ZIP Code Tabulation Areas
For Census 2000
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U S C E N S U S B U R E A U
Helping You Make Informed Decisions
ZIP Code Tabulations Areas (ZCTAs™)

.... are generalized area representations of United States Postal Service ZIP Codes developed by the U.S. Census Bureau for tabulating statistical data.

ZCTA™ is a trademark of the U.S. Census Bureau
ZCTAs

.... are distinct from other area representations of ZIP Codes because they reflect address locations and ZIP Codes collected or verified during Census 2000 field operations.
**ZCTAs**

.... are distinct from statistical areas such as census tracts because they are not stable over time and they are computer delineated using addresses rather than formally delineated before the census.
Census 2000 Dress Rehearsal Population Density
Sacramento, CA Dress Rehearsal Site
Comparison of Statistical Entities

Census Tracts

ZIP Code Tabulation Areas (ZCTA)

Population / square mile
- < 602
- 602 - 1848
- 1849 - 4386
- 4387 - 6454
- > 6454

Map Prepared by
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U.S. Bureau of the Census
1999
Comparisons

Census Tracts

- Locally defined
- Generally stable/comparable over time
- Ideally 1500 housing units
- Boundaries follow features
- Nest within counties/county county equivalents

ZCTAs

- Defined by addresses and extension algorithms
- Boundaries and codes change over time
- Variable size
- Boundaries follow tabulation block boundaries
- Cross counties but not states
Introducing ZCTAs!

- New for Census 2000
- Product and trademark of the US Census Bureau
- Prototype ZCTAs released with Census 2000 Dress Rehearsal products
- Documentation is available on the web:

  http://www.census.gov/geo/ZCTA/zcta.html
Requirements for Building ZCTAs

- Assign a ZCTA code to all land areas
- Follow census block boundaries
- Assign a single ZCTA code to each block
- Use a fully automated process
- Match true ZIP Codes as closely as possible
ZCTA Codes

- Represent the majority ZIP Code of the addresses in a census block
- Represent a USPS 5- or 3-digit ZIP Code
- Exclude unique, single delivery point ZIP Codes for firms and organizations
- Include dedicated P.O. Box ZIP Codes in rural areas
ZCTA Codes

• 5-digit numeric ZCTA codes
  22301  (land & internal water)

• Generic 3-digit ZCTA codes
  223XX  (land & internal water)
  223HH  (water along margins of several land ZCTAs)
Challenges for Delineating ZCTAs

• Addresses with incorrect or out-dated ZIP Codes
• Blocks split between ZIP Codes
• Areas with no addresses or ZIP Codes
ZIP Code Delivery Routes

ZIP Codes follow the street network

- Addresses with ZIP Code A
- Addresses with ZIP Code B
ZCTAs Reflect Majority ZIP

Determine majority ZIP Code of available addresses

- ZCTA representing ZIP Code A
- ZCTA representing ZIP Code B
P.O. Box ZIP Codes

Addresses with P.O. Box ZIP Codes scattered among addresses with city style delivery

- Addresses with ZIP Code A
- Addresses with P.O. Box ZIP Code B
P.O. Box ZIP Codes

P.O. Box ZIP Codes in areas with city style delivery are excluded from becoming ZCTAs.

- ZCTA representing ZIP Code A
- P.O. Box ZIP Code B is excluded
P.O. Box ZIP Codes

Addresses with P.O. Box ZIP Codes clustered around post office in rural delivery areas

- Addresses with ZIP Code A
- Addresses with P.O. Box ZIP Code B
P.O. Box ZCTA

P.O. Box ZIP Codes in rural delivery areas may become ZCTAs

- □ ZCTA representing ZIP Code A
- □ ZCTA representing P.O. Box ZIP Code B
Types of Unassigned Area Between ZIP Code Tabulation Areas (ZCTAs)

- **Internal Coverage Holes**
  - waterway
  - park lands
  - industrial areas
  - undeveloped lands

- **Coverage Gaps Between ZCTAs**
  - waterway
  - park lands
  - industrial areas
  - undeveloped lands

- **Fringe Areas and “Islands”**
  Islands surrounded by coastal or inland waterways.
  Residential/commercial areas on the edge of:
  - farm land
  - public lands
  - large industrial or mining areas
  - undeveloped wetlands

- **Sparsely Settled Areas**
  Sparsely located homesteads or small population centers in rural areas characterized by:
  - farming
  - ranch land
  - mining
  - forest land
  - wilderness areas
Internal Coverage Holes Within ZIP Code Tabulation Areas (ZCTAs)

- waterway
- park lands
- industrial areas
- undeveloped lands
Internal Coverage Holes Within ZIP Code Tabulation Areas (ZCTAs)

Extend the surrounding ZCTA to fill “holes” within the coverage.
Coverage Gaps Between ZIP Code Tabulation Areas (ZCTAs)

- waterway
- park lands
- industrial areas
- undeveloped lands
Coverage Gaps Between ZIP Code Tabulation Areas (ZCTAs)

Grow ZCTAs outward to fill adjacent blocks until all gaps are filled.

Assign special 3-digit water ZCTA codes to water features on the margins.
Unassigned Fringe Areas and “Islands”
ZIP Code Tabulation Areas (ZCTAs)

Islands surrounded by coastal or inland waterways.

Residential/commercial areas on the edge of:

- farm land
- public lands
- large industrial or mining areas
- undeveloped wetlands
Unassigned Fringe Areas and “Islands”
ZIP Code Tabulation Areas (ZCTAs)

Fill unassigned blocks on the edge of ZCTAs with adjacent ZCTA code.

Fill islands with the ZCTA code of nearby land areas.

Assign a generic 3-digit ZCTA code to large unassigned land areas on the fringes of existing assigned areas.
Fragmented ZIP Code Tabulation Areas (ZCTAs) in Sparsely Settled Areas

Dispersed homesteads or small population centers in rural areas characterized by:

- farming
- ranch land
- mining
- forest land
- wilderness areas
Rural Fragments

- Validate ZCTA Code in fragments
- Add blocks along road network to bridge fragments
- Respect natural and cultural boundaries
- Fill in small enclaves and “cavities”
- Leave remaining area as a generic ZCTA
Fragmented ZIP Code Tabulation Areas (ZCTAs) in Sparsely Settled Areas

Assign ZCTA codes to “windows” that enclose the ZCTA fragments. The balance of the area receives a generic 3-digit ZCTA code.
Areas with no MAF addresses appear in white.

Initial ZIP Code Tabulation Areas
Menominee, WI Dress Rehearsal Area
ZIP Code Tabulation Areas
Menominee, WI Dress Rehearsal Area
ZCTA Maintenance

• Monitor ZIP Code changes from USPS sources (ZIPMOVE file)

• Monitor changes in summary statistics
ZCTA Summary Statistics

• Create new MAF extract with
  - Latest ZIP Codes
  - New addresses

• Match addresses and ZIP Codes to ZCTA assignments block by block

• Identify negative changes in match rates