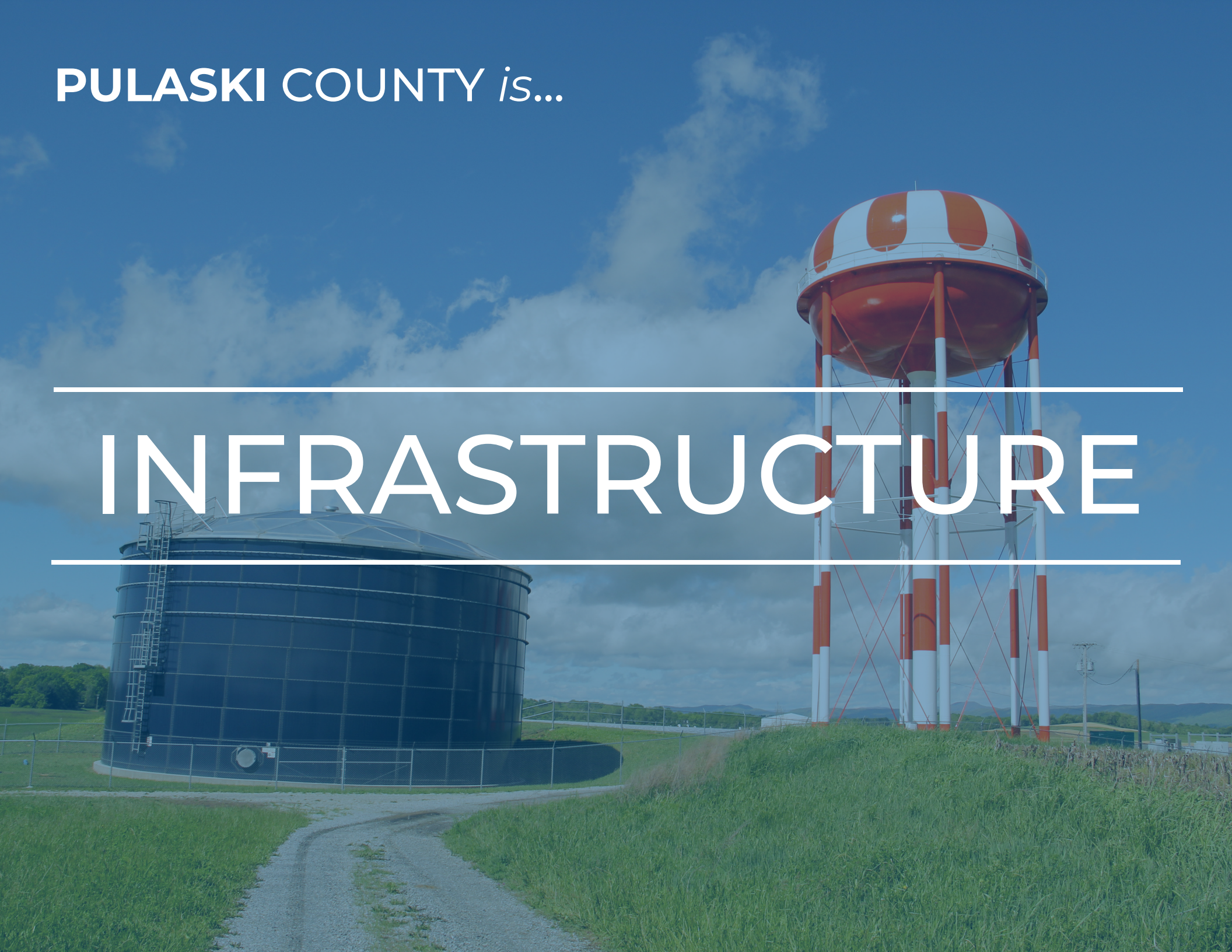


PULASKI COUNTY *is...*

INFRASTRUCTURE



INFRASTRUCTURE

Pulaski County infrastructure is best defined as the water treatment/distribution, wastewater collection/treatment, solid waste collection/disposal, and telecommunications operations, which supports the foundation of our community. This infrastructure is critically necessary to maintain a high quality of life and continued economic prosperity. The County will continue to invest in maintenance of existing systems and the continued growth of critical infrastructure to meet the needs of citizens, business, industry and organizations.

What issues are **most** important to you?

Results from Pulaski County Comprehensive Plan Survey

Employment Opportunities

63%

High Quality Education

59%

Parks and Outdoor Recreation

51%

Infrastructure (Public Water and Sewer, Transportation, and High Speed Internet)

51%

Water, Wastewater & Solid Waste

The Pulaski County Public Service Authority (PCPSA) provides residents and businesses with water treatment/distribution, wastewater collection, solid waste collection and streetlight services. Water, wastewater and streetlight services are currently provided to the most developed portions of Pulaski County, while solid waste collection is provided to all residents and businesses in Pulaski County.

The PCPSA is made up of five citizen representatives appointed by the Pulaski County Board of Supervisors. Authority members are responsible for overseeing the operation of these community services through user fees. The PCPSA operations and provision of services are entirely self-sustained through collection of the monthly user fees.

Water Treatment / Distribution

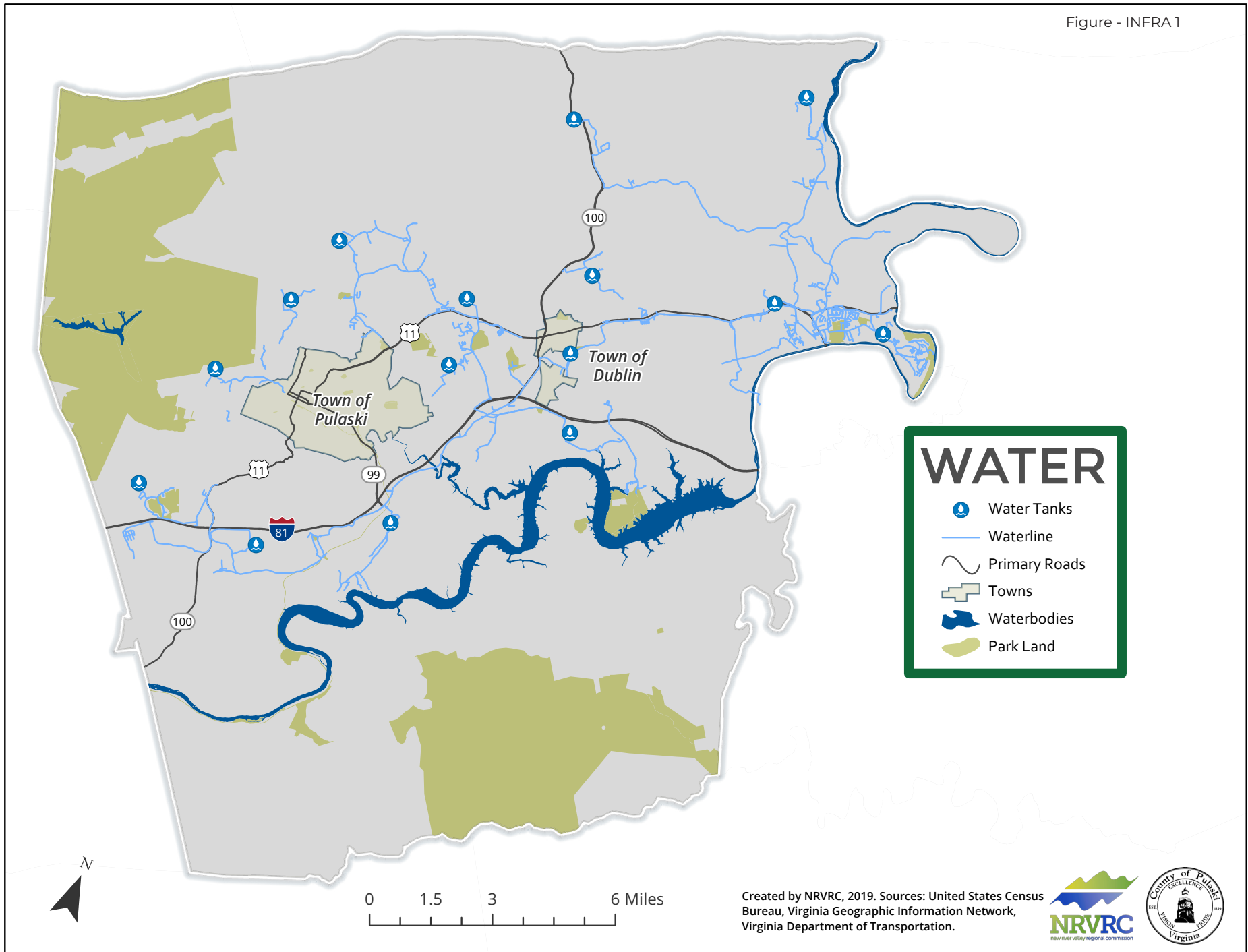
The PCPSA is responsible for treating, storing, and delivering public water to the citizens and businesses of Pulaski County. Within its water service area, the PCPSA provides drinking water to approximately 4,680 customers. The Town of Dublin and portions of the Town of Pulaski are also served as wholesale customers of the PCPSA.

The New River is the main source of water for meeting the County's water supply needs. The PCPSA owns and operates a water treatment plant ("WTP") with a permitted capacity of 4.2 million gallons per day (MGD) and a current pumping capacity of approximately 3.2 MGD. The PCPSA also purchases water from the City of Radford and has an agreement to buy water for an additional 3MGD, with a current pumping capacity of approximately 1.5 MGD.

The water distribution system is comprised of one primary and three smaller water systems. The water distribution system map is shown in Figure - INFRA 1. The system consists of approximately 160 miles of varied diameter water lines, 16 storage tanks, 8 pump stations, and associated appurtenances.



Figure - INFRA 1



Water, Wastewater & Solid Waste

Water Treatment / Distribution Continued

The existing water demand is approximately 2.2 MGD or 47% of the current pumping capacity (i.e., PCPSA WTP plus Radford City). Of this total demand, approximately 750,000 gallons per day (GPD) is sold to the Town of Dublin and approximately 50,000 GPD is sold to the Town of Pulaski. The PCPSA currently purchases approximately 375,000 GPD from the City of Radford.

A Water Master Plan is under development and the PCPSA is working with consultants to evaluate existing water systems and analyze capacity to accommodate growth. The planning process will include developing ranking criteria to prioritize capital improvement projects for the maintenance and expansion of the entire water system. The main purpose of the plan is to meet the future demands in a safe, reliable and economically feasible way.

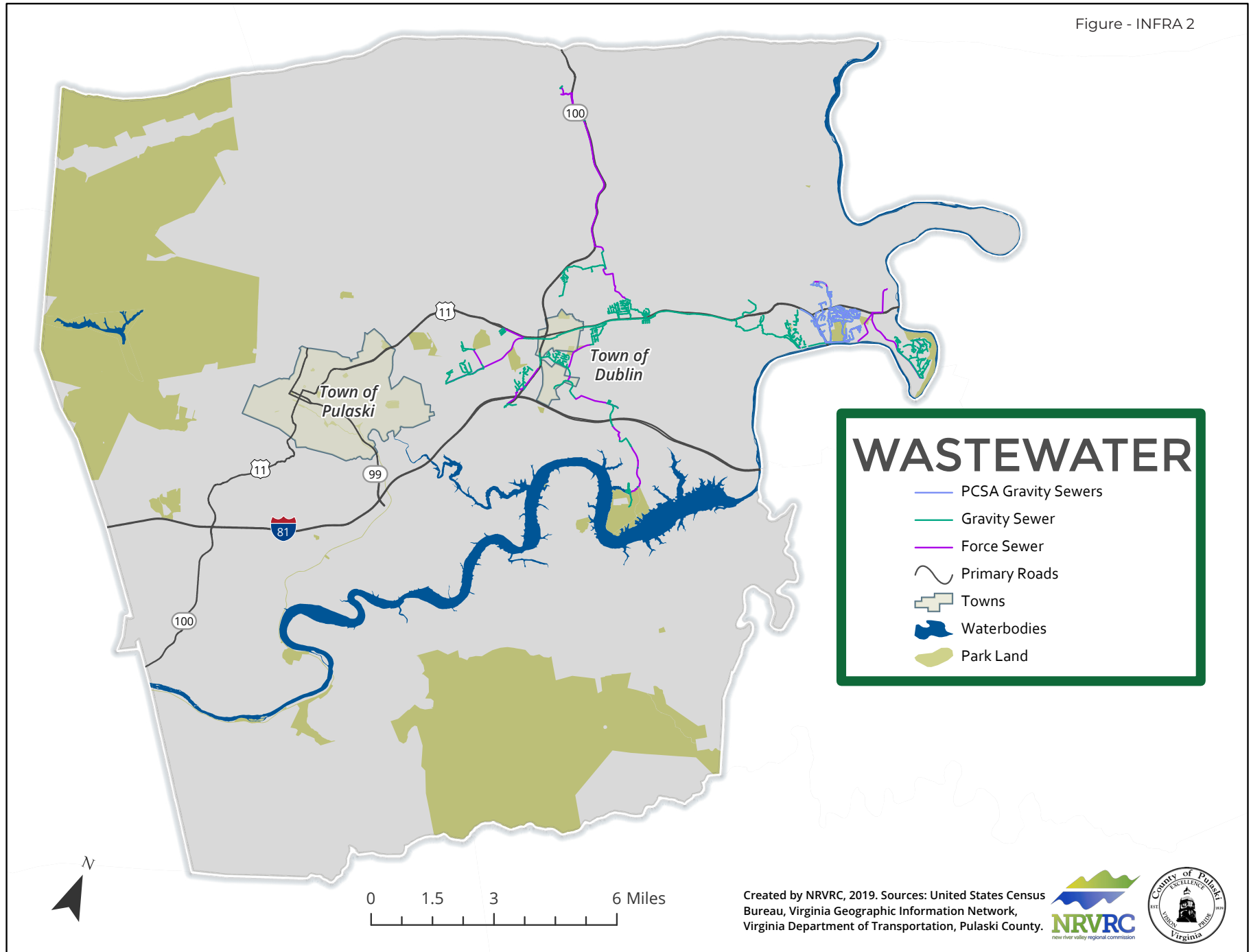
In most rural areas potable water for households and businesses are obtained from private wells. These private well systems are regulated and installed in accordance with the Virginia Department of Health (VDH), Office of Environmental Health.

The New River is the primary source of water supply for the County. As a result, it is beneficial for the County to promote the protection of the water resource and to enhance water quality through water quality protection efforts, public education, and through strong partnerships with other localities and organizations that have common interest in protection of this vital resource. The County can limit negative impacts on water quality by guiding new development/redevelopment to include best practices for water quality and by advancing efforts that prevent waste and abuse of water resources.

Public Water Fast Facts

- » **Total Current Water Demand: 2.2 MGD**
- » **Permitted Capacity: 4.2 MGD**
- » **Pumping Capacity: 3.2 MGD**
- » **Water agreement with City of Radford: 3.2 MGD and pumping capacity: 1.5 MGD**
- » **Waterline Miles: 160**

Figure - INFRA 2



Wastewater Collection

Rural areas in the County typically have on-site septic systems for sewage waste disposal which are installed and maintained by individual property owners. These on-site sewage systems and private well systems are regulated and installed in accordance with the Virginia Department of Health (VDH), Office of Environmental Health.

Public wastewater service is available within the developed areas of the County and is provided by the PCPSA and the Pulaski County Sewerage Authority (PCSA). The service area of the PCSA covers the community of Fairlawn, while PCPSA serves areas in various locations across the County (Figure INFRA 2).

The PCPSA has approximately 1,320 wastewater customers and its collection system is comprised of twelve separate service areas containing a total of 16 wastewater lift stations, 45 miles of gravity main, and 15 miles of force main.

The PCSA has approximately 900 wastewater service customers and provides wastewater collection service through one system, which consists of approximately 15 miles of varied diameter gravity main, one mile of force main, four wastewater lift stations, and associated appurtenances.

The PCPSA and PCSA do not currently own a wastewater treatment facility. The wastewater treatment facility is owned and operated by the Pepper's Ferry Regional Wastewater Treatment Authority (PFRWTA).

The PCPSA and PCSA have contracts with the PFRWTA for sewage treatment services. The total wastewater flow from PCPSA wastewater collection system is 830,000 GPD and from PCSA is 240,000 GPD. The PFRWTA also serves the Town of Pulaski, Town of Dublin, City of Radford, and a portion of Montgomery County. The average daily flow into the PFRWTA facility is approximately 6.0 MGD and the facility has a maximum permitted capacity of 9.0 MGD with a peak treatment capacity of 18.0 MGD.

Efficient use of the existing wastewater infrastructure is a primary goal of the county. Land Use Policy shall consider future infrastructure needs to ensure that new development is located in areas where adequate public services and facilities exist or are feasible. The Pulaski County Wastewater Master Plan is under development and will serve as the guiding document to wisely invest in new wastewater projects while maintaining existing systems.

Plans in the Works

Water Master Plan

Sewer Master Plan



Solid Waste Collection & Disposal

The Pulaski County Public Service Authority (PCPSA) provides curbside solid waste collection services to all County residents, as well as certain commercial and industrial waste hauling services. The PCPSA service area also includes the residents and business within the Town of Pulaski. The Town of Dublin currently operates its own solid waste collection service. The total solid waste tonnage collected by the PCPSA for the year 2018 was 43.05 tons. The PCPSA operates convenience and recycling centers in the Town of Pulaski, Town of Dublin and Fairlawn Community to supplement curbside collection. Solid waste is transported to the regional landfill site operated by the New River Resource Authority (NRRA), which is located on the south side of Cloyd's Mountain in Pulaski County.

NRRA, which is a partnership between the City of Radford, Town of Dublin and the counties of Pulaski, Giles and Montgomery, was established to provide solid waste disposal service for its member jurisdictions. In addition, the service area also includes the localities of Floyd, Wythe and Bland counties. The New River Resource Authority Solid Waste Management Plan was last updated in January of 2019. NRRA first began in 1986 and its mission is, "To develop a long-term waste management operation that is environmentally safe and economically efficient service for the residential, commercial and industrial needs of the region."

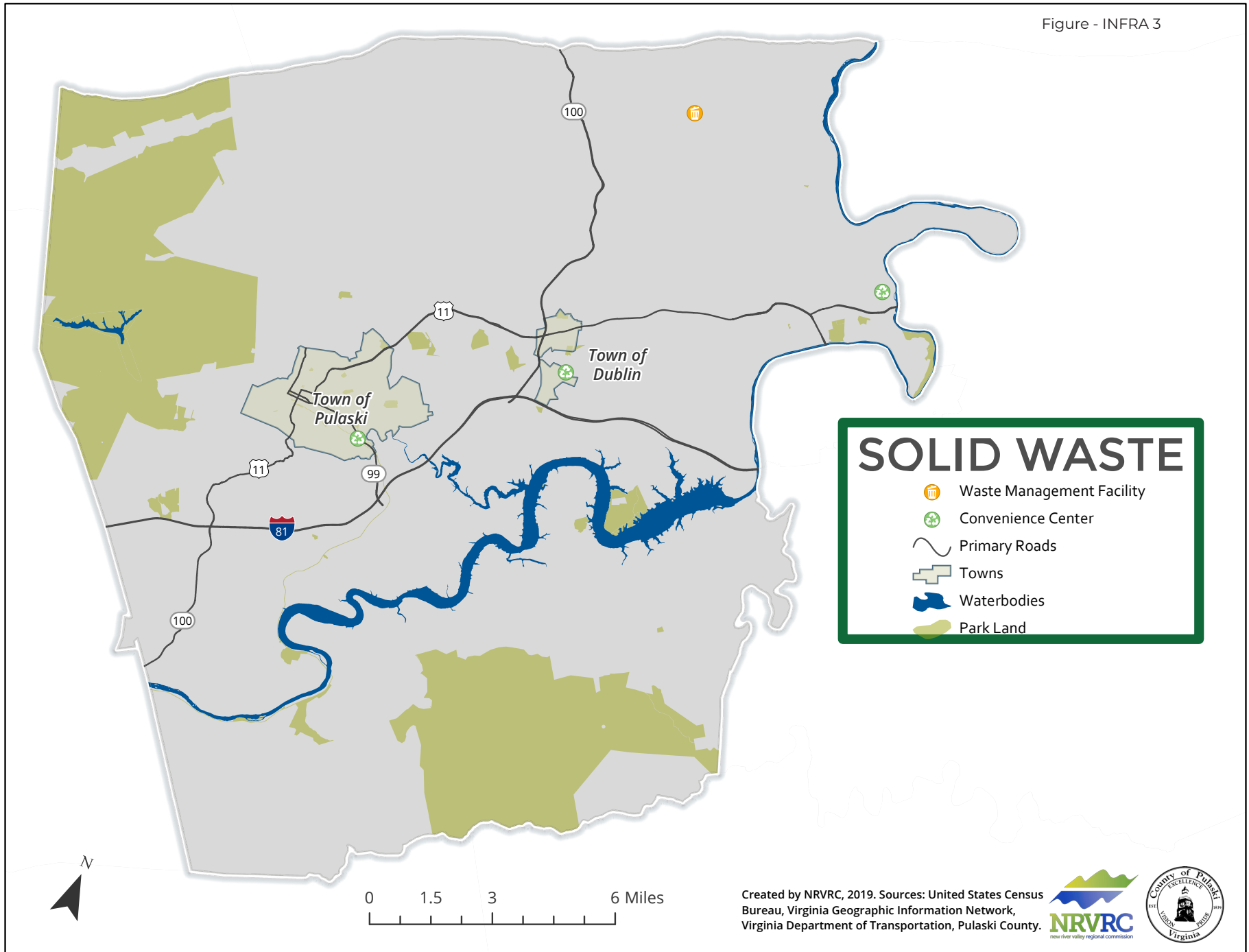
The Cloyd's Mountain landfill is a 930+ acre site which was opened in May 1997 and includes three cells (A-C) in use presently with a fourth cell (D) to be opened in 2020. The regional solid waste facility is a model site, recognized statewide for its' commitment to cleanliness and environmental education programs.

The innovative design of the landfill reduces the volume of liquid leachate and a partnership with CCI (formerly Ingenco) uses technology to eliminate the landfill gas which reduces the amount of greenhouse gases emitted. The electricity produced on site is sold to Appalachian Power Company and it is estimated to generate 2.3 megawatts of power per hour, roughly equivalent to 2,600 homes a year.

The collection of solid waste is facilitated by each individual jurisdiction and brought to the disposal site. In addition to solid waste, the New River Resource Authority collects recycled materials on site that are then transferred to the Montgomery Regional Solid Waste Authority. In addition to the efforts on site, the region as a whole report a recycling rate of 25.3% (2018) well above the statewide mandate of 15%. A tire recycling collection service, electronic e-waste collection site, onsite collection of wood-based materials for use as alternative daily cover and a household hazardous waste collection event held annually, all round out the list of services provided by the NRRA.



Figure - INFRA 3



Telecommunications

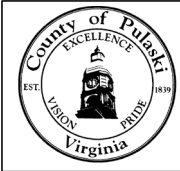
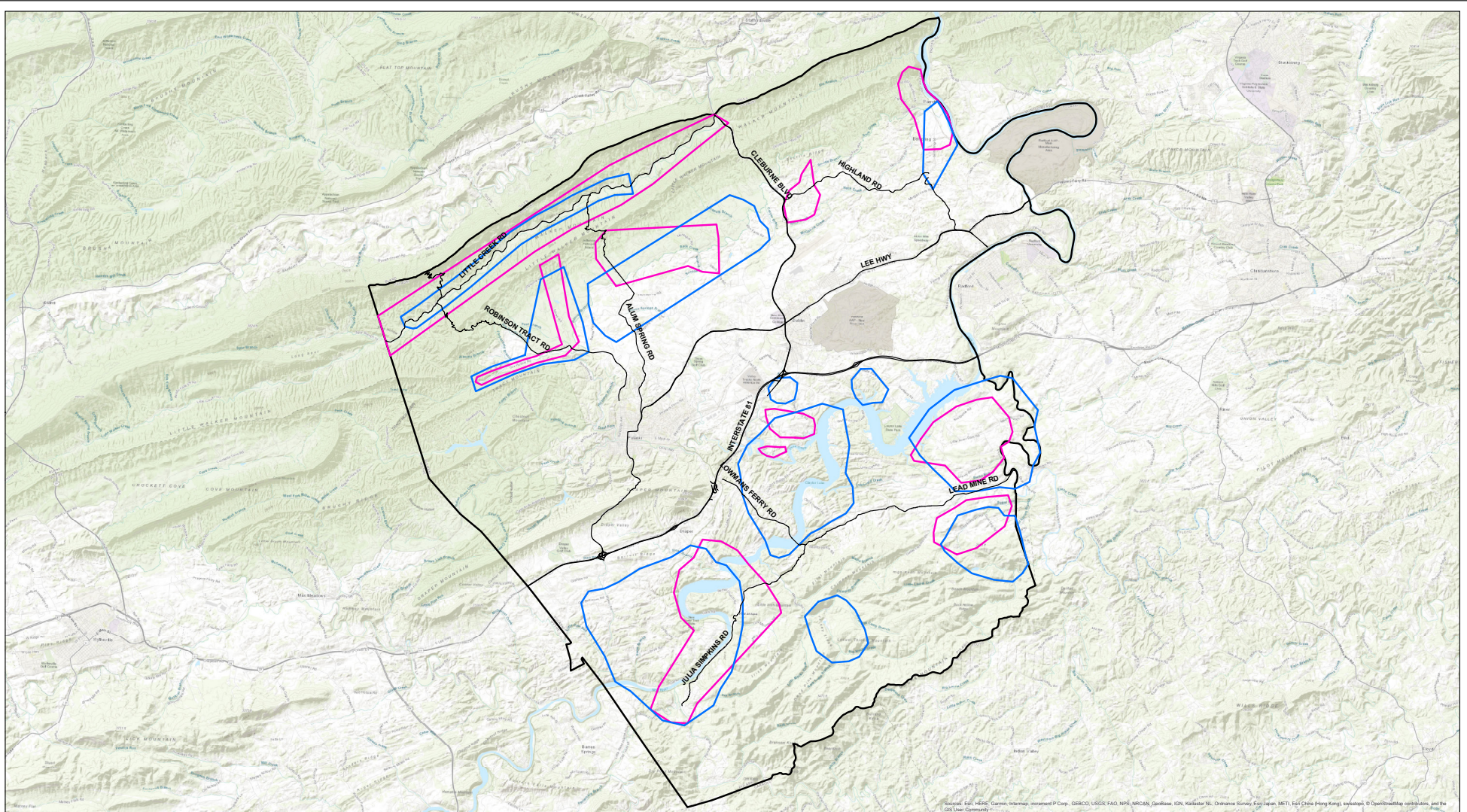
Pulaski County's telecommunication infrastructure includes communication towers, middle-mile wireline fiber optics communications infrastructure by local providers (Verizon, Comcast, Citizens Telephone Cooperative, Segra) and long-haul fiber optic cabling along main transportation routes and interstates.

Broadband Telecommunications Strategic Plan

In 2016, the County, in partnership with the Virginia Department of Housing and Community Development (VDHCD), developed a Broadband Telecommunications Strategic Plan. The plan conducted a needs assessment and prioritized potential projects that could bring infrastructure and coverage to areas of the County currently in need of broadband or in need of better internet services.

As part of this study, it was determined that approximately 40% of the geographic area of the County is still in need of reliable broadband, cellular service and/ or internet. These areas of need are mostly defined by areas with geographic challenges such as mountain valleys or those areas with low population centers where the private sector has not invested in either cable based or vertical assets that can deliver wireless internet or cell service. Using the strategic plan, areas of need were mapped to better understand where coverage is needed and to identify where potential opportunities exist to aid in advancement of this critical infrastructure. (Wireless Coverage Map and Broadband Map).



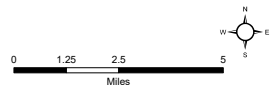


143 Third Street, NW, Suite 1
 Pulaski, VA 24301
 (540) 980-7710

Potential Areas of No service or Under Served Broadband and/or Cell Service
 Pulaski, VA
 September 3, 2019

- Legend**
- No Internet Service
 - No Cell Service
 - Pulaski Boundary

These areas were identified in the study:
 "Pulaski County, VA Community Broadband
 Telecommunications Planning Study"
 Dated: September 30, 2016



Map created by Pulaski County GIS

DISCLAIMER:
 This map was created by the Pulaski County Community Development Department and is solely intended to be used as a graphical representation only. The GIS maps and data distributed by Pulaski County are derived from a variety of public and private sector sources considered to be dependable, but the accuracy, completeness and currency thereof are not guaranteed. Pulaski County makes no warranties, expressed or implied, as to the accuracy, completeness, currency, reliability, or suitability for any particular purpose of information or data contained in or generated from the County's Geographic Information Systems database. Additionally, Pulaski County or any agent, servant, or employee thereof assume no responsibility with the use of this data, and assume no responsibility to maintain it in any matter or form.

Telecommunications

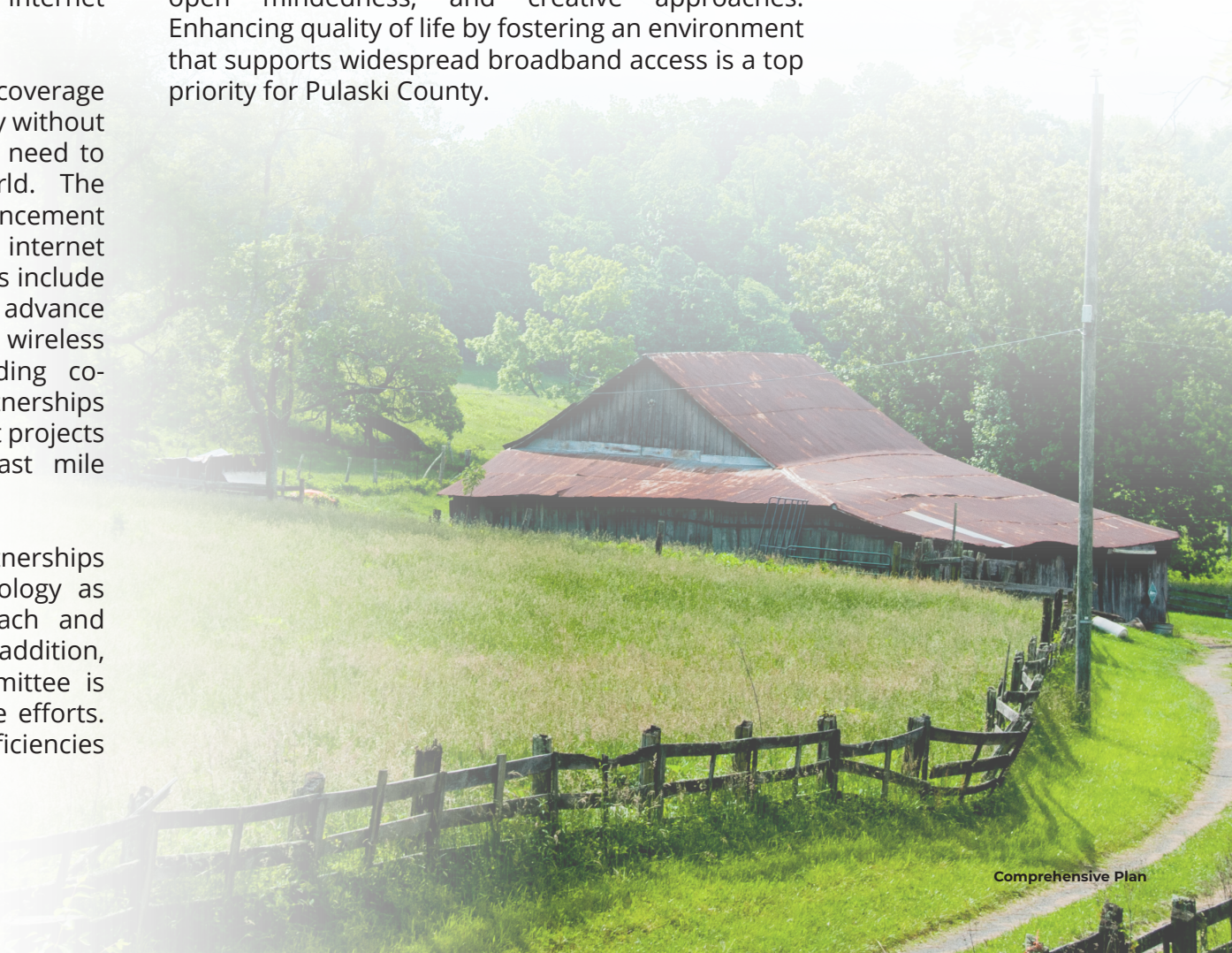
Telecommunications technology is changing rapidly, with ever increasing bandwidth speed, providers and products. Where dial-up internet or lack of coverage was common fifteen years ago, in today's society high-speed internet and connectivity with wireless devices is now a necessity for modern life. Cellular phone service providers now offer internet service and it is widely recognized that where cellular phone coverage is present, the ability to access the internet usually exists.

However, those areas with little to no cellular coverage are quite often the same areas of the County without line-based internet and there exists a real need to connect those areas with the modern world. The County is committed to fostering the advancement of technology, so that one day, high-speed internet is available to all citizens. Common solutions include fostering public-private partnerships that advance the deployment of high-speed internet and wireless communications. Efforts include providing co-location on vertical assets, encouraging partnerships during the early phases of new development projects and engaging in solutions that bring last mile connectivity to specific communities.

The County encourages private/public partnerships and has assigned the Director of Technology as the primary point of contact for outreach and advancement of broadband availability. In addition, a citizen-based Broadband Steering Committee is engaged in assisting the County with these efforts. Targeted efforts to address broadband deficiencies will be carried out in phases.

Phase I efforts will address the Snowville/Hiawasse, Draper/Delton and Highland Rd./ Lillydale/Little Creek Areas. Phase II efforts will springboard fixed wireless and other broadband to communities with the highest level of need.

Pulaski County recognizes that meeting the challenges of universal broadband access requires flexibility, open mindedness, and creative approaches. Enhancing quality of life by fostering an environment that supports widespread broadband access is a top priority for Pulaski County.



Infrastructure Goals, Objectives, Policies

Water

Goal 1: Provide adequate public water supply to meet the needs of existing and new residential, commercial and industrial developments

Objective 1.1: Ensure availability of adequate water supply.

Policy 1.1.1: Implement necessary projects, programs and expansions, as recommended in the Public Service Authority (PSA) Water Master Plan.

Policy 1.1.2: Projects will be ranked, as per the Water Master Plan ranking criteria, which are as follows:

- i. Ability to address public health concerns
- ii. Project cost per connection
- iii. Meeting economic development goals
- iv. Community willingness to participate

Policy 1.1.3: Continue to inspect and maintain water storage facilities, treatment facilities, and transmission and distribution systems.

Policy 1.1.4: Continue to prioritize improvements and development of water supply in accordance with the PSA Capital Improvement Program.

Policy 1.1.5: Ensure availability of alternate water supply sources by developing and maintaining inter-local agreements with other municipalities, particularly for emergency situations.

Policy 1.1.6: Amendments to the Future Land Use Map and Zoning Map shall consider availability of an adequate water supply.

Wastewater

Goal 2: Maintain safe wastewater systems

Objective 2.1: Coordinate efforts to provide safe wastewater collection, treatment and disposal.

Policy 2.1.1: Expand wastewater system to unserved areas as identified in the PSA Sewer Master Plan.

Policy 2.1.2: The PSA will consider new wastewater services, in accordance with the PSA Sewer Master Plan ranking criteria, which are as follows:

- i. Ability to address public health concerns
- ii. Project cost per connection
- iii. Meeting economic development goals
- iv. Community willingness to participate

Policy 2.1.3: Continue to prioritize improvements and development of sewer system in accordance with the PSA Capital Improvement Program.

Solid Waste

Goal 3: Provide adequate solid waste collection and disposal

Objective 3.1: Ensure safe and efficient collection, transportation and disposal of solid waste.

Policy 3.1.1: Maintain weekly curbside collection of household waste.

Policy 3.1.2: Partner with the New River Resource Authority (NRRA) to maintain solid waste capacity for the County at the NRRA Regional Solid Waste Management Facility.

Policy 3.1.3: Continue to support the County's recycling program(s).

Policy 3.1.4: Develop and implement a waste reduction strategy that includes waste prevention, source reduction, reuse and recycling.

Policy 3.1.5: Encourage County residents to participate in the NRRA household hazardous waste collection program.

Policy 3.1.6: Continue to provide County representation on the NRRA/Regional Landfill.

Infrastructure Goals, Objectives, Policies

Telecommunications

Goal 4: Achieve universal broadband coverage for all residents, businesses, employment centers, educational institutions and service organizations

Objective 4.1: Increase the County's fixed and mobile broadband (high speed internet) footprint.

Policy 4.1.1: Improve broadband access to enable businesses to innovate

Policy 4.1.2: Promote broadband in residential areas to improve the quality of life, to provide educational opportunities and to enable telework opportunities.

Policy 4.1.3: Continue to identify those areas where broadband coverage is lacking or inadequate and improve broadband access in these areas.

Policy 4.1.4: Support implementation of the Pulaski County Broadband Telecommunications Strategic Plan. Develop timelines, milestones, and priority areas for broadband deployment and improvements.

Policy 4.1.5: Continue to engage the Broadband Steering Committee on a semi-regular basis to ensure progress in deployment of broadband in the County and to help identify challenges and risks.

Policy 4.1.6: Incentivize projects that provide new or expanded access to broadband services for customers residing in underserved areas of the County.

Policy 4.1.7: Participate, when reasonable, in solutions that bring adequate middle-mile and last mile connectivity to communities.

Objective 4.2: Explore and engage in public/private partnerships to expedite broadband infrastructure deployment.

Policy 4.2.1: Pursue public-private partnerships to expedite broadband infrastructure build out in underserved or unserved areas of the County.

Policy 4.2.2: Identify funding opportunities and incentives to assist private entities in developing and deploying next generation infrastructure for identified areas of need.

Policy 4.2.3: Maintain existing inventory of assets and improve asset capacity to further broadband connectivity goals.

Policy 4.2.4: Encourage the co-location of telecommunication facilities on existing structures and towers.

Objective 4.3: Promote broadband infrastructure installation and support system expansion as part of land development and transportation projects.

Policy 4.3.1: Encourage developers to include broadband infrastructure planning during the early planning stages of new development.

Policy 4.3.2: To expedite broadband capabilities, partner with VDOT and other public and private entities to explore installing fiber conduit during maintenance of streets or construction of new streets or developments. Consider installing fiber during utility and other types of construction.

Policy 4.3.3: Review and update the Unified Development Ordinance to remove barriers that prohibit or delay the deployment of next-generation wireless broadband solutions.

Policy 4.3.4: Consider adopting a "dig once" policy and/or other broadband-friendly regulations and initiatives.