



pennsylvania  
DEPARTMENT OF COMMUNITY  
& ECONOMIC DEVELOPMENT

# 2015 State Land Use and Growth Management Report

## Regional Trends Supplement



Commonwealth of Pennsylvania  
Tom Wolf, Governor

PA Department of Community & Economic Development  
Dennis M. Davin, Secretary  
[dced.pa.gov](http://dced.pa.gov)



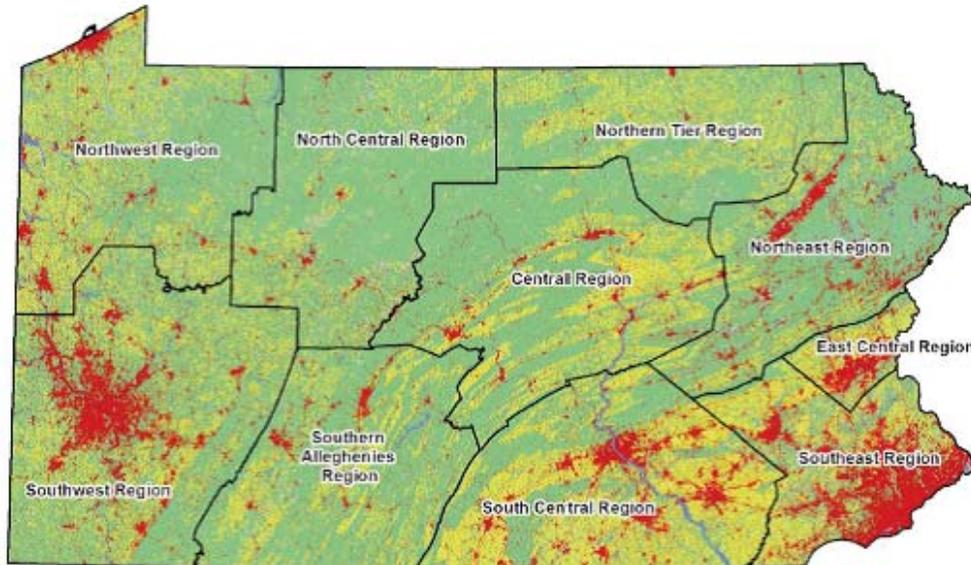
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# INTRODUCTION

This report is a supplement to the *2015 State Land Use and Growth Management Report*. These reports were prepared by the Pennsylvania Department of Community and Economic Development (DCED). The supplement report includes National Land Cover Database data and analysis provided by the Pennsylvania Department of Conservation and Natural Resources.

The *2015 State Land Use and Growth Management Report* provides information on statewide land use and growth trends, changes in demographics, the economy, and resources that impact land use, and data on land use management tools.

This supplement report provides additional detailed information on trends in land use, population, and agriculture in 10 regions of Pennsylvania. The regions in this report match those used for DCED's Partnerships for Regional Economic Performance (PREP) Program.



Base map source: National Land Cover Database from Landsat satellite imagery  
PREP regions source: PA Department of Community and Economic Development

# LAND USE PATTERNS BY REGION

**The change in the state’s land use patterns was not uniform across Pennsylvania, but varied by region.**

Overall, the proportion of land that changed categories in the individual regions between 2006 and 2011 was relatively small, ranging from 0.5 percent in the Central region to 1.85 percent in the North Central region with the total acreage involved varying from a low of 7,211 acres in the Lehigh Valley to 60,620 acres in the North Central region.

As shown in the table above and the accompanying graph below, the North Central region (Cameron, Clearfield, Elk, Jefferson, McKean, and Potter counties) experienced the largest land use change in both acreage and percentage terms between 2006 and 2011. In contrast, the number of acres that changed from one type of land use to another in the Lehigh Valley region was relatively small, but the change in percentage terms was the second highest among the ten PREP regions.

**NET CHANGE IN LAND USE BY PREP REGION  
2006 - 2011**

Region	Total Acres	Acres that Changed Land Cover 2006-11	Changed Acres % of Total Acres
Central	3,717,942	20,058	0.54%
Lehigh Valley	464,310	7,211	1.55%
North Central	3,268,705	60,620	1.85%
Northeast	2,864,688	29,959	1.05%
Northern Tier	2,552,348	17,201	0.67%
Northwest	3,524,459	36,352	1.03%
South Central	3,337,894	28,575	0.86%
Southeast	1,963,496	20,824	1.06%
Southern Alleghenies	2,972,426	13,144	0.44%
Southwest	4,324,585	47,802	1.11%
<b>Pennsylvania Total</b>	<b>28,990,853</b>	<b>281,744</b>	<b>0.97%</b>

**NET CHANGE IN LAND USE BY REGION  
2006-2011**



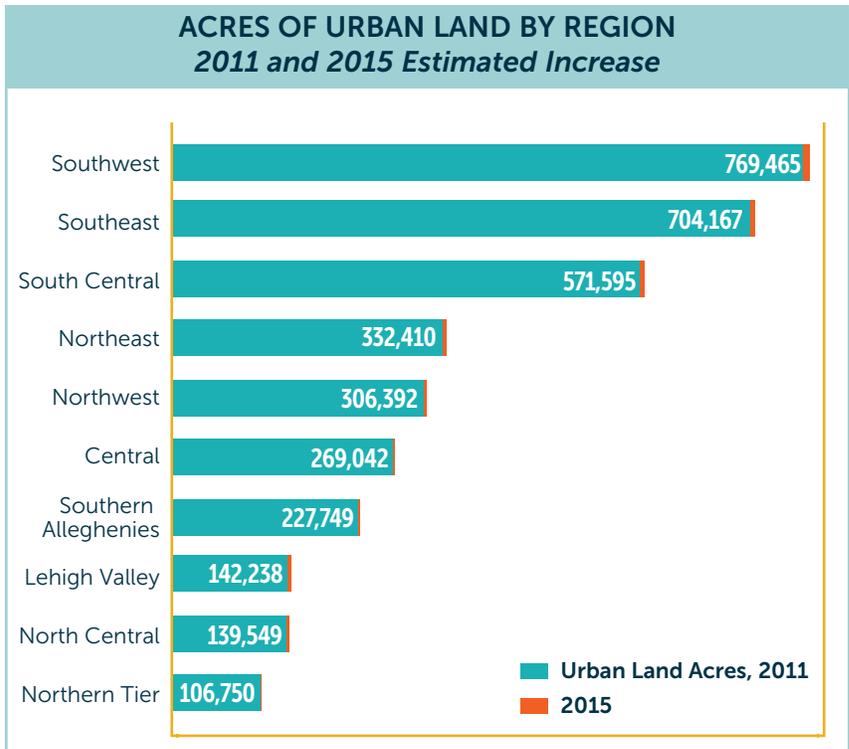
### Urban (Developed) Land Cover

Pennsylvania is largely a land of forests and farmland. Nevertheless, Pennsylvania’s landscape continues to change, especially in the more urbanized southeastern and southwestern portions of the state where the shift to developed land continued between 2006 and 2011, albeit at a slower pace than earlier in the decade. (Note: Urban land includes the four classes of developed land from the National Land Cover Database; open space, low intensity, medium intensity, and high intensity developed land).

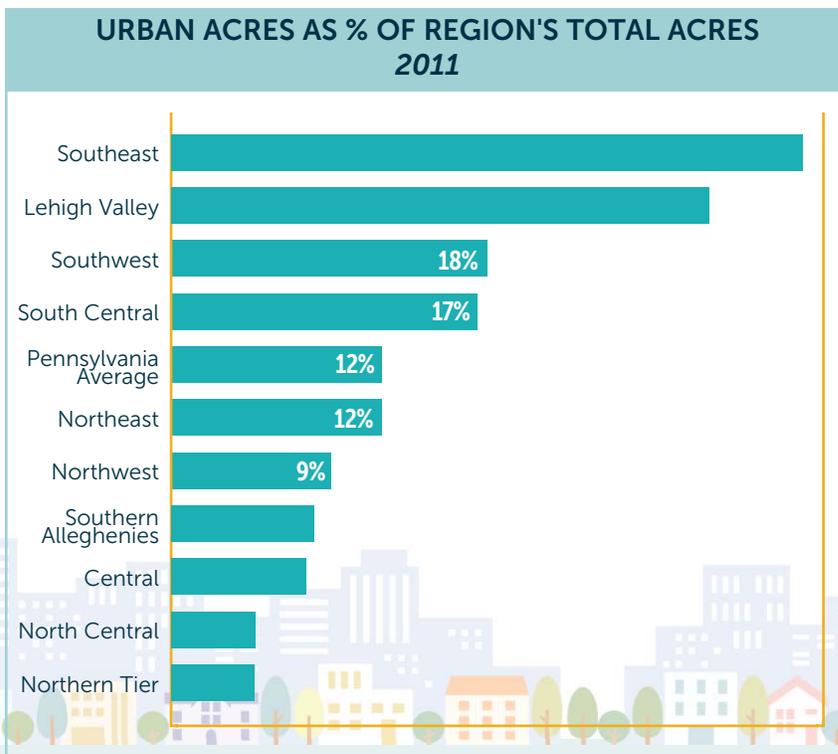
URBAN* LAND COVER BY REGION 2006-2011 and 2015 Estimate								
Region	Total Acres	Urban Acres		Urban Acres as % of Total		Net Change Urban Acres 2006-11	% Change Urban Acres 2006-11	% of Added Urban Acres Statewide
		2006	2011	2006	2011			
Central	3,717,679	266,622	269,042	7.2	7.2	2,420	0.91	4.1
Lehigh Valley	464,338	137,287	142,238	29.6	30.6	4,952	3.61	8.4
North Central	3,269,585	138,257	139,549	4.2	4.3	1,292	0.93	2.2
Northeast	2,864,532	325,518	332,410	11.4	11.6	6,892	2.12	11.8
Northern Tier	2,552,645	106,611	106,750	4.2	4.2	139	0.13	0.2
Northwest	3,524,627	302,839	306,392	8.6	8.7	3,553	1.17	6.1
South Central	3,338,090	557,301	571,595	16.7	17.1	14,294	2.56	24.4
Southeast	1,963,489	692,850	704,167	35.3	35.9	11,316	1.63	19.3
Southern Alleghenies	2,972,786	226,603	227,749	7.6	7.7	1,146	0.51	2.0
Southwest	4,325,202	756,857	769,465	17.5	17.8	12,607	1.67	21.5
<b>Pennsylvania Total</b>	<b>28,992,974</b>	<b>3,510,746</b>	<b>3,569,357</b>	<b>12.1</b>	<b>12.3</b>	<b>58,611</b>	<b>1.67</b>	<b>100.0</b>

Source: 2006 and 2011 data from NLCD  
 \*Urban land includes the four classes of developed land from the National Land Cover Database (i.e., open space, low intensity, medium intensity, and high intensity developed land).

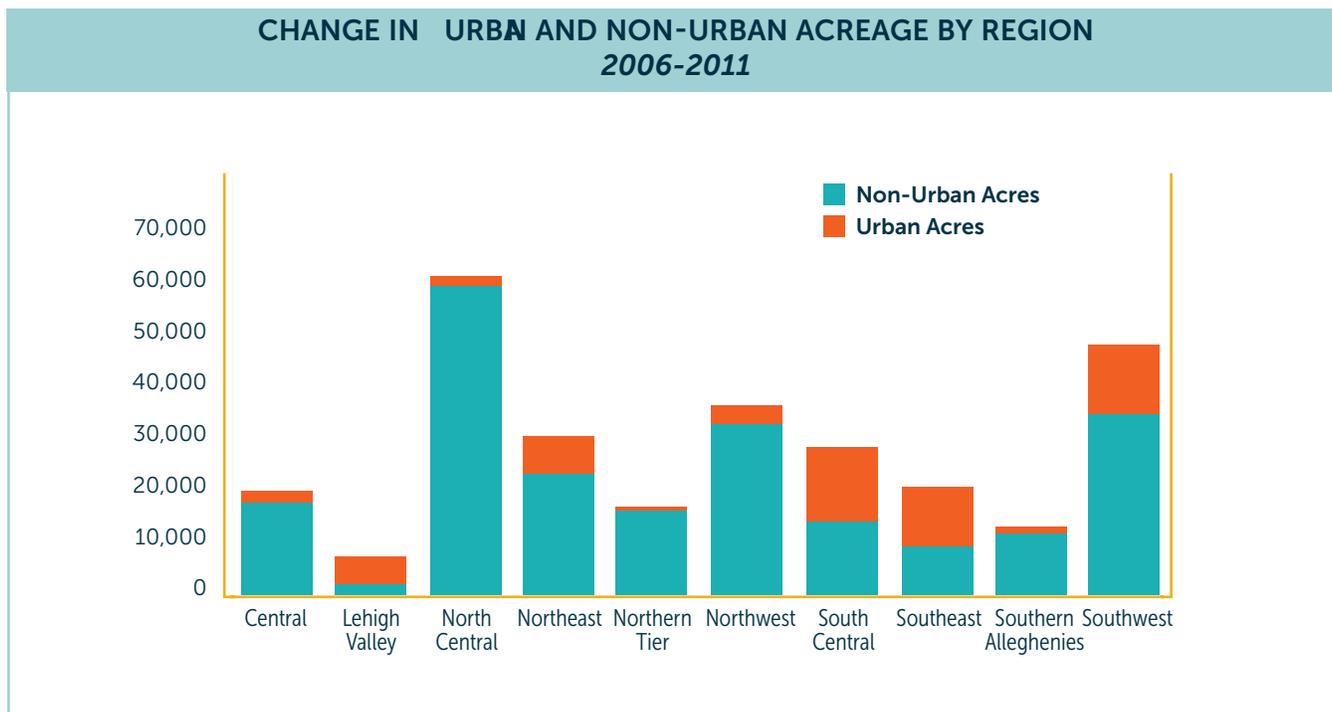
Together, the Southeast, South Central, Lehigh Valley, and Southwest Regions account for slightly more than a third of Pennsylvania’s total land area, but for more than 60 percent of the urban land cover and for nearly 75 percent of the increase in the state’s developed acreage between 2006 and 2011. In contrast, the North Central region, which experienced the largest change in land types during this period, saw only a small portion (2 percent) of the 60,620 acres that underwent a change in land type convert to urbanized status.



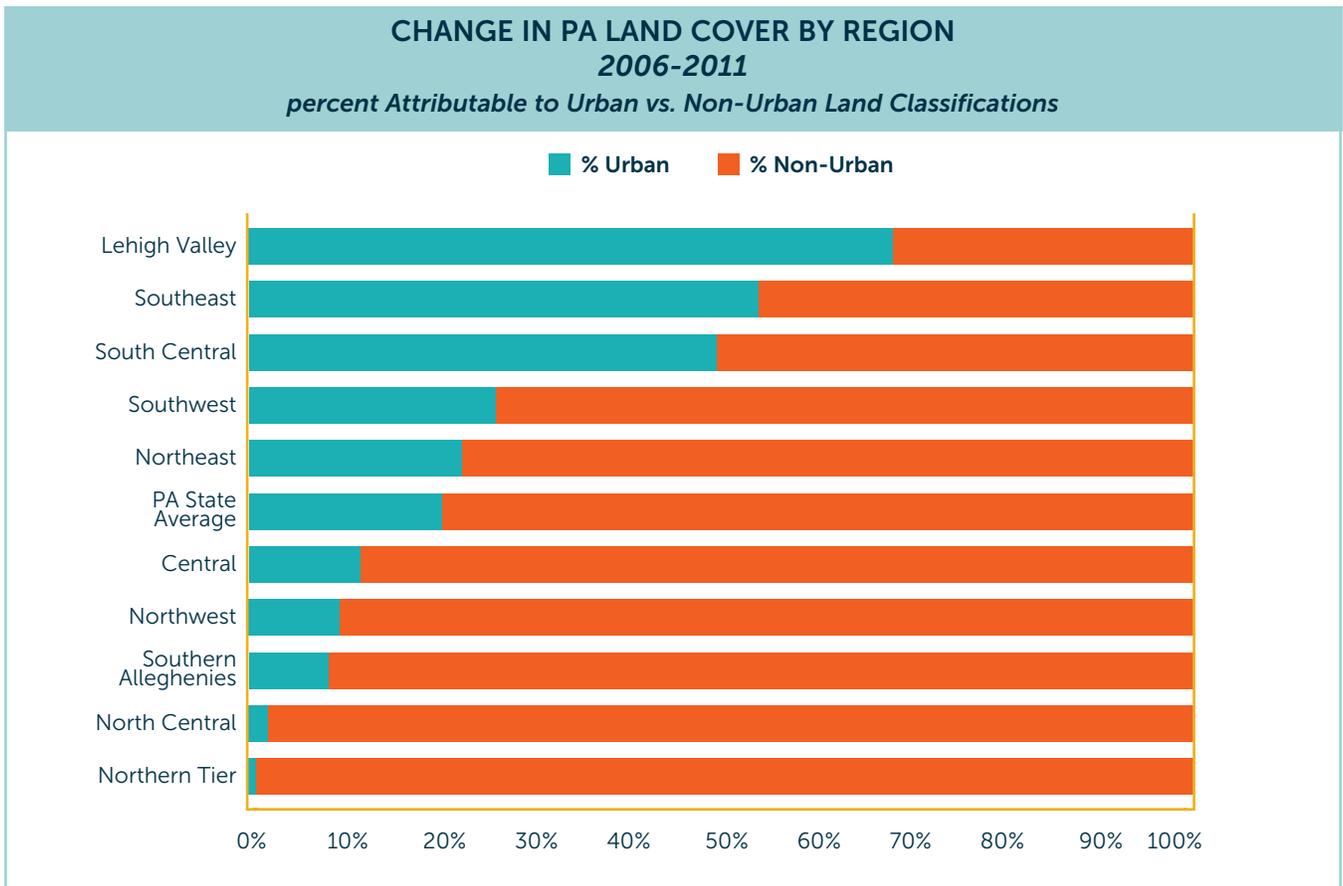
The following graph shows the percent of each region's land cover considered urban in 2011. Given the slow growth in the state's population, housing permits, and job growth since 2011, the percentages are assumed to be little changed in the subsequent years.



It is not surprising the most urbanized areas of the state in 2006 became even more so by 2011. The following chart illustrates the net increase in non-urban and urban acreage that took place in each PREP region between 2006 and 2011. The South Central region had the largest number of acres that were converted to developed status, followed by the Southwest and Southeast regions.

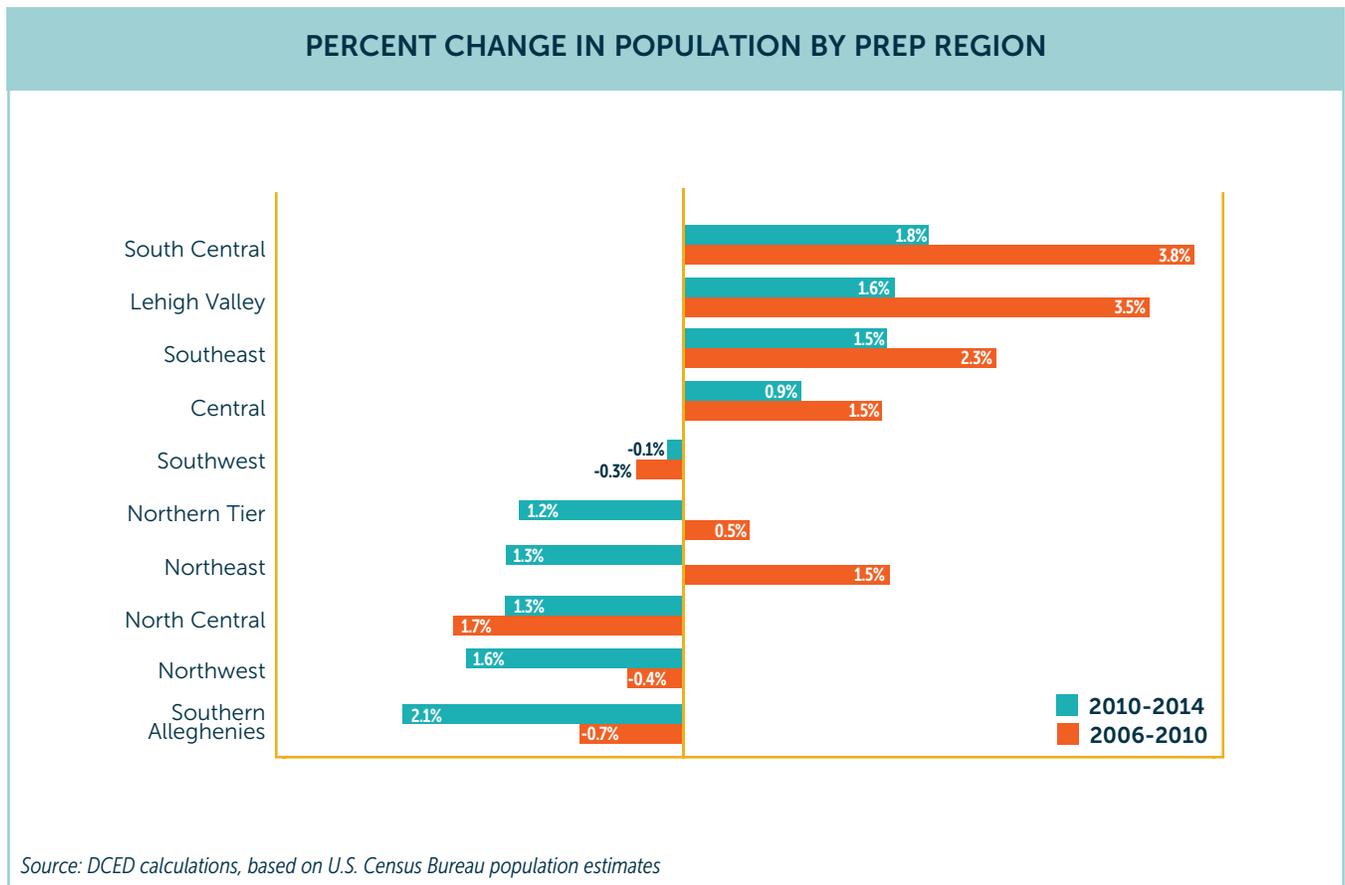


The Lehigh Valley region had the fifth highest number of acres converted to urbanized land between 2006 and 2011. However, as illustrated in the following chart, the region had the largest percentage of land converted to an urbanized status among the regions.





Regionally, the three PREP regions in the southeastern portion of the state – Southeast, South Central, and Lehigh Valley – had the largest increase in the number of residents between 2010 and 2014 and also between 2006 and 2010, with every county except Perry experiencing an increase in the size of its population in the most recent period. The Southeast PREP region saw its population grow by nearly 68,000 during this time, while South Central PA had the strongest gain in percentage terms at 1.8 percent, as illustrated in the following graph. These two regions also had the strongest population gains in the prior period, albeit at much higher levels than in recent years, with the Southeast region gaining more than 101,000 residents and the South Central region’s population growing at a rate of 3.8 percent.



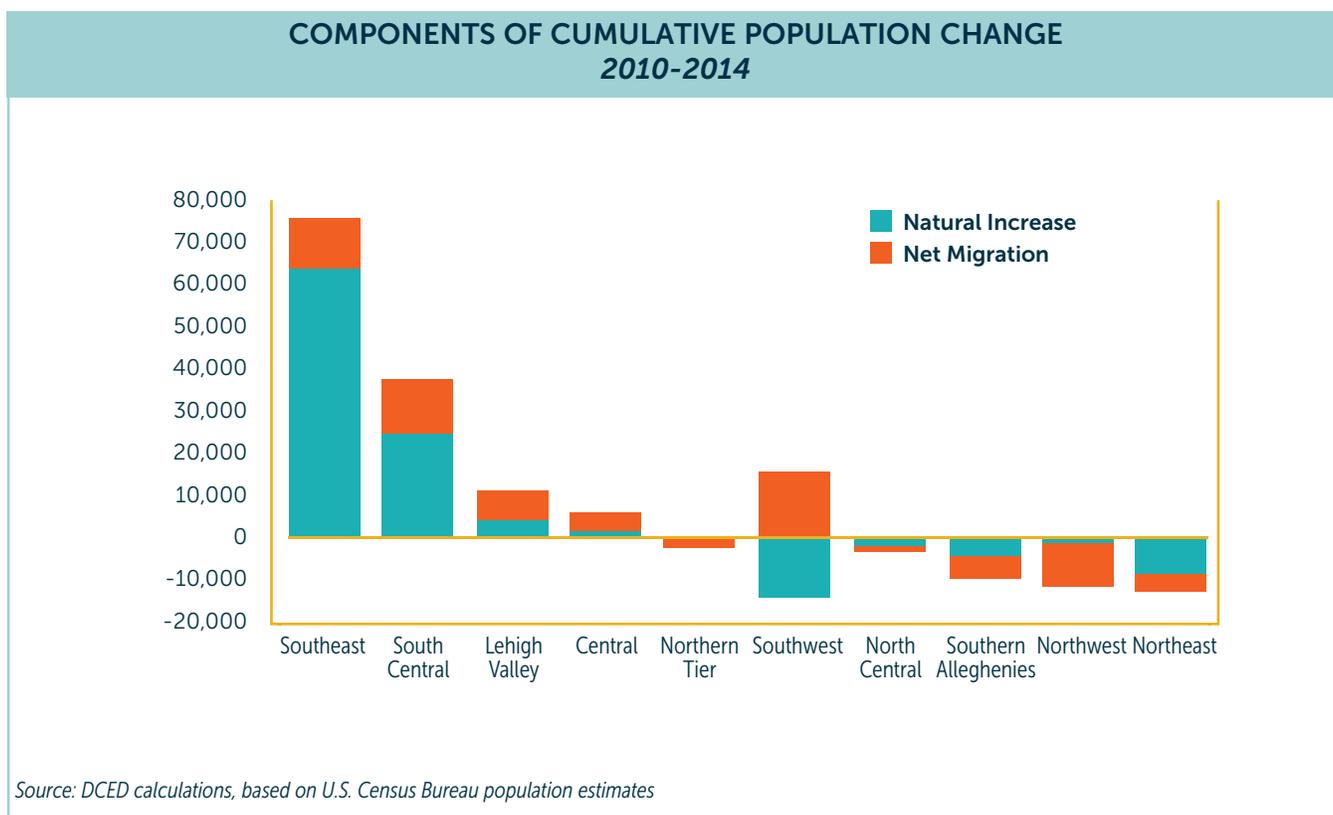
While the Southwest region experienced a small loss of population, Allegheny, Butler, and Washington counties each saw their populations grow between 2010 and 2014, but not by large enough numbers to completely offset the loss of population in the region’s other counties.

## Components of Population Change

The size of an area’s population can change in two ways through: (1) the net or “natural” increase from births and deaths in the resident population, and (2) the net migration of people moving into the region from either domestic or international locations and residents moving out to live elsewhere. Together, these two factors determine whether an area’s population base grows, shrinks, or stays roughly the same.

The three regions in the southeastern portion of the state – Southeast, South Central, and Lehigh Valley – had a net increase of nearly 121,200 residents between 2010 and 2014. The increase was due to the natural increase in the population, which was responsible for approximately three-quarters of the net increase in the area’s population, and international migration, which was responsible for close to 90,200 new residents –more than offsetting the net loss of an estimated 59,000 residents who moved to either another region in Pennsylvania or out of state.

The following chart illustrates the cumulative change in each region’s population between 2010 and 2014 from the natural increase attributable to births and deaths of the resident population and net domestic and international migration of individuals moving into and out of the region.



With the exception of the Southwest PREP region, many of the counties and regions that experienced a loss of population between 2010 and 2014 had more people die than were born and more residents move away than move in. The Southwest region was unique in experiencing an increase in population from both international and domestic migration of new residents, while its existing resident population base shrunk as the number of deaths was higher than that of births.

## Economic and Demographic Factors Affecting Population Base

Economic and demographic factors are often inter-related with an area’s population base. In the southeastern and central regions of the state an increase in population between 2010 and 2014 correlates with strong growth in jobs relative to other parts of the state and a younger demographic. The Southeast, South Central, and Lehigh Valley Regions were responsible for over 70 percent of the state’s job growth between 2010 and 2014 – together adding close to 100,000 jobs to the state’s economy, according to data from the U.S. Bureau of Labor Statistics. These three regions also had a higher percentage of residents in the younger age categories than the state average. Of the 16 counties that comprise these regions, Perry County was the only county that experienced a loss of population and jobs during this period.

In contrast, the four regions with the largest declines in population (i.e., North Central, Northeast, Northwest, and Southern Alleghenies) also had the weakest job growth between 2010 and 2014. During this period, the number of jobs in the North Central and Northeast regions was little changed and down 2 percent in the Southern Alleghenies. The Northwest region experienced a 1.5 percent increase in the number of jobs between 2010 and 2014, but this was equal to just roughly a third of the jobs that were lost during the recession. These three regions also had a higher proportion of older residents (i.e., aged 65 years or above) than either the U.S. or state average and the population in these four regions all declined.

### ECONOMIC AND DEMOGRAPHIC INDICATORS By PREP Region

PREP Region	Percent Change in Population	Percent of Population Under 45 Years of Age	Percent Change in Job Count 2010-2014	2014
South Central	.18	.56	.31	
Lehigh Valley	.16	.56	.67	
Southeast	.15	.58	.27	
Central	.09	.57	.26	
Southwest	-.01	.53	.26	
Northern Tier	-.12	.50	.59	
Northeast	-.13	.52	.03	
North Central	-.13	.51	.03	
Northwest	-.16	.53	.15	
Southern Alleghenies	-.21	.51	-.20	
<b>State Average</b>	<b>0.6</b>	<b>.55</b>	<b>3.1</b>	

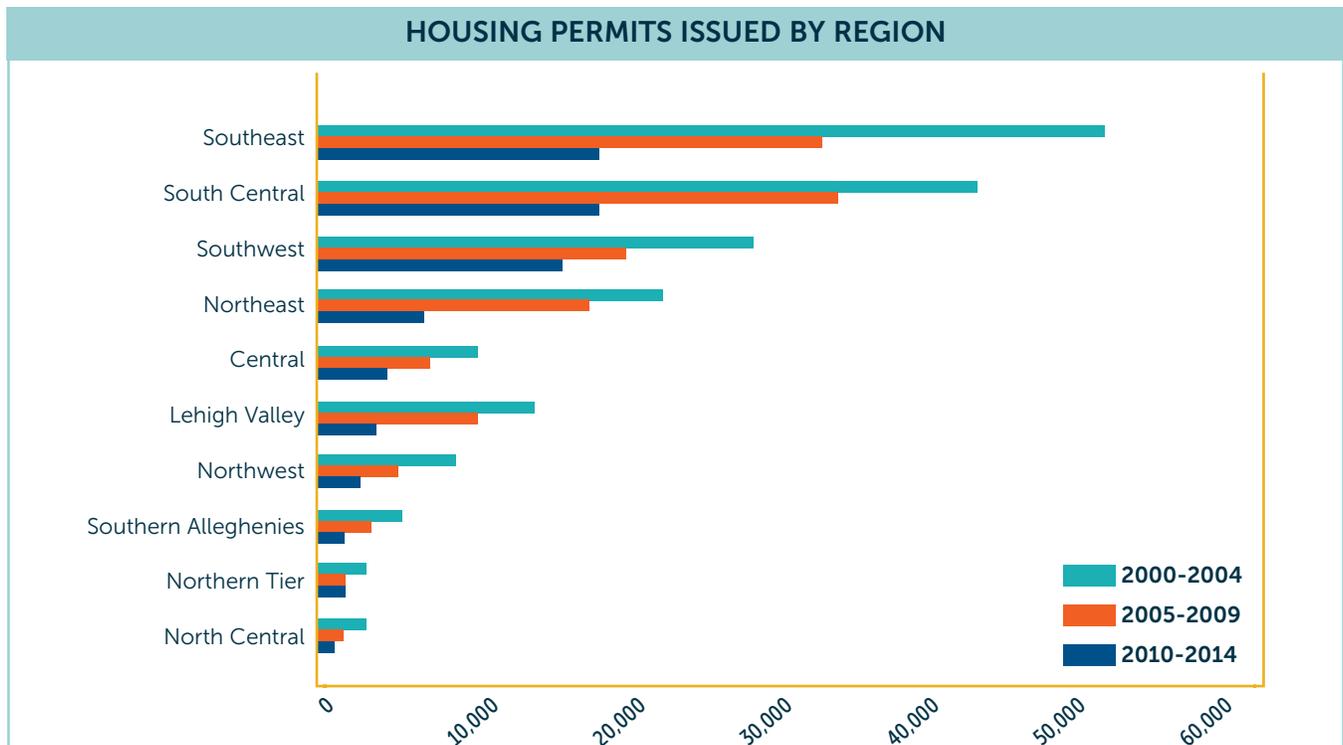
## Population and Residential Building Permits

The demand for new housing is closely tied to an area’s population dynamics. Areas with a growing population, e.g., southeastern Pennsylvania, will have a stronger need for new housing than other areas with weaker population growth or decline. Statewide, 9 percent of Pennsylvania’s total housing stock is relatively new (i.e., built since 2000), with nearly three-quarters built prior to 1980. In comparison, 16 percent of the nation’s housing stock was constructed in 2000 or later, with 56 percent built before 1980. The three southeastern regions together with the Southwest region account for close to 80 percent of the 33,300 housing units built in Pennsylvania since 2010. The following table shows the number of housing units for each region and the decade in which the units were built.

PREP Region	Total Housing Units	Built 2010 or later	Built 2000-09	Built 1990-99	Built 1980-89	Built 1970-79	Built 1960-69	Built 1950-59	Built 1940-49	Built 1939 or earlier
Northeast	499,750	1,891	48,636	49,794	60,979	69,682	38,197	39,633	32,984	157,954
Lehigh Valley	263,869	1,856	31,688	26,794	27,626	33,656	26,265	32,767	13,963	69,254
South Central	788,223	7,927	96,677	106,942	99,093	107,844	75,231	88,115	42,148	164,246
Southeast	1,823,748	9,454	137,127	148,352	163,067	200,536	207,555	299,481	182,141	476,035
Southwest	1,158,431	6,809	78,036	90,193	89,412	142,374	127,767	192,497	108,327	223,066
Northwest	336,115	1,512	23,367	31,053	28,560	48,825	34,418	47,060	26,986	94,334
North Central	117,007	429	7,621	11,562	11,791	16,801	8,366	12,695	9,116	38,626
Southern Alleghenies	213,192	1,062	14,113	18,082	19,349	30,854	18,725	26,043	18,037	66,927
Northern Tier	94,127	639	8,179	11,410	11,703	14,977	7,822	5,344	3,755	30,298
Central	283,931	1,734	23,798	30,508	30,981	42,477	25,831	28,556	17,535	82,511
<b>Total</b>	<b>5,578,393</b>	<b>33,313</b>	<b>469,242</b>	<b>524,690</b>	<b>542,561</b>	<b>708,026</b>	<b>570,177</b>	<b>772,191</b>	<b>454,992</b>	<b>1,403,251</b>

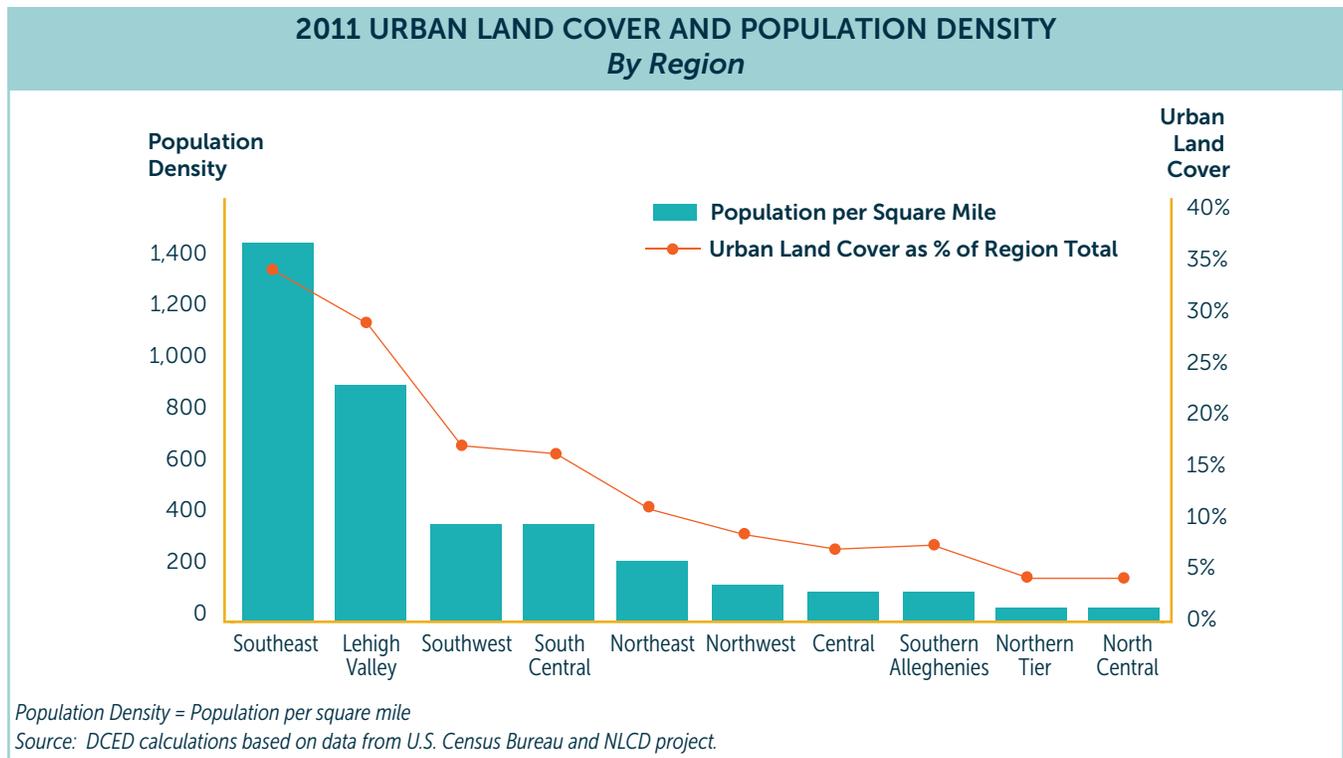
Source: DCED regional totals from U.S. Census Bureau 2010-2014 American Community Survey 5-Year Estimates

As noted earlier, the number of housing permits issued in years following the Great Recession was far lower than in the pre-recessionary years. The following table illustrates the drop in total housing permits issued for the most recent three five-year periods.



## Population and Land Cover

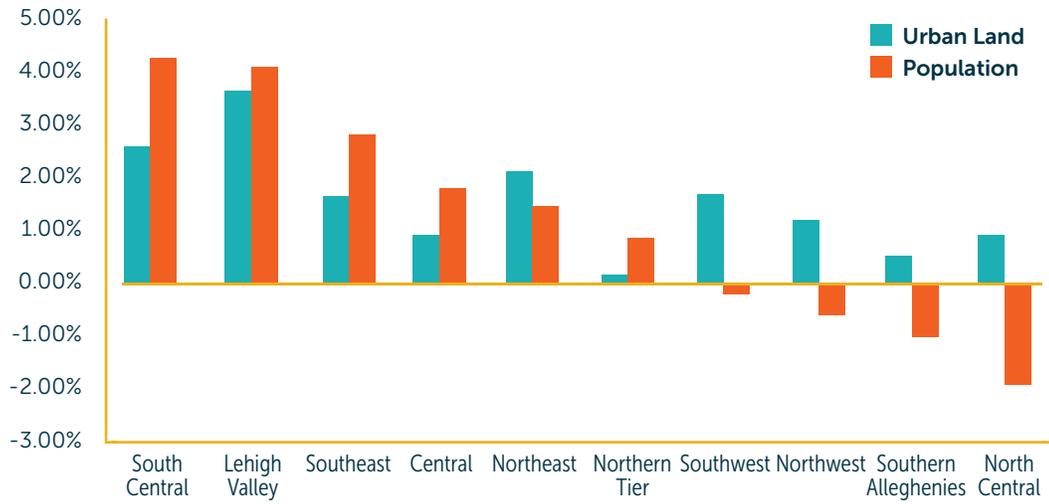
There is a clear and close relationship between the amount of land considered developed, or “urban,” and population density (measured by the population per square mile). As illustrated in the following chart, the regions with most people per square mile also have the highest proportion of land classified as developed. Conversely, those regions with the fewest people per square mile also have the smallest proportion of developed land.



The growth in population and the conversion of land to a developed, or “urban” classification are closely linked. As illustrated in following table, generally the regions with among the strongest population gains between 2006 and 2011 also had the largest proportion of land cover become urbanized, based on the NLCD data.

GROWTH IN URBAN LAND COVER AND POPULATION 2006 - 2011		
PREP Region	Percent Change in Population	Percent Change in Urban Land Cover
South Central	.43	.256
Lehigh Valley	.41	.361
Southeast	.28	.163
Central	.18	.091
Northeast	.14	.212
Northern Tier	.08	.013
Southwest	-.02	.167
Northwest	-.07	.117
Southern Alleghenies	-1.0	.051
North Central	-2.0	.093

**PERCENT CHANGE IN POPULATION AND URBAN LAND COVER  
2006-2011**



Source: DCED calculations from NLCD and U.S. Census Bureau data



Similarly, while the total amount of farm acreage showed a relatively small change of -1.5 percent statewide, there were strong shifts in a number of counties and regions with Dauphin County adding the most farm acreage (30,780 acres) between 1997 and 2012 and Chester County losing the most farm acreage at a nearly equal number (30,430). (Note: County-level data is only available from the 5-year Census of Agriculture.) The change in the amount of farm acreage by region is presented below.

TOTAL FARM ACREAGE by PREP Region						
Region	1997	2002	2007	2012	1997-2012	
					Percent Change	Acreage Change
North Central	305,929	310,311	318,037	323,227	5.7	17,298
Northeast	375,181	392,568	394,542	388,332	3.5	13,151
Central	1,001,005	1,024,501	1,041,867	1,034,961	3.4	33,956
South Central	1,648,159	1,615,316	1,639,854	1,678,114	1.8	29,955
Southern Alleghenies	856,921	833,441	844,804	861,892	0.6	4,971
Northern Tier	785,155	784,745	714,739	785,777	0.1	622
Northwest	939,897	896,352	976,715	908,190	-3.4	-31,707
Southwest	1,144,096	1,207,321	1,214,367	1,083,823	-5.3	-60,273
Southeast	581,166	513,764	511,424	498,053	-14.3	-83,113
Lehigh Valley	182,139	168,860	152,895	142,075	-22.0	-40,064
<b>STATE TOTAL</b>	<b>7,819,648</b>	<b>7,747,179</b>	<b>7,809,244</b>	<b>7,704,444</b>	<b>-1.5</b>	<b>-115,204</b>

Source: U.S. Department of Agriculture