

# LUCA participation will provide significant benefits for Oregon cities, counties, tribes and the State

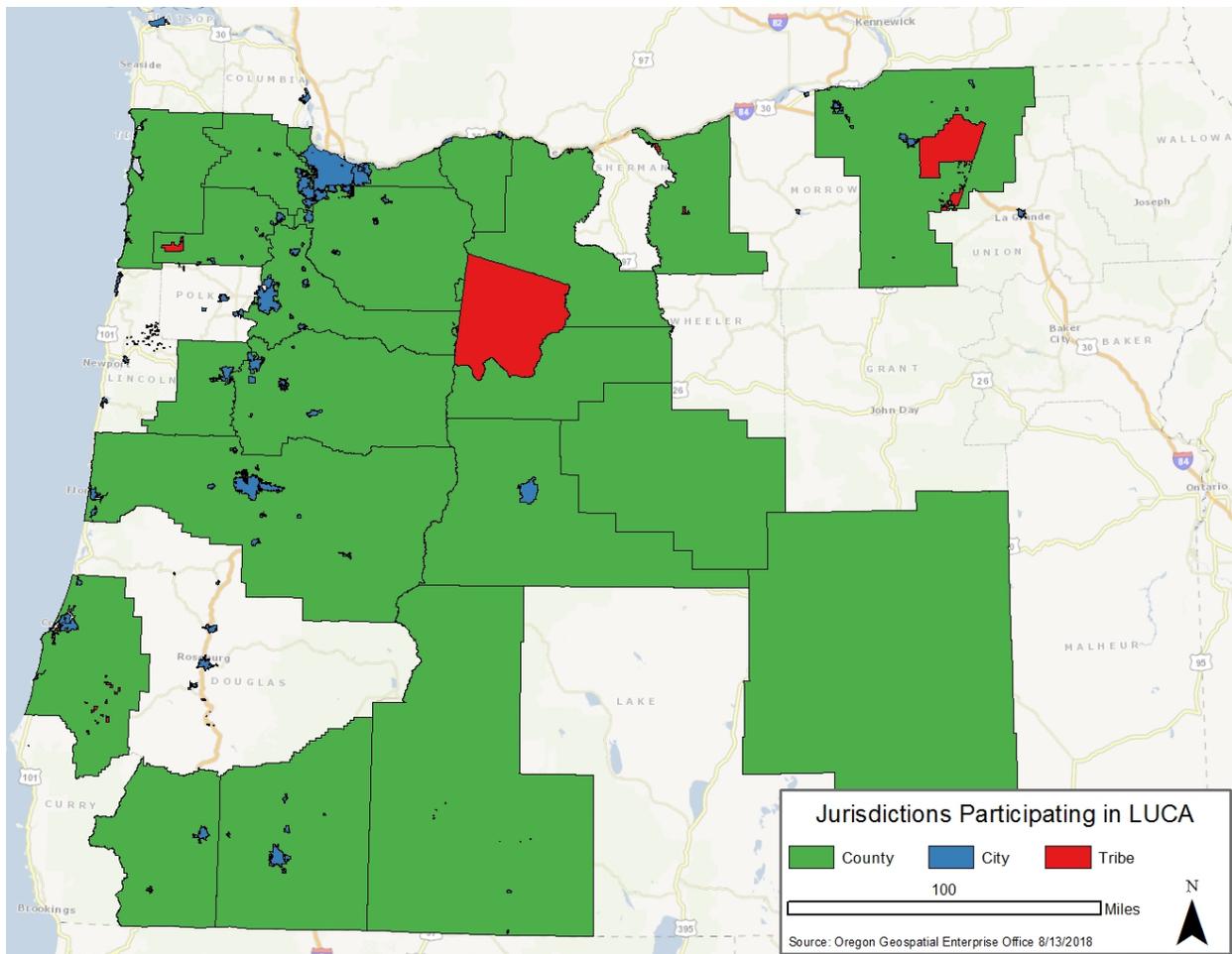
*“In those days, Caesar Augustus issued a decree that a census should be taken of the entire Roman world. And everyone went to their own town to register.” (Luke 2)*

Fast forward 18 centuries and the [US Constitution](#) states: “*The actual Enumeration [of every free person] shall be made...every subsequent Term of ten Years, in such Manner as they shall by Law direct.*” Besides being mandated by law, an accurate census count is important for every local jurisdiction and state. The results of the decennial census are used to apportion Congressional Representatives (and indirectly Presidential Electors) to the individual states. The results are also used to allocate various grants, funding, and other Federal program benefits to states, tribes, and local jurisdictions. Failure to count every person in Oregon during the 2020 Census could have an impact of billions of dollars for the state over 10 years.

An accurate census is a top priority for Oregon. Earlier this year, Oregon Governor Kate Brown appointed Cy Smith, State Geospatial Information Officer (GIO), and the Geospatial Enterprise Office (GEO) in the Office of the State Chief Information Officer, to act as the official liaison for the statewide evaluation of the Census address database. This was the first time the U.S. Census Bureau has authorized states to participate in this evaluation, called the [Local Update of Census Addresses \(LUCA\)](#). The LUCA program described in this article is an important foundation to ensure a complete, accurate census count in 2020.

The Local Update of Census Addresses is a collaborative program between the [United States Census Bureau](#) and local governments. It provides the only opportunity for local governments, and this year state governments, to provide input to the Census Bureau to improve the addressing information the Bureau uses to canvas for the 2020 decennial census. The State of Oregon participated in LUCA to help ensure that every person in the state is counted, and we know the State’s addressing data can improve the accuracy of the data the Bureau will use.

Participation in LUCA requires significant dedication of time and resources. For that reason, only 127 of Oregon’s 287 public bodies were able to commit to participating in the LUCA program. But because the State was allowed to participate, GEO was able to evaluate Census addresses in all jurisdictions, including the ones that were not able to participate directly. The State shared its evaluation with all the jurisdictions that participated in LUCA, as a resource for them to use in comparison to their own evaluation. Many of those jurisdictions responded positively, indicating that the State’s evaluation was helpful as they conducted their own. But for the jurisdictions that were not able to participate in LUCA, the State’s evaluation provided much needed assistance to the Census Bureau to ensure they have a complete list of addresses to use for the 2020 Census in Oregon.



The LUCA program starts a couple of years before the census is actually conducted, in order to give the Census Bureau time to review and incorporate the local feedback into their data. Earlier this year each jurisdiction participating in LUCA was sent the Census Bureau's address list. GEO received the statewide Census address database a couple weeks before any of the individual participant jurisdictions, since the statewide evaluation takes considerably longer than an evaluation for a single jurisdiction. This also gave GEO time to complete our evaluation and get it in the hands of the individual jurisdictions in advance of their scheduled completion dates.

Under [Title 13](#) of the United States Code, the Census Bureau is required to maintain the confidentiality of the information it collects, including its address list. This confidentiality requirement extends to the individuals at GEO working on the LUCA project. Before an individual can view the data they are required to sign an agreement, indicating they will adhere to the guidelines to keep the address list secure and confidential. At GEO, Cy Smith, Joshua Tanner and David Mather were the only individuals permitted access to the Census data.

The Census Bureau offered special software known as [GUPS \(Geographic Update Partnership Software\)](#) for editing their address list. GUPS tightly controls and documents the editing process, and simplifies submittal of changes to the Census Bureau. GEO evaluated GUPS, but because of the large size of the Census Bureau's address list for Oregon of 1,813,041 addresses,

GUPS was unwieldy and not the ideal solution for a statewide evaluation. As a result, GEO developed a series of optimized SQL queries to process the data directly on database tables for the statewide LUCA evaluation. GEO also used the Esri GIS software platform for visual inspection and quality assurance of the resulting output.

There are two categories of edits that can be done to the Census addresses data during the LUCA process. The first is to add new residential addresses that don't exist in the Census database. The second is to correct addresses that exist in the Census database. Because of the size of the effort and the need to conduct the effort using existing resources, GEO did not edit existing addresses. Our primary objective was to add verifiable addresses that were missing from the Census Bureau's list.

As a requirement of the Census Bureau LUCA guidelines, only residential addresses were to be submitted. In an effort to remove non-residential and business addresses from Oregon's recommended address additions, GEO utilized a statewide zoning layer from the Oregon Department of Land Conservation and Development and a list of registered business locations from the Oregon Employment Department. The statewide zoning layer helped identify and remove addresses that were within a zoning designation not suitable for residential development. The comprehensive list of registered business locations allowed GEO to compare and remove addresses that could be identified as existing business addresses.

While we found the Bureau's data to be relatively accurate, we were still able to add 81,600 residential addresses for the entire state. According to the Census Bureau, about \$675 billion per year in federal funding programs use Census data for allocating funds nationwide. The annual amount per person comes to a little more than \$2,000. Each address is estimated to average 2.5 people, so the total value of adding an address to the Census database is estimated to be about \$5,000 per year.

That means the total estimated value attributable to adding 81,600 addresses to the Census database for Oregon is \$408 million per year, or \$4.08 billion over the decennial period of the Census. All of these additions represent residents of Oregon who could potentially have been overlooked by the 2020 Census.

GEO submitted Oregon's statewide LUCA evaluation to the Census Bureau in June. Many of the individual participating jurisdictions have also now submitted their own evaluations and a few more will be doing so in the next few weeks. The Bureau will conduct a review and notify GEO and the individual jurisdictions of any discrepancies in their findings. We will have a final opportunity to appeal the Bureau's LUCA feedback in August 2019.

This effort would not have been successful without the dedication to the project of the two GIS analysts, Joshua and David. They were invested in the outcome, and made every effort to provide accurate, complete feedback to the Bureau. Much of the address data used by GEO to evaluate the Census database was originally provided by Oregon's Public Safety Answering Points (9-1-1 Centers), along with some City and County Planning Offices. This data was essential in conducting the statewide evaluation. Many thanks to the King County GIS Center, and particularly Greg Babinski and George Horning, for assistance in crafting this article.