

Map Set 3: Impact on Population

This series of maps displays information related to the potential environmental impacts of *additional* gas development in *Pennsylvania* if all remaining technically recoverable resources in the Interior Marcellus shale were developed using high volume hydraulic fracturing and horizontal drilling with eight wells per well pad.

This map set includes projections of the total land area and population in Pennsylvania projected to be within 0.5 and 1 miles of well pad locations. The population estimates are based on the 2010 population in US Census block data. Population and land area estimates are aggregated by county in the maps.

Note: These maps contain *projections* of natural gas development and associated impacts under a particular set of circumstances and assumptions. Changes to the assumptions could change the results. They are not *predictions* of development or impacts, and should not be used for commercial purposes, to guide investment decisions, or for short-range planning decisions. Furthermore, the maps should not be used to inform planning or decision making for geographic units smaller than the primary units of analysis (counties or HUC-10 watersheds).

Population Impact Maps

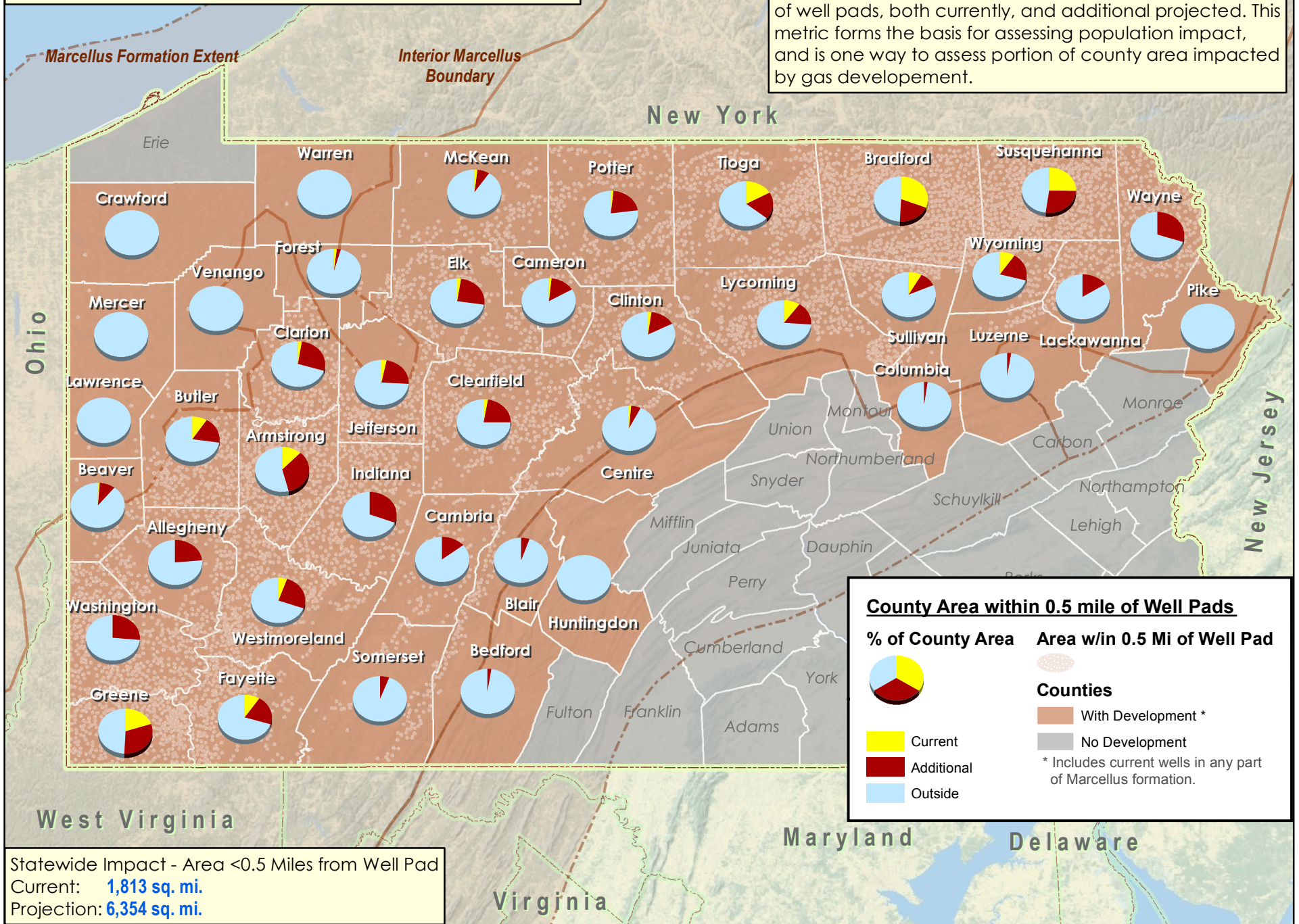
This map set includes projections of the following land and population impacts:

- 3.1 Area within 0.5 mile of well pads
- 3.2 Area within 1 mile of well pads
- 3.3 Population within 0.5 mile of well pads
- 3.4 Population within 1 mile of well pads

For additional documentation and methodology used to create these maps, please download the research report at: www.cna.org/PA-Marcellus

Map 3.1 - Area within 0.5 miles of Well Pads by County

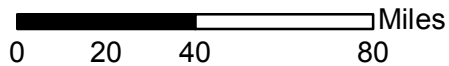
This map shows the portion of county area within 0.5 miles of well pads, both currently, and additional projected. This metric forms the basis for assessing population impact, and is one way to assess portion of county area impacted by gas development.



Statewide Impact - Area <0.5 Miles from Well Pad
 Current: **1,813 sq. mi.**
 Projection: **6,354 sq. mi.**

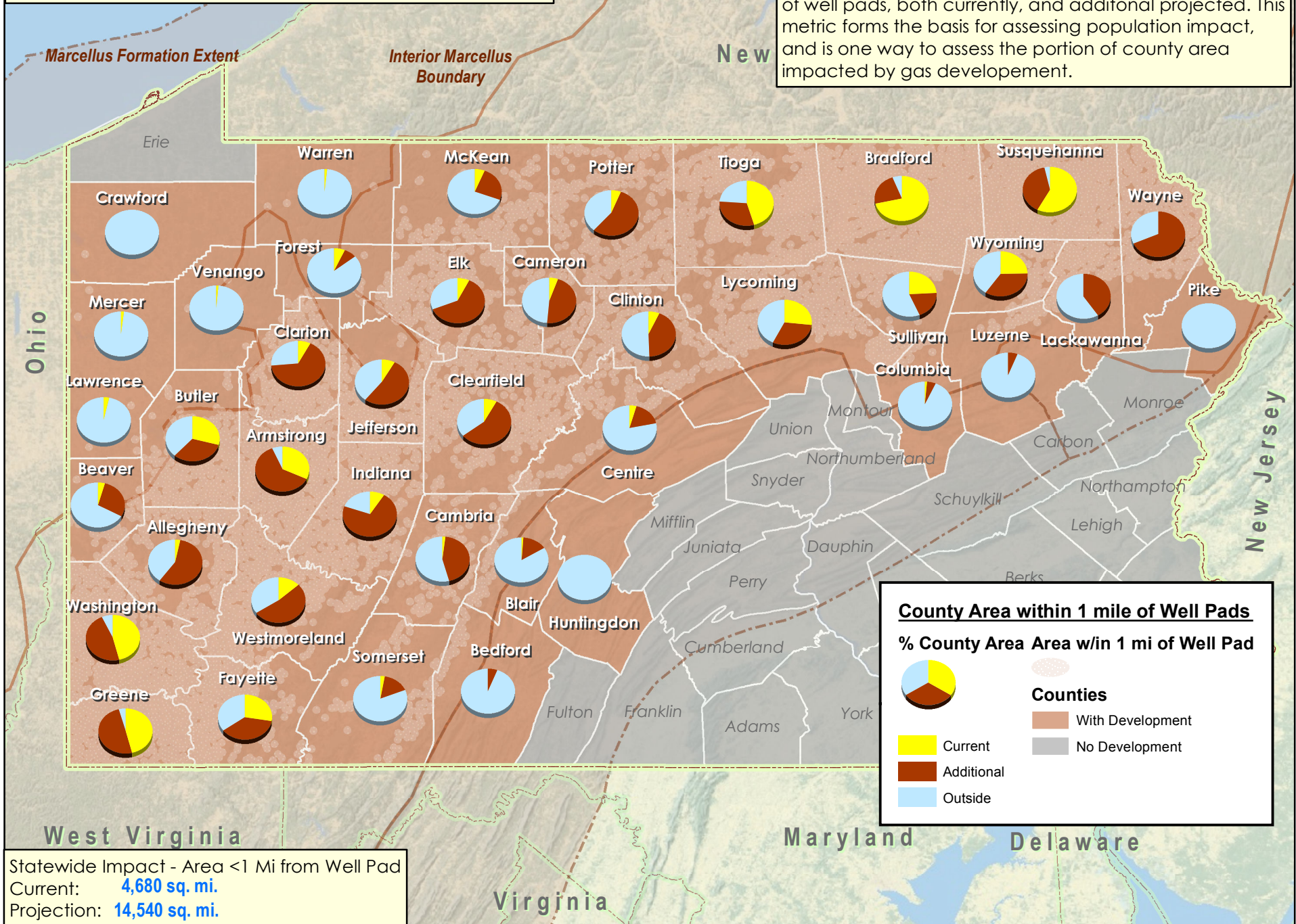
County Area within 0.5 mile of Well Pads

% of County Area	Area w/in 0.5 Mi of Well Pad
Counties	
	With Development *
	No Development
	* Includes current wells in any part of Marcellus formation.



Map 3.2 - Area within 1 mile of Well Pads by County

This map shows the portion of county area within 1 mile of well pads, both currently, and additional projected. This metric forms the basis for assessing population impact, and is one way to assess the portion of county area impacted by gas development.



County Area within 1 mile of Well Pads

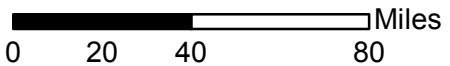
% County Area Area w/in 1 mi of Well Pad

Color	Category
Yellow	Current
Brown	Additional
Blue	Outside

Counties

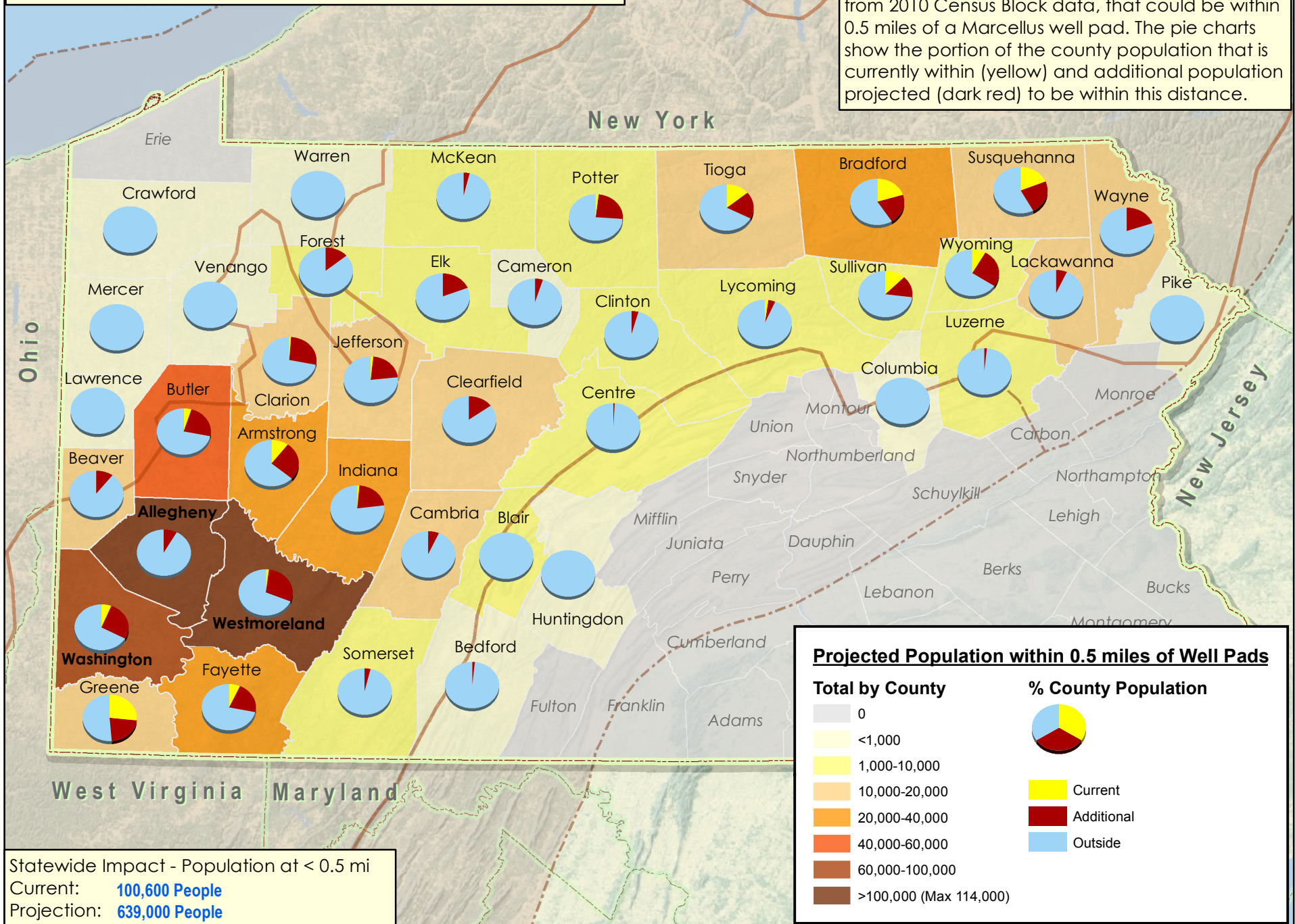
Brown	With Development
Grey	No Development

Statewide Impact - Area <1 Mi from Well Pad
 Current: **4,680 sq. mi.**
 Projection: **14,540 sq. mi.**

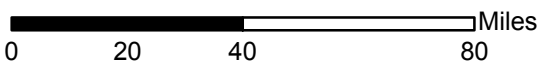


Map 3.3 - Population within 0.5 miles of well pad locations.

This map shows the county population, estimated from 2010 Census Block data, that could be within 0.5 miles of a Marcellus well pad. The pie charts show the portion of the county population that is currently within (yellow) and additional population projected (dark red) to be within this distance.

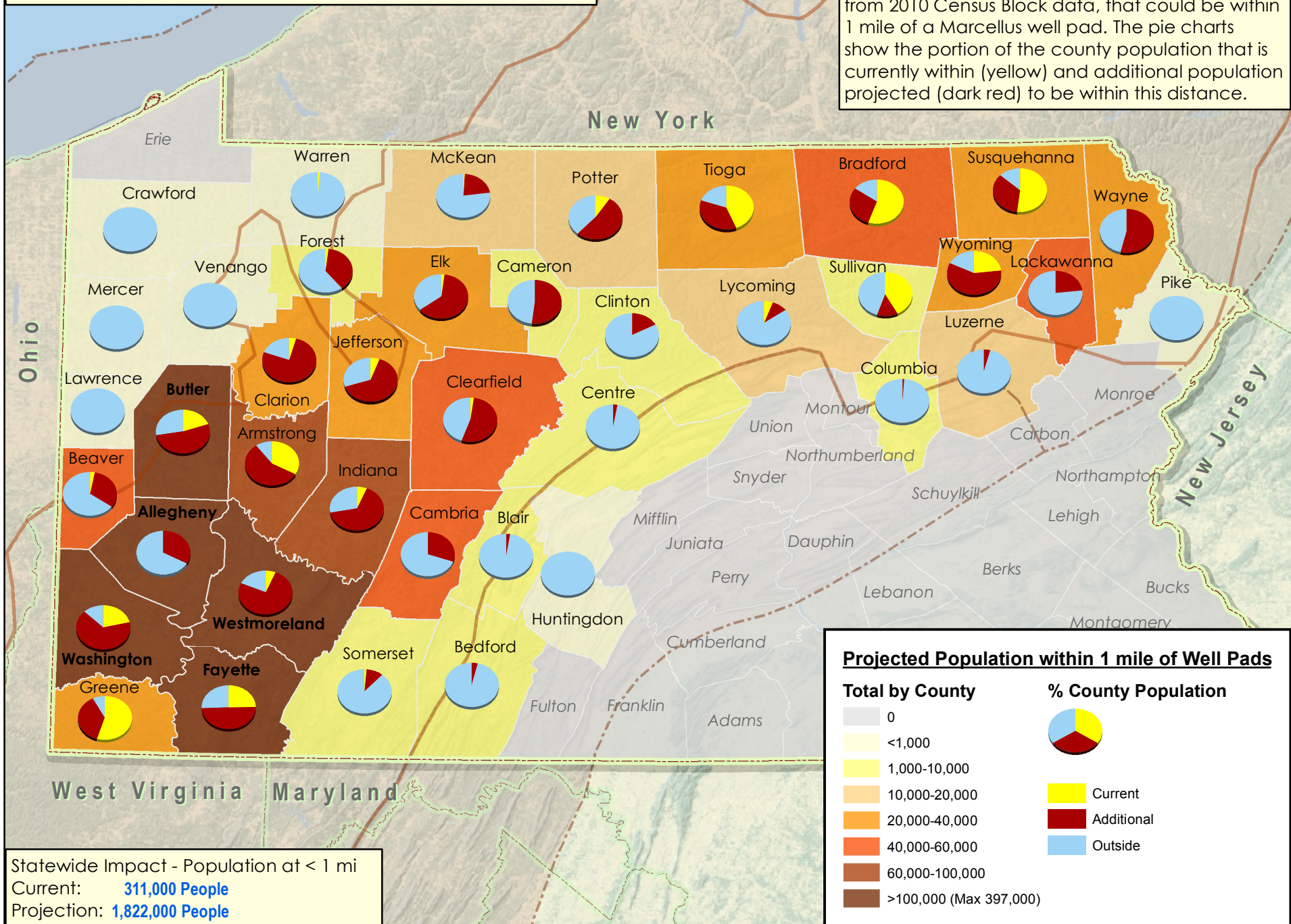


Statewide Impact - Population at < 0.5 mi
 Current: **100,600 People**
 Projection: **639,000 People**



Map 3.4 - Population within 1 mile of well pad locations.

This map shows the county population, estimated from 2010 Census Block data, that could be within 1 mile of a Marcellus well pad. The pie charts show the portion of the county population that is currently within (yellow) and additional population projected (dark red) to be within this distance.



Statewide Impact - Population at < 1 mi
 Current: **311,000 People**
 Projection: **1,822,000 People**

Projected Population within 1 mile of Well Pads

Total by County	% County Population
0	<p>Current Additional Outside</p>
<1,000	
1,000-10,000	
10,000-20,000	
20,000-40,000	
40,000-60,000	
60,000-100,000	
>100,000 (Max 397,000)	

