

Geospatial Techniques for Improving the Sample Frame of New Brunswick, NJ

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PURPOSE

- To field a 2016 New Brunswick survey using address-based sampling and digitized maps that will increase survey validity and the coverage area of the New Brunswick sample frame.

SIGNIFICANCE

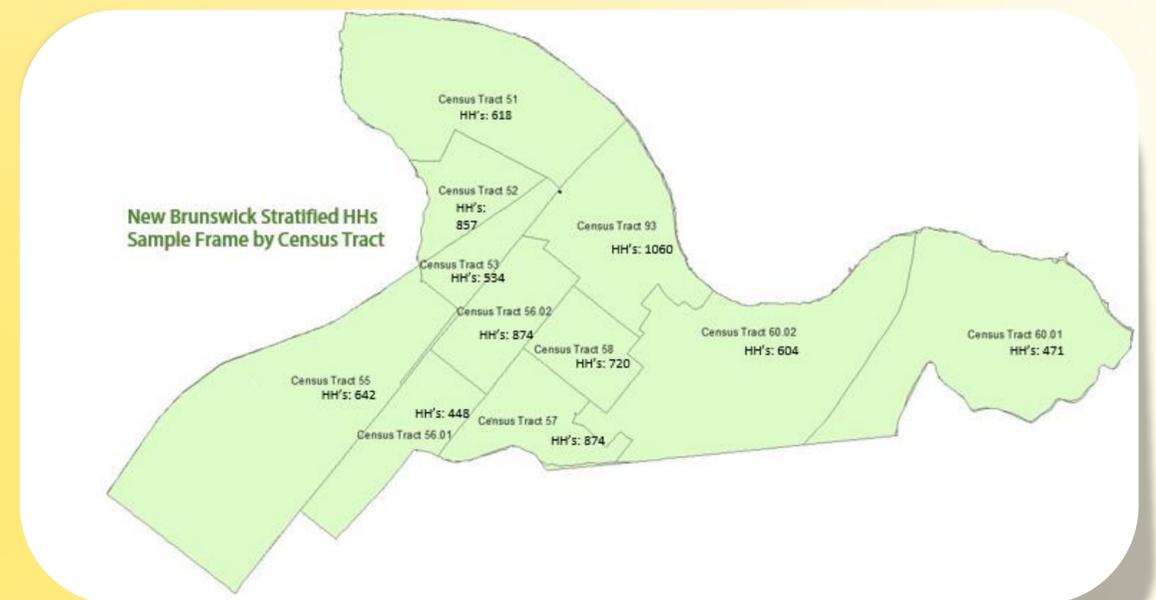
- Every four years, ECPIP administers a community longitudinal survey for clients New Brunswick Tomorrow (NBT), a community-based organization that serves as a catalyst in improving the quality of life and health of New Brunswick residents.
- In 2012, the survey was fielded via dual frame calling, resulting in low contact rates and a sample size of n=750. Address-based sampling, coupled with GIS mapping, improved the coverage area for the 2016 survey to be fielded in mid-May.

METHODOLOGY

- A sample frame was developed using stratified random probability sampling by Census Tract, ensuring proportionality between sample frame and Census Tract populations in New Brunswick.
- New Brunswick Census Tract and Block populations were identified and mapped using Census TIGERline shapefiles and ArcMAP 10.2

OUTCOMES

- 7734 households were selected for the stratified sample frame expecting a 10% ineligible error rate and a 15% survey response rate (1044 households).
- Overall coverage of New Brunswick (compared to Census Tracts) was estimated at 90 percent which is almost double the coverage of the dual-frame sample employed in 2012.



Census Tract (CT)	Household Count (HH)	Percentage: CT HH's/NB Population Total HH's	Sample Size HH Count	Final Stratified HH Sample Size
51	1150	8%	833	618
52	1574	11.07%	876	857
53	993	6.90%	225	534
55	1184	8.30%	689	642
56.01	828	5.80%	421	448
56.02	1612	11.30%	757	874
57	1606	11.30%	880	874
58	1334	9.30%	655	720
60.01	864	6.08%	519	471
60.02	1115	7.80%	715	604
93	1950	13.70%	1164	1060
NB HH Population = 14,210		Total Percentage = 100%	Sample Size = 7734	Stratified HH Sample = 7702

EVALUATION

- At least 25% more coverage using address-based survey mailing for the 2016 survey instrument than the 2012 survey in dual frame survey calling.
- The study is a randomly survey of residents (n=1000) and the results will be generalizable to New Brunswick residents with an MOE of +/-3.1 points.

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