

DATA

DATA

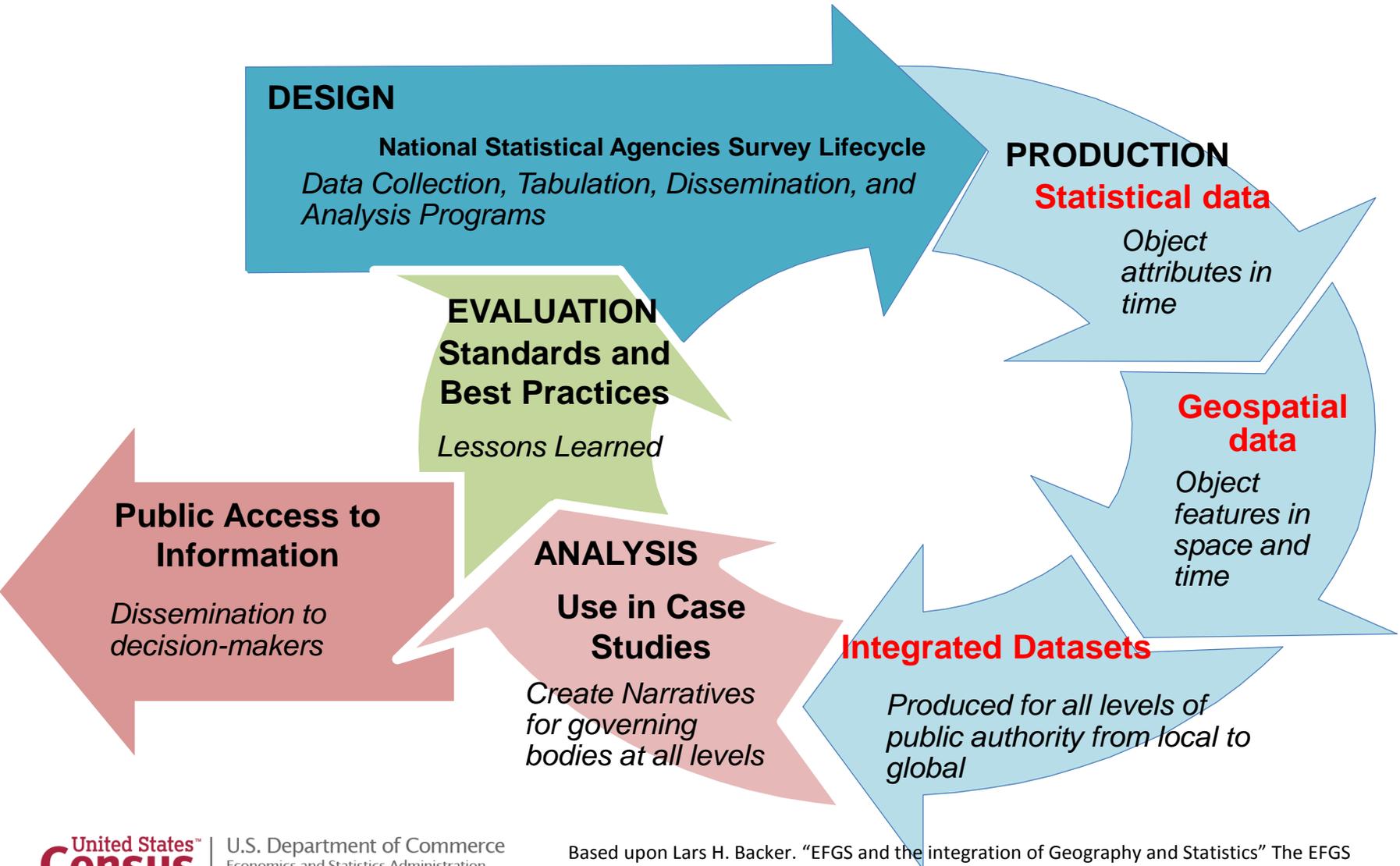
Preparing for the 2020 Round of Censuses

01

DATA

maps
printed reports
may be delayed,
M...
special...
training, workshops
relation,
customer call center,
regional offices,
map...
CD-
microfilm, CD-
electronic bulletin board,
SDO, OGDATA, flexible
diskette, GIS/DIME files,
DVDs, MOOs,
U.S. Gazette files,
Internet, IMPS,
Webinar, AFF,
maps online,
TIGER system,
Extracts, State
& County quick
facts, FTP site,
Industry focus,
QWI online,
Data Ferrett,
OnTheMap,
CENSTATS,
blogs
facebook,
twitter,
youtube

Framework of National Geospatial Statistical Data Office

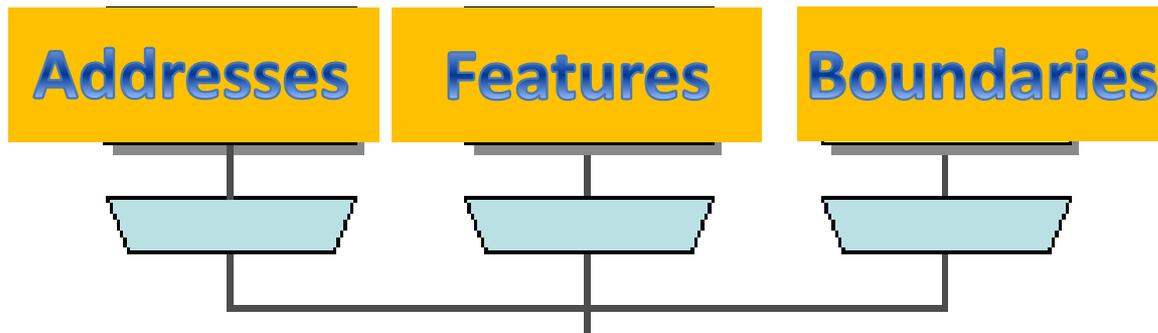


Establishing a National Geospatial Framework

- Initial data assessment
 - Assess current data on hand
 - Establish current baseline of data [i.e., types, quality, amounts, geography, including census areas]
- Identify operational capacity
 - Assess data gathering capacity
 - Establish census/survey schedule
 - Evaluate processing capabilities and capacity
 - Design data dissemination tools and methods
- Determine future data goals
- Continue to gather data and monitor progress
- Regularly assess status against baseline and goals

It begins with data...

3 basic types of **geospatial data** are needed to support census and survey operations and to produce relevant statistics



What are Geographical Data Files?

- Files that contain the coordinates describing the geographic features
- Examples:
 - Streets and roads
 - Legal, statistical and administrative area boundaries and associated geographic codes
 - City limits
 - Census tracts
 - Health districts
 - Rivers, lakes, and bodies of water

Data Types

- Forms

- Electronic
- Paper

- Spatial data

- National Mapping Agency produced spatial files
- Digitized maps
- Imagery
- Local GIS files

- Address list data

- Field updates
- Paper listings
- Digital files



14:29:46	38.96	33.44	30.55	31.50	36.95
14:29:59	3.596	1.762	2.046	1.212	0.814
14:30:15	9.617	7.845	4.262	1.992	1.188
14:30:25	4.145	2.519	1.305	1.089	0.721
14:30:35	38.38	32.86	30.37	31.34	36.63
14:30:44	10.54	4.650	2.757	1.714	0.962
14:30:53	11.48	3.843	2.899	1.937	1.185
14:31:04	3.957	3.203	2.258	1.373	0.794
14:31:10	37.90	32.33	30.01	31.36	36.81
14:31:18	2.669	3.368	2.368	1.601	0.883
14:31:26	4.130	3.835	2.176	1.319	0.669
14:31:36	2.748	3.698	1.283	1.229	0.738

Stakeholder Participation

Government (National/Regional/Local)

- Data partner
- Data source

Public/NGOs

- Demographic data source
- Consumer of data
- Research and academia

Private Industry

- Requirements, requests
- Provide technical expertise



Collection Geographic Areas

Administer and manage field operations in the U.S., Puerto Rico, and the Island Areas:

- Local Census Offices (499)
- Field Office Supervisor Districts (numbers vary by operation)
- Crew Leader Districts (numbers vary by operation)
- Assignment Areas (numbers vary by operation)
- Collection Tracts (66,440)
- Collection Blocks (6.7 million)

Collection Geographic Area Hierarchies

Local Census Office



Field Operations
Supervisor District



Crew Leader District



Assignment Area



Collection Block

Nation



1ST Level



2nd Level



Enumeration District

Pros and Cons of Using Collection Geography

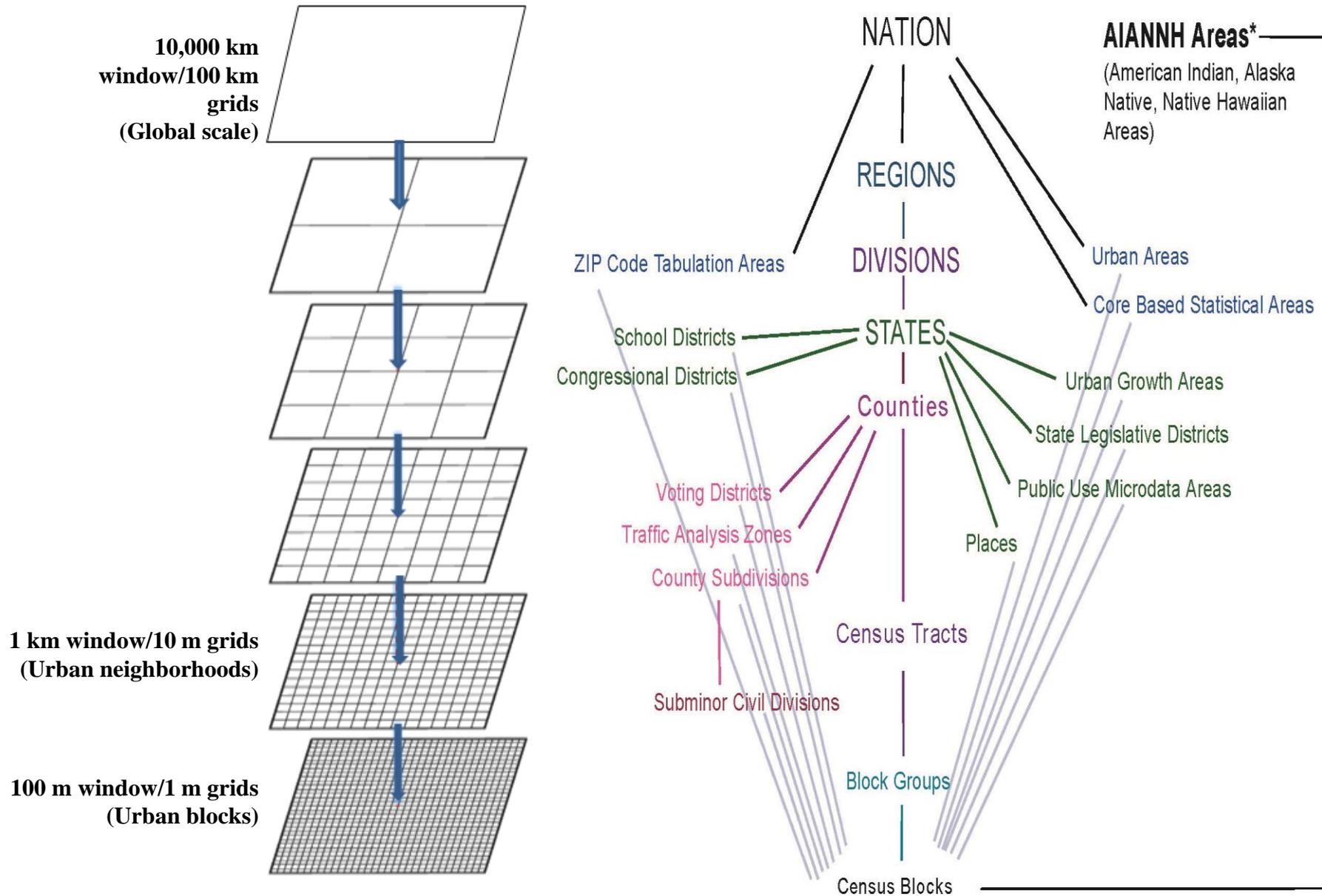
Advantages

- Ability to limit non-visible boundaries as collection boundaries
- Ability to balance the work load

Disadvantages

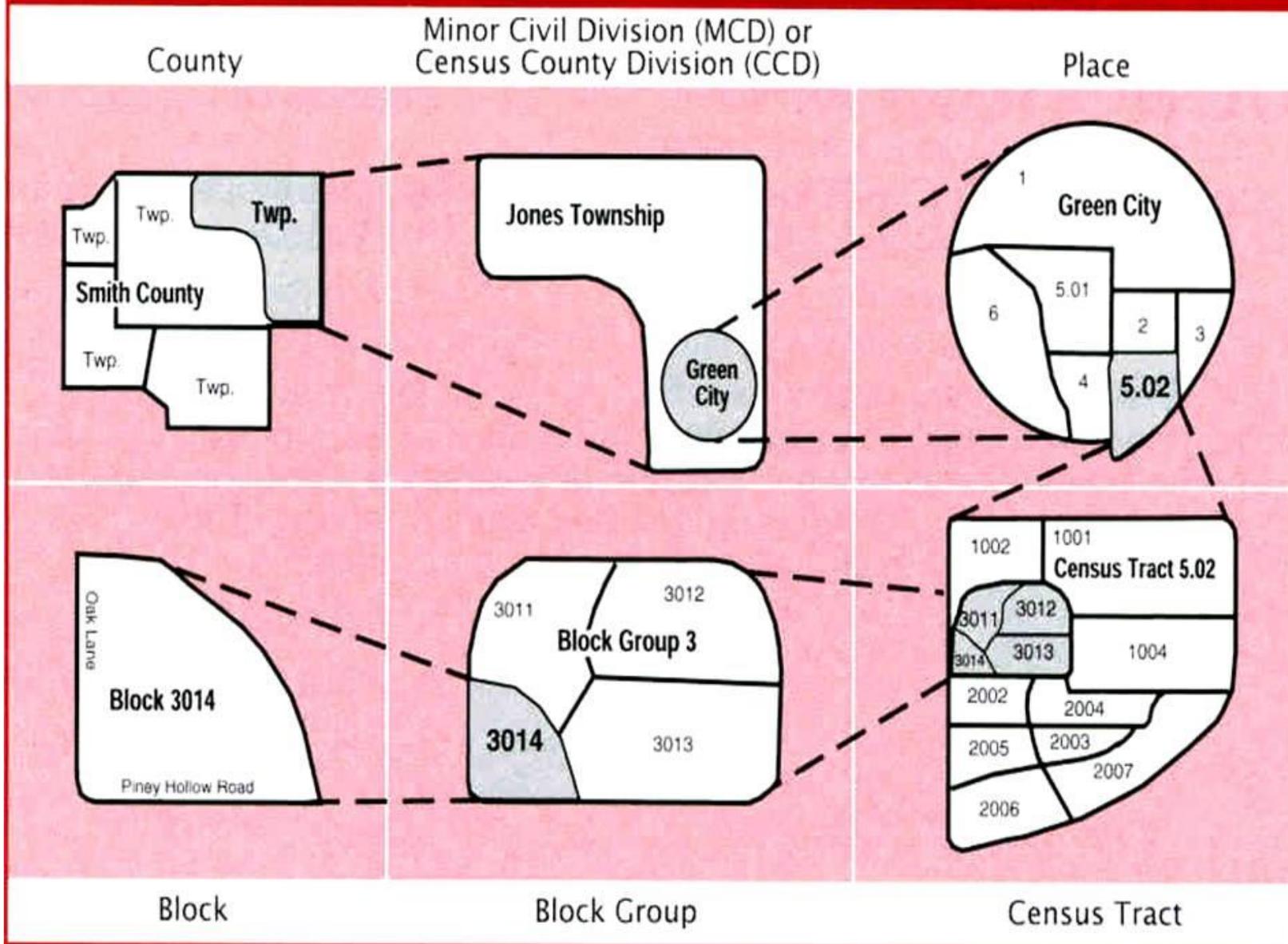
- Delineation
- Requires comparison between collection and tabulation geography
- Maintenance
- Storage

Geographic frame design

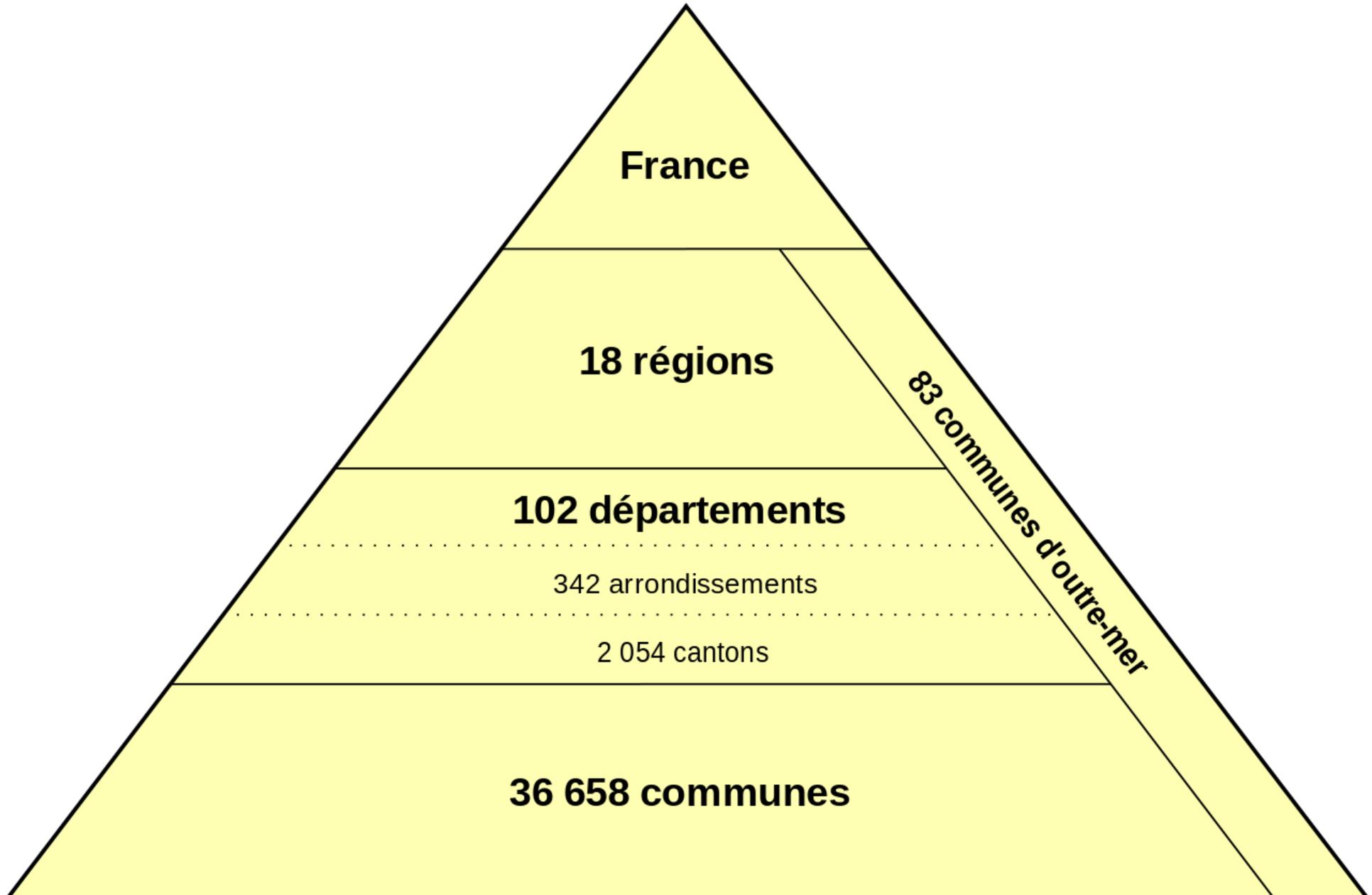


Census Small-Area Geography

Understanding the Relationships Among U.S. Census Bureau Geographic Entities

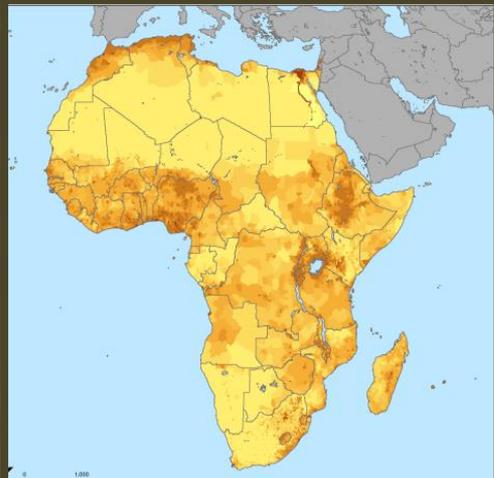
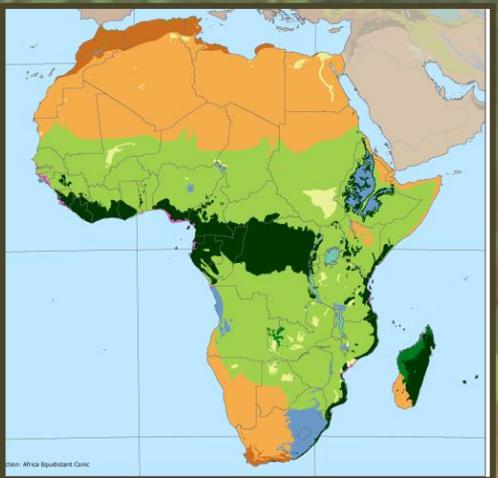
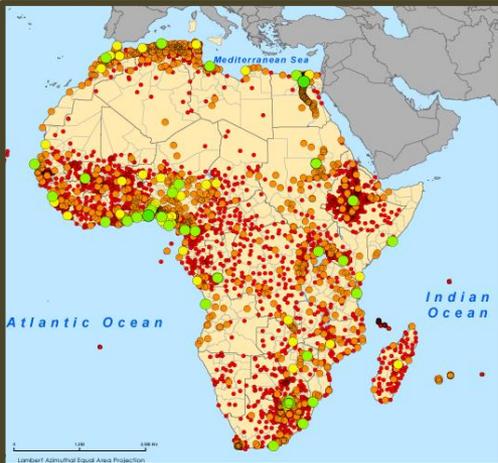


Geographic Framework – France



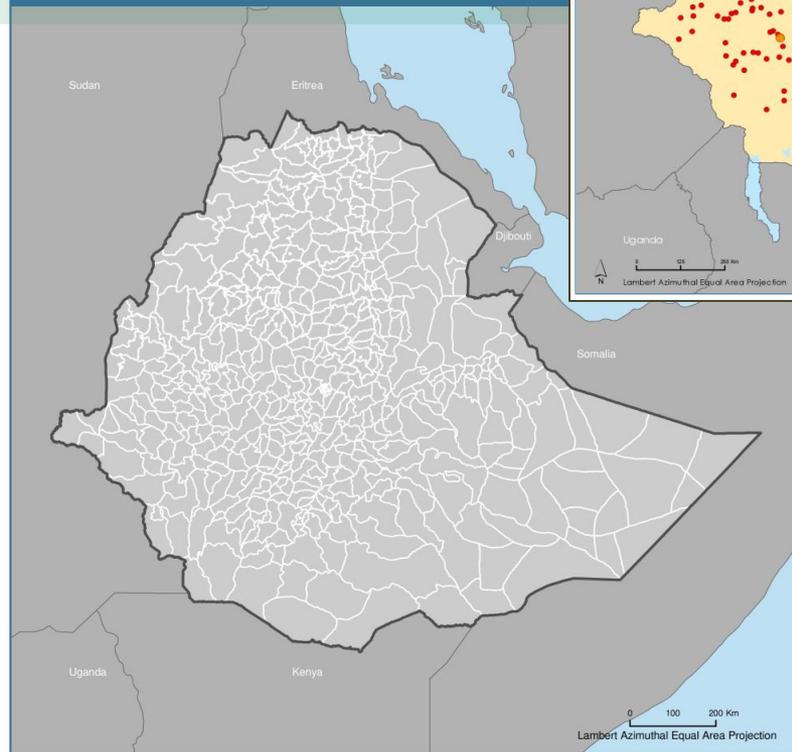
Geospatial Framework for Africa

maps
printed reports
maps on display,
at meetings,
special publications
guides/catalogs
training, workshops



Geospatial Framework for Ethiopia

Ethiopia : Input administrative unit boundaries



Administrative Boundaries

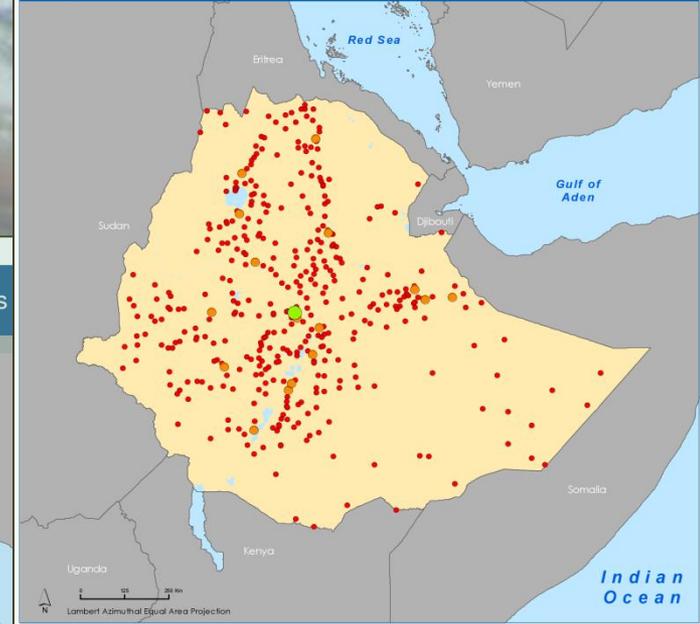
— Level 3: Wereda

NB: White boundaries indicate level used in gridding.

SETTLEMENT POINTS

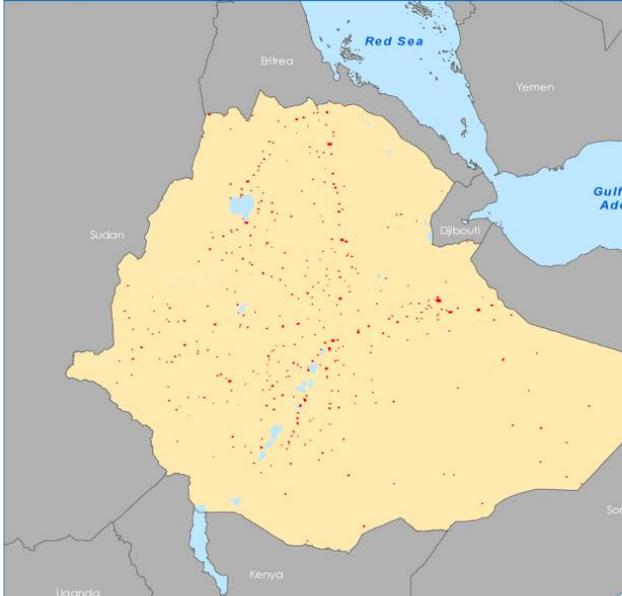
Ethiopia

GRUMP



URBAN EXTENTS

Ethiopia



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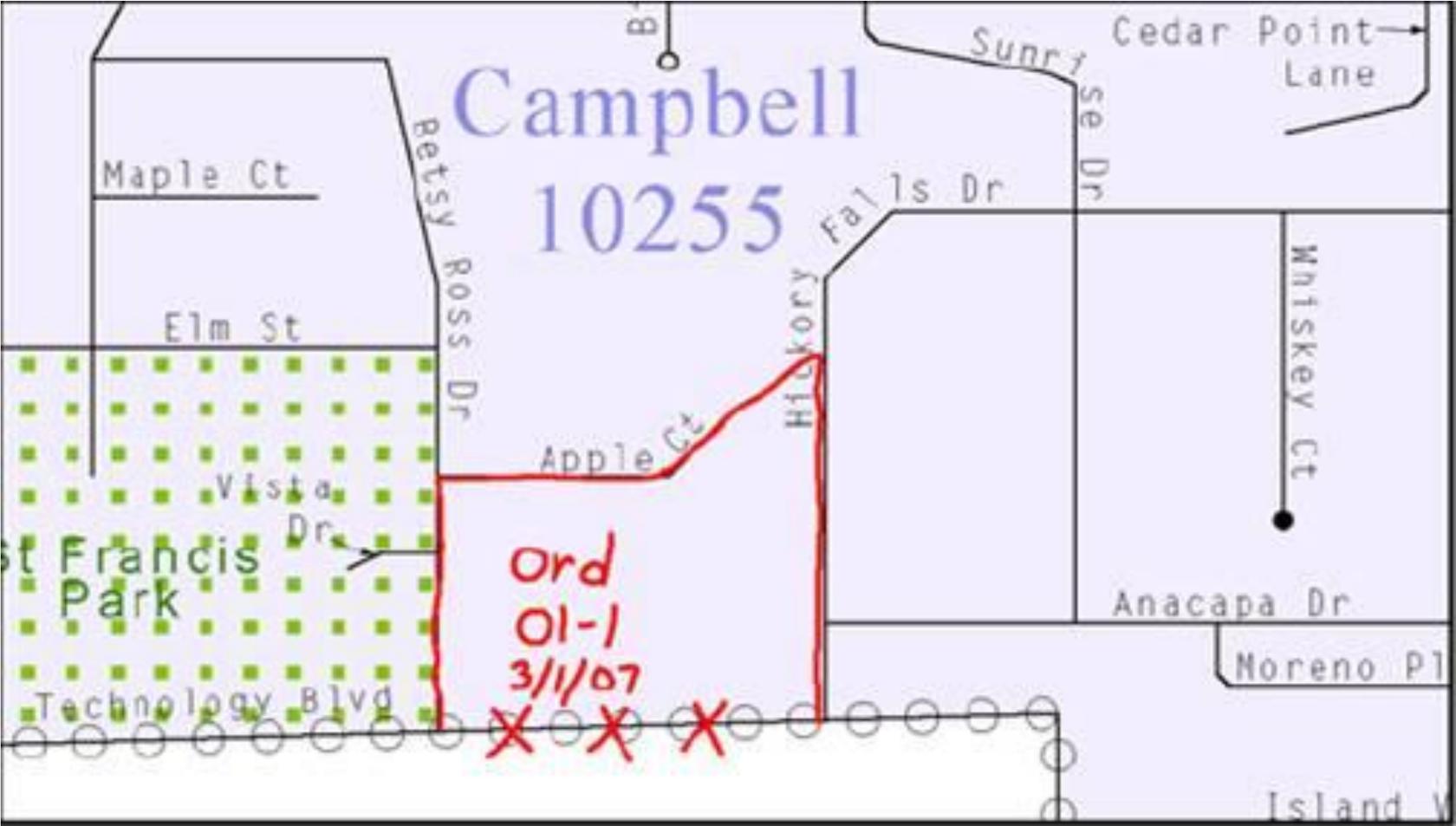
Update Methodologies

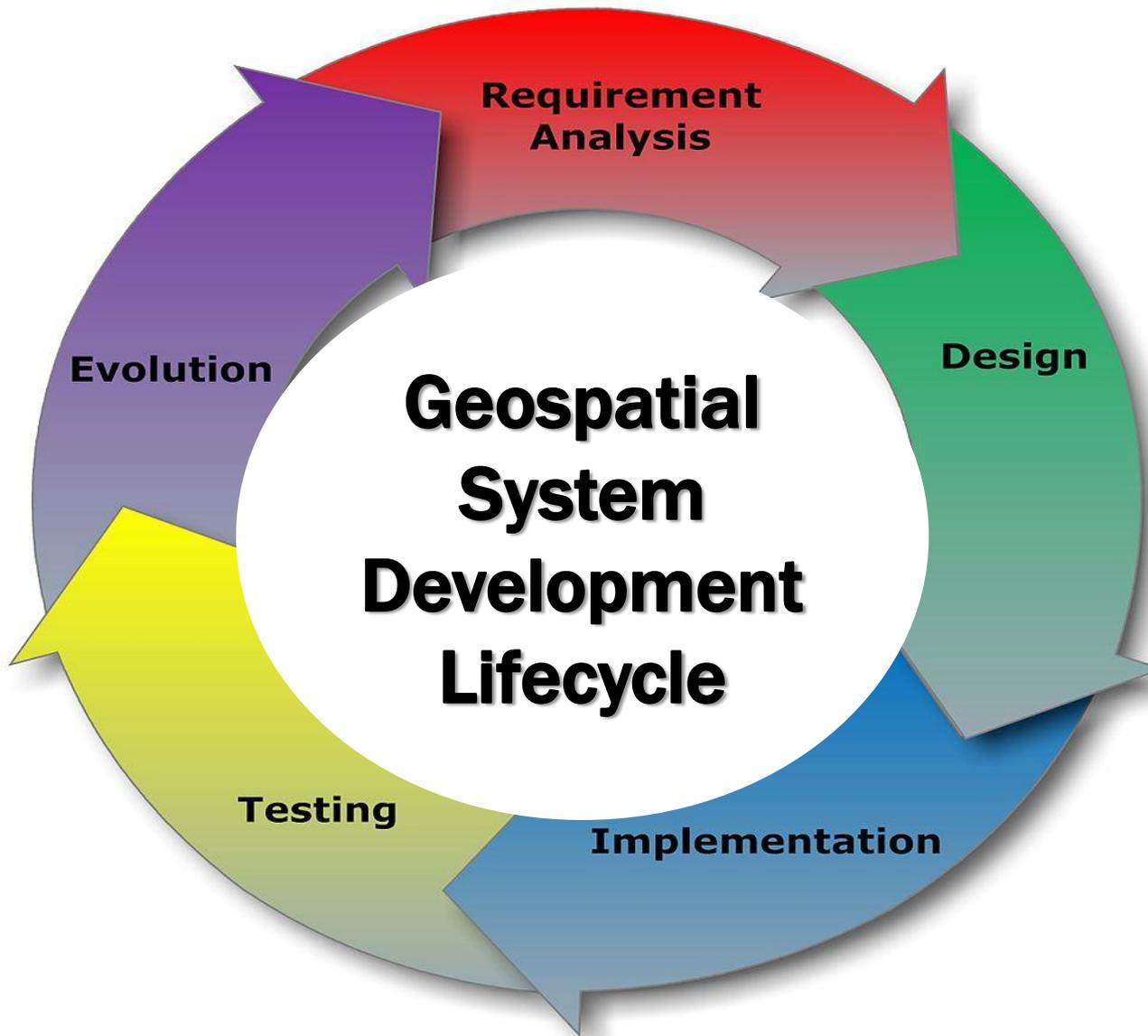
- Spatial files of a nation's geographic extent
- Transaction files that only include additions, deletions, and changes
- Paper maps with or without annotations

Types of Boundary Updates

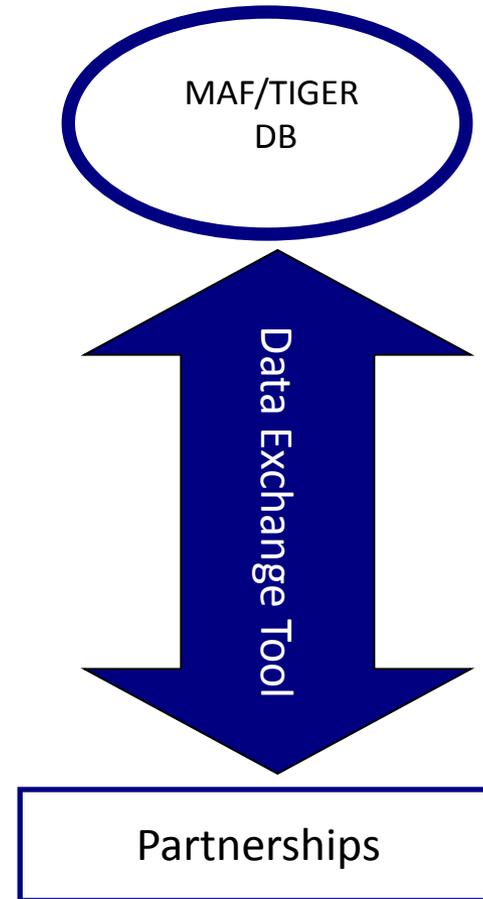
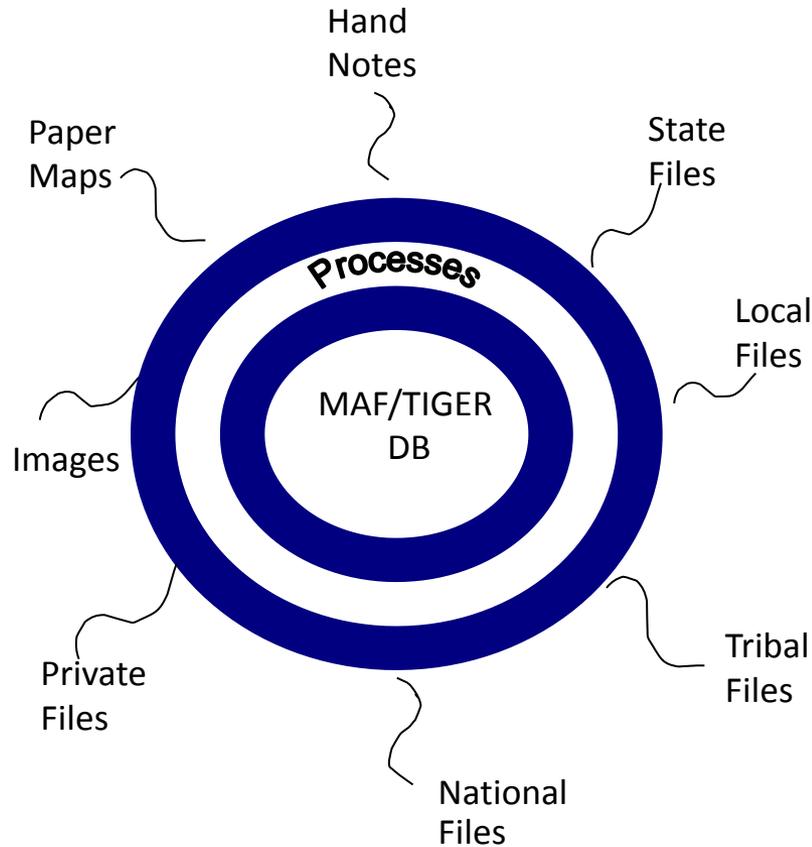
- New geographic areas
- Geographic area changes (annexations & deannexations)
- Boundary Corrections

Boundary Annexation Example





Two Different Approaches



Data Management Lifecycle

Quality Assurance

- Established, published metadata

Quality Control

- Regular auditing of data
- Rigorous adherence to established criteria

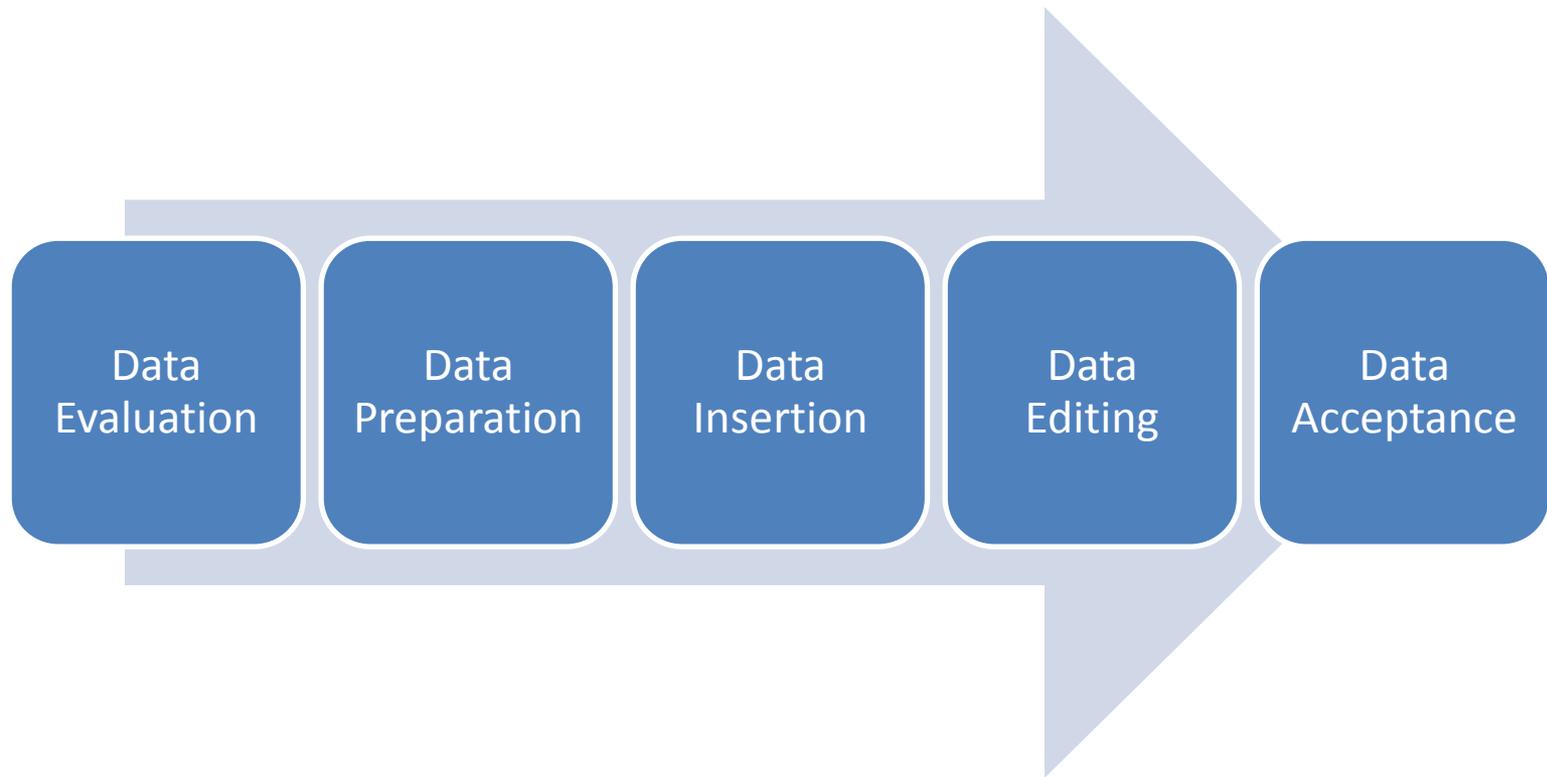
Open access to data and metadata

Challenging milestones

- Realistic initial assessment of data (coverage, quality, completeness)
- Establish timelines of future milestones with increasingly challenging goals

Data quality is an ongoing process, not a destination!

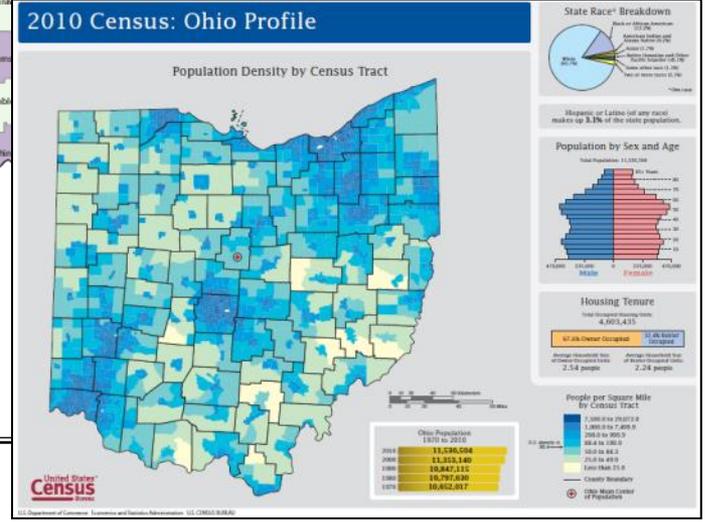
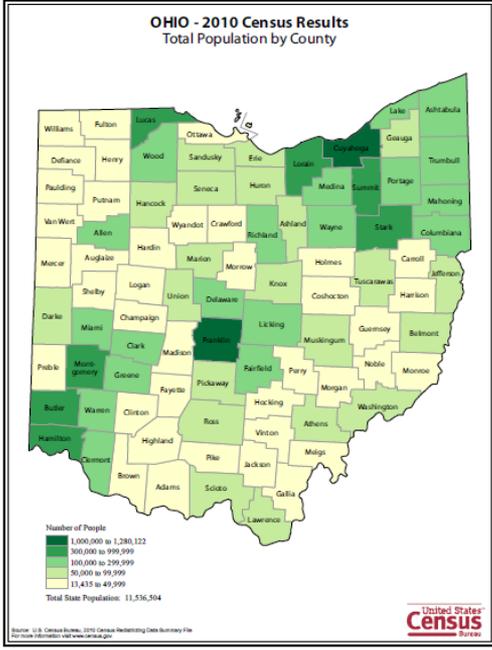
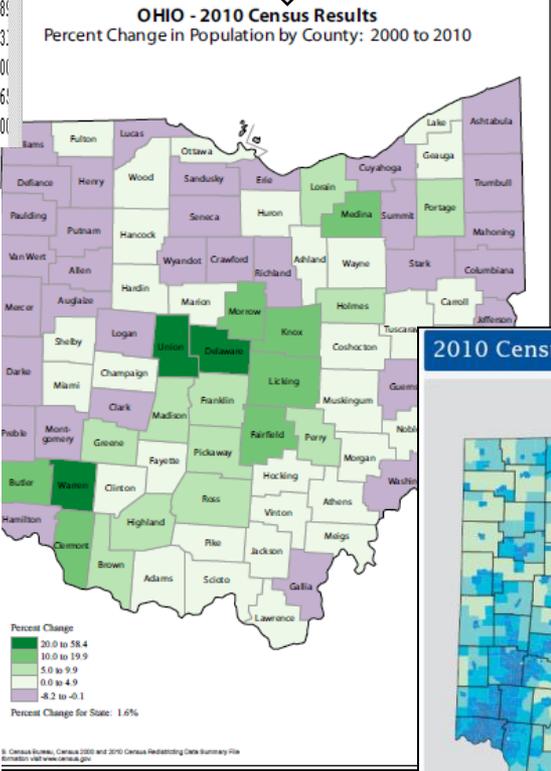
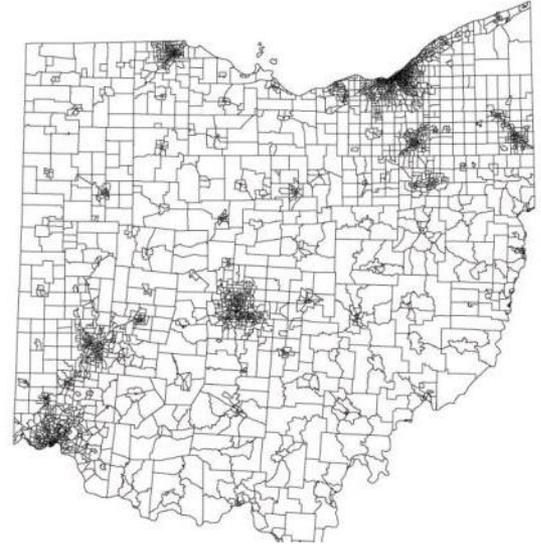
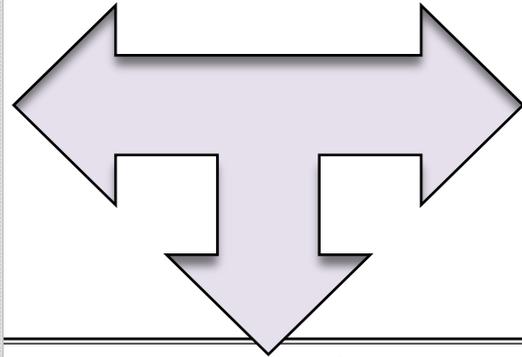
Update Steps



Statistical Data

Geospatial Data

AL0100124Abbeville city	2987	1353	40301945	120383	15.560669	0.04648
AL0100460Adamsville city	4965	2042	50779330	14126	19.606010	0.00545
AL0100484Addison town	723	339	9101325	0	3.514041	0.00000
AL0100676Akron town	521	239	1436797	0	0.554750	0.00000
AL0100820Alabaster city	22619	8594	53023800	141711	20.472605	0.05471
AL0100988Albertville city	17247	7090	67212867	258738	25.951034	0.09989
AL0101132Alexander City city	15008	6855	100534344	433413	38.816529	0.16734
AL0101180Alexandria CDP	3692	1467	28736198	0	11.095109	0.00000
AL0101228Aliceville city	2567	1092	11645143	0	4.496215	0.00000
AL0101396Allgood town	629	198	2685621	1451	1.036924	0.00056
AL0101600Altoona town	984	437	9851874	28111	3.803930	0.01085
AL0101708Andalusia city	8794	4279	48884652	242897	18.874470	0.09378
AL0101756Anderson town	354	174	3348509	0	1.291550	0.00000
AL0101852Aminston city	24276	12787	117651320	85700	45.425431	0.03308
AL0102116Arab city	7174	3223	33070427	211423	12.768564	0.08163
AL0102260Ardmore town	1034	506	5284061	0	2.040187	0.00000
AL0102320Argo town	1780	726	31519227	252950	12.169642	0.09766
AL0102428Ariton town	772	335	13129325	0	5.069261	0.00000



Why Integrate Statistical and Geospatial Data?

- Map statistical data to geographic space
- Analyze statistical data using geospatial processes (spatial analysis)
- Discover spatial trends

Integration of Statistical and Geospatial Data

- Statistical data corresponds with geographic data
- **Geographic codes** link statistical and geographic data
- Geocoding (assigning information to a location)

Geocode

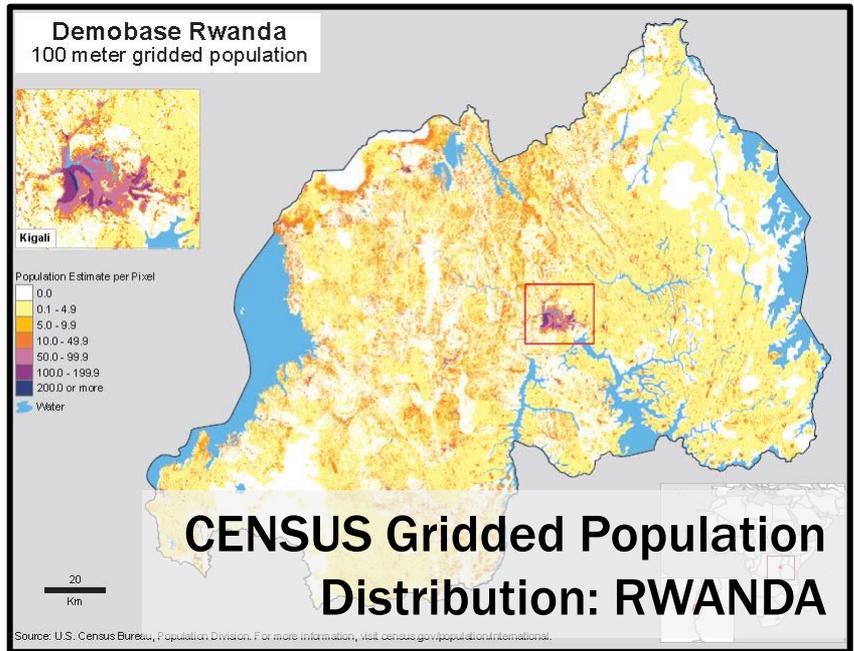
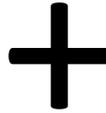
- Any alphanumeric or numeric-only designator that will uniquely identify one and only one geographical entity within the set of all similar entities
- Examples:
 - Mailing address
 - First and second level administrative areas with their name or number
 - Census statistical area numbers, e.g., census tract codes, block groups
 - Health district number
 - Watershed ID

GOAL 15: Protect, Restore, and Promote Sustainable Use of Terrestrial Ecosystems; NASA analysis + Census population statistics

NASA land degradation analysis



 Countries with land degradation monitoring



Trends in land degradation and impacted populations in Sub-Saharan Africa

The Decennial Census

Mission of the U.S. Census Bureau:

- To serve as the leading source of quality data about the nation's people and economy. We honor privacy, protect confidentiality, share our expertise globally, and conduct our work openly

Purpose of the 2020 Census:

- To conduct a census of population and housing and disseminate the results to the President, the States, and the American People

The Decennial Census

Primary Uses of Decennial Census Data:

- Apportion the U.S. House of Representatives
- Draw congressional and state legislative districts, school districts and voting precincts
- Enforce voting rights and civil rights legislation
- Provide funds to states and tribal governments
- Inform federal, tribal, state, and local government planning decisions
- Inform business and nonprofit organization decisions (e.g., where to locate, size of market)
- Provide population benchmarks for nearly every other United States survey

The 2020 Census: A New Design for the 21st Century

Motivate People to Respond

Conduct a nation-wide communications and partnership campaign

- Maximize outreach using traditional and new media
- Target ads to specific audiences
- Work with trusted sources to inspire participation.



Establish Where to Count

Identify all addresses where people could live

IN-FIELD

IN-OFFICE



- Conduct a 100% review and update of the nation's address list
- Minimize field work with in-office updating
- Use multiple data sources to identify areas with address changes
- Get local government input



**Count Everyone Once
In the Right Place**

TELEPHONE
AND PAPER SELF-
RESPONSE

NONRESPONSE
FOLLOWUP

INTERNET SELF-RESPONSE



Count the Population

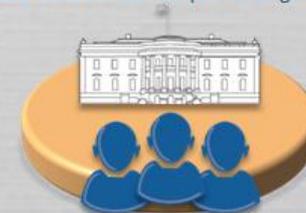
Collect data from all households, including group and unique living arrangements

- Make it easy for people to respond anytime, anywhere
- Encourage people to use the new online response option
- Use the most cost-effective strategy to contact and count nonrespondents
- Knock on doors only when necessary
- Streamline in-field census-taking

Release Census Results

Process and Provide Census Data

- Deliver apportionment counts to the President by December 31, 2020
- Release counts for redistricting by April 1, 2021
- Make it easier for the public to get data



Achieving the 2030 Agenda

Sustainable Development Goals



TRANSFORMING OUR
WORLD:
THE 2030 AGENDA FOR
SUSTAINABLE
DEVELOPMENT

1 NO
POVERTY



2 ZERO
HUNGER



3 GOOD HEALTH
AND WELL-BEING



4 QUALITY
EDUCATION



5 GENDER
EQUALITY



6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



8 DECENT WORK AND
ECONOMIC GROWTH



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



10 REDUCED
INEQUALITIES



11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



14 LIFE
BELOW WATER



15 LIFE
ON LAND



16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS



17 PARTNERSHIPS
FOR THE GOALS



Achieving the 2030 Agenda

- Good Land Governance
- National Statistical Offices
- National Mapping Agencies
 - National Geospatial Data Infrastructure
- International Data Partnership Framework
- Contributing to the SDGs through the 2020 Round of Censuses

An aerial photograph of a river delta, showing a large body of water branching into several distributaries. The land is a mix of brown and tan, with some green vegetation. The word "Questions?" is written in white, bold, sans-serif font in the center of the image.

Questions?