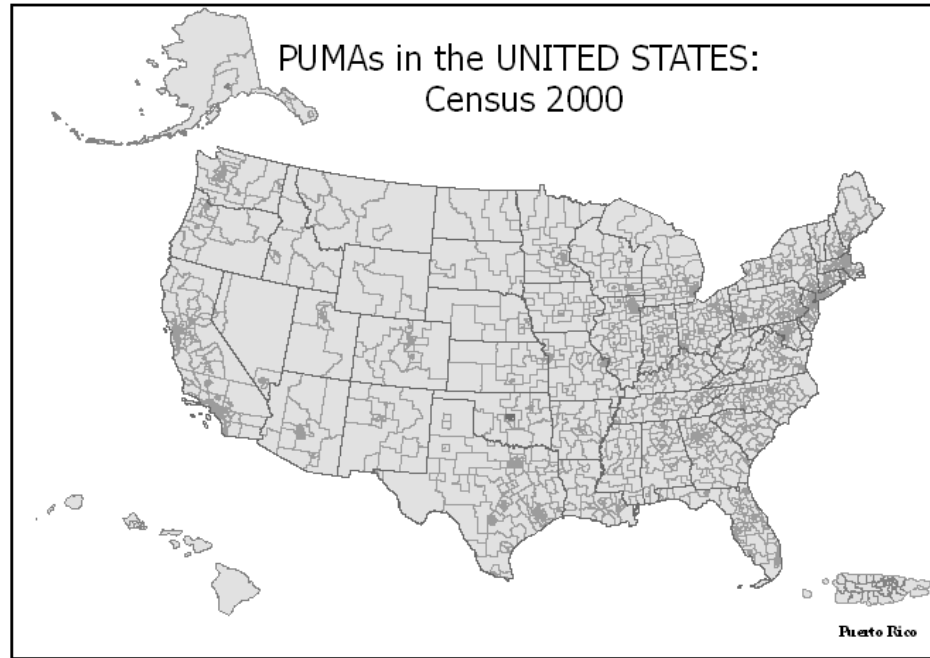
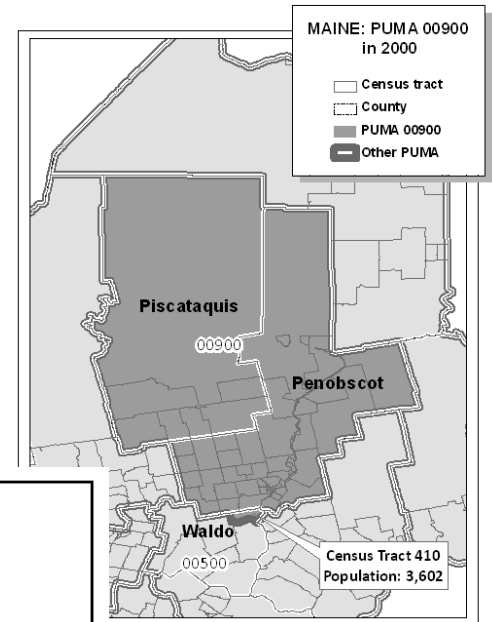
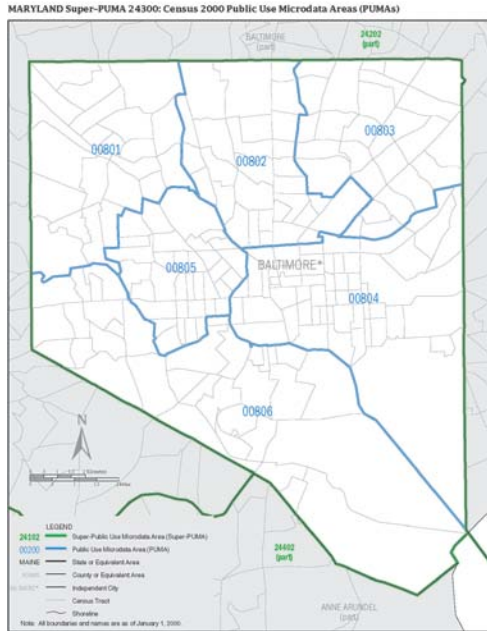


2010 Public Use Microdata Areas (PUMAs) for the 2010 Census and the American Community Survey

State Data Center
Steering Committee Meeting
Suitland, MD
June 16, 2011



Overview


- Comments on 2010 PUMA Proposed Criteria
- Research Supporting Final Criteria
- New features: PUMA names
- PUMA and PUMS Products
- Publication of 2010 PUMA Final Criteria and Guidelines
- Overview of PUMA Delineation and MTPS
- Training
- Schedule

2010 PUMA Proposed Criteria

- ✦ Standard PUMAs (one level only, 5% sample)
 - State-based
 - POW PUMAs and MIG PUMAs (county-based)
- ✦ Minimum population threshold of 100,000 throughout decade
- ✦ Counties and census tracts as building blocks
 - Contiguity
- ✦ Avoid splitting the more substantially populated areas of American Indian reservations and off-reservation trust lands (AIR/ORTL)

An asterisk ✦ indicates there is a change to the 2000 criteria

2010 PUMA Guidelines

- Wherever possible, each PUMA should comprise an area that is either entirely inside or entirely outside a current **Core Based Statistical Area**.
- Use 2010 place definitions, 2000 urban/rural definitions, as well as **local knowledge** to inform PUMA delineation.
- PUMAs may be **named** by local participants.  **NEW**
- The number of PUMAs should be maximized, so PUMAs **should not contain more than 200,000** people, unless the PUMA is defined for an area that is or will likely be experiencing population decline.

Comments on 2010 PUMA Criteria

Eliminating incorporated places and MCDs as a building block entity

- Four (4) responses **opposed to** this criteria from a major public policy research organization, as well as the states of California and Michigan representing state and local government agencies and a regional organization.
 - ❑ Majority of cities keep their boundaries consistent.
 - ❑ Data aggregated by incorporated places are more meaningful than data aggregated by large groups of census tracts.
 - ❑ MCDs are very important to local data users.
 - ❑ Census tracts do not correspond to MCD boundaries.
- One (1) response **in support of** this criteria from a California University.
 - ❑ PUMAs in Los Angeles are based on places that contain enclaves and exclaves. Eliminate these anomalies in favor of geographically contiguous areas.

Census Bureau Response: Criteria

Incorporated Places

1) Majority of cities keep their boundaries consistent.

Census Bureau found that a majority of cities had boundary changes in the last decade.

- Incorporated places of 100,000 or more residents comprise 17% of all PUMAs.
- A majority (60%) of the place-based PUMAs (60%) have had annexations/deannexations over the past 10 years (see Ann Arbor example).
- Changes in PUMA building block geography represent a disclosure risk for PUMAs publication (i.e., creates sliver geography with low populations); This is particularly significant where decennial PUMA boundaries do not coincide with the current Place of Work (POW) PUMA boundaries (POW PUMAs are updated *in practice* to reflect current incorporated place boundaries).
- Census tracts provide relatively stable boundaries and may be aggregated to approximate the extent of other types of geographic entities.

Census Bureau Response: Criteria

Incorporated Places (continued)

2) Data aggregated by incorporated places are more meaningful than data aggregated by large groups of census tracts.

To improve the utility and meaningfulness of the PUMA and PUMS/estimate data the Census Bureau has added the following provisions in support of counties and census tracts as the primary PUMA building blocks:

- Participants will have the ability to name PUMAs
- PUMA equivalency files will be provided to relate PUMA with underlying counties, county subdivisions, places, and tracts.
- PUMS data are subject to “noise” (i.e., small amounts of variation) and data swapping, therefore the PUMS data are less susceptible to the small differences between a census tract boundary and an incorporate place or MCD boundary. These differences are unlikely to have a significant impact on the spatial quality of the PUMS data.

Census Bureau Response: Criteria

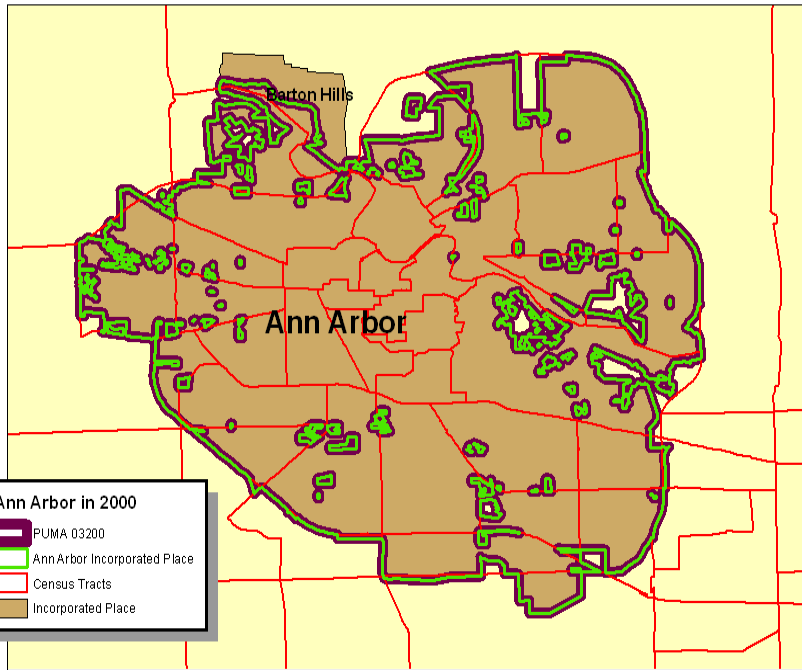
Incorporated Places (continued)

3) PUMAs in Los Angeles County are based on places that contain enclaves and exclaves. California respondent is in favor of geographically contiguous areas.

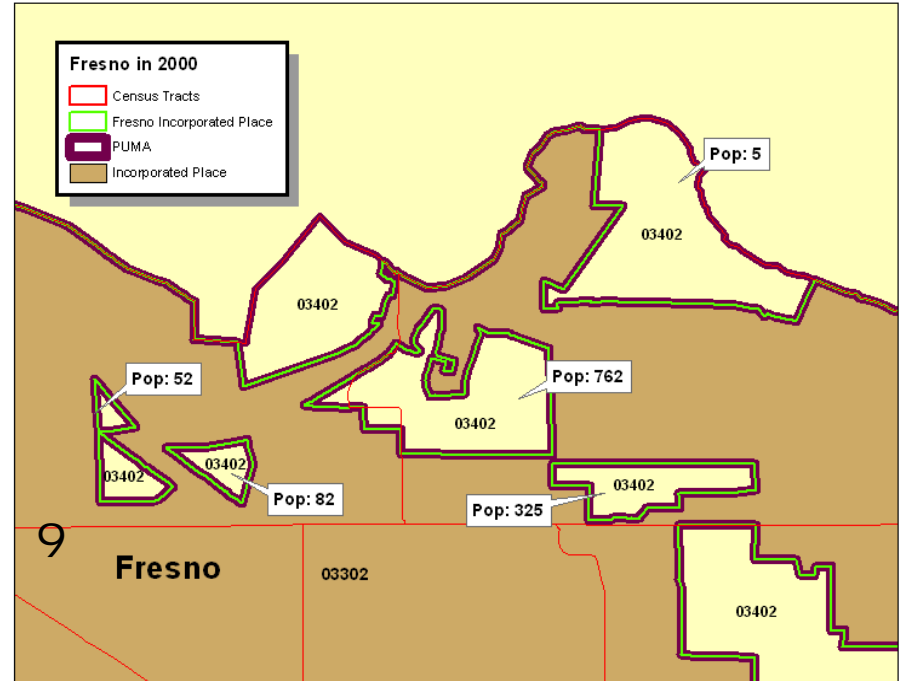
Census Bureau found several examples of noncontiguous place-based PUMAs in California and in Michigan that present a disclosure risk from sliver geography and areas of low population (enclaves and exclaves).

- PUMA 03200 in Ann Arbor, Michigan (see next slide)**
- PUMA 03301 and 03302 in Fresno, California (see next slide)**

Examples of PUMAs with Boundary Changes and Non-contiguous Enclave and Exclaves



Michigan PUMA 03200 is comprised of Ann Arbor incorporated place. It includes 4 exclaves and 86 enclaves. Ann Arbor reported 194 annexations in the last decade (2000-2010).



California PUMAs 03302 & 03301 make up Fresno incorporated place. Close-ups reveal unincorporated enclaves from **PUMA 03402** with low population totals within Fresno city limits. PUMA 03402 has 24 noncontiguous parts.

Census Bureau Response: Criteria

Minor Civil Divisions (MCDs)

1) MCDs are very important to local data users.

Census Bureau received opposing comments for only one state (Michigan).

- ❑ There are 20 states in which MCDs serve as general-purpose local governments. Presumably all other MCD states are satisfied with the proposed change to eliminate MCDs as building blocks for 2010 PUMAs.

2) Census tracts do not correspond to MCD boundaries.

Census Bureau found that a majority of PUMAs in the state of Michigan were built with Legal-General Purpose MCDs, tracts, and/or Counties.

- ❑ Most (90%) of the PUMAs in Michigan have a strong correlation with census tract and/or county boundaries.
- ❑ Tracts and county boundaries can be used to approximate the MCDs.

3) Sliver geography can be created when PUMAs and MCD boundaries are not coincident.

Census Bureau maintains that county and census tract boundaries are more stable.

- ❑ Not all boundaries in an area are coincident, therefore there will always be sliver geography. MCD boundaries can change over time.

Comments on 2010 PUMA Guidelines

Make PUMAs coincident with Metropolitan Statistical Area Boundaries, as well as other place definitions and principal cities

- One (1) response in support of this guideline from a major public policy research organization.
 - 1) **Define PUMAs that are either entirely inside or entirely outside a metropolitan statistical area whenever possible.**
 - 2) **Place definitions, urban/rural status, and local knowledge should inform PUMA delineation.**
 - 3) **Approximate principal city boundaries so that researchers can use PUMA data to study differences between urban, suburban, and rural populations.**

Include other organizations within the state during the 2010 PUMA delineation process for PUMAs that include Metropolitan Statistical Areas.

- Three (1) responses in support of this guideline from Missouri, Maryland, and New Mexico.
 - 1) **Local input should be required (rather than “recommended”) by the Census Bureau for these PUMAs.**
 - 2) **Groups such as the Tribal Governments, State Departments of Transportation (DOTs), and Metropolitan Planning Organizations (MPOs) are examples of organizations that can provide appropriate information and knowledge to develop boundaries for 2010 PUMAs in metropolitan areas.**

PUMA NAMES: *NEW*

- **Optional descriptive names** provided by SDCs during PUMA delineation will be added to the **Census Bureau's public products**:
 - PUMS files
 - Demographic/housing products
 - Geographic Products, e.g., TIGER/Line Shapefiles
 - Other map products

PUMA and PUMS Products

Currently, 2010 PUMAs will be used in the publication of:

- 2010 Census **decennial PUMS** files
- **ACS** 1-year, 3-year, and 5-year **PUMS files**
- **ACS** 1-year, 3-year, and 5-year **estimates***

2010 Public Use Microdata Areas (PUMAs)

A Public Use Microdata Area (PUMA) is a statistical geographic area defined for the tabulation and dissemination of [decennial census Public Use Microdata Sample \(PUMS\) data](#), [American Community Survey \(ACS\) PUMS data](#) and [ACS period estimates](#).

2010 PUMAs (based on proposed PUMA criteria):

- Nest within states or equivalent entities
- Cover the entirety of the United States, Puerto Rico, Guam, and the U.S. Virgin Islands.
- Contain at least 100,000 persons
- Are built on counties and census tracts (PUMA delineations are subject to population thresholds and building block geography)
- Are contiguous

The 2010 proposed criteria are available for review and comment from January 3, 2011 to February 28, 2011.

- [2010 PUMA criteria and guidelines](#) [[PDF](#)] [[Text](#)]
- [Summary of proposed changes to the 2010 PUMA criteria](#)

The Census Bureau will offer the [State Data Centers \(SDCs\)](#) in each state, the District of Columbia, and Puerto Rico the opportunity to delineate 2010 PUMAs within their state or equivalent entity using Census Bureau 2010 PUMA criteria and guidelines. The Census Bureau also will ask that SDCs work with interested individuals and organizations to ensure that PUMA definitions meet the needs of a variety of data users.

The [2000 PUMA criteria and guidelines](#) are available for review.

Reference Information

- [Decennial Public Use Microdata Samples \(PUMS\)](#)
2000 and historical files that contain records for a sample of housing units with information on the characteristics of each unit and each person in it.
- [ACS Public Use Microdata Samples \(PUMS\)](#)
Annual files that contain records for a sample of housing units with information on the characteristics of each unit and each person in it.
- [History of PUMAs](#) [[PDF](#)] [[Text](#)]
Brief history of PUMAs from 1960 to 2000.
- [PUMA tutorial](#) *Coming Soon!*
Slideshow of PUMA definitions, characteristics of microdata, history of PUMAs and microdata (1960-2000), new challenges since 2000, and changes for 2010.

For more information about PUMAs, contact the Geographic Standards and Criteria Branch at geo.puma@census.gov or 301.763.3056.

Overview of 2010 PUMA Delineation Plan

- Provide delineation materials to SDC participants (i.e., MAF/TIGER Partnership Software (MTPS), Partnership Shapefiles, and user guidelines) - **early September 2011**
- PUMA MTPS training webinar - **mid-September 2011**
- PUMA MTPS demonstration during SDC annual meeting - **October 2011**
- SDCs delineate new 2010 PUMAs using the MTPS and submit updates to Census Bureau - **October - December 2011**
- Census Bureau review of PUMA submissions and insertion into the MAF/TIGER database (MTDB) - **Fall 2011 to early Spring 2012**
- Creation of geographic products containing PUMAs for use in the 2010 Census PUMS and ACS - **Summer 2012**

2010 PUMA Delineation Materials – MTPS & Partnership Shapefiles

- ❑ The PUMA MTPS is specifically designed software from the Caliper Corporation. The software provides its users with:
 - ❑ Specifically designed tools to delineate PUMAs,
 - ❑ Methods for importing various data layers for reference,
 - ❑ Criteria checks to perform their PUMA updates quickly and accurately, and
 - ❑ Tools to export updates into a standardized data format.

- ❑ Since the PUMA MTPS contains both PUMA-specific tools and criteria checks, the SDCs must use the 2010 PUMA MTPS for all PUMA delineation work.

- ❑ The PUMA MTPS will only accept and process Census Bureau-provided Partnership Shapefiles, which consist of both spatial entity and feature extracts from the Census Bureau's MAF/TIGER Database (MTDB).

2010 PUMA Delineation Materials – Web Download Page

- ❑ The Census Bureau will provide the PUMA MTPS, Partnership Shapefiles, and user guidelines to all SDC participants via the Web.

- ❑ Providing all delineation materials via the Web:
 - ❑ Eliminates the need for shipping and procuring materials for shipping, both of which are very costly,
 - ❑ Is a “green” approach for disseminating materials, and
 - ❑ Enables the Census Bureau to push out new updates of the materials quickly to our participants if an issue with the materials ever arises

- ❑ A password is required to download the MTPS from the Census Bureau Web page. Therefore, a Census Bureau representative will contact each SDC participant via the phone and provide them with a password.

2010 PUMA Delineation Materials – Web Download Page (cont.)

- ❑ The Web page will contain links to various Census Bureau programs, and it will include a link to PUMA materials. Example:

U.S. Census Bureau

People | Business | Geography | Newsroom | Subjects A to Z | Search@

ATTENTION BAS Participants: [Please read this important note about the shapefiles before proceeding!](#)

Participants Shapefile Download Page
Please select your program to begin downloading data:

- [Boundary and Annexation Survey \(BAS\)](#)
- [Public Use Microdata Area \(PUMA\)](#)
- [School District Review Program \(SDRP\)](#)
- [Traffic Analysis Zones \(TAZ\)](#)

Please contact geo.bas@census.gov to request the MAF TIGER Partnership Software (MTPS).

Source: U.S. Census Bureau
Geography Division
Geographic Areas Branch

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2010 PUMA Delineation Materials – WEB Download Page (cont.)

- When a participant clicks on the PUMA link, the system will take them to the following screen, in which a participant will have the options of downloading 1) the MTPS (requires a Census Bureau-provided password), 2) user guidelines, and 3) spatial data (i.e., Partnership Shapefiles) by state

U.S. Census Bureau

People | Business | Geography | Newsroom | Subjects A to Z

Public Use Microdata Area (PUMA) Partnership Shapefile Download Access Point:

- [Download the MAF/TIGER Partnership Software \(MTPS\)](#)
- [Download Public Use Microdata Area \(PUMA\) Documentation](#)

To download Public Use Microdata Area (PUMA) Shapefiles, please select the state or state equivalent that you would like to download shapefiles for:

Alabama	Illinois	Montana	Rhode Island
Alaska	Indiana	Nebraska	South Carolina
Arizona	Iowa	Nevada	South Dakota
Arkansas	Kansas	New Hampshire	Tennessee
California	Kentucky	New Jersey	Texas
Colorado	Louisiana	New Mexico	Utah
Connecticut	Maine	New York	Vermont
Delaware	Maryland	North Carolina	Virginia
District Of Columbia	Massachusetts	North Dakota	Washington
Florida	Michigan	Ohio	West Virginia
Georgia	Minnesota	Oklahoma	Wisconsin
Hawaii	Mississippi	Oregon	Wyoming
Idaho	Missouri	Pennsylvania	

Source: U.S. Census Bureau
Geography Division
Geographic Areas Branch

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2010 PUMA Delineation Materials – WEB Download Page (cont.)

- When a participant clicks on a state for data download, they'll have the option of either downloading data by county or whole state*

U.S. Census Bureau People | Business | Geography | Newsroom | Subjects A to Z | Search

Partnership Shapefile Batch Download Access Point:

Please select the links below to download a large zipped file of all of the shapefiles for the county range specified or select up to 5 individual counties to download the shapefiles for just those counties.

[Download all zipped shapefiles for Beaver - Rich counties](#)

[Download all zipped shapefiles for Salt Lake - Weber counties](#)

<input type="checkbox"/> Beaver County (49001)	<input type="checkbox"/> Iron County (49021)	<input type="checkbox"/> Sevier County (49041)
<input type="checkbox"/> Box Elder County (49003)	<input type="checkbox"/> Juab County (49023)	<input type="checkbox"/> Summit County (49043)
<input type="checkbox"/> Cache County (49005)	<input type="checkbox"/> Kane County (49025)	<input type="checkbox"/> Tooele County (49045)
<input type="checkbox"/> Carbon County (49007)	<input type="checkbox"/> Millard County (49027)	<input type="checkbox"/> Uintah County (49047)
<input type="checkbox"/> Daggett County (49009)	<input type="checkbox"/> Morgan County (49029)	<input type="checkbox"/> Utah County (49049)
<input type="checkbox"/> Davis County (49011)	<input type="checkbox"/> Piute County (49031)	<input type="checkbox"/> Wasatch County (49051)
<input type="checkbox"/> Duchesne County (49013)	<input type="checkbox"/> Rich County (49033)	<input type="checkbox"/> Washington County (49053)
<input type="checkbox"/> Emery County (49015)	<input type="checkbox"/> Salt Lake County (49035)	<input type="checkbox"/> Wayne County (49055)
<input type="checkbox"/> Garfield County (49017)	<input type="checkbox"/> San Juan County (49037)	<input type="checkbox"/> Weber County (49057)
<input type="checkbox"/> Grand County (49019)	<input type="checkbox"/> Sanpete County (49039)	

Source: U.S. Census Bureau
Geography Division
Geographic Areas Branch

[Privacy Policy](#) | [2010 Census](#) | [Data Tools](#) | [Information Quality](#) | [Product Catalog](#) | [Feedback](#)

* Due to internal data constraints... when the data size of a ZIP file reaches 600 – 700 MB, we have to create two or more ZIP files

2010 PUMA Delineation - MTPS Training

- ❑ The Census Bureau is planning to provide two training sessions to SDC PUMA participants:
 1. WEBINAR – **Mid- September**
 2. Demonstration and MTPS Q & A Session – **Annual meeting in October 2011**

2010 PUMA Delineation – SDC Delineation and Census Bureau Processing

- ❑ The Census Bureau is giving the SDCs three months to review, update, and submit their new PUMA plans to the Census Bureau (i.e., October – December 2011)
- ❑ The Census Bureau will review and upload SDC-provided PUMA plans from the MTPS starting in early Fall 2011, and the review will continue until early Spring 2011.
- ❑ Census Bureau staff will thoroughly review all submissions and contact a SDC if there are any criteria or other delineation-related issues.

Discussion Topics

Guidelines for standard PUMA name conventions

- Recommendations for PUMAs that cover a large area (i.e. rural areas)
- Directional placement
- Standardized usage
- Other concerns?

Questions?

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