

**Department of Commerce**  
**U.S. Census Bureau**  
**OMB Information Collection Request**  
**Report of Building or Zoning Permits Issued**  
**for New Privately-Owned Housing Units (C-404)**  
**OMB Control Number 0607-0094**

**Part B - Collections of Information Employing Statistical Methods**

**1. Universe and Respondent Selection**

The target population for the survey is all permit-issuing jurisdictions in the United States. The universe and monthly sample are historically updated every 10 years; a new universe and sample was defined in 2013 for use beginning in 2014. A1 representative monthly sample was selected in 2013, however, changes in coverage have resulted in a sample size of about 8,353 permit-issuing places from a universe of about 20,100 places. This sample will be used to provide monthly estimates of construction authorized by building permits through December 2021. The average monthly unit response rate for 2020 was approximately 67 percent and the monthly total quantity response rate was approximately 79 percent.

An annual survey of all permit-issuing places in the universe was also conducted. Our overall unit response rate for 2020 (including both monthly and annual reporters) was about 80 percent. The overall total quantity response rate for 2020 (for both monthly and annual reporters) was about 90%.

Beginning in January 2022, the current monthly sample will be replaced by a new cutoff sample that will include 8,613 permit-issuing places in the monthly data collection. These places were selected for monthly collection because their 3-year average activity based on 2017-2019 annual data was more than 5 units.

The remaining 11,667 places below the activity cutoff will be included in the monthly estimates, with imputation, but only canvassed annually.

The design of the cutoff sample is intended to include the jurisdictions that authorize more units. The 8,613 places that authorize more than 5 units on average annually made up more than 99% of the total units authorized in 2019. The 11,667 jurisdictions where monthly collection will not be attempted only represent 1% of total units authorized during that same period. Over 4,400 of the 11,667 jurisdictions did not authorize any units over the three-year span.

At the end of the year, non-respondents to the monthly survey will also be asked to provide any missing data. The data from the annual respondents are combined with the data from the monthly respondents to produce an annual total. The response rate goal for the conclusion of the annual survey is 80 percent or above,

which aligns with the response rate goal for the Census Bureau.

Following each annual survey (April), the 3-year average activity will be recalculated for all active places in the universe and used to identify places that either exceed the cutoff to be included in the monthly survey or no longer meet the criteria to be included in the monthly survey.

## **2. Procedures for Collecting Information**

Monthly estimates will be produced by tabulating data reported by each permit-issuing place and imputing data for places not included in the monthly collection and/or those places that fail to respond for that month. This will result in complete coverage of the universe for the monthly data each month. The weight for all places for monthly and annual estimates will be one. Prior to January 2021, the monthly survey was based on a representative sample with weighted places selected to represent non-selected places. This resulted in complete total estimates at the state, region and total U.S. levels, but incomplete coverage at the county and local levels on a monthly basis.

When a report is not received, missing housing unit data are either obtained by using permits listed for Census Bureau's Survey of Construction (SOC) or are imputed. Data from the SOC are available for only about 900 permit offices for which Census Bureau field representatives list and sample the permits to be followed up to determine when the units are started, completed, and sold. If data are not reported and are not available from SOC, estimates are imputed based on the assumption that the ratio of authorizations for the current time period to the prior year total is the same for reporting and nonreporting jurisdictions in that Census Region. In addition, data has been purchased from 3<sup>rd</sup> party data vendors that collect similar information. While the data quality and consistency of the data is still being evaluated, we anticipate being able to use this new source of data as an alternative source to reduce collection costs and respondent burden.

Since all active permit-issuing places are included in estimation, there is no sampling error. However, since we intend to impute permit activity for a minimum of about 11,700 places each month plus any nonrespondents in the monthly survey group we need a measure of non-sampling error. Based on survey months 201904 to 202003 the monthly unit response rate for places above the cutoff is about 70%. A simulation study was conducted to measure the non-response error attributable to imputation for our current and future design. Missing data was simulated at random for a subset of monthly respondents and then imputed using our current imputation methodology. Totals by region were then determined for the original respondent data and the imputed data and the root mean square error (RMSE) of 100 simulations was computed and then averaged over 12 months. The future cutoff sample design showed a small decrease in imputation error for three out of four Census regions, and at the national level when compared to the current design. In the future design, the

average error due to imputation was estimated to be 2.2% nationally. The Census regions have average error due to imputation of 13.2% for the Northeast, 4.9% for the Midwest, 2.8% for the South, and 3.7% for the West.

### **3. Methods to Maximize Responses**

1We send letters (Attachments D through G) and additional survey forms as part of the annual survey to delinquent monthly and annual respondents. We also periodically contact non-respondents by telephone or email to solicit their participation, and we contact higher-level government agencies to request responses from their jurisdictions. We also ask State Data Centers and members of the Federal-State Cooperative for Population Estimates for their assistance with name and address updates as well as help obtaining data for prior time periods for places that are currently delinquent to the survey. We permit respondents to provide responses in any format which best suits their needs, including: internet, fax, phone call, proprietary format files, etc.. Additionally, we provide a web site with responses to Frequently Asked Questions to help facilitate reporting.

### **4. Tests of Procedures or Methods**

1We completed an evaluation of the BPS as required by the Statistical Policy Directive on Compilation, Release, and Evaluation of Principal Federal Economic Indicators; this evaluation was submitted to the OMB in September 2017. This submission includes a change in sample design and estimation methodology from the previous survey.

A simulation study was conducted to measure the non-response error attributable to imputation for our current sample and future cutoff sample design. We also examined the Total Quantity Response Rates(TQRRs) at the state and county level for both designs, using the reporting status from 2019 annual survey. We will continue to test and adapt our imputation methods to mitigate the effects of non-response error on our estimates.

All changes to methodology or processing systems are tested. A redesigned interactive survey processing system was put into production in June 2018. Testing of the system included a documented test plan, numerous test cases, and fully documented testing results. Tests were performed by analysts at headquarters and the National Processing Center (NPC).

In addition, we have conducted usability testing of the online questionnaire with a sample of respondents before offering the online questionnaire to all respondents and documented the results of the testing.

### **5. Contacts for Statistical Aspects and Data Collection**

The Economic Indicators Division plans and coordinates the survey. This includes the design of the reporting forms, sample selection, instructions for collecting and editing the information, preparation of table formats, and tabulation and release of the data.

The contact person for questions relating to the statistical aspects of the survey is Ms. Bonnie Kegan, Chief of the Construction Surveys Statistical Methods Branch in the Economic Statistical Methods Division. She can be reached on (301) 763-7639.

The contact person for questions relating to the collection and analysis of the data is Mr. Aidan Smith, Assistant Division Chief for Construction Indicator Programs in the Economic Indicators Division. He can be reached on (301) 763-2972.

Attachments:

- A. Form C-404, "Report of Building or Zoning Permits Issued for New Privately-Owned Housing Units"
- B. Letter of support from the Bureau of Economic Analysis
- C. Selected Screenshots from Centurion Instrument
- D. C-404-L1 (PS) – Initial letter for annual respondents
- E. C-404-L2 (PS) – Letter for monthly respondents not reporting 5 or more months of the year
- F. C-404-L3 (PS) – Follow-up letter for monthly respondents not reporting 1 to 4 months of the year
- G. C-404-L4 – Follow-up letter for annual non-respondents
- H. Title 13 Relevant Sections