Department of Conservation and Recreation
Division of Planning and Recreation Resources
600 E Main Street, 24th Floor
Richmond, Virginia 23219

FINAL

Master Plan
2025 UPDATE

Lake Anna State Park

6800 LAWYERS ROAD, SPOTSYLVANIA COURTHOUSE, VIRGINIA 22551

LAKE ANNA STATE PARK MASTER PLAN

2025 UPDATE

ADOPTION PAGE

The plan was reviewed by the Board of Conservation and Recreation on April 24, 2025

On July 8, 2025 the plan was adopted by DCR Director, Matthew Wells.

Adopted

Matthew S. Wells, Director, Department of Conservation and Recreation — Date: 7/8/25

ACKNOWLEDGMENTS

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EXECUTIVE SUMMARY

Nestled in the gold-laced hills along the shores of Virginia's fourth largest lake, Lake Anna State Park provides abundant opportunities for active recreation, personal exploration and solitude that are forever preserved for future generations.

Lake Anna State Park Purpose Statement

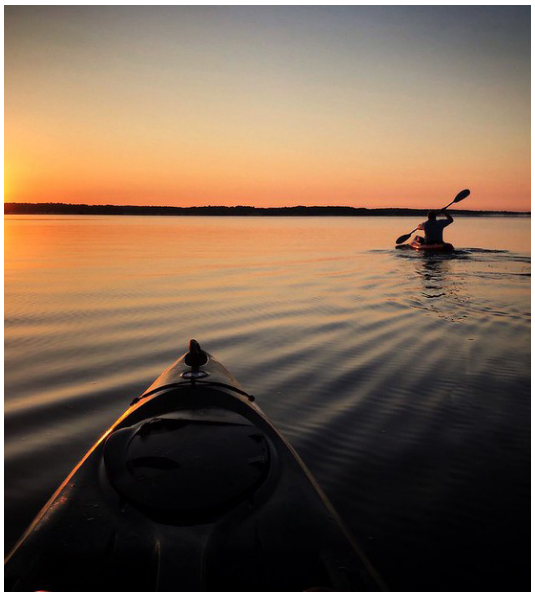
INTRODUCTION

Lake Anna State Park is renowned for its location along the north shore of Lake Anna, which was created as an impoundment on the North Anna River to supply water to the North Anna Nuclear Power Station. The park affords access to the lake for swimming, fishing, and recreational boating activities and includes facilities for lodging, camping, hiking, horseback riding, bicycling, and educational programs.

Located about 20 miles west of Interstate 95 in the Central Piedmont in Spotsylvania County, the park lies within 50 miles of four expanding population centers: Charlottesville, Fredericksburg, Richmond, and Northern Virginia. The entrance to the park is located on Route 601 (Lawyers Road), which can be accessed from Virginia State Highway 208 to the southeast or from U.S. Route 522. Lake Anna State Park's central location, frontage on one of Virginia's premier freshwater lakes, and proximity to growing population centers give it a unique status within the Virginia State Parks system. Hundreds of thousands of visitors are inspired to visit the park each year to enjoy its beautiful scenery, rich history, and ample recreational opportunities, making this 3,126-acre park an attractive destination for visitors.

MANDATES FOR PLANNING

The 2025 Lake Anna State Park Master Plan represents the most recent update of the plan as required by Section 10.1-200.1 of the Code of Virginia, which mandates that the Master Plan be reviewed and updated at least once every 10 years to ensure that the development objectives and recommendations outlined in the plan continue to meet the recreation and conservation needs of the citizens of the Commonwealth. The 2025 update is intended to set forth a clear vision for the future based on a phased development approach while fulfilling in its narrative and appendices the content requirements of Chapter IV of the Virginia Construction and Professional Services Manual (CPSM). It outlines the desired future condition of Lake Anna State Park upon buildout of all proposed developments recommended in the plan during the 30-year timeframe following adoption.



DEVELOPMENT OF THE PLAN

Planners and staff at the Virginia Department of Conservation and Recreation (DCR) conducted this Master Plan update in accordance with the content and public participation requirements of Section 10.1-200.1 of the Code of Virginia. The 2025 Lake Anna State Park Master Plan replaces the previous master plan document adopted in 2002 and last updated in 2011. The 2011 update revised the Executive Summary with emphasis on the need for

access and improvements to parcels acquired during the 2000s as well as connections to local recreation opportunities and a county-wide system of trails planned as part of the Spotsylvania County Greenways Plan, which was adopted around the same time. The plan proposed additional developments on the 778 acres acquired since 2001 including a connector road, new visitor center at Ware Field, amphitheater, picnic area, equestrian and group campground, boat slips, staff residence, and hiking trails. These recommendations were added to planned developments on the original site, which included expansion of the beach, relocation of the boat ramp to Ware's Cove, enlargement of the maintenance facility and contact station, and expansion of the campground, among other improvements.

DCR staff undertook this master plan update in accordance with the procedures established in the Code of Virginia and internal Standard Operating Procedures (SOP) guiding State Park Master Plan development. As part of this process, DCR staff reviewed the 2002 Master Plan and 2011 update to the Executive Summary. Staff determined that evolving trends with respect to park usage and need for immediate improvements to aging facilities, among other considerations, were sufficient to warrant a complete update of the Master Plan. A Public Information Meeting and Public Input Survey were conducted to solicit public input at the beginning of the process to ensure that the relative locations of park resources were generally understood and that the community, visitors, and the public had ample opportunity to register their recommendations for future improvements.

Although the overall desired future conditions at Lake Anna State Park remain largely unchanged, the park's facility and other needs have evolved since the writing of the 2011 update. As a result, the phased development plan and cost estimates have been revised to reflect projects completed since that time in addition to evolving park needs based on public input, changes in user demand, conditions of current facilities, and locational considerations. The plan also updates the park staffing and operations costs to reflect desired future conditions. A public comment meeting was held on October 17, 2024, at which the public was invited to comment on the phased development plan, proposed development map, and staffing recommendations. The public generally expressed support for these recommendations as well as the main findings of the Visitor Experience planning effort, including the park purpose statement, primary and secondary themes, essential visitor experiences, and map of Visitor Experience areas.

OVERVIEW OF THE PARK

Lake Anna is a 13,000-acre reservoir created by the Virginia Electric and Power Company in 1972 to serve as a recreational lake and provide cooling water for the North Anna Nuclear Power Station. In 1968, the company purchased 18,000 acres of farmland along the North Anna and Pamunkey Rivers in Louisa, Orange, and Spotsylvania counties. By 1972, much of the lake bottom was cleared of timber and the dam was nearly complete. The lake was predicted to fill completely from rainfall within three years, but it took only 18 months due to heavy rainfall from Hurricane Agnes. Today, Lake Anna is owned by Dominion Energy, which manages the impoundment under the Federal Energy Regulatory Commission (FERC) license for the purposes for which it was originally intended, including as cooling water for the North Anna Nuclear Power Station.

In 1975, the Virginia Commission of Outdoor Recreation approved a $1 million request for the purchase of 850 acres for Lake Anna State Park in Spotsylvania County using federal Land and Water Conservation Funds

(LWCF) which require the park be managed in perpetuity for public outdoor recreation. DCR completed the park's first master plan in 1977, initiated development in 1981, and opened the park to day use in 1983 with the construction of the park entrance road, contact station, visitor center, picnic area, comfort station, boat ramp, and trail system, all built at a total cost of $1 million. The beach, parking lot, and additional trail mileage were added during the 1980s followed by the concessions and bathhouse facility, park office, and Ware's Cove Picnic Area in the 1990s. Facilities constructed since the 1999 Master Plan update include the cabin and lodging area, campground, outdoor classroom, and additional trail mileage.

The beach complex, which includes the concessions and bathhouse facility, comfort station, picnic area and playground, and gravel parking lot, constitutes the park's main day use area. The visitor center, millpond, accessible fishing stations, overwater pavilion, and boat dock are located adjacent to the beach to the southeast; the boat ramp, boat trailer parking lot, and fishing pier are located immediately adjacent to the northwest. The Ware's Cove Picnic Area is situated further northwest and includes a comfort station, rentable picnic pavilion, playground, adaptive canoe/kayak launch, and paved parking lot. The outdoor classroom is located on a short, paved trail connecting the day use area and campground, one of 11 trails in the park totaling roughly 16.2 miles. Despite the high frequency of trail use, trails accessed from the central area of the park afford access to backcountry areas where views of Lake Anna are superb and opportunities for solitude and communion with nature abound.

The two overnight areas are reached by separate access roads leading from the central part of the park in the vicinity of the park office and equestrian parking lot. The campground, located due south of the park office, includes three loops containing 46 sites (half of which have electric and water), six camping cabins, four yurts, and two modern bathhouses. The cabin and lodge loop is located to the southwest of the park office next to Pigeon Run and includes 10 two-bedroom cabins, all but three of which face the lake, and two six-bedroom lodges. Additionally, three boat docks currently are maintained for use by overnight guests.

The park includes two primary administrative and service areas: the maintenance facility, ranger residence, and volunteer residence located in northern part of the park; and the park office, housekeeping building, and ranger residence located in the central part of the park. The Goodwyn (or Goodwin) Mine in the northeastern area of the park constitutes the primary interpretive area and includes a small shed housing various exhibits associated with the park's gold-mining past, including the well-preserved remnants of a sophisticated 19th-century mining operation on Pigeon Run that is the subject of guided tours and educational programming given by park staff.

The park was expanded through acquisition of additional parcels of land west of the park entrance road (State Park Lane) in 2001, 2005, and 2006, although access roads or facilities have not been constructed on these properties since being acquired. One of these contains Ware Field, which occupies the sloping terrain and high ground along the western bank of Ware Creek. Ware Field is managed by the park as a natural meadow, both to preserve precious habitat and the sweeping views of Lake Anna for future generations of park visitors.

For a number of years, Lake Anna State Park has been compelled to close the park to further entry and turn day use visitors away during busy summer weekends once the parking lot at the beach reaches capacity. To better safeguard public safety, accommodate rising demand, and improve access for visitors during such weekends, Virginia State Parks is currently evaluating whether to implement a day use reservation system requiring visitors to obtain a day pass in advance of their visit. The proposed development plan takes into account these ongoing efforts to manage capacity and access during times of peak demand so that, in the future, prospective visitors can plan their visit and have certitude of access to existing, new, and improved recreational amenities upon arriving at the park entrance.

PROPOSED BUILDOUT

The 2025 Master Plan update details new facilities needed at the park as well as improvements needed to existing facilities. New facilities should be designed and built with consideration to the natural surroundings while seeking to maximize the efficient use of space. Construction should also be in keeping with the protection of natural and cultural resources as described in the Natural Resource Management Plan, Cultural Resource Summary, and Visitor Experience Plan for the park.

All future phases of park construction will be developed in an environmentally sensitive manner. Building and site design will implement green energy standards using energy-efficient and sustainable building materials and processes to the greatest extent possible. These facilities will be carefully sited to minimize impacts to the views within the park and of the park from adjacent lands. Development activities will comply with the requirements set forth by the Virginia Erosion and Sediment Control (VESC) Law and Regulations, and the Stormwater Management Program (VSMP) Law and Regulations, including the Virginia Stormwater Management Handbook published by the Virginia Department of Environmental Quality (DEQ).

To the greatest extent feasible, Virginia State Parks strive to meet the requirements of the Americans with Disabilities Act (ADA) standards. During discussions of park needs, accommodations for people with physical, sensory, and other disabilities emerged as a paramount consideration to such an extent that park and agency staff sought not only to comply with minimum ADA requirements in the statewide building code, but also ensure that, to the extent feasible, disabled people have access to the same or equivalent high-quality recreational experiences enjoyed by able-bodied users. To that end, the recommendations of this master plan are intended to ensure that all people, regardless of ability level, can access and enjoy the premier outdoor recreation experiences afforded by Lake Anna State Park.

Additional details regarding proposed buildout of the park can be found in the complete document. The Phased Development Plan, Cost Estimate, and Staffing Plan can be accessed beginning on Page 66 of the plan. In addition, the Phased Development Plan Map (Figure 24) showing the locations of proposed improvements can be found on Page 68.

PHASE 1

Phase 1 addresses the following critical needs at the park involving visitor use trends and capacity issues identified by the public and park staff:

- **Relocate Boat Ramp:** This project aims to install a new, longer boat ramp on Pigeon Run for use by larger watercraft and demolition of the existing ramp adjacent to the swimming area to improve the safety of swimmers and motorized watercraft users.
- **Beach Expansion and Additional Comfort Station:** This project expands the beach area to the west and adds an additional comfort station containing showers to better accommodate visitors based on growing visitation trends.
- **New Visitor Center with Offices, Parking, and Gold Mine Exhibit Shed:** A new, larger visitor center containing administrative offices, expanded parking lot, and static and interactive exhibits, including a new exhibit shed related to the park's gold mining past, is proposed in the location of the existing park office and equestrian parking area.
- **New Equestrian Trailhead and Trail Connections:** This facility involves construction of a new, expanded equestrian trailhead parking area near the park entrance, temporary restroom facility, and trail connections to existing and proposed trail systems in the park and county to expand recreational opportunities for equestrians.
- **Upgrade Standard Campsites to Water/Electric and Yurts to Electric:** This project involves installing electric and water hook-ups for the remaining 23 standard campsites and adding electrical service to the four existing yurts for the comfort and convenience of guests.
- **Enlarge Trailhead Parking Lot:** The current trailhead parking area on Cabin Road would be enlarged to better accommodate trail users.
- **New Contact Station with Parking and Restrooms:** A larger, multi-lane contact station containing restrooms, parking, and additional lane capacity would be constructed to the south of the current station for the convenience of guests.
- **Gold Mine Safety Improvements:** This project aims to replace and expand context-appropriate fencing and signage at the Goodwin Gold Mine for the safety of visitors.
- **Maintenance Office Space:** An office, bathroom, and breakroom would be constructed within the existing maintenance building to improve the workspace used by park maintenance staff.
- **New Ranger Residence (Law Enforcement):** A new ranger residence is proposed near the existing maintenance area to improve housing for the park's Chief Park Ranger - Law Enforcement.

The total estimated cost for Phase 1 development is $12,521,420.

PHASE 2

Phase 2 addresses intermediate needs at the park to expand overnight accommodations and enhance recreation facilities by proposing the following improvements:

- **Campground Expansion:** This project will expand the park's campground by installing an additional campground loop containing 46 water and electric campsites to the south of the current campground, providing seasonal views of Lake Anna from the expanded campground and additional camping opportunities for overnight users.
- **Group Campgrounds:** The expansion of camping opportunities at the park includes construction of two (2) campgrounds for group camping directly north of the existing campground.
- **Equestrian Trailhead Comfort Station:** The temporary restroom facility constructed as part of the new equestrian trailhead proposed in Phase 1 will be demolished and replaced with a comfort station (restroom) and associated well and septic system for the comfort of equestrian users.
- **Cabin/Lodge Expansion:** A new, second cabin and lodge loop containing an additional eight (8) cabins and two (2) lodges is proposed on the peninsula of land to the south of the current cabin area.
- **Boat Docks at Existing Cabins and Lodges:** Separate boat docks are proposed for the existing lodges in the current cabin area for the convenience of guests staying at the lodges. Existing boat docks in the cabin area would be improved with electric lighting to facilitate use during evening hours.
- **Boat Docks at New Cabins and Lodges:** Separate boat docks are proposed for cabins and lodges in the new cabin loop, which would include electric lighting for use during evening hours.
- **Picnic Shelters at the Beach:** Installation of three (3) rentable picnic shelters in the beach picnic area to allow for group picnicking at the beach.
- **Renovate Ranger Residence (Law Enforcement):** The existing ranger residence housing the Chief Park Ranger - Law Enforcement would be renovated for use by additional law enforcement staff.
- **Railroad Bed Multi-Use Trail:** This project involves constructing a multi-use trail along the historic railroad bed that traverses the park from north to south to expand trail access for walkers, runners, hikers, bikers, and individuals with disabilities.
- **Renovate Existing Visitor Center for Community Use:** This project converts the existing visitor center located in the beach area to a rentable facility for group and community gatherings.

The total estimated cost for Phase 2 development is $21,461,398.

PHASE 3

Phase 3 focuses on the need to provide visitor access to Ware Field and expand recreational opportunities on properties west of State Park Lane acquired since 2001:

- **Discovery Playgrounds in Day Use and Overnight Areas:** The park proposes installation of natural Discovery Area playgrounds in each of the primary day use and overnight areas of the park for ease of access to encourage nature-based play by young visitors and families.
- **Ware Field Access Road and Conference Center:** This project involves construction of an access road to Ware Field from State Park Lane for development of a conference center and event venue at the Ware Field overlooking Lake Anna.
- **Upgrade and Replace Trail Bridges:** The replacement of trail bridges and upgrades to equestrian stream crossings throughout the park is needed for the safety and convenience of trail users.
- **Construct Western Hiking, Equestrian, and Mountain Biking Trails:** The park proposes the construction of separate hiking, mountain biking, and equestrian trails on parcels of land acquired since 2001 to provide recreational trail access to the western part of the park.
- **Extend Fishing Pier:** This project would extend the existing fishing pier into deeper water to expand fishing opportunities and increase fish catch rates.
- **Canoe and Kayak Rentals:** The park seeks to construct a canoe/kayak rental kiosk or facility at the Ware's Cove Picnic Area to increase access for paddlers.
- **Direct Road Access to Gold Mine:** Construction of a gated access road leading directly to the Goodwin Gold Mine interpretive area from State Park Lane to improve staff access for mine tours.
- **Central Equipment and Materials Storage Area:** Construction of a satellite equipment and materials storage yard in the central area of the park is needed to reduce the distances traveled and fuel used to haul construction materials from the existing maintenance facility at the northern end of the park to the primary day use and overnight areas located several miles to the south.

The total estimated cost for Phase 3 development is $15,381,483.

The total cost to bring Lake Anna State Park to its desired future condition is $49,364,301.

STAFFING AND OPERATIONS [1]

Existing (FY 2025)

Staffing: 9 FTE salary and benefits	$878,822
Wage totals	$423,438
OTPS:	$292,475
Total	**$1,594,735**

Immediate Needs

Staffing: 6 FTE salary and benefits	$537,755
Wage totals	$0
OTPS:	$0
Total	**$537,755**

Needs with Phase 1 Buildout

Staffing: 1 FTE salary and benefits	$83,537
Wage totals	$90,000
OTPS:	$196,672
Total	**$370,209**

Needs with Phase 2 Buildout

Staffing: 2 FTE salary and benefits	$167,074
Wage totals	$45,000
OTPS:	$170,325
Total	**$382,399**

Needs with Phase 3 Buildout

Staffing: 1 FTE salary and benefits	$107,740
Wage totals	$45,000
OTPS:	$91,081
Total	**$243,821**

Full Buildout

Staffing: 19 FTE salary and benefits	$1,774,928
Wage totals	$603,438
OTPS:	$750,722
Full Buildout Total	**$3,129,088**

1 *Amounts are in FY 2025 dollars and all costs such as salary, wage, and Other than Personnel Services (OTPS) are based on FY 2025 budget projections. OTPS includes non-staffing expenses such as (but not limited to) equipment, supplies utilities, and resource management.*

LIST OF ACRONYMS AND ABBREVIATIONS

BCR	Board of Conservation and Recreation
CPSM	Virginia Construction and Professional Services Manual
DCR	Virginia Department of Conservation and Recreation
FY	Fiscal Year
MPC	Master Planning Committee
MPT	Master Plan Team
PRR	Division of Planning Recreation and Resources
sf	Square Feet (measurement of area)
VOP	Virginia Outdoors Plan

INTRODUCTION

Figure 1 - Master Plan Cycle

PURPOSE OF THE MASTER PLAN

DCR identified Lake Anna State Park for review and update as part of its 10-year review cycle (see Figure 1). This revision was necessary to address changes to the existing conditions and reflects the current context of the park in the local community, region and within the Virginia State Parks system. The plan includes revisions to the phased development based on current and projected needs over the next 30 years. This report reflects both the park purpose statement and desired future direction of the park in accordance with Article XI Conservation of the Constitution of Virginia.

In accordance with §10.1-200.1 of the Code of Virginia the Department of Conservation and Recreation shall undertake a Master Planning process (i) for all existing state parks, (ii) following the acquisition of land for a new state park, and (iii) prior to undertaking substantial improvements to state parks that are not already documented in a park's existing Master Plan.

The Code also mandates that master plans be reviewed and updated by the agency and the Board of Conservation and Recreation (BCR) no less frequently than once every 10 years. The purpose of a park's Master Plan is to guide the development, utilization, and management of a park and its natural, cultural, and historic resources, and shall be adhered to closely.

MASTER PLAN DEVELOPMENT PROCESS

The state park master planning process is outlined in the Code of Virginia. The Code states that a Master Plan be developed in two stages. Stage One addresses the development of a characterization map indicating, at a minimum, boundaries, inholdings, adjacent property holdings, and other features such as slopes, water resources, soil conditions and types, natural resources, and cultural and historic resources. It also includes a characterization of the potential types of uses for different portions of the park and a narrative description of the natural, physical, cultural, and historic attributes of the park. The Stage One plan shall include the specific purposes for the park and goals and objectives to support those purposes.

Stage Two of the master plan development process utilizes the findings from the first stage and addresses the potential size, types and locations of facilities and the associated infrastructure including roads and utilities, as applicable. It also includes a proposed plan for phased development of potential facilities and infrastructure. Proposed development of any type shall be in keeping with the character of existing improvements, if appropriate, and the natural, cultural, and historic heritage and attributes of the park.

Development costs and the operational, maintenance, staffing, and financial needs for each phase of park development, as well as projections, are made as part of Stage Two of the process. Additionally, a map indicating boundaries, adjacent property holdings, and other features such as cultural and historic resources, is prepared during this stage. A park purpose statement, as well as goals and objectives for the park, are likewise developed.

DCR's process for addressing the requirements of the Code of Virginia for State Park Master Planning was reevaluated during a period from February to September of 2022. This effort culminated in a report, *Evaluation and Refinement of the Master Planning Process for Virginia State Parks*, developed in a collaborative effort with DCR personnel from the Division of Planning and Recreation Resources, Division of State Parks, and other divisions and offices that have historically and are projected to continue to be involved in the process. A key deliverable of this report was the development of a defined Master Plan process summarized in Figure 1 that places an emphasis on preplanning, public engagement, and integration of a park's unique resources and desired visitor experience.

MASTER PLAN TIMELINE AND PUBLIC INVOLVEMENT

The timeline for the development of a Master Plan is driven by the scope of the project, which varies depending on whether the process is for a new park, a 10-year update, revision following the acquisition of land or prior to undertaking substantial improvements not documented in the plan, or for non-substantial amendments. It is also influenced by the public engagement involved and final reviews by the DCR Director's Office, BCR, and General Assembly.

The 2025 Master Plan process for Lake Anna State Park was initiated as part of the 10-year update cycle and took almost two years to complete. The scope of, and anticipated timeline for, the 2025 update was devised based on those for the most recent update completed in 2011, as well as the DCR's current master planning process standards, in conjunction with the scheduling needs for both internal and external stakeholders.

Recognizing the importance of community involvement and public input in the DCR's development of a park Master Plan, the 2025 process included two public meetings held on Feb. 24, 2024, and Oct. 17, 2024. The meetings were attended by approximately two dozen participants and provided an opportunity for the public to speak directly with the Master Planning Team and DCR leadership, learn more about the planning process, request specific considerations for the future of the park, and provide feedback to help guide the vision, or mission, of the park.

Public engagement was ongoing throughout the Master Plan's development. In addition to the public meetings, staff opened an online public input survey and public comment period following each meeting. Initially, feedback was received from approximately 30 respondents, mostly regarding improvements to equestrian facilities. However, when the survey was opened for a second time in the early summer of 2024, respondents commented on the need for a variety of day-use and overnight facilities and improvements within the park. This feedback was incorporated into the draft plan which was also made available for public comment. The public input process was complemented by internal workshops.

The internal and public engagement process culminated in the development of a 10-year update for the Lake Anna State Park Master Plan that was presented to the Board of Conservation and Recreation (BCR) in a final public forum on April 24, 2025. The Board unanimously recommended approval of the plan before it was shared with the General Assembly for a 30-day review. On July 8, 2025, the plan was adopted by the DCR Director, Matthew Wells.

PARK BACKGROUND

Location and General Description

Lake Anna State Park is located along the north shore of Lake Anna, which was created in 1972 as a 13,000-acre impoundment on the North Anna River to supply cooling water to the North Anna Nuclear Power Station (see Figure 2). The park affords access to the lake for swimming, fishing, and recreational boating activities and includes facilities for lodging, camping, hiking, horseback riding, bicycling, and educational and interpretive programs. Located about 20 miles west of Interstate 95 in the Central Piedmont in Spotsylvania County, the park lies within 50 miles of four expanding population centers: Charlottesville, Fredericksburg, Richmond, and Northern Virginia. The entrance to the park is located on Route 601 (Lawyers Road), which can be accessed from Virginia State Highway 208 to the southeast or from U.S. Route 522. Lake Anna State Park's central location, frontage on one of Virginia's premier freshwater lakes, and proximity to growing population centers give it a unique status within the Virginia State Parks. Visitors are inspired to visit the park to enjoy its beautiful scenery, rich history, and ample recreational opportunities, making this 3,126-acre park an attractive destination for visitors to the state park system.

Figure 2 - Lake Anna

Resource inventories and field investigations conducted since the park's inception have consistently revealed a site possessing relatively few constraints to the development of a variety of recreational amenities. The park is comprised primarily of gently rolling topography draining into tributaries of the North Anna River from a main ridge that divides the park along a north-south axis. Steeper slopes enclose the narrow valleys formed by the upper reaches of these headwater streams, particularly on Pigeon Run and Ware Creek. Several small meadows occupy

the western side of the park entrance road (State Park Lane) and southern side of Cabin Road; otherwise, the park is mostly covered by mature Mesic Mixed Hardwood and Oak-Heath Forests. The acquisition of parcels west of State Park Lane during the 2000s added a large open meadow, Ware Field, on the peninsula at the mouth of Ware Creek across from the Ware's Cove Picnic Area (see Figure 3).

Property and Park History

Within the last four centuries, the land comprising Lake Anna State Park has been occupied by Siouan-speaking indigenous peoples; mined by people seeking iron and gold; logged for mining timbers and to produce charcoal for the area's iron furnaces; and cleared and cultivated by farmers. Within the confines of the park boundary, 14 archaeological sites have been previously documented by researchers and recorded in the Virginia Cultural Resources Information System (VCRIS) managed by the Virginia Department of Historic Resources (DHR). An additional 10 sites have been identified as requiring additional research and documentation. However, none of the known cultural resources at Lake Anna State Park have yet been added to the Virginia Landmarks Register or the National Register of Historic Places. Collectively, these archaeological sites contribute valuable information about the indigenous peoples who inhabited the area when the first settlers of European and African descent arrived, the colonial history of the region beginning in the 1720s, industrial development of the land for its rich natural resources, and farming and settlement by the various people who have attempted to make their living within the lands now comprising the park.

Figure 3 - The Ware Field property

A state park on what would become Lake Anna was first envisioned more than a decade prior to acquisition of the original properties when, in the early 1960s, the Virginia Electric and Power Company (now Dominion Energy) proposed an impoundment on the North Anna River to provide a stable water source for cooling Virginia's newest nuclear power plant. The North Anna Power Station was planned as one of two nuclear powered generating facilities in their network, providing electricity for the company's rapidly expanding service areas in Northern Virginia, Richmond, and Tidewater Virginia. By 1968, the power company had completed land acquisition; in 1972, the dam was constructed, and the lake filled. The lake was predicted to fill completely from rainfall within 3 years, but it took only 18 months due to heavy rainfall from Hurricane Agnes. Today, Lake Anna is owned by Dominion Energy, which manages the impoundment under the Federal Energy Regulatory Commission (FERC) license as cooling water for the North Anna Nuclear Power Plant. Given its proximity to the plant, Lake Anna State Park has a radiological emergency response plan in place and participates in bi-annual practice exercises for evacuation in case of a radiological emergency.

For a more detailed description of the history of the park, see the subsection on Cultural and Historic Resources in the Existing Conditions section.

Park Acquisition

In 1972, the (then) Department of Conservation and Economic Development, Division of State Parks, began the process of acquiring land for the proposed Lake Anna State Park. The original properties for the state park were acquired in 1975 and 1977 using federal Land and Water Conservation Funds (LWCF), which require the park be managed in perpetuity for public outdoor recreation. In the summer of 2001, a 246-acre property on the western boundary of the park was purchased from an adjacent landowner using LWCF funding, adding to the park's acreage. The park was further expanded in 2005 and 2006 through the acquisition of additional parcels of land west of State Park Lane for viewshed and resource protection and to provide additional recreational facilities. The current acreage of the park after these various acquisitions is 3,126.57 acres (see Figure 4 - Park Property Map).

Prior Park Planning Efforts

DCR completed the park's first master plan in 1977, initiated development in 1981, and opened the park for day use by visitors in 1983. Since that time, the Master Plan has been regularly updated by DCR, leading to the development of new and expanded facilities as described in the Physical Resources section of this plan.

The most recent Master Plan update in 2011 focused on the need for access and improvements to parcels acquired during the 2000s and connection to local recreation opportunities and a county-wide system of trails planned as part of the Spotsylvania County Greenways Plan, which has since been incorporated into the County's Comprehensive Plan. DCR began the 2011 update by conducting an initial assessment of the park and plan, at which time the agency determined that land acquisitions and developments since the previous review warranted formation of a citizen advisory committee to help guide the effort. Following meetings with staff and the public to share information and discuss relevant concerns, the committee decided to update the purpose statement, goals, and objectives to better reflect the desired future condition of the park. Additional developments planned for the 778-acre tract acquired to the west of State Park Lane included a connector road, new visitor center, amphitheater, picnic area, equestrian and group campground, boat slips, staff residence, and hiking trails. These recommendations were added to planned developments on the original site, which included expansion of the beach, relocation of the boat ramp to Ware's Cove, enlargement of the maintenance facility and contact station, and expansion of the campground, among other improvements.

This 2025 update to the master plan builds upon the 2011 Master Plan for the state park to create a framework for the development and operation of Lake Anna State Park, and in the process defines the park's purpose, goals, and objectives for the construction, expansion, and operation of the park over the next 30 years, while also taking into consideration is cultural, physical, and natural resources and visitor experiences.

Planning Context

The parcels comprising the park are surrounded primarily by forestal, agricultural, and residential land uses located within Spotsylvania County. Planning in the county is guided by the 2021 Spotsylvania County Comprehensive Plan, amended most recently in 2023, which provides recommendations for the long-range growth and physical development of the locality including land use, transportation, recreation, public facilities, and natural and historic resources. Lake Anna State Park lies in the southwestern part of the county, outside of Spotsylvania's Primary Development Boundary where public water and sewer are generally available, on land planned for open space, which is consistent with the park's present and proposed future use. On the county's Future Land Use Map, the park is surrounded primarily by areas planned for Agricultural and Rural land uses, categories which are intended for cultivation of crops and livestock, forestry operations, open space, agritourism, and rural, low-density residential uses.

Lake Anna State Park Property Map

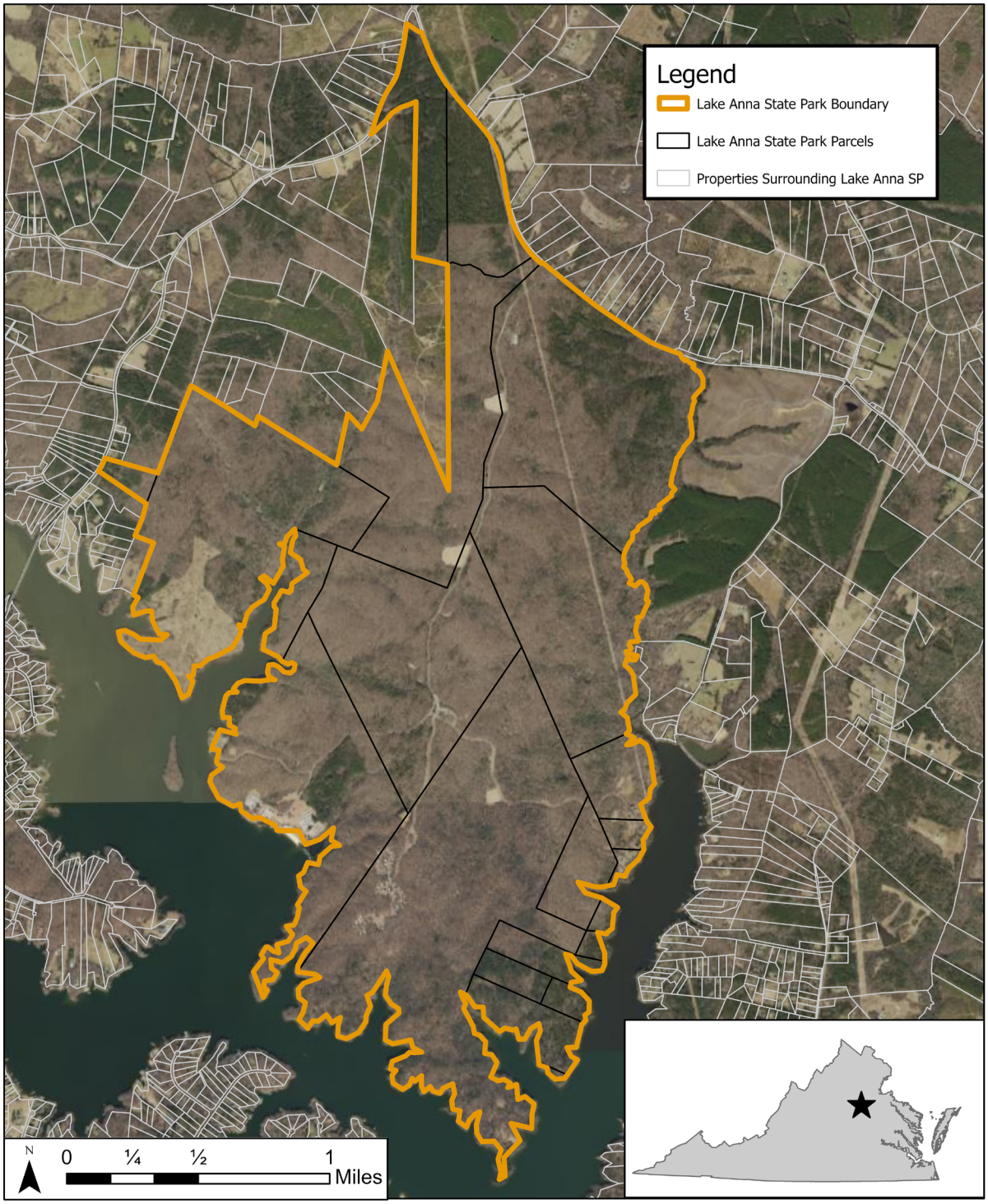


Figure 4 - Park Property Map

The Spotsylvania County plan for trails and greenways, the Trailways Master Plan, is included in Chapter 3A of the 2021 Comprehensive Plan. The Trailways Master Plan shows the proposed Lake Anna State Park Connector Trail connecting to a future trailhead in the northern part of the state park (see Figure 5). This proposed multi-use trail would run north from the park along powerline corridors to link up with two planned east-west trails, the Todd's Tavern Spur and Virginia Central Railway (VCR) Trail, connecting Lake Anna State Park to the wider county trail network. Easements for a portion of the route of the Lake Anna State Park Connector were obtained by the County as part of approval of a solar energy facility in 2019. The Comprehensive Plan notes that the pursuit of such alternative modes of transportation and efforts to expand their use helps reduce roadway congestion, improve levels of service, and reduce the frequency of vehicle crashes on local roads.

The Spotsylvania County Transportation and Thoroughfare Plan, included in Chapter 3 of the 2021 Comprehensive Plan, recognizes the need for improvements to highways and roads to provide improved transportation access to goods and services for populations residing in rural areas. The Plan also identifies a need to improve highway design and implement projects to increase safety at problematic intersections and on road segments experiencing elevated numbers of accidents. Lawyers Road, the two-lane thoroughfare providing direct access to the park entrance, is proposed to be widened to two 12-foot travel lanes and 6-foot shoulders between Courthouse Road (Virginia Route 208) and Stubbs Bridge Road (see Figure 6). Additionally, the County's long-term plans include widening Courthouse Road to four lanes and constructing parallel roads from Lawyers Road to Ridge Road to serve the proposed mixed-use area in the vicinity of Glenora and Colling Point. Once implemented, these improvements will improve access to Lake Anna State Park for visitors while mitigating traffic congestion occurring on local roads near the park entrance during busy summer weekends (County of Spotsylvania, Virginia, 2021).

At a regional level, Lake Anna State Park lies within the George Washington Regional Commission (GWRC) Planning District consisting of Spotsylvania, Stafford, King George, and Caroline counties and the City of Fredericksburg. The commission assists member localities with local planning and implementation related to economic development, environmental, housing, community health, and transportation issues. In 2020-2021, the Commission utilized a Virginia Department of Forestry Grant to develop the GWRC Greenway Feasibility Study and Plan to study the feasibility of a regional greenway network. The plan recommends a Regional Greenway Network and prioritizes trail connections in each locality to build out the network as quickly as feasible. In Spotsylvania, high-priority trail connections were identified in the eastern and central areas of the county where existing and planned suburban developments are concentrated. Although the Lake Anna State Park Connector is not prioritized in the regional plan, construction of trails in Eastern Spotsylvania in the near term will ultimately allow trails in the western end of the county to be linked in the future to an interconnected system of regional parks and recreation areas centered on the I-95 corridor (George Washington Regional Commission, 2021).

VIRGINIA OUTDOORS PLAN (VOP)

The Virginia Outdoors Plan (VOP) is the state's comprehensive plan for land conservation, outdoor recreation, and open-space planning. The document helps all levels of government and the private sector identify trends and meet the needs of the public for access to land and water for outdoor recreation purposes. Not only is the VOP required for state participation in the federal Land and Water Conservation Fund (LWCF) program, it also provides guidance for the protection of lands through the Virginia Land Conservation Foundation (VLCF), which receives state funding for the protection of farmland, forests, lands of historic or cultural significance, natural areas, open spaces, and parkland through the Virginia Land Conservation Fund. These funds were used historically to acquire the initial property for Lake Anna State Park as well as adjacent lands in the years since to enlarge the park property.

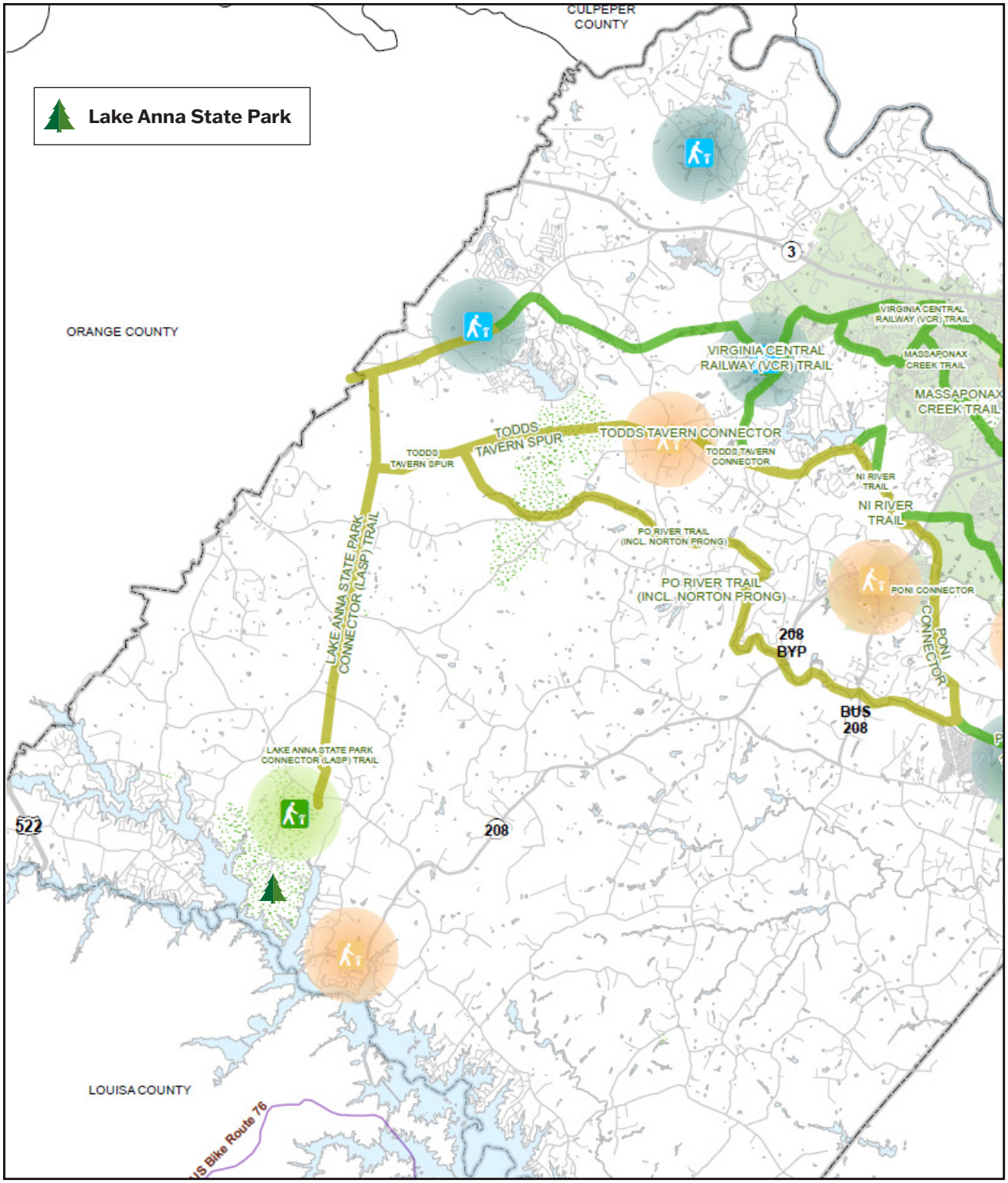


Figure 5 - Planned route of the Lake Anna State Park Connector (Multi-Use) Trail. Image courtesy of Spotylvania County Greenways Plan (as amended July 9, 2024)

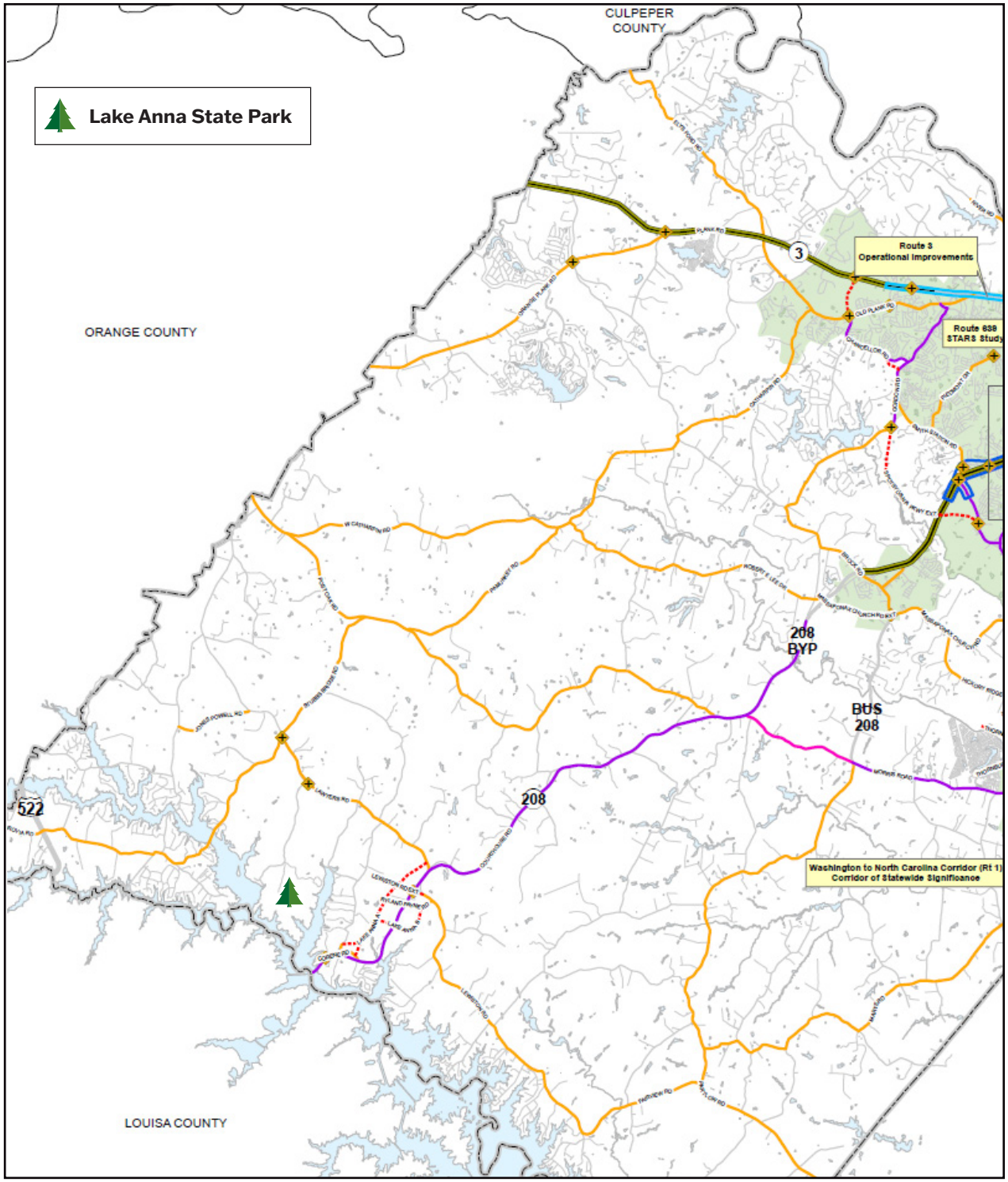


Figure 6 - Planned road and intersection improvements in Western Spotsylvania County. Image courtesy of Spotylvania County Thoroughfare Plan (as amended July 9, 2024)

The 2024 Virginia Outdoors Plan utilizes ArcGIS Hub and StoryMaps to create an online plan replete with interactive mapping, videos, photographs, links to related studies, and immersive content to identify past and present trends with respect to outdoor recreation, which increased dramatically during, and remained elevated in the aftermath of, the COVID-19 pandemic. The VOP recognizes the substantial contributions of outdoor recreation to the Virginia economy and establishes recommendations and priorities to guide public use of parks, greenways, waterways, and open spaces of all types for the next five years. Since Virginia State Parks provide a myriad of premier opportunities for outdoor recreation located across all regions of the Commonwealth, the following major findings of the plan are relevant to the recreational activities and accommodations available at state parks generally and Lake Anna State Park specifically:

- The COVID-19 pandemic prompted more people to participate in outdoor recreation, straining Virginia's public lands and outdoor recreation venues. The public expressed a clear need for additional recreation inventory to meet increased demand resulting from factors that include changing population densities in certain regions and increased visitation to popular recreation destinations. For instance, more than half of Virginia Outdoors Survey respondents (55.4%) were unable to reserve an overnight accommodation at a state park, primarily due to a lack of availability of their preferred lodging (campsite, cabin, or lodge) or a lack of accommodations during their preferred dates. State parks are significant nodes in Virginia's network of public lands and represent an important opportunity to expand recreational infrastructure and associated overnight accommodations across the Commonwealth.
- Virginians desire facilities and programs that are adequately funded, safe, resilient, and able to accommodate users having widely varying needs, backgrounds, experience levels, and abilities, particularly for the physical and mental health benefits such activities provide. The plan recommends prioritizing projects that expand outdoor recreation access, improve safety, give rise to better public health outcomes, and address climate change challenges through resilient infrastructure and resources management.
- Learning about our natural surroundings, gaining new outdoor skills, and building on those experiences with repeated exposure and guidance encourages long-term interest in outdoor recreation pursuits. For these reasons, the plan recommends prioritizing projects that improve outdoor recreation access through immersive outdoor experiences and programming, outdoor skills- and confidence-building exercises, guided tours and instruction, and affordable (or free) rental of outdoor equipment.
- Access to outdoor recreation has not always been equally available to individuals of all races, cultures, and backgrounds. The plan aims to implement projects in communities that have been historically underserved, underfunded, and underdeveloped with respect to recreation opportunities and address common barriers people with disabilities may encounter in the outdoors.
- Virginians rank water access (29.1%) as the fourth most-needed outdoor recreation activity in Virginia and spent an equal or greater number of days on average engaging in water-based activities as they did visiting parks and natural areas generally. The plan recommends additional and upgraded public access sites for motorized and non-motorized boating, swimming, fishing, water sports, and passive recreation use.

The VOP further recommends that park plans consider conservation values, purposes, and how the landscape may predictably change over time during land acquisition and project planning and design. The plan's recommendations recognize the importance of enhancing recreation opportunities in natural landscapes throughout the existing network of state natural areas and parks and engaging visitor interest in the natural landscape and local wildlife. Furthermore, the Virginia State Parks Natural Resources Management section is continually implementing biodiversity best management practices in state parks that support Virginia's ecological resiliency goals and enhance recreational enjoyment. This master plan recognizes these efforts and aims to put these VOP recommendations into practice by maximizing the conservation of natural resources in planning for future recreation facilities and programs.

GOALS AND PLANNING CONTEXT

GOALS, OBJECTIVES, AND MANAGEMENT FRAMEWORK

The basis for the park's long-term development plan is the Constitution of Virginia and the Code of Virginia, as well as the respective mission statements for DCR and Virginia State Parks. The Lake Anna State Park purpose statement, themes, and subthemes were written to be consistent with the mission of both the agency and state park system. These statements and themes, in turn, guided the wording of the goals and objectives to ensure that all provide consistent guidance regarding future improvements to Lake Anna State Park. Taken together, these sections of this master plan are intended to meet the Stage One requirements of the Code of Virginia referenced in the previous chapter.

Constitution of Virginia, Article XI, Section 1

"To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public lands, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, and historic sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth."

Department of Conservation and Recreation Mission Statement

"Conserve, protect, enhance, and advocate wise use of the Commonwealth's unique natural, historical, recreational, scenic, and cultural resources."

Virginia State Parks Mission Statement

"To conserve the natural, scenic, historic, and cultural resources of the Commonwealth and provide recreational and education opportunities consistent with the good stewardship of these lands, waters, and facilities that leave them unimpaired for future generations."

Lake Anna State Park Purpose Statement

"Nestled in the gold-laced hills along the shores of Virginia's fourth largest lake, Lake Anna State Park provides abundant opportunities for active recreation, personal exploration and solitude that are forever preserved for future generations."

Lake Anna State Park Goals and Objectives

The goals and objectives of the Master Plan encapsulate the central theme of protecting, conserving, and enhancing the park's resources while offering a range of day-use and overnight recreational facilities and programming for education and interpretation. Implementing these goals involves working across sectors, building partnerships, and administering and managing the park in a manner that establishes accountability and fosters the public's trust. The plan's goals and objectives provide inspiration and direction toward fulfilling the park's purpose, as well as the missions of the agency and Virginia State Parks, during the Master Plan's projected 30-year phased development period.

Goal 1.0. Resource Protection: Protect the natural, historic, cultural, and scenic resources encompassed within the park boundaries by preserving the lakeshore, its tributaries, and rich upland forest and meadows flanking its shores.

- Objective 1.1 – Locate, design, and construct facilities and manage the park to minimize impacts to areas containing such resources and avoid impacts to rare, sensitive, or exemplary resources.
- Objective 1.2 – Expand the park where appropriate and feasible to ensure adequate space for outdoor recreation facilities and protection of natural and cultural resources, while working with adjacent landowners and local government entities to encourage compatible adjacent land uses that protect the park from encroachment.
- Objective 1.3 – Maintain the natural integrity of the park by maximizing the conservation of parkland set aside as unimproved and passive use open space.
- Objective 1.4 – Implement the park's Natural Resource Management Plan (NRMP) and review and update the NRMP at least once every five years.
- Objective 1.5 – Ensure park rangers and staff are adequately trained and equipped to protect park resources from damage, destruction, or removal.
- Objective 1.6 – Implement practices and measures within the park in accordance with the recommendations of the DCR Shorelines Erosion Advisory Service (SEAS) to stabilize and address shoreline erosion and protect the water quality of Lake Anna and its tributaries.

Goal 2.0. Recreational Facilities: Provide for day-use and overnight recreational activities by affording access to the land and water while protecting resources from damage associated with overuse.

- Objective 2.1 – Expand the capacity of day-use facilities to better meet demand while managing visitor use through the establishment of limits for the most popular recreational activities as part of a Day Use Reservation System.
- Objective 2.2 – Expand the capacity of overnight facilities to better meet demand and provide expanded camping and lodging opportunities to various user groups.
- Objective 2.3 – Expand day-use facilities to parcels acquired west of State Park Lane to meet the growing demand for outdoor recreation, manage potential conflicts between user groups, and showcase the unique features and scenery of these properties.
- Objective 2.4 – Design and build recreation facilities that meet expectations for users of all incomes, backgrounds, interests, and abilities so that all visitors can experience the complete range of recreational opportunities offered by the park.
- Objective 2.5 – Maximize usage of the viewsheds of Lake Anna from the lakeshore and waterfront areas as a backdrop for planned facilities to showcase the park's natural scenery and beauty in the design of future improvements.
- Objective 2.6 – Ascertain the needs of a continually-changing community of recreational user groups and plan and implement programs and facilities accordingly.
- Objective 2.7 – Design new and retrofit existing recreational facilities to seamlessly integrate access for people with disabilities, whether physical, visual, auditory, sensory, or other type, consistent with American with Disabilities Act (ADA) standards.

Goal 3.0: Public Engagement: Administer the park in professional manner that enhances public participation, transparency, and accountability to foster trust and give visitors and the Lake Anna community a stake in decisions concerning the park.

- Objective 3.1 – Provide accurate and timely information to the public and create opportunities for public participation in the administration of the park by effectively communicating and interacting with local governments, civil society organizations, and the local community.
- Objective 3.2 – Conduct events, activities, and programs that inspire and nurture repeat visitation, volunteerism, and employment at the park.
- Objective 3.3 – Implement systems for managing visitation that establish trust in the ability of users to access recreational facilities during times of peak demand without comprising their enjoyment of the park.
- Objective 3.4 – Make the park a repository of public information about regional tourism to maximize the positive economic impacts of the park on nearby recreation, lodging, shopping, and dining destinations and benefits to adjacent communities generally.

Goal 4.0. Community Partnerships: Collaborate with community partners to market the state park as a regional destination, address issues and concerns associated with park usage, and provide local volunteer opportunities.

- Objective 4.1 – Partner with the Friends of Lake Anna State Park, volunteer groups, and similar organizations to fulfill unmet needs with respect to park staffing, operations, facilities, and maintenance
- Objective 4.2 – Participate in local, regional, and state planning efforts involving area parks, greenways, and recreational amenities to identify shared objectives and advance projects aimed at improving connectivity and cooperation.
- Objective 4.3 – Establish partnerships with local schools, historical societies, recreational user groups, trail maintenance organizations, and interest groups to enhance and expand educational opportunities and better manage and conserve cultural and ecological resources in the park, local area, and region.
- Objective 4.4 – Advance initiatives common to Lake Anna by collaborating with Dominion Energy, local governments, the Lake Anna Advisory Committee (LAAC), George Washington Regional Commission (GWRC), state agencies, civil society organizations, and others working to safeguard the waters and shoreline of Lake Anna for the enjoyment of current and future generations.
- Objective 4.5 – Collaborate with economic development departments, chambers of commerce, and tourism organizations to market the park as an integral component of the regional network of destinations.

Goal 5.0. Educational and Interpretive Programs: Increase public awareness of the park by providing meaningful opportunities to learn about its unique history and by highlighting the importance of environmental stewardship through development of hands-on educational opportunities and immersive interpretive exhibits.

- Objective 5.1 – Develop and implement a Visitor Experience Plan to guide programming and events at the park for the benefit of the public and local community.
- Objective 5.2 – Continue student participation in educational programs for all learning abilities and levels aimed at increasing student knowledge of, and appreciation for, the park's geology, ecology, and history.

- Objective 5.3 – Teach visitors about the importance of the cultural, historical, and natural resources found in the park and throughout the Piedmont using interactive exhibits, events, and programs.
- Objective 5.4 – Educate visitors and the community about the need to sustain and conserve natural resources in the park as well as in their own homes and communities.

Goal 6.0. Visitor Satisfaction: Optimize operations and visitor services to ensure a welcoming environment by providing ample spaces for the safe enjoyment of the lakeshore and its environs while protecting the park, visitors, and resources from the impacts that result when visitation exceeds capacity.

- Objective 6.1 – Provide sufficient space in the design of day-use and overnight facilities to accommodate user needs while affording sufficient privacy to guests.
- Objective 6.2 – Provide adequate separation between popular day-use activities, such as the beach and boat ramp, and areas of the park where quiet or solitude are desired by guests, for instance, in the campground, lodging area, and backcountry.
- Objective 6.3 – Ensure that park facilities and infrastructure are well maintained and kept in a clean, safe, and operational condition for the convenience of guests.
- Objective 6.4 – Provide visitors with clear and timely information about capacity and usage of popular areas during busy periods, particularly the beach and swimming area on summer weekends.
- Objective 6.5 – Prioritize customer satisfaction by making customer comment forms widely available, regularly compiling responses, and utilizing guest feedback to improve park management.
- Objective 6.6 – Upgrade equipment and adjust operations to address the effects of heat waves and similar climate conditions on visitor comfort and safety.

Goal 7.0. Staffing, Funding, and Equipment: Provide sufficient staffing and facilities to fulfill the purpose of the Lake Anna Master Plan and meet visitors' needs while striving for positive economic impacts to the Commonwealth and community, respectively.

- Objective 7.1 – Provide appropriate staffing levels and training needed to endow staff with the necessary skills to achieve the park mission and professional advancement within the Virginia State Parks system.
- Objective 7.2 – Ensure the park has adequate staffing and revenue streams to sustain and support essential visitor experiences identified in the Visitor Experience Plan.
- Objective 7.3 – Utilize the market analysis and implement the strategies outlined in the Lake Anna State Park Business Plan to maximize economic activity, revenue generation, local job creation, and retail sales of merchandise both online and at park gift shops.
- Objective 7.4 – Maximize revenue generated by the park to support the park mission and create stable sources of funding to supplement the General Fund revenues used to operate the park.
- Objective 7.5 – Plan and implement upgrades to vehicles, machinery, equipment, and information technology used by staff as needed to remain up to date with technological advancements.

EXISTING CONDITIONS

Surrounding Land Use

The primary land uses surrounding Lake Anna State Park are forestal and low-density residential. Forestal uses border the park property on the north, northwest, and east, whereas residential uses, comparatively smaller in number, are concentrated to the north on Lawyers Road and west where the park boundary abuts Stubbs Bridge Road. The park is surrounded by Lake Anna on the south, southeast, and southwest; forestal and low-density residential uses occupy the opposite shore visible from the park's lakefront areas.

In recent years, the Virginia Department of Health (VDH) has monitored and issued periodic "no swim" advisories due to the presence of harmful algal blooms (HABs) during the warmer months on certain branches of Lake Anna, which is owned and managed by Dominion Energy. These advisories have not, to date, affected the waters surrounding the park or led to closures of the swimming area, although contamination of upstream and downstream waters by HABs and other pollutants, such as E. coli bacteria, will continue to be monitored by the park to ensure the health and safety of park visitors.

Park Boundaries

Currently, Lake Anna State Park consists of approximately 3,126 acres lying in the Livingston District in southwestern Spotsylvania County. The shoreline of Lake Anna forms the southern boundary and Pigeon Run the eastern boundary. The northern boundary is formed by the right-of-way of Route 601 (Lawyers Road) from the Pigeon Run stream crossing northwest to Bells Crossroad near the intersection of Stubbs Bridge Road. The western boundary runs from Bells Crossroad generally south and west to the Lake Anna shore and includes nearly 120 feet of frontage on Stubbs Bridge Road.

The land for the park was assembled over several decades from properties consisting of agricultural and forestal land. In 2001, the agency acquired approximately 246 acres near the park entrance to protect the park's western boundary from encroachment, which moved further north and west in 2005 and 2006 through the acquisition of parcels containing 165 and 367 acres, respectively. These acquisitions increased the total park acreage from its original 2,058 acres to the park's present acreage. The boundary on Lake Anna creates a shoreline of approximately 10 miles within the park. A map characterizing the boundaries, inholdings, and adjacent properties is depicted above in Figure 4.

Physiographic Region and Geology

Lake Anna State Park lies in southwestern Spotsylvania County within the Piedmont physiographic region of Virginia, a wide belt separating the Blue Ridge to the west from the Coastal Plain to the east. The park is situated within the Central Virginal Seismic Zone (CVSZ), one of three seismic zones in Virginia, and is underlain by deep geologic faults, or fracture zones. Although seismic activity does pose a hazard to the region, larger earthquakes such as the 5.8-magnitude quake on August 23, 2011 near Mineral, Virginia are rare and are not correlated to faults visible at the surface (Carter et al., 2019).

The presence of gold in the Virginia Gold-Pyrite Belt of the Western Piedmont and Lake Anna State Park is a product of the geology of the region. The park is underlain primarily by Ordovician-era, metamorphosed volcanic and sedimentary bedrock of the Chopawamsic Formation. This terrane is punctuated by two narrow, northeast-to-southwest-oriented bands of younger rocks consisting of a Mesozoic vein of metamorphosed igneous intrusive rock (diabase) and a strip of Paleozoic metamorphosed sedimentary and volcanic rock of the Quantico Formation. Gold in this region is associated spatially with the presence of metamorphosed volcanic rocks of the Chopawamsic Formation; most gold deposits in this region are located at the top of this formation near its contact with rocks of the Quantico Formation. The remnants of commercial gold mines situated within the state park and Spotsylvania County generally occur at the interface of these bedrock formations (National Academies of Sciences, Engineering, and Medicine, 2023).

Topography

The park property consists of rolling topography of the Virginia Piedmont, with elevations ranging from a high of approximately 420 feet at the northern tip in the small crossroads village of Stubbs to 250 feet at the normal lake level of Lake Anna (or lower depending on fluctuations in lake levels). The park's higher-elevation terrain is formed by a main ridge that divides the park along a north-south axis roughly coincident with the alignment of State Park Lane and Campground Road. Shorter ridges radiating from the main ridge drain these relatively flat upland areas into perennial and intermittent tributaries of the North Anna River. Steeper slopes (15-25%) can be found in ravines formed within the lower reaches of these headwater streams that drain to Pigeon Run, Pamunkey Creek, and Ware Creek. Most of the land within the park, in terms of its natural topography and grade, is considered suitable for development.

Watersheds

Understanding a park's "watershed address" (or addresses) is important for protecting and enhancing water quality of the park's waterways and wetland areas, which provide critical habitat for the park's flora and fauna. Pollution of these resources may stem from a variety of sources associated with how the lands that drain to a particular receiving channel or water body are developed or used for recreational, residential, maintenance, and related purposes. The Virginia Stormwater Management Act and Regulations (VSMA/VSMRs) require that stormwater runoff from land uses temporarily during construction and permanently thereafter are minimized and treated before being discharged into the natural environment. These requirements, in turn, are aimed at helping the Commonwealth fulfill its obligations pursuant to the regional interstate Chesapeake Bay Program partnership and the federal Clean Water Act for improving water quality so that the Chesapeake Bay, its tributaries, and all Virginia waters ultimately achieve "fishable and swimmable" status for the benefit of the public as well as the organisms that inhabit them.

Although the terms "watershed" and a "hydrological unit" are typically used interchangeably, they technically refer to two different types of drainage features. A watershed is traditionally defined as all the area of land draining to a body of water at a single convergence point, whereas a hydrologic unit is a numerical code (referred to as a hydrologic unit code or HUC) assigned to a specific drainage area, including watersheds, to fit all land in the United States into a multi-level, hierarchical land classification system. As described on DCR's Soil and Water Conservation webpage, hydrologic units, unlike watersheds, "*may also accept water from one or more points outside of the unit's boundary*" and "*may include associated surface areas whose drainages do not connect, thus resulting in multiple outlet points."* Thus, as stated on the webpage, *"all watersheds are hydrologic units, but not all hydrologic units are watersheds*" (Division of Soil and Water Conservation).

Today, there are two primary methods used in Virginia for labeling drainage areas by hydrologic unit: a 12-digit HUC 12 code and a 4-digit VAHU6 code. As depicted in Figure 7, Lake Anna State Park is roughly divided into two HUC 12 drainage areas, with approximately half of the park flowing to the west (Code 020801060503) and half to the east (Code 020801060602). Likewise, the park is roughly divided into two VAHU6 drainage areas wherein the first two digits refer to the major stream name (York River) and the last two refer to a sequential numbering system designed to indicate drainage from the headwaters to the mouth of the waterway. Per the VAHU6 system, approximately half of the park flows to the west to the YO18 drainage area and half to the east to the YO20 drainage system. These requirements, in turn, are aimed at helping the Commonwealth fulfill its obligations pursuant to the regional interstate Chesapeake Bay Program partnership and the federal Clean Water Act for improving water quality so that the Chesapeake Bay, its tributaries, and all Virginia waters ultimately achieve "fishable and swimmable" status for the benefit of the public as well as the organisms that inhabit them.

Lake Anna State Park Environmental Features

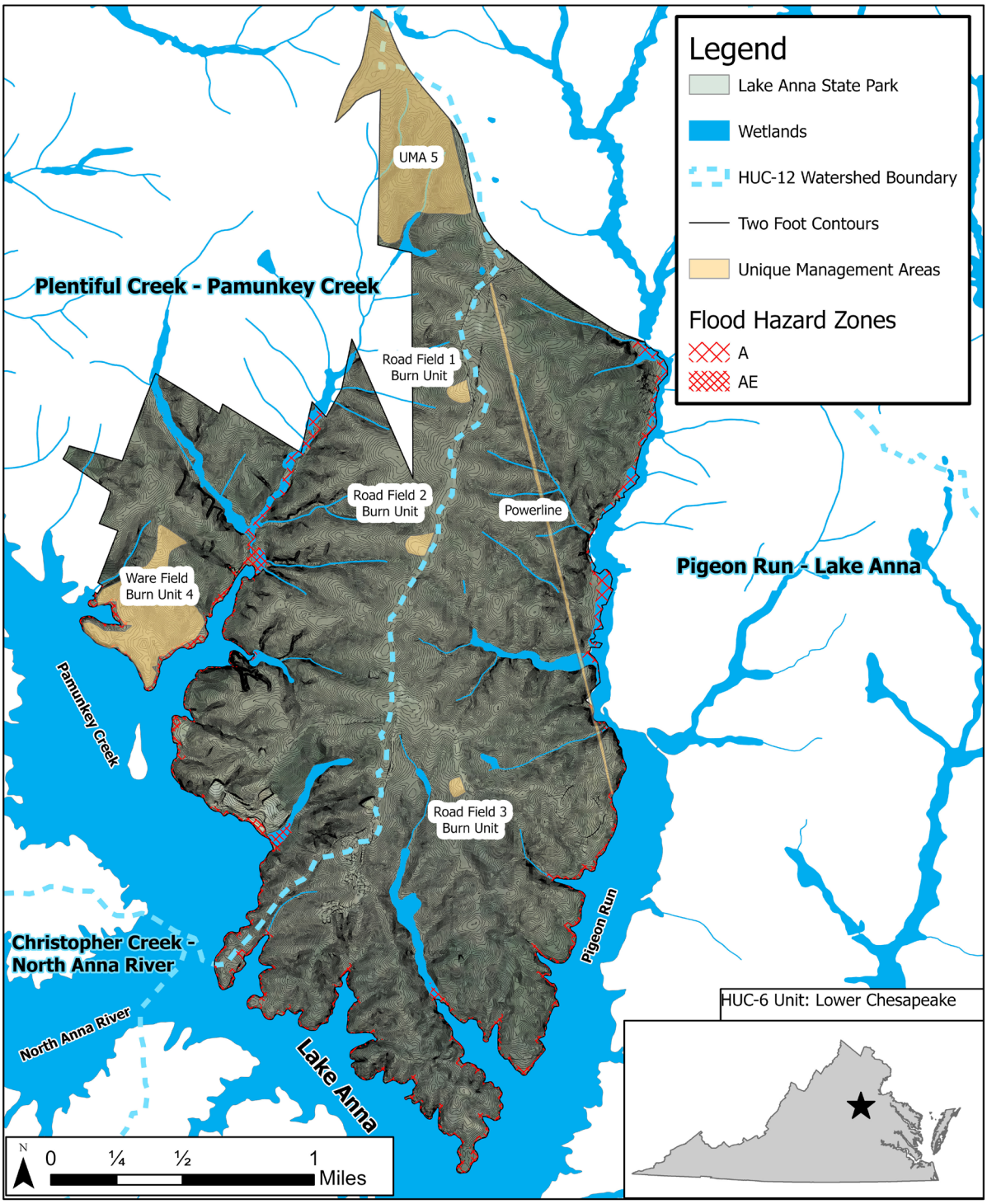


Figure 7 - Environmental Features Map

The significance of these hydrologic codes in terms of minimizing discharges of contaminants and enhancing the quality of receiving waters is heightened when these lands are disturbed during development of the facilities proposed in this plan. The design of buildings, infrastructure, and recreational facilities in the park's watersheds, all of which ultimately drain to Lake Anna, must strictly consider water quantity and quality standards of the VSMRs for minimizing the discharge of keystone pollutants (nitrogen, phosphorus, and Total Suspended Solids) during construction. In addition, permanent stormwater Best Management Practices (BMPs) and facilities must be regularly maintained post-construction to achieve state and federal water quality goals. Finally, park and agency staff may be required to modify certain operational or land management practices in a particular watershed in the event a downstream waterbody is designated as impaired for particular contaminants in accordance with a Watershed Improvement Plan (WIP) and Total Maximum Daily Load (TMDL) imposed pursuant to the federal Clean Water Act.

Flood Zones

The National Flood Insurance Program (NFIP), administered by the Federal Emergency Management Agency (FEMA), provides flood insurance to property owners, renters, and businesses to assist them in recovery in the aftermath of a flood. As part of the NFIP, FEMA publishes and coordinates with participating local governments to regularly update Flood Insurance Rate Maps (FIRMs) designating flood zones of high, moderate, and low flood risk in a community. A flood zone is a defined geographic area sharing the same flood hazard risk for the purpose of determining flood insurance requirements and costs. DCR is the state agency responsible for administering local NFIP compliance and participation in Virginia as part of the Virginia Floodplain Management Program. In accordance with §10.1-603 of Code of Virginia, all agencies and departments of the Commonwealth must adhere to applicable floodplain regulations when undertaking development activities, including the construction or rehabilitation of buildings and structures, on state-owned property located in a floodplain.

Flood zones are categorized in accordance with the probability and potential impact of flooding in a designated area. Special Flood Hazard Areas (SFHAs) are high-risk areas inundated by the flood event having a one percent (1%) chance of being equaled or exceed in any given year (i.e., the 100-year floodplain) and include all A and V zones (including A, AO, AH, AE, A99, AR, AR/AE, AR/AO, AR/A, V, and VE). The shaded Zone X is a moderate-risk area lying between the limits of the one percent (1%) and the 0.2 percent (0.2%) annual chance flood (i.e., the 500-year floodplain), whereas the unshaded Zone X is classified as a low-risk area lying outside the 500-year flood zone. Zone D represents an area where the flood risk is undetermined.

Figure 7 shows the extents of the SFHAs located on the park property. Approximately 60 acres along the eastern, southern, and western borders of Lake Anna State Park, and approximately 38 acres along the eastern border, are classified as Zone AE and Zone A, respectively, which are considered Riverine SFHAs. The floodplain management regulations applicable to these zones will need to be taken into consideration during planning and implementation of future development in these areas. The remaining acreage at Lake Anna State Park, or approximately 2,838 acres, is categorized as unshaded Zone X areas, or those exhibiting minimal flood hazard.

Wetlands

Wetlands are defined by the federal Clean Water Act (CWA) and U.S. Army Corps of Engineers (USACE) as "*those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (United States Environmental Protection Agency, 2024). Section 404 of the federal Clean Water Act enables the USACE to regulate certain activities within waterways and wetlands, and various federal and state agencies administer laws and regulations for projects that impact surface waters such

as land clearing for construction, dredging, filling, excavating, draining, and ditching. Although not all wetlands fall within the regulatory jurisdiction of federal and state government agencies, those that do are referred to as jurisdictional wetlands.

The U.S. Fish and Wildlife Service (USFWS) maintains the National Wetlands Inventory (NWI), a geospatial database and map of wetland areas organized into a hierarchical classification system comprised of wetland systems, classes, and modifiers. According to the NWI, Lake Anna State Park contains the following classifications of wetlands within its boundaries in addition to perennial streams and open water (see Figure 5 - Environmental Features Map):

- Approximately 87 acres of Freshwater Forested/Shrub Wetlands are located throughout the property adjoining non-tidal streams and inlets of Lake Anna. These wetlands are all non-tidal, dominated by broad-leaved deciduous trees and shrubs.
- Approximately 0.5 acres of Freshwater Emergent Wetland occur in the northeastern portion of the park in a powerline right-of-way.

Although this area represents a small fraction of the total area of the park, the NWI is general in nature and may not accurately reflect the true extent of jurisdictional wetlands on the park property for the purposes of ensuring regulatory compliance at the time of development. For this reason, a wetland delineation should be undertaken and a preliminary jurisdictional determination from the USACE obtained prior to development within or in the vicinity of potential wetlands to avoid, minimize, and mitigate impacts.

Soil Conditions and Types

Soils are composed of four basic ingredients: minerals, organic material, air, and water. The National Cooperative Soil Survey, a collaboration led by the U.S. Department of Agriculture's Natural Resources Conservation Service (USDA-NRCS), defines 12 major soil texture classifications (sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay) whereby classifications are named for the primary constituent particle size or a combination of the most abundant particles sizes. The degree to which soil is composed of its three potential base materials (silt, clay, and loam) determines properties such as its water retention capacity and the type of plant life it can support. Understanding soil type, therefore, can better inform decisions regarding land planning and development.

More than 20 different soil types have been mapped in Lake Anna State Park as depicted in Figure 8. The five most prevalent soil types on the park property are shown in Table 1 below.

Table 1: Prevalent Soil Types, Lake Anna State Park

Map Unit Symbol	Map Unit Name	Approx. Area (Ac.)
39C2	Tatum loam, 7 to 15 percent slopes, eroded	534
32C2	Nason silt loam, 7 to 15 percent slopes, eroded	504
11B	Catharpin silt loam, 2 to 7 percent slopes, eroded	320
42B	Toddstav silt loam, 0 to 4 percent slopes	259
39B	Tatum loam, 2 to 7 percent slopes	252

Source: USDA National Cooperative Soil Survey

Lake Anna State Park Soil Composition

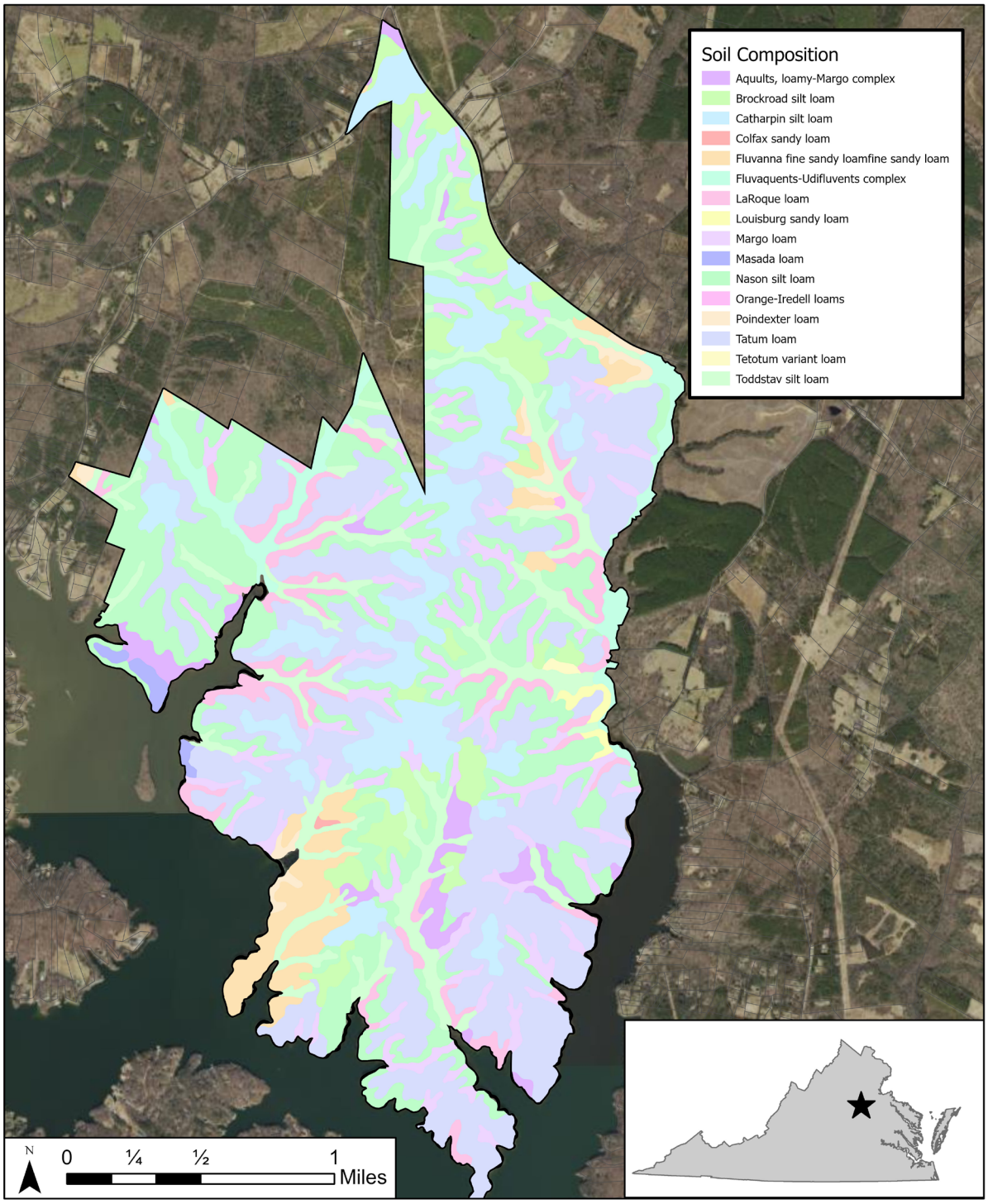


Figure 8 - Soil Composition Map

NATURAL RESOURCES

Most of the park property is undeveloped and protects diverse ecosystems and biotic resources, some of which are unique and require specialized management practices.

Ecosystems

The various ecosystems in the park, and the recommended desired future condition (DFC) for each ecosystem, described in the Natural Resources Management Plan for the park, form the basis of the park's resource management efforts. The DFCs identify the park's long term management goals for each ecosystem through descriptions of existing vegetation, wildlife habitat, presence of invasive species, and management guidelines, strategies, and practices. The Virginia State Parks Resource Management Team works with the DCR Division of Natural Heritage to map park ecosystems and keep them current. The sections below provide a brief overview of the unique ecosystems found within Lake Anna State Park.

- **Mesic Mixed Hardwood Forest:** Covering 1,308 acres of park land, this forest is found on gently rolling uplands throughout the park, from the lower ravines to the moderately steep side slopes. Many stands of Acidic Oak Hickory Forest are beginning to transition to this ecosystem type due to fire suppression and consequential decline in oak and hickory regeneration. The typical overstory for this ecosystem is dominated by American Beech, Red Maple, Tulip Poplar, and White Oak. The understory and shrub layer contains American Holly, Pignut Hickory, Red Maple, and Sweetgum; the herbaceous layer contains many species such as Bosc's Panicgrass, Christmas Fern, Hairy-Leaved Sedge, New York Fern, and Whorled Loosestrife. The main threats to this ecosystem are deer browse, particularly within the herbaceous layer, and invasive species such as Japanese Stiltgrass, Tree-of-Heaven, and Japanese Honeysuckle.
- **Oak/Heath Forest:** This forest makes up approximately 700 acres of park land and is found in the highest upland areas throughout the park on dry slopes and crests. Historically, the site experienced extensive logging and is still generally recovering, although some stands are more mature. Fire suppression in the area has also led to low oak and hickory recruitment in recent years. The typical overstory for this ecosystem is dominated by Black Oak, Chestnut Oak, Virginia Pine, and White Oak. The understory and shrub layer contains American Holly, Black Tupelo, Pignut Hickory, and Red Maple; the herbaceous layer contains many species such as Black Huckleberry, Blue Ridge Blueberry, Deerberry, Poverty Oatgrass, and Spotted Wintergreen. The key threats to this ecosystem are deer browse, particularly within the herbaceous layer, and fire suppression that has led to decreased regeneration of oak and hickory species and more American Beech, Red Maple, and pine species in the understory.
- **Mixed Successional Forest:** Forest stands classified as Mixed Successional make up a total of 149 acres of park land, most of which represent highly disturbed areas of Mesic Mixed Hardwood Forest. This forest's overstory is characterized by Loblolly Pine, Sweet Gum, Tulip Poplar, and Virginia Pine. The main threat to this ecosystem is invasive species such as Japanese Stiltgrass, Tree-of-Heaven, and Japanese Honeysuckle.
- **Coastal Plain/Piedmont Bottomland Forest:** This forest comprises a total of 94 acres of park land. This ecosystem can be found in the alluvial bottoms of Ware Creek, Pigeon Run, and other tributaries. The typical overstory for this ecosystem is dominated by American Sycamore, Green Ash, Red Maple, Sweet Gum, and Tulip Poplar. The understory and shrub layer is dominated by American Hornbeam and Northern Spicebush; the herbaceous layer contains many species such as American Hog-Peanut, Carex species, False Nettle, Jack-In-The-Pulpit, Mayapple, New York Fern, and Southern Lady Fern. The main threats

to this ecosystem are nearby beaver activity that has the potential to alter the hydrology of the ecosystem and various invasive species within the Bottomland Forest ecosystem, particularly Japanese Stiltgrass, Japanese Honeysuckle, and Marsh Dewflower.

- **Coastal Plain/Piedmont Oak-Beech/Heath Forest:** Covering 27 acres of park land, this forest is found in the western part of the park in isolated stands on the steep slopes above Ware Creek. Although most of the stands are relatively undisturbed, one stand has seen high disturbance due to the death of the eastern hemlock and wind disturbance. The typical overstory for this ecosystem is dominated by American Beech, Chestnut Oak, and White Oak; the understory and shrub layer is dominated by Mountain Laurel. This ecosystem is listed as vulnerable in the Commonwealth of Virginia, the main threat being the invasive Hemlock Woolly Adelgid, which has devastated some of the stands of hemlock in the park and requires treatment to restore populations.
- **Coastal Plain/Piedmont Seepage Swamp:** This ecosystem only comprises seven acres of park land across four sites and is listed as vulnerable globally in the Commonwealth of Virginia. Two of these four Seepage Swamp sites have also been labeled as part of the rare community Element Occurrences at the park. The typical overstory for this ecosystem is dominated by Black Tupelo, Red Maple, Sweetgum, and Willow Oak. The understory and shrub layer is dominated by American Holly, Black Highbush Blueberry, Maleberry, Smooth Witherod, and Winterberry; the herbaceous layer contains many species such as American Royal Fern, Bristly-Stalked Sedge, Fowl Mannagrass, Fringed Sedge, New York Fern, Prickly Bog Sedge Fern, Weak Sedge, and White Cutgrass. This area is vulnerable to alteration or destruction by beavers, invasive species, and human development activities. Protection of this ecosystem from future trail development or other human activities is recommended.
- **Eastern White Pine-Hardwood Forest:** Covering two acres of park land, this forest is found on a submesic, lower, north-facing slope associated seepage swamp near the park's eastern edge. This ecosystem type can be expected to expand in areas where white pine is present in small numbers and fire suppression is practiced. The typical overstory for this ecosystem is dominated by Chestnut Oak, Eastern White Pine, and White Oak. The understory and shrub layer contains abundant American Holly, Mountain Laurel, Red Maple, and Sweetgum; the herbaceous layer contains many species such as Blue Ridge Blueberry, Bush Huckleberry, Maleberry, and Pink Azalea.

Element Occurrences

The DCR Division of Natural Heritage has developed and manages an inventory of rare, threatened, and endangered plant and animal species as well as exemplary natural communities, collectively referred to as Element Occurrences (EOs). The exact locations of these EOs are protected information and therefore not shared with the public. However, their locations are relevant for planning purposes to avoid disturbances to sensitive species from planned development activities.

The relevant codes from the NatureServe system used by DCR to rank the relative abundance of species, subspecies, and communities both globally and statewide are described below:

- **Global/State Rank:** Critically Imperiled (G1/S1), Imperiled (G2/S2), Vulnerable (G3/S3), Apparently Secure (G4/S4), and Secure (G5/S5).
- **Subspecies Rank:** A "T-rank" following a species' global rank ("T" followed by a number) represents the rank or status of a subspecies/variety on an identical scale from Critically Imperiled (T1) to Secure (T5).
- **Inexact Rank:** A question mark ("?") denotes an inexact numeric rank.

Currently, known EO species, subspecies, and communities present at Lake Anna Park are:

- **Red Milkweed (Asclepias rubra):** A small population of this G4G5/S2 species has been found in the northeast portion of the park and is associated with a sphagnous, saturated swale. Within boggy swales, this species often prefers to grow along the edge of shrub thickets, although some plants grow out in the open.
- **Ten-angled Pipewort (Eriocaulon decangulare):** A small population of this G5T5?/S2 species, which is often associated with sphagnous, saturated swales, has been found in the northeast portion of the park.
- **Northern Coastal Plain/Piedmont Mesic Mixed Hardwood Forest:** Approximately 1,308 acres in total size, this community is ranked as a G5/S5, meaning that it is at very low risk of extirpation in the jurisdiction due to a very extensive range, abundant populations, and little to no concern from declines or threats. Currently this forest type covers most of the side slopes and ravines throughout the park in 19 distinct but closely aggregate patches.
- **Piedmont/Central Appalachian Mixed Oak/Heath Forest:** Approximately 700 acres in total size, this community is ranked as a G5/S5, meaning that it is at very low risk of extirpation in the jurisdiction due to a very extensive range, abundant populations, and little to no concern from declines or threats. Currently this forest type covers much of the central, upland portions of Lake Anna State Park, particularly along its highest, most convex ridges.
- **Coastal Plain/Outer Piedmont Acidic Seepage Swamp:** Approximately two acres in size, this community is ranked as a G3/S3, meaning that at both a global and state level, this community is vulnerable and at moderate risk of extinction or extirpation due to restricted range, relatively few occurrences, recent and widespread declines, or other factors. Furthermore, a S3 ranking generally indicates 21-100 occurrences statewide, or a larger number of occurrences subject to relatively high levels of threat. Currently, there is only one known occurrence of this community located in two patches in the eastern section of the park.

Predicted Suitable Habitat

The Division of Natural Heritage utilizes species habitat modeling to create predicted suitable habitat (PSH) areas for rare plants and animals. A known species occurrence would be an Element Occurrence; this tool, however, allows for a filtered approach when determining a potential area for a rare species. Currently there is no known predicted suitable habitat for any rare species at Lake Anna State Park.

Ecological Cores

The DCR Division of Natural Heritage utilizes satellite imagery to determine areas throughout Virginia that contain at least 100 acres of undisturbed natural area. These areas, called ecological cores, can include forested areas, marshes, dunes, and beaches. Cores are assigned an Ecological Integrity Score from C1 to C5 based on factors such as biodiversity, environmental diversity, and water quality benefits. The scores rank as follows: C1-Outstanding; C2-Very High; C3-High; C4-Moderate; C5-General. Ecological cores represent important background information for utilization in planning future developments in the park to avoid disturbing or fragmenting these areas. The four ecological cores found in the park include:

- Most of the forested land west of State Park Lane, except for the Ware's Cove Picnic Area and the Ware Field site, is a C3 Core of High Significance totaling approximately 1,646 acres.
- Most of the forested land on the southern peninsula of Lake Anna State Park, except for the campground area, is a C3 Core of High Significance totaling approximately 878 acres.

- Most of the forested land north of Cabin Road and east of State Park Lane to the west of the natural gas pipeline right-of-way is part of a C4 Core of Moderate Significance totaling 429 acres.
- Most of the forested land north and east of the natural gas pipeline right-of-way to the park's eastern boundary is part of a C4 Core of Moderate Significance totaling 589 acres.

Park Resource Management Issues

The following Resource Management Priorities were identified with the help of the District 2 Resource Specialist. These priorities will be addressed as part of long-term projects anticipated to either begin, or be continued, during the next five years.

Unique Management Areas

Lake Anna State Park contains a minimum of four Unique Management Areas (UMAs) that are managed by prescribed fire. The UMAs are labeled as follows:

- **Ware Field Burn Unit:** The Ware Field Burn Unit is a 76-acre remnant of former agricultural land. Due to past disturbances on the site, there are many documented invasive species in this area, including Lespedeza, Paulownia, Ailanthus and Eleagnus.
- **Road Field 1 Burn Unit:** This unit is a 4-acre field along State Park Road that consists of a mixture of planted warm-season grasses that was created to provide a diverse habitat for wildlife and for wildlife viewing by park guests
- **Road Field 2 Burn Unit:** This unit is a 5-acre field along State Park Road that consists of a mixture of planted warm-season grasses that was created to provide a diverse habitat for wildlife and for wildlife viewing by park guests.
- **Road Field 3 Burn Unit:** This unit is a 2-acre field along Cabin Road that consists of a mixture of planted warm-season grasses that was created to provide a diverse habitat for wildlife and for wildlife viewing by park guests.

Shoreline Needs

Shoreline erosion and the need for stabilization have been identified along much of Lake Anna's shoreline (see Figure 9). The shoreline around the cabin area on the eastern side of the park remains an area of particular concern, but much of the shoreline experiences erosion. The identified erosion rate for this shoreline is currently estimated at less than 1 foot per year and appears to be caused by elevated water levels and waves associated with storms. In order to address this erosion, the Shoreline Erosion Advisory Service (SEAS) of the DCR Division of Soil and Water Conservation provided a series of recommendations in 2020 for addressing shoreline erosion, particularly near the cabin area. The primary objective at this site should be to establish a line of riprap to help reduce wave stimulation along the shore. The comprehensive report detailing shoreline stabilization at this site can be found in Recommendations 1-5 of the Lake Anna SEAS Report.

The public beach access point in the southwestern end of the park represents a second area of concern (see Figure 10 - Shoreline Erosion Mitigation Map). The stabilization recommendation for this area was for the construction of groins and spurs to help eliminate further washout of the beach into the lake. The comprehensive analysis detailing these practices is found in Recommendations 6 and 7 in the Lake Anna SEAS Report.

The section of Railroad Ford Trail that runs along the lake edge is yet another area requiring shoreline stabilization. There is evidence of excessive washout of the bank along much of this peninsula, and a small portion of the trail has already eroded. Because the park exhibits similar erosion signs at the cabin area, similar stabilization efforts will be necessary per Recommendations 1-5 of the report.

Finally, park staff have recently identified the shoreline just across from the kayak launch, along Ware Creek, as another high priority location for shoreline stabilization. This area will likely need riprap to reduce wave stimulation, similar to what was recommended for the cabin area (see Figure 10).

Figure 9 - Shoreline erosion at Lake Anna State Park

Invasive Species

Wavyleaf Basketgrass (*Oplismenus undulatifolius*) is a relatively new threat to Virginia's ecosystems. This invasive was first spotted at Lake Anna State Park along the trail junction of the Railroad Ford Trail, Campground Walkway Trail, and Old Pond Trail. Further spread to the west has occurred along the Campground Walkway Trail near the amphitheater, likely due to a combination of deer browse and off-trail foot traffic. To deter excessive such foot traffic, signage is needed along the trail explaining the dangers of the spread of wavyleaf and how off-trail hiking can increase the spread. Additionally, resource management staff should take care to document the locations of wavyleaf when found to maintain a living, working database for state records. Treatments should be performed in accordance with the invasive species management plan for this species.

Stands of the invasive Tree-of-Heaven (*Ailanthus altissima*) have been found around the park near old structures. Staff will continually monitor and treat these stands in accordance with the invasive species management plan for this species.

Ware Field is a former agricultural field located in the northwestern portion of the park acquired since 2001, which remains largely inaccessible to visitors. As is the case with many such fields, Ware Field is littered with several invasive species including Lespedeza, Paulownia, Ailanthus, and Elaeagnus. These species are being targeted by the District Resource Specialist (DRS) and Resource Specialist Assistant (RSA) for treatment in accordance with their respective invasive species management plans.

Additionally, resource management staff should document the locations of known invasive species as they are found to maintain a living, working database for state records.

Lake Anna State Park Shoreline Erosion Mitigation

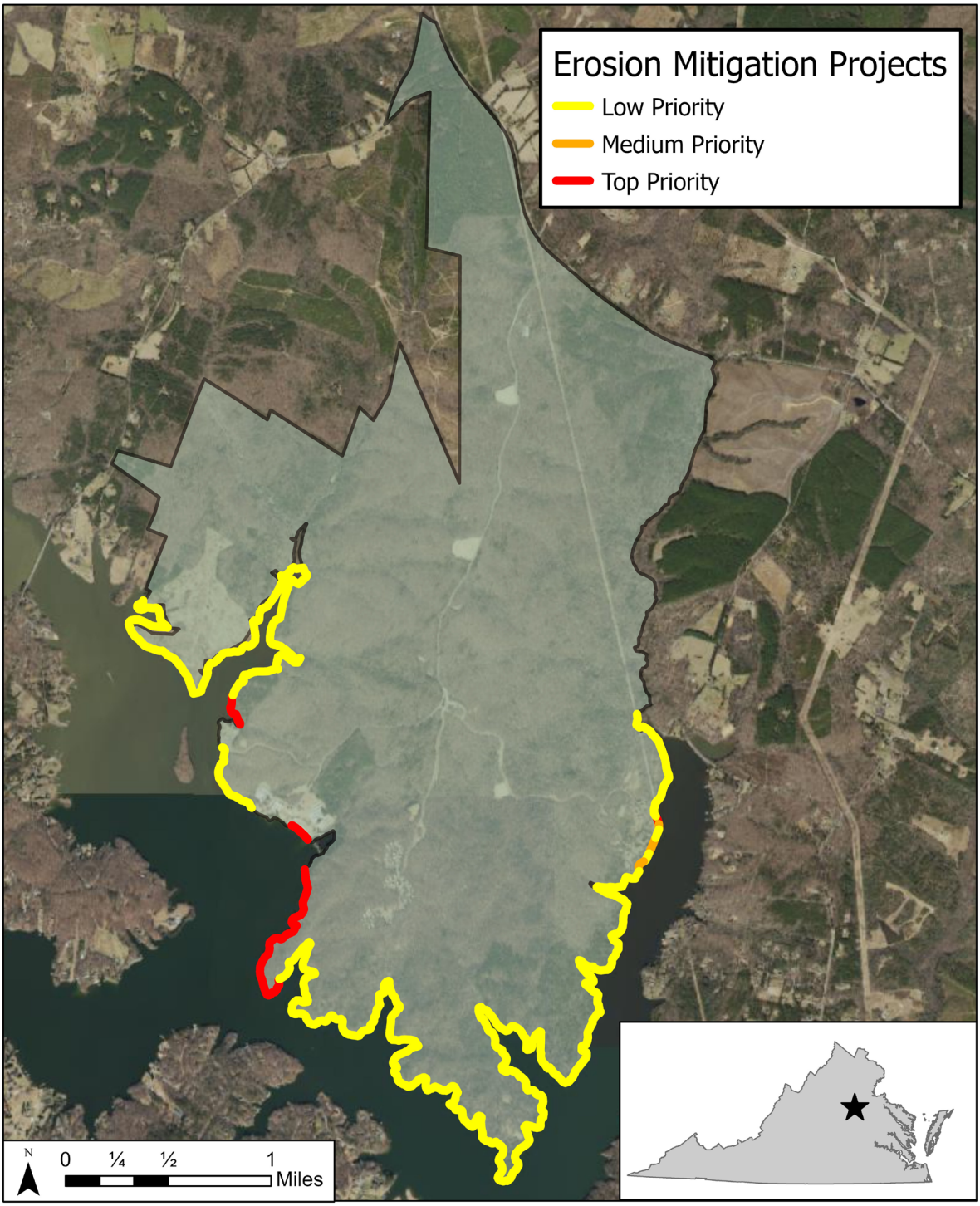


Figure 10 - Shoreline Erosion Mitigation Map

Cultural and Historic Resources

The park's cultural resources tell the story of the various peoples that occupied and utilized the lands comprising the park throughout history. The locations of these areas are shown in Figure 11 below; the exact locations of archeological resources are obscured in order to prevent their removal, damage, and destruction.

Cultural Resource Management Areas (CRMAs)

The Lake Anna State Park Cultural Resource Summary was prepared by Virginia State Parks to summarize the findings of the Lake Anna State Park Cultural Resources Inventory conducted in 2024. The information presented in the report derives from archaeological site reports and site summaries obtained from the V-CRIS database maintained by the Virginia Department of Historic Resources (DHR). Most of the surveys conducted on the property involved Phase I investigations consisting of background research, pedestrian surveys, and shovel test pits. The report describes the history of the park property by historical era as a basis for dividing the park into three Cultural Resource Management Areas (CRMAs) corresponding to the relative locations of gold mining and industrial sites (Area 1), pre-Contact Native American sites (Area 2), and homesteads and family cemeteries (Area 3).

Area 1: Gold Mining and Industrial Sites

Spotsylvania County was founded in 1721 and named for Colonial Governor Alexander Spotswood, who founded an ironworks in the county during the early 1700s and employed German iron workers to build a settlement and iron furnace at Germanna, located on a bend in the Rapidan River about 20 miles northeast of the park, in the 1720s. Iron production at that time was an extremely labor-intensive industry and utilized enslaved labor to mine ore and process increasing volumes of pig iron. Spotswood's iron mine was the first of many mining operations in the county.

In 1726, Richard Fitzwilliams moved into the vicinity, and, by the early 1730s, he acquired more than 15,500 acres known as "the big woods", which included land now located in Lake Anna State Park, to provide charcoal for his iron furnaces. The development of local industries was instrumental in bringing nearby Fredericksburg to prominence and providing economic self-sufficiency to the American colonies before, during, and in the aftermath of the American Revolution.

Spotsylvania was the site of both the first and last (1947) commercial gold mines to operate in Virginia (National Academies of Sciences, Engineering, and Medicine, 2023). The Whitehall mine, located approximately nine miles northeast of Lake Anna State Park, operated as early as 1806 and is the first recorded gold mine in Virginia, although local farmers working lowlands near streams likely discovered gold in Virginia's gold-pyrite belt prior to this date, starting Virginia's local gold rush. Gold mining operations, which required steam-driven, water-powered, or horse-powered machinery to crush the quartz containing gold deposits, appeared across the region until the California gold rush lured miners west in the 1850s. This was followed in the early 1860s by the Civil War, which shut down most mines across Virginia. Although gold mining in the region would experience a resurgence in the early-to-mid 1900s, it would never again achieve its previous productivity.

The park contains evidence of two gold mining operations, and three mines were located just outside of the park's boundaries on both sides of Pigeon Run, including the officially recorded Goodwin Gold Mine. The unrecorded gold mine in the northeast corner of the park near the Gold Hill Trail, which is currently the subject of guided tours and educational programming, consists of sloughs, pits, a 100-foot-deep mine shaft, water tank, 70-horsepower engine, jawcrusher, and stamp mill (see Figure 12). This mine was either the original Goodwin (or Goodwyn) Mine or an additional part of the mine, although additional research is needed to confirm this information. The

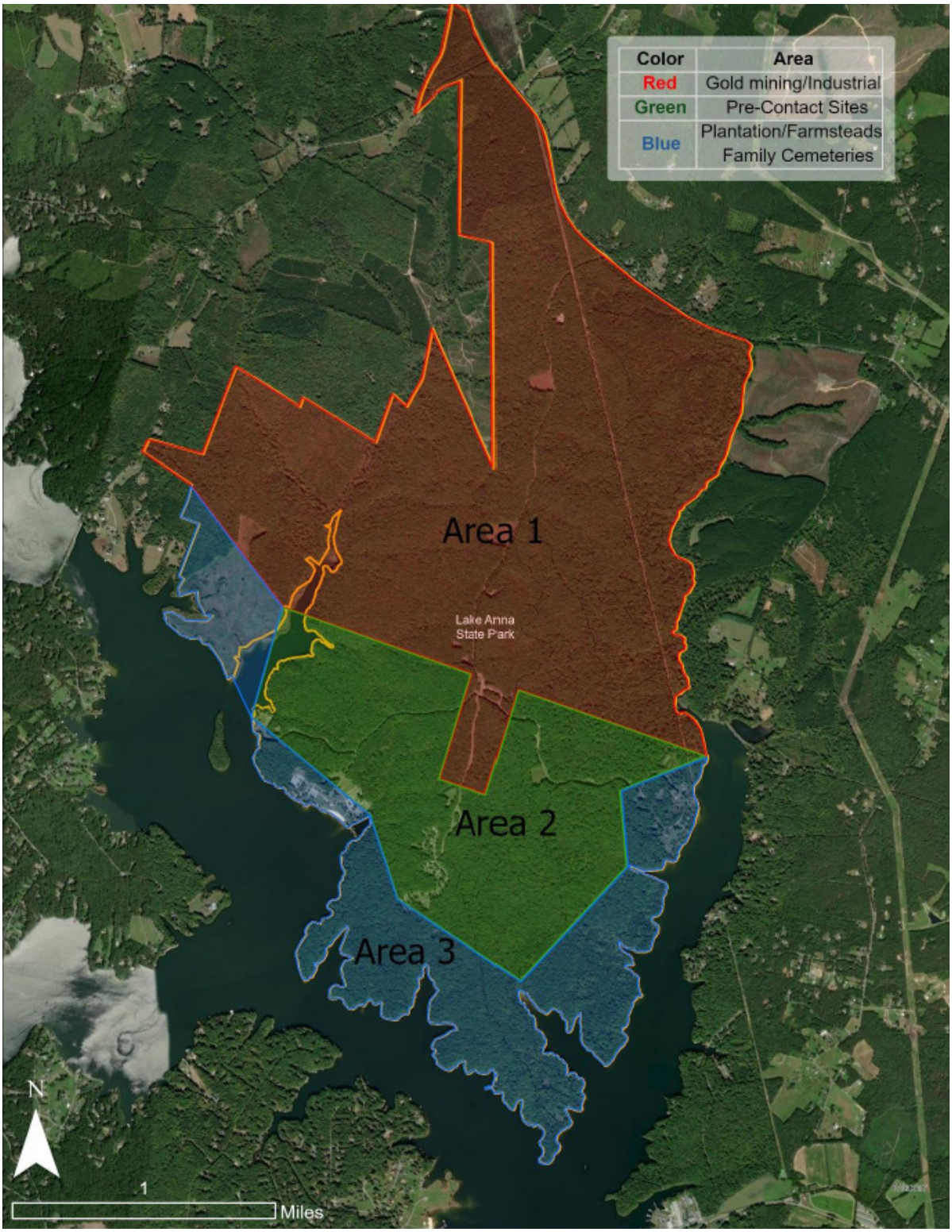


Figure 11 - Cultural Resource Management Areas

second site includes the remains of mining operations but has not been attributed to any specific historic mine. The park contained other types of mining operations as well, including zinc, lead, and copper mines, which were sent by rail to Northern factories during World War I and World War II to make lead bullets and zinc shell casings.

Area 1 contains additional evidence of one known and four potential archaeological sites associated with the park's industrial past. The known site is a historic railroad bed dating to approximately 1900–1924 and likely connected to significant mining activities that occurred within and near the park. Other potential sites include remnants of the Walker's Sawmill and Hailey's Gristmill, a mill that operated along Pigeon Run from 1857 to 1889 and served local farmers as a business and a social center.

Figure 12 - Panning for gold at the Goodwin Gold Mine

Area 2: Pre-Contact Sites

The history of Native Americans inhabitation is divided into Pre-Contact Late Archaic Period (2500 BCE to 1200 BCE), pre-Contact Late Woodland Period (900 CE to 1600 CE), and Post-Contact (post 1600 CE) Period. While not many details are known about the Pre-Contact occupants of the land that later became Lake Anna State Park, the Monacans and Mannahoacs inhabited the Piedmont region of Virginia during the Late Woodland Period. The Monacans were traditionally organized "*in a confederation ranging from the Roanoke River Valley [north] to the Potomac River, and from the fall line at Richmond and Fredericksburg west through the Blue Ridge Mountains*" (Thacker-Gwaltney, McMillan and Charland, 2024). Although less is known about the Mannahoac, they lived along the upper Rappahannock River east of the Blue Ridge Mountains and likely joined together with the Monacans following European colonization in 1607. Both tribes occupied Spotsylvania County and were a semi-nomadic agriculturalist, hunter-gathering society residing in established villages at the time of European settlement. The Monacans lived in palisaded towns along rivers with dome-shaped homes and cultivated a wide variety of domesticated crops, leaving their villages for hunting camps during seasons and in locations where wild game was more plentiful. Likewise, the Mannahoac lived in settlements along waterways and, in addition to the cultivation of crops, utilized prescribed burns on forests in their territory to create more favorable habitat for hunting wild game.

Although both tribes likely dispersed into smaller, more isolated settlements to avoid European settlers, native peoples likely continued to occupy land that would become Lake Anna State Park between the end of the Archaic period (1200 BCE) and the beginning of known historical occupation in the 18th century. Until European colonists settled the Piedmont region of Virginia in significant numbers during the mid-1700s, the Mannahoac and Monacan likely maintained their pre-Contact settlement structures, eventually dispersing to the upper reaches of the James and Rappahannock not far from earlier centers of their ancestral homeland. Others dispersed to Pennsylvania and South Carolina to join other Siouan-speaking peoples. Native Americans in Virginia faced many struggles as European colonists, and later Americans, took over their land and attempted to eliminate Native cultures. Despite these hardships, Native American tribes in Virginia are still here and maintaining their cultural identities. Today, the Monacan Nation is a federally recognized tribe centered around Bear Mountain in Amherst County, Virginia.

The cultural resources study identified at least eight Native American archaeological sites within Area 2 of the state park associated with short-duration domestic camps, six of which did not contain dateable artifacts and were assigned a broad pre-Contact date range of 15000 BCE to 1600 BCE. Two other sites contained hafted bifaces (stone tools) dating to the Late Archaic Period (2500 BCE to 1200 BCE). Further evaluations in terms of Phase II and III surveys are recommended to determine their eligibility for inclusion in the National Register of Historic Places (NRHP) prior to commencing land disturbance activities in these areas.

Area 3: Post-Contact Homesteads and Cemeteries

Intensive European colonial settlement of Virginia's Piedmont began during the late 18th and early 19th century, when the central and northern Piedmont were farmed for wheat, corn, and other crops. Large estates formed the beginnings of the plantation system, which were centers of power and wealth in the Commonwealth and dependent upon enslaved labor for economic success. Lake Anna State Park includes the remnants of one such plantation, Glenora (also called Pigeon Run), built by John Jerdone in 1832. At one time the estate covered 3,000 acres, including a dairy, kitchen, bath-washhouse, well, privy, laundry, storage shed, slave quarters, icehouse, and smokehouse. The smokehouse located near the end of the Glenora Trail is the only surviving building of this historic plantation.

After the Civil War and emancipation, many plantation owners entered into labor contracts with formerly enslaved people as part of the sharecropping system whereby both the landowner and tenant receive a share of the crop. However, sharecropping was less prevalent in areas of the Piedmont where bright-leaf tobacco was grown, leading to greater ownership of farms by African American households in areas like Spotsylvania and nearby Louisa County, where 76 percent of African American households owned land.

The park contains the remains of three homesteads and four cemeteries. Two of the homesteads were owned by African American families and are likely affiliated with nearby cemeteries: the Taylor and Burke homestead, dating from the early-to-mid-19th century, and the Old Taylor Home Site, a 19th to 20th century farmstead. The park contains evidence of a third homestead in this area dating to the mid-20th century as well as the Ware Family Cemetery containing graves dating to the 19th and 20th century. Other confirmed sites within this area include the Old Home Site, the Wingfield Home, and the Wingfield Family Cemetery.

Physical Resources

Buildings, structures, and other physical resources at Lake Anna State Park are shown in Figure 13 and described below beginning with construction of the first facilities in the early 1980s.

Initial Developments (1980s)

Development was initiated in 1981 when the first staff residence, storage building, and supporting infrastructure were constructed near the northern park boundary. The development of public use facilities followed with the extension of the park entrance road and construction of the contact station, lakefront picnic area, comfort station (restrooms), and the initial trail system before the park opened to the public in 1983. The initial waterfront development also included construction in 1983 of the 2,087 square-foot visitor center in its present location next to the Old Mill Pond. In that same year, the two-lane boat ramp, stationary fishing dock, and parking area for boat trailers were completed, providing the first public boat access to Lake Anna.

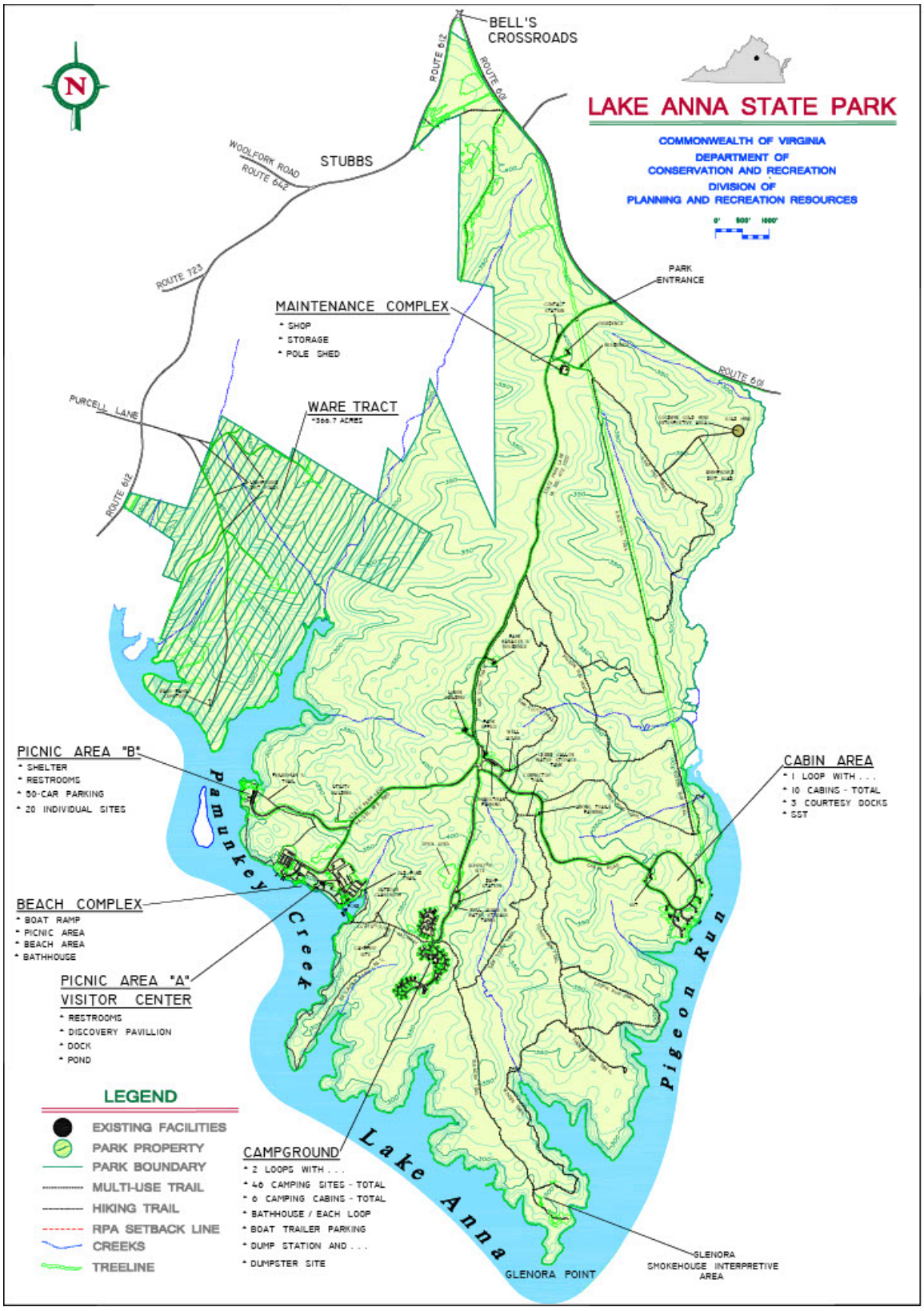


Figure 13 - Physical Resources Map

Construction of the 27,000 square-foot swimming beach took place in 1989 followed by the concessions and bathhouse facility, completed in 1991 (see Figure 14). The beach area currently features more than two acres of lawn area, 38 picnic tables, a 405-space parking lot, and playground. The 4,830 square-foot concession building includes a concession kitchen and workroom, snack bar, restrooms, showers, lifeguard office, and elevated deck with picnic tables affording an excellent view of the swimming beach and lake. The beach, adjacent picnic area, and concession area continue to be popular attractions and the focus of most of the visitation to Lake Anna State Park.

Figure 14 - Beach and swimming area

Day Use Expansion (1990s)

Developments during the 1990s focused on opening additional areas of the park to day use and expanding facilities to accommodate increased visitation, beginning with construction of the overwater pavilion and wheelchair-accessible fishing platforms on Old Mill Pond near the visitor center. The boat dock on Lake Anna, which allows recreational boaters to access the park from the lake, was also constructed near the visitor center on the paved trail traversing the pond's dam. In 1996, the western part of the park opened for day use with the development of the access road and second picnic area on Ware Creek. Today, the Ware's Cove Picnic Area includes a rentable picnic shelter, 29 picnic tables spaced throughout the picnic area, playground, restrooms, and parking lot for 50 vehicles. The eastern section of the park opened for day use in 1996 with the construction of an access road to a third interim picnic area constructed one of the hills overlooking Pigeon Run, later redeveloped into the cabin and lodging area.

The 1990s also witnessed construction of the 1,172-square foot administrative office in the central area of the park in 1997, which allowed staff to relocate offices from the visitor center to the new office building while freeing up space in the visitor center for additional interpretive exhibits. The park office currently supports multiple park functions including administrative offices, conference room, check-in counter for overnight guests, campground store and gift shop, public restrooms, and storage. The office includes a small shed for storing firewood, parking lot for staff and guests, and a second parking lot nearby for horse trailers seeking equestrian access to the park's trail system.

Overnight Facilities (2000-Present)

Since 2000, the construction of overnight facilities for visitors has been the focus of development activity. In the early 2000s, the campground access road extending south from the vicinity of the park office was constructed to a new, modern campground facility containing 23 primitive sites, 23 sites featuring water and electric hook-ups, six camping cabins, four yurts, two bathhouses with showers (one of which has laundry facilities), and

a bunkhouse (presently not in use). In 2003, a cabin loop containing 10 climate-controlled cabins was constructed in the eastern section of the park on the site of the former Pigeon Run Picnic Area (see Figure 15). All but three of the cabins face the lake, and each features a kitchen, living room, two bedrooms, and an outdoor deck, fire ring, and picnic table. In 2017, two six-bedroom lodges having capacity for up to 16 guests were developed in the cabin area. Both the Pigeon Lodge and Finch Lodge are rentable by the week and feature a kitchen, living room, six bedrooms (two containing queen-sized beds), three bathrooms, washer and dryer, and outdoor picnic table, fire ring, charcoal grill, and front and rear decks.

Figure 15 - Cabin Area at Lake Anna State Park

Other developments since the 2000s have involved improvements to existing day use facilities and construction of an outdoor classroom for educational programs. The ADA-accessible cartop canoe and kayak launch, including storage shed, was constructed next to the Ware's Cove Picnic Area to provide a separate floating dock on Ware Creek for launching smaller, non-motorized watercraft. The amphitheater consisting of a stage, bench seating, and electrical service was built in the early 2000s above the Old Mill Pond on the trail connecting the campground to the beach area.

Staff Facilities and Utilities

Much of the initial infrastructure supporting park staff was constructed when the park first opened including the park access road to and from Lawyers Road, potable water wells, septic systems, and electrical lines. Park infrastructure and facilities have expanded considerably since then with the construction of the maintenance complex in the northern part of the park consisting of a three-bay shop building, two pole sheds, office trailer, and fenced, 22,050 square-foot shop yard. The two staff residences located in this same area include a 1,152 square-foot ranger residence and 1,093 square-foot double-wide manufactured home that serves as the volunteer residence. A larger (1,595 square-foot) primary ranger residence for the Park Manager was built in 1993 to the south on State Park Lane between the maintenance area and park office. A small (890 square-foot) building was constructed near the park office at the same time as the cabins for use by custodial staff and the storage of cleaning supplies.

The park maintains several water wells and water storage facilities on the property for supplying water to buildings and developed areas. The office well house serves not only the park office and custodial building but also the maintenance facility and staff residences to the north as well as the cabins and lodges to the east. A separate well near the beach serves the concessions building, bathhouses, visitor center, Ware's Cove Picnic Area bathroom, and hydrants located throughout both day use areas. The campground well provides potable water to the campground and two bathhouses but is supplemented with water pumped from the beach well during periods of high use.

Trails

Figure 16 - Hikers on the Railroad Ford Trail

The trails of Lake Anna State Park are popular day-use features and experience considerable use during all times of the year (see Figure 16). There are 11 trails in the park totaling approximately 16.3 miles, seven of which are rated as having a difficulty level of “Easy” in terms of distance, grade, and total elevation change: Cedar Run, Fisherman’s, Glenora, Mill Pond, Old Pond, Railroad Ford, and Turkey Run. The remaining trails, Big Woods, Gold Hill, Pigeon Run, Sawtooth, and Ware Creek, are rated as “Moderate” difficulty. The park’s trail system can be accessed from the parking area at the park office, the four-space trailhead parking lot on Cabin Road, the Ware’s Cove Picnic Area, and the parking area at the beach. Trails accessed from the central area of the park afford access to backcountry areas where other visitors are seldom encountered, and opportunities for solitude and communion with nature abound.

Most of the trail mileage in Lake Anna State Park is comprised of compact natural surfaces (e.g., soil, grass, etc.) that traverse the various types of forests found in the park, allowing for pleasant forest walks between points of interests that include scenic views of Lake Anna, including some featuring benches for sitting beside the lake, and historic sites containing exhibits and interpretive signage. Sections of the Pigeon Run and Gold Hill trails follow the open (unforested) powerline corridor that traverses the northeastern portion of the park. Foot bridges allow hikers and bicyclists to conveniently cross streams without having to ford them at crossings reserved for equestrians. Approximately 12 miles of the park’s trails are designated multi-use in that they allow hiking, biking, and horseback riding; four miles are designated for hiking only.

VISITOR EXPERIENCE

Introduction

As part of the Master Plan process, Virginia State Parks hosted a Visitor Experience workshop to better define the desired experience that the park should provide to its diverse guests. The primary purpose of the Visitor Experience planning work was to define the following to provide a solid foundation for future interpretive efforts at the park:

- Audience Types
- Visitor Wants, Needs, and Expectations
- Park Purpose
- Themes and Subthemes
- Essential Experiences
- Experience Areas

Creating the visitor experience first requires identification of the various audience types using the park. Once those audiences are identified, their specific wants, needs and expectations can be evaluated, and suitable experiences, programming, themes, and messages can be planned.

Audience Types

Staff first listed out the wide variety of audiences that routinely utilize the park, then grouped the audiences into categories based on similar characteristics, and ended with a discussion of each group's wants, needs, and expectations when visiting Lake Anna State Park. The following audiences were identified:

- Anglers
- Bikers
- Birders
- Boaters (Motorized)
- Education Program Users, Including Homeschoolers and Public School Groups
- Equestrian Users
- Families (Overnight)
- Families (Day Use)
- Hikers
- Locals
- Paddlers, Including Canoers, Kayakers and Paddleboarders
- Picknickers
- Special Use Permits Users for Churches, Races, Scouts, Competitions, etc.
- Swimmers

Visitor Wants, Needs, and Expectations

For simplification, the diverse audiences identified in the previous exercise were combined into the user groups listed and described below based on their shared wants, needs, and expectations when visiting the park.

1. **Day Use Beach and Picnicking Access Users**

   a. Audiences: Swimmers, Picnickers

   b. Wants: These groups primarily visit the park to access the water from the shore, and to spend the day wading, swimming, sunbathing, and picnicking. They often come with large families and want enough space and time to enjoy the entire day together. They want picnic tables, grills, hammock hangers, and snack bar/food service.

   c. Needs: This group has special needs including lifeguards, good water quality, alternative activities in the case of rain or storms, and beach accessibility (although this may eventually become an expectation).

   d. Expectations: These users expect safe and clean facilities, restrooms, hydration stations, and a public safety presence. Parking also is an important expectation for this group. If able to gain entrance to the park, they expect to get to where they want to go.

Figure 17 - Bikers on State Park Lane

2. **Outdoor Recreation Enthusiasts**

   a. Audiences: Bikers (see Figure 17), Birders, Equestrian Users, Familes (Day Use), Hikers, Locals

   b. Wants: This diverse group of enthusiasts typically comes to the park to explore and enjoy the plethora of natural resources on the land and water. Depending on the level of adventure they are seeking, they want sidewalks, trails, and water access, all to provide quality experiences. Many of these users want to enjoy their visit along with a small group of friends or family members, whereas others value the peace, quiet, and serenity of a solo adventure.

   c. Needs: These visitors need well-marked, properly designed trails. This means different things to different users. For example, elderly locals may be most concerned with roots, stumps, and other obstructions in the trail, whereas equestrian users may be most concerned with overhead clearance. All users will need access and space. Their need for parking optimally means separation from the crowded day use area, with an area for trailers in the case of equestrian users. Rest areas along the trails, blinds and benches, and points of interest with a clear view all are needs of this group. Finally, they need accurate maps, clear signage, wayfinding, and trail blazing. High-quality stream crossings are also needed, particularly for equestrian users.).

   d. Expectations: These users expect safe and clean facilities, restrooms, hydration stations, and a public safety presence. They expect well-maintained trails and wayfinding at the park that will help facilitate a safe, enjoyable trip. Advanced information on website (pre-visit) is critical for them to prepare their trip. This pre-arrival information can then be further enhanced by knowledgeable and engaging staff or volunteers. Exciting merchandise offerings, especially with scenic or wildlife themes, may add to their experience by providing take-home memories.

3. **Water Access Users**

Figure 18 - Young angler at Lake Anna State Park

a. Audiences: Anglers (see Figure 18), Boaters, Paddlers

b. Wants: These users are typically coming to the park specifically to enjoy Lake Anna, as opposed to the surrounding park lands that other user groups are primarily interested in. They typically want safe and easy access to the lake via a high-quality boat ramp or car-top boat launch, depending on their chosen watercraft. Many desire solitude, time with family, or a small group of friends as they enjoy their adventures for the day. A good catch also helps brighten the mood!

c. Needs: These users need access to the park first, then access to the lake via a boat ramp or car-top boat launch. Often before they hit the lake (or immediately after they return), they need quick access to clean bathrooms. Clear orientation, on-water wayfinding information, wake limits, and other rules are also needed. Some of these users may also require ADA entry. Also, although many bring their own equipment to the park, others may need equipment such as kayaks for rent in addition to the facilities where these may be utilized. Additionally, a subset of these outdoor enthusiasts may need specific events or programs to provide them encouragement in "new" adventures such as kayaking.

d. Expectations: These users expect safe and clean facilities, restrooms, hydration stations, and a public safety presence. Lighting is also very important around boat ramp locations, particularly for boaters who put in before dawn or arrive back at the park after dusk.

4. **Curriculum-based Users**

a. Audiences: Education Program Users, Including Homeschoolers, Public School Groups, and Scouts

b. Wants: These users desire curriculum-based programs or activities provided by the park that are in line with the Virginia Standards of Learning (SOLs) or other key scholastic learning objectives. These visitors are coming specifically to access and learn about the diverse natural and cultural resources that they can find in the park. Updated exhibits and interpretive experiences are important to this group. They desire accurate, balanced interpretation, led by staff interpreters, or in the form of signage and exhibits. In the case of scout groups, they also want opportunities to support the park through small, hands-on projects whereby they can potentially earn badges.

c. Needs: These visitors need facilities that can handle large group sizes having enough space for their planned activities. They often picnic and thus need picnic shelters, picnic tables, or flat, dry, open lawns where they can spread out towels or blankets. Additionally, since these visitors typically arrive in large groups, they need places to park a multitude of vehicles or that are large enough to park and maneuver school buses. They are also looking for affordable opportunities at low or no cost, with pre-trip engagement and post-trip follow-up. Finally, they also need a high level of staff and/or volunteer assistance.

d. Expectations: These users expect safe and clean facilities that are appropriate for use by children of all ages and differing abilities. They expect access for hydration and restrooms at more than one location in the park, as well as other basic comfort needs. Well-maintained trails and wayfinding are critical to avoid

lost children. Similarly, a public safety presence is important, especially if needing to seek out a lost child. While numerically the primary make-up of these groups is typically children or teenagers, these groups are also usually led by a teacher, parent chaperone, or a Scout Master that provides oversight and guidance to the group. This leader typically expects advanced information from the park website or directly from staff or volunteers, which provide added value to the group's visits. A primary contact "point person" at the park is often expected to assist with planning and executing their visit. Finally, these groups often bring petty cash for spending in a gift shop on snacks or exciting merchandise offerings.

5. **Overnight Users**

   a. Audiences: Families (Overnight)

   b. Wants: Overnight users desire cabin, yurt, or campsite availability, particularly ones with lake views where possible. Within the existing campground, they desire additional sites, especially pull-through sites, electrical and water upgrades to primitive sites, group camping options, larger washer and drier facilities, and a camp store that can effectively serve the campground. Wi-Fi and cell coverage are also increasingly desired by overnight users.

Figure 19 - Camping at Lake Anna State Park

   c. Needs: An intuitive, reliable reservation system is critical for this group as are clear and abundant pre-arrival information. Upon arrival at the park, this group also needs a convenient place to check in and is the group most likely to seek out resources that were forgotten at home (i.e., camp store supplies such as fire starters, flashlights, sunscreen, etc.). Since visitors staying multiple nights may desire to go off site and explore the local area, they often need more information about the local area in comparison to day users. They also need a playground, programs, etc. to address children's needs. For cabin users specifically, electrical outlets at the cabin boat docks are needed.

   d. Expectations: As with many of the other groups, these users expect safe and clean facilities, restrooms, hydration stations, and a public safety presence. Safe and clean campsites, including flat RV sites, well-drained tent pads, and bathhouses are critical for this group (see Figure 19). Increasingly, campers also expect cellular service. These users also expect a smooth check-in, access to firewood, firepit, an engaged camp host, and friendly, interactive staff.

6. **Neighbors and Locals within 10 Miles**

   a. Audiences: Locals

   b. Wants: While this group is covered elsewhere in groups such as the Outdoor Recreation Enthusiasts, local residents have specific wants, needs, and expectations that largely apply to their group alone. First and foremost, locals desire an end to the summer traffic issues on Lawyers Road due to back-ups at the

main entrance to the park. They want a high public safety presence, a turn lane, and potentially a widened state-maintained (by VDOT) road. They also want to be able to utilize the park on weekends once again; many locals currently avoid visiting the park on weekends due to overcrowding issues, instead choosing to visit on quieter weekdays.

c. Needs: In addition to their needs while visiting the park, this group needs other visitors to stop parking in their front yards. They need carrying capacity to be addressed. They also need volunteer opportunities as they are the group most likely to assist the park in volunteering activities.

d. Expectations: As with many of the other groups, these users expect safe and clean facilities, restrooms, hydration stations, and a public safety presence. However, they also have expectations from the park even when not visiting including safe travel down Lawyers Road and the ability to get past the contact station safely, quickly, and efficiently.

7. **Event Attendees**

a. Audiences: Special Use Permit Users for Churches, Races, Scouts, Competitions, etc.

b. Wants: This group desires to hold events throughout the park. Depending on the scope, size, and scale, this could include access to trails and roads for racing, water for group baptisms, swimming or boating competitions, electricity for amplification of music, staging areas, and similar requests.

c. Needs: These users primarily come to the park for access to a venue large enough for their given function or event. Special event users often need adequate bathrooms (which may require portable toilets in some cases with larger events). Before coming to the park, they also need clear information on permits, including rental costs, and friendly, accurate interactions with staff handling their reservations..

d. Expectations: As with other groups, these users expect safe and clean facilities, restrooms, hydration stations, and a public safety presence. Due to the numbers of users at events, and potential health and safety needs, the public safety presence is especially important. Parking also is an important expectation for this group, as often these events bring in large numbers of park users.

Park Purpose

Nestled in the gold laced hills along the shores of Virginia's fourth largest lake, Lake Anna State Park provides abundant opportunities for active recreation, personal exploration and solitude that are forever preserved for future generations.

Themes and Subthemes

Theme 1: *Created by the need for electricity, Lake Anna has become a haven for recreation within a unique ecosystem that diverse flora and fauna call home.*

Subthemes:

- The Lake
- Unique Wildlife
- Recreational Opportunities
- Birding

Theme 2: *The rich mineral veins in the folded and fractured bedrock of the Piedmont have drawn people and industry to the area for generations.*

Subthemes:

- The Chopawamsic fault
- The Gold Mine and Historic Ore Extraction
- The Railroad

Theme 3: *Though the rolling fields and forests of yesteryear have transformed into the present-day park, this land's resources still provide, sustain, and remain the heart of the Lake Anna community.*

Subthemes:

- Hardwood Forests
- Farming and Forestry
- Glenora Plantation
- Indigenous Peoples
- African American History
- Enslavement

Essential Experiences

Staff discussed the following essential experiences as opportunities for visitors to immerse themselves in the park, its resources, and its sources. These experiences are the most unique opportunities at the park that truly allow for the guest to get a full experience of all that Lake Anna State Park has to offer:

1. **Gold Mining Experience:** Visitors should participate in a gold mining and panning program led by park interpretive staff, including a tour of the historic mine ruins (see Figure 20). Lake Anna is the only Virginia State Park containing the ruins of a gold mine.
2. **Ware's Cove Experience:** Visitors should seek solitude within the park at Ware's Cove, enjoy a picnic, explore some of the associated trails, look at the mountains in the distance, and view the beautiful Ware Field across the water.
3. **Ware's Creek Paddling Experience:** Guests should join park interpreters for a group paddle around Ware Creek or go out for an adventure with their family or small group. Look for bryozoans, wildlife watch while paddling, or throw in a line to catch some fish.
4. **Lake Anna Viewshed Experience:** Visitors can enjoy great views of the lake and its wildlife, such as hunting eagles and osprey, sit on a bench to enjoy magnificent lake scenery, particularly at sunset, and take the Railroad Ford Trail to see the historic rail bed.
5. **Upland Hardwood Hiking Experience:** Guests should immerse themselves in acres of contiguous hardwood forests by traversing the park's many upland trails via foot, bike, or horseback, enjoying the interior forest environment and associated wildlife species.

Figure 20 - Discovery of minerals while panning for gold

6. **Cabin on the Water:** Overnight guests can enjoy restful views of Lake Anna from the back porch of their cabin, relax and read a book, etc.
7. **Fishing at the Points:** Anglers should cast in a line on Lake Anna for an opportunity to catch land-locked stripers and the many other abundant species in this recreational anglers' paradise.

Experience Areas

The experience areas of a state park are often distinct portions of the park, each with its characteristics, resources, and landscapes, as well as corresponding stories and interpretive values. Once the essential experiences were described, work shifted to mapping out of Lake Anna's experience areas for both tracts, including a discussion of each area's character, audiences, current and future needs in preparation for the Lake Anna Master Plan Needs Assessment (see Table 2 and Figure 21 below). These results were compared to past and present market analyses of the park to ensure that visitor satisfaction trends expressed in the key findings and takeaways are accurately reflected below for each experience area (see Market Analysis on Page 53).

Table 2: Experience Areas, Lake Anna State Park

Experience Area (Audiences)	Current Structures	Future Development Needs	Interpretive Opportunities
Arrival Corridor (All)	Contact station, main park road, and utilities	New contact station further down from Lawyers Road, as well as ample room for a loop turnaround for turning visitors back when the park is over capacity	Wayfinding and other signage in bilingual format (English and Spanish)
Day Use Waterfront Area (Curriculum-based Users, Outdoor Recreation Enthusiasts, Water Access Users, Neighbors and Locals, Day Use Beach and Picnicking Access Users, Event Attendees, Overnight Users)	Picnic shelter, playgrounds, comfort stations, cartop boat launch, kayak storage, boat ramp, beach, concessions building, parking, visitor center, roads, and utilities	Updating or replacement of the visitor center, including but not limited to a redo of its exhibits and installation of public restrooms, parking improvements, outdoor showers and changing rooms, removal of boat ramp, expansion of beach, protecting the shoreline, playground updates or conversion to natural playscape	Visitor Center, exhibits, Roving Ranger, cultural connections
Interpretive Area (Curriculum-based Users, Outdoor Recreation Enthusiasts)	Exhibit sheds, stone foundations, viewing overlook, gold mine ruins	Building and exhibit improvements, improve transportation issues	Education, programming, and signage related to gold panning, mercury, and the mines

Experience Area (Audiences)	Current Structures	Future Development Needs	Interpretive Opportunities
Primary Overnight Area #1 (Overnight Users, Water Access Users)	10 2-BR cabins, 2 lodges, wellhouse, roads, utilities	Dock for use by cabin and lodge users only	Interpretive staff for programming on geology as well as cultural and historic resources in this area of the park
Primary Overnight Area #2 (Overnight Users)	Campground with 46 sites (23 are E/W, and 23 are primitive), a camp host site, 4 yurts, dump station, 6 camping cabins, an accessible trail to the day use area, roads, utilities	23 campground site upgrades to E/W, 4 yurts need power upgrades	Interpretive experiences in the campground should focus on Roving Ranger or other staff-led programming geared towards campers
Potential Capital Development Area #1 (Overnight Users, Outdoor Recreation Enthusiasts)	Trails	Group campground, third bathhouse, second and third campground loops	Interpretive experiences in the campground should focus on Roving Ranger or other staff-led programming geared towards campers
Potential Capital Development Area #2 (Overnight Users)	None	10 new 3-BR cabins, additional lodges, roads, and utilities	Interpretive staff for programming on evident geology as well as cultural and historic resources in this area of the park
Potential Capital Development Area #3 (Curriculum-based Users, Outdoor Recreation Enthusiasts, Water Access Users, Neighbors and Locals, Event Attendees)	None	Water access, boat ramp, boat parking, wellhouse, utilities, roads, office space are all options. This would not be a great location to reach all guests, especially day use visitors headed to the day use waterfront area.	Interpretive staff and signage could focus on the surrounding meadow ecosystems

Experience Area (Audiences)	Current Structures	Future Development Needs	Interpretive Opportunities
Potential Capital Development Area #4 (Outdoor Recreation Enthusiasts, particularly Equestrian Users)	None	Potential equestrian trailhead, trail hub and trailer parking to connect to Spotsylvania County's broader trail plan	Wayfinding, interpretive signage
Passive Recreation and Habitat Management #1 (Outdoor Recreation Enthusiasts, particularly Equestrian, Hikers, Birders)	Trails	Fix existing trails, add additional trailheads with associated parking, marked trails, UTV access points for safety, improved bridges. Only add to trail network once current trails are brought to a higher standard	Wayfinding, interpretive signage
Passive Recreation and Habitat Management #2 (Outdoor Recreation Enthusiasts, particularly Mountain Bikers)	None	New mountain biking trails, trailheads with associated parking, UTV access points for safety, road, and utilities to Ware property.	Wayfinding, interpretive signage
Service Area #1 (None, staff only)	Ranger residence, volunteer quarters, maintenance facility	Maintenance facility replacement (pole barn, etc.), volunteer housing revisions, employee parking	None
Service Area #2 (All, staff)	Ranger residence, wellhouse, housekeeping facilities, office, parking, utilities	Ranger residence (currently in queue to be built), repurpose/renovate office, additional storage, potential relocation of the maintenance facility	Wayfinding, interpretive signage

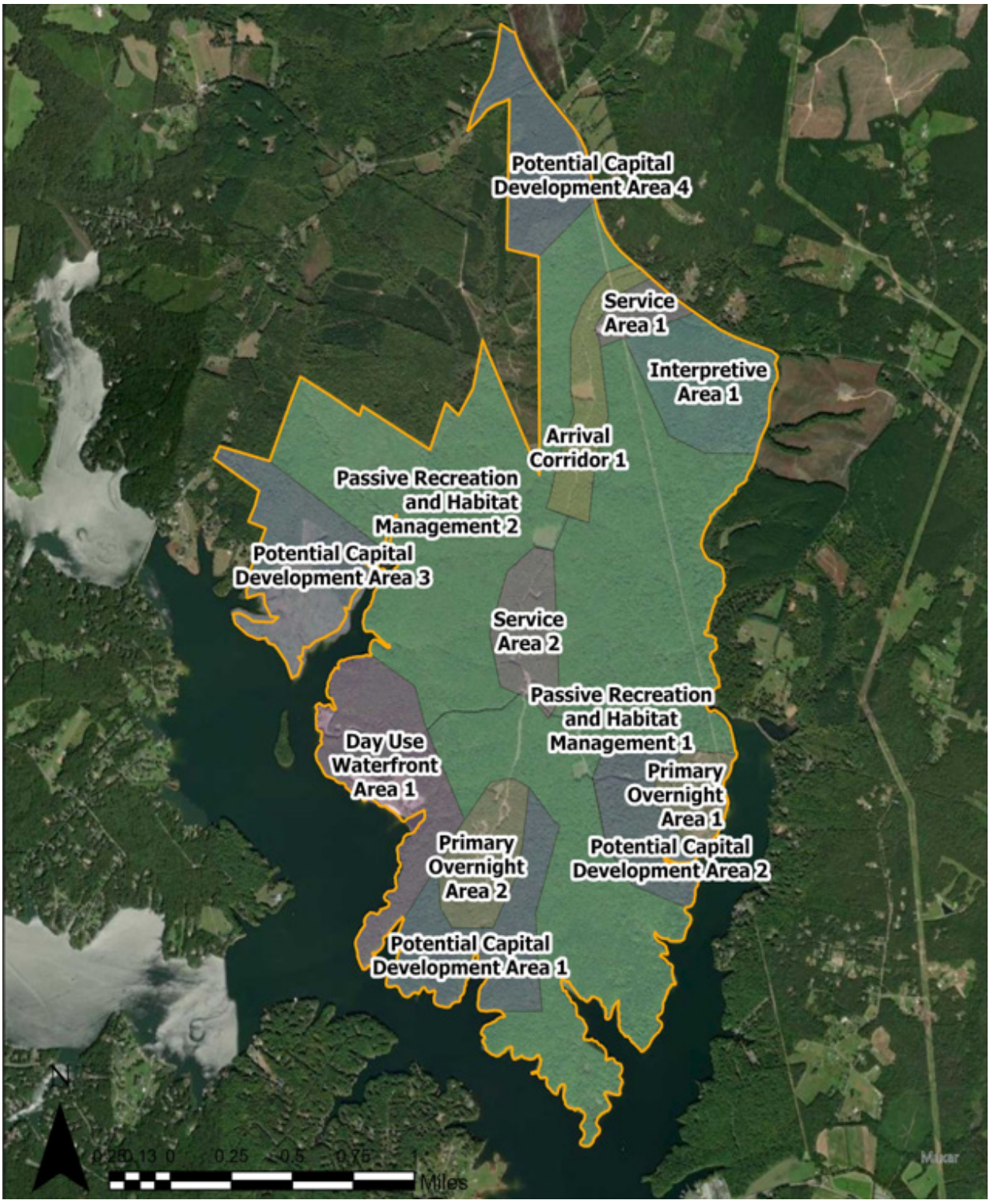


Figure 21 - Visitor Experience Areas Map

MARKET ANALYSIS

Introduction

To reflect changing market and economic conditions that impact a state park, a market analysis should be updated once every five years and the latest data and findings incorporated into the Master Plan. Additional information may be provided in the Master Plan to guide updates to the market analysis and provide high-level guidance on the park service area and economic conditions. A park market analysis, therefore, is not intended to supersede the information or recommendations of the Master Plan, but rather to supplement the plan with the most up-to-date economic data to better guide decision-making and target funding of limited budgetary resources.

The updated Market Analysis for Lake Anna State Park, prepared by Vincent P. Magnini, Ph.D. of the Longwood University College of Business and Economics in 2024, is a key component of the master planning process. Dr. Magnini conducts market analyses through a Memorandum of Understanding (MOU) between Longwood University and DCR using a variety of local, state, and national data sources on outdoor recreation usage trends, lodging supply and demand, tourist flow data, demographic trends, and climate. In addition, each analysis evaluates responses to the Virginia State Parks Your Comments Count survey and direct interactions with DCR leadership, park management, and staff to garner insights pertaining to the prioritization of future recreation offerings. By synthesizing primary and secondary data sources, the study is intended to inform future decisions made by park and agency leadership regarding the prioritization of capital investments pertaining to facilities, marketing, outreach, partnerships, operations, park design, staffing, and revenue generation (Magnini, 2024).

The qualitative and quantitative research conducted in the development of the market analysis is summarized by 32 key takeaways (KTs). For brevity, only takeaways most relevant to master planning are summarized in this section.

Service Area Demographics

The primary service area was specified using a two-hour driving radius around the park. The secondary service area encompasses a five-hour driving radius which extends to Trenton, NJ and Pittsburgh, PA to the north, and Wilmington, NC to the south. The primary and secondary service areas are shown below in Figure 22.

The primary service area for Lake Anna State Park is heavily populated; 8.42 million people reside in the primary service area. Much of the population growth in Lake Anna State Park's primary service area occurred prior to the Covid-19 pandemic since population growth in the Northern Virginia region has slowed substantially post-pandemic. Nevertheless, the total population of the primary service area is projected to increase from approximately 8.24 million in 2024 to in 8.47 million in 2029, while the population of the secondary service area is projected to grow from 28.74 million to 29.06 million during the same period.

Other key takeaways of the market analysis with respect to changing demographics in the primary and secondary service areas were:

1. Both Lake Anna State Park's primary and secondary service areas are forecasted to experience significant growth in the 65+ age cohort over the next five years. Therefore, the park/park system should consider:
    a. Expanding offerings of universally-accessible trails;
    b. Improving/repairing the path leading to the universally-accessible fishing pier at the park's pond;
    c. Offering bicycle rentals that have the pedal-assist feature and designating a trail for such use; and
    d. Making sections of the park's beach universally accessible.
2. In both the primary and secondary service areas, the U.S. Census Bureau's "white alone" demographic category has decreased significantly in relative size in comparison to other race/ethnic categories in recent years. This trend is forecasted to continue throughout the coming years.

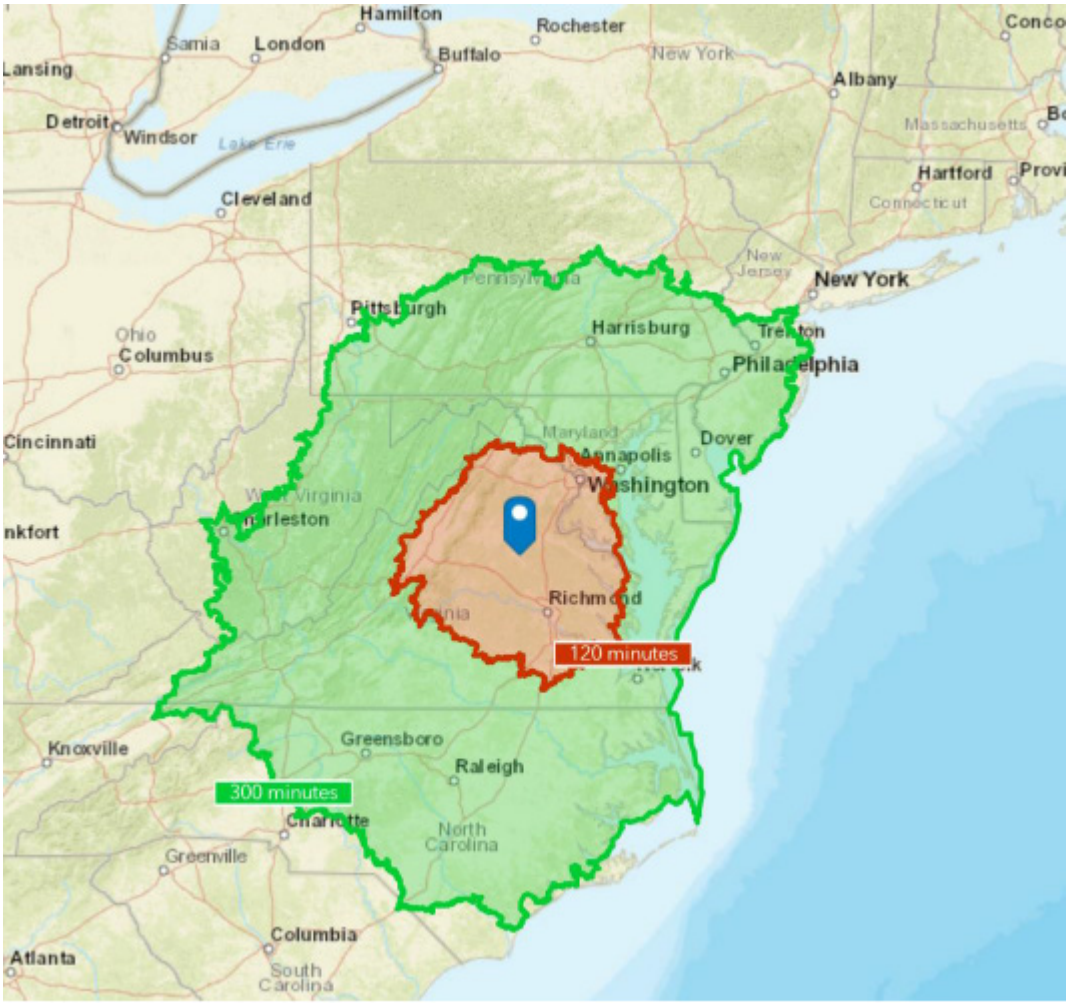


Figure 22 - Primary and Secondary Service Areas

3. In both the primary and secondary service areas, the U.S. Census Bureau's "Hispanic Origin" demographic category has increased significantly in relative size in comparison to other race/ethnic categories in recent years. This trend is forecasted to continue throughout the coming years.
4. The median household income in Lake Anna's primary service area is more than 25 percent greater than the median household income nationally. Hence, the park/park system should consider expanding its offerings of add-on revenue options such as boat rentals and bike rentals.

Tourism and Recreation Trends

The market analysis noted the following takeaways regarding tourism and recreation participation trends applicable to master planning for Lake Anna State Park:

1. Tourists' spending on recreation in Spotsylvania County is more than four times greater than the median amount recorded across all Virginia municipalities. Tourists' spending on lodging in Spotsylvania County is more than three times greater than the median amount recorded across all Virginia municipalities.
2. Within Lake Anna State Park's primary service area, the popularity of the jogging/running, hiking, backpacking, rock climbing, mountain biking, frisbee, swimming, photography, and canoeing/kayaking exceeds the national average. Consequently, the park/park system should consider:

    a. Hosting an increased number of organized running events during off-peak times;

    b. Further accenting its trails system in marketing communications; and

    c. Further accenting canoeing / kayaking opportunities that are available at the park during off-peak seasons in marketing communications.

3. Within Lake Anna State Park's secondary service area, the popularity of freshwater fishing, canoeing/kayaking, power boating, birdwatching, frisbee, and swimming exceeds the national average. Therefore, the park/park system should consider further highlighting fishing opportunities that are available at the park during off-peak season.

Adapting to Changing Conditions

Changing environmental and climate conditions could have an influence on the park in future years. Consequently, the park/park system should consider the following measures:

1. Installing more shaded picnic areas and adding more shade to existing picnic areas.
2. Possessing informed and best-possible remediation plans for algae blooms.
3. Having robust plans for invasive species control and removal.
4. Anticipating increased demand for water-based recreation that may cause the park to reach maximum capacity more frequently.
5. Pursuing funding to make its facilities more energy efficient.
6. Actively marketing its lodging options year-round to take advantage of shoulder seasons. This recommendation serves as the most significant revenue growth opportunity for the park.

Visitor Sentiments and Perceptions

Visitors' ratings of natural and historic resources, facilities, parking, grounds, fees, cleanliness, staff, and security are mostly positive and are not significantly different than the park system-wide average. The lake and beach emerged as visitors' favorite aspects of the park, and approximately 95 percent of visitors would recommend the park to a friend.

The market analysis identified the following several key takeaways regarding visitor satisfaction that pinpoint potential areas for improvement to facilities and programs:

1. Visitors' ratings of Lake Anna State Parks' activities and programs are significantly lower than the park system-wide average. Therefore, the park/park system should consider bolstering the variety and frequency of its interpretive programming.
2. Visitors' ratings of Lake Anna State Park's visitor center are significantly lower than the park system-wide average. Therefore, depending upon availability of financial resources, the park/park system should consider renovating/upgrading the existing visitor center or constructing a new visitor center.
3. On the Your Comments Count survey, visitors were clear regarding their desires for what should be added to the park. Hence, the park/park system should consider: (1) installation of additional full hook-up campsites, (2) offering watercraft rentals, (3) implementing a recycling program, and (4) expanding the hours and inventory of the camp store.

Balancing Market Demand and Capacity

Demand for lake swimming and beach usage far exceeds the park's carrying capacity during the summer months. Consequently, to aid in managing excess capacity, the park/park system should consider:

1. Further enhancing park entrance infrastructure to accomodate high traffic volumes more efficiently duirng peak times.
2. Investing in technologies that can more quickly and efficiently communicate across mobile devices when the park has reached capacity.
3. Further developing recreational opportunities that would attract visitation during off-peak periods.
4. Increasing cross-marketing efforts between Lake Anna and parks with low visitation/excess summertime capacity.
5. Implementing a day use reservation system.

NEEDS ASSESSMENT AND PROPOSED DEVELOPMENT

This section of the report meets the Stage Two requirements of the Code of Virginia. These requirements include sizes, types, and locations of facilities and associated infrastructure, including roads and utilities. The Master Plan includes a proposed plan for phased development of potential facilities and infrastructure as well as development cost and operational, maintenance, and staffing needs.

The above requirements for Lake Anna State Park were determined using an evaluation of the 2024 Market Analysis of the park along with key input from the following:

- DCR Planning and Recreation (PRR) staff;
- Virginia State Parks staff; and
- Public comments received during the master planning process, including two advertised public meetings and surveys to obtain input from the public.

OUTDOOR RECREATION NEEDS AND PUBLIC INPUT

Introduction

Following the Visitor Experience work, the agency conducted a Needs Assessment workshop for Lake Anna State Park to identify opportunities for expanding the park's recreational offerings with the goal of fulfilling the evolving needs of users as well as the essential visitor experiences, all while protecting the park's natural and cultural resources. These discussions were guided by survey results and other public input collected at the state, local, and park level regarding user preferences, visitation trends, and recreational activities pursued at the park. The assessment harnessed the various sources of public input summarized in the sections that follow, in addition to the knowledge of park staff, to guide the plan's recommendations with respect to locations and extents of future facilities and infrastructure at the park. The plan also considered both present and future development, operational and maintenance costs, and staffing to determine how best to address the specific needs of various user groups while prioritizing improvements by development phase to ensure that the facilities most needed for public safety, or to protect park resources, are constructed earliest during implementation of the proposed development plan.

Public Input

Virginia Outdoors Survey

The Virginia Outdoors Survey (VOS) is conducted every five years to inform DCR's statewide strategy for outdoor recreation contained in the Virginia Outdoors Plan. The most recent survey was fielded between June and September 2022 utilizing both a statistically significant probability sample, designed to allow for generalizations of the statewide population as well as within four geographic regions of the state, and a second crowd-sourced approach to understand the perspectives of more motivated user groups. The results of the survey provide feedback from Virginians regarding which types of recreation activities are most popular, ways in which outdoor recreation can be improved, and how respondents' perspectives varied depending on demographic as well as other differences, including the region of the state where they reside.

The table below compares the statewide results of questions aimed at respondents' preferred activities for both the probability sample and crowd-source surveys. Probability sample respondents were statistically sampled and are therefore more representative of views of the broader state population. Crowd-sourced respondents, whether having a basic interest in outdoor recreation or belonging to a specific recreation-interest group, were self-selected individuals who chose to participate in an online survey. The crowd-source effort is helpful for understanding the perspectives of more motivated users and groups that may not have been included in large numbers in the probability-based survey. Notably, crowd-source survey participants tended to be slightly younger, slightly more affluent, more active, and more likely to engage in outdoor recreation for exercise or simply to experience nature than persons in the probability sample.

The table below demonstrates respondents' answers for the probability sample and crowd-source survey with respect to activities in which they participated mostly in Virginia during the past 12 months. Only activities for which state parks offer facilities and that received at least a 20% response rate statewide are included in the table.

Table 3: Activities, Activity Occurred Mostly in Virginia, Probability and Crowd-Source Surveys, 2022 VOS

Activity	Percent (%) Response Probability Sample	Percent (%) Response Crowd-Source*
Walking for pleasure	70.4	61.4
Visiting parks (local, state, national)	38.5	61.4
Viewing the water	37.9	51.5
Swimming/outdoor pool	35.2	33.4
Outdoor festivals	34.7	29.1
Visiting working farms, etc.	33.0	30.5
Nature-based tours/trails	30.5	48.1
Visiting natural areas	29.6	48.9
Fresh water fishing	28.8	33.8
Driving for pleasure	28.1	37.4
Visiting historic areas	27.1	38.4
Music festivals	26.1	23.3
Canoeing/kayaking	23.8	50.2
Hiking/backpacking day trips	23.3	46.1
Sunbathing/relaxing on the beach	23.2	29.6
Pools	23.0	16.9
Viewing scenery	22.9	42.3
Swimming beach, lake, river (open water)	22.7	35.7
Jogging/running	22.0	24.9
Picnicking away from home	20.8	32.3

* Other activities receiving a response of at least 20 percent for the crowd-source survey included visiting gardens/ arboretums (36.7), paddling on scenic rivers (28.6), paved or gravel bicycle trails (27.4), nature study/programs (24.5), bird watching away from home (23.3), and tent camping (21.7).

These results demonstrate statewide differences between the responses received to this question for the probability sample and crowd-source surveys for each group surveyed. Many of the most popular activities offered at Lake Anna State Park such as visiting the park, viewing the water, nature-based tours/trails, visiting natural and historic areas, canoeing/kayaking, hiking, sunbathing, swimming, and picnicking received significantly higher responses on the crowd-source survey. Other prominent activities offered, or potentially offered, at Lake Anna State Park that received a significantly higher percentage of responses on the crowd-source survey compared to the probability sample included bicycle trails (paved or gravel), nature programs, bird watching, and tent camping. Visitors to parks and outdoor areas seeking these activities are highly motivated and more likely to be frequent users whose repeated use of trails and other facilities may result in greater impacts than their numbers would otherwise indicate. Understanding the differences between more motivated groups that frequent visit outdoor recreation areas for their intrinsic natural value and casual users who may visit only once for more passive pursuits is critical to ensuring that facilities address the varying impacts, and cater to the different needs, of both types of users (see Figure 23).

Table 4: Activities, More Needed, Probability and Crowd-Source Surveys, 2022 VOS

Activity	Percent (%) Response Probability Sample	Percent (%) Response Crowd-Source*
Walking for pleasure	48.0	53.7
Outdoor festivals	40.6	36.0
Visiting working farms, etc.	36.9	30.9
Music festivals	35.5	29.7
Visiting parks (local, state, national)	35.1	47.1
Swimming/outdoor pool	35.1	27.2
Nature-based tours/trails	34.1	52.1
Visiting gardens/arboretums	30.2	36.8
Visiting natural areas	28.9	42.8
Driving for pleasure	28.7	25.1
Viewing the water	28.4	35.6
Canoeing/kayaking	28.1	47.4
Fresh water fishing	26.7	24.8
Visiting historic areas	26.1	29.6
Stargazing, dark skies, astronomy	25.9	29.6
Swimming beach, lake, river (open water)	24.8	32.4
Pools	24.8	16.7
Picnicking away from home	24.3	25.1
Sunbathing/relaxing on a beach	23.8	24.8
Hiking/backpacking day trips	22.9	40.0
Nature study/nature programs	21.3	36.4
Archery	20.7	14.9
Paved or gravel bicycle trails	20.7	29.9
Staying in cabins and/or yurts	20.1	26.4

* Other activities receiving a response of at least 20 percent for the crowd-source survey included outdoor festivals (36.0), paddling on scenic rivers (35.2), viewing scenery (29.1), tent camping (25.1), bird watching away from home (24.9), tubing on the water (21.2), and horseback riding (20.7).

Comparisons of other top recreational activities pursued by outdoor enthusiasts relative to the needs cited by these same users reveals important clues about the need for new or expanded facilities at state parks, including Lake Anna State Park. Notably, if a significantly higher percentage of respondents indicated a need for a specific activity than engaged in that activity in Virginia, one may reasonably infer that the need for that facility exceeds its availability and, furthermore, that providing additional facilities for that activity may help reduce this disparity and fulfill an unmet need. Of the primary activities listed in one or both tables above, outdoor festivals, nature-based tours, canoeing/kayaking, nature study/ programs, tubing on the water, staying in a cabin or yurt, picnicking, and horseback riding exhibited this trend to a greater degree, whereas swimming, bicycle trails, bird watching, and tent camping also exhibited this trend, albeit to a lesser degree. Park planners in Virginia should continue to plan new and expanded facilities for these recreational pursuits secure in the knowledge that Virginians are seeking not only additional opportunities to explore the outdoors, but also novel ways to enjoy and interact with the outdoor environment once they arrive.

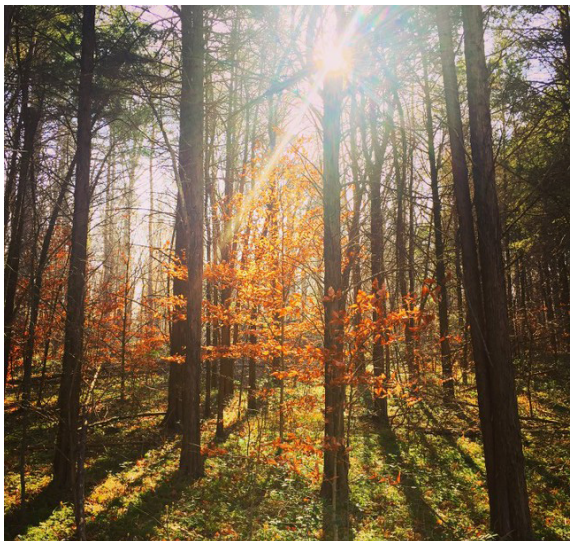


Figure 23 - Lake Anna State Park's trails provide opportunities to explore the park's forested setting and enjoy its natural beauty.

Otherwise, primary recreational activities that experience the highest levels of participation in Virginia and are broadly available to visitors to parks such as Lake Anna State Park, including walking for pleasure, visiting a park, attending outdoor festivals, experiencing nature-based tours/trails, viewing the water, viewing scenery, and visiting natural or historic areas, were also cited as being among the most needed activities by both casual and more motivated users. Of the most popular activities, only walking for pleasure, viewing the water, and viewing scenery were cited significantly less frequently on one or both surveys as being needed compared to being undertaken, perhaps indicating that ample opportunities for pursuing these activities exist statewide. Lake Anna State Park, owing to its waterfront setting, abundant natural and cultural resources, and core mission, has historically provided and will continue to accommodate such high-demand, broad-based recreation by virtue of its very existence, fulfilling many of the foremost outdoor recreation needs of Virginians cited in the 2022 Virginia Outdoors Survey.

Master Plan Survey

The agency developed and deployed an online public input survey designed to obtain input on an array of user characteristics, preferences, and experiences at the park at the time of the Public Information Meeting and made the survey available on the DCR Lake Anna State Park Master Plan webpage for 30 days following the meeting. Due to the public comment period occurring in February-March before swimmers and beachgoers normally visit the park, staff conducted a second public input period from Memorial Day weekend until July 15, 2024. A total of 94 responses were received, yielding the following results:.

- Approximately 48% of survey participants were 55 years or older, and 26% were 65 years or older. Forty-eight percent (48%) of respondents were 54 years of age or younger.
- Ninety-two percent (92%) of respondents visited the park at least once within the past 12 months, and 72% visited the park either frequently (at least once a month) or occasionally (3-5 visits) during that time. Only 20% had visited the park only once during the past year, and only 8% had not visited the park during that period.

- The word “trails” was the word utilized most frequently by respondents (31 uses) to describe what they value about the park, followed by “water” or “lake” (25) and “horse,” “horseback,” or “equestrian” (19). Other prominent words used to describe what respondents value were “nature” or “outdoors” (17); “peace,” “peaceful,” “relaxing,” or “quiet” (16); and “beauty,” “beautiful,” or “view” (10).
- In terms of characteristics that set Lake Anna State Park apart from other locations, most respondents focused on:
  - The beauty and scenery of the lake as viewed from waterfront trails and the lakeshore;
  - The historic gold mine, homesites, and information provided to the public about the cultural resources of the park;
  - The public swimming beach;
  - Equestrian trails affording horseback riding opportunities; and
  - The central location of the park and proximity relative to where they live.
- Given the choice of 10 recreational activities to rank in terms of importance, on a scale of 1-10 (with “1” being most important), respondents ranked hiking, swimming, and camping as the most important recreational activities at the park.
- Given the choice of 10 educational opportunities to rank in terms of importance, on a scale of 1-10 (with “1” being most important), respondents ranked outdoor recreation skills, outdoor safety skills, and environmental education as the most important educational opportunities at the park.
- Survey participants were asked to rank the importance of nine potential day-use facilities to add to the park’s current recreational offerings. Participants cited trails, restrooms, and additional kayak/canoe launches as the top three responses.
- When asked whether specific park features need improvement, 68.1% of respondents indicated that one or more facilities need to be improved. Of these, only “other” facilities, the visitor center (16%), and campground (14%) were cited in 10 percent or more of the responses. Of the 25% of responses that identified “other” facilities not otherwise listed, trails were specified most frequently as needing improvement and were the only “other” facility cited in more than 10% of responses (14%). User comments focused on a lack of adequate trail maintenance and noted that the park’s trails are in a state of disrepair, muddy or eroded in places, and frequently blocked by downed trees.
- In addition to trails, respondents also cited the need for an equestrian campground, improved wayfinding signage, and additional electric and water sites at the campground. Respondents also mentioned the need for upgrading the visitor center with improved educational exhibits, restrooms, and meeting space. Several participants suggested moving the contact station further to the south on State Park Lane to allow additional stacking distance and alleviate traffic congestion for vehicles queuing at the park entrance. The need for a road connection to, and additional recreation facilities at, the Ware Field site was also cited.

Your Comments Count

In addition to the public input survey, Virginia State Parks solicits public input for individual state parks on its website via the Your Comments Count (YCC) survey, responses for which are compiled quarterly. Although the survey has a different purpose than the one deployed specifically for the Master Plan in that it focuses on visitor satisfaction, parallels exist between the two with respect to certain questions about user demographics, activities, and preferences. Due to its high participation rate, the Your Comments Count survey represents a valuable supplement to the public input survey and an excellent mechanism for gauging public opinion generally.

The Master Plan utilized survey data for 2024 during which the master planning process was ongoing. Annual data for 2023 is included for comparison purposes. Responses received to questions most relevant to the planning of current and future recreational facilities and improvements at Lake Anna State Park are summarized below.

Table 5: Summary of Responses, "Your Comments Count" Survey, 2023-2024

Question	2023 Responses	2024 Responses
Distance from the park	50 miles or more away (79.0%) Within 50 miles (21.0%)	50 miles or more away (69.84%) Within 50 miles (30.16%)
Day use activities during this visit*	Hiking (56.4%) Swimming (21.7%) Fishing (17.9%) Bicycling (15.6%) Educational programs (15.6%) Boating (12.2%) Picnicking (10.2%)	Hiking (32.3%) Swimming (10.9%) Fishing (9.5%) Boating (9.1%) Picnicking (9.3%) Bicycling (8.7%) Birding (6.7%)
Satisfaction with day use facilities used during your stay**	Trails (4.47) Beach/swimming (4.44) Picnic areas (4.42) Shelter reservations (4.39) Boat launch (4.39) Disabled access (4.38), Visitor center (4.34) Watercraft rental (4.19) Restrooms (4.16) Playgrounds (4.09) Food service (3.84)	Trails (4.46) Beach/swimming (4.43) Picnic areas (4.42) Restrooms (4.41) Visitor center (4.33) Shelter reservations (4.3) Boat launch (4.28) Disabled access (4.19) Playgrounds (4.18) Watercraft rental (4.06) Food service (3.9)
Overnight accommodations used during this visit*	N/A	Developed campground (59.3%) Cabin (22.7%) Camping cabin (7.2%)
Satisfaction with cabin and lodging accommodations**	Check-in (4.6) Check-out (4.6) Reservations (4.55) Cleanliness (4.52) Furnishings (4.27) Comfort level (4.24) Appliances (4.13)	Check-out (4.77) Check-in (4.75) Cleanliness (4.68) Reservations (4.64) Furnishings (4.42) Comfort level (4.31) Appliances (4.31)
Satisfaction with camping accommodations**	Campsites (4.64) Check-in (4.6) Check-out (4.6) Reservations (4.52) Hookups (4.43) Bathhouse (3.9)	Check-out (4.72) Campsites (4.68) Check-in (4.62) Reservations (4.6) Hookups (4.55) Bathhouse (4.44)
Natural/historic resources**	4.55	4.52
Park activities/programs	4.3	4.31

* List only includes activities receiving a response rate of at least 5%.
** Numbers represent the average rank on a scale of 1 (unacceptable) to 5 (excellent).

The YCC results demonstrate that hiking, swimming, fishing, boating, and picnicking were the top five day-use activities conducted by survey respondents during 2024, although each of these activities experienced a noticeable decline compared to 2023. Trails, the beach/swimming area, and picnicking facilities were ranked highest in terms of visitor satisfaction, while food service ranked the lowest and was the only accommodation that scored lower than four ("Good").

In terms of overnight stays, most respondents (63.1%) reported staying in campsites at the campground as opposed to one of the park's full-sized cabins, lodges, camping cabins, or yurts. Campers were most satisfied with the check-in and check-out processes as well as the quality of the campsites at the campground. Although users were least satisfied with the campground bathhouses, the average ranking increased substantially from 2023 to 2024, yielding an average score greater than four in 2024. For those who reported staying in a cabin or lodge, respondents ranked the check-in and check-out processes, reservation system, and cleanliness highest and ranked all accommodations higher than four.

The park's natural and historic resources, and educational programs and activities, were ranked above four both in 2023 and 2024, indicating a high level of satisfaction generally with park resources, programs, and activities.

Past Visitation Numbers

Virginia State Parks tracks monthly and annual visitation to all state parks, including Lake Anna State Park. The following table depicts park attendance during the period from 2020 to 2024, both in total as well as for day use and overnight visitors.

TABLE 6: LAKE ANNA STATE PARK VISITATION

	2020	2021	2022	2023	2024
Camping	32,667	33,484	31,809	33,077	31,505
Cabin	12,211	30,505	28,809	30,193	24,385
Day Use	174,007	126,466	124,605	113,136	153,834
Total	**218,885**	**190,455**	**184,223**	**176,406**	**209,724**

In 2024, Lake Anna State Park had 209,724 visitors, 55,890 of which were overnight guests and 153,834 of which were day use visitors. Day use and lodging visitation experienced a significant increase compared to the previous year. The Master Plan's recommendations, once implemented, are expected to improve the visitor experience and increase visitation, which will have a positive impact on tourism and spending in the region.

A more detailed projection of park visitation and the effect it may have on the economy is provided in the Lake Anna State Park Market Analysis which is summarized above in the Market Analysis section of this plan.

NEEDS ASSESSMENT APPROACH

Park needs vary significantly depending on a variety of factors including the purpose of the park, existing conditions, user characteristics, desired visitor experiences, and proposed and existing infrastructure in both the park and the surrounding community.

DCR utilized the following approach for conducting the Needs Assessment for Lake Anna State Park:

1. Staff compiled and evaluated the results of the Master Plan Public Input Survey, responses to relevant questions on the Your Comments Count survey, and market area and visitation data within the larger context of statewide and regional outdoor recreation preferences and trends as identified in the 2022 Virginia Outdoors Survey. When available, updated summaries of these results were presented to the Master Plan Team at the Visitor Experience and Needs Assessment workshops as well as to the public at the Public Comment Meeting on October 17, 2024. Staff utilized public input throughout the planning process as a basis for identifying future development needs and the locations and details for proposed developments at the parks.
2. Staff conducted an internal Needs Assessment workshop at the Lake Anna Visitor Center involving the Master Plan Team and additional park staff. Participants discussed the locations of new, expanded, and renovated facilities within the Experience Areas of the park. Participants then prioritized developments into one of three phases whereby Phase 1 represented the most immediate and significant development needs and Phases 2 and 3 corresponded to intermediate-term and long-term needs, respectively.
3. Staff presented the map of proposed developments and phased development plan to the public at the Public Comment Meeting and reviewed comments received during the following 30-day period to ensure that the needs and concerns of visitors and the Lake Anna community were reflected in the recommendations.

The Master Plan Team identified the following issues associated with the visitor center, swimming beach, and boat ramp as critical, and resolution of these issues as a necessary first step, for planning proposed developments at the park. Accordingly, staff recommended the following with respect to these facilities.

- The current visitor center is nearly 30 years old and lacks restrooms, modern exhibits, or sufficient space to meet the needs of visitors or staff. In addition, the current location of the visitor center in the primary day use area next to the beach is not optimal for maximizing visitation since beachgoers tend to avoid the visitor center altogether in favor of the beach, bathhouse, concession building, and adjacent picnic areas. The Master Plan Team recommended building a new, larger visitor center in a central location near the current park office along with additional administrative office and storage space, expanded gift shop and camp store, and larger exhibit space.
- The boat ramp is located adjacent to the swimming area, creating a significant safety concern associated with people swimming in proximity to motorized watercraft operating nearby. Expanding the beach to the northwest would exacerbate this conflict and is therefore infeasible as long as the boat ramp remains at its current location. The Master Plan Team recommended relocating the boat ramp to the eastern part of the park on Pigeon Run to the south of the present cabin and lodge area. This location would allow cabin users to launch their watercraft closer to the cabin docks where they tie up their boats as well as provide a safer location for recreational boat users to launch away from the park's principal day use area.
- On summer weekends, beach users frequently fill the beach and adjacent areas to capacity, which is currently limited by parking availability, requiring staff to close the park to further entry and turn prospective visitors away. The group proposed expansion of the beach and a more limited expansion of the parking lot to the northwest to increase capacity while decreasing the ratio of beachgoers to beach area, thereby allowing these users to spread out further on the expanded beach.
- Following resolution of these fundamental concerns, staff identified additional park needs and issued recommendations regarding the sizes, types, and locations of day-use, overnight, and staff facilities, including roads, utilities, and associated infrastructure. These proposed improvements were categorized in terms of short-term (Phase 1) priorities needed for safety reasons or to address immediate concerns such as overcrowding or damage to resources, intermediate-term (Phase 2) needs to expand accommodations and convenience for guests, and long-term (Phase 3) improvements to expand access to unimproved areas of the park. This ranking exercise, and subsequent input by DCR and Virginia State Parks leadership, resulted in the Proposed 30-Year Phased Development Plan described in detail on the following pages and shown in Figure 24.

During the Needs Assessment, staff at the Division of State Parks evaluated the shoreline of Lake Anna State Park using drone overflights to confirm the findings of the SEAS report and map the low-, medium-, and high-priority areas experiencing shoreline erosion as shown on the map in Figure 10. As a result of this effort, the division recommended structural (i.e., hardened) shoreline stabilization work beginning with high-priority areas and continuing with medium-priority areas in the vicinity of existing and proposed cabin areas, concluding with low-priority areas corresponding to the remainder of the park's shoreline. The total estimated cost of these improvements is $52,602,000, which are not included in the Phased Development Plan or Cost Estimate on page 74.

PROPOSED 30-YEAR PHASED DEVELOPMENT PLAN

Phase 1

Address Visitor Use and Capacity Issues

Phase 1 addresses the following critical needs at the park involving visitor use trends and capacity issues identified by the public and park staff:

- Demolition of the boat ramp adjacent to the swimming beach in favor of constructing an enlarged boat ramp on a cove on Pigeon Run in the vicinity of the Cedar Run Trail, including an access road to the site from the Cabin Road.
- Expansion of the swimming beach to the point of land directly east of the current boat ramp, including installation of additional hardened picnic pads, charcoal grills, and hammock poles, and construction of an additional comfort station containing showers in the vicinity of the proposed beach expansion.
- To maximize the space available for construction of the new visitor center, the plan calls for the existing equestrian parking lot near the park office to be eliminated in favor of constructing a new trailhead on State Park Lane directly north of the current contact station. The proposed trailhead includes horse trailer parking and a temporary restroom facility (in Phase 1) for the convenience of trail users and the construction of trails linking to the Gold Hill Trail and Lake Anna State Park Connector Trail planned by Spotsylvania County.
- Construction of a new visitor center and administrative office building, including parking lot, located in the central area of the park near the current park office. In addition, the exhibit shed at the Goodwin Gold Mine would be removed and a new exhibit shed installed at the proposed visitor center featuring mining-related exhibits.
- Upgrading all standard non-electric campsites at the campground to include electric and water connections and upgrading the yurts and camping cabins with electric service.
- Expanding the existing trailhead parking lot on Cabin Road to provide additional parking.
- Demolition of the existing contact station in favor of constructing a larger, multi-lane contact station featuring parking and restrooms on State Park Lane to the south of the current station, thereby increasing the distance available for traffic queuing to enter the park and minimizing the potential for traffic backups on Lawyers Road.
- Installing fencing and related safety improvements at the Goodwin Gold Mine as required by the Virginia Department of Energy (VDOE).
- Construction of additional office space at the existing maintenance facility and a new three-bedroom, two-bathroom law enforcement (LE) ranger residence in this same service area.

Phase 2

Expand Overnight Accomodations

Phase 2 addresses intermediate needs at the park to expand overnight accommodations and enhance recreation facilities by proposing the following improvements:

- Expansion of the campground by doubling the total number of campsites to a total of 92 water and electric sites, doubling the total number of camping cabins to twelve (12), adding bathhouses, and installing two (2) group campgrounds.
- Construction of a comfort station (bathroom) at the new equestrian trailhead constructed in Phase 1.
- Construction of a second cabin and lodge loop to south of the current lodging area containing an additional eight (8) cabins and two (2) lodges. The access road to the new boat ramp in Phase 1 would provide access to this second lodging area.
- Separate boat docks are proposed for the cabins and lodges in the new loop as well as for the existing lodges in the current lodging area. Existing and proposed boat docks in the current lodging area would be improved with electric lighting.
- Installation of three (3) rentable picnic shelters in the beach picnic area.
- Renovation of the existing law enforcement (LE) ranger residence for use as volunteer housing and demolition of the current volunteer residence.
- Construction of a multi-use trail along the historic railroad bed that traverses the park from north to south.
- Renovation of the existing visitor center for use as a rentable group or community gathering space.

Lake Anna State Park Phased Development Plan

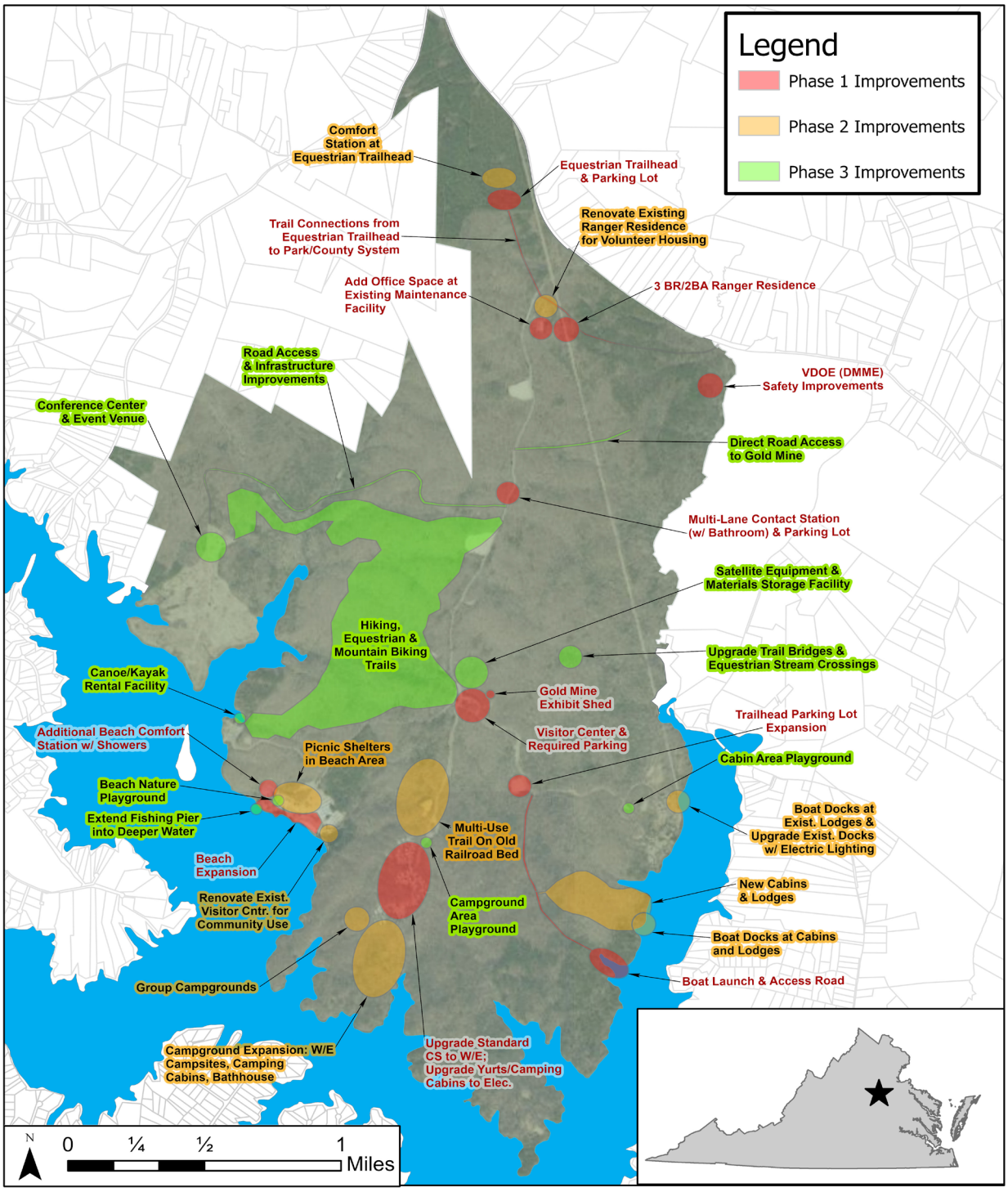


Figure 24 - Phased Development Plan Map

Phase 3

Provide Access to Ware Field and Western Properties

Phase 3 focuses on the need to provide visitor access to Ware Field and expand recreational opportunities on properties west of State Park Lane acquired since 2001:

- Installation of Natural Discovery Area playgrounds in each of the three primary day use and overnight areas of the park (beach area, campground, cabin and lodge area).
- Construction of an access road to Ware Field from State Park Lane, extension of electrical service to the site from the closest point of connection, and installation of other infrastructure necessary to serve proposed development of the property.
- Construction of a conference center and event venue, not including lodging, on the Ware Field site to make use of the expansive views of Lake Anna from the open meadow on the knoll overlooking the lake.
- Replacement of trail bridges and upgrades to equestrian stream crossings throughout the park.
- Installation of separate hiking, mountain biking, and equestrian trails on parcels of land west of State Park Lane acquired since 2001 to open these areas of the park to the public.
- Extension of the fishing pier near the current boat ramp into deeper water to provide expanded recreational fishing opportunities.
- Installation of a canoe/kayak rental kiosk or facility at the Ware's Cove Picnic Area.
- Construction of a gated access road leading directly to the Goodwin Gold Mine interpretive area from State Park Lane to improve access for staff leading tours of the mine site.
- Construction of a satellite equipment and materials storage yard in the central area of the park.

PHASE 1 - COST ESTIMATE

Description	Quantity	Unit	Unit Cost	Total
Relocate boat ramp - 3 vehicle	1	LS	$ 1,000,000	$1,000,000
Road	5280	LF	$ 250	$1,320,000
Water - new well	1	LS	$ 250,000	$250,000
Electric	5280	SF	$ 60	$316,800
Beach expansion - concrete picnic pads, grills, and hammock poles	20	EA	$ 20,000	$400,000
Additional beach comfort station with showers - typical bathhouse (7 showers)	1	SY	$ 400,000	$400,000
Water - use existing well system	200	SF	$50	$10,000
Electric	200	SF	$60	$12,000
Sewer - drainfields	1	LS	$ 75,000	$75,000
Visitor center	5000	LF	$ 400	$2,000,000
Water - use existing well system	200	SF	$50	$10,000
Electric	200	SF	$60	$12,000
Sewer - drainfields	1	LS	$ 75,000	$75,000
Visitor center/office parking lot expansion - 30 spaces	1500	SY	$ 150	$225,000
Equestrian parking lot and trailhead - 10 spaces	1000	SY	$ 150	$150,000
Trail connection from equestrian trailhead to park/County system - 1.5 mi.	7920	LF	$ 50	$396,000
Upgrade standard campsites to water and electric - 23 existing sites	23	EA	$ 10,000	$230,000
Water - use existing well system	2640	SF	$ 50	$132,000
Electric	2640	SF	$ 60	$158,400
Upgrade yurts and camping cabins with electrical service - existing sites (6 camping cabins, 4 yurts)	10	EA	$ 10,000	$100,000

Continued next page

Notes:
SF: square feet; LF: linear feet; SY: square yards; EA: each; LS: lump sum.
All estimates of unit and project costs for phases 1, 2, and 3 are in 2025 dollars.

PHASE 1 - COST ESTIMATE

Description	Quantity	Unit	Unit Cost	Total
Trailhead parking lot expansion - 30 spaces	1500	SY	$ 150	$225,000
VDOE (DMME) safety improvements at gold mine - cover	400	SF	$ 100	$40,000
Fence - split rail	400	LF	$ 50	$20,000
Add office space to existing maintenance building - existing bldg. 1,800 SF	620	SF	$ 400	$248,000
Large contact station - south of current location (multi-lane)	250	SF	$ 500	$125,000
Water - use existing well system	400	LF	$ 50	$20,000
Electric	400	LF	$ 50	$20,000
Sewer - drainfields	1	LS	$ 75,000	$75,000
Parking for contact station - 5 spaces	250	SY	$ 150	$37,500
Ranger residence - 3 BR, 2 BA	1600	SF	$ 400	$640,000
Water	500	LF	$ 50	$25,000
Electric	500	LF	$ 60	$30,000
Sewer - drainfields	1	LS	$ 75,000	$75,000
Residential well	1	LS	$ 100,000	$100,000
Model gold mine exhibit shed at Visitor Center	1	LS	$ 75,000	$75,000
PHASE 1 CONSTRUCTION SUBTOTAL				**$9,027,700**
A/E Fee (17% see note 1) includes stormwater mgmt. & E&S control measures				$1,534,709
SUBTOTAL				**$10,562,409**
Contingency (10% see note 2)				$902,770
Other Project Costs (10% see note 3)				$1,056,241
TOTAL				**$12,521,420**
			Phase 1 Total	**$12,521,420**

PHASE 2 - COST ESTIMATE

Description	Quantity	Unit	Unit Cost	Total
Campground Expansion - 46 sites with water and electric	46	EA	$ 40,000	$1,840,000
Roads - 1 mi. of roads	5280	LF	$ 250	$1,320,000
Camping cabins - 6	6	EA	$ 75,000	$450,000
Bathhouse	2	LS	$ 400,000	$800,000
Water	5280	LF	$ 50	$264,000
Electric	5280	EA	$ 50	$264,000
New well and well house	1	LS	$ 250,000	$250,000
Sewer - drainfields	2	LS	$ 75,000	$150,000
Group campground	2	EA	$ 20,000	$40,000
Water	400	LF	$ 50	$20,000
Comfort station at equestrian parking lot and trailhead	1	LS	$ 300,000	$300,000
Water - use existing well system	2000	LF	$ 50	$100,000
Electric	2000	LF	$ 60	$120,000
Sewer - drainfields	1	EA	$ 75,000	$75,000
Cabin expansion				
Roads	5280	LF	$ 250	$1,320,000
(8) 3 bedroom cabins	8	LS	$ 400,000	$3,200,000
(2) Lodges	2	LS	$ 500,000	$1,000,000
Water - use existing well system	5280	LF	$ 50	$264,000
New well and well house	1	LF	$ 250,000	$250,000
Electric	5280	LF	$ 50	$264,000
Sewer - shared septic and drainfields	5	EA	$ 75,000	$375,000

Continued next page

PHASE 2 - COST ESTIMATE

Description	Quantity	Unit	Unit Cost	Total
Boat docks (2) at existing lodges	2	EA	$ 100,000	$200,000
Boat docks (2) at new lodges and shared boat docks (2)	4	EA	$ 100,000	$400,000
Picnic shelters in beach area (3)	3	EA	$ 75,000	$225,000
Renovate existing ranger residence for volunteer housing	1150	SF	$ 300	$345,000
Multi-use trail along old railroad bed	16515	LF	$ 50	$825,750
Renovate existing visitor center for community/group meeting space	2090	SF	$ 350	$731,000
Cabin area boat dock upgrades and electric lighting	8	EA	$ 10,000	$80,000
PHASE 2 CONSTRUCTION SUBTOTAL				**$15,473,250**
A/E Fee (17% see note 1) includes stormwater mgmt. & E&S control measures				$2,630,453
SUBTOTAL				**$18,103,703**
Contingency (10% see note 2)				$1,547,325
Other Project Costs (10% see note 3)				$1,810,370
TOTAL				$21,461,398
			Phase 2 Total	**$21,461,398**

PHASE 3 - COST ESTIMATE

Description	Quantity	Unit	Unit Cost	Total
Beach nature discovery playground	1	LS	$ 100,000	$100,000
Ware Field road access	11615	LF	$ 250	$2,903,750
Ware Field conference center and event venue	5000	SF	$ 400	$2,000,000
Water	250	LF	$ 50	$12,500
Electric	6500	LF	$ 60	$390,000
Well and well house	1	LS	$ 250,000	$250,000
Sewer - drainfields	1	LS	$ 75,000	$75,000
Parking - 50 spaces	2500	SY	$ 150	$375,000
Upgrade trail bridges and equestrian stream crossings - 7 bridges	7	EA	$ 25,000	$175,000
Construct western hiking, equestrian, and mountain biking trails	52800	LF	$ 50	$2,640,000
Extend fishing pier into deeper water - 150 feet	150	LF	$ 1,000	$150,000
Canoe/kayak rental facility in Ware's Cove Picnic Area	500	SF	$ 350	$175,000
Water - use existing well system	1500	LF	$ 50	$75,000
Electric	1500	LF	$ 50	$90,000
Sewer - drainfields	1	LS	$ 75,000	$75,000
Cabin area nature discovery area playground	1	LS	$ 100,000	$100,000
Campground nature discovery area playground	1	LS	$ 100,000	$100,000
Direct access to Gold Mine from State Park Lane - 0.9 miles	4750	LF	$ 100,000	$1,187,500
Central equipment and materials storage				
Pole shed - 3 bay (30' X 36')	1080	SF	$ 200	$216,000
PHASE 3 CONSTRUCTION SUBTOTAL				**$11,089,750**
A/E Fee (17% see note 1) includes stormwater mgmt. & E&S control measures				$1,885,258
SUBTOTAL				**$12,975,008**
Contingency (10% see note 2)				$1,108,975
Other Project Costs (10% see note 3)				$1,297,501
TOTAL				$15,381,483
			Phase 3 Total	**$15,381,483**
Total Master Plan Cost (see note 4)				**$49,364,301**

Notes:

1 A/E Fee - 17% includes site visits, code reviews, agency reviews, plan reviews, bidding, construction administration, project close out.
2 Contingency - 10% due to minimal project scope and unknown site conditions.
3 Other Project Costs - 10% includes project mgmt/inspection, equipment and furnishings, exhibits, site survey, abatement, geotech, materials testing, document printing / bid ads, utility connection fees - all as per the Construction & Professional Services Manual.
4 The total cost estimate does not include shoreline stabilization work identified as part of the needs assessment, which is estimated to cost $52,602,000.

STAFFING NEEDS AT BUILDOUT

The Virginia State Park Staffing Buildout outlined below identifies the staffing needs of the park, both currently and as development of the park progresses in the future, based on the evolving nature of visitor usage and park operations, characteristics and sizes of proposed facilities, frequency and types of educational programs and special events, and needs with respect to the protection of park resources. The immediate needs listed below are based on the Field Operations Staffing Matrix, which applies a complex formula to identify the optimal staffing complement of a state park based on a combination of such considerations regarding the park's size and resources, condition and character of recreational and other facilities, and types of programming needed to effectively deliver high-quality visitor experiences while optimizing public safety and protecting park resources. Additional staffing numbers per phase have been coordinated with the Phased Development Plan to optimize the efficiency of park operations and provide a best-in-class visitor experience.

Existing Staffing (FY 2025)

The park employs nine (9) full-time employees, exclusive of wage and seasonal staff:

- Park Manager (1)
- Assistant Park Manager (1)
- Chief Park Ranger – Law Enforcement (1)
- Chief Park Ranger – Visitor Experience (1)
- Office Manager (1)
- Park Ranger – Maintenance (3)
- Park Ranger – Law Enforcement (1)

Immediate Needs

Virginia State Parks begins staffing a state park with four core full-time employees (FTEs). Beyond that, staffing buildout should logically follow capital buildout as the park is developed. Since many parks have not historically experienced staffing increases to the levels optimally needed to operate and maintain facilities, Virginia State Parks in 2019 completed the Field Operations Staffing Matrix, an internal study which examined park tier, overnight lodging, day use infrastructure, programs and activities, natural/cultural resources, and other unique management factors to calculate the total FTEs recommended per park and compare existing staffing to recommended staffing levels. This comparison is utilized by Virginia State Parks' planning, business administration, and operations staff to identify the gap between a park's current and optimal staffing level before proposed developments occur to determine which positions are most needed at the park today. Utilizing the information generated by this tool combined with staff knowledge and expertise regarding a particular park, Virginia State Parks develops a list for planning purposes representing the most urgently needed positions based on parks having similar infrastructure and visitation.

The following six full-time positions represent immediate staffing needs at the park to optimize visitor experiences and safety, resource management, and operational efficiency:

- Facilities and Maintenance Manager (1)
- Education Specialist (1)
- Park Ranger – Maintenance (2)
- Park Ranger – Resource Management (1)
- Park Ranger - Law Enforcement (1)

Phase 1

The following full-time position is an anticipated staffing need during Phase 1 of development in order to ensure sufficient staffing of the new larger visitor center and administrative office facility proposed in the central part of the park:

- Office Assistant (1)

Phase 2

The following full-time positions are anticipated staffing needs during the buildout of Phase 2 in order to ensure proper maintenance and sanitation of expanded overnight facilities proposed during this phase, including doubling of the number of cabins, lodges, and campsites and constructing additional campground bathhouses containing showers and laundry facilities:

- Park Ranger – Maintenance (2)

Phase 3

Phase 3 is anticipated to generate the need for the following additional full-time position to manage the conference and events center proposed at Ware Field:

- Conference and Events Manager/Coordinator (1)

The total number of full-time staff people and associated salary, wage, and "Other than Personnel Services (OTPS)" costs are shown in Table 7. All salary, wage, and OTPS costs are based on FY2025 budget projections:

TABLE 7: OTHER THAN PERSONNEL SERVICES (OTPS)

POSITION (FY25)	EXISTING POSITION	IMMEDIATE NEEDS VIA STAFFING MATRIX	NEEDS WITH PHASE 1 BUILD OUT	NEEDS WITH PHASE 2 BUILD OUT	NEEDS WITH PHASE 3 BUILD OUT	TOTAL AT FULL BUILD OUT
Park Manager	1					**1**
Assistant Park Manager	1					**1**
Conference and Events Manager/Coordinator					1	**1**
Facilities and Maintenance Manager	1					**1**
Chief Park Ranger (Visitor Experience)	1					**1**
Office Manager	1					**1**
Office Assistant			1			**1**
Education Specialist		1				**1**
Park Ranger (Maintenance)	3	2		2		**7**
Park Ranger (Resource Management)		1*				**1***
Park Ranger (Law Enforcement)	2	1				**3**
FTE SALARY WITH BENEFITS TOTAL						
	$878,822	$537,755	$83,537	$167,074	$107,740	**$1,174,928**
WAGE TOTAL						
	$423,438	$0	$90,000	$45,000	$45,000	**$603,438**
OTPS TOTAL**						
	$292,475	$0	$196,672	$170,325	$91,081	**$750,722**
TOTAL BUDGET						
	$1,594,735	$537,755	$370,209	$382,399	$243,821	**$3,129,088**

Note: All costs such as salary, wage, and "Other than Personnel Services" (OTPS) are based on FY25 budget projections.**

*Need for Park Ranger – Resource Management may also be fulfilled by additional full-time District Resource staff positions.

**OTPS stands for “Other Than Personnel Services;” it covers all of the non-staffing expenses necessary to open and operate a Virginia State Park, including but not limited to routine maintenance, equipment, supplies, utilities (e.g. power, sewer, water), and resource management. OTPS does not include costs for salaried employees, wage and seasonal staff.

CONCLUSION

The Master Plan for Lake Anna State Park recommends improvements to recreational facilities to meet the needs of park visitors based on current and anticipated future usage trends. The plan also includes recommendations for upgrading staff facilities and operational capabilities to better fulfill the park's overall purpose. These recommendations are based on analysis and evaluation of the park's existing resources; demographics of the primary and secondary service areas; wants, needs, and expectations of primary visitor groups; and analysis of which types of recreation opportunities and experiences the park should provide to meet the evolving outdoor recreation needs of visitors and Virginians generally.

The phased development plan represents a comprehensive plan for the physical development of the park, not only for the ensuing decade until the park's next master planning effort gets underway, but also for the entire 30-year buildout period following adoption. As such, implementation of the plan will be an interative process affecting the need for, and prioritization of, future park developments. Proposed developments are divided into phases such that each development phase is designed to be implemented holistically during the initial and subsequent 10-year periods until the park's short-, medium-, and long-term needs are addressed in full. Thus, improvements needed 20 or 30 years from now in Phases 2 and 3 are anticipated to become immediate park needs during future updates, assuming implementation of the plan proceeds as intended and future needs assessments generate similar findings. Implementation of these recommendations piecemeal as part of a particular phase or as funding permits should be done thoughtfully so that any preliminary and related improvements necessary to accomodate such developments, such as building demolitions or utility upgrades, are likewise designed, funded, and constructed in advance, or as part, of that effort.

Lake Anna State Park has been fulfilling the foremost outdoor recreation needs of Virginians since its inception. This 2025 Master Plan recognizes the enormous contributions of park and agency staff in the development of the plan as well as the work they do every day to advance the overall mission of Virginia State Parks by providing premier outdoor recreational and educational opportunities to Virginians of all backgrounds, abilities, and interests.

APPENDICES

The Master Plan for any park within the state park system is a composite of the various plans for the park that, taken together, assure the best management and stewardship of the land and its resources while providing an exemplary experience for all visitors. These plans include the Natural Resource Management Plan, Market Analysis, and Visitor Experience Plan. Following are summaries of these plans conducted for Lake Anna State Park.

NATURAL RESOURCE MANAGEMENT PLAN

The Natural Resource Management Plan (NRMP) is an ArcGIS-based plan that consolidates all known ecological resource information for a park and provides management direction for maintaining and enhancing those resources. The NRMP first identifies the key abiotic resources of the park, including but not limited to floodplains, soils and wetlands, then reviews biotic properties of the park such as its ecosystems, sensitive species and communities, as well as invasive species challenges. The NRMP then divides the park into the following areas for management:

- Mapped ecosystem types which have typically been delineated in partnership with the DCR Division of Natural Heritage;
- Unique management areas (UMAs), which are undeveloped areas with a specific resource-related purpose or function such as a historic battlefield or open pollinator meadow;
- Developed areas where park facilities are located yet have natural requiring specific management.

Following delineation of the park into ecosystems and UMAs, the NRMP then prescribes defined management objectives and recommended actions for each area in order to steward the park's natural resources during the coming decades. Resource management recommendations often include but are not limited to prescribed burning, invasive species mapping and control, sensitive species management, deer population control through managed hunts, and water quality monitoring. All actions are taken in order to help each ecosystem or UMA either maintain or eventually reach a defined Desired Future Condition (DFC).

NRMPs are developed in partnership between the District Resource Specialist, Park Operations staff, and Virginia State Parks planning staff, and are reviewed periodically and updated at least once every five to 10 years to stay current with ongoing natural resource projects and management objectives.

MARKET ANALYSIS

The Division of State Parks completed a Market Analysis for Lake Anna State Park in January of 2025 in partnership with Dr. Vincent Magnini of Longwood University. The purpose of this analysis is to describe growth potential, marketing strategies, and retail sales opportunities for increased revenue generation at the park. Key findings of this analysis are summarized in the Master Plan; however, for detailed recommendations pertaining to marketing the park to prospective visitors and improving customer satisfaction, readers are encouraged to consult the Market Analysis directly. DCR recommends that the business plan be reevaluated and updated at least once every five years to keep these findings current and update the recommendations as needed.

VISITOR EXPERIENCE PLAN

Virginia State Parks is working to develop Visitor Experience plans that address the unique needs, wants, and expectations of visitors for each park. Ultimately, the Visitor Experience plans are intended to inform the goals, objectives, needs, and recommendations of the park Master Plan and the future Interpretive Plan to guide educational and interpretive programming at the park. Prior to development of this Master Plan, Lake Anna State Park did not have a formal Visitor Experience Plan. The park also does not have an Interpretive Plan at this time.

Through efforts undertaken as part of the development of this Master Plan, DCR staff undertoook an assessment of visitor needs, wants, and expectations using public outreach including the public information meeting, visitor surveys, discussions with park staff, and other methods documented in this Master Plan. These efforts culminated in a two-day Visitor Experience workshop held in April of 2024 among members of the Master Plan Team, Visitor Experience interpretive staff with the Division of State Parks, and Lake Anna State Park staff. The workshop evaluated the following to provide a solid foundation for developing future interpretive efforts at the park:

- Audience Types
- Visitor Wants, Needs, and Expectations
- Park Purpose
- Themes and Subthemes
- Essential Experiences
- Experience Areas

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