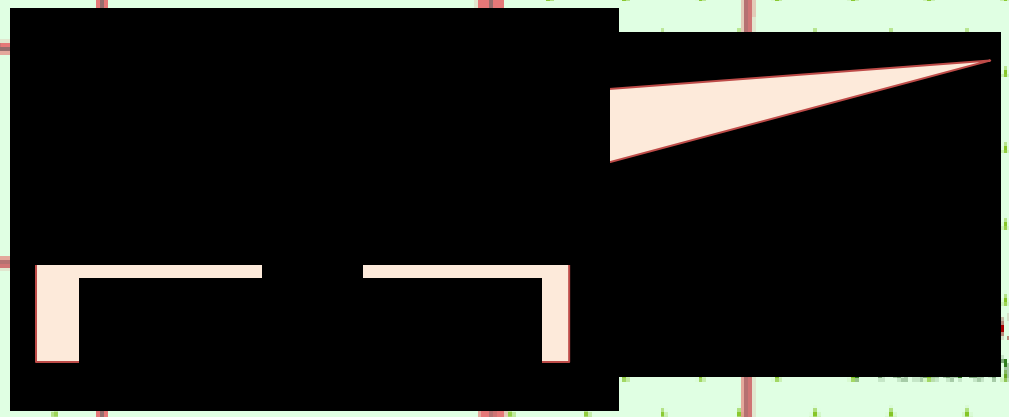


Hierarchy of Census Geographic Entities

Census Small-Area Geography



United States Census Bureau



2010 Census Redistricting Data (Public Law 94-171)	
	Block 1031, Block Group 1, Census Tract 62.02
Total:	5
Population of one race:	5
White alone	0
Black or African American alone	5
American Indian and Alaska Native alone	0
Asian alone	0
Native Hawaiian and Other Pacific Islander alone	0
Some Other Race alone	0

United States Census Bureau

Small Geographic Areas

Census Tracts

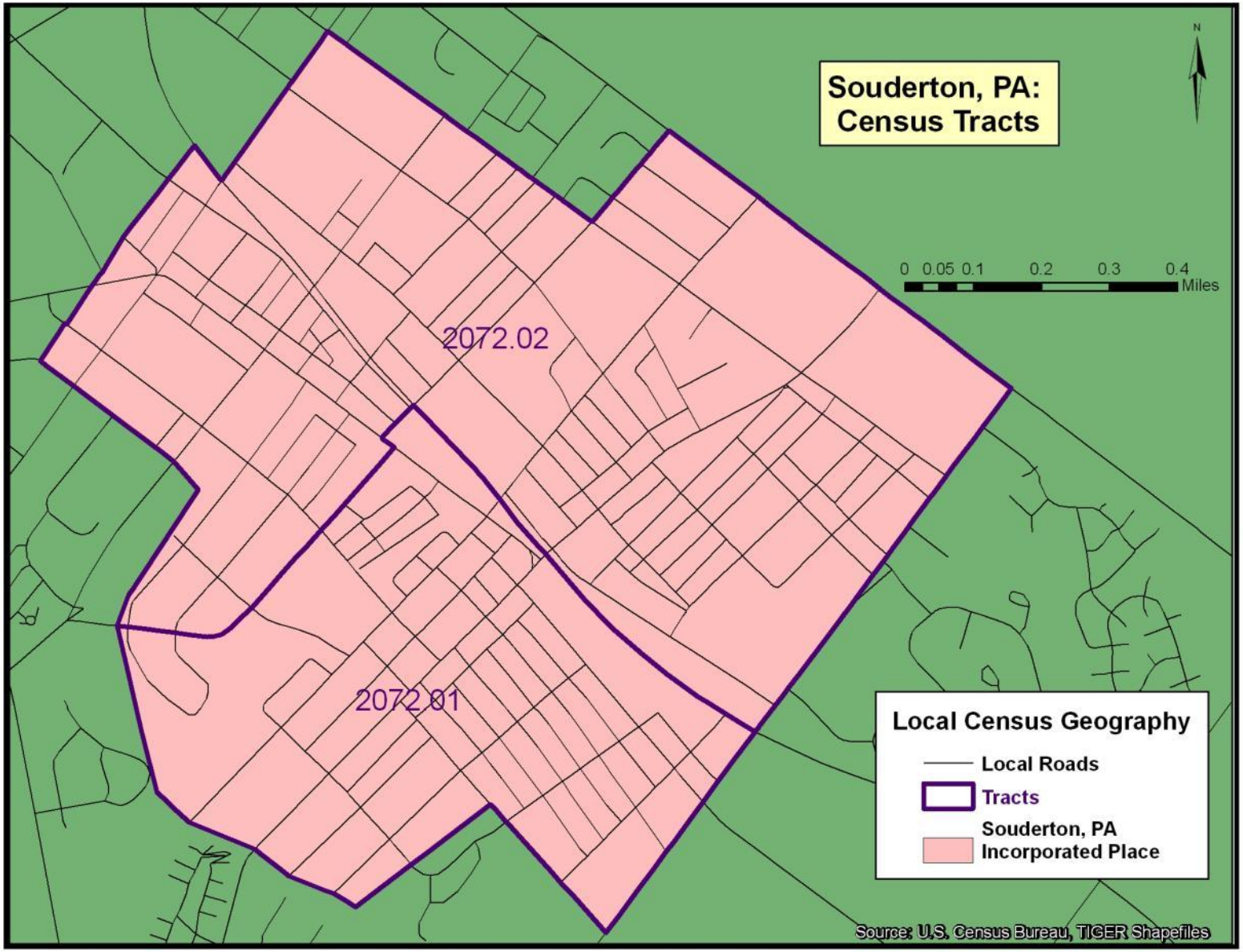
- Small, permanent, consistent statistical divisions of a county
- Optimally contains 4,000 people; range between 1,200 and 8,000

Block Groups

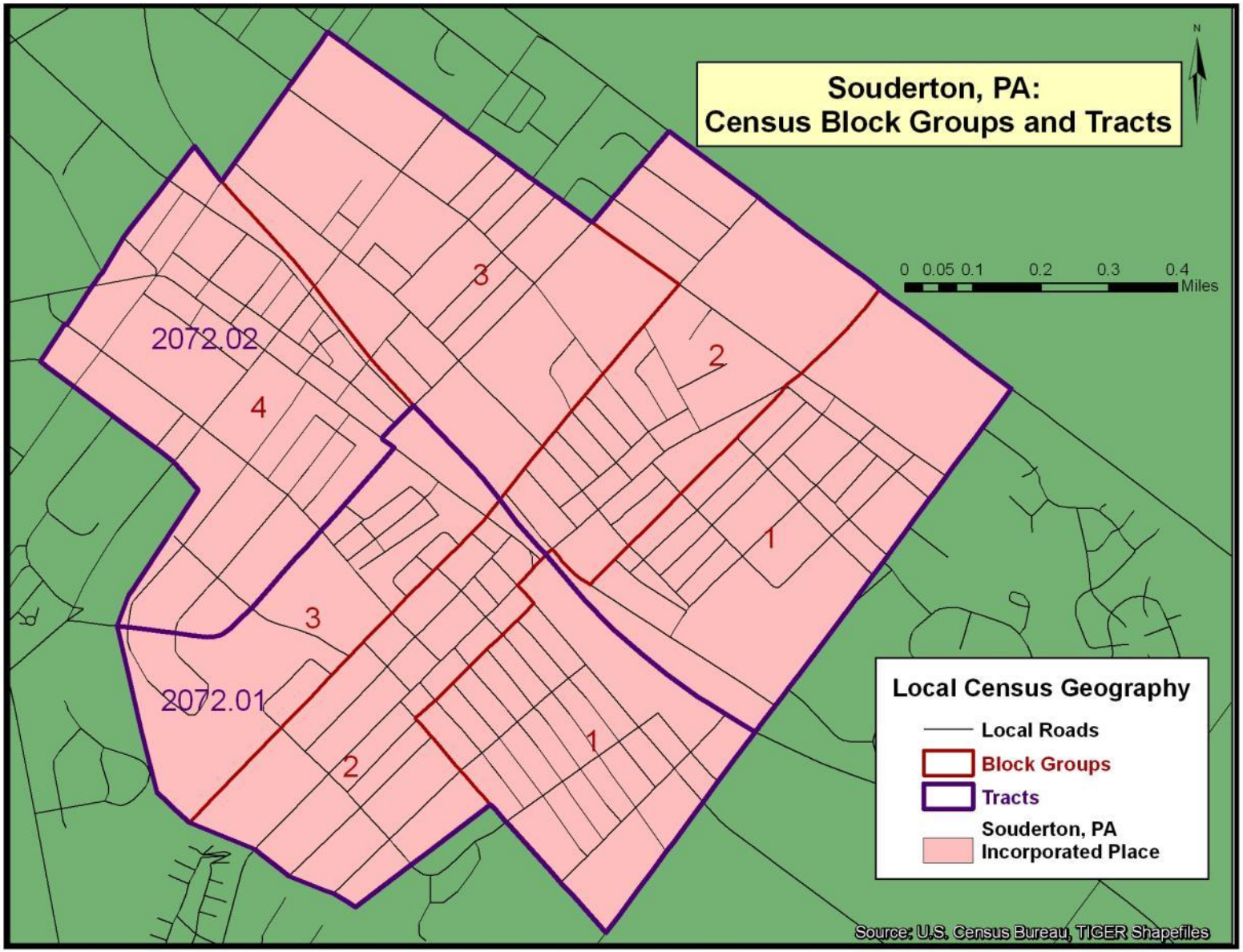
- Smallest units for tabulation of **sample data**
- Population ranges from 600 to 3,000

Blocks

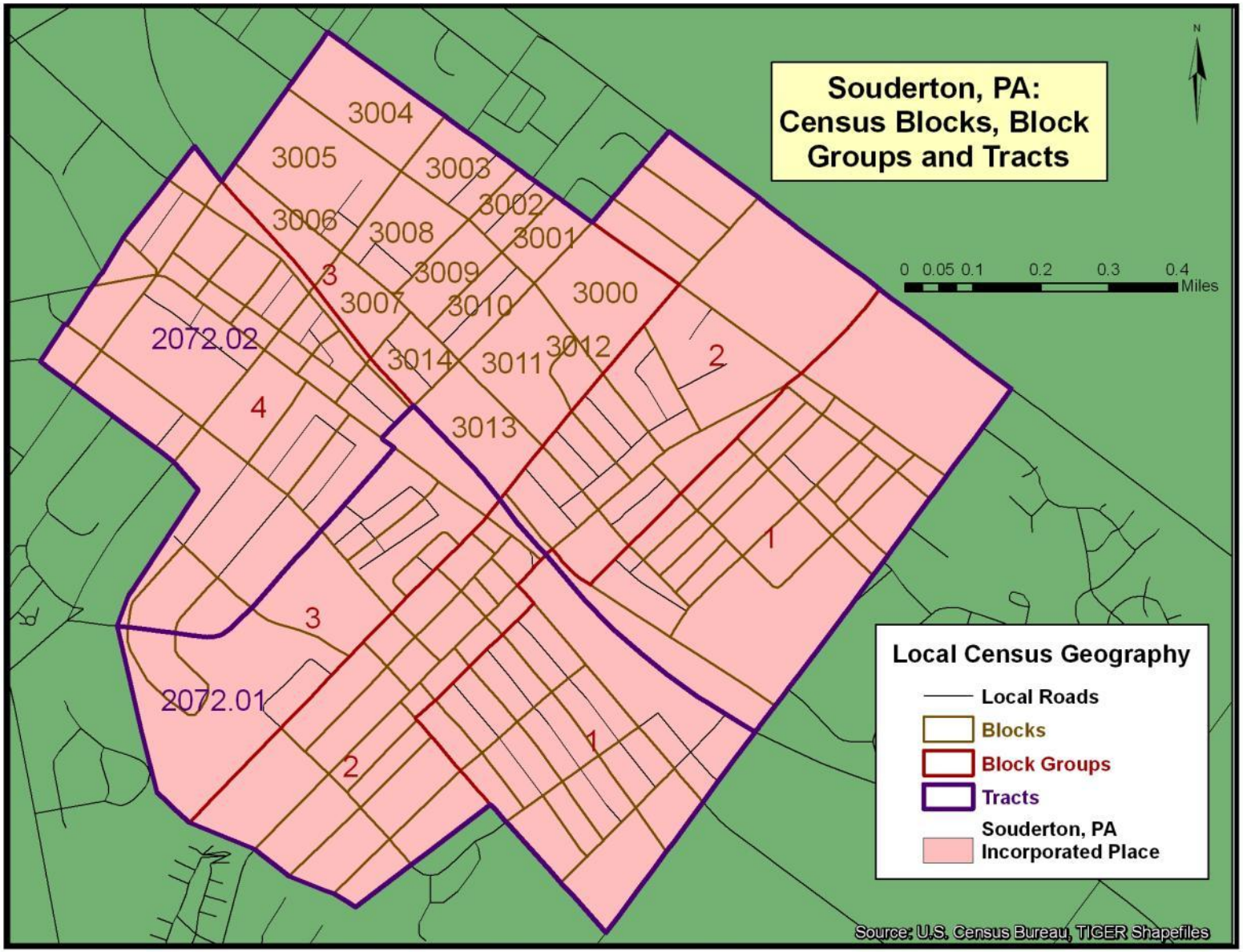
- Smallest units for **100% data tabulation**
- Cover entire nation
- **Nest within all other types of geographic areas**
- Generally bounded by visible features or boundaries



United States™ Census Bureau



United States Census Bureau


Souderton, PA:
Census Blocks, Block Groups and Tracts
N
0 0.05 0.1 0.2 0.3 0.4
Miles
3004
3005
3003
3002
3006
3008
3001
3
3009
3000
3007
3010
2072.02
3014
3011
3012
2
4
3013
1
3
2072.01
2
1
Local Census Geography
Local Roads
Blocks
Block Groups
Tracts
Souderton, PA
Incorporated Place
Source: U.S. Census Bureau, TIGER Shapefiles

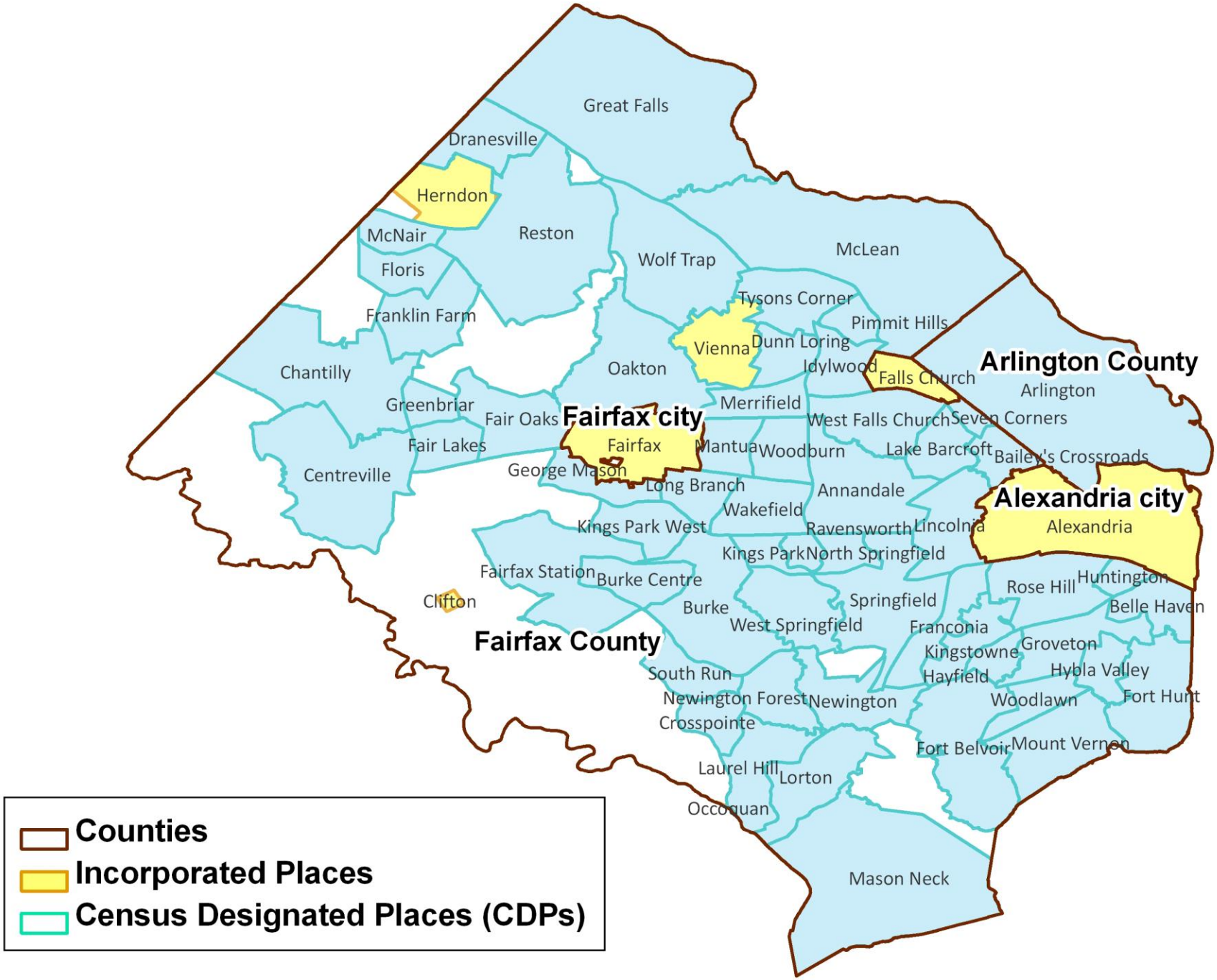
Places

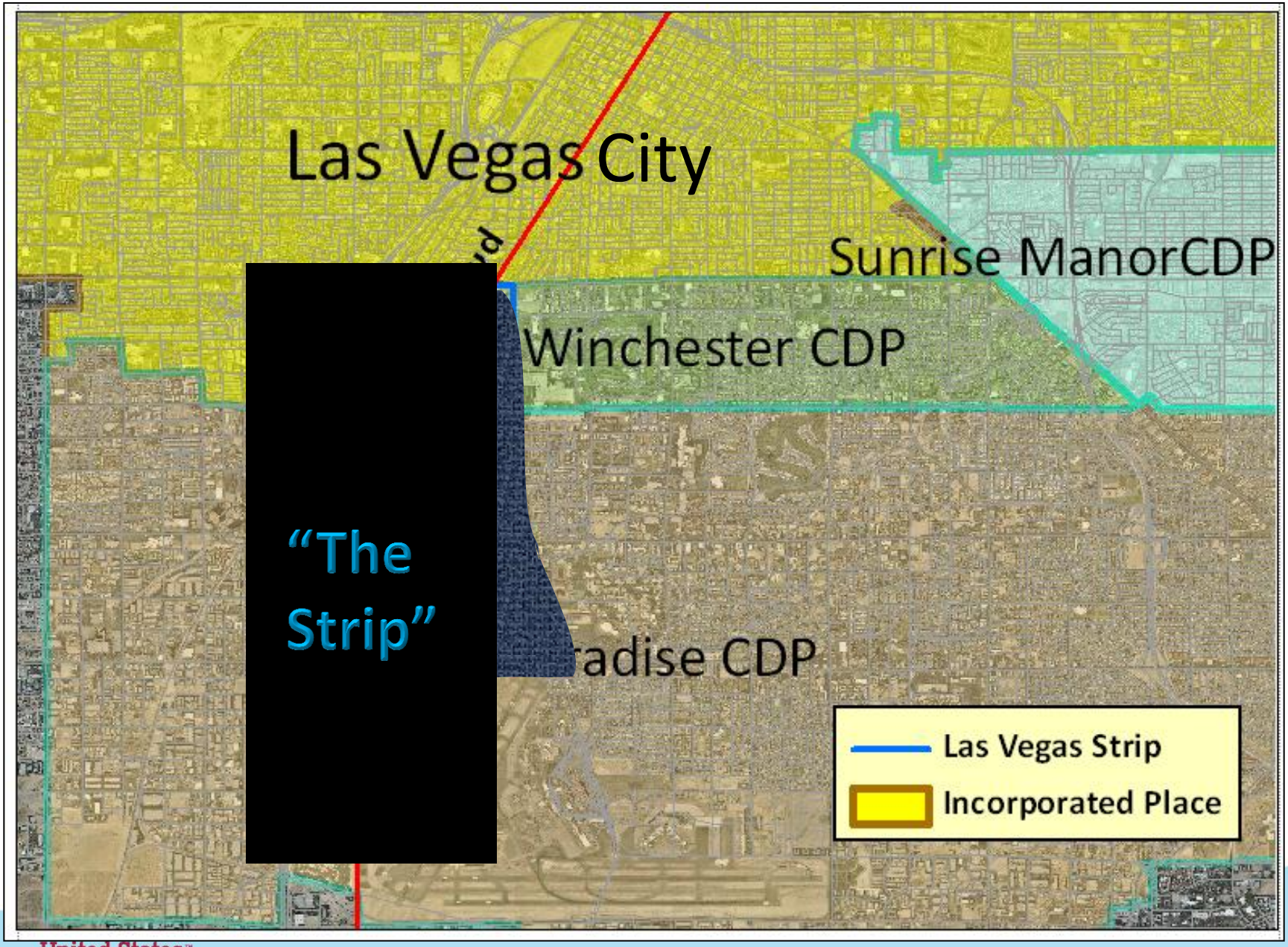
Incorporated Places

- Legally bounded entity
- Referred to as cities, boroughs, towns, or villages, depending on the state
- Some form of local governance (city council, mayor, etc) recognized by the state

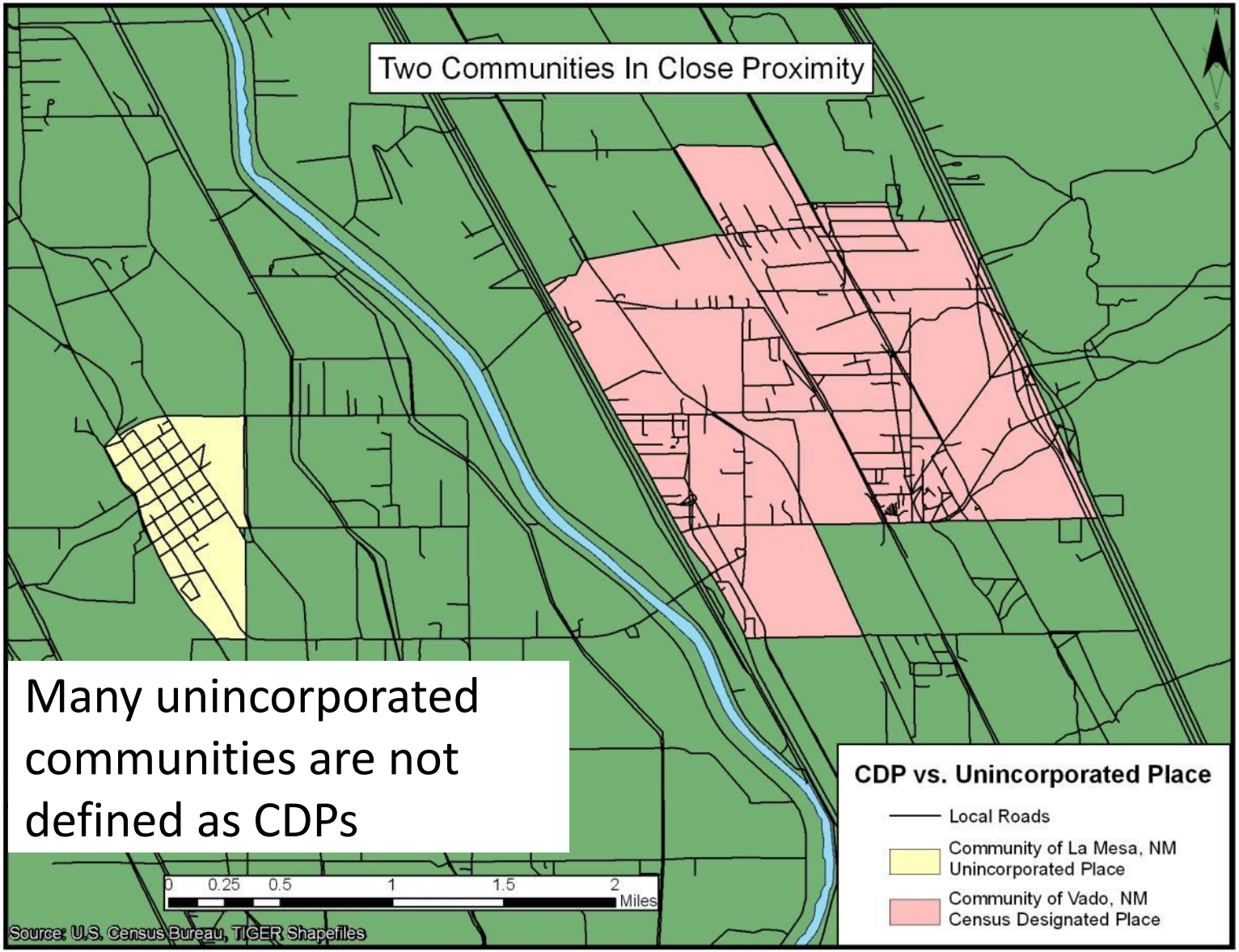
Census Designated Places (CDPs)

- Statistical entity
- Area with a concentration of population, housing, and commercial structures identifiable by name; not within an incorporated place


Great Falls
Dranesville
Herndon
McNair
Reston
Floris
Wolf Trap
McLean
Tysons Corner
Pimmit Hills
Franklin Farm
Vienna
Dunn Loring
Idylwood
Falls Church
Arlington County
Arlington
Chantilly
Oakton
Merrifield
Greenbriar
Fair Oaks
Fairfax city
West Falls Church
Seven Corners
Fair Lakes
Fairfax
Mantua
Woodburn
Lake Barcroft
Bailey's Crossroads
Centreville
George Mason
Long Branch
Annandale
Alexandria city
Wakefield
Alexandria
Kings Park West
Ravensworth
Lincolnia
Kings Park
North Springfield
Fairfax Station
Burke Centre
Rose Hill
Huntington
Clifton
Springfield
Belle Haven
Burke
West Springfield
Franconia
Fairfax County
Kingstowne
Groveton
South Run
Hayfield
Hybla Valley
Newington Forest
Newington
Woodlawn
Fort Hunt
Crosspointe
Fort Belvoir
Mount Vernon
Laurel Hill
Lorton
Occoquan
Mason Neck
Counties
Incorporated Places
Census Designated Places (CDPs)



United States Census Bureau



United States Census Bureau

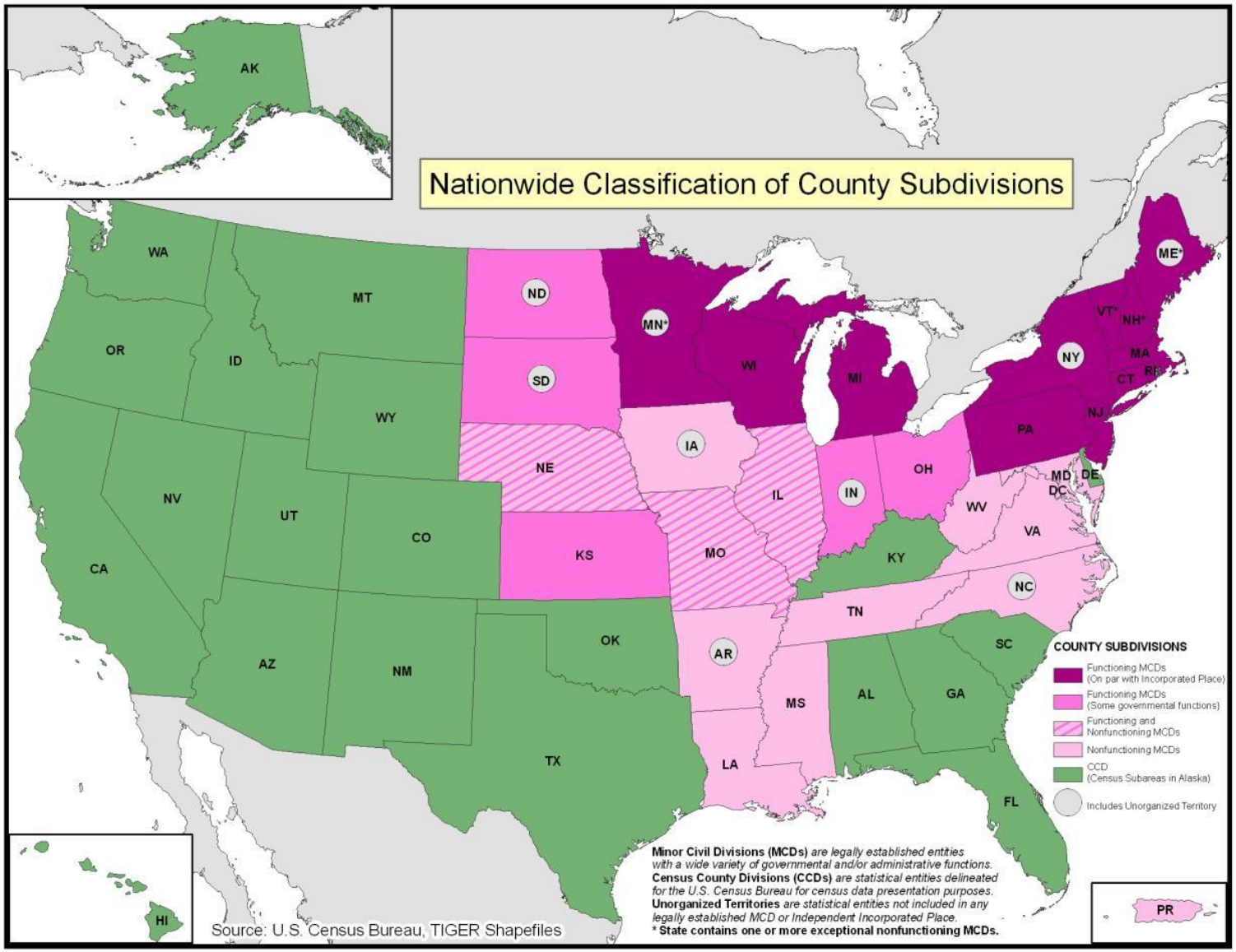
County Subdivisions

Minor Civil Divisions (MCDs)

- Legally bounded entity
- Subcounty entities in 29 states, the District of Columbia, Puerto Rico, and the Island Areas
- May have a formal government with elected officials

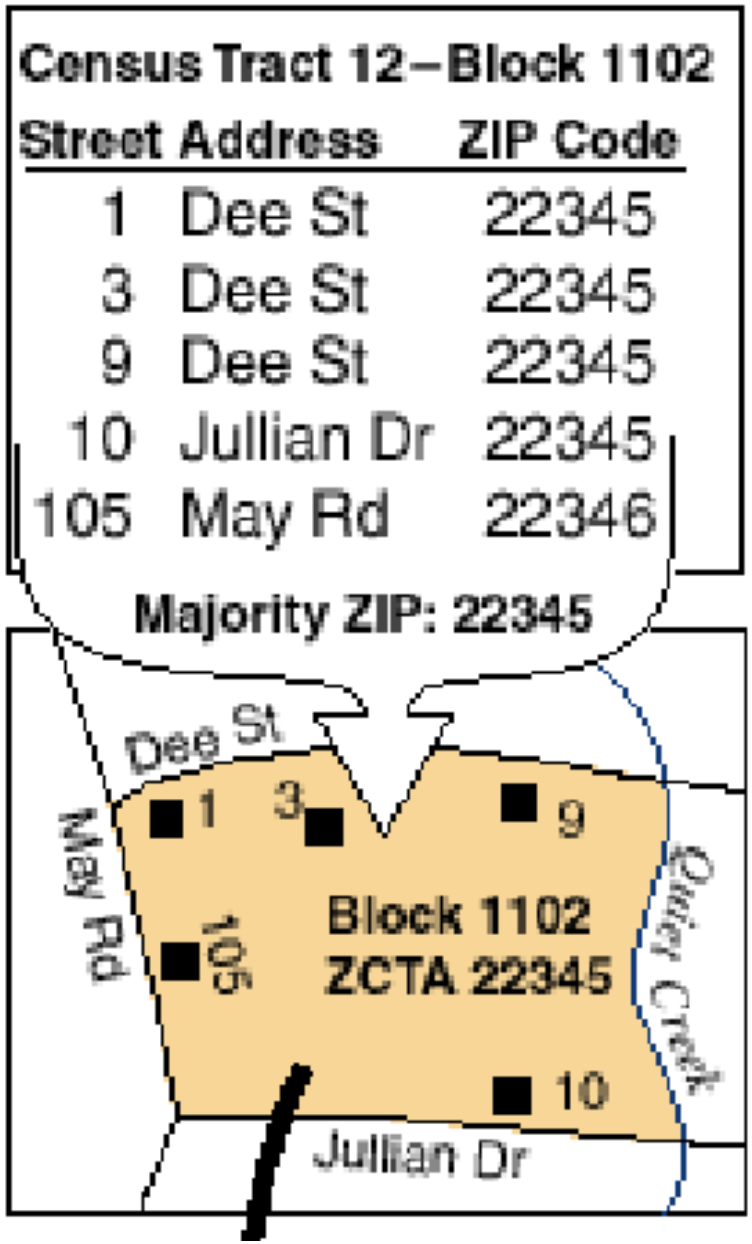
Census County Divisions (CCDs)

- Statistical entity
- Subcounty units that have stable boundaries and recognizable names in 21 states
- No minimum or maximum population guidelines


Nationwide Classification of County Subdivisions
AK
HI
PR
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN*
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
NC
VA
PA
NY
MD
DC
DE
NJ
CT
RI
MA
VT*
NH*
ME*
COUNTY SUBDIVISIONS
Functioning MCDs (On par with Incorporated Place)
Functioning MCDs (Some governmental functions)
Functioning and Nonfunctioning MCDs
Nonfunctioning MCDs
CCD (Census Subareas in Alaska)
Includes Unorganized Territory
Minor Civil Divisions (MCDs) are legally established entities with a wide variety of governmental and/or administrative functions.
Census County Divisions (CCDs) are statistical entities delineated for the U.S. Census Bureau for census data presentation purposes.
Unorganized Territories are statistical entities not included in any legally established MCD or Independent Incorporated Place.
* State contains one or more exceptional nonfunctioning MCDs.
Source: U.S. Census Bureau, TIGER Shapefiles

Counties and County Equivalents

- Counties in 48 states
- Independent Cities in MD, MO, NV, and VA
- Parishes in Louisiana
- Cities, Boroughs, Municipality, Census Areas in Alaska
- Municipios in Puerto Rico
- Islands and Districts in American Samoa
- Municipalities in the Northern Marianas
- Islands in the Virgin Islands
- District of Columbia and Guam each treated as a county equivalent



Creating Zip Code Tabulation Areas (ZCTAs)

- Approximate ZIP Code distribution
- A "calculated" geography
- Composed of whole blocks
- ZCTAs do not nest cleanly within other geography

United States Census Bureau

Urban Area Classification: Census 2010

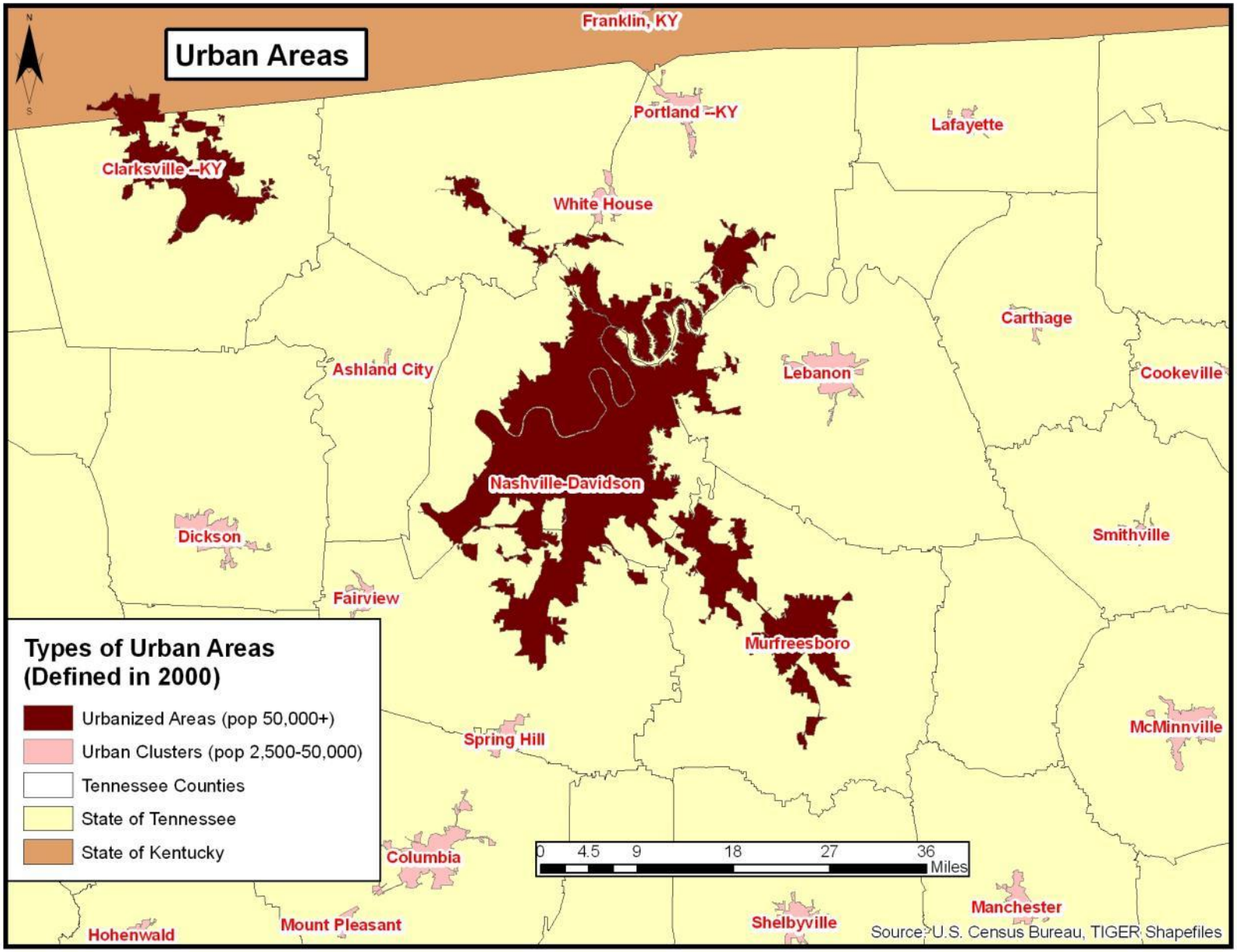
Two types of Urban Areas:

1. Urbanized Areas of 50,000 or more people
2. Urban Clusters of 2,500 up to 50,000 people

Classification Changes:

- Substantial changes to urban area concept and criteria adopted for Census 2000
- Both defined based on population density at the census block and block group levels
- Area definitions announced in March 2002 with updates in August and November 2002
- Urban areas will be redefined following the 2010 Census

www.census.gov/geo/www/ua/ua_2k.html

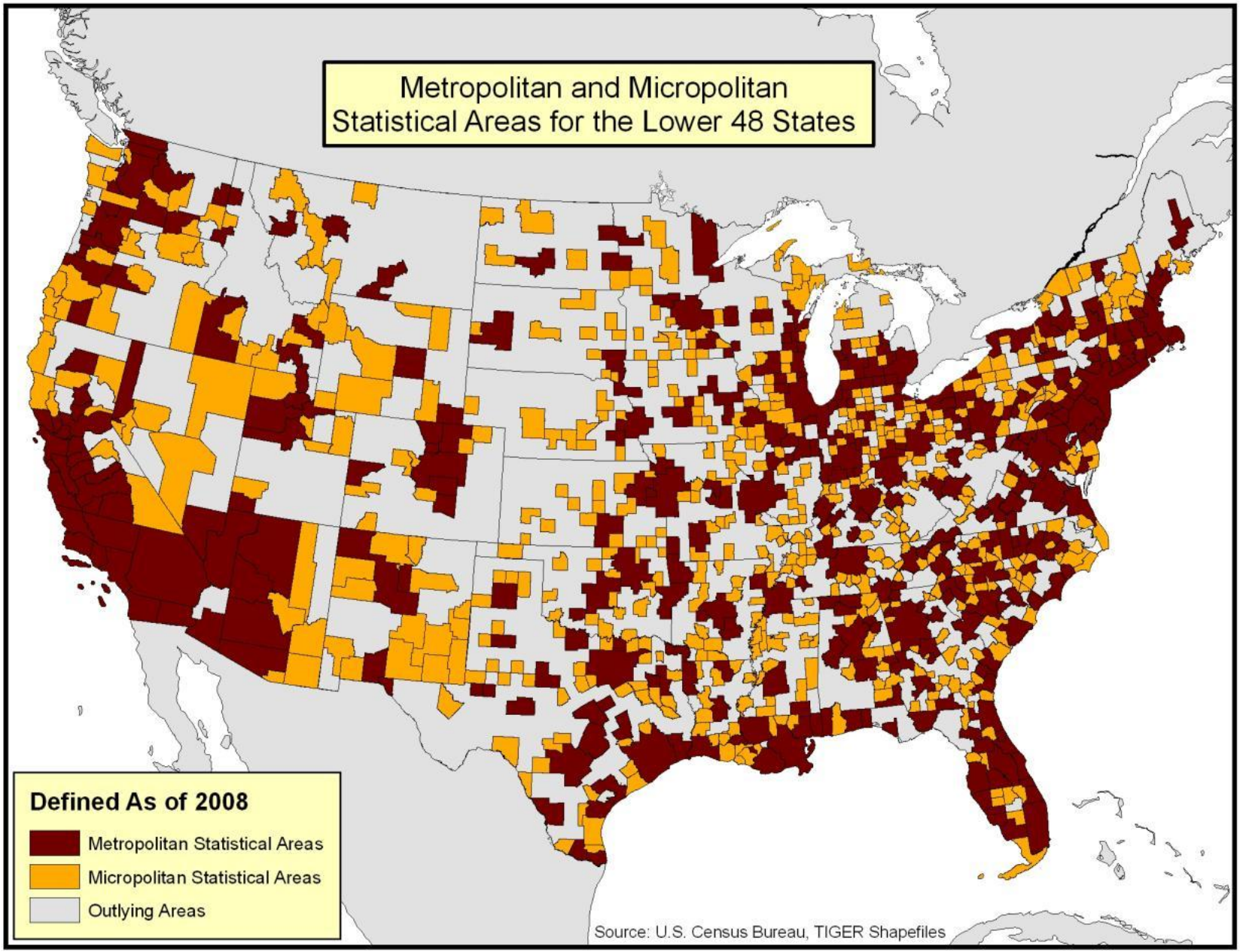

Urban Areas
Franklin, KY
Portland -KY
Lafayette
Clarksville -KY
White House
Carthage
Ashland City
Lebanon
Cookeville
Nashville-Davidson
Dickson
Smithville
Fairview
Murfreesboro
Spring Hill
McMinnville
Columbia
Hohenwald
Mount Pleasant
Shelbyville
Manchester
Types of Urban Areas
(Defined in 2000)
Urbanized Areas (pop 50,000+)
Urban Clusters (pop 2,500-50,000)
Tennessee Counties
State of Tennessee
State of Kentucky
0 4.5 9 18 27 36
Miles
Source: U.S. Census Bureau, TIGER Shapefiles

Core Based Statistical Area Classification

- Core Based Statistical Area (CBSA) – refers to both metropolitan and micropolitan statistical areas; county-based areas, defined based on commuting patterns
- Metropolitan Statistical Area - must have at least one UA
- Micropolitan Statistical Area - must have at least one UC with a population of at least 10,000
- Metropolitan Division – subdivision of a metropolitan statistical area

Core Based Statistical Area Classification – continued

- Combined Statistical Area – represents a grouping of adjacent CBSAs
- New England City and Town Area – a city- and town-based equivalent to the county-based CBSAs
- Principal City – a place that occupies a more important social and economic


Metropolitan and Micropolitan
Statistical Areas for the Lower 48 States
Defined As of 2008
Metropolitan Statistical Areas
Micropolitan Statistical Areas
Outlying Areas
Source: U.S. Census Bureau, TIGER Shapefiles

Core Based Statistical Area Examples

- 2010 Census Geographic Products
- Topologically Integrated Geographic Encoding and Referencing System (TIGER®)
- Geographic Support System (GSS) Initiative
- Resources for Understanding Census Geography
- Geographic Programs
- Maps and Mapping Resources
- Census 2000 Geographic Products
- Census Tract Resources
- LandView® 6
- Contact Us

2010 Census Brief

On January 25, the U.S. Census Bureau will release a 2010 Census brief on the AIAN population at a forum held with the National Museum of the American Indian.

See More

< 1 2 3 4 5 6 >

Economic Indicators

uction 12	657,000 Housing starts	-4.1% *
12	$-47.8 B	10.4%
/12	$1,550.1 B	0.3%
Advance Monthly Retail Sales December 2011 Report *Released 8:30 AM EST, 1/12/12*	$400.6 B	0.1% *

View All

* change not statistically significant

QuickFacts

Quick, easy access to facts about people, business, and geography.

To begin, select a state from this list or use the map.

Select a state to begin

Interactive Map

Census News

Facts for Features: Irish-American Heritage Month (March) and St. Patrick's Day (March 17): 2012

Tuesday, January 24, 2012

Irish-American Heritage Month (March) and St. Patrick's Day (March 17): 2012 Originally a religious holiday to honor St. … Read More

Facts for Features: Super Bowl XLVI

Tuesday, January 24, 2012

Super Bowl XLVI Super Bowl XLVI will be played Feb. 5 at Lucas Oil

We changed our homepage
Tell us what you think

Stat of the Day

American Indian And Alaska Natives

As of the 2010 Census, the nation's population of American Indians and Alaska Natives was 5.2 million,

2010 Census Geographic P[redacted]
Topologically Integrated Geographic Encoding and Referencing System (TIGER®)
Geographic Support System (GSS) Initiative
Resources for Understanding Census Geography
Geographic Programs
Maps and Mapping Resources
Census 2000 Geographic Products
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LandView® 6
Contact Us

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Resources for Understanding Census Bureau Geography

Hierarchical Diagrams of Census Bureau Geography

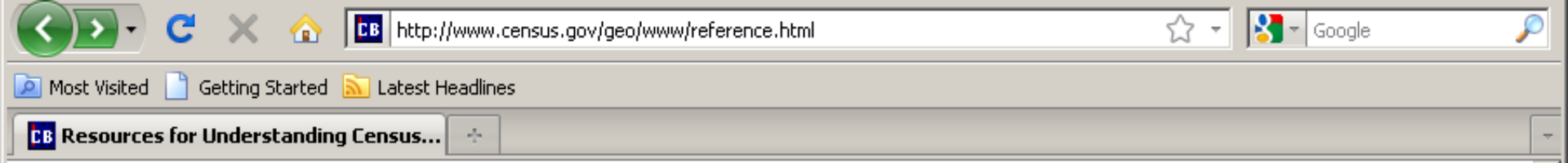
- American Indian Area/Alaska Native Area/Hawaiian Home Lands diagram [PDF]
- Census Bureau Legal and Statistical Geographic Entities [PDF]

Census Regions and Divisions of the United States

- [PDF] or [Text]

Geographic Glossaries and Guides

- Geographic Terms and Concepts
  - 2010 [PDF] [HTML]
  - 2008 [PDF] [TXT]
  - 2000 [PDF] [HTML]
- Guide to State and Local Census Geography
- 2007 Economic Census Geography Definitions
- Geographic Changes for Census 2000 + Glossary
- Geographic Areas Reference Manual (GARM) (1990 Census)



Geography Related Census Blog Postings

- Mapping the 2010 Census
- U.S. Census Bureau Releases 2010 Guide to State and Local Census Geography
- What Are Census Blocks?
- Why Geography Is Important

Geographic Area Criteria, Geographic Codes and Census Tract Resources

- Urban and Rural Classification
  - 2010, 2000 and 1990 Census Federal Register Notices; Urban Area Files; Urban Cluster Files; Major Airports
- County Adjacency File
- 2008 County Subdivision and Place Information
- Census Tract Locating Resources
- American National Standards Institute (ANSI) Codes (formerly FIPS)
- Metropolitan and Micropolitan Statistical Areas
- ZCTAs™ (ZIP Code® Tabulation Areas)
  - Area representations of USPS ZIP Code service areas.
- U.S. Postal Service ZIP Code data
  - Information on the Census Bureau's position regarding ZIP Code data

2010 Census Geographic Terms and Concepts

This site provides definitions of geographic terms and concepts as well as a description of the different methods used to present information for geographic entities in U.S. Census Bureau data products. The site contains definitions for all geographic area terms and concepts recognized by the Census Bureau and that may appear in any Census Bureau product presenting demographic and housing data (geographic terms and concepts unique to the economic census and other specialized surveys and censuses are not included in this document).

The inclusion of a particular term or concept on this site does not imply that data for that geographic entity or attribute appear in each data product. For instance, data for tribal census tracts and tribal block groups will appear only in products providing data according to the American Indian Nation-based geographic hierarchy (see the American Indian Area/Alaska Native Area/Hawaiian Home Lands Hierarchy Diagram [PDF]). As another example, because urban areas are defined on the basis of decennial census population counts, data for urban areas do not appear in initial decennial census data products. In addition, the description of both the hierarchical and inventory approaches to presenting data for geographic entities does not imply that both formats are used in each data product.

The information contained in this site is also available in a printer-friendly PDF version.

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

A

- Alaska Native Regional Corporation (ANRC) (see American Indian, Alaska Native,Native Hawaiian Area)
- Alaska Native Village (ANV) (see American Indian, Alaska Native, Native Hawaiian Area)

Geographic Areas Reference Manual

The Geographic Areas Reference Manual describes in great detail the basic geographic entities the Census Bureau uses in its various data tabulations and documents the purposes, definitions, standards, criteria, and procedures used to select, define, delineate, and revise these geographic entities.

Since the publication of the GARM in November 1994, there have been two major changes in geographic areas for Census 2000:

- The Census Bureau will no longer include the Republic of Palau in U. S. censuses because it is an independent state.
- All entities referred to as "block numbering areas" (BNAs) in 1990 will become census tracts.

If you have any questions about this or any other information on changes in geographic areas for Census 2000, please contact the Geographic Standards and Criteria Branch, Geography Division, U.S. Census Bureau, Washington, DC 20233-7400, telephone (301) 763-3056.

[PDF] or denotes a file in Adobe's Portable Document Format. To view the file, you will need the Adobe® Reader® available **free** from Adobe.

View or Download the Geographic Areas Reference Manual files:

- Table of Contents (500K)
- Chapter 1 - Census Bureau Geography (473K)
- Chapter 2 - Geographic Overview (623K)
- Chapter 3 - Local Census Statistical Areas Committees and Other Local Assistance (406K)
- Chapter 4 - States, Counties, and Statistically Equivalent Entities (2M)
- Chapter 5 - American Indian and Alaska Native Areas (515K)
- Chapter 6 - Statistical Groupings of States and Counties (2M)
- Chapter 7 - Puerto Rico and the Outlying Areas (11M)
- Chapter 8 - County Subdivisions (1M)

TIGER Products

Topologically Integrated Geographic Encoding and Referencing system

---

The Census Bureau offers several file types for mapping census geographic data based on data found in our MAF/TIGER database.

TIGER/Line Shapefiles & Files

- Our most comprehensive dataset, including boundaries, roads, address information, water features, and more
- 2011, 2010, 2009, 2008, 2007, 2006, 2000, 1992

Cartographic Boundary Files

- Generalized (limited detail) boundary files designed for thematic mapping
- 2010, 2000, 1990

KMLs

- Boundary files for use with Google Earth, Google Maps, or other similar platforms
- Generalized and Detailed boundaries
- 2010

Help Me Choose...

Accessing Shapefiles

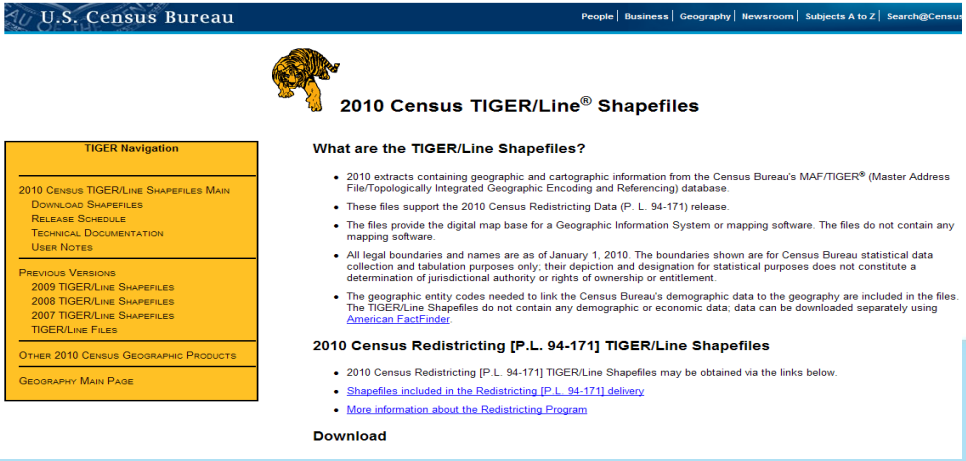
Public product created from the MAF/TIGER Data Base (MTDB)

Digital files containing geographic features, attributes, legal and statistical boundaries

Covers United States, Puerto Rico, and Island Areas

Future releases in shapefile format

www.census.gov/geo/www/tiger/index.html



Geographic Programs

2010 Census Local Update of Census Addresses (LUCA)

The Local Update of Census Addresses program, also known as LUCA, is a decennial census geographic partnership program that will allow the Census Bureau to benefit from local knowledge in developing its Master Address File (MAF) for the 2010 Census. Tribal, state, and local governments can contribute to a more complete and accurate census for their community by reviewing and commenting on the list of housing unit and group quarters addresses that the Census Bureau will use to deliver questionnaires within their community.

2010 Census New Construction Program

The 2010 Census New Construction program will help ensure that the U.S. Census Bureau's address list is as complete and accurate as possible by Census Day, April 1, 2010. The Census Bureau is updating its address list by field canvassing all blocks in the spring/summer of 2009. The New Construction program is the opportunity for Tribal and Local governments to submit city style mailing addresses for units constructed after the address canvassing operation. Addresses must have basic construction (closing the structure to the elements) completed by Census Day.

Boundary and Annexation Survey (BAS)

Determining the inventory of legally defined entities and the correct names, legal descriptions and boundaries of counties and equivalent areas, minor civil divisions, incorporated places, American Indian reservations and American Indian off-reservation trust lands

http://www.census.gov/geo/www/programs.html

United States™ Census Bureau

Geographic Products and Information

Products at a Glance

- An overview of 2010 Census geographic and cartographic products, including planned release dates [PDF] [TXT]

Reference Information

- Block Assignment Files
  - Block Assignment Files
  - Name Look-Up Tables
- Geographic Terms and Concepts
- Hierarchy Diagrams
  - American Indian Area/Alaska Native Area/Hawaiian Home Lands [PDF]
  - Census Bureau Legal and Statistical Geographic Entities [PDF]
- New Incorporations (2000 - 2010) [Excel] [TXT]
- State Area Measurements and Internal Point Coordinates
- Urban Area Information

Maps

- **Reference**
  - 2010 Census Local Census Offices with Type of Enumeration Areas
- **Thematic**
  - 2010 Census Total Population and Population Change Maps

Relationship Files

- Block Relationship Files

Tallies of Geographic Entities

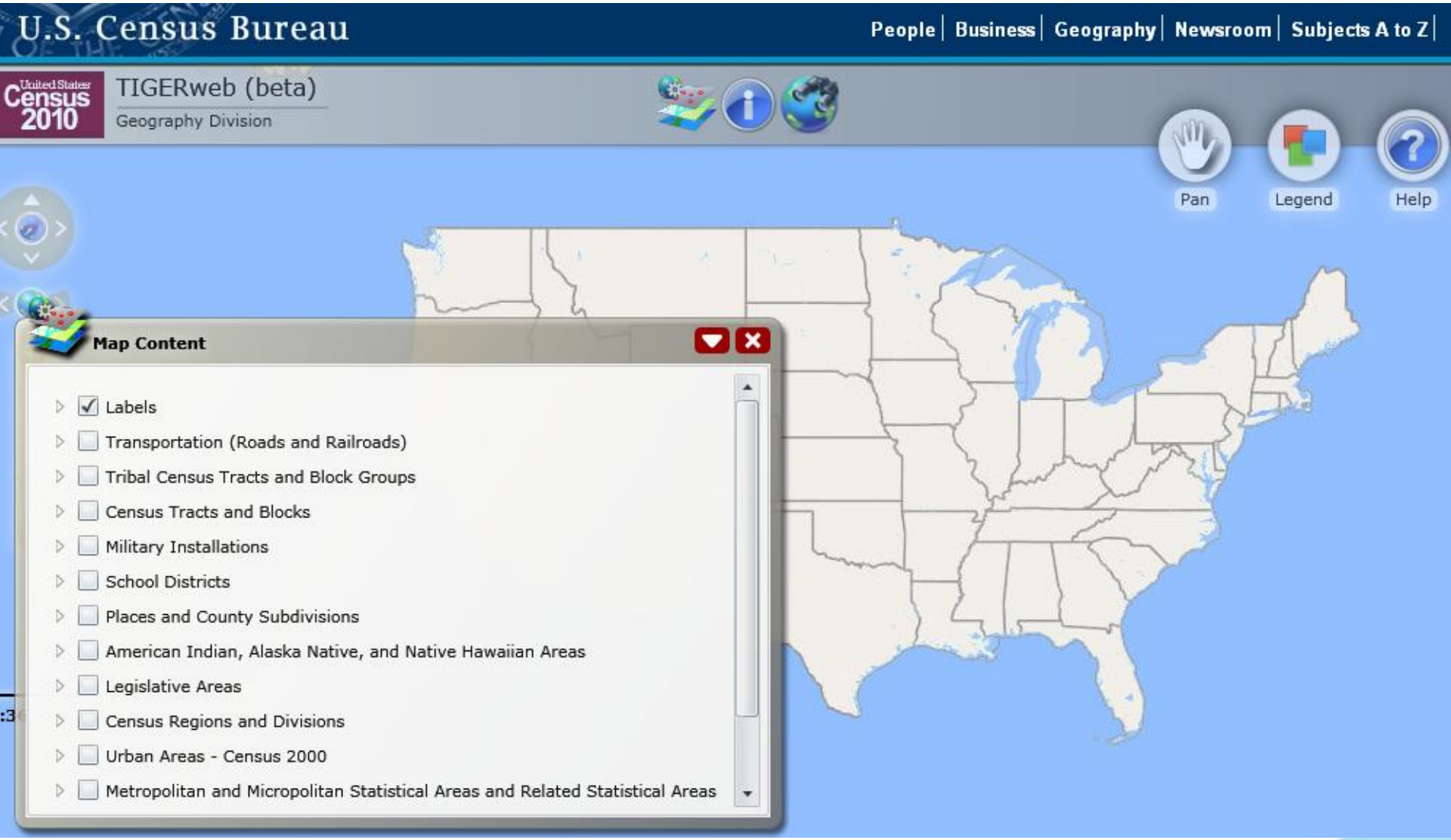
- Gazetteer Files
- Geographic Tallies by Entity Type
- Geographic Tallies by State
- Tallies of Census Blocks by State or State Equivalent
- Changes in Number of Census Blocks Between 2000 and 2010 [PDF] [TXT]

TIGER/Line Shapefiles

- 2010 TIGER/Line Shapefiles

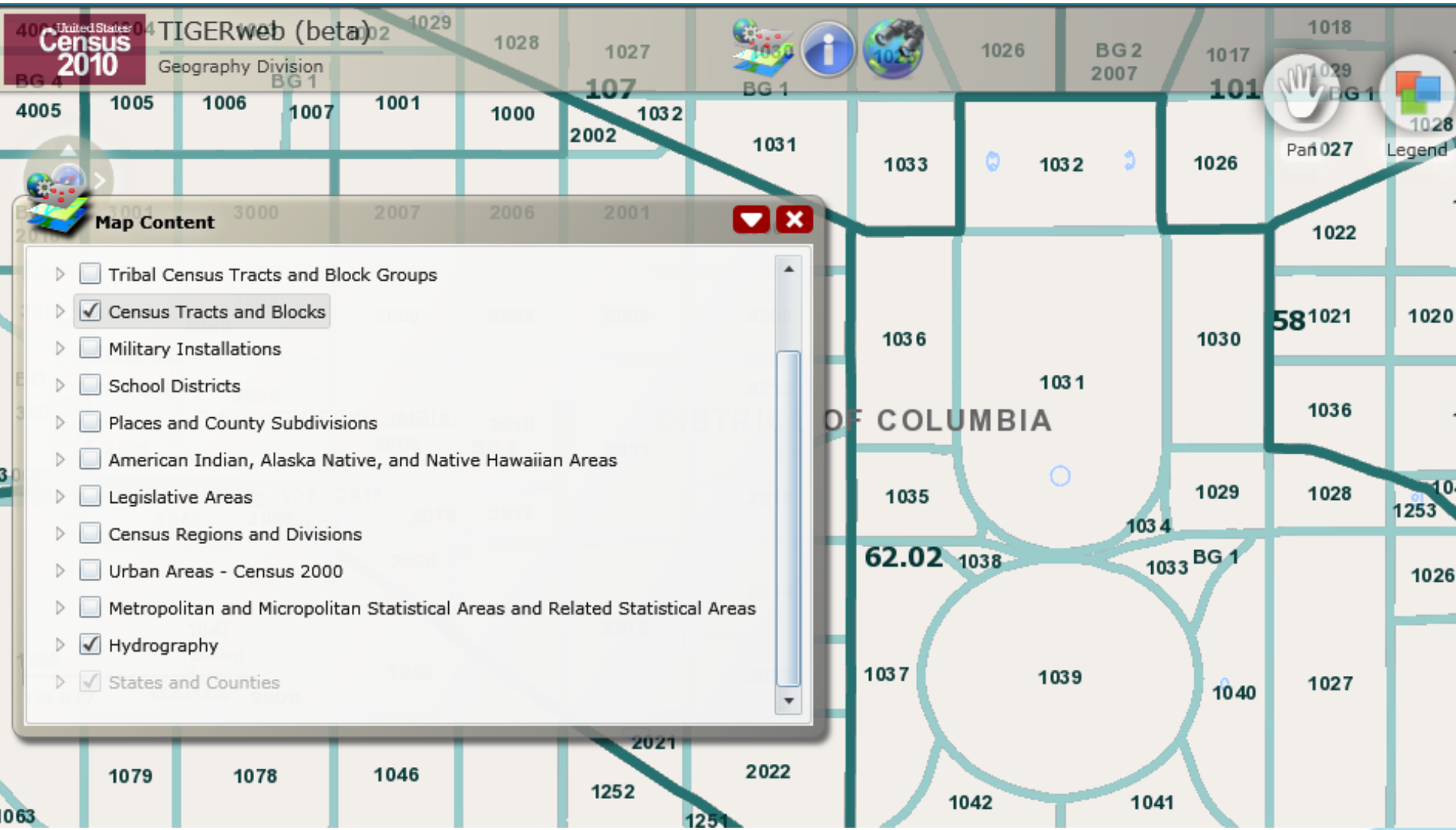
United States Census Bureau

http://www.census.gov/geo/www/



United States Census Bureau

http://tigerweb.geo.census.gov/tigerweb/default.htm



United States Census Bureau

http://tigerweb.geo.census.gov/tigerweb/default.htm

MTDB
(MAF/TIGER Database)

Geographic information (roads, rivers, railroads, map spots, map features)

Attributes (names, addresses, codes)

Legal and Statistical Boundaries for data collection, processing and tabulation operations

Questions?

Geographic area concepts, criteria, codes, and attributes:

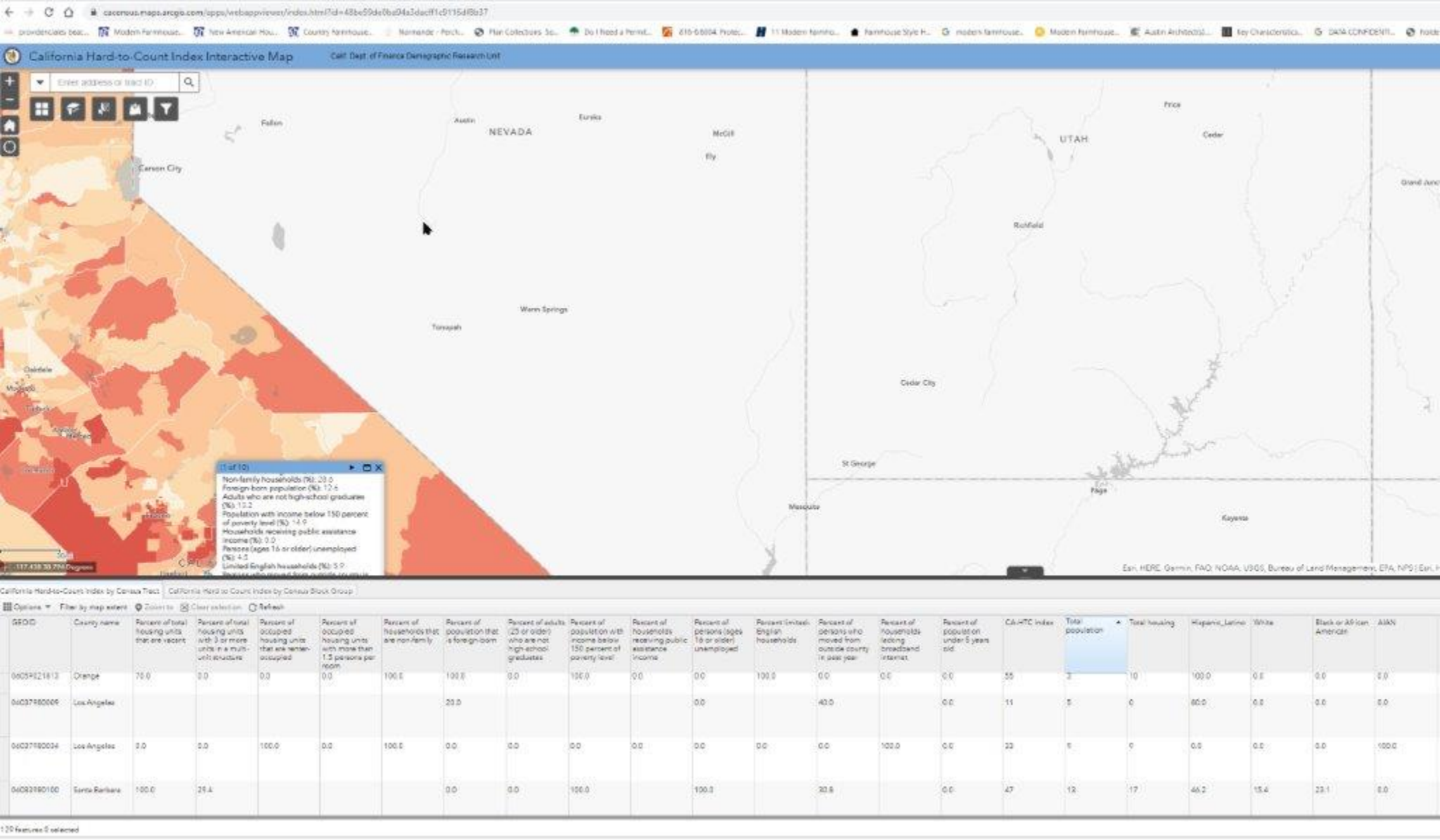
Geographic Standards
and Criteria Branch: 301-763-3056

Geographic products:

Geographic Products Branch: 301-763-1128

United States™ Census Bureau

Exhibit B



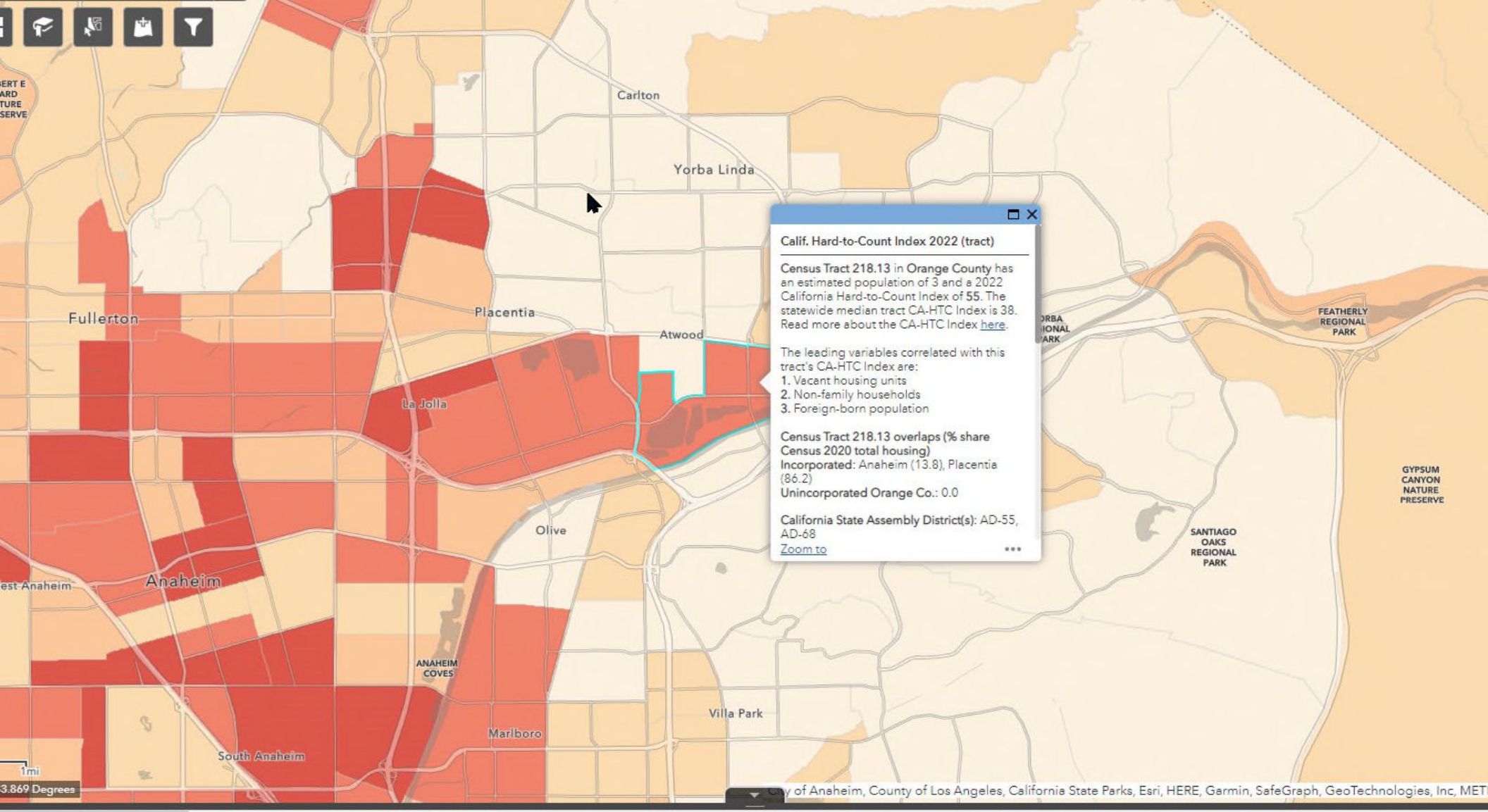
California Hard-to-Count Index by Census Tract | California Hard to Count Index by Census Block Group

Options | Filter by map extent | Zoom to | Clear selection | Refresh

GEOID	County name	Percent of total housing units that are vacant	Percent of total housing units with 3 or more units in a multi-unit structure	Percent of occupied housing units that are renter-occupied	Percent of occupied housing units with more than 1.5 persons per room	Percent of households that are non-family	Percent of population that is foreign-born	Percent of adults (25 or older) who are not high-school graduates	Percent of population with income below 150 percent of poverty level	Percent of households receiving public assistance income	Percent of persons (ages 16 or older) unemployed	Percent limited-English households	Percent of persons who moved from outside county in past year	Percent of households lacking broadband internet	Percent of population under 5 years old	CA HTC Index	Total population	Total housing	Hispanic_Latino	White	Black or African American	AIAN
06059021613	Orange	70.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	55	2	10	100.0	0.0	0.0	0.0
06037980006	Los Angeles						20.0				0.0		40.0		0.0	11	5	0	80.0	0.0	0.0	0.0
06037980004	Los Angeles	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	22	1	0	0.0	0.0	0.0	100.0
06083980100	Santa Barbara	100.0	28.6			0.0	0.0	0.0	100.0		100.0		33.6		0.0	47	12	17	46.2	15.4	23.1	0.0

1-20 Features 0 selected

Exhibit C

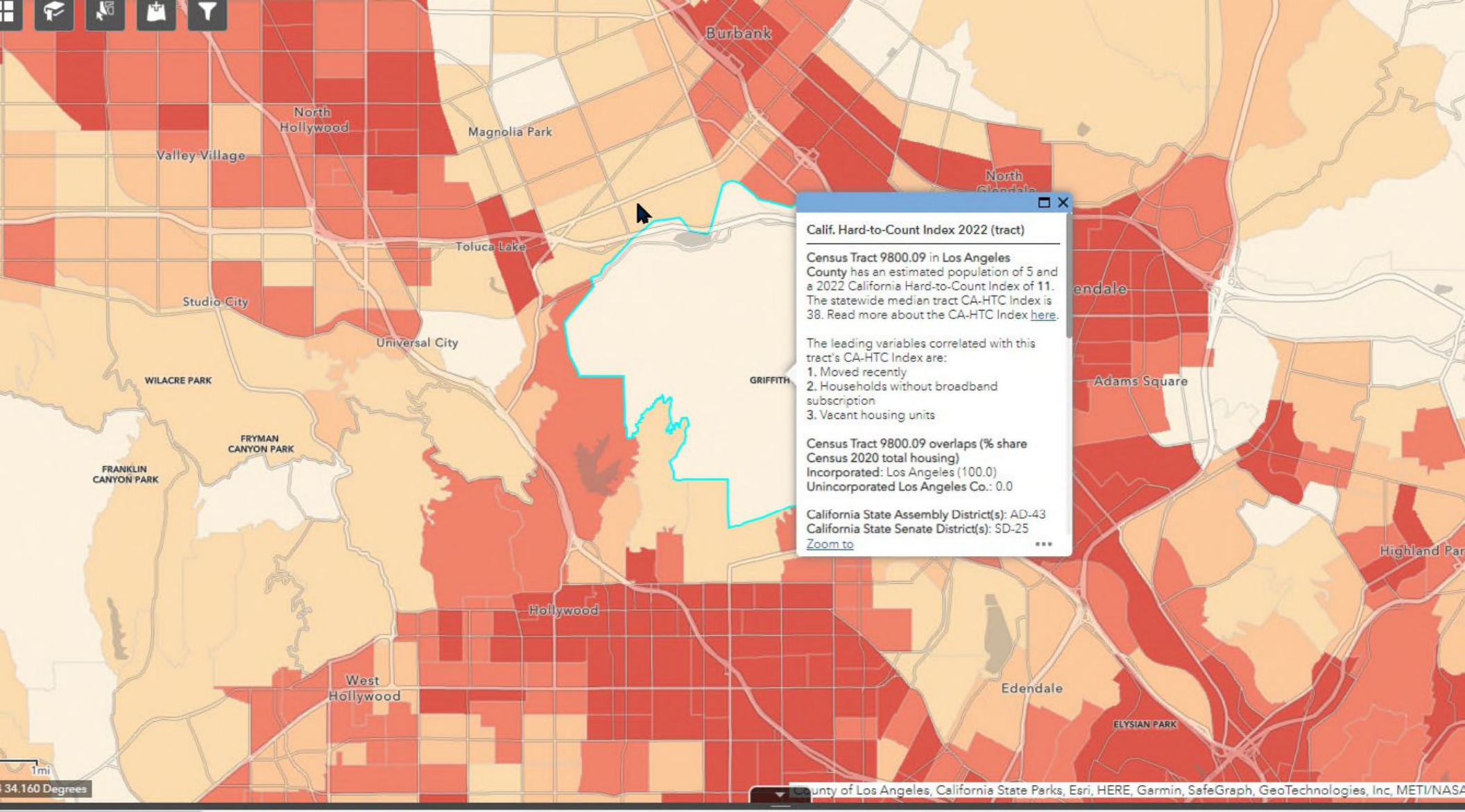


d-to-Count Index by Census Tract | California Hard to Count Index by Census Block Group

Filter by map extent | Zoom to | Clear selection | Refresh

	County name	Percent of total housing units that are vacant	Percent of total housing units with 3 or more units in a multi-unit structure	Percent of occupied housing units that are renter-occupied	Percent of occupied housing units with more than 1.5 persons per room	Percent of households that are non-family	Percent of population that is foreign-born	Percent of adults (25 or older) who are not high-school graduates	Percent of population with income below 150 percent of poverty level	Percent of households receiving public assistance income	Percent of persons (ages 16 or older) unemployed	Percent limited-English households	Percent of persons who moved from outside county in past year	Percent of households lacking broadband internet	Percent of population under 5 y old
00	San Francisco														
13	Orange	70.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0
09	Los Angeles						20.0				0.0		40.0		0.0

Exhibit D

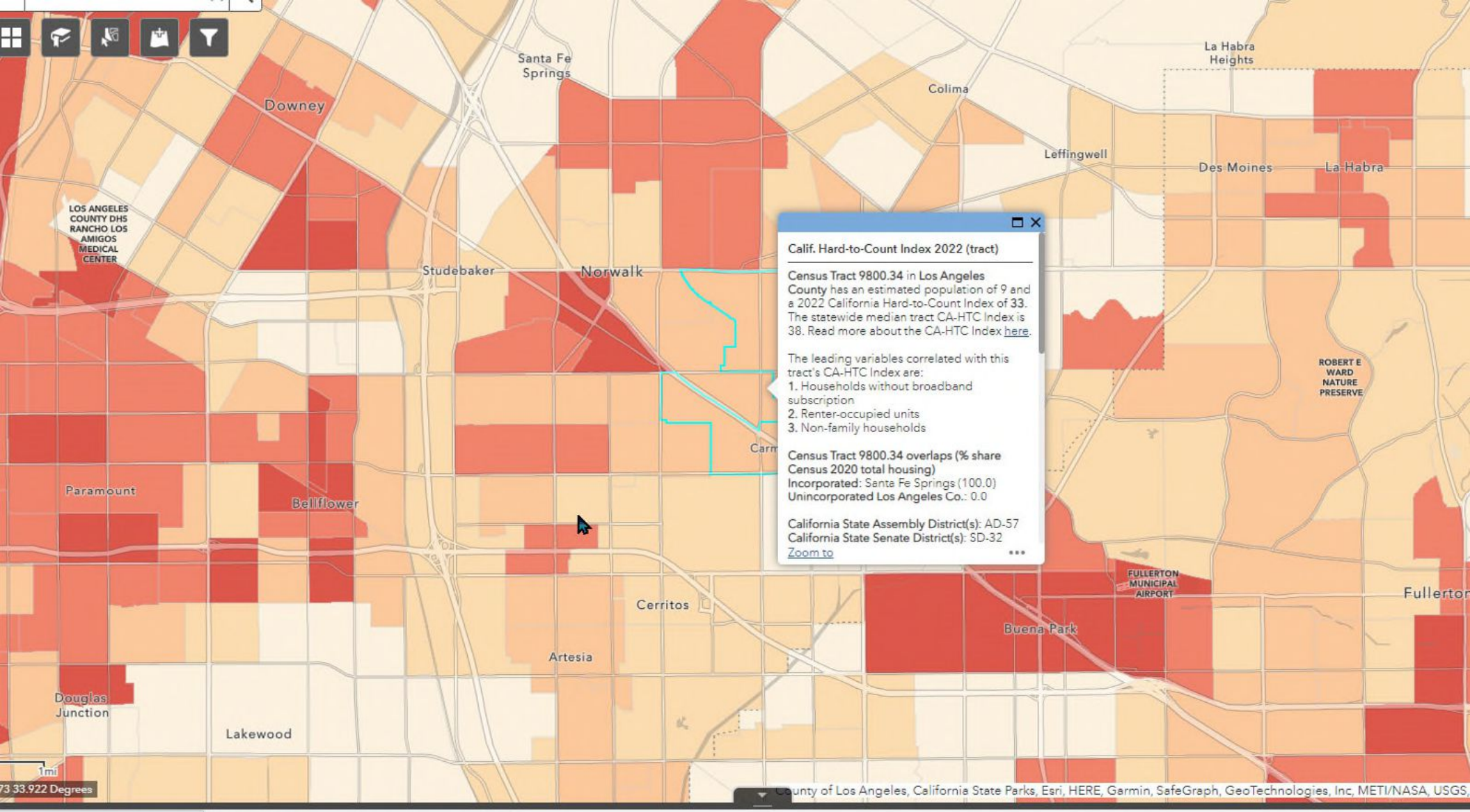


ard-to-Count Index by Census Tract | California Hard to Count Index by Census Block Group

Filter by map extent | Zoom to | Clear selection | Refresh

	County name	Percent of total housing units that are vacant	Percent of total housing units with 3 or more units in a multi-unit structure	Percent of occupied housing units that are renter-occupied	Percent of occupied housing units with more than 1.5 persons per room	Percent of households that are non-family	Percent of population that is foreign-born	Percent of adults (25 or older) who are not high-school graduates	Percent of population with income below 150 percent of poverty level	Percent of households receiving public assistance income	Percent of persons (ages 16 or older) unemployed	Percent limited-English households	Percent of persons who moved from outside county in past year	Percent of households lacking broadband internet
813	Orange	70.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0
0009	Los Angeles						20.0				0.0		40.0	
8034	Los Angeles	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

Exhibit E

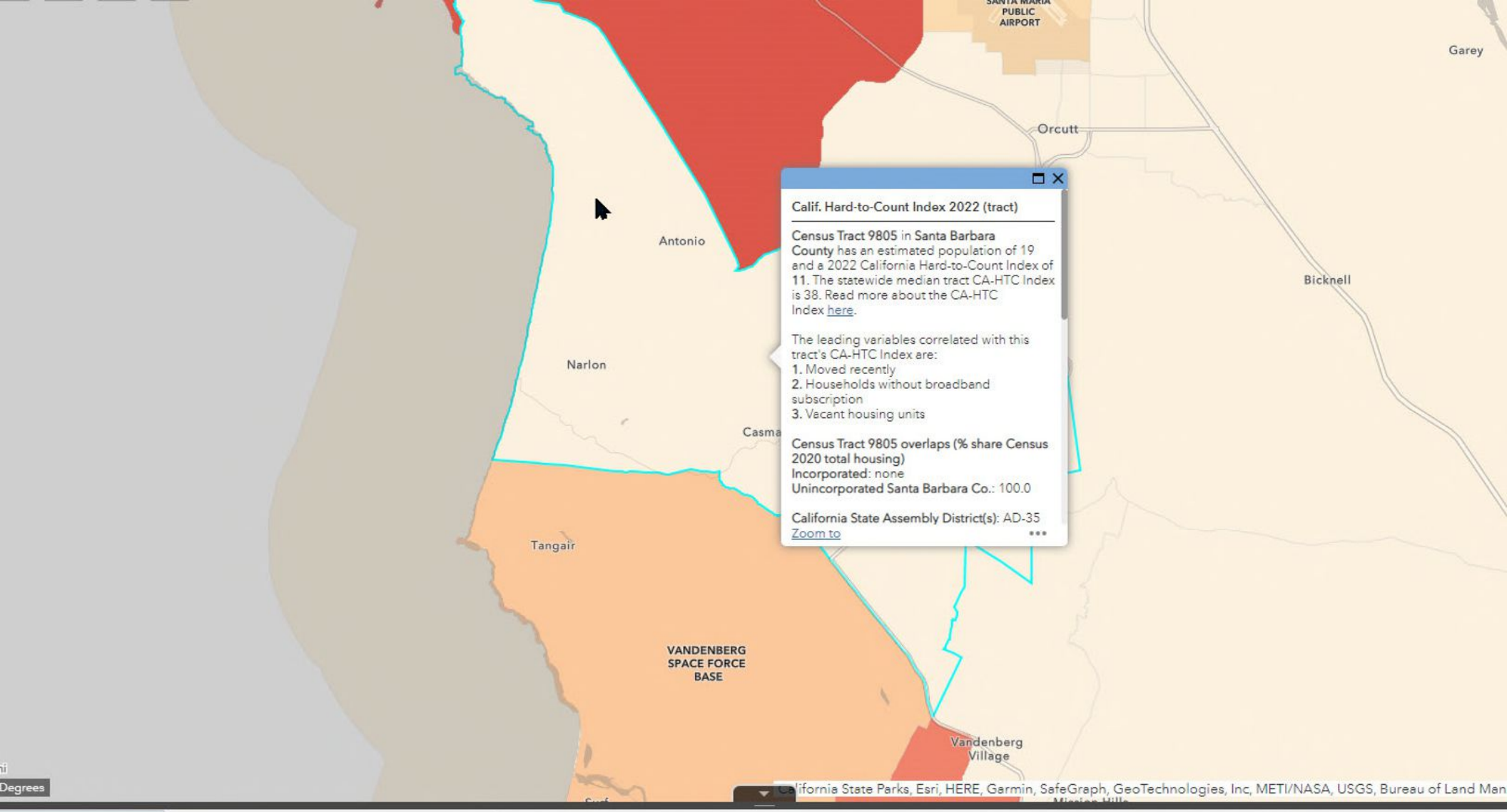


Hard-to-Count Index by Census Tract | California Hard to Count Index by Census Block Group

Filter by map extent | Zoom to | Clear selection | Refresh

	County name	Percent of total housing units that are vacant	Percent of total housing units with 3 or more units in a multi-unit structure	Percent of occupied housing units that are renter-occupied	Percent of occupied housing units with more than 1.5 persons per room	Percent of households that are non-family	Percent of population that is foreign-born	Percent of adults (25 or older) who are not high-school graduates	Percent of population with income below 150 percent of poverty level	Percent of households receiving public assistance income	Percent of persons (ages 16 or older) unemployed	Percent limited-English households	Percent of persons who moved from outside county in past year	Percent of households lacking broadband internet	Percent popul under old
21813	Orange	70.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0
30009	Los Angeles						20.0				0.0		40.0		0.0
30034	Los Angeles	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0

Exhibit F

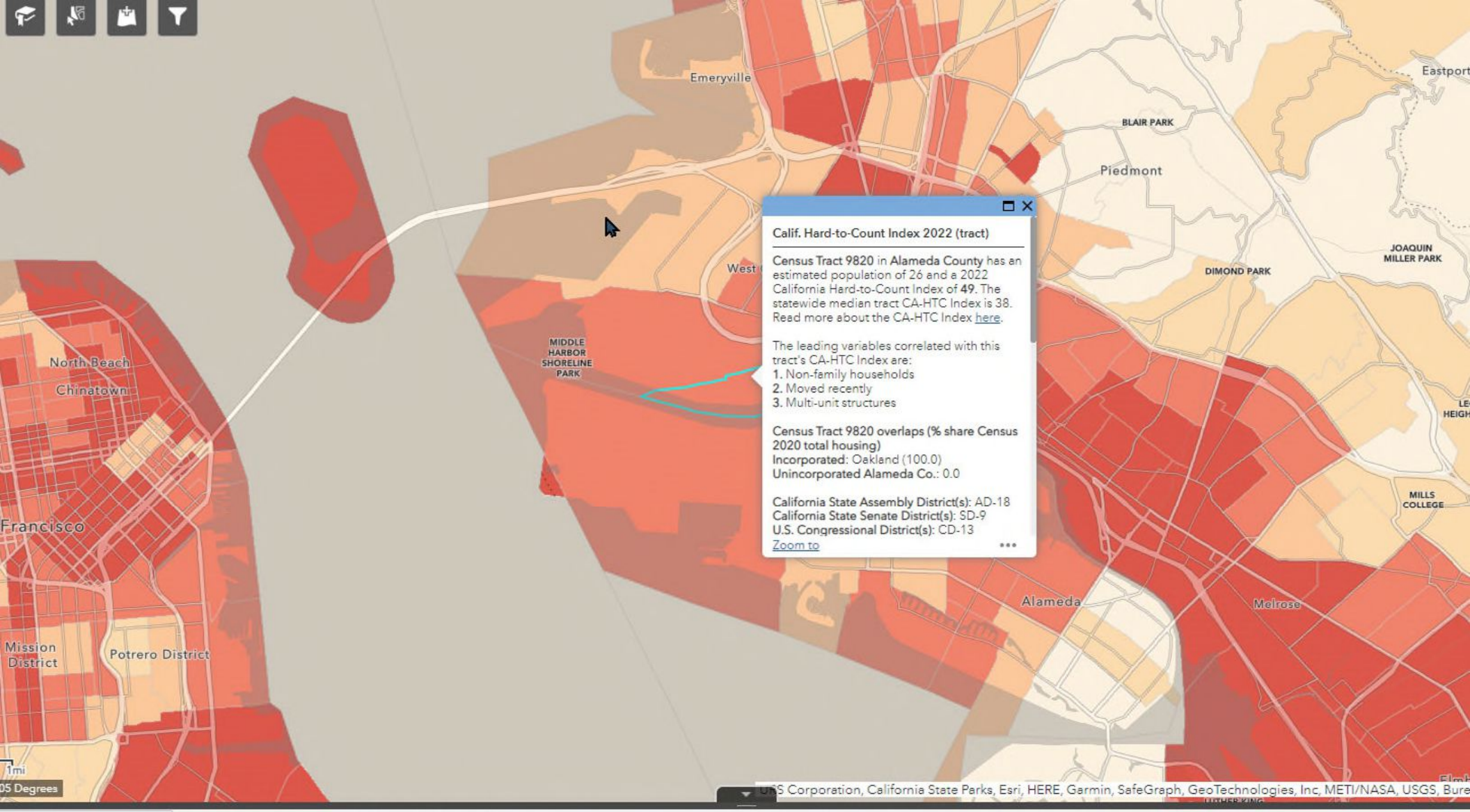


Count Index by Census Tract | California Hard to Count Index by Census Block Group

lter by map extent | Zoom to | Clear selection | Refresh

County name	Percent of total housing units that are vacant	Percent of total housing units with 3 or more units in a multi-unit structure	Percent of occupied housing units that are renter-occupied	Percent of occupied housing units with more than 1.5 persons per room	Percent of households that are non-family	Percent of population that is foreign-born	Percent of adults (25 or older) who are not high-school graduates	Percent of population with income below 150 percent of poverty level	Percent of households receiving public assistance income	Percent of persons (ages 16 or older) unemployed	Percent limited-English households	Percent of persons who moved from outside county in past year	Percent of households lacking broadband internet	Per po un old
Los Angeles						0.0						0.0		0.0
Santa Barbara						0.0						100.0		0.0
Alameda	0.0	66.7	0.0	0.0	66.7	46.2	0.0	0.0	0.0	0.0	22.2	23.1	0.0	0.0

Exhibit G



o-Count Index by Census Tract | California Hard to Count Index by Census Block Group

Filter by map extent | Zoom to | Clear selection | Refresh

County name	Percent of total housing units that are vacant	Percent of total housing units with 3 or more units in a multi-unit structure	Percent of occupied housing units that are renter-occupied	Percent of occupied housing units with more than 1.5 persons per room	Percent of households that are non-family	Percent of population that is foreign-born	Percent of adults (25 or older) who are not high-school graduates	Percent of population with income below 150 percent of poverty level	Percent of households receiving public assistance income	Percent of persons (ages 16 or older) unemployed	Percent limited-English households	Percent of persons who moved from outside county in past year	Percent of households lacking broadband internet	Perce popu unde old
Alameda	0.0	66.7	0.0	0.0	66.7	46.2	0.0	0.0	0.0	0.0	22.2	23.1	0.0	0.0
Los Angeles						40.0	0.0					0.0		0.0
San Francisco	0.0	88.0	100.0	0.0	88.0	31.2	0.0	0.0	0.0	6.2	0.0	28.1	0.0	0.0