DEPARTMENT OF COMMERCE

Bureau of the Census

[Docket Number 110714393–1393–01]

Urban Area Criteria for the 2010 Census

AGENCY: Bureau of the Census, Department of Commerce.

ACTION: Notice of final program criteria.

SUMMARY: This notice announces the Bureau of the Census' (hereafter, Census Bureau's) final criteria for defining urban areas based on the results of the 2010 Decennial Census (the term ''urban area'' as used throughout this notice refers generically to urbanized areas of 50,000 or more population and urban clusters of at least 2,500 and less than 50,000 population). This notice also provides a summary of comments received in response to proposed criteria published in the August 24, 2010, **Federal Register** (75 FR 52174), as well as the Census Bureau's response to those comments.

The Census Bureau's urban-rural classification is fundamentally a delineation of geographic areas, identifying both individual urban areas and the rural areas of the nation. The Census Bureau's urban areas represent densely developed territory, and encompass residential, commercial, and other nonresidential urban land uses. The Census Bureau delineates urban areas after each decennial census by applying specified criteria to decennial census and other data. Since the 1950 Census, the Census Bureau has reviewed and revised these criteria, as necessary, for each decennial census. The revisions over the years reflect the Census Bureau's desire to improve the classification of urban and rural territory to take advantage of newly available data, as well as advancements in geographic information processing technology.

DATES: *Effective Date:* The Census Bureau will begin implementing the criteria as of August 24, 2011.

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SUPPLEMENTARY INFORMATION: The Census Bureau's delineation of urban areas is designed to identify densely developed territory, and encompass residential, commercial, and other nonresidential urban land uses. The boundaries of this ''urban footprint'' have been defined using measures based primarily on population counts and residential population density, but also through criteria that account for nonresidential urban land uses, such as commercial, industrial, transportation, and open space that are part of the urban landscape. Since the 1950 Census, when densely settled urbanized areas (UAs) of 50,000 or more people were first defined, the urban area delineation process has addressed nonresidential urban land uses through criteria designed to account for commercial enclaves, special land uses such as airports, and densely developed noncontiguous territory.

In delineating urban areas and the resultant classification of territory outside these urban areas as rural, the Census Bureau does not take into account or attempt to meet the requirements of any nonstatistical uses of these areas or their associated data. Nonetheless, the Census Bureau recognizes that other government agencies use the Census Bureau's urban-rural classification for allocating program funds, setting program standards, and implementing aspects of their programs. The agencies that use the classification and data for such nonstatistical purposes should be aware that the changes to the urban area criteria might affect the implementation of their programs.

The Census Bureau is not responsible for the use of its urban-rural classification in nonstatistical programs. If a federal, tribal, state, or local government agency voluntarily uses the urban-rural classification in a nonstatistical program, it is that agency's responsibility to ensure that the classification is appropriate for such use. In considering the appropriateness of the classification for use in a nonstatistical program, the Census Bureau urges each government agency to consider permitting appropriate modifications of the results of implementing the urban-rural classification specifically for the purposes of its program. When a program permits such modifications, the Census Bureau urges each agency to describe and clearly identify the different criteria being applied to avoid confusion with the Census Bureau's official urban-rural classifications.

I. Summary of Changes Made to the 2010 Census Urban Area Criteria

The following table compares the final 2010 Census delineation of urban areas criteria with the provisions that were proposed in the August 24, 2010, **Federal Register** (75 FR 52174).

Criteria	Proposed 2010 Census criteria	Final 2010 Census criteria
Identification of Initial Urban Area Cores.	Census tract and block population density, count, and size thresholds. Use of National Land Cover Database to identify territory with a high degree of impervious land cover.	Census tract and block population density, count, and size thresholds. Use of National Land Cover Database to identify territory with a high degree of impervious land cover.
Inclusion of Noncontiguous Territory Separated by Exempted Territory.	Bodies of water and wetlands as identified in the National Land Cover Database.	Bodies of Water.
Inclusion of Noncontiguous Territory via Hops and Jumps.	Maximum hop distance 0.5 miles, maximum jump distance 2.5 miles, and no hops after jumps. Solicited comment on returning to the maximum jump distance of 1.5 miles implemented for pre-Census 2000 delineations.	Maximum hop distance 0.5 miles, maximum jump distance 2.5 miles, and no hops after jumps.
Inclusion of Enclaves	Two types of enclaves are identified when surrounded solely by qualifying land territory, and one type of enclave can be included when surrounded by both land that qualified for inclusion in the urban area and water.	Two types of enclaves are identified when surrounded solely by qualifying land territory, and one type of enclave can be included when surrounded by both land that qualified for inclusion in the urban area and water.

Criteria	Proposed 2010 Census criteria	Final 2010 Census criteria
Splitting Large Urban Agglomerations.	The urban agglomeration encompasses at least 1,000,000 people. Split occurs at the metropolitan statistical area boundary (or metropolitan New England city and town area), and compensates for incorporated place and census designated place boundaries to attempt to avoid splitting places between urban areas.	The agglomeration consists of urbanized areas defined separately for Census 2000. Split location is guided by location of Census 2000 urbanized area boundaries. Potential split locations will also consider metropolitan statistical area, county, place, and/or minor civil division boundaries as well as distance from each component urbanized area.
Merging Individual Urban Areas.	N/A	Merge qualifying territory from separately defined 2010 Census urban cores that share territory contained within the boundaries of the same Census 2000 urban area. Merge only occurs if an area is at risk of losing urbanized area or urban status and is preventable by the merge.
Inclusion of Indentations	5 square mile maximum area of the territory within the indentation to be added to the urban area.	3.5 square mile maximum area of the territory within the indentation to be added to the urban area.
Inclusion of Airports	Annual enplanement of at least 2,500 passengers and be contiguous to the urban area.	Currently functioning airport with an annual enplanement of at least 2,500 passengers and is within 0.5 miles to the urban area.
Additional Nonresidential Urban Territory.	N/A	Inclusion of groups of census blocks with a high degree of impervious surface and are within 0.25 miles of an urban area.
Assigning Urban Area Titles	Clear, unambiguous title based on commonly recognized place names derived from incorporated places, census designated places, minor civil divisions, and the Geographic Names Information System.	Clear, unambiguous title based on commonly recognized place names derived from incorporated places, census designated places, minor civil divisions, and the Geographic Names Information System.
Minimum Population Residing Outside Institutional Group Quarters.	At least 1,500 persons must reside outside institutional group quarters for the area to qualify as its own urban area.	At least 1,500 persons must reside outside institutional group quarters for the area to qualify as its own urban area.
Density Criteria for Military Installations.	Census blocks on military installations with 2,500 or more persons are automatically given a population density of 1,000 persons per square mile; census blocks between 1,000 and 2,500 population are automatically given a population density of 500 persons per square mile.	N/A.

Throughout this **Federal Register** Notice and the urban area criteria for the 2010 Census, the Census Bureau uses the term ''contiguous'' where the term ''adjacent'' was used in the proposed 2010 urban area criteria.

II. History

Over the course of more than a century of defining urban areas, the Census Bureau has introduced conceptual and methodological changes to ensure that the urban-rural classification keeps pace with changes in settlement patterns and with changes in theoretical and practical approaches to interpreting and understanding the definition of urban areas. Prior to the 1950 Census, the Census Bureau primarily defined ''urban'' as any population, housing, and territory located within incorporated places with a population of 2,500 or more, but with the additional allowances to classify certain New England towns and other areas urban by ''special rule''. That definition was easy and straightforward to implement, requiring no need to calculate population density, to understand and account for actual settlement patterns on the ground in relation to boundaries of administrative units, or to consider densely settled populations existing outside incorporated municipalities. For much of the first half of the twentieth century, that definition was adequate for defining ''urban'' and ''rural'' in the United States, but by 1950 it became clear that it was incomplete.

Increasing suburbanization, particularly outside the boundaries of large incorporated places led the Census Bureau to adopt the Urbanized Area (UA) concept for the 1950 Census. At that time, the Census Bureau formally recognized that densely settled communities outside the boundaries of large incorporated municipalities were just as ''urban'' as the densely settled population inside those boundaries and the large unsettled or sparsely settled areas inside those boundaries were just as ''rural'' as those outside. Due to the limitations in technology for calculating and mapping population density, delineation of UAs was limited to cities of at least 50,000 people (in the 1940 Census) and their surrounding territory. The geographic units used to analyze settlement patterns were enumeration districts (similar to census block groups), but to facilitate and ease the delineation process, each incorporated place was analyzed as a single unit—that is, the overall density of the place was calculated and if it met the minimum threshold, it was included in its entirety in the UA. Outside UAs, ''urban'' was still defined as any place with a population of at least 2,500. The Census Bureau recognized the need to identify distinct unincorporated communities existing outside the UAs, and thus created the ''census designated place'' (CDP) [1] and designated those with populations of at least 2,500 as urban.

Starting with the 1960 Census and continuing through the 1990 Census, the Census Bureau made a number of changes to the methodology and criteria for defining UAs, but retained the 1950 Census basic definition of ''urban'' which was defined as UAs with a population of 50,000 or more and defined primarily on the basis of population density, as well as places with a population of 2,500 or more located outside UAs. The enhancements made by the Census Bureau to the methodology and criteria used during this period included:

[1] A CDP is a statistical geographic entity encompassing a concentration of population, housing, and commercial structures that is clearly identifiable by a single name, but is not within an incorporated place. CDPs are the statistical geography counterparts of incorporated places.

(1) Lowering, and eventual elimination, of minimum population criteria for places that formed the ''starting point'' for delineating a UA. This made recognition of population concentrations independent of the size of any single place within the concentration.

(2) Identification of ''extended cities''—incorporated places containing substantial amounts of territory with very low population density, which were divided into urban and rural components using 100 persons per square mile (ppsm) as the density criterion. This kept the extent of urban territory from being artificially exaggerated by sparsely settled and overbounded incorporated places.

(3) Implementation for the 1990 Census of nationwide coverage by census blocks, and use of interactive analysis of population density patterns at the census block level, or by groups of blocks known as ''analysis units,'' using Census Bureau-developed delineation software. This enhancement allowed greater flexibility when analyzing and defining potential UAs, as opposed to using enumeration districts and other measurement units defined prior to decennial census data tabulation.

(4) Implementation of qualification criteria for incorporated places and CDPs for inclusion within a UA based on the existence of a densely populated ''core'' containing at least fifty percent of the place's population. This eliminated certain places from the urban area classification because much of their population was scattered rather than concentrated.

For the 2000 Census (Census 2000), the Census Bureau took advantage of technological advances associated with geographic information systems (GIS) and spatial data processing to classify urban and rural territory on a more consistent and nationally uniform basis than had been possible previously. Rather than delineating urban areas in an interactive and manual fashion, the Census Bureau developed and utilized software that automated the examination of population densities and other aspects of the criteria. This new automated urban area delineation methodology provided for a more objective application of criteria compared to previous censuses in which individual geographers applied the urban area criteria to delineate urban areas interactively. This new automated approach also established a baseline for future delineations to enable the Census Bureau to provide comparable data for subsequent decades.

Changes for Census 2000

The Census Bureau adopted six substantial changes to its urban area criteria for Census 2000:

(1) *Defining urban clusters.* Beginning with Census 2000, the Census Bureau created and implemented the concept of an urban cluster. Urban clusters (UCs) are defined as areas of at least 2,500 and less than 50,000 persons using the same residential population density-based criteria as applied to UAs. This change provided for a conceptually consistent, seamless classification of urban territory. For previous censuses, the lack of a density-based approach for defining urban areas of less than 50,000 persons resulted in underbounding of urban areas where densely settled populations existed outside place boundaries or overbounding when cities included territory with low population density. Areas where annexation had lagged behind expansion of densely settled territory, or where communities of 2,500 up to 50,000 people were not incorporated and were not defined as CDPs, were most affected by the adoption of density-based UCs. As a result of this change, the Census Bureau no longer needed to identify urban places located outside UAs for the purpose of its urban-rural classification.

(2) *Disregarding incorporated place and CDP boundaries when defining UAs and UCs.* Taking place boundaries into account in previous decades resulted in the inclusion of territory with low population density within UAs when the place as a whole met minimum population density requirements, and excluded densely settled population when the place as a whole fell below minimum density requirements. Implementation of this change meant that territory with low population density located inside place boundaries (perhaps due to annexation, or the way in which a CDP was defined) no longer necessarily qualified for inclusion in an urban area. However, it also meant that nonresidential urban land uses located inside a place's boundary and located on the edge of an urban area might not necessarily qualify to be included in a UA or UC.

(3) *Adoption of 500 persons per square mile (ppsm) as the density criterion for recognizing some types of urban territory.* The Census Bureau adopted a 500 ppsm population density threshold at the same time that it adopted its automated urban area delineation methodology. This ensured that census blocks that might contain a mix of residential and nonresidential urban uses, but might not have a population density of at least 1,000 ppsm, could qualify for inclusion in an urban area. For the 1990 Census, geographers could interactively modify analysis units to include census blocks with low population density that might contain nonresidential urban uses, while still achieving an overall population density of at least 1,000 ppsm. Adoption of the lower density threshold facilitated use of the automated urban area delineation methodology, and provided for comparability with the 1990 methodology. This change did not result in substantial increases to the extent of urban areas.

(4) *Increase in the jump distance from 1.5 to 2.5 miles.* The Census Bureau increased the jump distance from 1.5 to 2.5 miles. A ''jump'' is the distance across territory with low population density separating noncontiguous qualifying territory (area of high population density) from the main body of an urban area. The increase in the jump distance was a result of changing planning practices that led to the creation of larger clusters of single-use development. In addition, research conducted prior to Census 2000 showed that some jumps incorporated in UA definitions in 1990 were actually longer than 1.5 miles as a result of the subjective identification of the gap in developed territory. As used in previous censuses, only one jump was permitted along any given road connection.

(5) *Introduction of the hop concept to provide an objective basis for recognizing small gaps within qualifying urban territory.* For Census 2000, the Census Bureau officially recognized the term ''hops,'' which is defined as gaps of 0.5 mile or less between qualifying urban territory. Hops are used primarily to account for territory in which planning and zoning processes resulted in alternating patterns of residential and nonresidential development over relatively short distances. This provided for a more consistent treatment of short gaps with low population density, some of which had been treated as jumps in the 1990 urban area delineation process (and not permitted if identified as a second jump), while others were interpreted as part of the pattern of urban development and grouped with contiguous, higher density blocks to form qualifying analysis units.

(6) *Adoption of a zero-based approach to defining urban areas.* The urban area delineation process in previous censuses had generally been an additive process, where the boundary of a UA from the previous census provided the starting point for review for the next census. The changes made for Census 2000 were substantial enough to warrant

the Census Bureau to re-evaluate the delineation of all urban areas as if for the first time, rather than simply making adjustments to the existing boundary. The Census Bureau adopted this zero-based approach to ensure that all urban areas were nationally defined in a consistent manner.

The six changes described above represent the major modifications implemented for Census 2000. They illustrate a substantial shift in approach adopted by the Census Bureau in its procedure for delineating urban areas. The availability of new datasets and continued research since Census 2000 showed the potential for further improvements for the 2010 Census.

III. Summary of Comments Received in Response to Proposed Criteria

The notice published in the August 24, 2010 **Federal Register** (75 FR 52174) and requested comments on proposed criteria for the 2010 Census urban areas. In response, the Census Bureau received 179 comment letters from regional planning and nongovernmental organizations, municipal and county officials, Members of Congress, state governments, federal agencies, and individuals.

Comments Pertaining to Proposed Criteria for Splitting Large Urban Agglomerations

The proposed criteria for splitting large agglomerations formed during the delineation process drew the largest number of comments. Of the 179 responses received, 160 commented on the proposed criteria for splitting large agglomerations. Of these, 102 commenters expressed concern about the potential merger of specific pairs of urban areas, with 87 commenters expressing concern about the impact on planning and policymaking as well as the potential loss of federal funding as a result of the loss of individual UA status. Other commenters expressed concern about the loss of local control over funding allocation and policy decisions, lack of consistency with the Census 2000 urban classification, and loss of meaningful data.

Twenty-five commenters supported splitting large urban agglomerations along metropolitan statistical area boundaries or (in New England) New England city and town area (NECTA) boundaries. Ten also supported the proposal to avoid splitting incorporated places and CDPs between urban areas. Six of the comments suggested splitting urban areas along NECTA Division in New England where available or Primary Metropolitan Statistical Area boundaries (although the latter are no longer defined by the Office of Management and Budget). Thirteen commenters specifically suggested basing the urban agglomeration splits on the location of the current urban area boundaries; those commenters who expressed favor for maintaining separate UA status for areas identified as part of potential agglomerations can be assumed to favor splitting along Census 2000 UA boundaries. Five commenters advocated the use of commuting data to determine how and where to split large agglomerations. Twenty-six commenters favored splitting urban agglomerations within metropolitan statistical areas, with some wondering whether the lack of such a provision in the proposed criteria was an oversight.

The Census Bureau received sixty-five comments regarding the minimum population threshold to identify which urban agglomerations should be split. Of these, six commenters favored the proposed 1,000,000 person threshold. Thirty commenters favored a 250,000 person threshold and eleven commenters suggested keeping the 50,000 person threshold implemented for the Census 2000 delineation. Among other suggested minimum population thresholds, commenters also suggested using a threshold consistent with Federal Transit Administration and Federal Highway Administration funding thresholds, or no minimum population threshold at all.

In addition to requests for clarification, the Census Bureau also received comments expressing concern about the arbitrary nature of the proposed criteria for splitting and merging urban areas as well as a lack of local input. Other suggestions include the identification of combined urban areas through commuting patterns, examining each urban agglomeration individually to determine the location of each split boundary, defining agglomeration splits along county and sub-county boundaries, and retaining the current split boundaries defined for the Census 2000 delineation.

In response to the comments regarding criteria for splitting large agglomerations, the Census Bureau will adopt criteria ensuring that urbanized areas defined for Census 2000 continue to be identified as separate urbanized areas for the 2010 Census, but only if these areas continue to qualify as urbanized under the 2010 urban area delineation criteria. The boundary used to split large agglomerations will be based on the locations of Census 2000 urban area boundaries. To the extent possible, this will facilitate continuity and comparability between the Census 2000 and the 2010 Census urban area definitions.

Comments Pertaining to Proposed Hop and Jump Criteria

The Census Bureau received seventy-five comments regarding the proposed hop and jump criteria designed to include noncontiguous, but qualifying territory within an urban area. Of these, forty commenters suggested lowering the maximum jump distance threshold from 2.5 to 1.5 miles. These commenters suggested that, in addition to preventing the consolidation of functionally separate urban areas, a shorter maximum jump distance would improve the overall delineation by preventing inclusion in the urban area of long stretches of qualifying territory that are more appropriately classified as rural, especially with the presence of large expanses of exempted territory and long distance commuting patterns. Further, one commenter expressed concern that retaining the existing 2.5-mile maximum jump threshold indicates that the Census Bureau has moved away from a morphological concept of urban towards one based on function relationships.

Thirty-three commenters favored no change to the 2.5 mile maximum jump distance threshold. Reasons for retention of the 2.5 mile maximum jump distance provided by these commenters included retaining consistency with the Census 2000 urban area delineation, the ability to account for future urbanization and extended suburbanization, and mitigation of the presence of undevelopable land not identified by the Census Bureau. One commenter suggested that the 2.5 maximum jump distance allowed is too restrictive in coastal areas where large areas of wetlands are present, even if such territory is identified as exempted. One commenter suggested different maximum jump thresholds should be applied to urban areas of different population sizes, with longer jumps allowed for larger initial urban cores.

Three commenters expressed concern that the proposed criteria do not allow for a second iteration of hops after jumps; one commenter agreed with the proposal to not allow hops after a jump had been made. Two commenters requested clarification on the sequence of hops and jumps in relation to the identification of airports, wondering whether it is possible to hop or jump from an urban area to additional qualifying territory if airports are included in the urban area after the hop and jump criteria have been implemented. One commenter suggested that all intervening census

blocks separating an initial urban core and its noncontiguous qualifying territory must have a minimum population density of at least 500 ppsm. One commenter suggested not allowing multiple hops, and another opposed including any noncontiguous densely settled territory via hops and jumps.

Based on the comments received as well as a general desire to maintain comparability between the Census 2000 and 2010 Census criteria, the Census Bureau will continue to use the maximum jump distance of 2.5 miles, as well as the maximum hop distance of 0.5 miles. The Census Bureau notes that the comments pertaining to the maximum distance of a jump did not strongly favor either retention of the 2.5-mile maximum jump distance implemented for the Census 2000 or reversion to the 1.5 mile maximum of previous decades. In response to concerns that application of the hop and jump criteria allows urban areas to reach too far into rural territory, the Census Bureau will not allow for a second iteration of hops after a jump. The Census Bureau will also retain the proposed requirement for an overall density of at least 500 ppsm for all noncontiguous qualifying territory (both the high density destination and intervening territory).

Comments Pertaining to Proposed Criteria for Identifying and Linking Across Exempted Territory

The Census Bureau received thirty-three comments pertaining to the proposed criteria for recognizing territory in which urban development is constrained due to either topographic or land cover/land use conditions during the inclusion of noncontiguous, but qualifying urban territory. Sixteen commenters agreed with the proposed criteria to identify wetlands as exempted territory in addition to water features, national parks, and national monuments as was done for the Census 2000 delineation. Five of these commenters, however, suggested that wetlands only be identified as exempt if the maximum jump distance was lowered to 1.5 miles. In addition to identifying wetlands as exempted territory, five commenters suggested additional classes of land cover restricting development, such as farmland, forested land, conservation easement properties, and steeply sloped territory in which mountain passes are present. Although still in agreement with the identification of wetlands as exempted territory, commenters expressed additional concerns regarding the vintage of the 2001 National Land Cover Database (NLCD) developed by the Multi-Resolution Land Characteristics Consortium (MRLC) [2] and suggested using the NLCD 2006 update as well as incorporating additional wetlands datasets based on ground-truth samples, more current imagery, and/or projection models, and locally produced surface data where available. Commenters also expressed concern about the objectivity in determining whether these territories will not be developed as well as not be included in the overall population density calculation of urban areas.

Five commenters opposed the identification of wetlands as exempted territory, citing NLCD data vintage and quality, the compatibility of the NLCD to data within the Census Bureau's Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) database (MTDB), lack of local input in defining wetlands, and the proper vetting of NLCD prior to inclusion in the criteria as issues of concern. Commenters also suggested that the combination of wetlands and water features as exempted territory with a 2.5-mile maximum jump distance threshold exaggerates the amount of urban territory defined and noted that only considering wetlands as exempted does not account for other types of land cover/uses that act as barriers to urban development. One commenter also questioned how close wetlands territory must be to road segments as well as why it is necessary to be located on both sides of the road, to be considered exempted territory.

The Census Bureau received three comments opposing the identification of water features as exempted territory suggesting that wide expanses of water should clearly separate urban areas. One commenter suggested the use of Radio Detection And Ranging (RADAR) mapping to better identify water landscape features as exempted territory. Three commenters opposed the identification of all exempted territory in the urban area delineation criteria. These commenters suggested that the exempted territory criteria allow for the extension of urban areas across county boundaries, which is counter to the overall intent for defining urban areas by the Census Bureau. Note that the Census Bureau's urban area criteria have always allowed for the extension of urban area boundaries across the county boundaries. Other commenters suggested adding floodplains, regional parks, national wildlife areas, steeply sloped terrain, and other defined open space with restricted development properties as exempted territory classes.

In response to the comments received, the Census Bureau will continue to take into account exempted territory when delineating urban areas, as it has for several decades. The Census Bureau will also continue to only consider conditions where exempted territory is on both sides of a road, otherwise development would not be fully constrained. However, based on concerns raised by commenters and to maintain decennial comparability, for the 2010 Census urban area delineation, bodies of water included in the Census Bureau's MTDB will be the only specific class of territory identified as exempted. Similar to the Census 2000 delineation criteria, additional exempted territory will include land area in which the populations of the census blocks on both sides of a road segment are zero and the road connection crosses at least 1,000 feet of water. This methodology is designed to identify unpopulated wetlands and floodplains adjacent to water that separate areas of urban development. Nonetheless, the Census Bureau decided to break from the Census 2000 delineation criteria by not considering national parks and national monuments as exempted territory because of concerns regarding the data quality and vintage. The Census Bureau also decided not to include any of the proposed wetlands classes in the category of exempted territories. The presence of large expanses of wetlands territory coupled with a maximum jump distance threshold of 2.5 miles would facilitate the over extension of urban territory in certain locations around the nation. The consideration of wetlands as exempted territory imparts a regional bias to the delineation process due to the greater prominence of wetlands in some parts of the country, such as the southern and southeastern United States. The Census Bureau has decided against adding additional classes of exempted territory until a larger and more robust category of land cover/land use types acting as barriers to urban development can be identified consistently and uniformly for the entire United States and Puerto Rico.

Comments Pertaining to Proposed Criteria To Qualify Territory Containing a High Degree of Impervious Surface Land Cover

Twenty-three commenters responded to the proposed use of the NLCD to assist in identifying and qualifying as urban, sparsely populated urban-related territory associated with a high degree

[2] The NLCD includes data for the entirety of the United States, Puerto Rico, and the U.S. Virgin Islands.

of impervious surface land cover. Eighteen comments favored adoption of the proposal to qualify territory based on the percentage of impervious surfaces. Ten commenters, however, expressed concern about the vintage of the data, questioning the relevance of using the 2001 NLCD as it is more representative of urban conditions at the time of Census 2000 and does not account for subsequent development. Commenters suggested using the NLCD 2006 update, supplemental land cover/land use datasets based on ground-truth samples, more current imagery, and/or projection models, as well as local opinion and locally produced surface data, where available. Five commenters who favored using impervious surface data conditioned their support on the premise that the maximum jump distance threshold should revert to 1.5 miles to prevent the over extension of urban territory. Other commenters expressed concern about the overall quality of the NLCD, how well these data match data in the MTDB, that introduction of these data were not properly vetted, and requested that the Census Bureau provide public products merging impervious surface data with information for census blocks.

After considering the comments received, the Census Bureau, as described in the proposed criteria, will include impervious surface data when delineating urban areas as a means to identify business districts, commercial, and industrial zones, located both on the edge and in the interior of an urban area that would not qualify as urban based on residential population measures alone. In response to the comments, the Census Bureau will use the 2006 NLCD update wherever available and will use the 2001 NLCD in areas of the Nation not yet covered by the 2006 NLCD update in its efforts to promote a more publicly replicable urban area delineation. For the 2010 Census urban area delineation, the most consistent, comprehensive, and accessible impervious surface database for the United States and Puerto Rico is the NLCD.

Comments Pertaining to Proposed Use of Census Tracts as Building Blocks

The Census Bureau received twenty-one comments regarding the proposed use of the census tract as the analysis unit (or geographic building block) during the delineation of the initial urban area core. Of these, sixteen commenters favored the proposal. Three commenters also supported the use of census tracts as analysis units, but suggested modifications to the initial urban core delineation criteria. These commenters expressed concern that the minimum population density threshold of 500 ppsm was too high, proposed increasing the maximum land area threshold to four square miles, and suggested applying the Census 2000 block group-based delineation criteria after using census tracts as analysis units to capture lower density territory in mountainous areas resulting from census geography primarily being defined along visible features. The two letters opposing the use of census tracts as analysis units both questioned the relevance of this criterion when delineation of initial urban cores also occurs at the census block level. An additional concern was about the reduced population density measurements resulting from the inclusion of water area in census tracts (although population density is based only on land area). One letter requested clarification on the iterative nature of the initial urban core building process once the delineation criteria moves down to the census block level.

In response to the comments received regarding these criteria, the Census Bureau will replace census block groups with census tracts as the analysis unit during the delineation of the initial urban area core for the 2010 Census urban area delineation as described in the proposed criteria. Changing the urban area core delineation analysis unit to the census tract offers advantages of increased consistency and comparability, since census tracts are more likely to retain their boundaries over the decades than census blocks and block groups. The Census Bureau decided to retain the minimum 500 ppsm threshold to maintain comparability with the Census 2000 urban area delineation. This population density threshold was chosen to allow the Census Bureau to account for the inclusion of open space and other nonresidential urban uses within census tracts and blocks that also contain residential development. The Census Bureau also decided not to adopt the suggested maximum census tract size criterion of four square miles and to include a maximum census tract size criterion of three square miles to avoid adding large amounts of sparsely settled territory to urban areas. Water area, as depicted in the Census Bureau's MTDB, has never been included in population density calculations for the urban area delineation program.

Research by the Census Bureau has indicated that the initial urban cores tend to experience slight decreases in territory and only slight increases in population qualifying as urban when the initial analysis unit is changed from the block group to the census tract. The small reduction in initial urban area core territory is due to the use of census tracts, which are larger geographic units and therefore less likely than block groups to qualify under the density requirements. Similar to the way block groups were used for Census 2000, if a census tract does not meet specified area measurement and density criteria, the focus of analysis will shift to individual census blocks within the tract, and delineation will continue at the block level. As a result, when using census tracts, the delineation process shifts to census block-level analysis sooner than would be the case when using block groups. This methodology is iterative as additional qualifying census tracts and blocks are added to the initial urban core until no such qualifying territory exists during this phase of the delineation.

Comments Pertaining to Proposed Criteria for Inclusion of Enclaves and Indentations

The Census Bureau received six comments regarding proposed criteria for inclusion of territory in indentations and enclaves formed during the delineation process. Three commenters supported the proposed criteria for including indentations, by way of criteria similar to those implemented for the Census 2000, citing the jagged nature of the current urban area boundaries. Conversely, one commenter opposed the indentation criteria if the only purpose was to produce a more cartographically pleasing depiction of boundaries. One commenter suggested modifying the enclave criteria by lowering the maximum area threshold of five square miles and requiring the majority of the enclave boundary to border territory qualifying as urban. One commenter questioned if these criteria are still necessary.

In response to the comments received regarding the criteria for the inclusion of enclaves and indentations, the Census Bureau decided not to make any changes to the proposed enclave and indentation criteria to maintain comparability from one decade to another. In situations where an enclave is identified and is contiguous to both qualifying territory and a water feature, the territory within the enclave can only be captured if the line of contiguity with the qualifying territory is greater than the line of contiguity with the water feature. These criteria are designed to qualify internal and fringe territory that may not qualify as urban due to large census blocks with a substantial presence of open space (parks, golf

courses, *etc.*) but should be considered part of the urban footprint.

Comments Pertaining to Proposed Criteria for Inclusion of Airports

The Census Bureau received ten comments pertaining to the proposed criteria for including airports in urban areas; all ten agreed with the proposal to include census blocks in their entirety approximating the territory encompassed by major airports. One commenter, however, disagreed with the proposal to lower the minimum enplanement threshold to 2,500 passengers, noting that commercial hubs are better represented than facilities with a mixture of charter or business flights and joint-use (military/general aviation) airports according to commercial enplanements only. This commenter also suggested that the criteria should take into consideration the number of flights. Two commenters favored the inclusion of cargo flights in addition to general aviation enplanements when identifying airports according to the minimum enplanement threshold. Another commenter noted that more recent enplanement data (2009) are available through the Federal Aviation Administration (FAA) than were referenced in the proposed criteria. Additional comments included requests for data content clarification such as whether the data include commercial only, military activities, or all enplanements, as well as whether the Census Bureau will consider cargo weight in identifying major airports. The Census Bureau also received one comment requesting the recognition of rail yards, sea ports, and utilities facilities as qualifying as urban territory in addition to airports.

Upon considering the comments received, the Census Bureau will retain the Census 2000 criteria to include whole census blocks representing airports in urban areas. In order to qualify, an airport must report a minimum annual enplanement of 2,500 passengers as reported by the FAA for at least one calendar year from 2001 to the most current data available for the delineation. All identified airports must be currently in service and providing services for the urban area in which it is to be included. The 2,500 passenger threshold was chosen to provide for a more complete coverage of airports, particularly those near smaller initial urban cores. The annual passenger boarding data will include only commercial service enplanements (primary and nonprimary) to promote consistency with the Census 2000 urban area criteria as well as to facilitate a more replicable delineation. Also in accordance with the Census 2000 delineation, the inclusion of airports will represent the last step in identifying qualifying urban territory. However, upon further consideration and review of data, the Census Bureau has decided to also include airports within 0.5 miles of the urban area. This process simulates the connection of noncontiguous qualifying territory via the hop criteria. All other urban land cover/land use not qualifying through residential population count and density measures will be represented through the enclave and indentation criteria designed for the Census 2000 delineation and supplemented with the impervious surface data introduced for the 2010 Census.

Comments Pertaining to the Proposed Criterion Requiring at Least 1,500 Persons Residing Outside Institutional Group Quarters for an Area To Qualify as an Urban Area

Five commenters supported the proposed criterion requiring that an area must encompass at least 1,500 persons living outside institutional group quarters (GQs) in order to qualify as an urban area. Two commenters opposed this criterion, with one stating that an urban area should qualify only on the basis of population residing outside group quarters and the other suggesting that qualification as an urban area should be based on total population without distinction based on status within institutional group quarters. One commenter requested that the Census Bureau more closely examine the nature of the land use associated with large group quarters before disqualifying territory as urban as it contradicts the proposed criteria relating to population density and impervious surfaces.

In response to the comments received, the Census Bureau is finalizing the provision that all qualifying urban areas must encompass at least 1,500 persons living outside institutional GQs without change to avoid the delineation of an urban area comprising only a few census blocks in which an institutional GQ was located. The Census Bureau recognizes that although the population densities of these areas exceed the minimum thresholds specified in the urban area criteria, and the total populations exceed 2,500, they lack most of the residential, commercial, and infrastructure characteristics typically associated with urban territory.

Comments Pertaining to the Proposal to Eliminate the Central Place Concept

The Census Bureau received nine comments regarding the proposed elimination of the central place concept from the urban area delineation criteria. Eight commenters agreed with the proposal. The one commenter who disagreed requested that the Census Bureau should continue to identify central places until it is clear that the elimination of these criteria will not impact the designation of principal cities of metropolitan and micropolitan statistical areas.

In response to the comments received, the Census Bureau is finalizing its proposal to discontinue identifying central places as part of the 2010 Census urban area delineation process. The Census Bureau notes that the identification of central places is no longer necessary for the process of delineating urban areas and can result in some central places being split between urban and rural territory. Moreover, the Office of Management and Budget (OMB) always had its own criteria to identify principal cities as part of the metropolitan and micropolitan statistical areas program.[3] The list of principal cities identified by the OMB is quite similar to what would emerge if the urban area process created a list of central places. The Census Bureau no longer sees a need for a second representation of the same concept in its statistical and geographic data products. Principal cities of metropolitan and micropolitan statistical areas are identified based on different set of criteria and as part of the metropolitan and micropolitan area delineation process. This decision will have no impact on the metropolitan and micropolitan area delineation process.

Comment Pertaining to the Shape Index Used When Measuring Compactness of Census Blocks

The Census Bureau received one comment concerning the shape index proposed to identify census blocks considered compact during the delineation of the initial urban area cores. This commenter suggested modifying the compactness criterion to only include those census blocks that score 0.310 or higher according to the proposed shape index formula, as opposed to the proposed shape index value of 0.185 or higher.

The Census Bureau will retain the shape index threshold as proposed. Internal research and investigation has shown this to be a reasonable metric for measuring compactness for all census blocks having the potential to qualify as urban without excluding census blocks

[3] See the ''2010 Standards for Delineating Metropolitan and Micropolitan Statistical Areas,'' **Federal Register**, 75 FR 37246, June 28, 2010.

that should be included in an urban area.

Comments Pertaining to the Nonstatistical Uses of Urban Area Delineations

Seventeen commenters expressed concern that the Census Bureau does not acknowledge or consider any nonstatistical uses of urban areas when developing delineation criteria. Thirteen of these commenters suggested that the Census Bureau initiate an inter-agency task force to identify the potential negative impacts, particularly on federal funding, resulting from changes to the urban area delineation criteria, and design mitigation measures and/or solutions to these issues if the proposed changes were implemented. These commenters also suggested delaying the delineation of urban areas until provisions are adopted that would prevent adverse impacts on programs and funding formulas relating to urban areas as currently defined.

Nine commenters stressed the importance of consistency in both urban area delineation criteria and status from one decade to another to aid long-term planning and policy making. Five of these commenters specifically requested that territory defined as urban in Census 2000 continue to be defined as urban for the 2010 Census.

Five commenters expressed concern that there are no provisions in the delineation criteria for local input and requested the opportunity to review and comment on the definition of urban areas before boundaries become final. These commenters also expressed concern about the automated and inflexible nature of the delineation process and suggested that the extent of each urban area should be evaluated individually. The Census Bureau also received two comments expressing concern that the proposed delineation criteria do not take into account local zoning laws and incorporated place boundaries.

Two commenters criticized the timing for developing the urban area delineation criteria. These commenters stated that the methodology is flawed because projections related to potential changes in the delineation criteria are based on Census 2000 data and geography. These commenters suggested that the Census Bureau should delay development of the proposed delineation criteria until after 2010 Census data and geography become available.

The Census Bureau received eight requests for the extension of the public comment period on the proposed urban area delineation criteria to further assess its potential impacts. Additional comments expressed difficulty in predicting results of changes to criteria as published in the August 24, 2010 **Federal Register** (75 FR 52174), and requested clarification of the proposed urban area delineation criteria. Commenters also submitted requests for real-world examples of how changes to the urban area delineation criteria would manifest on the landscape, maps of the proposed urban areas, and access to the delineation software to facilitate better informed public comment.

In response to the comments received regarding the nonstatistical uses of Census urban areas, the Census Bureau recognizes that some federal and state agencies use the Census Bureau's urban-rural classification for allocating program funds, setting program standards, and implementing aspects of their programs. The Census Bureau remains committed to an objective, equitable, and consistent nationwide urban area delineation, and thus identifies these areas solely for the purpose of tabulating and presenting statistical data. This provides data users, analysts, and agencies with a baseline set of areas from which to work, as appropriate. Given the many programmatic and often conflicting or competing uses for Census Bureau-defined urban areas, the Census Bureau cannot attempt to take each program into account. Therefore, by not taking any one nonstatistical use into account, the Census Bureau does not favor one program over another. The Census Bureau's designations are used to identify areas to receive funding for urban programs and also to identify areas for exclusion from rural-based programs.

In building upon the Census 2000 urban area criteria, the Census Bureau is developing urban area criteria for the 2010 Census consisting of a single set of rules that allow for application of automated processes based on the input of standardized nationwide datasets that yield consistent results. Rather than defining areas through a process of accretion over time, the criteria also provide a better reflection of the redistribution of population and how it affects the current state of urbanism. This can be done only by reexamining all territory that qualified as either urban or rural in earlier censuses based on different criteria, geography, and population distribution patterns as measured by those censuses. Nonetheless, the Census Bureau will apply urban agglomeration split and individual urban area merge criteria to ensure, to the greatest extent possible, the continued existence of all urbanized areas defined for the Census 2000; although the actual urban territory these areas comprise may differ.

The delineation and production of urban areas and their associated data were scheduled to begin in March 2011, to ensure sufficient time to delineate and review the urban area definitions and prepare geographic information files in time to tabulate statistical data from both the 2010 Census and the American Community Survey (ACS). Adherence to this schedule prevented any attempts toward a test delineation using all of the proposed 2010 urban area criteria for the entire United States and Puerto Rico, thus prohibiting the availability of real-world examples without showing preference to any particular location. Further, this schedule also dictated that the development of the delineation software coincided with the development of the proposed and final criteria.

IV. Changes to the Proposed Urban Area Criteria for the 2010 Census

This section of the **Federal Register** provides information about the Census Bureau's decisions on changes that were incorporated into the Urban Area Criteria for the 2010 Census in response to the many comments received. These decisions benefited greatly from the public participation, which served as a reminder that, although identified for purposes of collecting, tabulating, and presenting federal statistics, the urban areas defined through these criteria represent areas in which people reside, work, and spend their lives and to which they attach a considerable amount of local pride. In reaching our decisions, the Census Bureau took into account the comments received in response to the proposed criteria published in the **Federal Register** on August 24, 2010, (75 FR 52174), as well as comments received during webinars, conference presentations, and meetings with federal, state, and local officials, other users of data for urban areas, and additional research and investigation conducted by Census Bureau staff.

The changes made to the proposed criteria in Section II of the August 24, 2011, **Federal Register** Notice, ''Proposed Urban Area Criteria for the 2010 Census,'' are as follows:

1. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' in the introductory paragraph to this section, the Census Bureau removed the reference to Island Areas in the first sentence because the Census Bureau, in consultation with government officials in the Island Areas (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S.

Virgin Islands), is still considering whether to identify urban and rural areas for the Island Areas. Census 2000 was the only census in which density-based criteria were applied to defining urban areas in the Island Areas.

2. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.1, the Census Bureau corrected the initial urban area core delineation criteria to better represent the iterative nature of these criteria. After the initial urban area core with a population density of 1,000 ppsm or more is identified, additional qualifying census tracts may be included only if contiguous to other qualifying census tracts.

3. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.1, the Census Bureau removed reference to census blocks within military installations. Due to imposed restrictions on the selection of features that could be used as census block boundaries within military installations for Census 2000, blocks on military installations that had a population of 2,500 or more were treated as having a population density of 1,000 ppsm even if the density was less than 1,000 ppsm. Census blocks that had a population greater than 1,000 and less than 2,500 were treated as having a population density of 500 ppsm. The Census Bureau has removed these criteria as the restrictions on the selection of features for census block boundaries within military installations is no longer in effect for the 2010 Census.

4. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.1, the Census Bureau clarified references to the MRLC NLCD data used in determining impervious surfaces during the delineation of initial urban cores. The Census Bureau has decided to use the MRLC NLCD 2006 update (recently made available for the conterminous United States in February 2011) to better represent land use/land cover conditions at the time of the delineation. The MRLC 2001 NLCD will be used only where the 2006 data are not available.

5. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.1, the Census Bureau added criteria to include in the initial urban core census blocks that are associated with a high degree of impervious surface land cover and are mostly contiguous to qualifying territory, but fail the shape index threshold of compactness. These criteria were added to compensate for the presence of elongated census blocks defined along road medians, which create narrow strips of territory not qualifying as urban. Through further investigation, the Census Bureau found instances where one or more of these intervening census blocks associated with road medians created a barrier which prevented nearby qualifying territory from being considered contiguous. Furthermore, the Census Bureau has decided census blocks associated with road medians sharing a large degree of contiguity with qualifying territory should be included in the urban area.

6. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.1, the Census Bureau added reference to describe the review of the initial urban area cores. In an effort to mitigate the overextension of territory classified as urban into rural areas, the Census Bureau will identify census blocks qualifying as urban via the impervious surface criteria that are added to the initial urban cores late in the delineation process. The Census Bureau will review these census blocks located on the edge of an initial urban area core to determine if their classification as urban is appropriate. This review will also determine if these late-qualifying census blocks are elongated or small and consistently qualified when compared to the relatively large cell size of the impervious surface data.

7. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.2, the Census Bureau removed the identification of wetlands as exempted territory criteria and references to the MRLC's 2001 NLCD wetlands class definitions. The Census Bureau decided to only consider bodies of water as exempted territory until a more comprehensive category of land use/land cover classes can be identified for the entirety of the United States and Puerto Rico. Furthermore, because the Census Bureau will retain the 2.5 mile maximum jump distance threshold implemented for the Census 2000, it has decided to limit the recognition of exempted territories to prevent the over expansion of urban areas.

8. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.2, the Census Bureau added criteria to include the identification of land area where the populations of the census blocks on both sides of a road segment are zero and, additionally, the road connection crosses at least 1,000 feet of water. The Census Bureau added this criterion to remain consistent with the urban area delineation criteria implemented for Census 2000.

9. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.3, the Census Bureau added a criterion for the inclusion of noncontiguous territory via hops and jumps to allow stand-alone census blocks, that are not contiguous to territory that qualify as part of the initial urban core, but having a population density greater than or equal to 500 ppsm, to be added to an urban area. This criterion is designed to include densely settled territory proximate to the urban fringe within a relatively larger census block that remains separated from the initial urban area core due to the local road network configuration. The addition of this criterion is also consistent with the Census 2000 urban area delineation criteria.

10. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.4, the Census Bureau added reference to the data extracted from the FAA Air Carrier Activity Information System to clarify the dataset that is to be used in the identification of airports that are included in urban areas. The Census Bureau has decided to use data representing annual enplanements for only primary and nonprimary commercial service facilities as defined by the FAA. Limiting the enplanement data to commercial service airports offers the advantage of minimizing the amount of data manipulation required to identify airports, which in turn facilitates public replication of the criteria. This also results in consistency with the Census 2000 urban area delineation criteria.

11. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.4, the Census Bureau modified the criteria for including airports in urban areas by clarifying that the qualifying airport does not need to be contiguous with an urban area, but rather within 0.5 miles of the urban area. The Census Bureau changed this criterion to simulate the connection of noncontiguous qualifying territory via the hop criterion.

12. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.4, the Census Bureau modified the airport inclusion criteria so that the Census Bureau will only identify functioning airports at the time of the delineation. This modification ensures that these criteria will not include an airport if it no longer services a particular urban area.

13. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' the Census Bureau moved subsection B.4 in its entirety to follow the criteria for the inclusion of indentations to urban areas

(subsection B.6). The Census Bureau reordered the delineation criteria so that the inclusion of airports will represent the last step in identifying urban territory, as was done for the Census 2000 delineation. Although the airport inclusion criteria do allow for the qualification of noncontiguous facilities to urban areas, they prohibit an airport from serving as a source area from which hops and jumps can originate.

14. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.5, the Census Bureau clarified the criteria for the inclusion of enclaves in urban areas. The criteria distinguish between the two types of enclaves completely surrounded by qualifying land territory, and a third enclave type completely surrounded by qualifying land and nonqualifying water.

15. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B.6, the Census Bureau modified the maximum area of the territory within the indentation that is added to the urban area from less than five square miles to less than 3.5 square miles. The Census Bureau changed this criterion for the 2010 Census urban area delineation to reduce the amount of territory qualifying through indentations without lowering the maximum length of the potential closure lines.

16. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' the Census Bureau moved subsection B.6 in its entirety to follow immediately the criteria relating to splitting large agglomerations and merging of individual urban areas. For Census 2000, the splitting of large urban agglomerations occurred prior to the inclusion of indentations to urban areas. Splitting the urban agglomerations before the addition of urban territory through the indentation criteria enabled the Census Bureau to better identify where the corridor of contiguity between urban areas was truly at its narrowest, which aided in determining the best split location. The Census Bureau reordered the delineation criteria to remain consistent with the criteria implemented for the Census 2000.

17. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' the Census Bureau replaced subsection B.7 with a new set of criteria for splitting large agglomerations based on comments received. The Census Bureau adopted criteria that will ensure that Census 2000 urbanized areas will continue to be recognized as separate urbanized areas if these areas continue to qualify as urbanized under the 2010 Census urban area delineation criteria. Adoption of these criteria will facilitate continuity and comparability between the two decades' urban definitions.

18. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' the Census Bureau modified subsection B.8, which addressed the criteria for assigning urban area titles, to allow for more equal representation of local places if the urban area does not contain a place with an urban population of at least 2,500 people. This change is also intended to promote consistency with the Census 2000 criteria for titling urban areas.

19. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection B, the Census Bureau added new criteria to identify and qualify additional nonresidential urban-related territory that is not contiguous with, but near qualifying urban areas. The Census Bureau added these criteria in its effort to capture large commercial and/or industrial land uses separated from an urban area by a relatively small amount of undeveloped territory. As a final review, the Census Bureau will examine the territory surrounding the urban areas associated with a high degree of impervious surface land cover and determine whether they should be included in an urban area.

20. In Section II, ''Proposed Urban Area Criteria for the 2010 Census,'' subsection C, the Census Bureau modified the definitions for *contiguous, exempted territory, group quarters,* and *impervious surface* to clarify how these key terms relate to the 2010 urban area delineation criteria. Additional definitions are provided for *enclave, hop, indentation, initial urban area core, institutional group quarters, jump, and noninstitutional group quarters,* all terms used in the proposed criteria.

21. Throughout this **Federal Register** Notice and the urban area criteria for the 2010 Census, the Census Bureau uses the term ''contiguous'' wherever the term ''adjacent'' was used in the proposed 2010 urban area criteria. This change was made for the purposes of clarity.

The Following Sets Forth the Urban Area Criteria for the 2010 Census.

V. Urban Area Criteria for the 2010 Census

The criteria outlined herein apply to the United States[4] and Puerto Rico. The Census Bureau will use the following criteria and characteristics for use in identifying the areas that will qualify for designation as urbanized areas and urban clusters for use in tabulating and presenting data from the 2010 Census, the American Community Survey (ACS), the Puerto Rico Community Survey, and potentially other Census Bureau censuses and surveys.

A. 2010 Census Urban Area, Urbanized Area, and Urban Cluster Definitions

For the 2010 Census, an urban area will comprise a densely settled core of census tracts and/or census blocks that meet minimum population density requirements, along with contiguous territory containing nonresidential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. To qualify as an urban area on its own, the territory identified according to the criteria must encompass at least 2,500 people, at least 1,500 of which reside outside institutional group quarters. Urban areas that contain 50,000 or more people are designated as urbanized areas (UAs); urban areas that contain at least 2,500 and less than 50,000 people are designated as urban clusters (UCs). The term ''urban area'' refers to both UAs and UCs. The term ''rural'' encompasses all population, housing, and territory not included within an urban area.

As a result of the urban area delineation process, an incorporated place or CDP may be partly within and partly outside an urban area. Any place (incorporated place or CDP) that is split by an urban area boundary is referred to as an extended place. Any census geographic areas, with the exception of census blocks, may be partly within and partly outside an urban area.

All criteria based on land area, population, and population density, reflect the information contained in the Census Bureau's Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Database (MTDB) produced for the 2010 Census. All calculations of population density include only land; water area contained within census tracts and census blocks are not used to calculate population density.

B. UA and UC Delineation Criteria

The Census Bureau defines urban areas primarily on the basis of residential population density measured at the census tract and census block levels of geography. Two population density thresholds are used in the delineation of urban areas: 1,000 persons per square mile (ppsm) and 500 ppsm. The higher threshold is consistent with population density criteria used in the 1960 Census through 1990 Census urban area delineation processes; it is used to identify the

[4] The United States includes the 50 States and the District of Columbia.

starting point for delineation of individual, potential urban areas and ensures that each urban area contains a densely settled core area that is consistent with previous decades' delineations. The lower threshold was adopted for the Census 2000 process when the Census Bureau adopted an automated delineation methodology; it provides that additional territory that may contain a mix of residential and nonresidential urban uses can qualify for inclusion in an urban area.

1. Identification of Initial Urban Area Cores

The Census Bureau will begin the delineation process by identifying and aggregating contiguous census tracts, each having a land area of less than three square miles and a population density of at least 1,000 ppsm. After the initial urban area core with a population density of 1,000 ppsm or more is identified, additional census tracts with a land area less than three square miles and with a population density of at least 500 ppsm will be included if contiguous to any qualifying census tracts. If a qualifying census tract does not exist, then one or more contiguous census blocks that have a population density of at least 1,000 ppsm are identified and aggregated.

A census block is included in the initial urban area core if it is contiguous to other qualifying territory, and

a. Has a population density of at least 500 ppsm, or

b. At least one-third of the census block consists of territory with a level of imperviousness of at least twenty percent,[5] and is compact in nature as defined by a shape index. A census block is considered compact when the shape index is at least 0.185 using the following formula: $I = 4\pi A/P^2$ where I is the shape index, A is the area of the block, and P is the perimeter of the block, or

c. At least one-third of the census block consists of territory with a level of imperviousness of at least twenty percent, and at least forty percent of its boundary is contiguous with qualifying territory.[6]

The Census Bureau will apply criteria 1.a, 1.b, and 1.c above until there are no census blocks to add to an urban area.[7] Any ''holes'' or remaining nonqualifying territory completely contained within an initial urban area core that is less than five square miles in area will qualify as urban via the criteria for the inclusion of enclaves set forth in V.B.4.a.

2. Inclusion of Noncontiguous Territory Separated by Exempted Territory

The Census Bureau will identify and exempt territory in which residential development is substantially constrained or not possible due to either topographic or land use conditions.[8] Such territory offsets urban development due to particular land use, land cover, hydrological, and/or topographic conditions. For the 2010 Census, the Census Bureau identifies bodies of water as exempted territory. Additional exempted territory will include land area where the populations of the census blocks on both sides of a road segment are zero and the road connection crosses at least 1,000 feet of water.

Noncontiguous qualifying territory will be added to a core when separated by exempted territory, provided that:

a. The road connection across the exempted territory (located on both sides of the road) is no greater than five miles, and

b. The road connection does not cross more than a total of 2.5 miles of territory not classified as exempted (those segments of the road connection where exempted territory is not on both sides of the road), and

c. The total length of the road connection (exempt distance and nonexempt distance) is no greater than five miles for a jump and no greater than 2.5 miles for a hop.

3. Inclusion of Noncontiguous Territory via Hops and Jumps

Noncontiguous territory that meets the proposed population density criteria specified in Sections 1.a, 1.b, and 1.c above, but is separated from an initial urban area core of 1,000 or more people, will be added via a ''hop'' along a road connection of no more than 0.5 miles. Multiple hops may be made along a single road connection, thus accounting for the nature of contemporary urban development which often encompasses alternating patterns of residential and nonresidential land uses.

After adding territory to an initial urban area core via hop connections, the Census Bureau will identify all cores that have a population of 1,500 or more and add other qualifying territory via a jump connection.[9] Jumps are used to connect densely settled noncontiguous territory separated from the core by territory with low population density measuring greater than 0.5 and no more than 2.5 road miles. This process recognizes the existence of larger areas of nonresidential urban uses or other territory with low population density that do not provide a substantial barrier to interaction between outlying territory with high population density and the main body of the urban area. Because it is possible that any given densely settled area could qualify for inclusion in multiple cores via a jump connection, the identification of jumps in an automated process starts with the initial urban area core that has the largest total population and continues in descending order based on the total population of each initial urban area core. Only one jump is permitted along any given road connection, unless the territory being included as a result of the jump was an initial urban area core with a population of 50,000 or more. This limitation, which has been in place since the inception of the urban area delineation process for the 1950 Census, prevents the artificial extension of urban areas over large distances that results in the inclusion of communities that are not commonly perceived as connected to the particular initial urban area core. Exempted territory is not taken into account when measuring road distances along hop and jump corridors.

In addition to the distance criteria listed above, a hop or a jump will qualify only if:

a. The territory identified in the high-density destination and along the hop or

[5] The data used to define impervious surfaces are limited to only those that are included in the MRLC's 2001 NLCD or NLCD 2006 update where available. The Census Bureau has found in testing the NLCD that territory with an impervious percent less than twenty percent results in the inclusion of road and structure edges, and not the actual roads or buildings themselves.

[6] The Census Bureau found in testing with the new 2010 Census geography that a number of census blocks were associated with a high degree of impervious surface land cover and contiguous to territory qualifying as urban, but fail the shape index threshold of compactness . These elongated census blocks are largely the result of block boundaries defined along road medians and can artificially separate qualifying territory that should be considered contiguous. Where appropriate, these elongated census blocks will be added to the urban area to maintain contiguity of qualifying territory.

[7] The Census Bureau will identify census blocks qualifying as urban via the impervious surface criteria that are added to an initial urban area core during later iterations of the delineation criteria. These census blocks located on the edge of initial urban cores will be reviewed to determine if their classification as urban is appropriate. The Census Bureau will also determine if these census blocks were added as a result of the relatively large cell size of the impervious surface data when overlaid with a small or thin census block.

[8] The land cover and land use types used to define exempted territory are limited to only those that are included in or can be derived from the Census Bureau's MTDB nationally, consistently, and with a reasonable level of accuracy.

[9] All initial urban area cores with a population less than 1,500 are not selected to continue the delineation as separate urban areas; however, these cores still are eligible for inclusion in an urban area using subsequent proposed criteria and procedures.

jump corridor has a combined overall population density of at least 500 ppsm, or

b. The high-density destination to be added via the hop or jump has a total population of 1,000 or more.

Although census blocks with a population density greater than or equal to 500 ppsm, but less than 1,000 ppsm, and not contiguous to qualifying territory containing at least one census tract or census block with a population density of at least 1,000 ppsm do not qualify as part of the initial urban core, these census blocks may still qualify as urban via hops or jumps.[10]

4. Inclusion of Enclaves

The Census Bureau will add enclaves (that is, nonqualifying area completely surrounded by area already qualified for inclusion as urban) within the urban area, provided that they are surrounded only by land area that qualified for inclusion in the urban area based on population density criteria and at least one of the following conditions is met:

a. The area of the enclave must be less than five square miles, or

b. All area of the enclave is surrounded by territory that qualified for inclusion in the initial core, and is more than a straight-line distance of 2.5 miles from a land block that is not part of the urban area.

Additional enclaves will be identified and included within the urban area if:

c. The area of the enclave is less than five square miles, and

d. The enclave is surrounded by both land that qualified for inclusion in the urban area and water, and

e. The length of the line of adjacency with the water is less than the length of the line of adjacency with the land.

5. Splitting Large Agglomerations and Merging Individual Urban Areas

Population growth and redistribution coupled with the automated urban area delineation methodology that will be used for the 2010 Census may result in large urban agglomerations of continuously developed territory that may encompass urban areas that were defined as separate urbanized areas in Census 2000. Conversely, the delineation methodology may also result in separate urbanized areas that were previously defined as belonging to a single urbanized area. If such results occur, the Census Bureau will apply split and merge criteria guided by the Census 2000 urban area boundaries to the greatest extent possible to ensure the continued recognition of all such urbanized areas. All territory subject to either the splitting or merging criteria must first qualify as urban according to the 2010 Census delineation criteria.

The rule to retain the inventory of urbanized areas that continue to separately qualify for the 2010 Census does not apply to urban clusters. Urban clusters may be merged with other urban areas. The Census Bureau retains previously separate urbanized areas because these urban areas have historically developed as the functional units of 50 years of urbanized area delineation. Mandating this rule for urban clusters would artificially impede these areas from merging to form urbanized areas.

The Census Bureau will split a large urban agglomeration if the agglomeration consists of urbanized areas that were defined separately for the Census 2000. Potential split locations will include territory not qualifying as urban for the 2010 Census, water features, jump or hop corridors,[11] impervious census blocks,[12] where the corridor of contiguity between the component urbanized areas is at its most narrow, other geographic boundaries,[13] and/or the nearest location to the midpoint between the two component urbanized areas. In all cases, the Census Bureau will split the urban agglomeration at the best possible location that ensures the continued existence of all urbanized areas defined for the Census 2000.

After splitting all qualifying urbanized agglomerations into their component urbanized areas, the Census Bureau will examine all urban area cores sharing territory contained within the boundaries of the same urban area previously defined for the Census 2000. The Census Bureau will merge qualifying urban territory if an urban area defined for the Census 2000 is at risk of changing urban status from an urbanized area to an urban cluster, or losing its urban status entirely. If it is possible to maintain the urban status of a Census 2000 urban area, the Census Bureau will merge noncontiguous urban territories in descending order of population[14] until the urban area status threshold is met.[15]

After application in their entirety, the splitting and merging criteria will not prevent the formation of new urban areas consisting of territory previously defined as belonging to a Census 2000 urban area. These criteria also will not completely prevent urban areas from changing urban status.

6. Inclusion of Indentations

The Census Bureau will evaluate and include territory that forms an indentation within an urban area. This recognizes that small, sparsely settled areas that are partially enveloped by urban territory are more likely to be affected by and integrated with contiguous urban territory.

To determine whether an indentation should be included in the urban area, the Census Bureau will identify a closure line, defined as a straight line no more than one mile in length, that extends from one point along the edge of the urban area across the mouth of the indentation to another point along the edge of the urban area.

A census block located wholly or partially within an indentation will be included in the urban area, if at least 75 percent of the area of the block is inside the closure line. The total area of those blocks that meet or exceed the 75 percent criterion is compared to the area of a circle, the diameter of which is the length of the closure qualification line. The territory within the indentation will be included in the urban area if its area is at least four times the area of the circle and less than 3.5 square miles.

If the collective area of the census blocks inside the closure line does not meet the criteria listed above, the Census Bureau will define successive closure lines within the indentation, starting at its mouth and working inward toward the base of the indentation, until the criteria for inclusion are met or it is determined that the indentation will not qualify for inclusion.

7. Inclusion of Airports

After all territory has been added to the urban area via hop and jump connections, enclaves, and indentations,

[10] These isolated census blocks not contiguous to an initial core remain eligible destinations for either hops or jumps. These census blocks may be included via the noncontiguous qualifying territory criteria in an effort to capture proximate densely settled territory on the urban fringe within a relatively larger census block that is separated from the initial urban area core.

[11] The Census Bureau will remove the jump or hop connection if the component urban areas are connected via the noncontiguous qualifying territory criteria.

[12] The Census Bureau may remove the entire connection in cases where urban areas are only contiguous via elongated census blocks qualifying as urban and associated with road medians. The connection will remain intact in situations where additional impervious census blocks are present.

[13] In situations where an incorporated place, CDP, or minor civil division crosses the Census 2000 urbanized area boundary, the 2010 urbanized area boundary may be modified to follow these boundaries if it is deemed that territory qualifying as urban belongs more to a particular urbanized area.

[14] All urban territory separated solely by water may also be merged regardless of its population.

[15] Nonqualifying intervening territory separating the merged urban territories will be included to avoid the formation of noncontiguous urban areas.

the Census Bureau will then add whole census blocks that approximate the territory of major airports, provided at least one of the blocks that represent the airport is within a distance of 0.5 miles of the edge of qualifying urban territory. An airport qualifies for inclusion, if it is currently functional and had an annual enplanement of at least 2,500 passengers in any year between 2001 and the last year of reference in the FAA Air Carrier Activity Information System.[16] In cases where the qualifying airport is not contiguous to the qualifying urban area, the intervening nonqualifying census blocks will also be included in the urban area.

8. Additional Nonresidential Urban Territory

The Census Bureau will identify additional nonresidential urban-related territory that is noncontiguous, yet near the urban area. The Census Bureau recognizes the existence of large commercial and/or industrial land uses that are separated from an urban area by a relatively thin ''green buffer,'' small amount of undeveloped territory, and/or narrow census block required for tabulation (such as a water feature, offset boundary, road median, or area between a road and rail feature). The Census Bureau will review all groups of census blocks whose members qualify as urban via the impervious surface criteria set forth in Section 1.b, have a total area of at least 0.15 square miles,[17] and are within 0.25 miles of an urban area. A final review of these census blocks and surrounding territory[18] will determine whether to include this territory in an urban area.

9. Assigning Urban Area Titles

A clear, unambiguous title based on commonly recognized place names helps provide context for data users, and ensures that the general location and setting of the urban area can be clearly identified and understood. The title of an urban area identifies the place(s) that is (are) most populated within the urban area. All population requirements for places and minor civil divisions (MCDs) apply to the portion of the entity's population that is within the specific urban area being named. The following criteria will be used by the Census Bureau to determine the title of an urban area:

a. The most populous incorporated place with a population of 10,000 or more within the urban area will be listed first in the urban area title.

b. If there is no incorporated place with a population of 10,000 or more, the urban area title will include the name of the most populous incorporated place or CDP having at least 2,500 people in the urban area.

Up to two additional places, in descending order of population size, may be included in the title of an urban area provided that:

c. The place has 250,000 or more people in the urban area, or

d. The place has at least 2,500 people in the urban area, and that population is at least two-thirds of the urban area population of the most populous place in the urban area.

If the urban area does not contain a place with an urban population of at least 2,500 people, the Census Bureau will consider the name of the incorporated place, CDP, or MCD with the largest total population in the urban area, or a local name recognized for the area by the United States Geological Survey's (USGS) Geographic Names Information System (GNIS), with preference given to names also recognized by the United States Postal Service (USPS). The urban area title will include the USPS abbreviation of the name of each state or statistically equivalent entity into which the urban area extends. The order of the state abbreviations is the same as the order of the related place names in the urban area title.[19] If an MCD name is used (outside of New England), the title also will include the name of the county in which the MCD is located.

If a single place or MCD qualifies as the title of more than one urban area, the largest urban area will use the name of the place or MCD. The smaller urban area will have a title consisting of the place or MCD name and the direction (North, South, East, and/or West) of the smaller urban area as it relates geographically to the larger urban area with the same place or MCD name.

If any title of an urban area duplicates the title of another urban area within the same state, or uses the name of an incorporated place or CDP, that is duplicated within a state, the name of the county that has most of the population of the largest place or MCD is appended, in parentheses, after the duplicate place name for each urban area. If there is no incorporated place or CDP name in the urban area title, the name of the county having the largest total population residing in the urban area will be appended to the title.

C. Definitions of Key Terms

Census Block: A geographic area bounded by visible and/or invisible features shown on a map prepared by the Census Bureau. A block is the smallest geographic entity for which the Census Bureau tabulates decennial census count data.

Census Designated Place (CDP): A statistical geographic entity encompassing a concentration of population, housing, and commercial structures that is clearly identifiable by a single name, but is not within an incorporated place. The CDPs are the statistical counterparts of incorporated places and represent distinct, unincorporated communities.

Census Tract: A small, relatively permanent statistical geographic division of a county defined for the tabulation and publication of Census Bureau data. The primary goal of the census tract program is to provide a set of nationally consistent, small, statistical geographic units, with stable boundaries that facilitate analysis of data between decennial censuses.

Contiguous: A geographic term referring to two or more areas that are adjacent to one another, sharing either a common boundary or at least one common point.

Core Based Statistical Area (CBSA): A statistical geographic entity defined by the U.S. Office of Management and Budget (OMB), consisting of the county or counties associated with at least one core (urban area) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core. Metropolitan and micropolitan statistical areas are the two types of CBSAs.

Enclave: A territory not qualifying as urban that is either completely surrounded by qualifying urban territory or surrounded by qualifying urban territory and water.

Exempted Territory: A territory that is exempt from the urban area criteria because its extent is entirely of water or an unpopulated road corridor that crosses water.

[16] The annual passenger boarding data only includes primary and nonprimary commercial service enplanements as defined and reported by the FAA Air Carrier Activity Information System.

[17] The Census Bureau found in testing that individual (or groups of) census blocks with a high degree of impervious surface land cover with an area less than 0.15 square miles tend to be more associated with road infrastructure features such as cloverleaf overpasses and multilane highway medians.

[18] Additional census blocks within eighty feet of the initial groups also qualifying as impervious, but failing the shape index, are also identified for review.

[19] In situations where an urban area is only associated with one place name but is located in more than one state, the order of the state abbreviations will begin with the state within which the place is located and continue in descending order of population of each state's share of the population of the urban area.

Group Quarters (GQ): A place where people live or stay, in a group living arrangement that is owned or managed by an entity or organization providing housing and/or services for the residents. These services may include custodial or medical care, as well as other types of assistance, and residency is commonly restricted to those receiving these services.

Hop: A connection from one urban area core to other qualifying urban territory along a road connection of 0.5 miles or less in length.

Impervious Surface: Man-made surfaces, such as building roofs, roads, and parking lots.

Incorporated Place: A type of governmental unit, incorporated under state law as a city, town (except in New England, New York, and Wisconsin), borough (except in Alaska and New York), village, or other legally recognized description that provides a wide range governmental services for a concentration of people within legally prescribed boundaries.

Indentation: A recess in the boundary of an urban area produced by settlement patterns and/or water features resulting in a highly irregular urban area shape.

Initial Urban Area Core: Contiguous territory qualifying as urban according to population count, density, and degree of impervious surface land cover.

Institutional Group Quarters: People under formally authorized, supervised care or custody in institutions at the time of enumeration, who are generally, restricted to the institution, under the care or supervision of trained staff, and classified as ''patients'' or ''inmates.''

Jump: A connection from one urban area core to other qualifying urban territory along a road connection that is greater than 0.5 miles, but less than or equal to 2.5 miles in length.

MAF/TIGER (MTDB): Database developed by the Census Bureau to support its geocoding, mapping, and other product needs for the decennial census and other Census Bureau programs. The Master Address File (MAF) is an accurate and current inventory of all known living quarters including address and geographic location information. The Topologically Integrated Geographic Encoding and Referencing (TIGER) database defines the location and relationship of boundaries, streets, rivers, railroads, and other features to each other and to the numerous geographic areas for which the Census Bureau tabulates data from its censuses and surveys.

Metropolitan Statistical Area: A core based statistical area (CBSA) associated with at least one urbanized area that has a population of at least 50,000. A metropolitan statistical area comprises a central county or counties containing the urbanized area, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured by commuting.

Micropolitan Statistical Area: A core based statistical area (CBSA) associated with at least one urban cluster that has a population of at least 10,000, but less than 50,000. A micropolitan statistical area comprises a central county or counties containing the urban cluster, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured by commuting.

Minor Civil Division (MCD): The primary governmental or administrative division of a county in 29 states and the Island Areas having legal boundaries, names, and descriptions. MCDs represent many different types of legal entities with a wide variety of characteristics, powers, and functions depending on the state and type of MCD. In some states, some or all of the incorporated places also constitute MCDs.

New England City and Town Area (NECTA): A statistical geographic entity that is delineated by the U.S. Office of Management and Budget (OMB) using cities and towns in the New England states as building blocks rather than counties, and that is conceptually similar to the metropolitan and micropolitan statistical areas.

Noncontiguous: A geographic term referring to two or more areas that do not share a common boundary or a common point along their boundaries, such that the areas are separated by intervening territory.

Noninstitutional Group Quarters: Dwelling of people who live in group quarters other than institutions.

Rural: Territory not defined as urban.

Urban: Generally, densely developed territory, encompassing residential, commercial, and other nonresidential urban land uses within which social and economic interactions occur.

Urban Area: The generic term used to refer collectively to urbanized areas and urban clusters.

Urban Cluster (UC): A statistical geographic entity consisting of a densely settled core created from census tracts or blocks and contiguous qualifying territory that together have at least 2,500 persons but fewer than 50,000 persons.

Urbanized Area (UA): A statistical geographic entity consisting of a densely settled core created from census tracts or blocks and contiguous qualifying territory that together have a minimum population of at least 50,000 persons.

Executive Order 12866

This notice has been determined to be not significant under Executive Order 12866.

Paperwork Reduction Act

This notice does not contain a collection of information subject to the requirements of the Paperwork Reduction Act, 44 United States Code, chapter 35.

Dated:August 16, 2011.

Robert M. Groves,

Director, Bureau of the Census.

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