

For Next U.S. Census, Cameras in Space Replace Boots on the Ground

It will take 90,000 fewer workers—and lots of satellite imagery—to determine where to mail forms



A sign marks the vehicle of a census enumerator during census training in Dummerston, Vt., in 2009. Far fewer workers will be used in the 2020 census. Photo: Toby Talbot/ASSOCIATED PRESS

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SUITLAND, Md.—Every decade, there is a census before the census, to help the government figure out where to mail hundreds of millions of forms.

The Census Bureau calls the first round its “address canvass.” Last time, it took 150,000 temporary workers who had to drive 137 million miles. For census 2020, using satellite imagery will cut that to just 60,000 workers, an especially useful shortcut with unemployment at the lowest level since the 1960s.

Overhauling how the Census Bureau tracks every household address is part of a broader revamp that will make this the first largely electronic census.

On a recent morning, geographers at census headquarters in Suitland, Md., used a custom software tool that lets them overlay and compare imagery from 2009 and today, marking every place they spot a new

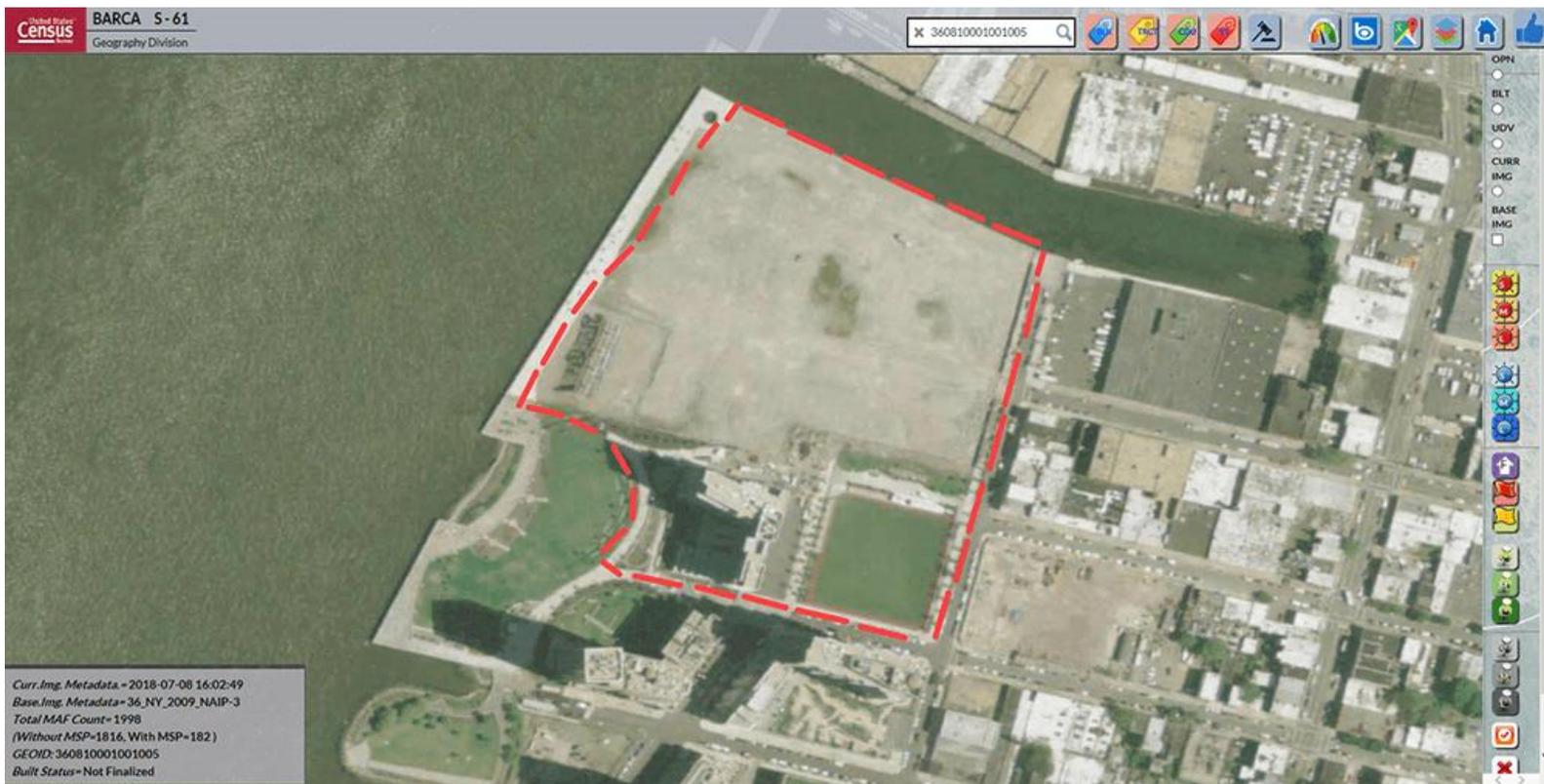
Manhattan apartment building or razed Nebraska farmhouse. One by one, workers have peered at each of 11 million small areas, called census blocks, that make up the nation.

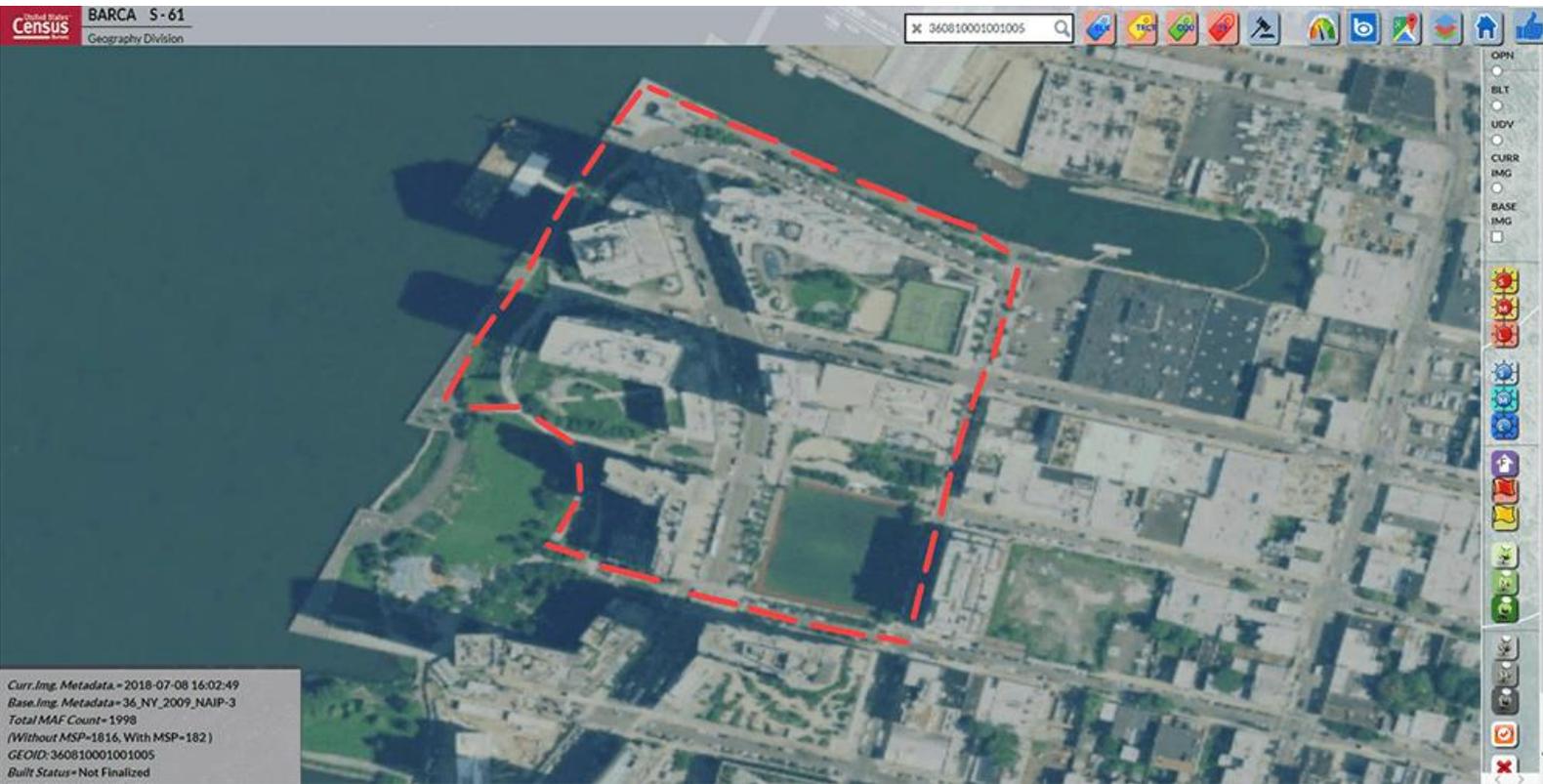
“They sit all day at their computers scrolling back and forth between these two vintages,” said Deirdre Dalpiaz Bishop, geography division chief at the bureau. Geographers also use Google and Bing mapping technologies for guidance.

The broader digital overhaul of the 2020 count includes a push to have most Americans respond over the internet instead of mailing back a paper form. Census workers will carry iPhones loaded with custom software when they fan out to visit 45 million homes that are expected to ignore census mailings. And for the first time, a full option to complete the census by telephone will be available.

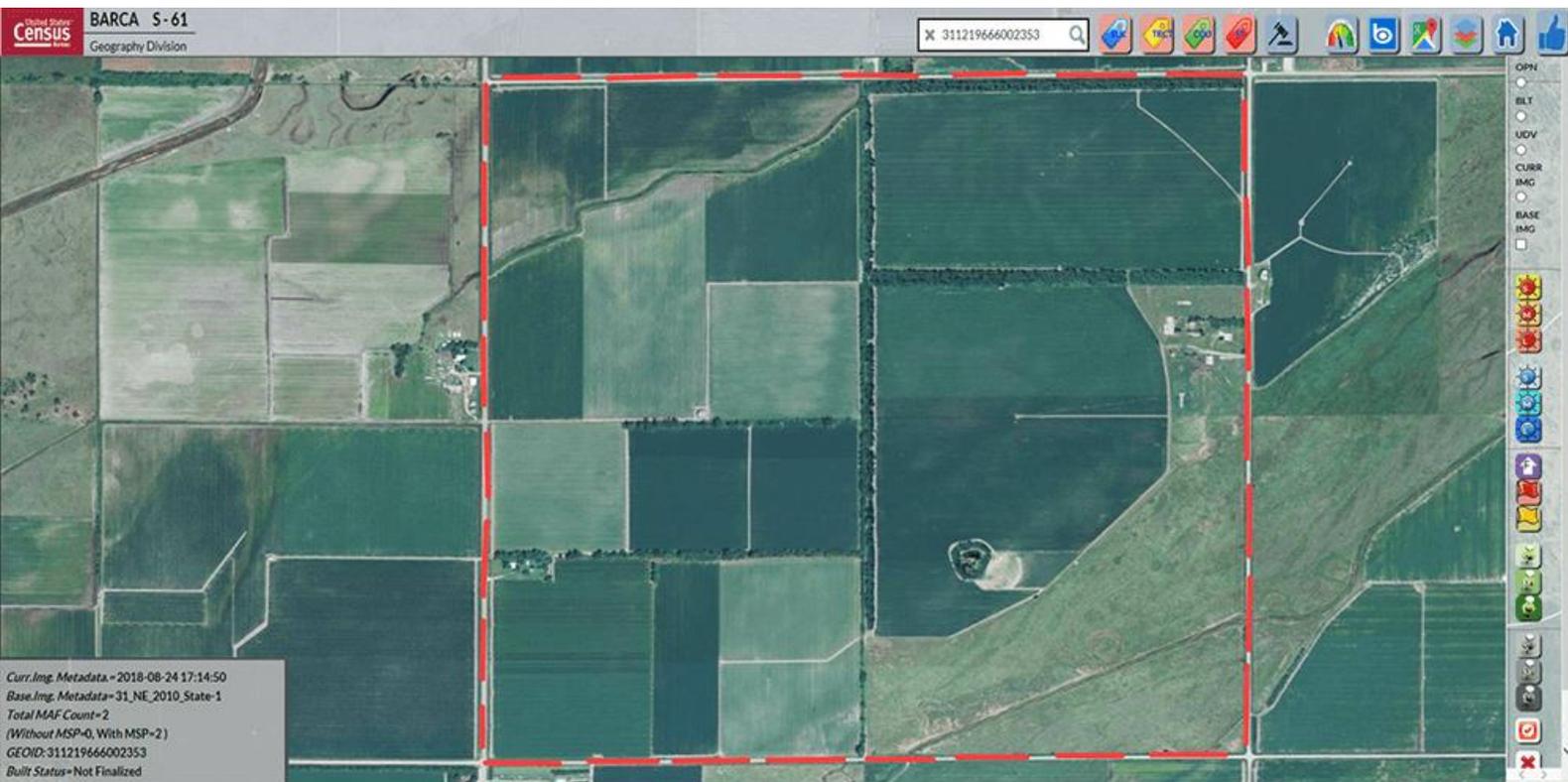
2009 vs. Today

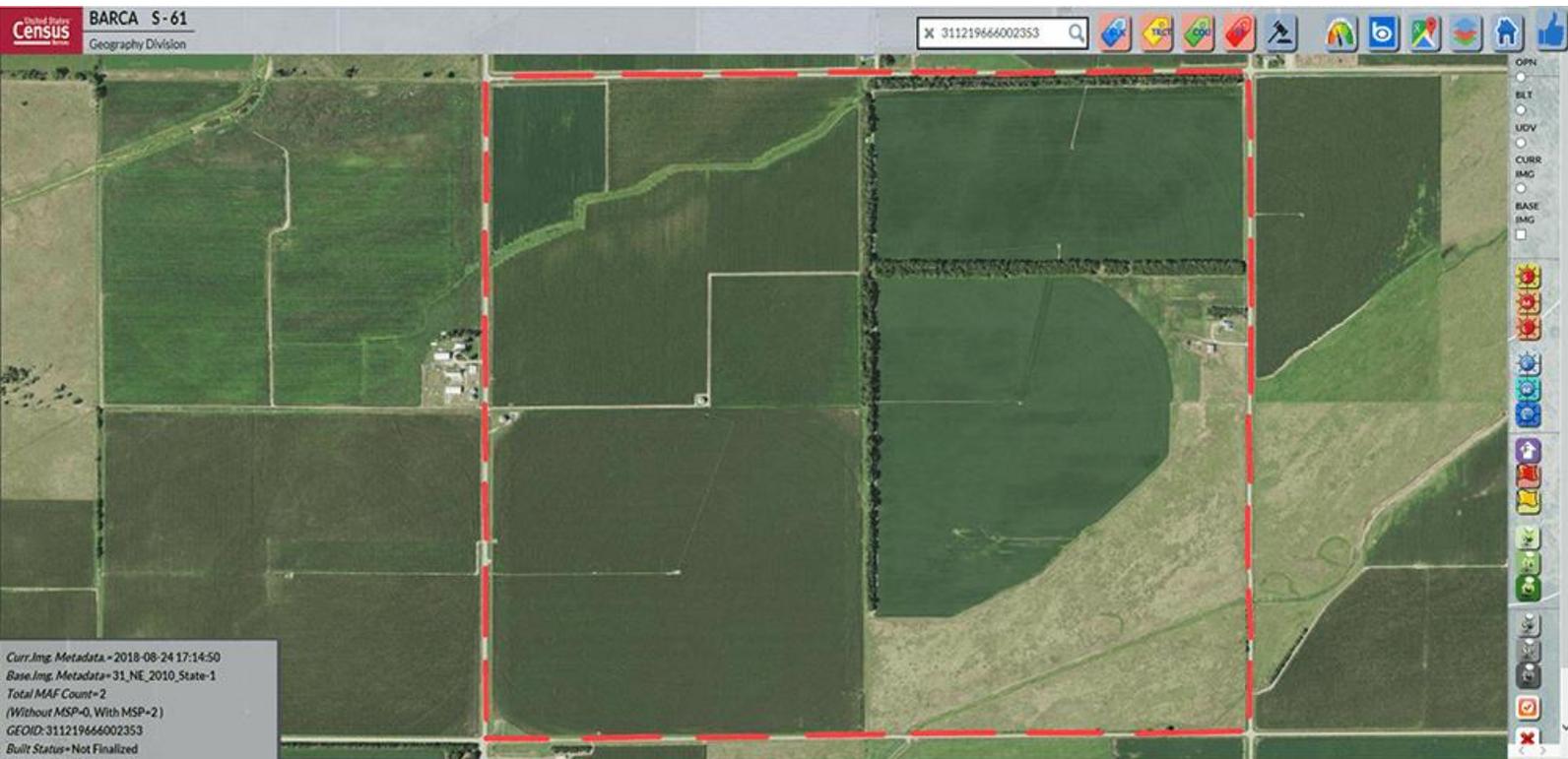
Census workers review satellite imagery with custom software to classify each of 11 million census blocks like these as "active"—needs to be checked on the ground next spring—or "passive," with no need for follow-up.





Screenshots from the software show a census block in Queens, N.Y., in 2009 (first image) and now.
Photos: Census Bureau





A census block in Clarksville Township, Neb., in 2009 when it had more buildings, and now. Photos: Census Bureau

An accurate count is critical because census tallies shift congressional seats among states and shape boundaries that will be redrawn for thousands of state and local districts. Census results also steer hundreds of billions of dollars a year in government funding and even more in investments by local governments and businesses.

Digital tools should save money by reducing the need for workers who are budgeted to make about \$17 an hour plus mileage. For instance, the satellite imagery should be able to verify 70% of the places that the Census Bureau needs to reach with its kickoff census mailing. That would still leave a large task—45 million addresses one by one—but 60,000 workers should suffice, according to the bureau.

However, building and linking all the new technology risks delays and cost overruns. Further opening the census to the internet also creates cybersecurity risks and could make Americans leery of responding online.

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The Government Accountability Office this summer said that the bureau had identified 3,100 security weaknesses as of June that will need to be addressed in the coming months. It also said that the bureau's IT costs had grown from \$3.41 billion in October 2015 to \$4.97 billion in December 2017, largely because of the technical integration and a contract for mobile devices.

In response to these concerns, the Census Bureau has said it has multiple layers of security, including assistance from federal law enforcement, intelligence agencies and the private sector in monitoring emerging threats. It's also focusing on cost management and contract oversight.

The digital address canvass offers a glimpse into how and where the country is changing. About 70% of addresses where people might live look the same as in 2010 or already have been updated, census officials say.

Ms. Bishop said that the bureau receives regular updates from the Postal Service, adding about 785,000 addresses each year.

There's even a Census Bureau staffer who tracks floods, fires and other disasters. Post-disaster imagery is checked and areas are assigned to be reviewed on the ground if the bureau's address count doesn't match the altered landscape. Earlier this year, the bureau decided it will have to check all 1.5 million addresses in Puerto Rico on the ground because of Hurricane Maria's damage.

Even completely developed areas keep changing. In New York City, imagery of a block on Park Avenue shows a 1,400-foot condominium tower completed in 2015. The whole block's address list will be checked on the ground. The same result followed after a staffer reviewing imagery of a lakefront community in Nebraska noticed new rooftops—and also that some present in 2009 were missing.