

National Assessment of Onsite Wastewater Treatment Systems

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Project Coordinated with:

West Virginia University (WVU)

National Environmental Services Center (NESC)

Infiltrator Water Technologies, LLC.

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Project Objectives

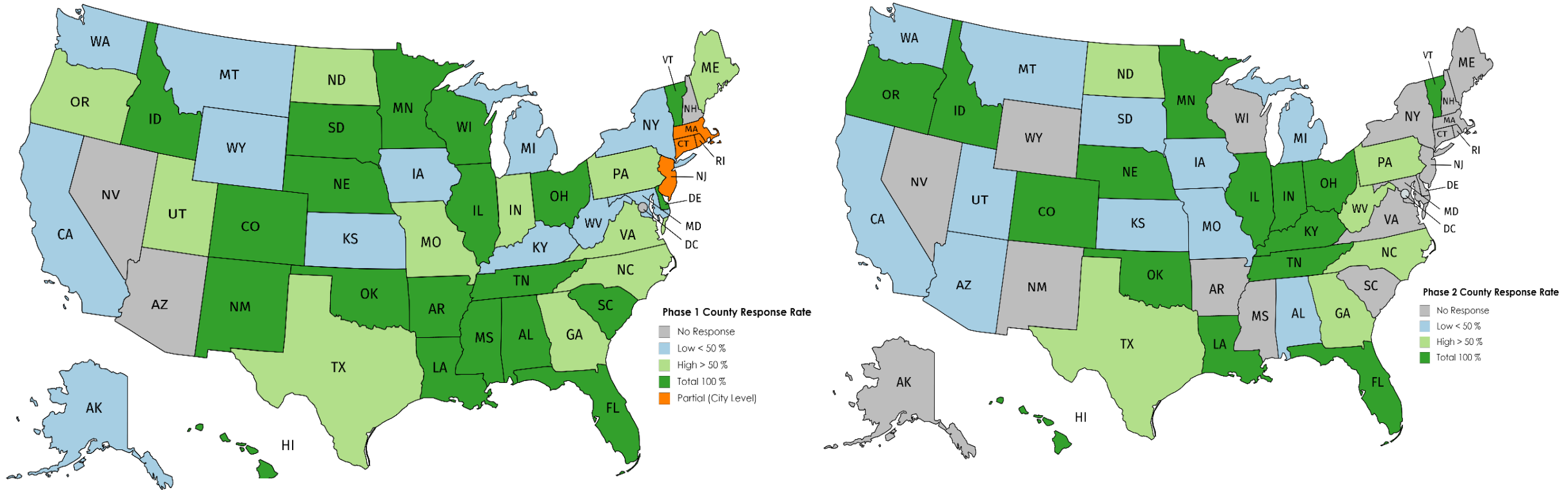
- 1) Contact permit authorities of onsite system permits for the years 2015-2018
- 2) Assess Onsite System Utilization Rate (OSUR) measurement
$$\frac{\textit{New OWTS Permits}}{\textit{New Housing Permits}} = \textit{OSUR}$$
- 3) Determine trends and integrate new variables for analysis

Background

Historical onsite system permits by type						
	New residential onsite system permits		Repair / Replace onsite system permits		Reported failing onsite system	
	1993	1998	1993	1998	1993	1998
Total	270,431	333,838	68,515	81,925	56,263	88,889

- National Environmental Services Center (NESC) conducted an assessment of onsite wastewater systems in 1993 and 1998.
- Contacted 3,490 permit authorities with a 45% response rate.

Response rate of National Assessment



Around 85% of permitting authorities contacted for 2015 data;
45% for 2016- 2018.

Onsite System Utilization Rate (OSUR)

$$\textit{Adjusted OSUR} = \frac{\textit{OWTS Permits}}{(\textit{TNH}) \times (\textit{NH}\%)}$$

OWTS permits are residential or combined (residential and commercial)

Total New Housing (TNH) is the sum of manufactured and constructed housing with a 6-month lag

New Housing Percentage (NH%) is the percentage of new housing located within responding counties.

Results with Historical Dataset

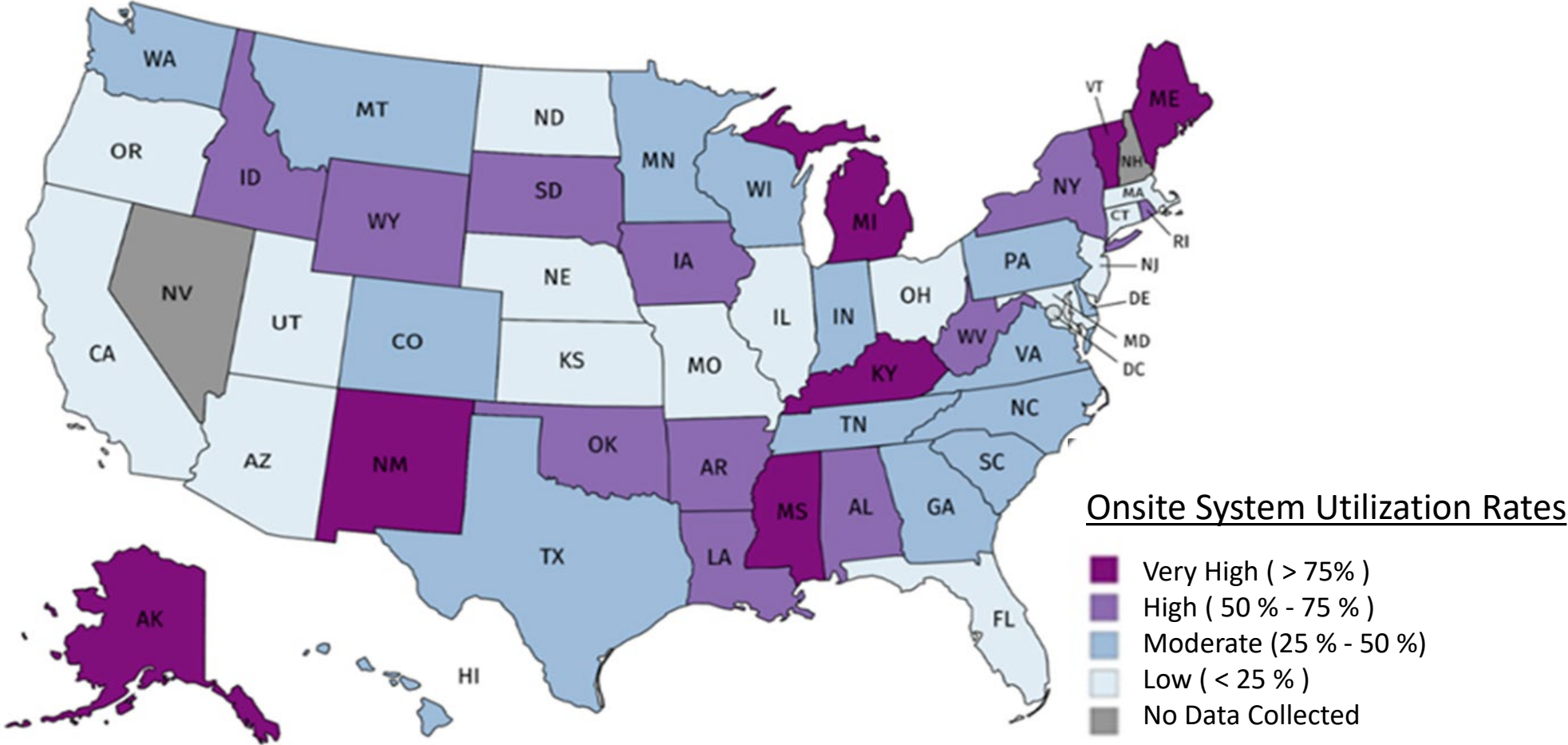
Permit Type	National new housing permits					
	1993*	1998*	2015	2016	2017	2018
Total new OWTS	270,431	333,383	189,233	160,129	166,192	157,691
(%) included in OSUR	NA	NA	73%	77%	76%	73%
Adjusted new OWTS	NA	NA	138,681	123,746	126,591	115,203
Total new housing	1,285,714	1,472,479	731,686	808,755	875,484	938,365
(%) included in OSUR	90%	93%	63%	49%	46%	42%
Adjusted total new housing	1,163,219	1,373,855	460,447	399,207	399,339	396,196
Unadjusted OSUR	21%	23%	26%	20%	19%	17%
Adjusted OSUR	23%	24%	30%	31%	32%	30%

The (*) indicates housing numbers are annual total with no 6-month lag. This will have a small deviation in actual OSUR value.

Adjusted total removes data sets with no response or incompatible data

Unable to parse incompatible data in the historical dataset (1993, 1998) due to data set limitations.

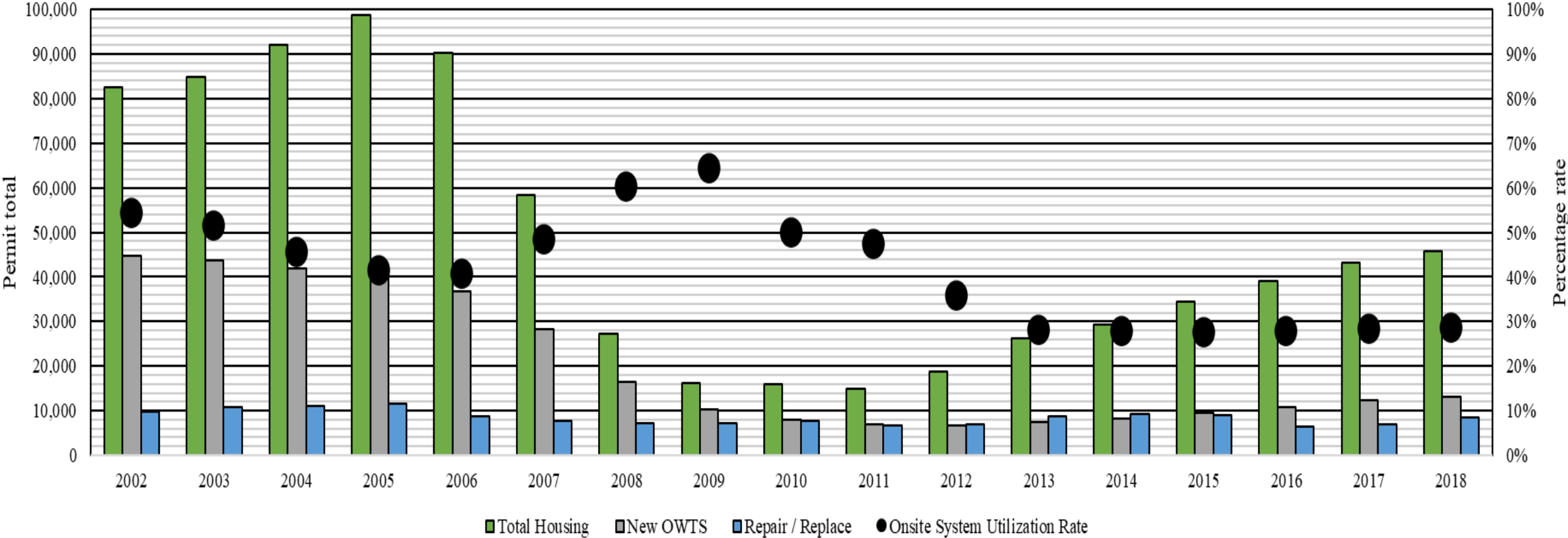
Onsite System Utilization Rate National Map - 2015



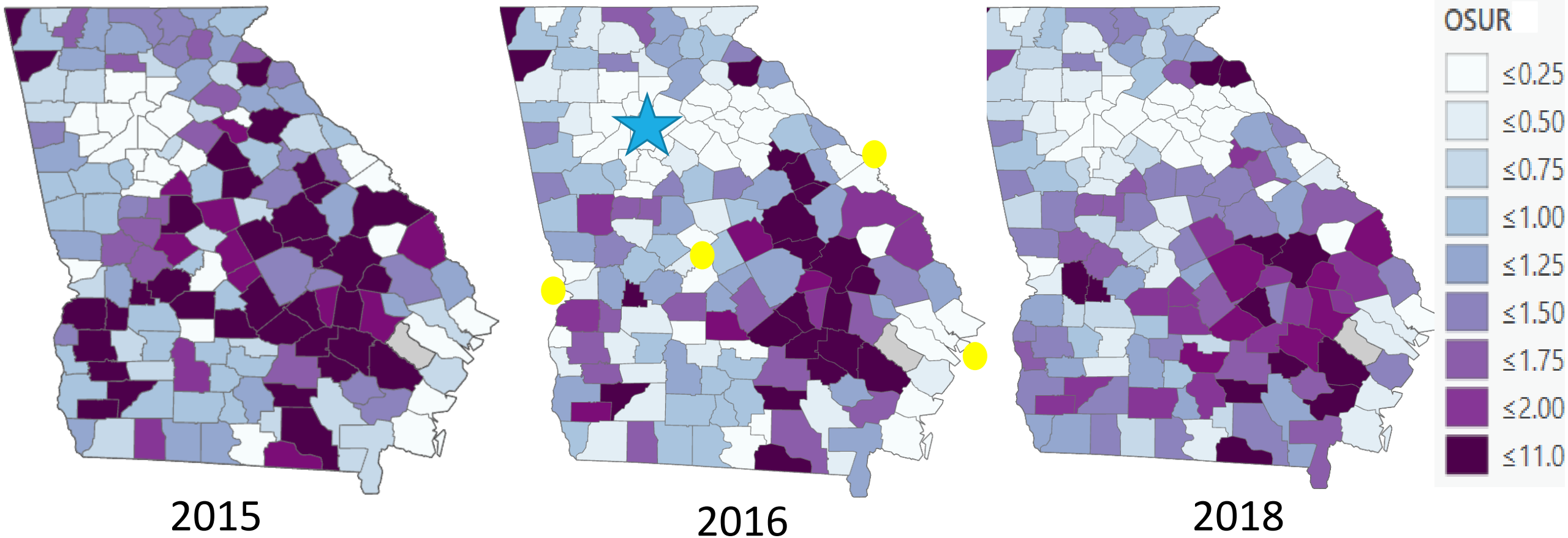
What story is the data sharing with us?

Trends Over Time

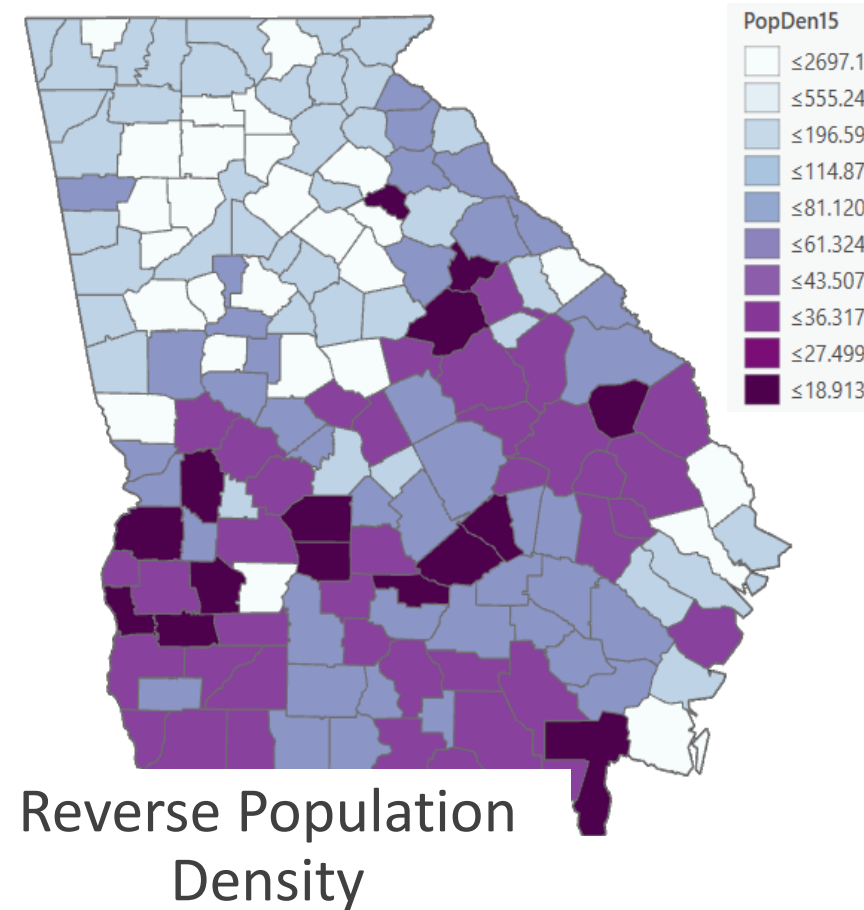
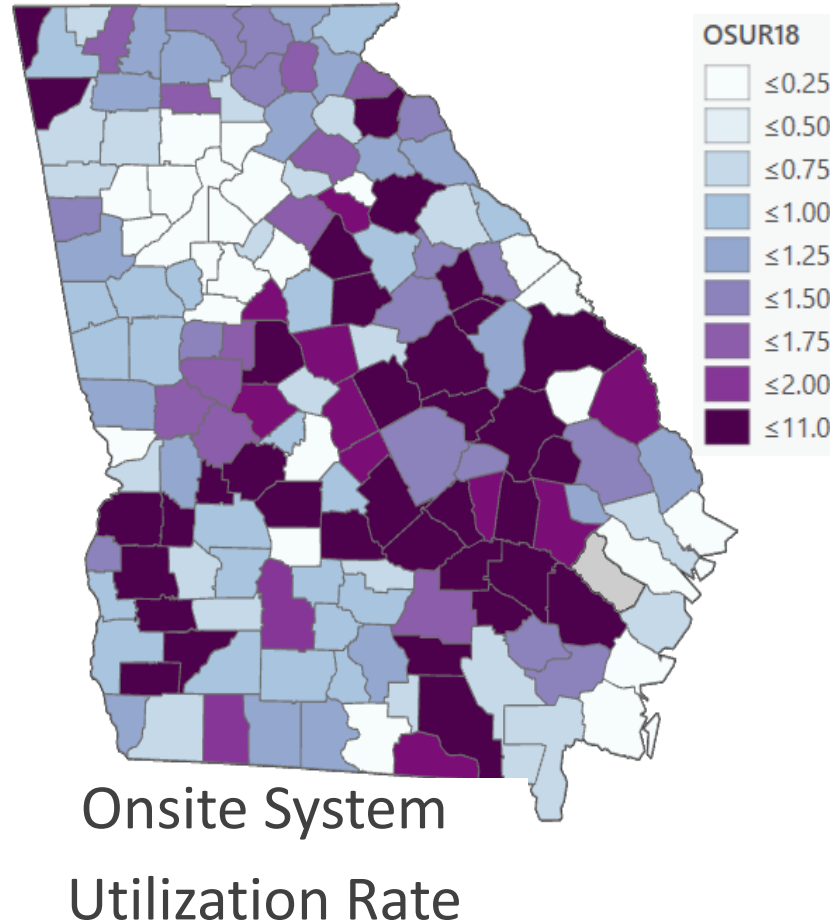
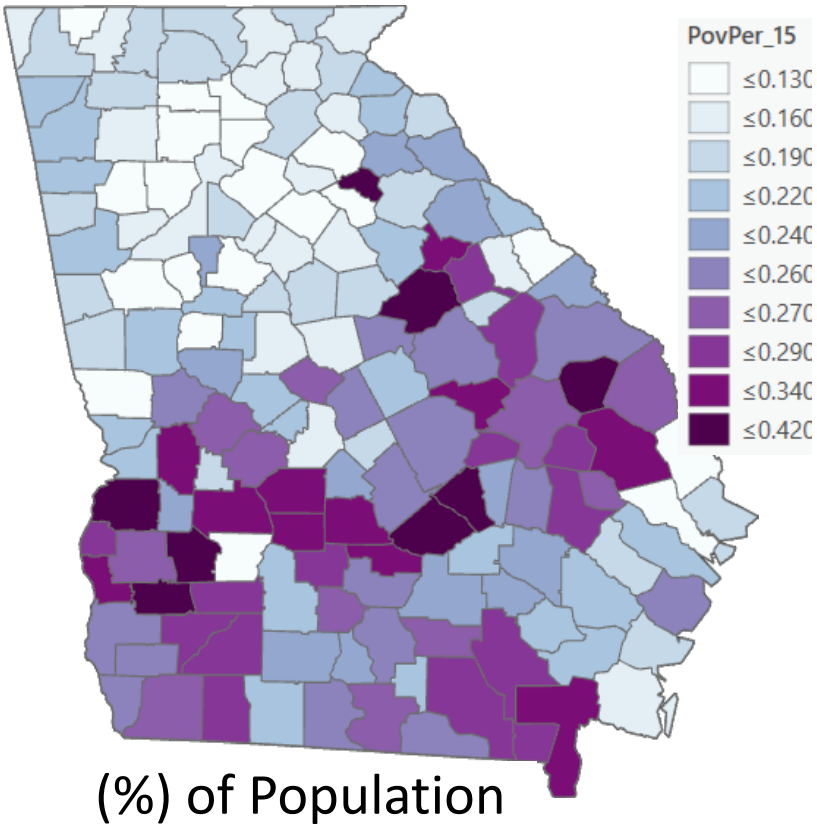
Permits with OSUR
Georgia 2002 - 2018



Onsite System Utilization Rate Georgia 2015, 2016, & 2018



Data Variable Analysis with OSUR Georgia 2015



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