

# 2020 Census Count Review (CRO)

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**Coverage and Evaluations Branch, DCMD**

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# Purpose

The Count Review Operation *enhances the accuracy of the 2020 Census* through:

- Implementing an efficient and equitable process to identify and incorporate housing units (HUs) that are missing from the Census Master Address File (MAF).
- Identifying and including or correcting large group quarters (GQs), such as college/university student housing, that are missing from the MAF or geographically misallocated.
- Positioning unresolved cases for a smooth transition to the Count Question Resolution (CQR) operation.
- Evaluating census responses and subsequent data files at multiple levels of geography for reasonableness and verifying that edits have been properly applied.

# Key Operational Phases

- 1) FSCPE Housing Unit and Group Quarters Address Review
- 2) Census Count and File Review (CCFR)

# Phase 1 Event 1: HU and GQ Address Review

**Timing: January and February 2020**

- Address points reviewed by state participants using Geographic Update Partnership Software (GUPS).
- Look for clusters of missing HUs (25+, city-style address) or individual missing/misallocated in-scope GQs.
  - In-scope GQs: Nursing/skilled nursing facilities, military barracks, adult correctional facilities, college/university student housing, and worker's group living quarters and job corps centers.
- All state-identified cases reviewed by CRO staff before approval.
- Approved address cases sent to NRFU (HUs) or GQE (GQs).

## Event 1 – Address Records Added to Enumeration



2020CENSUS.GOV

*Case counts from CROPCS; GQ and HU address counts from GEO, derived from approved case files. Information provided by Geography Division*

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# Phase 1 Event 2: Post-Enumeration GQ Review

## Re-planned Timing: September 23 – 30, 2020

- State/FSCPE reps reviewed GQs in-scope with enumeration status not enumerated “cannot locate in block” (D-1) for the following GQ types:
  - Adult Correctional Facilities (103-105), Nursing/Skilled Nursing Facilities (301), College/University Student Housing (501-502), Workers' Living Quarters and Job Corp Centers (901) and Unknown (999)
- For GQs that were not enumerated, the state’s participant had the opportunity to provide new contact information to help Census enumerate the facility during Late GQ Enumeration.

# Phase 1 Event 2: Post-Enumeration GQ Review (cont.)

- State/FSCPE reps received an Excel file with the in-scope GQs not enumerated.
- The files were sent and received back to Census using Kiteworks.
- HQ staff (DCMD, ACSO, POP, FLD, CODS) volunteered to enter the new information provided by the states in the CRO module of the GQPCS.
- The information entered in GQPCS was approved by the Census Liaisons.
  - To be approved the case needed to include at least one of the following:
    - New contact name (primary or secondary)
    - New contact number (primary or secondary)
    - New email (primary or secondary)

# Phase 1 Event 2: Post-Enumeration GQ Review (cont.)

- Files were created for 48 states
- 46 states received files. Two states no longer had special sworn status participants
- 39 of the 46 states submitted new contact information that can be used for late GQE.

# Phase 1 Event 2: Post-Enumeration GQ Review (cont.)

Group Quarters	Number	Percent
Sent for state review	1781	-
Proposed for revisit by state	569	32%
Approved by Census Liaison (Late GQE cases)	497	28%

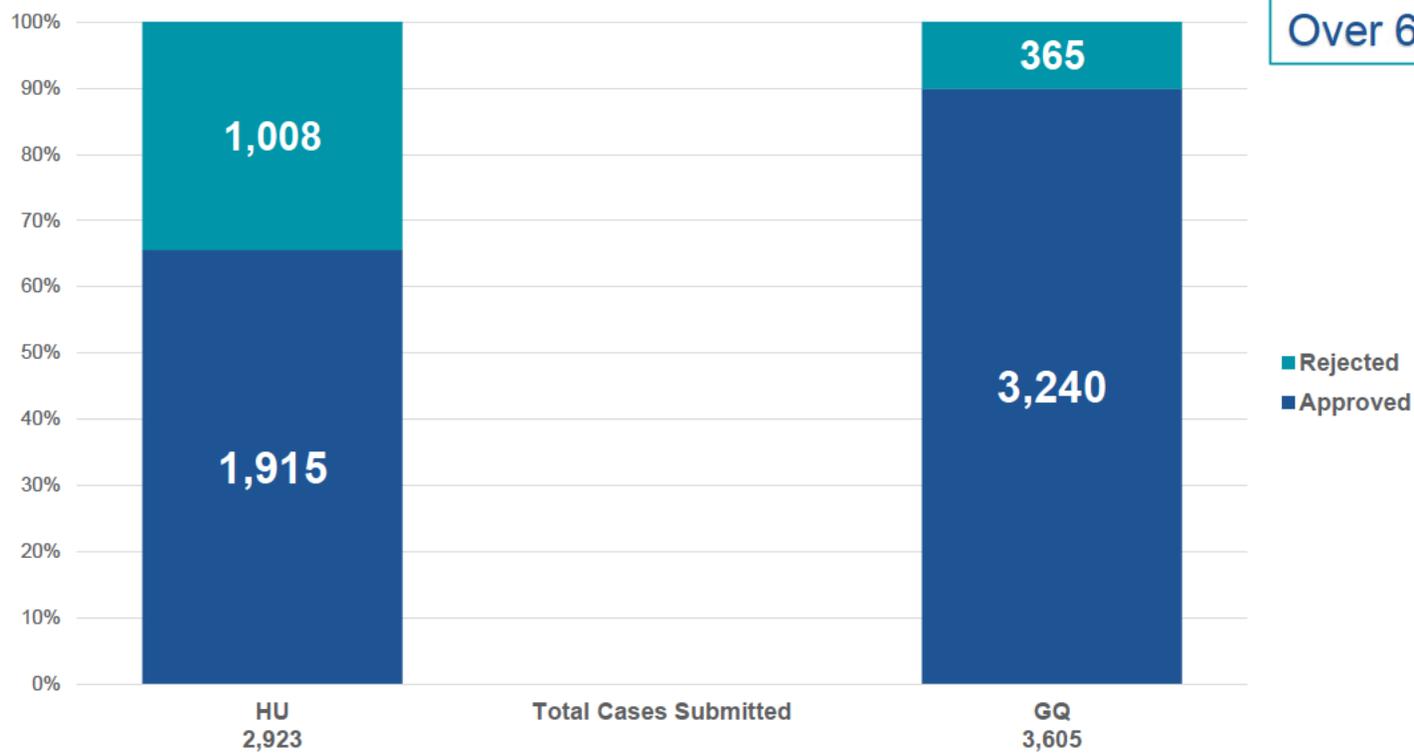
Of the 497 cases sent to Late GQE, 183 were college/university student housing facilities

HQ subject matter experts identified 102 military barracks to send to Late GQE.

Total workload for Late GQE: **599**

# Supplemental Slides

# FSCPE Address Review Event 1 – Cases Submitted



Over 6,500 cases!!

2020CENSUS.GOV

Case counts from CROPSC; GQ and HU address counts from GEO, derived from approved case files.

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# Count Review Operation (CRO) Background

- Collaborative effort between Population Division (POP) and Decennial Census Management Division (DCMD).
- Two separate programs were conducted in 2010:
  - Count Review Program (now Phase 1, Federal-State Cooperative Population Estimates (FSCPE) Housing Unit and Group Quarters Address Review)
  - Traditional Count Review (now Phase 2, Census Count and File Review)
- Recognizing importance of these two programs, decision made to combine into Count Review Operation (CRO) and fully integrate into 2020 Census operations.
- Numerous operational innovations for 2020.

# Count Review Operation (CRO) Activities

- **FSCPE address submission:** FSCPE reps provide HU and GQ addresses from their state; the state-submitted addresses are compared against the MAF
  - *Complete:* June 3 – September 15, 2019
- **Geographic Update Partnership Software (GUPS) Training for reviewers (HQ)**
  - *Complete:* September 26-27, 2019
- **Census Liaisons Training**
  - *Orientation Complete:* October 15, 2019
  - *Complete:* December 4 and 11, 2019
- **Production Readiness Review**
  - *Complete:* October 4, 2019

# Count Review Operation (CRO) Activities

- **1st Review – HU and GQ Address Reviews (January 13 – February 6, 2020)**
  - HU Review: Identifies cluster of addresses missing from the MAF
    - *Complete:* Remote: January 13 – February 6, 2020
    - *Complete:* On Site: January 27 – 31, 2020
  - GQ Review: Identifies large GQs missing or misallocated in MAF
    - *Complete:* Remote: January 13 – 31, 2020
    - *Complete:* On Site: January 27 – 31, 2020

# Count Review Operation (CRO) Activities

- **Census Review, Analysis, and Visualization Application (CRAVA) development**
  - *Complete:* February 4– May 20, 2019
- **CRAVA internal testing**
  - *Complete:* May 20 – August 19, 2019
- **CRAVA scaling**
  - *Complete:* December 17, 2019 – January 31, 2020
- **CRAVA external testing**
  - *Complete:* November 12 – August, 2020
- **CRAVA User guide development**
  - *Complete:* August 19, 2019 – July 7, 2020

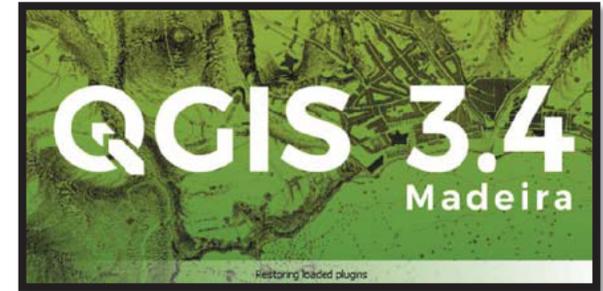
# Count Review Operation (CRO) Soft Launches and Production Milestones

Activity	Start	Finish
FSCPE contracts		1/10/2020
Receive FSCPE address Files	6/3/2019	9/15/2019
Conduct FSCPE GUPS Training	9/26/2019	9/27/2019
Conduct Census Liaison Training	12/02/2019	12/14/2019
Conduct Title 13 Webinar		12/05/2019
CRO Soft Launch		1/10/2020
FSCPE GQ Address Review (remote)	1/13/2020	1/31/2020
FSCPE HU Address Review (remote)	1/13/2020	2/06/2020
FSCPE HU and GQ Address Review (on site)	1/27/2020	1/31/2020

# Systems – Census Count and Files Review (CCFR)

- **CRAVA development and migration completed**
  - Training will be conducted next week.
  - POP will use the application to review all the files including DRF1.

# Geographic Update Partnership Software (GUPS)



- Census Bureau Geography Division (GEO) software developed for partnership programs.
- Built on QGIS.
  - Free and open source geographic information system (GIS) software.
- Custom build developed by GEO for CRO.
- Will be used during Event 1 to identify missing GQ/HU addresses or misallocated GQs.

## GUPS has a typical GIS/mapping interface

The screenshot displays the GUPS GIS application window. The main map area shows a map of Kent County, Ohio, with a blue shaded region labeled "Kent (10001)". The interface includes a menu bar, a toolbar, and a Layers panel on the left. Below the map is a table titled "HU Count List by County".

County	County Name	Number of unmatched city-style HUs for State	Number of matched city-style HUs for State	Total number of HUs for State	Total number of unmatched city-style HUs for Census	Total number of city-style HUs for Census	Difference between number of unmatched city-style HUs for State and Census	Difference between total number of HUs for State and Census
101	Kent County	50	0	50	2512			

**Data shown are publicly available or simulated**

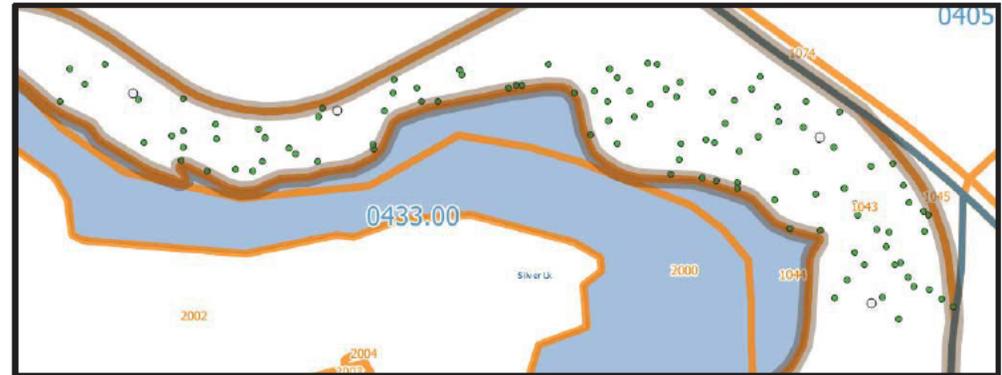
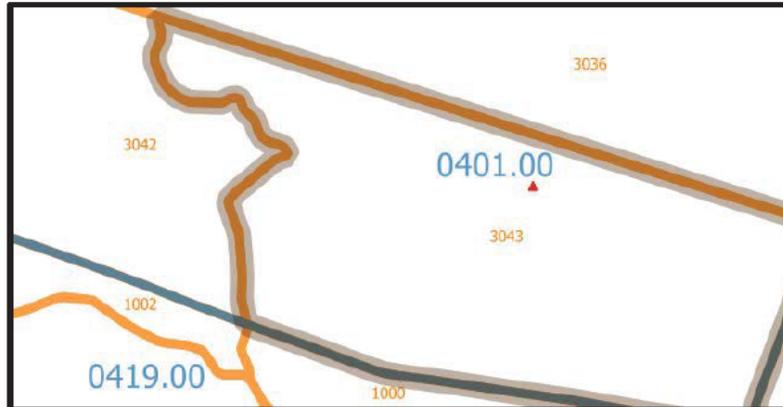
## Tools are available to guide review

HU Count List by Block

County	Tract	Block	Number of unmatched city-style HUs for State	Number city-style
001	043300	1043	50	
001	041000	1062	0	
001	040100	3042	0	
001	041801	2034	0	
001	041900	2031	0	

[HU Count List by County](#)
[HU Count List by Tract](#)
[HU Count List by Block](#)

## Identify missing HUs or missing/misallocated GQs



## Interactively review cases

HU Create Case

Total Addresses In Case: 122    Unmatched State Addresses: 61

Case ID	Source	Match Address Flag	Address Number	Street Name	Unit	Zip Code	2010 State	2010 Count
10-HU00001_thomp645	S		553	Blue Fin HWY		31402	10	001
10-HU00001_thomp645	S		1726	Blue Fin HWY	B	31406	10	001
10-HU00001_thomp645	S		1726	Blue Fin HWY	S	31406	10	001
10-HU00001_thomp645	S		1728	Blue Fin HWY	D	31406	10	001
10-HU00001_thomp645	S		1726	Blue Fin HWY	A	31406	10	001
10-HU00001_thomp645	S		2247	Blue Fin HWY		31404	10	001

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### EDIT GQ - 22007641 - Mr. McGregor's Youth Rehabilitation Center (EDIT)

GQ Update

Scheduled Visit:

**GQ Response**

**Contact Information**

Name: Foley Fokerson  
 Phone Number: (301) 7639033  
 Phone Extension:  
 Title:  
 Business Email:

**GQ Information**

GQ Name: Mr. McGregor's Youth Rehabilitation Center  
 Facility Name:  
 Address Number: 4600  
 Loc Street Name: Silver Hill Road  
 Loc Apt/Unit:  
**Location Description:**  
 Loc City: Suitland  
 Loc County: 033 - Prince George's County  
 Loc State: 24 - MD  
 Loc ZIP: 20746  
 Loc ZIP+4 Code:  
 Building Name:  
 Building Number:  
 BCU State:  
 BCU County:  
 BCU Tract:  
 BCU ID:  
 GQ Type: 901  
 Max Pop: 100  
 MAID:  
 Longitude:  
 Latitude:  
 AIAHHCE:  
 ACO:  
 Letter Sent:  
 UAA Reason:

Contact Name: Foley Fokerson  
 Contact Phone Number: 2017639033  
 Contact Phone Ext:  
 Contact Title:  
 Contact Business Email:  
 2nd Contact Name:  
 2nd Contact Phone Number:  
 2nd Contact Phone Ext:  
 2nd Contact Title:  
 2nd Business Email:  
 GQ Name: Mr. McGregor's Youth Rehabilitation Center  
 Facility Name:  
 Loc Street Name: Silver Hill Road  
 GQ Type: 901 - Workers Group Living Quarters and J  
 Max Pop: 100  
 Survivor ID:

Date: mm/dd/yyyy  
 Time:  
 User ID: breez003  
 Mgmt Attention: N

Mgmt Attention Notes:  
 Enum Method:  
 Eat Near Van:  
 Expected Pop:  
 Pop Sex:  
 Roster Available:  
 Other Languages:  
 GQ Languages: English  
 Enum Status:  
 Enum Fail Reason:  
 Conversion:  
 E-2 Eligible:  
 Revisit Requested:  
 Submit for Approval:  
 Date:

GQ Operating:  
 Status Code: Assigned  
 OS Reason:  
 Method Recv Food:  
 GQ Open:  
 GQ Closed:  
 Arrival Time:  
 Ending Time:  
 Largest Meal Served:

Interaction with Count Review Participant:

Specific Instructions: N  
 Date Completed:  
 Notes:

[Address History](#)
[Submit for approval](#)
[Attach Documentation](#)
[Save](#)
[Clear](#)
[Close](#)

# Phase 1 Event 2: Post-Enumeration GQ Review

## Timing: September 2020

- State participants will use GQ Production Control System (GQPCS) to review results of GQ Enumeration (GQE) and identify additional new or non-enumerated in-scope GQs for revisit.
- All state-identified cases reviewed by CRO staff before approval.
- Approved cases sent to Late GQE.

# Phase 2: Census Count and File Review (CCFR)

**Timing: Late 2020/Early 2021**

- Objective is to identify processing errors and determine how reasonable the results of 2020 Census data collection efforts appear for several levels of geography.
- Comparing multiple sets of **benchmark data** with:
  - Decennial Response File (DRF-2) – Primary selection algorithm applied
  - Census Unedited File (CUF) – Used for apportionment; count imputation applied
  - Census Edited File (CEF) – Edits and characteristic imputation applied
  - Microdata Detail File (MDF) – Disclosure avoidance applied (differential privacy); basis for non-apportionment public data products
- Benchmark data examples: 2010 Census, American Community Survey (ACS), intercensal population estimates.

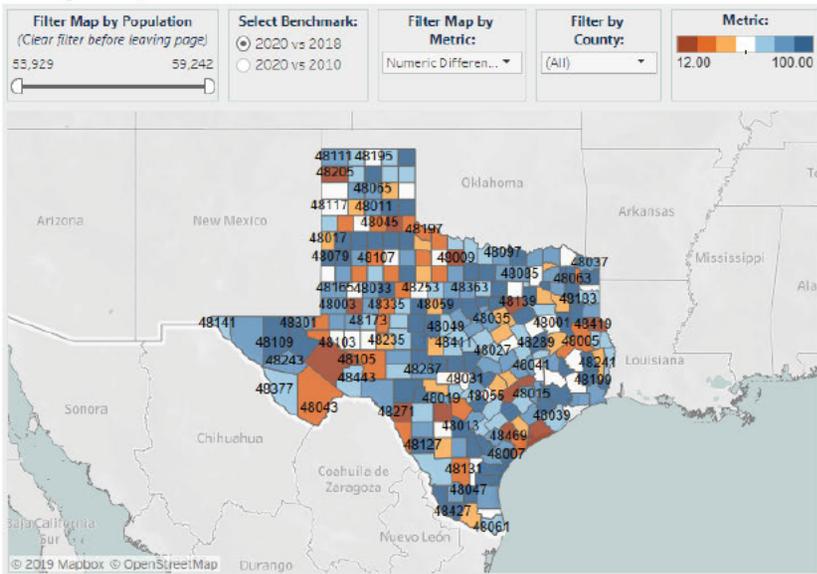
# Census Count and File Review (CCFR)

- Additionally, CCFR...
  - Verifies that each person and housing unit on the CEF has valid values in the person and housing items.
  - Ensures consistencies among characteristics.
  - Checks that all issues identified in the DRF-2, CUF, and CEF reviews were addressed.

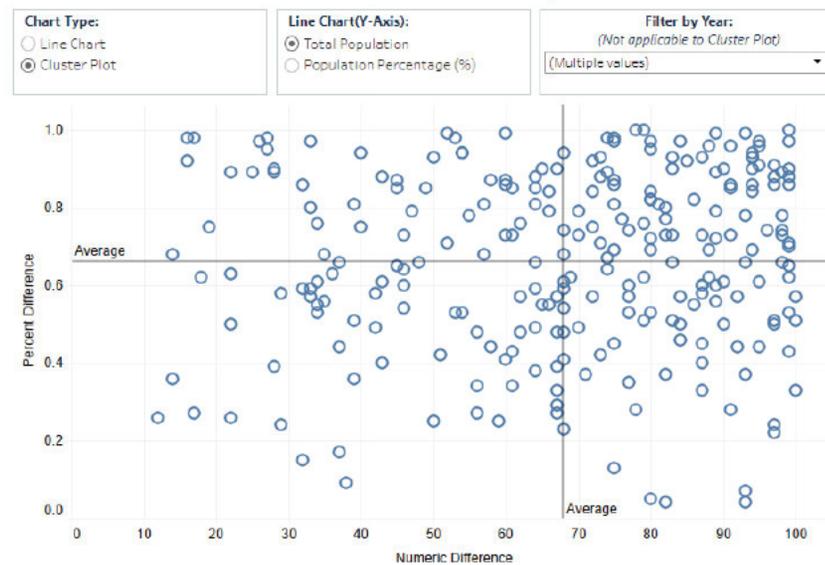
# CRAVA

- Census Review, Analysis, and Visualization Application (CRAVA).
- Data visualization dashboard with data available at multiple levels of geography to inform analysts of potential anomalies.
- Charts, maps, and data tables available.
- Developed using Tableau software (server-based).

County ID: All, TEXAS



Numeric Difference vs. Percent Difference, 2020 vs 2018



ID	County	Year	Total Population	Population Percentage (%)	Numeric Difference: 2020-2010	Numeric Difference: 2020-2018	Percent Difference: 2020-2010	Percent Difference: 2020-2018	Loss Function: 2020-2010	Loss Function: 2020-2018	Distributional Difference: 2020-2010	Distributional Difference: 2020-2018	Composite Rank
48000	ALL COUNTIES	2010	53,898	0.80	38	98	1.00	0.98	0.72	0.78	78.14	96.14	28,230
48000	ALL COUNTIES	2018	53,906	0.56	64	53	0.99	0.79	0.76	0.31	86.30	39.79	28,238
48000	ALL COUNTIES	2020	53,908	0.71	31	34	0.11	0.76	0.46	0.79	90.16	59.27	28,239
48001	Anderson County	2010	53,919	0.84	90	96	0.94	0.88	0.85	0.93	88.76	82.38	28,241
48001	Anderson County	2018	53,927	0.86	3	60	0.70	0.86	0.57	0.39	58.40	88.25	28,249
48001	Anderson County	2020	53,929	0.91	93	61	0.54	0.73	0.93	0.75	97.43	89.16	28,250
48003	Andrews County	2010	53,940	0.71	88	79	0.66	0.77	0.81	0.91	73.24	94.54	28,252
48003	Andrews County	2018	53,948	0.20	75	75	0.84	0.90	0.52	0.28	32.36	39.91	28,260
48003	Andrews County	2020	53,950	0.95	18	80	0.53	0.05	0.65	0.93	88.10	66.13	28,261
48005	Angelina County	2010	53,961	0.92	48	94	0.77	0.62	0.82	0.87	88.21	88.15	28,263
48005	Angelina County	2018	53,969	0.89	13	83	0.79	0.32	0.47	0.58	30.18	90.47	28,271
48005	Angelina County	2020	53,971	0.94	66	32	0.07	0.15	0.74	0.25	62.92	26.18	28,271
48007	Aransas County	2010									47.72	45.84	28,273
48007	Aransas County	2018									97.05	86.97	28,282
48007	Aransas County	2020									83.09	81.56	28,282
48000	Archer County	2010	54,003	0.91	64	8	0.34	0.74	0.69	0.43	73.01	88.16	28,284

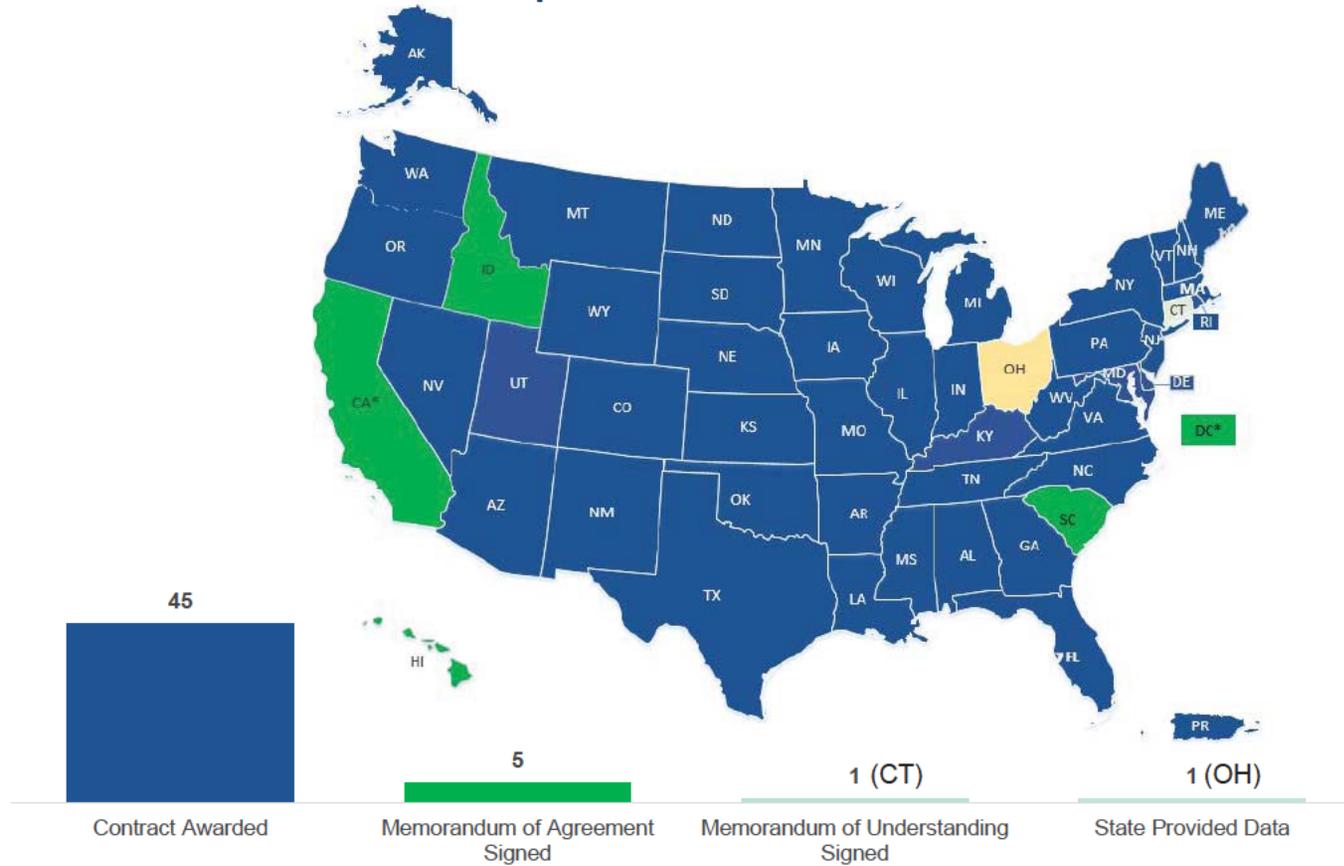
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# FSCPE Address Review – Event 1

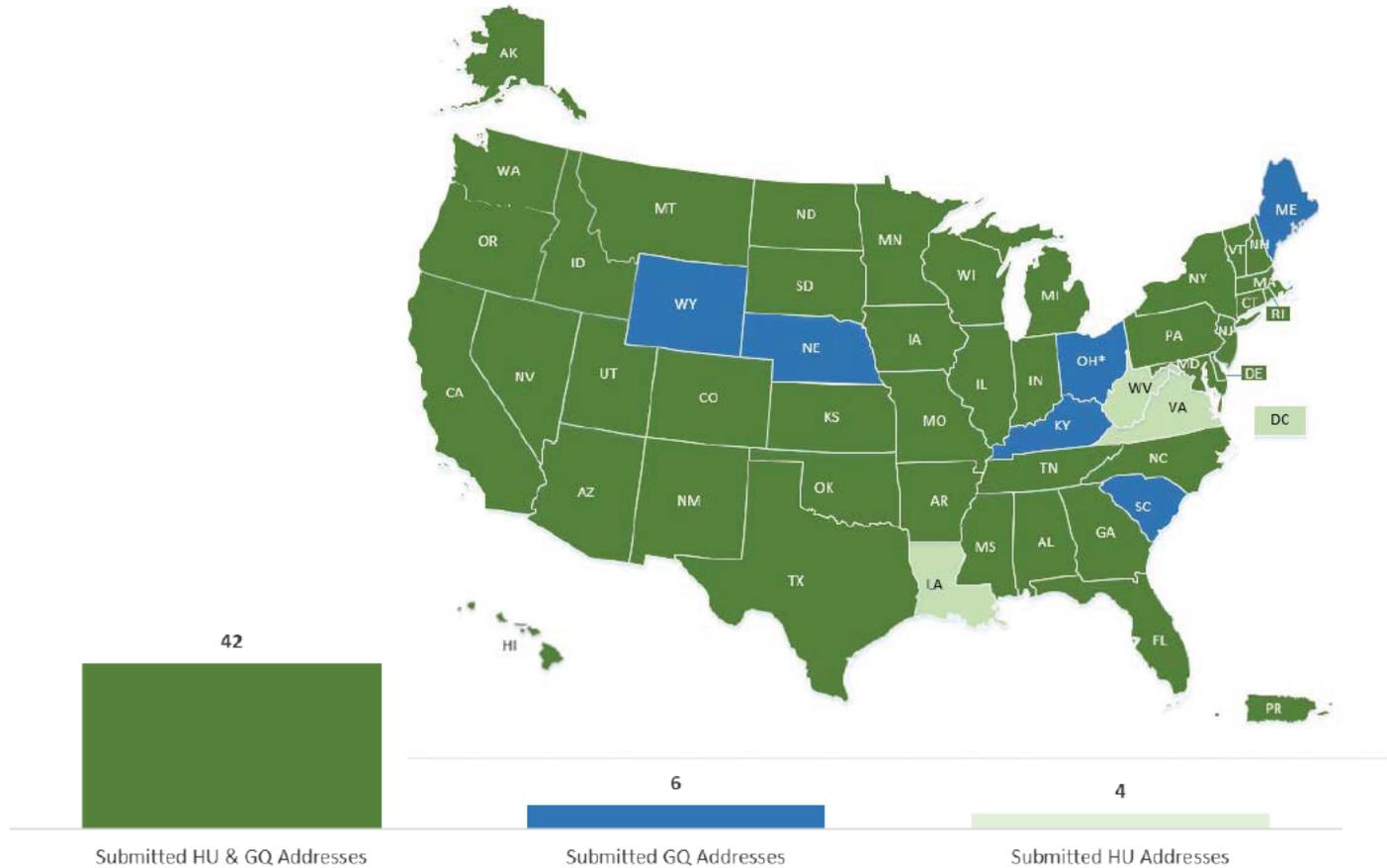
# Periodic Performance Management Reports

## 2020 Census: Count Review Participation



# Periodic Performance Management Reports

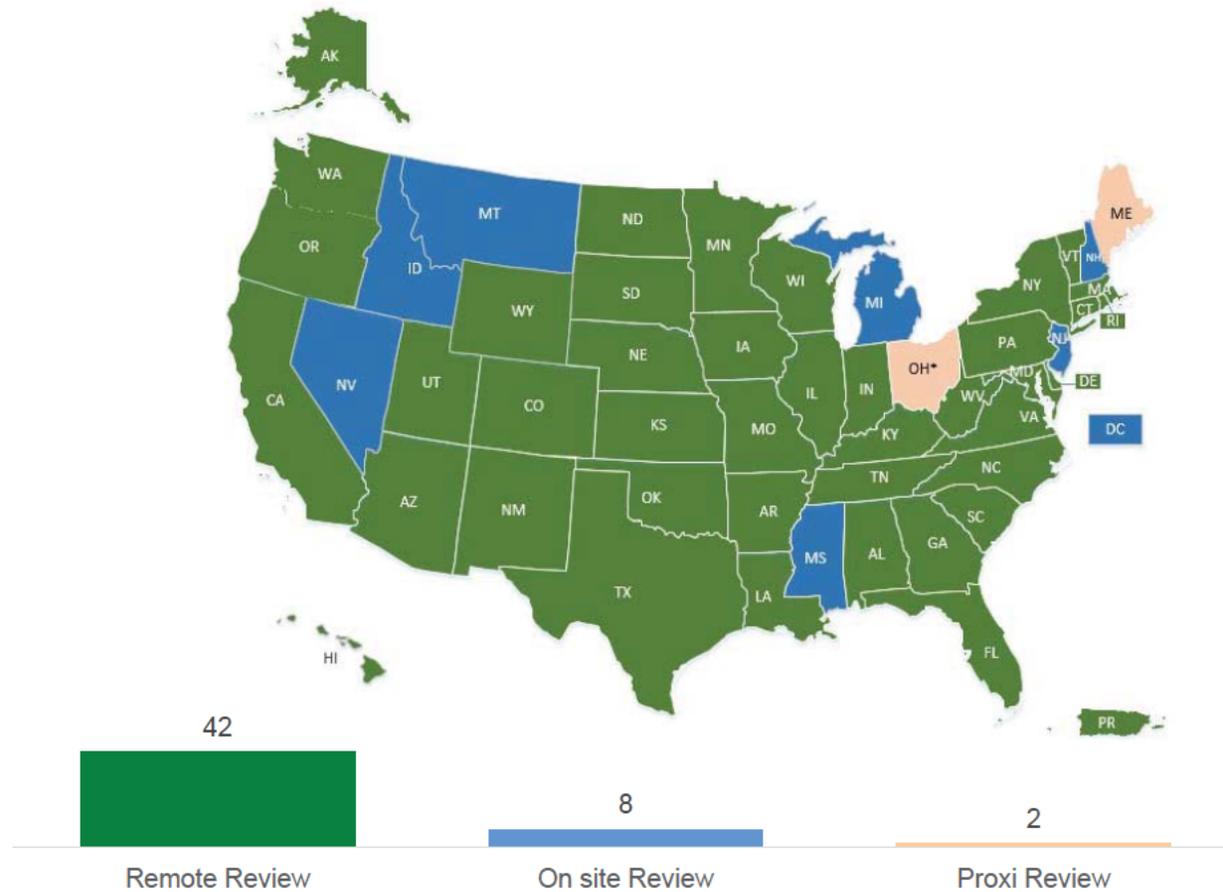
## 2020 Census: **Count Review Data Submission**



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## 2020 Census: Count Review Event 1 Remote / On site Participation



Source: 2020 Count Review Internal Participation Tracking Sheet

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# Review Issues

- **Technical issues:**

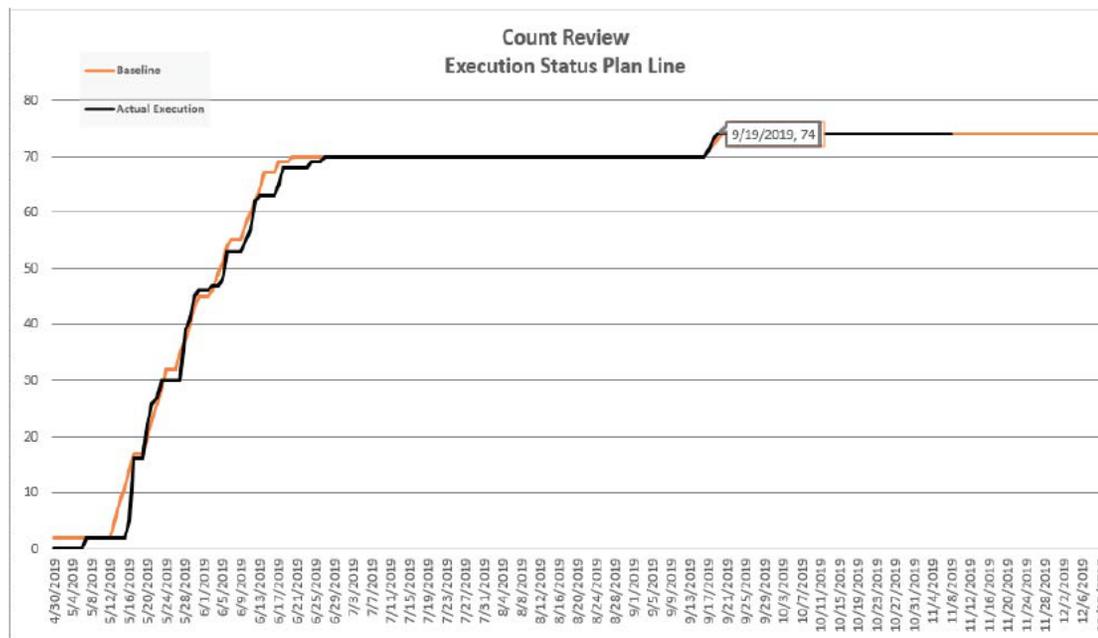
- GUPS error messages, extended data loading times, Virtual Desktop access.
- CRO Team developed workarounds for all technical issues, so reviewer downtime was minimized.

- **Communications and training:**

- Users encompassed a range of software comfort and familiarity with geospatial software.
- Some users did not follow guidance in reference manuals or email or refer back to training materials.
- Some users also did not fully document cases submitted.

# Count Review Operation (CRO) PRR Open Item tracking

- End to end testing scheduled for 11/20/2019 – 12/12/2019



# Items for Leadership Attention or Risk?