PULASKI COUNTY is...

LAND USE

LAND USE

The County promotes wise land use policy to ensure that compatible and appropriate uses are considered in land use decisions. As we continue to develop the landscape, multiple factors shall be considered. Economic development, adequate housing choices, transportation networks, geographic constraints, farmland protection and environmental quality all factor into land use choices and future policy.

Geography

The land area of Pulaski County is 327 square miles. It is bordered by Bland, Carroll, Floyd, Giles, Montgomery, and Wythe counties, and the City of Radford. The County lies within the Valley and Ridge physiographic provinces of Virginia. The elevation in the County ranges from 1,800 to 2,850 feet above mean sea level. Because of the ridge and valley geography, steep slopes are an issue for portions of the county. In general, slopes over 20% are difficult to develop and create environmental concerns such as soil erosion.

Climate

The climate of Pulaski County is modified continental, with mild winters, and warm and humid summers. The County is located in the mean paths of winter North American storm tracks and moist tropical air from the Gulf of Mexico. Besides its location, the major controlling factors on temperatures in the County are elevation and the mountains. The mountains steer and modify storms and air masses. The higher elevations cause a flow of cooler air which tend to moderate summer nights.

LAND USE

Geology

Pulaski County is characterized by sedimentary rocks such as limestone, shale, and sandstone. Historically, limestone, salt-peter, coal, iron-oxide pigments, zinc, lead and sandstone have been mined in the County. Soils in Pulaski County are generally loamy soils formed from weathering of sandstone and shale. The depth to bedrock varies from moderately deep (20 inches) to deep (60 inches). (Soils map can be found in Appendix)

As early as the 1700's salt-peter was mined from the caves of Pulaski County to make gun powder. Zinc, lead and coal were mined in several areas, with large furnaces located in the Town of Pulaski and smaller coke/charcoal furnaces located in several communities. Currently there are four mines with active permits from the Department of Mines, Minerals and Energy. The Hoover Color Corporation mines pigment, while the other quarries mine stone and sand.

Karst Topography

Much of Pulaski County is underlain by carbonate bedrock and the surface topography is typical of a karst terrain. As is typical of karst terrain, soil cover is thin and rapid infiltration of surface water occurs through drainage into sinkholes. These characteristics dictate how surface activities can have a severe and widespread potential for adversely affecting groundwater quality. The folded, fractured and solubilized nature of carbonate bedrock can result in rapid and widespread distribution of contaminants once they are introduced into the groundwater.

In karst terrain, pinnacle erosion is common. Therefore, excavation costs may vary within a relatively small area. Small cave-ins are not uncommon and usually develop after heavy rains, when water enters the earth through deep cracks in the dried-out soil.

Claytor Lake

Claytor Lake was created in 1939 with the construction of the Appalachian Power Company's hydroelectric power facility and dam. The lake spans an area of 4,472 acres and has approximately 100 miles of shoreline. The total installed electrical capacity of the hydroelectric project is 75MW. Claytor Lake supports a variety of fish, aquatic and land-based species, while also providing an idyllic place for residents and visitors to recreate. Claytor Lake State Park sits on approximately 400 acres with direct access to the lake. The park is a tourism hotspot and provides campgrounds, cottages, a seasonal beach, marina, and hiking trails for visitors.

Appalachian Power Company maintains nine (9) management plans to monitor and protect the natural resources of the lake. The Shoreline Management Plan is the tool which is used to monitor and permit development on the shoreline of the lake.

Maintaining the health of the lake continues to remain a top priority for Pulaski County. Staff members participate in various meetings and working groups with partners and stakeholders, including Appalachian Power Company, the Virginia Department of Game and Inland Fisheries (VDGIF), the Virginia Department of Conservation and Recreation (VDCR), and the Friends of Claytor Lake (FOCL) among others. The New River and Claytor lake are major tourism assets, and the municipal water resource for Pulaski County is provided by the lake and the New River. The County has a continued interest in protecting the water quality of this resource.

Claytor Lake

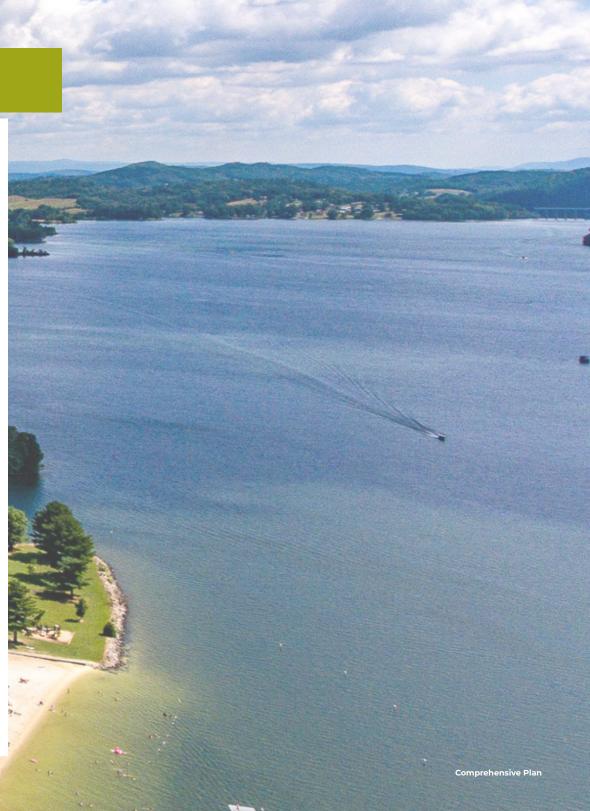
Friends of Claytor Lake (FOCL)

FOCL was formed in 1993 in response to excessive debris build-up in Claytor Lake. Since then this volunteer group has led lake cleanup efforts in partnership with AEP and Pulaski County. FOCL continues to advocate for natural resources protection and policies that support recreational use of the lake. In 2018, FOCL's cleanup program hauled huge amounts of debris out of the lake which included more than 290 roll-off container loads (4,357 tons), 59 tires, 229 trash bags, 10 barrels, 14 docks, 1 camper, 2 boats, and more.

FOCL works with Pulaski County on the maintenance and upkeep of DeHaven Park, located on the lake. Some of their accomplishments are as follows:

- » Obtained grant money and installed volleyball court and swing set
- » Provided shoreline stabilization of riprap and repair of seawall on lake side of park
- » Tree maintenance and removal of dead trees
- » Installed native grasses and artificial fish habitat offshore at DeHaven to promote bank fishing
- » Maintained the no wake buoys at Harry DeHaven

FOCL is committed to conserving and protecting the quality, sustainability, and tranquility of Claytor Lake for all. They continue to seek support, grant funding, and donations for projects that protect and improve the health of the lake.



New River

The New River flows 160 miles from its source in the Blue Ridge Mountains of North Carolina, through the counties of Grayson, Carroll, Wythe, Pulaski, Montgomery and Giles, into West Virginia, where it joins the Kanawha River and continues to the Mississippi River. Little River, Peak Creek, Big Walker Creek, and Dodd's Creek are major tributaries of the New River. In Pulaski County the New River runs for about 50 miles. The New River provides numerous environmental and socioeconomic benefits such as habitat for wildlife, drinking water, irrigation, industrial water supply, and recreation.

According to the Virginia Water Quality Assessment in 2008, a segment of the New River running between Carroll, Wythe and Pulaski Counties is listed as level 5 in the impaired waters categories. This segment begins at Buck Dam to Buddle Bridge and from the confluence with Reed Creek downstream to the Reed Island Creek confluence. The county supports water quality efforts with the local Erosion and Sedimentation Control Program and by facilitating a strong partnership with the Department of Environmental Quality on the Stormwater Management Program. These programs monitor developments to ensure that appropriate measures to control erosion and sedimentation are used. Stormwater is regulated to ensure that water quality and water quantity run-off meets state standards for watershed protection. The County is a member of the New River Watershed Roundtable. This organization promotes watershed stewardship through community collaboration and projects such as the regional river clean up. The New River provides ample recreational opportunities to fish, boat and swim. In some areas the scenic New River Trail State Park travels parallel to the river and provides opportunities to hike, bike and ride horses along this historic rail bed.

New River Tributaries map can be found in the Appendix

Comprehensive Plan

Forest Resources

Forested lands are critical to maintaining healthy ecosystems. Trees provide benefits such as clean air and water, wildlife habitat, hunting, outdoor recreation and aesthetics. They also provide economic benefits from hunting leases, recreation fees and forest products. Urban forestry provides shade, habitat and reduces the overall temperature of neighborhoods. The primary forest type in Pulaski County is Oak-Hickory, which constitutes 83% of the forestland. In Pulaski County the amount of forest land has remained relatively constant over time. Looking to the future, the county should examine this resource in more detail to better understand economic opportunities and programs for forest advocacy.



9.0% of forested land is Federal USFS land

History & Trends

Forest Trends

- » Virginia lost more a than half million acres of forestland since 1977
- » Ownership of forestland by forest products firms has declined
- » Aging workforce in timber industry, and fewer young people joining the industry
- » Changes in timber exports
 - From 2011 to 2015 U.S. total forest products exports decreased by \$2.1 billion (5%)

6.5% of forested land area is owned by Boy Scouts of America

83.0% of Pulaski's forest land is in private ownership

Floodplains

Pulaski County participates in the National Flood Insurance Program (NFIP) and manages a Floodplain Ordinance to guide and permit floodplain development. The National Flood Insurance Program requires participation in the program as a requirement for citizens to obtain flood insurance protection. FEMA provides National Flood Insurance Rate Maps (FIRM) which illustrates the flood hazards in the community. Floodplains in Pulaski County are located along the New River, Little River and major streams. Flood events are caused by excessive snowmelt or rainfall that causes waterways to exceed normal channel capacity.

The preservation, protection and restoration of natural features such as rivers, lakes, forest, stream banks, and floodplains are critical measures for protection of water quality, mitigating flood hazards, preventing loss of life and property, supporting wildlife habitat, and providing opportunities for outdoor recreation. Ensuring that land use decisions consider environmental quality and hazard mitigation is important for not only the residents, but also for the economic benefits of tourism that these assets support.

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Agriculture

Pulaski County has a rich agricultural heritage which spans to pre-colonial times. The high-quality soil, forages, water and timber that attracted immigrants in the 1750's continue to be key resources for the County. While the earliest farm production was focused on self-sufficiency, by 1800 the area was already known for producing quality livestock.

The railroad's arrival in the 1850's provided access to broader markets, including Europe where cattle shipped by area farmers earned Pulaski County a reputation for topquality beef. Pulaski continues to produce high quality beef, dairy products and other farm commodities with a total market value in 2017 of nearly \$33 million. This agricultural heritage, along with new and emerging opportunities, will continue to advance agriculture as a key economic sector. The data from the USDA Census of Agriculture, released every five years, shows a general decrease of county farmland. Approximately 19,000 acres were lost to other uses from 2012 to 2017. The number of farms has also declined.

The decline of agriculture has been a long-term trend. Agricultural acreage in Pulaski County has dropped by almost one-half from 142,000 acres in 1910 to 77,500 acres in 2017. The County can significantly improve the retention and promotion of agriculture operations in the County by identifying prime farmlands and prioritizing the preservation of these lands. Advocating for younger generations to join this profession, and efforts to improve the economic resiliency of farms, should be considered along with other measures to preserve this asset.

<u>Trends</u>

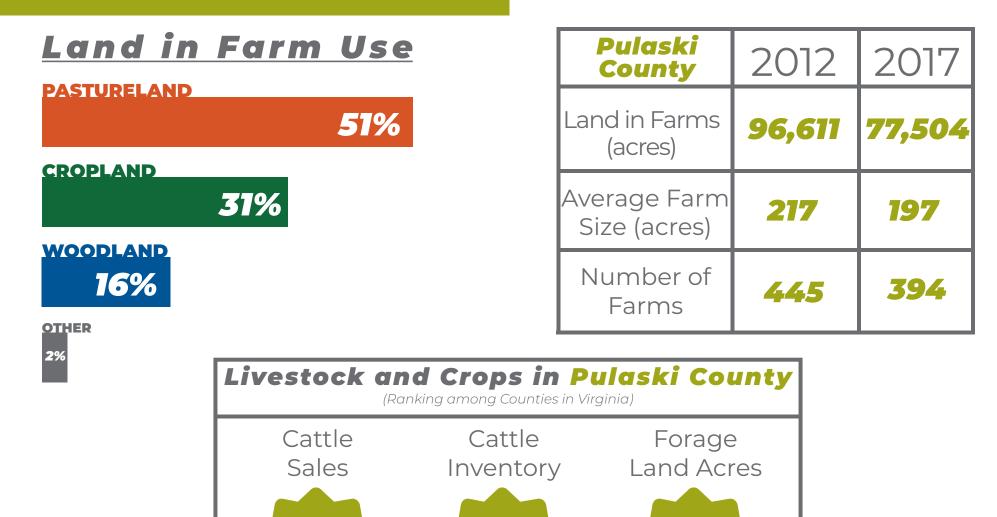
- » Beginning & small farmers
- » Agritourism
- » Demand for local food
- » Technology

Challenges

- » Growing gap between consumers and farms. Less than 2% of population are involved with agriculture.
- » Access to farmland for rent or to lease
- » Low success rates of farm transition
- » Tight profit margins for farmers

<u>Source: Virginia Cooperative Extension, Pulaski County</u>

By the **Numbers**:



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22nd

7 th

Source: USDA Census of Agriculture Virginia Cooperative Extension, Pulaski County

Conservation Easements

Conservation easements use restrictive covenants to protect land. They are designed to conserve open space, farmland, forests or historical/cultural assets on a specific parcel of land. The easement is held by a tax-exempt charitable corporation, association or trust, whose primary purpose or powers include protecting natural resources, and preserving historic, architectural or archaeological aspects. The duration of the easements is in perpetuity unless the legal instrument provides for a specific time frame (Virginia Code §10.1-1009).

There are 5,440 acres of conservation easement lands in Pulaski County. A Conservation Easement map is included in the appendix. Landowners can receive state and federal tax-credits for conservation easements and they receive a lower local property tax rate. Conservation easement designation is a cost-effective tool to protect environmentally sensitive lands, historic resources, and agricultural lands.

The Planning Commission reviews conservation easement proposals for compliance with the Comprehensive Plan and Future Land Use Map. The County should develop a process to ensure this land use tool is used wisely and that the process ensures that future conservation easement decisions are based on criteria such as; location in suitable areas, meeting specific qualifiers and alignment with land use policies.

Radford Army Ammunition Plant

Situated on more than 7,000 acres in Pulaski and Montgomery Counties, the Radford Army Ammunition Plant was built in the 1940s to support the war effort. It has played an important role in every American conflict since then, and today is the core propellant-manufacturing facility for the U.S. Department of Defense.

Radford is capable of producing mass quantities of solvent and solventless propellants to support direct fire, indirect fire, and rocket applications. The facility uses a variety of ingredients in its propellant-making process, including nitroglycerin and nitrocellulose. Radford currently is the primary supplier of solventless propellants, and is the only North American manufacturer and supplier of nitrocellulose. (Source: www.baesystems.com)

Future Land Use

Land areas within the unincorporated areas of Pulaski County are assigned to land use categories on the Future Land Use Map. These categories typically describe the allowable land uses, density, and intensity of development which will be needed to accommodate for future development. The majority of the land area (43%) is designated for future Agriculture uses. There is approximately 26% of area that is classified as Civic and Conservation. Residential land use categories account for 25% and 6% is Commercial and Industrial land use. The Future Land Use Map is a tool used by Planning Department Staff, the Planning Commission and the Board of Supervisors to evaluate land use applications and decisions such as rezonings and special use permits.

Future Land Use Designation	Number of Parcels	Acreage	Percent Area
Agricultural	2,956	83,878.44	42.80%
Conservation	424	31,867.37	16.26%
Residential	14,843	48,384.03	24.69%
Commercial	1,127	3,697.69	1.89%
Industrial	109	7,799.76	3.98%
Civic	69	20,304.58	10.36%
Other (unknown)	17	59.45	0.03%
TOTAL	19,545	195,991.30	100.00%

Future Land Use Issues & Opportunities

Future Land Use Map

As part of the comprehensive plan update, the Land Use Classification System and the Future Land Use map were reviewed. The review illustrated several concerns including:

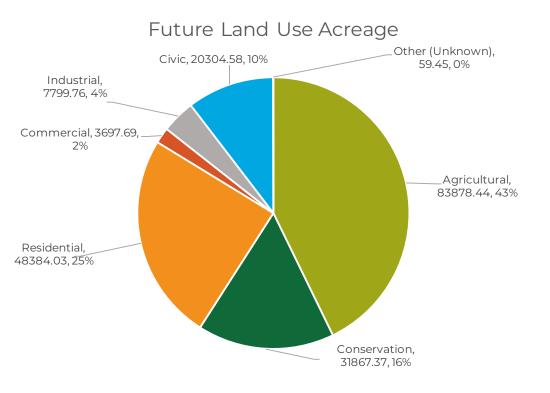
- 1. Description of the various land use categories was not present
- 2. Types of uses, allowable densities and intensities were missing
- 3. There are three residential land use categories but no distinctions between the categories
- 4. There are two Civic uses Government and Public, but no differences between the two

The Following actions were taken to improve the Future Land Use categories:

- 1. The different residential land use categories were assigned densities allowed in each category
- 2. There are three different commercial land use categories were consolidated
- 3. Government and Public land use were consolidated into one land use category

Future actions to improve the Future Land Use Map:

- 1. Assess the need for a mixed use category to accommodate emerging development patterns
- 2. Identify the reasoning behind the parcels identified as Unknown category and revise Future Land Use Map to designate future land use categories to those parcels
- 3. Evaluate future land use designations to ensure they are still relevant



Unified Development Ordinance & the Zoning Map

The Pulaski County Unified Development Ordinance (UDO) in coordination with the official zoning map guides development and land use in Pulaski County. The zoning map was first developed in 1990 and has been modified on a parcel by parcel basis at the request of landowners. Historically changes were made to rezone the map by subject properties for specific use changes in a piecemeal approach.

The zoning map should now be re-evaluated in light of current conditions and projected future needs and priorities. In order to ensure that the County zoning map is still relevant to each respective community or neighborhood that it describes and to coordinate overall development patterns, the County should engage in a complete review of the zoning map. Zone district standards, subdivision standards and development guidelines currently listed in the Pulaski County UDO should also receive periodic review and improvement to meet the new goals and objectives of the comprehensive plan and to facilitate wise land use planning.

Walkable Communities

Transportation in Pulaski County is mostly auto dependent. Historically development has created uses which are often separated by long distances. Common needs such as; housing, employment and recreation are only obtainable by traveling long distances. Communities that are walkable are vibrant places that provide a mix of land uses, pedestrian friendly corridors, and connections to open spaces and recreation areas. The County should consider a new mixeduse zoning category that permits a range of uses such as retail, residences, restaurants and office buildings within walking distances. Incorporating traditional neighborhood design into land use policies should be explored.

Sub-Area Planning

Sub-area plans identify unique issues and opportunities related to a defined geographic area. These smaller areas or sub-area plans can be used to establish land use strategies, and prescribe solutions that are place specific.

Based on the community survey responses, residents were in favor of this new type of planning. Certain areas within the county were considered as having special value or significance. Areas of historic, natural, economic or cultural significance which may be suitable for subarea plans include locations such as Claytor Lake, Draper, Snowville, Hiwassee, Newbern, and Fairlawn, among other communities.

Feedback from Citizens:

"Better cooperation between citizens of Claytor Lake, the Board of Supervisors and AEP. Update the land use management rules governing the county so that unscrupulous random development cannot take place. The idea that you can strip farmland and without much supervision install ridiculous building projects should be curtailed and outlined more specifically to govern such Construction."

Growth Areas

Growth Areas are defined by Section 15.2-2223.1 of the Code of Virginia as areas designated by a locality that are (i) appropriate for higher density development due to its proximity to transportation facilities, the availability of a public or community water and sewer system, or a developed area and (ii) to the extent feasible, to be used for redevelopment or infill development.

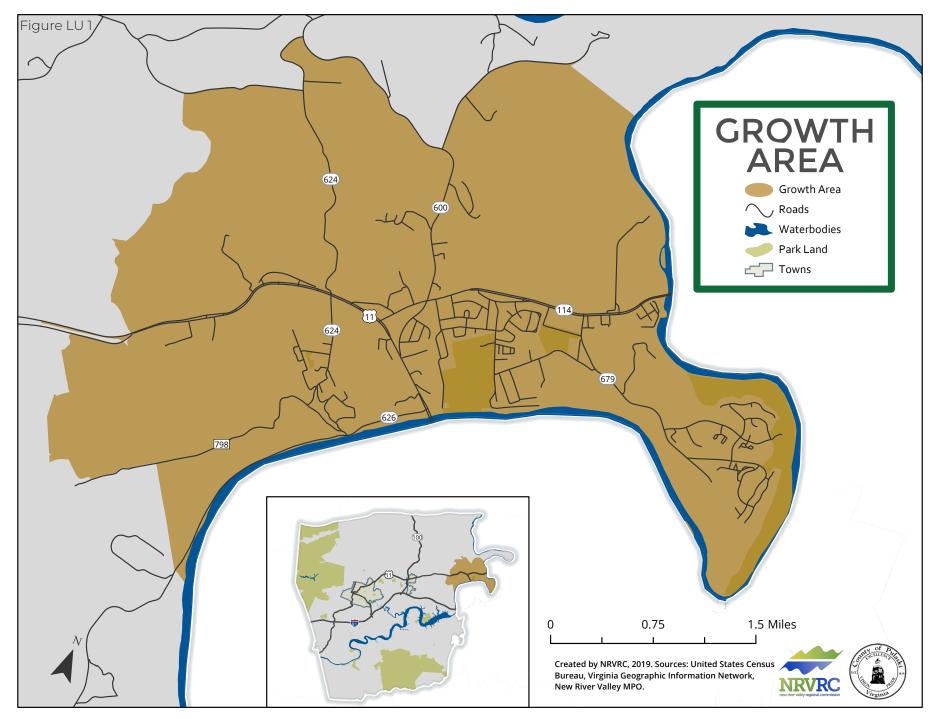
Growth Areas are sufficient to meet projected residential and commercial growth in the locality for at least 10 to 20 years and will allow for development at a density of at least four single-family residences, six townhouses, or 12 apartments, condominium units, or cooperative units per developable acre, and a floor area ratio of at least 0.4 per acre for commercial development, or any proportional combination thereof.

The Virginia Code also stipulates that growth areas, intended to comply with Virginia Code Section 15.2-2223, incorporate principles of traditional neighborhood design (TND). The principles include:

- » Pedestrian-friendly road design
- » Interconnection of new local streets with existing local streets and roads
- » Connectivity of road and pedestrian networks
- » Preservation of natural areas
- » Mixed-use neighborhoods, including mixed housing types, with affordable housing to meet projected family income distributions of future residential growth
- » Reduction of front and side yard building setbacks
- » Reduction of subdivision street widths and turning radii at subdivision street intersections

In order to accommodate future development, encourage mixed-use development and the efficient provision of public infrastructure, it is beneficial for the County to guide growth by designating growth areas. The County has proposed that the Fairlawn Growth Area be created which consists of Fairlawn and the surrounding areas. The boundary for this growth area is shown in Figure LU 1.

Fairlawn is a dynamic area consisting of a variety of uses including residential homes, historical neighborhoods, commercial and industrial buildings, and employment centers. It is bounded by Montgomery County to the east and City of Radford to the south. Fairlawn is located only 11 miles from the main campus of Virginia Tech. Major commercial activities are located along Route 11 (Lee Highway) and the Rt. 114 (Peppers Ferry Rd.) corridor. There are also vacant parcels and underutilized land for future growth potential. Mobility in this area is auto-oriented and currently lacks bike and pedestrian connectivity. Fairlawn has high potential for new development and redevelopment due to several factors. Since 2010, several businesses have sprouted along the US Route 11 and Rt. 114 corridor, including retail stores, restaurants, and fueling stations. Due to its direct access to these major routes and because of the close proximity to existing public infrastructure and amenities, Fairlawn has been identified as a growth area.



Land Use Goals, Objectives, Policies

Goal 1: Provide land use policy and guidance that maintains and promotes environmental stewardship while supporting a healthy and thriving community for all citizens of Pulaski County.

Objective 1.1: Improve Future Land Use

Map and Zoning Map.

Policy 1.1.1: Include descriptions, densities and intensities of various land use categories in the Future Land Use Map.

Policy 1.1.2: The County, in consultation with property owners, will designate appropriate future land use categories for properties listed as "unknown".

Policy 1.1.3: Evaluate zoning districts to ensure the current uses align with the map. Revise the Zoning Map where deemed necessary and when compatible with the surrounding areas.



Objective 1.2: Increase environmental and community health through recreation, open spaces and conservation.

Policy 1.2.1: Protect natural assets such as New River Trail State Park and Claytor Lake State Park from encroachments that diminish their value.

Policy 1.2.2: Consider the value of open spaces, trails and greenways in land use decisions. Green assets provide opportunities for recreation, multimodal transportation, economic growth and for preserving ecological communities.

Policy 1.2.3: Identify unique and sensitive natural, cultural and environmental resources such as flood prone areas, ridgelines, scenic vistas and historic sites and buildings.

Policy 1.2.4: Consider adopting an Open Space Plan.

Policy 1.2.5: Support conservation easements and partnerships with organizations or private landholders to protect unique cultural and natural assets. Develop criteria to wisely and consistently evaluate conservation easement proposals.

Policy 1.2.6: Support education and outreach of best management practices to promote land stewardship.

Policy 1.2.7: Incentivize and encourage Low Impact Development (LID) stormwater management practices to protect natural areas and improve water quality.

Policy 1.2.8: Maintain strong partnerships with local, state, and federal agencies, and private organizations to promote conservation of environmentally significant natural areas, cultural areas and unique recreational assets.

Policy 1.2.9: Consider water quality and water quantity impacts when evaluating land use applications.

Policy 1.2.10: Maintain a strong partnership with the Virginia Department of Health- Environmental Health Services to ensure that onsite sewage systems are evaluated and improved. Support policies that promote water quality by improving wastewater systems.

Policy 1.2.11: Support sustainable building practices, energy efficiency and renewable energy development. Promote activities and programs that reduce the carbon footprint of the community.

Comprehensive Plan

Land Use Goals, Objectives, Policies

Goal 1: Provide land use policy and guidance that maintains and promotes environmental stewardship while supporting a healthy and thriving community for all citizens of Pulaski County.

Objective 1.3: Support agriculture and forestry in Pulaski County.

Policy 1.3.1: Identify prime agricultural farmlands to preserve agricultural productivity.

Policy 1.3.2: Partner with local, state and federal agencies and organizations to improve the economic viability and resiliency of agricultural lands.

Policy 1.3.3: Explore creating an Agriculture Development Board (ADB) to support and enhance agribusiness, agricultural activities, and expanding markets for Pulaski County producers.

Policy 1.3.4: Support the efforts of Virginia Cooperative Extension Office to maintain and grow agriculture in Pulaski County.

Policy 1.3.5: Work with agency and non-profit partners to promote forestry best management practices, share information on wise timber management and explore forest related products and emerging trends in forest related economic development opportunities. Promote urban forestry where possible.

Policy 1.3.6: Support agriculture-related education for all age groups to ensure that county agriculture is using the latest technology, information and techniques to improve production efficiency and return on investment.

Policy 1.3.7: Support efforts that incentivize and prepare students for future careers in agriculture related fields.

Policy 1.3.8: Sponsor studies to identify market opportunities for value added farm products.

Policy 1.3.9: Explore production infrastructure opportunities to support the distribution and sales of local meats and produce.

Policy 1.3.10: Consider partnering with organizations to utilize County owned undevelopable or surplus lands for community gardens or other types of creative uses that foster a sense of community while also supporting local food and agriculture.

Policy 1.3.11: Partner with Economic Development to explore an agritourism trail and/or other opportunities that bring in additional farm income.

Objective 1.4: Create small area plans for places with unique character and needs.

Policy 1.4.1: Evaluate areas such as Claytor Lake, Draper, Snowville, Hiwassee, Newbern, and Fairlawn for small area plans.

Policy 1.4.2: Develop small area plans that protect the distinctive character of these communities and that enhance economic, social, cultural and community activities.

Policy 1.4.3: Support the maintenance of these small area plans by incorporating policy in land use guidance documents and identify these areas as unique in planning maps.



Land Use Goals, Objectives, Policies

Goal 1: Provide land use policy and guidance that maintains and promotes environmental stewardship while supporting a healthy and thriving community for all citizens of Pulaski County.

Objective 1.5: Provide support for the viability of existing neighborhoods and plan for future residential needs.

Policy 1.5.1: Retain neighborhood character by creating land development policies that address the specific needs of established neighborhoods.

Policy 1.5.2: Encourage and incentivize creative mixed-use developments that introduce a variety of housing types and that provide thriving compatible uses and walkable communities.

Policy 1.5.3: Coordinate new residential development with the availability and capacity of critical infrastructure.

Policy 1.5.4: Evaluate the subdivision policy to ensure that housing is developed in appropriate areas of the county. Support subdivision policies that promote multi-modal transportation, that consider wise use of tax dollar investments in infrastructure and that minimize impacts on natural areas/prime farmland.

Policy 1.5.5: Identify areas within the County that can accommodate high density residential development and Traditional Neighborhood Design (TND). TNDs are compact development patterns in close proximity to activity centers. Design principles include:

- 1. Pedestrian-friendly road design
- 2. Interconnection of new local streets with existing local streets and roads
- 3. Connectivity of road and pedestrian networks
- 4. Preservation of natural areas
- 5. Mixed-use neighborhoods, including mixed housing types
- 6. Reduction of front and side yard building setbacks
- 7. Reduction of subdivision street widths and turning radii at subdivision street intersections

Objective 1.6: Foster economic growth through incentives and by designating adequate amount of land for commercial and industrial land uses.

Policy 1.6.1: Designate the Fairlawn Growth Area. The Fairlawn Growth Area is created to accommodate future population, employment and economic growth over the next 10 to 20 years to meet the intent of Section §15.2-2223.1 of the Code of Virginia. The boundary of the growth area is shown in Figure 3 and on the Future Land Use Map.

Policy 1.6.2: Identify and characterize existing economic growth areas and inventory the suitable locations for future economic growth areas.

Policy 1.6.3: Improve public infrastructure in economic growth areas as incentives to direct development to such areas.

Policy 1.6.4: Maintain buffers along industrial areas to prevent encroachment of incompatible uses

Policy 1.6.5: Consider incentives for commercial uses with identified high levels of need.