



2020 Census Program Management Review

The Path to the 2020 Census Design Decision

Deirdre Bishop
Senior Advisor for Administrative Records and Data Linkage

October 3, 2014

Planning for the 2020 Census

- Design and conduct a census that costs less per housing unit than the 2010 Census while maintaining high quality
- Identify cost drivers and implement innovative enumeration methods aimed at reducing these costs
- Focus early research and testing program on major innovations to the design of the census oriented around major cost drivers of the 2010 Census

Four Key Design Areas

- Reengineering Address Canvassing
- Optimizing Self Response
- Utilizing Administrative Records
- Reengineering Field Operations

“The Path” Document

- Assumptions
- Design options and/or components
- Key questions
- Research and testing activities
- Schedule – Design Decision by September 2015
- Stakeholders

Reengineering Address Canvassing

Reengineering Address Canvassing

- Assumptions
 - In-field canvass only 20 percent of total housing units
 - Eliminate early local census offices (manage from regional census centers)
 - Reduce the number of crew leader assistants by 50 percent
 - Redesign the training strategy to reduce enumerator training hours by 35 percent
 - Establish a training pay rate of \$1.50 lower than the production pay rate

Reengineering Address Canvassing

- Preliminary lifecycle cost estimates

\$1 billion in savings

Reengineering Address Canvassing

- Design Component 1
 - Remove geographic areas from the in-field address canvassing workload based on the availability of administrative data sets (e.g., military lands, national forests) and/or the method of enumeration planned for the 2020 Census (e.g., Update/Leave, Update/Enumerate)

Reengineering Address Canvassing

- Design Component 2
 - Use statistical modeling to determine where to conduct in-field address canvassing

Reengineering Address Canvassing

- Design Component 3
 - Use empirical geographic evidence (e.g., imagery, comparison of the Census Bureau's address list to partner provided lists) to determine where to conduct in-field address canvassing

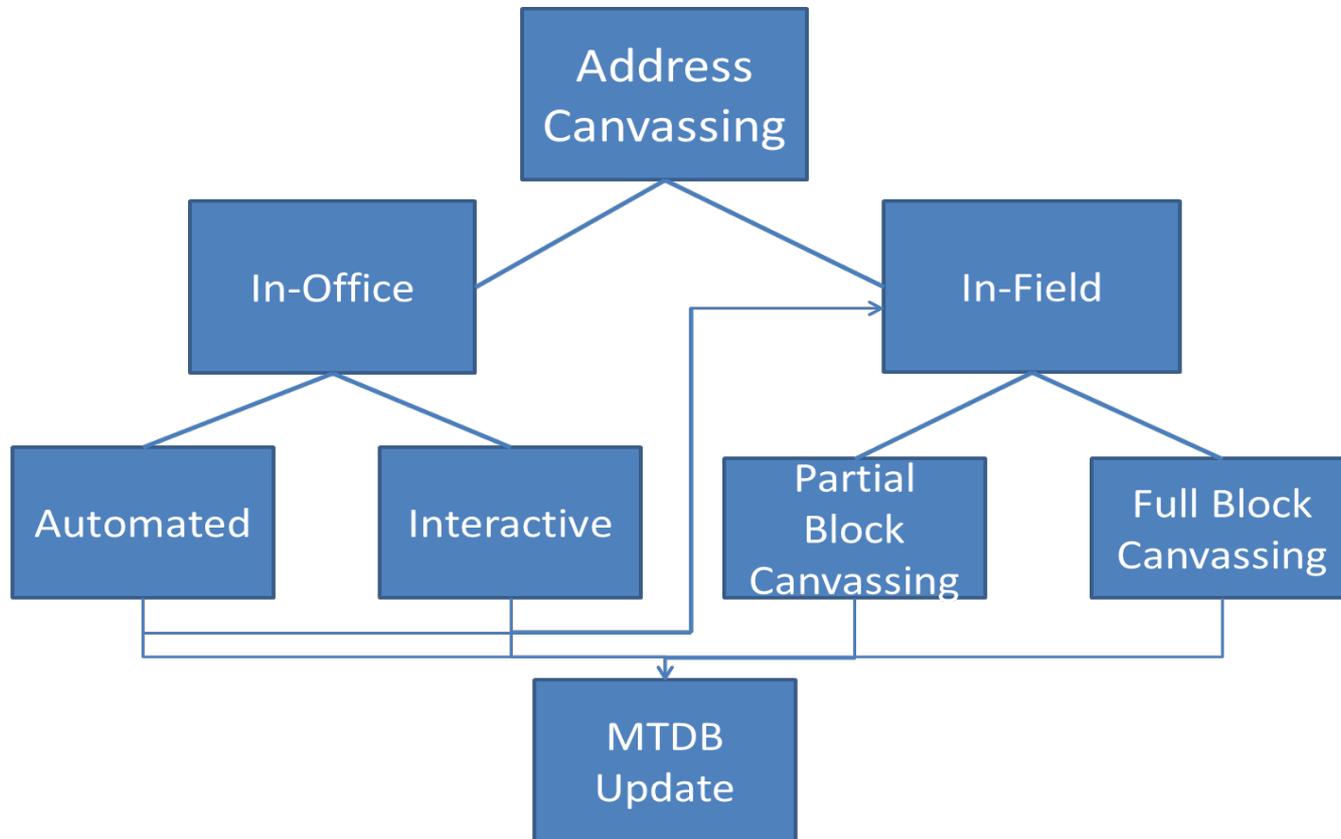
Reengineering Address Canvassing

- Design Component 4
 - Detect and capture change from administrative and third-party data sources

Reengineering Address Canvassing

- Design Component 5
 - Conduct in-field partial block canvassing in select portions of census blocks (as opposed to canvassing the full block)

Reengineering Address Canvassing



Reengineering Address Canvassing

- Key Questions
 - Which address and spatial data (including imagery) can be used to improve the quality of the MAF/TIGER System?
 - Federal government data from partners
 - Tribal, state, and local government data from partners
 - Third-party data
 - A combination of the above approaches

Reengineering Address Canvassing

- Key Questions
 - Can geographic areas be removed from the in-field address canvassing workload based on specific characteristics?
 - Using administrative and third-party data
 - Special land use areas such as national forests, national parks, and military lands
 - Areas traditionally included in non-mail out types of enumeration such as Update/Leave and Update/Enumerate

Reengineering Address Canvassing

- Key Questions
 - What is the best approach to measure the quality and completeness of the MAF/TIGER System?
 - MAF Error Model
 - Targeted Address Canvassing (TAC) Model
 - Quality Indicators
 - National Estimate of Coverage
 - Address Range Check
 - A combination of the above approaches

Reengineering Address Canvassing

- Key Questions
 - Can statistical modeling be used to predict stability and change?
 - Which data contributes to the models? For example, 2010 Census, US Postal Service, utility records, building permit records
 - Which model performs best?
 - MAF Error Model
 - TAC Model
 - Combination of both

Reengineering Address Canvassing

- Key Questions
 - How should statistical modeling be used?
 - As an input to research and field work (geographic modeling/partial block canvassing)
 - As a direct mechanism
 - To determine where to or not to conduct in-field address canvassing
 - To determine how much in-field address canvassing is necessary

Reengineering Address Canvassing

- Research and Testing

	Reengineering Address Canvassing	Optimizing Self-Response	Utilizing Administrative Records	Reengineering Field Operations
2012 National Census Test		X		
2013 Census Test			X	
2014 Census Test		X	X	
2015 Address Validation Test	X			
2015 Optimizing Self Response Test		X		
2015 Census Test			X	X
2015 National Content and Self Response Test		X		
Geographic Support System Initiative	X			
Decennial Modeling and Analysis	X		X	
ROCKIT Simulations				X
2012 Gallup Poll			X	
American Community Survey	X	X	X	X

Optimizing Self Response

Optimizing Self Response

- Assumptions
 - The response via the Internet will be 55%
 - The Census Bureau's strategy will include the use of paper mail
 - Paper questionnaires will be mailed to 20% of specific non-respondents based on data analysis
 - There will be a reduction in paper capture operations and infrastructure as compared to the 2010 Census

Optimizing Self Response

- Preliminary lifecycle cost estimates

\$548 million in savings

Optimizing Self Response

- Design Component 1
 - Employ the use of a pre-registration phase (Notify Me)

Optimizing Self Response

- Design Component 2
 - Allow respondents to answer the 2020 Census without an identification code (Non-ID)
 - Option 2a
 - Provide on-line tools that allow real-time matching and geocoding at the time of response
 - Option 2b
 - Conduct batch matching and geocoding at specific periods during the day

Optimizing Self Response

- Respondent does not need to enter unique identification code

Where did you live on July 1, 2014? [\(Help\)](#)

Please select the type of address associated with your residence.

Address Type: Street Address P.O. Box Rural Route

Address Number: Street Name: Apt/Unit:

For example: (5007) (N Maple Ave) (*Apt. A* or *Lot 3*)

City: State: ZIP Code:

Optimizing Self Response

- Key Questions
 - What are the best methods for communicating the importance of responding to the 2020 Census as measured by public response?
 - Communications Campaign
 - Partnership Program

Optimizing Self Response

- Key Questions
 - What is the estimated self response rate? Via different modes?
 - What infrastructure is necessary to support the Internet as the primary mechanism for self response?
 - Is there value in asking households to pre-register?

Optimizing Self Response

- Key Questions
 - Is it necessary to provide households with an identification code to respond via the Internet?
 - Validation and authentication
 - Matching and geocoding

Optimizing Self Response

- Research and Testing

	Reengineering Address Canvassing	Optimizing Self-Response	Utilizing Administrative Records	Reengineering Field Operations
2012 National Census Test		X		
2013 Census Test			X	
2014 Census Test		X	X	
2015 Address Validation Test	X			
2015 Optimizing Self Response Test		X		
2015 Census Test			X	X
2015 National Content and Self Response Test		X		
Geographic Support System Initiative	X			
Decennial Modeling and Analysis	X		X	
ROCKIT Simulations				X
2012 Gallup Poll			X	
American Community Survey	X	X	X	X

Utilizing Administrative Records

Utilizing Administrative Records

- Assumptions
 - Through the removal of vacant and deleted housing units:
 - The total Nonresponse Followup (NRFU) workload will be reduced by 11%
 - The total number of Local Census Offices will be reduced by 12%
 - The Vacant/Delete Operation will be eliminated
 - Contact Strategy
 - The total number of NRFU visits will be reduced
 - The Coverage Followup Operation will be eliminated

Utilizing Administrative Records

- Preliminary lifecycle cost estimates

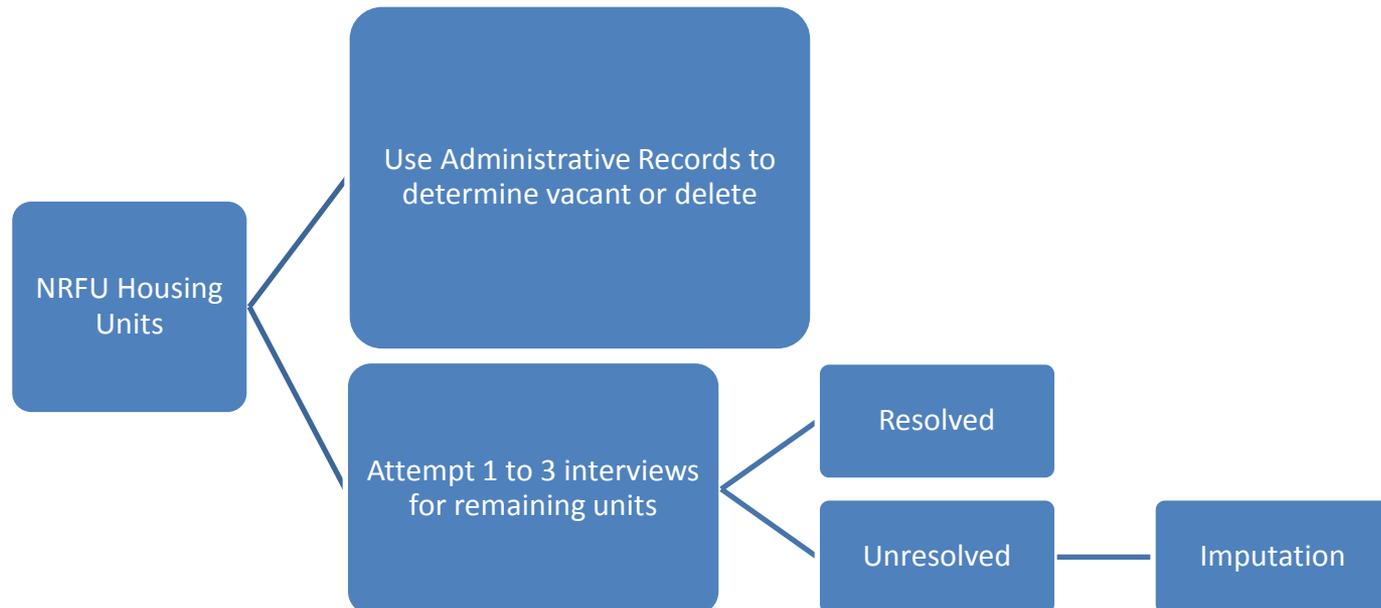
\$1.23 billion in savings

Utilizing Administrative Records

- Design Option 1
 - Match administrative records to the NRFU universe
 - Remove vacant and deleted housing units

Utilizing Administrative Records

- Design Option 1

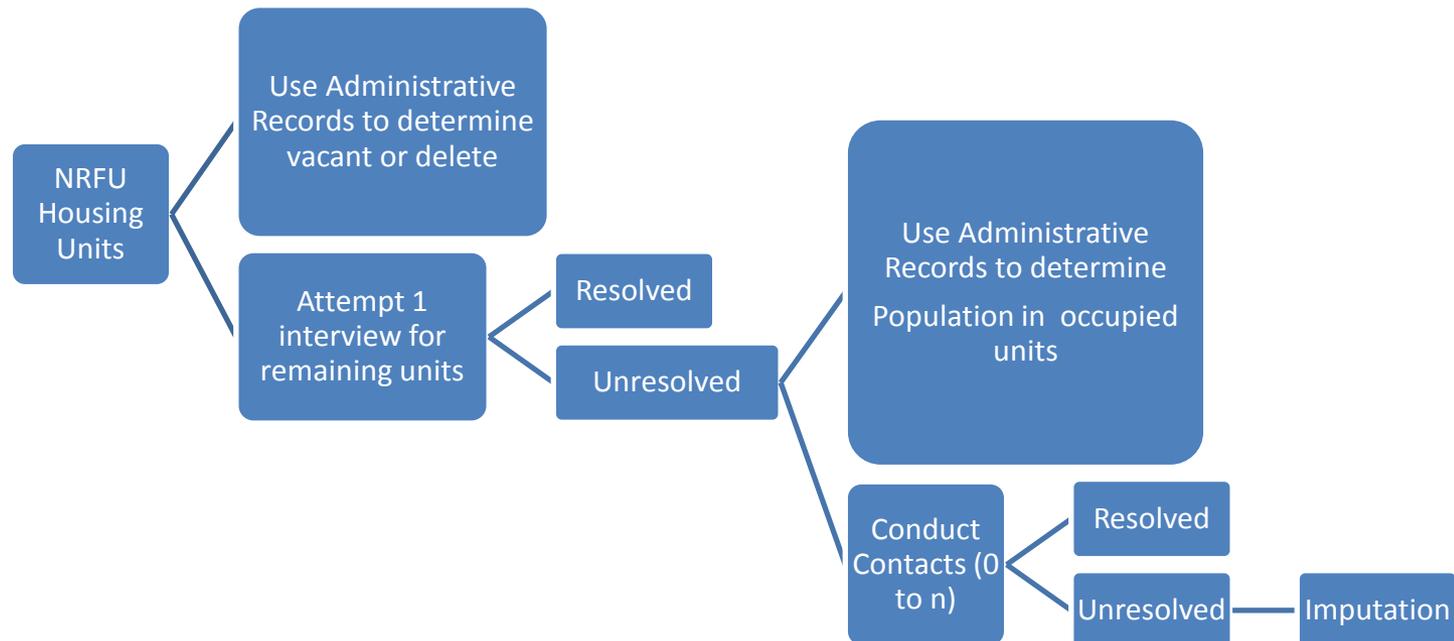


Utilizing Administrative Records

- Design Option 2
 - Match administrative records to the NRFU universe
 - Remove vacant and deleted housing units
- AND**
- Identify occupied units
 - Reduce NRFU in-person visits to 1

Utilizing Administrative Records

■ Design Option 2



Utilizing Administrative Records

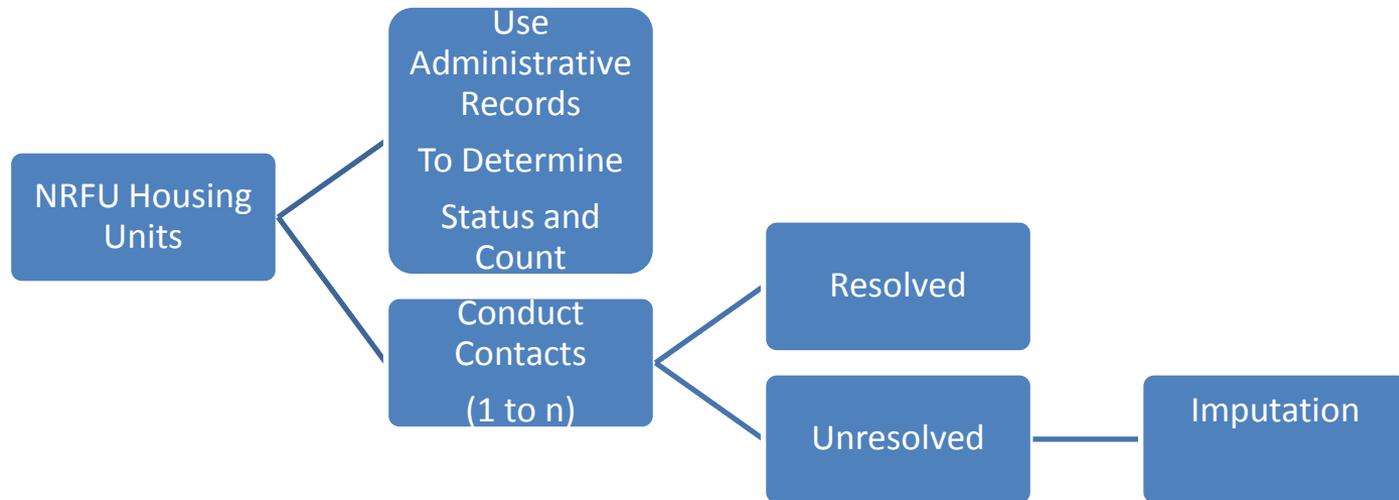
- Design Option 3
 - Match administrative records to the NRFU universe
 - Remove vacant and deleted housing units

AND

- Identify occupied units
- Eliminate NRFU in-person visits

Utilizing Administrative Records

- Design Option 3



Utilizing Administrative Records

- Key Questions
 - Which administrative records are necessary to support the 2020 Census?
 - Federal government data
 - Tribal, state, and local government data
 - Third-party data
 - A combination of the above
 - Does the Census Bureau already have access to the data or is acquisition required?

Utilizing Administrative Records

- Key Questions
 - How accurately does the Census Bureau remove occupied and vacant cases from the NRFU workload?
 - Is there enough characteristic data to enumerate each person in the household?
 - Name, Sex, Age, Hispanic Origin, Race, Housing Unit Status (occupied vs. vacant), and Housing Unit Tenure
 - What characteristic data are available from each source?
 - How many characteristics are required to enumerate the household?

Utilizing Administrative Records

- Key Questions
 - Are proxy responses for NRFU addresses more or less accurate than the administrative records for a housing unit?
 - Are proxy responses more valuable in certain geographic areas than in others?
 - What is the public's perception of the Census Bureau's use of administrative data?

Utilizing Administrative Records

- Research and Testing

	Reengineering Address Canvassing	Optimizing Self-Response	Utilizing Administrative Records	Reengineering Field Operations
2012 National Census Test		X		
2013 Census Test			X	
2014 Census Test		X	X	
2015 Address Validation Test	X			
2015 Optimizing Self Response Test		X		
2015 Census Test			X	X
2015 National Content and Self Response Test		X		
Geographic Support System Initiative	X			
Decennial Modeling and Analysis	X		X	
ROCKIT Simulations				X
2012 Gallup Poll			X	
American Community Survey	X	X	X	X

Reengineering Field Operations

Reengineering Field Operations

■ Assumptions

- Increase NRFU productivity by 20% with automation
- Remove late responses from the NRFU workload
- Reduce the total number of LCOs by 5%
- Reduce the total square footage of LCOs by 70%
- Eliminate crew leader assistants
- Reduce the number of clerical staff by 20%
- Redesign the training strategy to reduce enumerator training hours by 35%
- Establish training pay rate \$1.50 lower than production pay rate

Reengineering Field Operations

- Assumptions
 - 75% of enumerators bring their own device (BYOD)
 - Reduce the phone/personal visit contact cycle relative to the 2010 Census from 6 to 3
 - Use adaptive design (routing and dynamic case management) to allocate resources efficiently

Reengineering Field Operations

- Preliminary lifecycle cost estimates

\$2.3 billion in savings

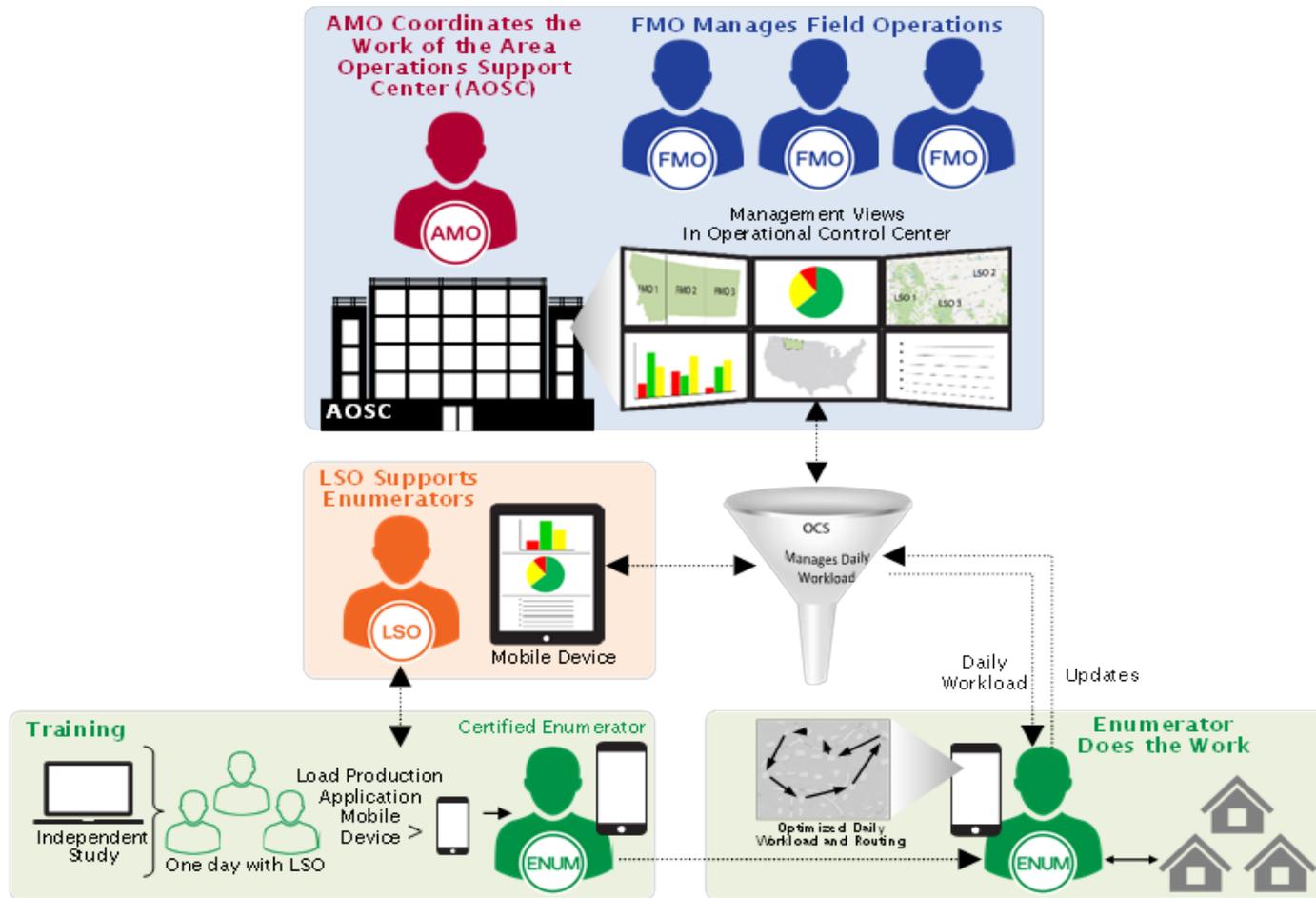
Reengineering Field Operations

- Design Component 1
 - Reengineer the field work
 - Provide enumerators with daily, optimal, and sequenced contact attempt assignments
 - Provide supervisors with electronic access to enumerator workload and status information
 - Automate training

Reengineering Field Operations

- Design Component 2
 - Reengineer the field staff structure
 - Field staff roles
 - Work schedule
 - Staffing ratios

Reengineering Field Operations



Reengineering Field Operations

- Key Questions
 - How can the Census Bureau reduce the cost of field operations with automation?
 - What does the model for reengineered field operations entail?
 - How will the structure of field change?
 - Management interaction with employees?
 - Workload assignment?
 - Where will workload management occur?

Reengineering Field Operations

- Key Questions
 - What type of systems and devices will be used to support:
 - Case assignment (OCS)
 - Routing and navigation (GIS)
 - Data collection
 - Administrative activities
 - Will the Census Bureau build or buy these systems?
 - How will the employees obtain the devices?

Reengineering Field Operations

- Research and Testing

	Reengineering Address Canvassing	Optimizing Self-Response	Utilizing Administrative Records	Reengineering Field Operations
2012 National Census Test		X		
2013 Census Test			X	
2014 Census Test		X	X	
2015 Address Validation Test	X			
2015 Optimizing Self Response Test		X		
2015 Census Test			X	X
2015 National Content and Self Response Test		X		
Geographic Support System Initiative	X			
Decennial Modeling and Analysis	X		X	
ROckIT Simulations				X
2012 Gallup Poll			X	
American Community Survey	X	X	X	X

Schedule

- **The Path to the 2020 Census Design Decision**
 - 2020 Census Program Leads Briefings – July – August, 2014
 - Decennial Leadership Review – July 28, 2014
 - Executive Leadership Review – August 29, 2014
 - ESA Briefing – September 5, 2014
 - 2020 Census PMR Briefing – October 3, 2014
 - Other Stakeholder Briefings – 2014 – 2015

- **2020 Census Design Decision**
 - Deliver to Executive Leadership – July 31, 2015
 - FINAL 2020 Census Design Decision – September 2015

Questions?

- Send questions to the email address below.

census.2020.program.management.review@census.gov