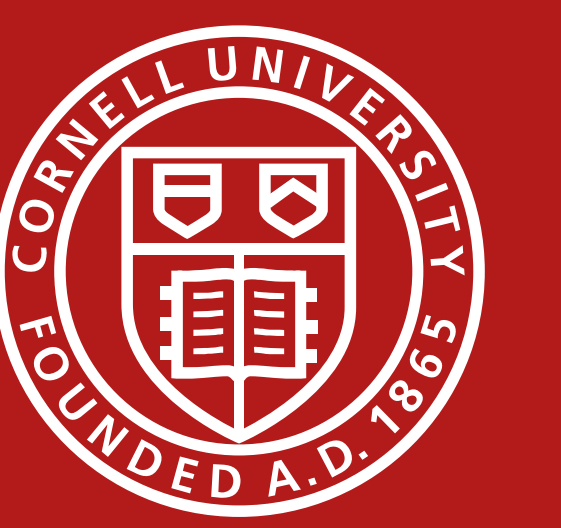


Housing Unit Loss Between 2010 and 2020: True or Not?

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Introduction

Real property data is an important source of income for many localities and a change in the number of housing units can mean more or less money in the budget. Severe losses in the real property values would mean either raise tax rates (very unpopular and often capped) or a need of budget cuts.

The 2020 Census results showed, often unexpected, decreases in the housing unit stock in many places. This seemed to happen in areas with high vacancies and didn't go hand in hand with comparable decreases in the household population.

Attributes of Observed change

Observed HousingUnit Count 2020 – Observed HousingUnit Count 2010 =

Real difference as a result of building, demolitions, etc +

Difference in coverage +

Difference caused by changes in definitions and data collections

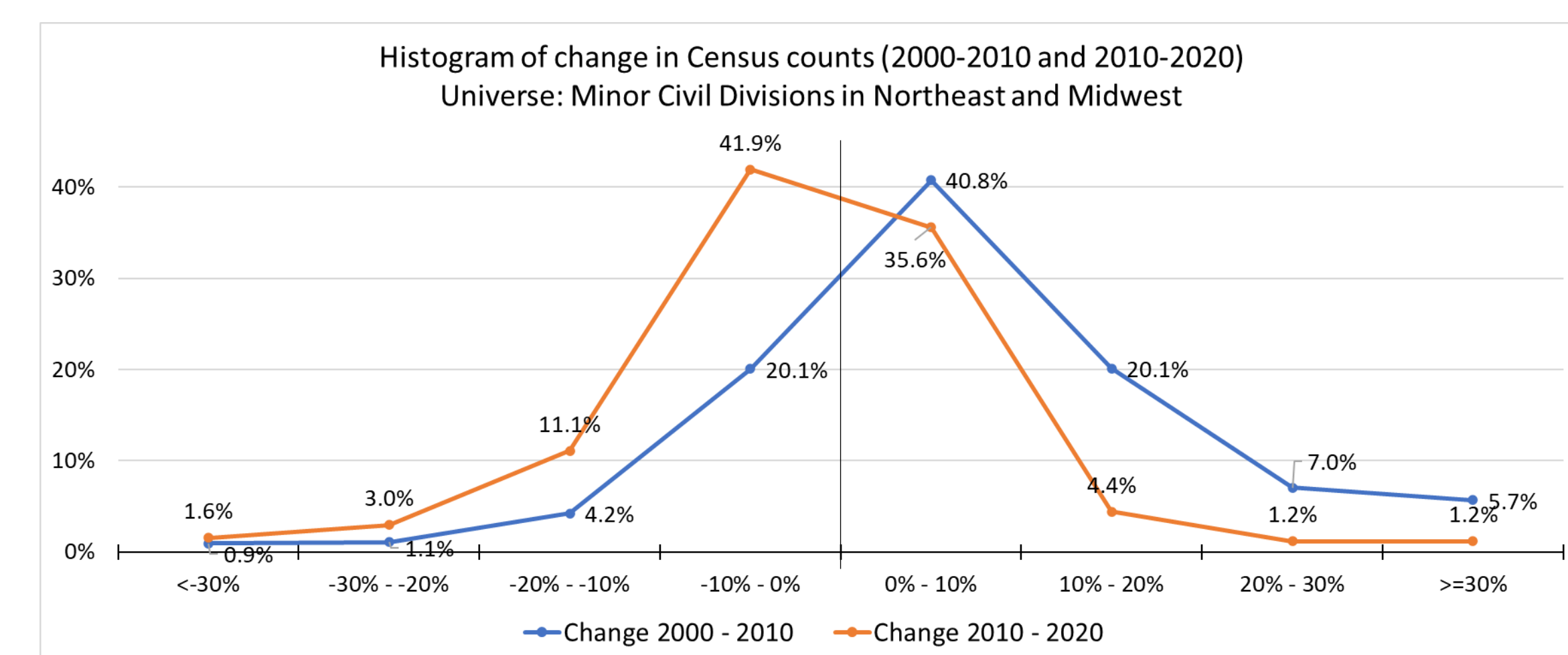
Counting Housing units: 2010 and 2020

Housing Units A housing unit is a living quarters in which the occupant or occupants live separately from any other individuals in the building and have direct access to their living quarters from outside the building or through a common hall. Housing units are usually houses, apartments, mobile homes, groups of rooms, or single rooms that are occupied as separate living quarters. They are residences for single individuals, groups of individuals, or families who live together.

For vacant housing units, the criteria of separateness and direct access are applied to the intended occupants whenever possible. Nontraditional living quarters, such as boats, RVs, and tents, are considered to be housing units **only** if someone is living in them and they are either the occupant's usual residence, or the occupant has no usual residence elsewhere. These nontraditional living arrangements are **not considered to be housing units** if they are vacant.

Definitions haven't changed, but some housing only get counted when occupied.

Change in housing units 2010-2020 vs 2000-2010



	HU Loss		HU Gain	
	#MCDs	% of MCDs	#MCDs	% of MCDs
Change 2000 - 2010	6,513	26.3%	18,212	73.6%
Change 2010 - 2020	14,245	57.6%	10,488	42.4%

2010 - 2020 Change in Housing units by occupancy status, MCDs with at least 10% Housing Unit loss (N=3,925)

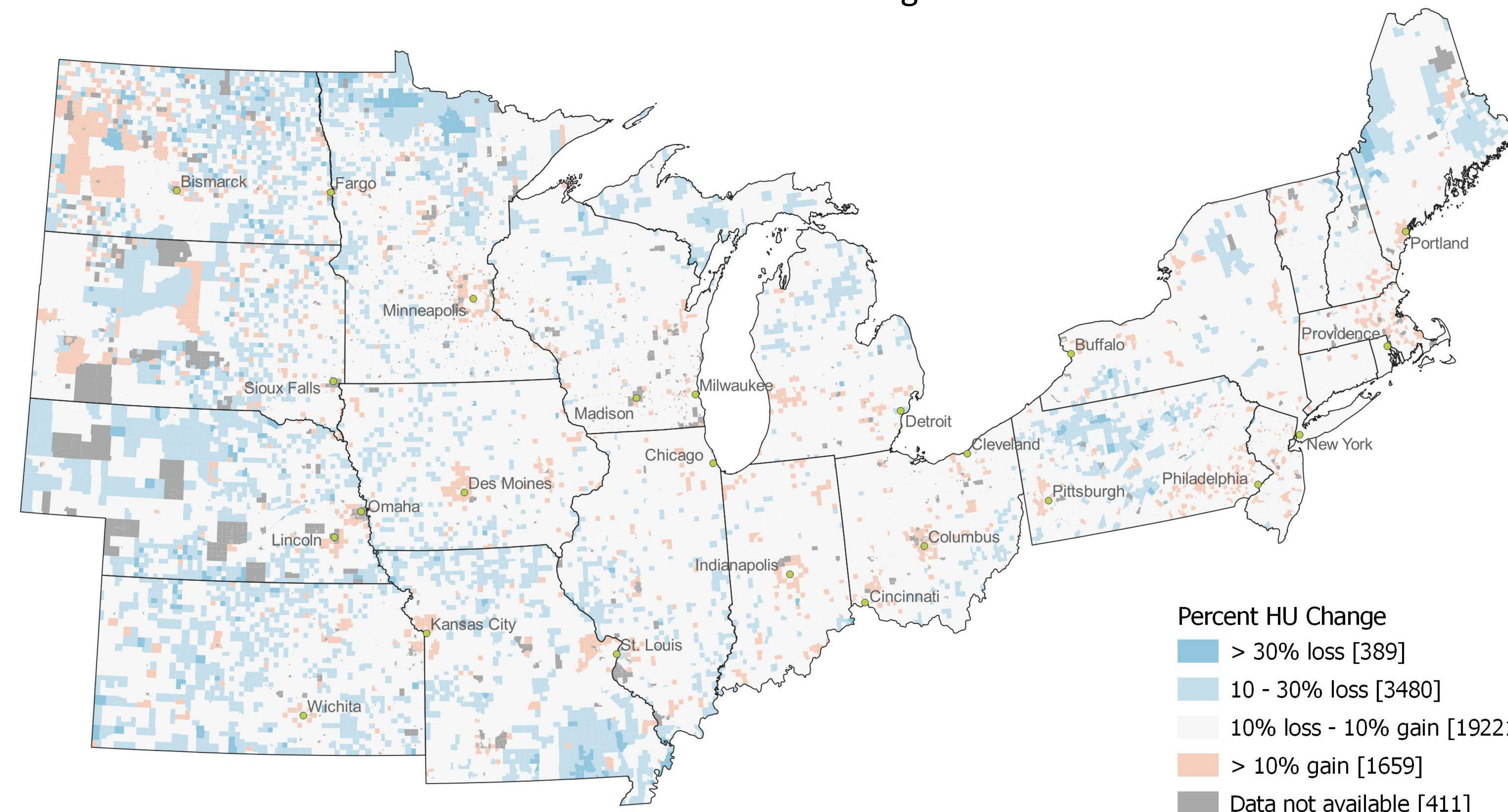
	2010	2020	% change
Total	1,476,269	1,225,293	-17.0%
Occupied	1,073,991	941,091	-12.4%
Vacant	402,278	284,202	-29.4%
Population	3,067,810	2,735,029	-10.8%

Many more MCDs saw a decrease in housing units according to the Decennial Censuses. The decreases of vacant housing far exceed the decreases in occupied housing. Population decreases were not as severe.

Percent Housing Unit Change 2010-2020

County Subdivision Level

NorthEast and MidWest regions



Percent HU Change

- > 30% loss [389]
- 10 - 30% loss [3480]
- 10% loss - 10% gain [19221]
- > 10% gain [1659]
- Data not available [411]

Coverage: Post Enumeration Survey

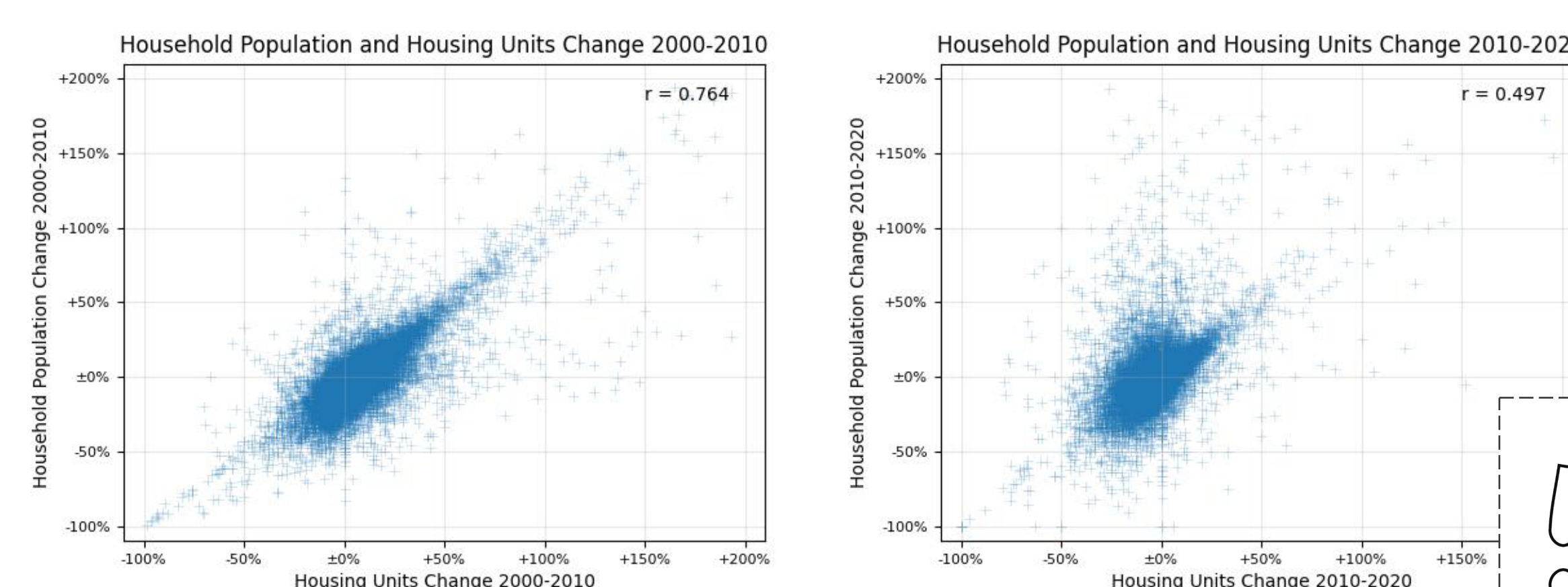
	2010	2020
US – by occupancy status and by type of housing unit		
Total Housing Units (US)	-0.6%*	0.04%
Occupied Housing Units	-0.03%	0.33%*
Vacant Housing Units	-4.80%*	-2.57%*
Single unit	-1.00%*	-0.08%
Small multiunit (2 to 9)	1.82%*	5.09%*
Large multiunit (10+)	0.01%	-0.84%
Trailer and others	-1.96%*	-4.34%*
US by type of enumeration area and occupancy status		
Self-Response total	-0.47%*	0.17%
Self-Response occupied		0.42%*
Self-Response vacant	-4.21%*	-2.28%*
Update Leave total	-0.92%	-4.15%*
Update Leave occupied		-3.62%*
Update Leave vacant	-5.03%*	-5.21%*

* Denotes a (percent) net coverage error that is statistically significantly different from zero.

Coverage in this table is defined as: (Census – PES) / PES in 2010 and (Census – PES) / Census in 2020

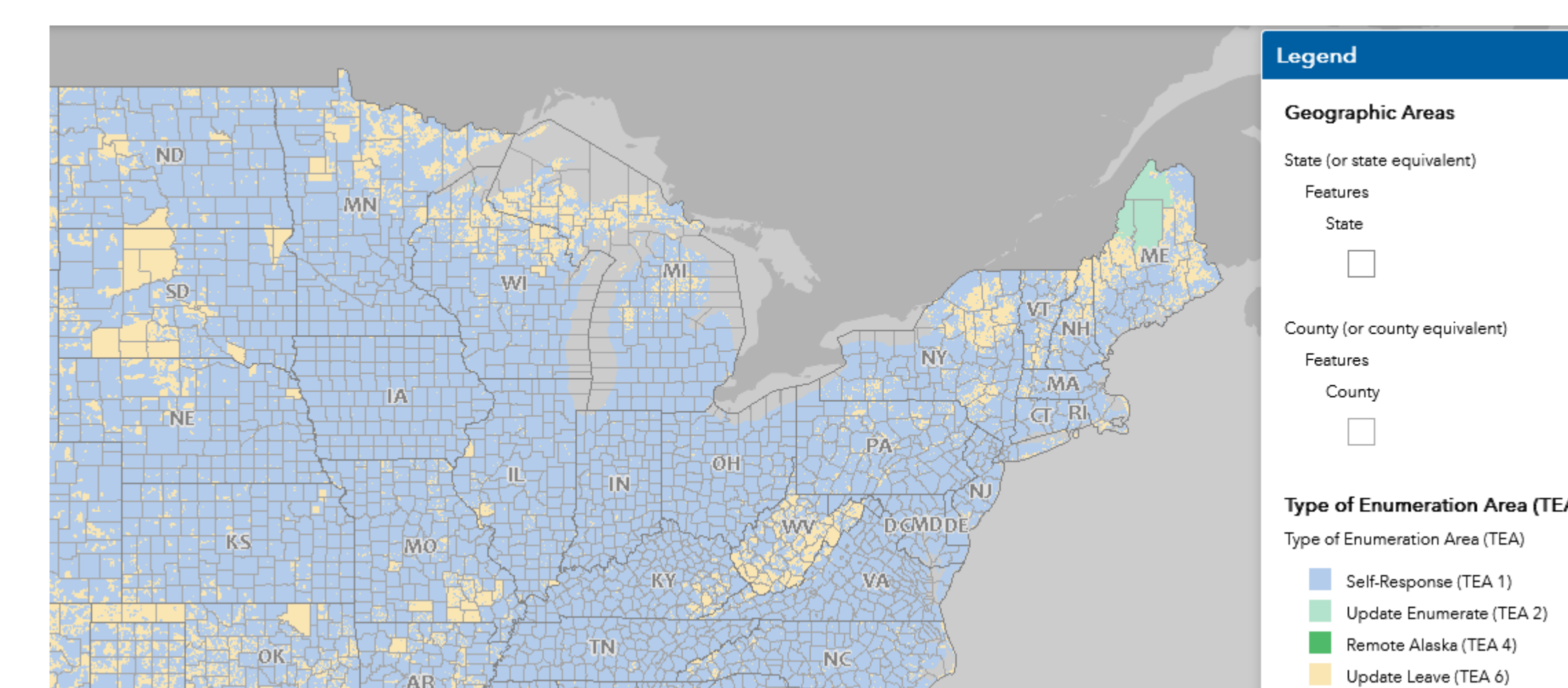
The Post Enumeration Survey indicates that there were some differences in coverage between 2010 and 2020. Especially the 2020 undercount in update leave areas and trailer counts could be significant.

Δ Household Population = f(Δ Housing Units)



Population estimates for sub county geographies often rely on the housing unit method. This method assumes a strong correlation between number of housing units and size of population. Between 2010-2020 this correlation was absent.

Census Operation: Correlation with Update/Leave?



Update Leave Operation Assessment Report, Version 1.2

Table 12: Counts by Field Action Code

Field Action Codes/Action Name	Stateside		Puerto Rico		Total
	Percent	Percent	Percent	Percent	
A Add	9.1	11.7	9.8	9.8	
C Change	20.6	35.3	24.5	24.5	
D Delete	15.1	12.9	14.5	14.5	
G HU to GQ Conversion	0.2	0.1	0.1	0.1	
K Non-Address Change	10.5	4.9	9.0	9.0	
L Duplicate	3.5	5.0	3.9	3.9	
N Nonresidential	1.6	0.7	1.3	1.3	
U Unable to Work	2.1	0.5	1.7	1.7	
T HU to TL Conversion	1.2	0.1	0.9	0.9	
V Verified	36.2	28.8	34.2	34.2	
Total Number of Addresses*	5,568,000	100.0	2,014,000	100.0	7,582,000

Source: U.S. Census Bureau, 2020 Census UL operation. Note: The data in this table have been rounded or injected with noise as part of the Census Bureau's approved disclosure avoidance practices applied to this report. Numbers may not sum because of rounding.

Over 15% of addresses encountered in the 2020 Update/Leave operation were deleted. In 2010, this was 3.5%. The operation assessment report didn't include hints why this percentage was much higher in 2020.

Case study: Stable block?

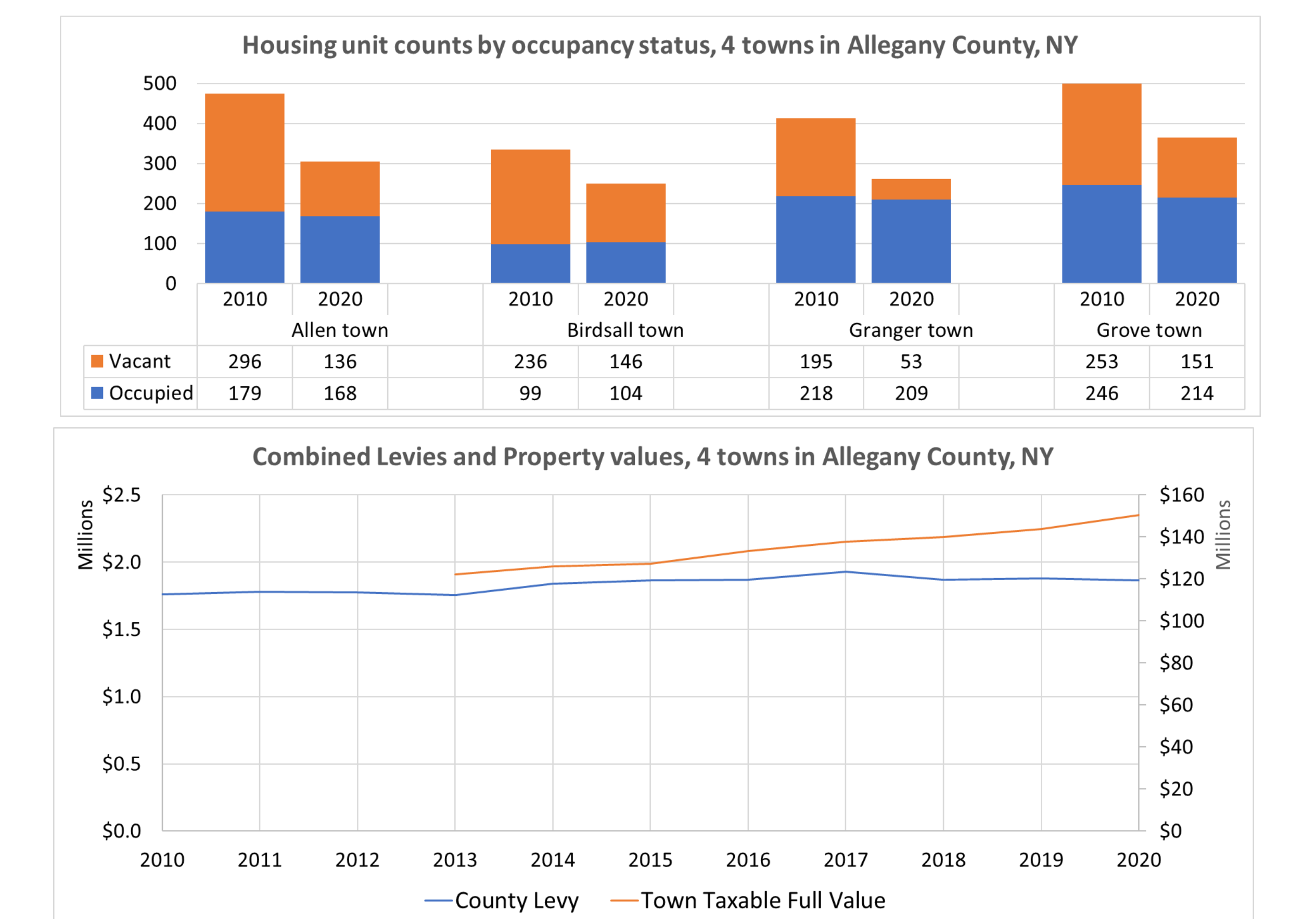


Aerial picture: 2007
2010 Census Count: 15 Housing units

Aerial picture: 2022
2020 Census Count: 7 Housing units
Overlay: information from Real Property

The aerial imagery from 2007 and 2022 do not indicate a change in the number of structures. Real Property data suggests a HU count in between the 2010 and 2020 counts

Case study: impact on real property taxes?



Although the 2020 Census HU count in these 4 towns was 31% lower than in 2010, the combined property values and property taxes did not decline

Conclusion

Without looking at what happened to individual addresses in the 2020 cycle it might be impossible to answer the question: is the housing unit loss real or not. But I found enough puzzle pieces to indicate that the observed housing unit loss between 2010 and 2020 comparison is not only caused by true change.

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