Census Tract Boundaries and Place-Based Development Programs

Joseph Fraker

Abstract

Place-based economic development programs are often tied to census statistical units, such as census tracts. These units allow for the precise allocation of program benefits to areas with certain underlying socioeconomic conditions. During the 2020 decennial cycle, some local governments and metropolitan planning organizations sought to alter these units to change areas eligible for place-based Opportunity Zone incentives. Although criteria for modifying census tract boundaries are strict and have been consistent for decades, those efforts illuminate a potential conflict between the needs of data users and the desires of some who stand to benefit from place-based incentives. By interviewing people familiar with the Census Bureau's process for revising statistical boundaries and through conversations with people in the economic development field, this report aims to better understand this potential issue.

Introduction

As part of the 2020 Census, some local governments and metropolitan planning organizations successfully rearranged census statistical geographies (census tracts) with the intent of expanding areas eligible for Opportunity Zone tax incentives (Buhayer and O'Neal, 2021). The strategy was suggested by then-senior Trump administration officials as a way to potentially increase the size of eligible Opportunity Zone tracts. Some local governments and metropolitan planning organizations then pursued the tract redrawings, which were approved in the fall of 2020. Upon taking office, the Biden Administration ruled that the Opportunity Zone boundaries will remain the same as when first designated, curtailing the efforts to expand the size of the zones in these cases.

The episode raised questions and concerns from academics, policymakers, and local government officials around the country.

It shows the potential "unintended consequences of the decision to use tracts as Opportunity Zone units," noted David Van Riper, Director of Spatial Analysis at the Institute for Social Research and Data Innovation at the University of Minnesota and one of the principal investigators of the

National Historical Geographic Information System, a project that facilitates the comparison of geostatistical data at varying units over time (Van Riper, 2021). Van Riper noted that census tract boundaries, although intended to be fairly permanent, undergo changes from decade to decade, but he is unaware of tracts being changed for economic development purposes.

This article attempts to get at a few questions. First, it briefly examines the implementation geographies of place-based programs. It then looks at the census tract as a geographical and statistical unit, focusing on the decennial process for revising tracts known as the Participant Statistical Areas Program (PSAP) to better understand the purpose of the census tract and the processes by which they are determined. This analysis includes a review of a survey sent out to select PSAP participant organizations about their practices and procedures for drawing and modifying boundaries. Next is a case study from Baltimore County, Maryland, where tracts were redrawn at the request of the county government to expand one of the Opportunity Zones to encompass a large, multimodal logistics hub. The report concludes with a discussion about the potential implications of this effort.

This report aims to answer these questions by consulting with economic development and policy experts and by interviewing those familiar with the Census Bureau's decennial PSAP program for determining census tract boundaries. The overall goal of the research is to shed light on this rather innovative approach to potentially receiving place-based economic incentives.

Implementation Geographies for Place-Based Programs

Place-based programs can be implemented at any number of geographies with varying shapes and sizes. They can range from something as small as a commercial corridor for Tax Increment Financing, to county and city boundaries, to locally defined and drawn lines for the Federal Choice Neighborhoods program, to census statistical geographies for others. Census tracts provide the added benefit of facilitating analysis of underlying socioeconomic conditions in the targeted areas through the annual data release of the American Community Survey (ACS), which provides statistically valid population samples at the tract level. Increasingly, Congress has used geographical units, including the census tract, to implement policy. The quality of ACS data and the underlying geographies they utilize are vital for the distribution of federal funding (Reamer, 2018).

For some place-based programs that rely on census tracts, the program boundaries shift annually as the underlying data from the ACS get retabulated. A census tract that once qualified as low income or high poverty, for example, may gain wealth or vice versa, taking it in or out of a program. This is the case with Qualified Census Tracts and Difficult Development Areas for the Low-Income Housing Tax Credit (LIHTC). For others, such as Empowerment Zones, the program boundaries are static to the underlying tracts at the year of implementation. As the Biden administration recently ruled, the Opportunity Zone program will also be static to 2010 census tract geographies.

Overall, many of these federal and state economic development programs that use census tracts as the underlying implementation unit aim to increase jobs and investment in disadvantaged areas through incentivizing private investors, businesses, and governments with interests in the zones.

The decision to tie these programs with census tracts allows for easier monitoring of the program impacts. Census tracts also generally roughly follow neighborhood boundaries and homogenous geographies, so they are useful units for targeting programs in areas with specific socioeconomic conditions. The targeting of economic development programs, such as the Opportunity Zone program, to census tracts is made possible by the local governments and metropolitan planning organizations and by the Census Bureau applying consistent and accurate criteria for drawing census tracts across the country through PSAP.

What is the Census Tract, and What Is PSAP?

The foundations of the census tract unit were first conceived by Dr. Walter Laidlaw in 1906. Laidlaw was the Director of the Population Research Bureau of the New York Federation of Churches, and he wanted a way to accurately determine population characteristics for congregations in New York City (Krieger, 2006). Existing ward boundaries were "surely political—purely around getting votes—and there was no real consistency. There was no real unit that would allow you to compare populations over time," noted Professor Nancy Krieger at the Harvard T.H. Chan School of Public Health, who agreed to be interviewed for this report (Krieger, 2021). Krieger is an epidemiological researcher whose work focuses on the societal determinants of public health, and she has written about the history of the census tract. Laidlaw wanted a nonpolitical way to compare populations with "reasonably similar social and economic characteristics over time," Krieger said.

By 1910, eight cities, with the assistance of the Census Bureau and at the urging of Laidlaw, implemented the country's first "sanitary areas" to measure population characteristics, primarily to plan for public health (Truesdell and Green, 1937). In 1927, public health researcher Howard Whipple Green expanded on Laidlaw's work and implemented the first citywide census tract schema in Cleveland, which had been adopted by a total of 18 cities by the 1930 census. Green referred to the push for cities to adopt census tracts as a "movement" in his 1934 Census Tract Manual, which he prepared for the Census Bureau (Truesdell and Green, 1934).

For "tracting" these initial cities, "census tract committees" were formed consisting of local organizations that would likely use the data in cooperation with the Bureau of the Census (Truesdell and Green, 1934). The initial guidelines for tracts stated that the boundaries should be "definite" and should typically follow centers of streets and, occasionally, rivers or railroad lines. They should also be between 3,000 and 8,000 persons in total. Each committee was to have a leader, or "key person," who should have "a considerable amount of tact and diplomacy" to find compromise between data users. The leader should be knowledgeable of the use of population data in the city and be familiar with government, business, academic, and welfare interests (Green, 1947).

Initially just used for measuring public health characteristics, such as disparities in mortality rates, uses of tract data expanded as other disciplines and governments began seeing them as an important way to continually monitor social and economic change (Green, 1947). In 1934, the Census Bureau officially standardized the methodology for census tracts, allowing for their increased use for determining school populations and the locations of police and fire districts, recreation facilities, and housing. These uses, Green noted, were predicated on having consistent

and relatively homogenous characteristics in each tract, noting that "any one tract should not originally include areas with widely dissimilar characteristics" (Green, 1947: 10).

The governments that implemented census tracts continued to grow throughout the 20th century. By the 2000 census, every part of the country was covered in these data tabulation units (Krieger, 2021). Over the past few decades, the census tract has increasingly been used for direct resource allocation in the form of public policy implemented at the tract level. The homogeneity of tracts and the consistent data they provide make analysis and allocation easier and tailorable. "You want them to be meaningful units that you are comparing over time," says Krieger. "They were meant to be free of political influence and of market influence" (Krieger, 2021).

A review of the history of census tracts indicates that the criteria used to define tracts have remained relatively consistent from the 1930s to the present. Tracts should still follow visible features such as roads and rivers, and they should include between 1,200 and 8,000 people. According to the Federal Register, "The primary goal of the census tract is to provide a set of nationally consistent small, statistical geographic units, with stable boundaries, that facilitate analysis of data across time."[1] This goal, however, may come into conflict with a community's planning process if place-based economic development creates strong incentives for boundary changes that could inject instability into the data series.

The Participant Statistical Areas Program (PSAP)

The Census Bureau now utilizes the Participant Statistical Areas Program (PSAP) to delineate these statistical areas, work formerly done by the census tract committees and census statistical area committees (U.S. Census Bureau, 2008). PSAP allows invited participants from state and local governments and regional planning agencies to review and modify census statistical boundaries, including tract boundaries. The Census Bureau recommends that invited participants reach out to data users and stakeholders in this process (U.S. Census Bureau, 2008).

These statistical geographies are used to tabulate data from the census, economic census, ACS, and other potential Census Bureau surveys (U.S. Census Bureau, 2020). This process is not quite as intensive as it may have been in the past because most jurisdictions are usually not drawing tracts from scratch; it can, however, still be an involved process, especially in areas with substantially changing populations. In these areas, the Census Bureau encourages tracts that have gained population to split and those that have lost population to merge, allowing the outer boundaries of tracts to retain their shapes (U.S. Census Bureau, 2020).

Before the 2000 census, formal committees were required as part of the process, and they were asked to provide local agencies, private citizens, and organizations with the opportunity to engage (U.S. Census Bureau, 2008). The primary participant organization, often a metropolitan planning organization or county, is still required to ensure that the process is open to all who would like to participate, but the primary participant takes more of a leading role (U.S. Census Bureau, 2008).

[1] "Census Tracts for the 2020 Census—Final Criteria," *Federal Register* 83 (219) November 13, 2018. https://www.govinfo.gov/content/pkg/FR-2018-11-13/pdf/2018-24567.pdf.

During the 2020 PSAP process, the Census Bureau simplified things by providing PSAP primary participants with pre-delineated tract geographies in their Geographic Update Partnership Software (GUPS) mapping software that utilized the base 2010 tracts, with modifications where there were substantial population changes. The groups could either accept or make modifications to the Census Bureau's proposals in the GUPS system on the basis of local data needs and preferences (U.S. Census Bureau, 2020).

According to the final criteria for delineating 2020 census tracts published in the Federal Register, "the goal of the criteria has remained unchanged; they assure comparability and data reliability through the standardization of the population thresholds for census tracts, as well as requiring that tracts' boundaries follow specific types of geographic features that do not change frequently."[2] One of the more significant ways in which the criteria have changed happened in 2010, when housing units could be used in place of population to better reflect areas with seasonal populations, such as resort towns.[3]

Although there are fairly strict criteria for drawing tracts, there is room in the guidelines for local governments and planning organizations to make changes.[4] The Federal Register criteria do not mention drawing tracts in a way that makes certain areas eligible for federal programs and other areas not. The criteria do state, however, that "the Census Bureau may modify and, if necessary, reject any proposals for census tracts that do not meet the published criteria."[5] A webinar on PSAP does note the following: "We [the Census Bureau] recognize that statistical geographies, census tracts especially, are used in a variety of federal programs; those attempting to want to change boundaries to meet the needs of a particular program, please be aware that a change that may have a positive effect for one program may have a negative impact on another" (U.S. Census Bureau, 2019). The webinar continues: "It is better to maintain the statistical objectivity and comparability of areas, updating areas to meet the general analytical needs of as many data users as possible" (U.S. Census Bureau, 2019). According to Tim Trainor, President of the International Cartographic Association and former U.S. Census Bureau official, the Census Bureau, "does not make a change if it (a census tract submission) is in conflict with the criteria." (Trainor, 2021). This statement indicates that although the Census Bureau may not look favorably upon submissions that aim to change tract geographies on the basis of tax incentives, it is not a hard rule of the Bureau, and local governments and planning organizations have some discretion.

PSAP Respondents Survey Questions

To better understand how PSAP works and how local governments and metropolitan and regional planning organizations approached the process in 2019 when PSAP groups were conducting this work for the 2020 Census, the author emailed a survey to 15 PSAP primary participants. The survey included three questions on procedures and standards for PSAP. The survey was sent out

[2] Ibid.

[3] Ibid.

[4] Ibid.

[5] Ibid.

in April 2021 and represents some of the largest metropolitan areas across the country. The survey results are summarized in exhibit 1.

Exhibit 1

PSAP Survey Results

Survey Question	Summary of Responses
1. Other than the Census Bureau, who do you consult with in the PSAP process (local governments, community organizations, citizens, etc.)?	Six respondents stated they worked with local governments and municipalities within their jurisdiction, and one did not respond directly to the question. There was variable participation among local governments, with some participating in the process and others leaving it to the primary participants. One primary participant stated they worked with other regional planning agencies if they had overlapping boundaries with particular counties. None of the primary participants indicated they worked with citizens or community groups.
2. Do you defer to local governments if the local governments have recommendations for changes?	The answer to this question was generally yes. If the local government had requests for changes, the primary participant tried to accommodate those requests. Three primary participants emphasized that they defer to local governments only if the boundary modifications followed the Census Bureau criteria. In some instances, participants indicated there was some back and forth over a geographical feature to use as a boundary or how to better align a tract with a neighborhood, for example.
3. Did you feel any pressure to draw census tracts in a way that might not be in keeping with the guidelines from the Census Bureau?	Five of the seven respondents stated that they did not feel pressure to violate the Census Bureau criteria. Some groups indicated that they would not have accepted submissions that violated the criteria. One group expressed surprise that tracts could be exploited for the Opportunity Zone program at all, and another group declined to answer.

PSAP = Participant Statistical Areas Program.

Source: Author communication with PSAP participants between March 2021 and May 2021

In addition to providing the answers outlined here, primary participants gave some additional details into their methodology. One participant indicated that there may have been instances in which Opportunity Zones would have expanded due to tract changes, but those changes would have been incidental and would have also had to conform with the designated criteria for boundary adjustments. Others repeatedly mentioned that they would accept changes only if they complied with the Census Bureau standards for boundary adjustments. One group stated, "The idea that census tracts could be gamed for exploiting the Opportunity Zones [2017 Tax Act] seems far-fetched—simply because it would take so many, many [sic] years to change the boundaries thru Census's once/decade update, then wait 2–3 more years for socioec [sic] data to become available." Another group said, "The case studies described in the Bloomberg article are certainly concerning and problematic. I feel fortunate that we didn't experience any such egregious attempts to influence the outcomes."

Case Study: Baltimore County, Maryland

In Baltimore County, a representative for Tradepoint Atlantic—a massive, multimodal logistics facility in eastern Baltimore County—met with county officials to request that the Sparrows Point peninsula tract, the tract that underlies Tradepoint Atlantic, be merged with the adjacent low-

income community and designated Opportunity Zone of Turner Station so that Tradepoint Atlantic could qualify for Opportunity Zone tax incentives. The strategy, which Trump administration officials had suggested, was a way to get around the characteristics that made the Sparrows Point tract ineligible to begin with; it was a zero-population census tract and not a low-income community (O'Neal, 2021). With the suggestion in hand, Tradepoint asked Baltimore County to have the tracts merged as part of the 2020 PSAP process. The request came after the county had already submitted its 2020 PSAP tract boundaries to the Baltimore Metropolitan Council, the local regional planning agency and primary PSAP participant, without merging the tracts. The county then revised its submission.

Although the idea never materialized in terms of the Opportunity Zone because of the Biden Administration's decision that changes in tracts will not affect Opportunity Zone boundaries, it did result in a substantially changed census tract. One side of Bear Creek represents the low-income and historic African-American community of Turner Station, and the other side overlies the massive, global logistics hub and regional economic success story of Tradepoint Atlantic. Unlike some other areas that have experienced similar declines and have stagnated, the former industrial site at Sparrows Point has experienced success since the 2010s, having had an impressive and rapid turnaround, facilitated by the 2014 purchase of the 3,300-acre peninsula by a privately held limited liability corporation (Tradepoint Atlantic, 2021). In the years since the purchase, and with help from Baltimore County in the form of $78 million in funding, the company has cleaned up the site and turned it into a massive, multimodal logistics hub (Wood, 2018). It is now home to multiple Amazon and Home Depot warehouses, Volkswagen, Floor and Décor, the urban produce producer Gotham Greens, the offshore wind company Orsted, and many others (see exhibit 3). As of the fall of 2020, Tradepoint Atlantic estimated 8,000 employees were working at a total of 20 companies on the site, and Tradepoint Atlantic will have an estimated 17,000 jobs by 2025 (Tradepoint Atlantic, 2020). The area is once again a center for regional commerce, employing people from around the Baltimore metropolitan area.

Turner Station developed as an African-American community on the other side of Bear Creek from Sparrows Point in the early part of the 20th century. African-Americans were barred from living in the surrounding residential communities of Dundalk and Middle River, and there was only a small portion of the Bethlehem Steel company town on Sparrows Point where African-Americans could live (Pitts, 2019). With limited opportunities elsewhere, Turner Station grew as a major center for African-American culture and commerce in the Baltimore area and the country. Several notable residents have called Turner Station home, including Henrietta Lacks, astronaut Robert Curbeam, Jr., and Congressman Kweisi Mfume (Pitts, 2019).

Although the neighborhood of Turner Station is linked with Sparrows Point in the sense that many of its residents worked at the steel mill and some now work at the Tradepoint Atlantic site, the two areas are divided by a major tributary of the Patapsco River and an interstate highway, geographical features that often divide tract boundaries. The tracts are on two separate peninsulas. There is also no direct transit access between Turner Station and Tradepoint Atlantic. The trip by car between the two areas is between 4 and 8 miles, depending on where on the sprawling Sparrows Point tract one is heading. Until it was changed during the 2020 redrawing, Sparrows Point was a Special Use

Census Tract because of its unique geography as an employment center with no housing units. It was precisely this unique geography and classification as a zero-population census tract that meant it could not qualify as an Opportunity Zone to begin with as the Opportunity Zone program requires certain household income thresholds to qualify for selection.

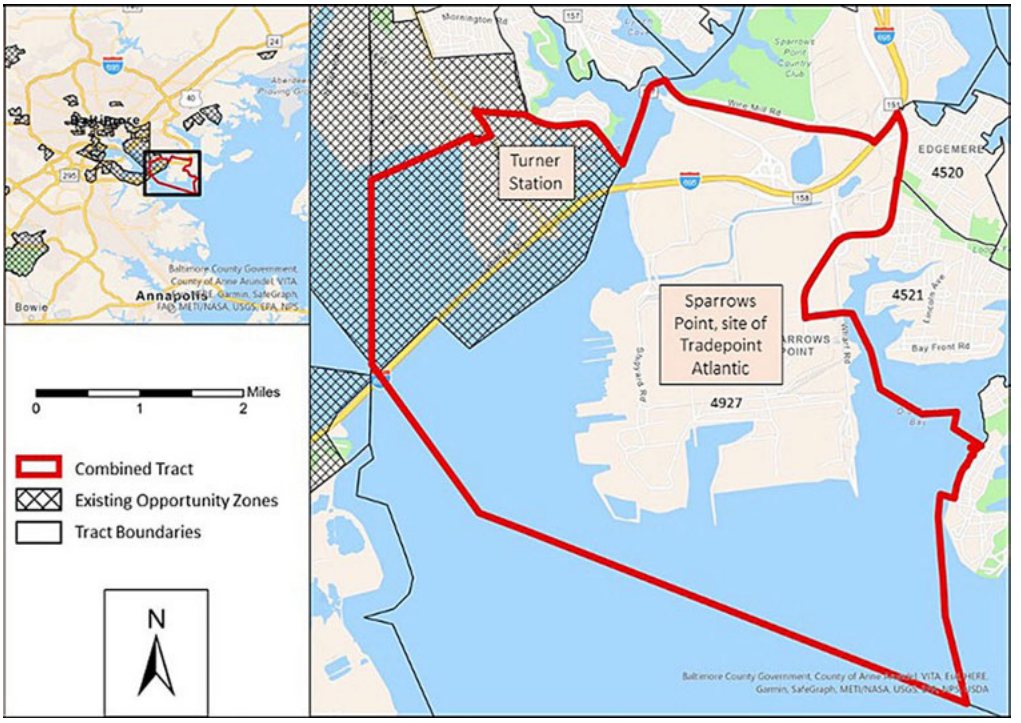
Some, including Congressman Dutch Ruppersberger, who represents the area, argued that extending the Opportunity Zone to include Tradepoint Atlantic was "entirely consistent with the purpose and intent of the Opportunity Zone program."[6] Other lawmakers have suggested sunsetting certain tracts with similar characteristics to the Sparrows Point area—that is, census tracts that qualify by being adjacent to low-income communities (O'Neal, 2021). Senator Ron Wyden, for example, has proposed eliminating eligibility for contiguous tracts and tracts with high incomes, the former of which Sparrows Point would have been had it been a population census tract. In addition, the Sparrows Point and Tradepoint Atlantic area is among the types of areas others have said should not qualify—areas already seeing significant investment without implementing the program. This point, of course, has become moot since the news came out that the Opportunity Zones will remain stagnant to the 2010 boundaries.

The previous example proves the lengths to which investors and some governments will go to help businesses receive the tax incentives. If Baltimore County only wanted to eliminate a zero-population census tract, it would have made more sense to merge with tract 4520 or tract 4521 on the same peninsula, says Van Riper. Those two tracts are not low-income communities and did not qualify as Opportunity Zones, however, so Tradepoint Atlantic and Baltimore County looked to the distressed census tract and low-income community across the creek (See exhibit 2).

[6] O'Neal, Lydia. 2021. [@LydsONeal]. 2021 (March 29). "Rep. Ruppersberger (@Call_Me_Dutch) has asked @SecYellen to allow a tax-advantaged Opportunity Zone in the Baltimore area to expand based on redrawn census tract lines, so that it includes an industrial project—one example of a nationwide phenomenon @USTreasury has to address." [Tweet]. Twitter. https://twitter.com/LydsONeal/status/1376559925686599683.

Exhibit 2

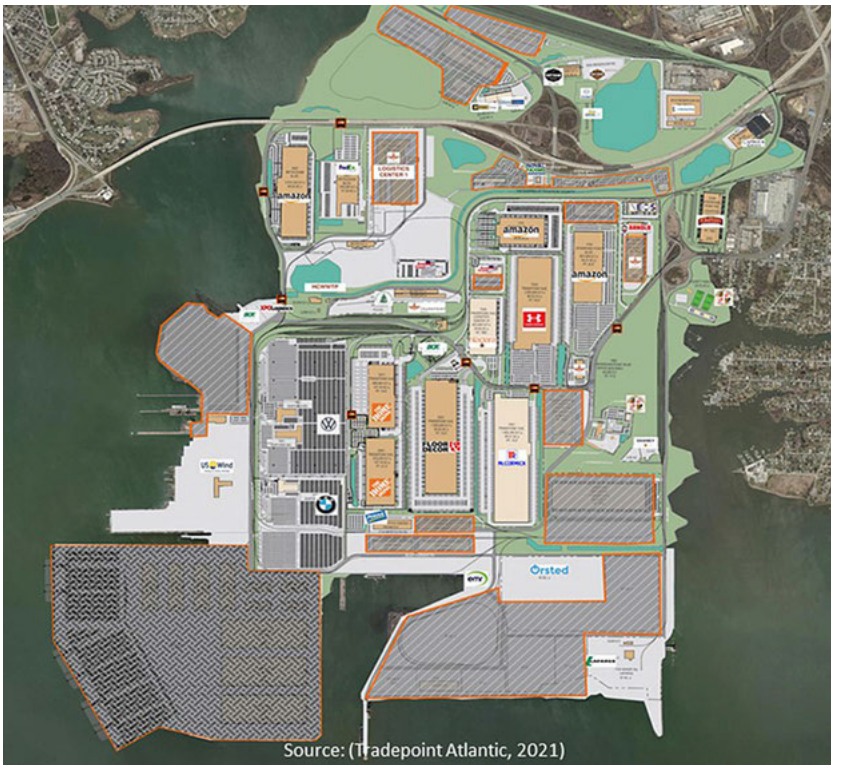
Map of Existing Opportunity Zones in the Baltimore Area and the Census Tract Expansion at Sparrows Point–Tradepoint Atlantic



Sources: Esri World Navigation Map (Esri, n.d.); Maryland Department of Housing and Community Development (MD iMAP Data Catalog [DOIT], n.d.); U.S. Census Bureau, Geography Division, n.d.

Exhibit 3

Detailed View of Tradepoint Atlantic that Shows Current and Future Development Sites



Source: Tradepoint Atlantic, 2021

Discussion

To get a better sense for how researchers and practitioners view the strategy of rearranging tract boundaries to make certain areas eligible for place-based programs, additional interviews were conducted for this report. In these interviews, there was a consensus that tracts should only be adjusted if the underlying statistics or geography merits it.

Even among those who would like to see the Opportunity Zone program expanded to include more areas, there was little appetite for adjusting statistical geographies for that purpose. Kenan Fikri of the Economic Innovation Group, the 501-C4 organization behind the initial push for an Opportunity Zone-like program, stated that allowing Opportunity Zones to expand if the underlying statistics do not merit it would be inappropriate. There is an argument to be made, according to Fikri, that the new 2020 tracts would have better represented on-the-ground statistics and neighborhoods. Even so, he says, if a jurisdiction was just "drafting off" or "looping in whatever they wanted to, regardless [of] whether or not it looks, feels, smells, and counts as a low-income community, that's not what you want" (Fikri, 2021).

Andrew Reamer, Professor at the George Washington University Institute for Public Policy, whose research focuses on economic development and competitiveness, offered similar sentiments. "I wasn't aware of this subject and certainly would be concerned if census tract lines are redrawn to enhance tax benefits," he said (Reamer, 2021). Reamer's work includes analysis of the federal economic statistical programs and uses and users of American Community Survey data. When asked if this sort of thing has happened in previous decennial census cycles for other place-based programs that rely on census tracts, he said that he was unaware of any such occurrences (Reamer, 2021). Ned Hill, Professor of Economic Development at Ohio State University, stated similar sentiments (Hill, 2021).

Dr. Kurt Usowski, Deputy Assistant Secretary for Economic Affairs with the U.S. Department of Housing and Urban Development's Office of Policy Development and Research (HUD PD&R) stated that he was not aware of any instances of this strategy being employed for the LIHTC program, stating that the "time horizon for implementing such a solution would most likely be outside the risk tolerance for even real estate developers" (Usowski, 2021). Dr. Michael Hollar, Senior Economist with HUD PD&R stated that while he was aware of developers occasionally contacting the Census Bureau, he did not know of any specific instances or what was discussed. He noted that if it were a request to modify a tract boundary, it would have been "quickly denied" (Hollar, 2021).

The process of drawing and revising census tract boundaries every 10 years is esoteric. This obscurity is probably because, unlike many functions with the census, PSAP is largely administrative, conducted by those in governments and governing bodies with expertise in statistics and demographics. It is also unclear in this research if it is common for local governments to request input from nongovernmental groups or the public. From the primary PSAP participant responses for this research, it appears as though it is not, with primary PSAP participants mainly soliciting input from local governments.

From a local government perspective, Rich Quodomine, Senior Lead Geographic Information System (GIS) Analyst with the Department of Public Property for the City of Philadelphia and member of the American Association of Geographers, notes that changes in tract boundaries for non-statistical purposes would have a significant and disruptive impact on transportation resource planning (Quodomine, 2021).

A couple of the discussions for this report revealed an underlying sense that changing tract or other statistical geographies for political or economic development purposes is probably not uncommon. Quodomine noted that some local governments have historically tried to influence the naming conventions of metropolitan statistical areas, for example, as benefits can be associated with name recognition or pride associated with living in an area. "The manipulation of the census," he notes, "is probably as old as the Census going back to 1790" (Quodomine, 2021). Others noted generally that even data get politicized in one way or another.

From a data analysis perspective, changes in tract boundaries create issues for those looking to compare data over time. Researchers, including those who work on this topic at the Minnesota Population Center, have created workarounds for this issue, developing the National Historical

Geographic Information System (NHGIS), which allows for the comparison of different tract geographies going back to 1990. NHGIS provides geographic "crosswalks" that allow for the comparison between census units (Manson et al., 2020). This comparison becomes difficult when changes to tract footprints happen, which is why Census Bureau set standards for splitting or merging tracts to retain outer boundaries.

Conclusion

As evidenced through the case study in this article and the research by Buhayer and O'Neal (2021), the Opportunity Zone program and other place-based programs may provide the incentive to draw tracts in a way that connects low-income areas with areas seeing or likely to see development that would qualify them for incentives given to distressed tracts. There also may be an incentive to draw tracts that are larger in geography.

Efforts to expand Opportunity Zones through this process failed because of the decision to keep the zones unchanged to 2010 tract boundaries. The attempt, however, has implications for data users and for other federal programs that rely on accurate population counts. "You name the discipline; they use census tract data," says Professor Nancy Krieger. "We want the units to be meaningful for the work that we do (Krieger, 2021)."

Author

Joseph Fraker is an urban planner based in New Orleans, Louisiana.

References

Buhayer, Noah, and Lydia O'Neal. 2021. "A Trump Tax Break Kicked Off a Race to Redraw U.S. Census Maps," *Bloomberg News*. https://www.bloomberg.com/news/features/2021-02-25/trump-s-opportunity-zone-tax-break-started-a-race-to-redraw-census-maps.

Esri. [Basemap]. n.d. Scale Not Given. "World Navigation Map." https://www.arcgis.com/home/item.html?id=63c47b7177f946b49902c24129b87252

Fikri, Kenan. 2021 (April 7). Personal communication (interview). Economic Innovation Group, 616 H St. NW, Ste. 550, Washington, D.C. 20001.

Green, H. Whipple. 1947. *Census Tract Manual*, 3rd ed. Washington, D.C.: U.S. Department of Commerce, U.S. Census Bureau.

Hill, Ned. 2021 (March 25). Personal communication (interview). Professor of Economic Development at Ohio State University, 281 W. Lane Ave, Columbus, OH 43210.

Hollar, Michael. 2021 (October 28). Personal communication (email exchange). Senior Economist at the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 451 7th Street, S.W., Washington, D.C. 20410

Krieger, Nancy. 2021 (March 26). Personal communication (interview). Professor at Harvard T.H. Chan School of Public Health, 677 Huntington Ave., Boston, MA 02115.

———. 2006. "A Century of Census Tracts: Health and the Body Politic (1906–2006)," *Journal of Urban Health* 83 (3): 355–361. https://doi.org/10.1007/s11524-006-9040-y

Manson, Steven, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. 2020. IPUMS National Historical Geographic Information System (NHGIS): Version 15.0 [dataset]. Minneapolis, MN: IPUMS. http://doi.org/10.18128/D050.V15.0.

Maryland Department of Housing and Community Development. n.d. "Maryland Incentive Zones - Opportunity Zones." MD iMAP Data Catalog (DOIT). https://data.imap.maryland.gov/datasets/maryland-incentive-zones-opportunity-zones/explore?location=38.788621%2C-77.279300%2C7.86

O'Neal, Lydia. 2021 (April 15). Personal communication (interview). Reporter at The Wall Street Journal, 1211 Avenue of the Americas, New York, NY. 10036.

Pitts, Jonathan. 2019. "In Its day, Baltimore County's Turner Station Was a Beloved African-American Enclave. Now Some Seek a Revival." *Baltimore Sun*, February 2. https://www.baltimoresun.com/maryland/baltimore-county/bs-md-turner-station-20190124-story.html.

Quodomine, Rich. 2021 (April 15). Personal communication (interview). Senior Lead GIS Analyst with the Department of Public Property for the City of Philadelphia, 1400 John F. Kennedy Blvd., Philadelphia, PA 19107.

Reamer, Andrew. 2021 (March 30). Personal communication (interview). Research professor at The George Washington University Institute of Public Policy, MPA Building, 805 21st Street N.W., Washington, D.C. 20052.

———. 2018. *Census-Derived Datasets Used to Distribute Federal Funds: Counting for Dollars 2020: Report #4*. Washington, D.C.: George Washington Institute of Public Policy. https://gwipp.gwu.edu/sites/g/files/zaxdzs2181/f/downloads/Counting%20for%20Dollars%20%234%20Census-derived%20Datasets%20rev%2005-19.pdf.

Tradepoint Atlantic. 2021. Master Plan: Sparrows Point, Baltimore, Maryland. https://www.tradepointatlantic.com/wp-content/uploads/2021/08/TPA_Master_Plan_Site_Availability_08-2021.pdf.

———. 2020. "Straight to the Point," Tradepoint Atlantic Fall 2020 Newsletter. https://www.tradepointatlantic.com/wp-content/uploads/2020/09/TPA_Newsletter_Fall-2020.pdf.

Trainor, Tim. 2021 (April 23). Personal communication (interview). President of the International Cartographic Association (and former U.S. Census Bureau official), 10382 Stansfield Road, Laurel, Maryland 20723.

Truesdell, Leon Edger, and Howard Whipple Green. 1937. "Census Tracts in American Cities," rev. ed., Washington, D.C.: U.S. Department of Commerce, U.S. Census Bureau.

———. 1934. "Census Tracts in American Cities." Washington, D.C.: U.S. Department of Commerce, U.S. Census Bureau.

U.S. Census Bureau. 2020. "Participant Statistical Areas Program (PSAP)." https://www.census.gov/programs-surveys/decennial-census/about/psap.html.

———. 2019. "PSAP Standard GUPS Webinar." https://www.youtube.com/watch?v=ZCjoG4QKH30.

———. 2008. "2010 Participant Statistical Areas Program: Participant Information." https://www2.census.gov/geo/pdfs/partnerships/psap2010_part_info.pdf.

U.S. Census Bureau. Geography Division. n.d. "2020 TIGER/Line Shapefiles: Census Tracts." https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2020&layergroup=Census+Tracts

Usowski, Kurt G. 2021 (October 28). Personal communication (email exchange). Deputy Assistant Secretary for Economic Affairs at the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 451 7th Street, S.W., Washington, D.C. 20410.

Van Riper, David. 2021 (April 1). Personal communication (interview). Director of Spatial Analysis at the Institute for Social Research and Data Innovation at the University of Minnesota, 50 Willey Hall, 225 19th Ave. S., Minneapolis, MN 55455.

Wood, Pamela. 2018. "Baltimore County Council OKs $78M Help for Tradepoint Atlantic," The *Baltimore Sun*. https://www.baltimoresun.com/maryland/baltimore-county/bs-md-co-tradepoint-vote-20181217-story.html.