

MASTER PLAN REPORT DOVES LANDING NATURAL/CULTURAL RESOURCES PARK

October 11, 2022



Coles Magisterial District
Prince William County, Virginia

Adopted by BOCS on: _____
Per Resolution: _____

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I. INTRODUCTION

This Plan has been prepared by staff within the County's Department of Parks, Recreation & Tourism (DPRT), in consultation with professional landscape architects and planners from Gordon & Associates. From the outset, the primary goal of this Plan was to transform Doves Landing Park and the Sinclair Mill/Long Branch parcels into a premier Natural/Cultural Resource Park. The current Doves Landing Park has grown in size since the last time it was master planned in 2013, and with the pending acquisition of the Sinclair Mill and Long Branch parcels proffered with the Preserve at Long Branch residential rezoning, DPRT has been presented an opportunity to evaluate how the subject properties can be cohesively improved and programmed. The recommendations and decisions made in this document have been guided by input from Prince William County residents and stakeholders, and in conjunction with outlining a program and development plan for these properties, this Plan aims to provide professionally developed recommendations that address the needs and desires of the day-to-day users as well as the future operation and management of these sites.

The purpose of this Master Plan document is to serve as the guiding policy document for the programming and development of what will be an expanded Doves Landing Natural/Cultural Resources Park. By documenting the history of the land and analyzing the existing features and assets present on the subject parcels, this Plan serves to demonstrate how the County can proceed with developing the largest Natural/Cultural Resources Park in its system, while also creating a viable program plan that promotes the exploration of the outdoor environment through passive-only recreational activities. The intent is to expand the passive recreation opportunities offered at the current Doves Landing Park, with a programming connection to parcels to be dedicated, on the opposite side of the Occoquan River, with the Preserve at Long Branch residential rezoning. Through this process, the County seeks to develop a nearly 500-acre natural area, with a program plan that provides nearby residents with their daily recreational needs and also attracts a broader range of visitors that want to learn more about and enjoy the unique natural assets of these properties. For reference, a Regional Context Map is included in Appendix A to show the correlation of the properties to one another.

II. PROJECT HISTORY/BACKGROUND

Prince William County acquired the original parcels for Doves Landing Park through the settlement of two separate court actions in 1993 and 1997. The property remained vacant and unplanned until 2013 when the Board of County Supervisors (BOCS) approved a Comprehensive Plan Amendment (CPA) to change the land use designation on all parcels to Parks and Open Space (P&OS). Subsequent to that CPA, County staff completed a Master Plan for the park property as it existed at that time, which in total consisted of approximately 235 acres. In 2020 the County acquired an additional 73 acres on the east side of the previous Doves Landing Park boundary, which increased the footprint of the park to the 308 acres it is today.

On January 19, 2021, the BOCS approved the Preserve at Long Branch residential rezoning for property that lies on the opposite side of the Occoquan River from Doves Landing Park. With this rezoning, a 20-acre area on the Occoquan River waterfront, historically known as the Sinclair Mill site, and an additional 168-acre parcel that follows Long Branch to the southeast, are proffered to be dedicated to the County for parks and recreation purposes. The Preserve at Long Branch residential development is currently in site planning and dedication of the parcels must be approval by the Board of County Supervisors. Collectively, the Doves

Landing Park, Sinclair Mill, and Long Branch parcels will make for a 500-acre area that will be County-owned and continue to have a long-range land use designation of P&OS.

As identified, a Master Plan was developed for the original Doves Landing Park property in 2013. Given that that Master Plan does not cover the area added in 2020, nor the area to be dedicated with the Preserve at Long Branch rezoning, a decision was made to update and expand the Master Plan for the larger, nearly 500-acre area. This plan draws heavily on the research and analysis done in 2013, and also takes into consideration park planning goals identified in the recent updates to the Parks, Recreation and Tourism Chapter of the County's Comprehensive Plan, and DPRT's Parks, Recreation and Open Space Master Plan, both of which were adopted in 2020.

III. PROJECT OBJECTIVE

The objective of this Master Plan is to look cohesively at the combined Doves Landing Park, and Sinclair Mill and Long Branch properties, to develop a program plan that provides a greater quality of life for the county's residents by balancing the outdoor recreation opportunities with the protection and preservation of the area's natural and cultural resources. Protecting open space and natural areas provides a greater quality of life for the county's residents by:

- protecting stream water quality;
- providing habitat and corridors for wildlife;
- minimizing environmental damage from development;
- conserving natural and cultural resources; and
- providing passive outdoor recreation opportunities.

DPRT's intent in this process is to create a sustainable overarching Master Plan for the properties that promotes accessibility and passive recreation while minimizing impacts on the natural and cultural resources of the respective properties. Cohesively looking at how visitors can use and access Doves Landing Park, in conjunction with the Sinclair Mill and Long Branch properties, provides a unique opportunity to create a premier Natural/Cultural Resources Park that is central to the county's population. The subject properties provide a wide variety of natural and cultural resources that, in turn, provide a wide range of opportunities for interpretation and environmental education, and also passive recreation activities that are directed at the enjoyment of these resources. This Plan is therefore based upon both an analysis of the natural and physical characteristics of the subject land area, and the needs, desires, and use patterns of Prince William County residents.

The documents that lend support to decisions made in this plan include the 2013 Master Plan Report for Doves Landing Park, the Parks, Recreation and Tourism Chapter of the County's Comprehensive Plan, DPRT's Parks, Recreation and Open Space Master Plan, and DPRT's 2019 Needs Assessment Survey of county residents. The 2013 Master Plan report for Doves Landing Park provides a summary of the natural and cultural resources on that property, and an expanded analysis was completed by consultants in conjunction with this Plan update, in order to address evaluate the acreage added to the park in 2020. The Parks Chapter of the County Comprehensive Plan identifies goals and objectives for the development of the County's parks system and this Plan addresses these goals and objectives by seeking to create additional outdoor recreation opportunities for the public, while preserving and protecting the county's open space. The properties also offer opportunities to address several needs identified in the DPRT's 2019 Needs

Assessment, such as walking and biking trails, protection of natural wildlife habitats, and picnic areas and shelters – which were all in the Top 5 of identified needs. Specific to Doves Landing Park, DPRT’s Parks, Recreation and Open Space Master Plan further identifies a specific need to evaluate locations for hand-carried boat launches along Broad Run and the Occoquan River, and a means for connecting the upstream Brentsville Courthouse historic site with Doves Landing Park (and subsequently the Sinclair Mill site) with a both a blueway trail and a greenway trail.

IV. MASTER PLAN PROCESS

Development of this Master Plan was broken into the following five steps, which also generally form the outline for this document.

- Site Inventory /Analysis
- Development Constraints
- Program Plan
- Resource Management
- Master Plan

In addition to the analysis contained herein, DPRT held two public meetings (April 21 and July 14, 2022) to gather community/resident input and feedback, and also gathered comments and feedback via online forums/meetings throughout this process. The public meetings were advertised via DPRT press releases, social media, signs in the park, and were also referenced in local online new sources. The outreach was targeted towards all County residents. As a natural resource park, Dove Landing is intended to serve the entire community in addition to residents residing directly adjacent to the park. The feedback received throughout the master planning process was instrumental in developing this final Master Plan for all properties. The April meeting was formatted to gather information on community preferences regarding a program plan for the properties, while the July meeting was designed to garner additional feedback on specific facility and program recommendations. Again, throughout this process the Sinclair Mill and Long Branch properties were part of the analysis, given the interconnectivity that exists between the properties and their respective uses. While the Sinclair Mill and Long Branch properties have not yet been formally dedicated to the County, it is a recommendation of this plan that they be accepted into the County’s parks system and joined with the current Doves Landing Park to create the 500-acre Natural/Cultural Resources Park envisioned by this plan.

During the master planning process, the number one topic of discussion raised by residents was whether Doves Landing Park would be placed under a conservation easement, similar to the easement being placed on the Sinclair Mill/Long Branch parcels in association with the development proffers. From a programming standpoint the facilities that garnered the most favorable response from citizens were a hand-carried boat launch, additional picnic tables and benches, general trail improvements, and dedicated/separated mountain bike trails. Regarding maintenance and management of the properties, the greatest number of inquiries pertained to the how the illegal ATV/motorbike use would be monitored/patrolled, and general safety and security concerns regarding access to the park areas after hours and patrolling of the waterway if boating access was provided. Lastly, numerous neighbors voiced concern about the additional vehicular traffic on Doves Lane and the need for road improvements for safety. The currently volume of vehicles accessing Doves Landing Park is negligible and not expected to increase significantly after the Master Plan is fully implemented due the passive uses and limited programming proposed.

V. SITE INVENTORY/ANALYSIS

The site inventory and analysis contained in this Plan utilizes and expands on the analysis contained in the 2013 Master Plan for Doves Landing Park, to include an analysis of the acreage added to Doves Landing Park in 2020 and the Sinclair Mill/Long Branch parcels that are to be dedicated per the Preserve at Long Branch rezoning. The site constraints considered include topography, hydrology, forest cover, soils/geology, and cultural resources. Because the subject properties are on opposite sides of the Occoquan River and have different characteristics, separate summaries are provided below with graphic representations of this analysis included in Appendix B.

Doves Landing Park

Topography. The topography within Doves Landing Park is rolling in nature with moderately steep slopes generally just inland from Broad Run and the Occoquan River. Elevations within the park vary from 145 to 225 feet above sea level, making the hiking trails on the property generally easy to moderate. Mountain biking currently occurs within the park but is not especially challenging given the minimal change in topography. Several existing trails within the park are also not constructed along the topographic fall line creating some drainage and erosion concerns. Overall, the greatest variation in topography is generally in the western and central areas of the park, with the more gradual slopes on the eastern side of the park.

Hydrology. The lowest and flattest areas within Doves Landing Park are along the Occoquan River. Given that the park is situated at the confluence of Cedar Run and Broad Run as they merge to form the Occoquan River, much of the land along the riverfront is floodplain or wetland. Most significant is an approximately 62-acre wetland located toward the eastern side of the property where the Occoquan River makes a turn to the northeast. The size of the wetland is based on a predictive wetland model provided by Prince William County Environmental Services. In its current condition the wetland is not considered to be particularly healthy given that it is currently being degraded by illegal ATV/motorbike use. For this area to best serve as a filtering location for upland runoff, and potentially slow the downstream flow of water in the Occoquan River during flooding events, restoration of the wetland and its vegetation is considered imperative. Wetland restoration will also enhance species diversity, which can ultimately allow this area to be an environmental interpretation and nature viewing destination within the park.

Forest Cover. Despite previous farming activities on the property and the wetland/floodplain areas, almost 95% of Doves Landing Park is currently forested. From the 2013 Master Plan, it was identified that there are three dominant forest types on the property - Acidic Oak Forest, Mesic Mixed Hardwood, and Piedmont Floodplain Forest. Acidic Oak Hickory Forest comprises a significant portion of the property. The overall vegetation condition is fair. This stand is heavily oak dominant, is likely 40 to 60 years old, and shows moderate soil disturbance resulting in relatively low invasive cover and moderate species diversity. Within the Acidic Oak Hickory Forest type is the oldest, most mature forest stand on the site, and shows up as a woodlot as far back as the 1937 aerial images of the site. Most interesting within this forest stand is the presence of a few large eastern hemlocks. This species is found along the Bull Run-Occoquan River basin further east, but the presence in the oldest forest stand of this otherwise heavily disturbed landscape may indicate that eastern hemlock had a larger presence in forests in this region prior to massive land conversion for agriculture.

The second forest type is the Mesic Mixed Hardwood Forest. This forest stand is less than 60 years old as evidenced by the remaining Virginia pine co-dominant with tulip poplar. Larger tulip poplar (20- to 40-inch

diameter breast height) near and adjacent to the stream indicate that the 20th century land use practices disturbed upland and side slopes but generally retained trees along stream courses. American beech is dominant in the understory demonstrating the stress on the system by heavy deer browsing, which limits regeneration to beech because it is a non-preferred species by deer. The relatively good diversity in the herbaceous layer indicates that despite clearing, this site underwent moderate soil disturbance in the 20th century.

Piedmont Floodplain Forest makes up the remainder of the forest type located in the floodplain of the Occoquan River just downstream of the confluence of Cedar Run and Broad Run. Ash-leaved maple completely dominates the over story with river birch and tulip poplar also well represented but not co-dominant. The shrub layer and understory are in poor condition. There is little to no recruitment or regeneration. The forest appears to be less than 60 years old and may be growing on sediments that accumulated after construction of the Lake Jackson dam.

Soils/Geology. The major soil types in Doves Landing Park are Arcola Silt Loam, Arcola-Nestoria Complex, Bermudian Silt Loam, Braddock Loam, Brentsville Sandy Loam, Calverton Silt Loam, Manassas Silt Loam, Meadowville, Silt Loam, Panorama Silt Loam, and Rowland silt loam, according to United States Department of Agriculture, Soil Conservation Service data. The soil types are noted by type and slope. The greatest extent of any one soil is Calverton Silt Loam which occupies the 7 to 15% slope range on 25% of the site. Overall, the most predominant slope range is from 0 to 15 percent slopes, with a very small percent of slopes above 25%. A soils map and table are provided for additional reference in Appendix B. Moving forward, it is recommended that the soil erodibility index be considered in the site design phase, to help ensure that facilities are not proposed in areas with highly erodible soils.

Cultural Resources. The park is considered to have a high probability of containing prehistoric resources, based on the generally low relief topography within park boundary and the proximity of the property to the confluence of Broad Run, Cedar Run, and the Occoquan River. Typically, if prehistoric sites are present within the project area on the ridge tops or uplands, they are likely to be confined to the plow zone and are not likely to require work beyond the recordation done at the Phase I survey level, as plowing disturbs the context of Native American artifacts thereby reducing the information potential of a particular site. Prehistoric sites found outside of an upland setting (e.g., floodplain) or in unplowed contexts would require additional work if preserved deposits are identified.

The probability for the occurrence of historic period sites largely depends upon the historic map search, the history of settlement in the area, the topography, and the proximity of a particular property to historic roads. Research done in conjunction with the 2013 Master Plan found that a farmstead is visible in the western area of the park in 1937, and dwellings are apparent adjacent to the northern project area along Doves Lane. The farmstead within the project area continues to be shown on subsequent United States Geological Survey (USGS) quadrangles as late as 1998. Two buildings are shown within the far eastern project area on the 1941 Independent Hill, VA quadrangle and continue to be shown until 1969, after which time one building is shown in this area and continues to be shown as late as 1998. Another building appears within the northern project area along the east side of an unimproved road on the 1956 USGS quadrangle. A second building appears in this area on the 1984 USGS quadrangle.

Based on the 2013 map review, the project area was determined to have a high probability of containing 19th- and 20th-century archeological resources. A pedestrian reconnaissance survey done in 2013 further found one historic farm complex including two cut stone foundations, a well, and a cemetery. Several areas

of interesting landforms were also noted, that could date to civil war period, but will require further exploration/analysis to verify. No new archeological resources have been identified within the park since the 2013 pedestrian reconnaissance survey, although nineteenth-century sites, if present within the park, will likely only be discovered with additional archeological work. Typically, 20th-century sites are not likely to be considered significant unless they contain unique, intact cultural materials that would contribute new research information. Regardless of significance, care should be given to identify and protect any archeological and cultural resources found during construction activities within the park.

Sinclair Mill/Long Branch Parcels

Topography. The topography within the Sinclair Mill property has areas with significant slopes and drops from an elevation of 220 feet above sea level at the entrance off Sinclair Mill Road to 148 feet on the west side of the property, where Long Branch joins the Occoquan River. Some of the steepest grades on the site are directly north of the entrance drive as it slopes to the Occoquan River. This area has cliff-like slopes ranging from 10% just off the entrance drive, to 67% in the steepest areas. There are similarly steep slopes of 10 to 75% on the south side of the property where the property drops down to the Long Branch stream valley. The topography of this site poses the greatest difficulty for designing and developing public access as the entry to the property will need to be designed for two-way traffic. Interior to the property, the steadily falling slopes will also require that areas be graded for amenities such as restrooms and parking. The area near the mouth of Long Branch is the flattest portion of the property. Behind the existing residential structure there are constructed steps and retaining walls that moderate the slopes in this area and provide access areas along the river where the grade is very steep.

The Long Branch parcel follows the Long Branch stream valley, upstream of its confluence with the Occoquan River, to a point just upstream of the proposed Classic Springs Drive crossing. The parcel that will be dedicated to the County has not yet been subdivided from its parent parcel, but the topography will range from an elevation of around 230 feet above sea level in the upland areas, to the stream valley elevation of around 190 feet in the upper reaches and 158 feet where the property joins with the Sinclair Mill site. As identified, a parking lot and trail are proffered to be constructed prior to the dedication of the property to the County. The trail alignment has already been identified as part of the site plan review process and DPRT will assume maintenance responsibilities of the trail and parcel once the property is conveyed. No other facilities are planned for this portion of the site and the property is also proffered to be placed under a conservation easement. With this, there are no outstanding topographic concerns on this parcel from a development standpoint.

Hydrology. The Occoquan River runs along the northern boundary of the Sinclair Mill property. Long Branch flows into the Sinclair Mill site from an upstream location, following a course to the southeast of the mill site. Of the 20 acres that encompass the Sinclair Mill site, 9.3 acres fall within Resource Protection Area including 2.5 acres of open water. Part of the area along the river is also floodplain. A wetland study has not yet been performed on these parcels, however there are most likely some wetlands along the Occoquan River frontage and potentially along the Long Branch stream on the flattest sections of the site. A wetlands survey should therefore be undertaken prior to any design work associated with developing this site and methods for minimizing runoff should be evaluated as part of the design and engineering processes.

Forest Cover. A forest survey has not yet been completed for the Sinclair Mill and Long Branch parcels, although forest types are expected to be similar to those at Doves Landing Park. Presently, the entire Long Branch parcel is forested and by quick estimate approximately 85% of the Sinclair Mill property is forested,

with the only cleared area being around the existing residential structure. A review of aerial images back to 1937 indicates that the parcels have not been cleared for farming or other agricultural uses since that time and, as such, stands of larger, older growth trees are anticipated, primarily on the Long Branch parcel. No development is proposed on the Long Branch portion of the property once it is conveyed to the County, and any development proposed on the Sinclair Mill site should focus on minimizing the limits of clearing and utilize existing open areas to the greatest extent possible.

Soils/Geology. The major soil types on the Sinclair Mill parcel are Bermudian Silt Loam, Codorus Loam, Elioak Loam, Meadowville Loam, Occoquan Sandy Loam, Spriggs Silt Loam, and Stumptown Very Flaggy Loam, according to the United States Department of Agriculture, Soil Conservation Service data. The greatest extent of any one soil is the Occoquan Sandy Loam with a 7 to 25% slope range, covering a total of 28% of the site. The second greatest extent of one soil is the Stumptown Very Flaggy Loam with a 25 to 50% slope range on 20% of the site. Overall, the most predominant slope range is below 20%. To properly address erodibility and erosion concerns, the soil erodibility index should be evaluated during the site design phase of any new development. As a general reference, a soils map and table for this site are included in Appendix B. A soils analysis of the Long Branch parcel was not specifically done in conjunction with this Plan given that no development is proposed in the location beyond the parking lot and trails being constructed in conjunction with the residential rezoning.

Cultural Resources. Like the Doves Landing Park site, the Sinclair Mill property is considered to have a high probability of containing prehistoric resources, based on the proximity of the property to the confluence of Broad Run and Cedar Run, and its location at the mouth of Long Branch where it joins the Occoquan River. A Phase I archaeological survey was not a condition of the Preserve at Long Branch residential rezoning and should therefore be done once the property is in County ownership.

Archeological sites are known to exist on the Sinclair Mill property, given that Long Branch has been the home of a mill since the 1730s and 1740s. The earliest references for the area, from the 1730s thru 1740s, indicate that Filkin's Mill likely stood in the same general area as the later mill properties did on Long Branch. In John Wood's 1820 map of Prince William County, the mill is referred to as "Maddox's Mill". The Maddox family came to the area in the 1740s and 1750s and were instrumental in the creation of Brentsville. The current name of Sinclair's Mill came into use about the 1850s. Sinclair Mill was first referenced in a state survey for the RF&P Railroad in 1855, which called "Mr. Sinclair's Mill" a potential location for a railroad bridge spanning the Occoquan River, for a line from Quantico to Manassas Junction. At the time there was a branch of Dumfries Road that ran from the Canova area, down the Long Branch valley, past the mill to a ford on the Occoquan, and then up the hill to Bradley. Remnants of the old mill exist today in addition to the mill race. It was a regular guard post for the Confederate Army at Manassas during the winter of 1861-1862. Possible remnants of these picket posts exist on the property today. The mill name continues to appear on an 1862 US Army "Map of n. eastern Virginia and vicinity of Washington", the 1901 William Brown Map of the area, and last appeared on the 1943 1:62500 scale Quantico map. It was no longer recorded on the 1944 version of the Quantico map. With the use of the mill site as a Confederate Army guard post additional studies should be done to identify any pertinent landforms or resources associated with that use. In addition, it would be beneficial to identify the location of the ford across the Occoquan, as these areas would all lend themselves to protection and interpretation.

In addition to the mill use, there are local rumors of gold mining taking place on the property in the late 19th or early 20th century, although there are no formal records of gold mining on the property. It is most likely that a small shaft was dug in the search for gold deposits, as was done in Independent Hill at a site known

as Greenwood Mine. The Greenwood Mine site was dug about 1900-1907 and failed to find gold. The digging at Sinclair's Mill might have been confused with the Greenwood Mine or other excavations conducted in the area, which was not uncommon. Additional research and site surveys should be undertaken to confirm the existence and/or location of any gold mining areas on the property.

VI. DEVELOPMENT CONSIDERATIONS

With the site constraints identified in the previous section, the next step in the master planning process was to evaluate how those constraints impact or support the development and program plans for the respective properties. Overall, the main goal of this plan is to enhance and expand the recreational opportunities available on the respective properties, in a sustainable manner, such that the passive recreational uses do not adversely impact the natural and cultural resources. In addition, the program plan is to be consistent with DPRT's intent to maintain this park as a Natural/Cultural Resource Park within the County's parks inventory. Natural/Cultural Resource Parks are, by nature, designed to protect and promote the natural and cultural resources of the property, but are also intended to offer public access and programming opportunities that promote and encourage a better understanding of the resources. The development considerations/site constraints therefore need to go hand in hand with program development.

The development considerations resulting from the site constraints analysis for Doves Landing Park and the Sinclair Mill/Long Branch parcels are summarized below and take into consideration the community feedback received during this Master Plan process. The general development considerations are mainly geared toward the development and maintenance of the park, while the resource-specific considerations are directed more toward the operation and management of the properties and the protection of their respective resources. These considerations are general across all properties, with exceptions noted where the consideration is site specific. Lastly, the considerations have been separated by the program element/development features to which they are most applicable.

General Development Considerations

Site Design/Development

- All design/development should be low impact and protect the natural/cultural resources of the property. Site Development should embrace low impact design. Stormwater management should be a priority using bioretention, infiltration trenches, or wet ponds where possible.
- Infrastructure improvements should be minimal and carried out with great care and study. Chosen materials should reflect the natural and cultural context of the site.
- Sinclair Mill - A Phase I archaeological study should be completed prior to, or as a part of design/development of this site.
- Sinclair Mill - The parking area should be the first feature designed at this site to assist in establishing capacity limits. The site constraints will likely limit the amount of parking available at this site which, in turn, could lead to the need to develop management policies around access restrictions, times of use, ranger patrols, etc.
- Doves Landing Park - A conservation easement should be considered on the property to protect its use as a passive recreational park, similar to the easement that is proffered to be placed on the Sinclair Mill/Long Branch parcels.

- Sinclair Mill/Long Branch parcels – In accordance with the development proffers, these parcels should be placed under conservation easement prior to being dedicated to the County for passive recreation use.

Access

- Doves Landing – The newly acquired acreage on the east side of Doves Landing Park is currently inaccessible by car due to a lack of dedicated parking. A second parking area should be created as well as public access to the interior of the park for convenient water access and access for park maintenance. To the extent possible this access should follow the existing electric line easement/clearing on the east side of the property. Improvements in this area would minimally impact the forest cover on the site and improve the current access/drainage in this area. Burying the overhead electric lines on the property should also be taken into consideration.
- Sinclair Mill – Access into the site will need to be designed to improve the width and grade of the existing entrance drive.
- All property boundaries should be clearly marked to deter encroachments and access by unauthorized motor vehicles, such as ATVs and motorbikes. Entry points should be gated and/or monitored to stop entry to the park outside normal operating hours.
- The unimproved section of Doves Lane should be evaluated for improvements to ensure safety. Any necessary road improvements should be made in concert with vehicular access improvements at the east side of Doves Landing Park.
- Parking areas should be gated as necessary to control unapproved uses and illicit activity.

Trails

- Motorized vehicles should not be permitted on the trail system, except for approved mobility impairment devices. ATV/motorbike users should be restricted from accessing the property and this use should be patrolled. DPRT should also evaluate policies regarding E-bikes on its trail systems, as this is a new and emerging use for which there are currently no specific management policies.
- Existing trails should be realigned where erosion concerns exist. DPRT should evaluate separated trail uses (pedestrian, equestrian, mountain bike), as appropriate, to improve the visitor experience of each user group.
- Suitable stream crossings, such as bridges, should be established along trails to eliminate embankment erosion. Any crossings should take into consideration the shared use (hikers, mountain bikers, and equestrians) nature of the trails.
- Accessible trail loops should be added to expand opportunities for visitors with mobility limitations.
- Doves Landing - DPRT should seek to secure an easement or land dedication over the section of trail along the Occoquan River in the southwestern corner of Doves Landing Park outside the park boundary. If this is not feasible, the trail should be re-routed within the park boundary and measures to restrict/deter access to private property should be evaluated.
- A trail connection between Sinclair Mill and Doves Landing Park, via a pedestrian bridge, should be considered as a long-term goal of this Plan. Such a bridge would essentially replace the ford that existed in the 1850s and along with providing an interpretive connection, it would also prove a physical connection between the two sides of the larger future park.

Programming/Facilities

- Programming should be limited to passive activities (hiking, picnicking, fishing, non-motorized boating, interpretation, wildlife viewing, etc.) with any new facilities designed to have minimal impacts on the natural/cultural resources of the site. For example, facilities should be placed where minimal grading

and clearing will be required. Materials such as permeable paving should be chosen, and where necessary drainage swales, filtration ponds, or similar should be established to encourage water infiltration and decrease sheet flow and erosion issues.

- Entry roads and parking lots should be designed to minimize or control runoff and be visually compatible with the site's natural setting. Asphalt and other impervious pavements should be limited. Ditch section roadways should also be considered in lieu of curb and gutter storm drainage systems, where possible.
- If lighting is added to parking areas for safety reasons, lighting should be IDA (Dark Sky) certified to minimize impacts to neighbors and wildlife. Lighting should be on a timer and/or motion sensor to limit use to necessary periods.
- Restroom design and location should be studied and take into consideration the lack of sewer and water lines in the vicinity of the subject properties.
- Electrical service should be considered for all pavilion(s) constructed within the identified properties.
- Access should be provided to the Occoquan River for the purposes of paddling (canoeing, kayaking, paddleboarding). This access should be provided in a manner that does not degrade the riverbank or cultural resources. If provided, no wake zones should be posted and patrolled along the riverfront to ensure the safety of paddlers.
- Doves Landing - Programming opportunities that engage children while promoting environmental education are vital and should be implemented as soon as possible. These programs promote protection of the resource through a better understanding of the resource, which is a key goal for Doves Landing Park moving forward.
- Sinclair Mill - opportunities to use the existing residential structure for an administrative building/restroom should be evaluated. As appropriate, this building could potentially serve as a ranger station, paddle craft rental area, public restroom, or similar.

Resource-Specific Considerations

Ecological

- Doves Landing - Stream banks along Broad Run and the Occoquan River should be improved/enhanced with vegetation to slow erosion. Designated areas should be provided for bank fishing, ensuring areas are safe places to fish without damaging the resource protection area. Piers and/or small floating platforms should be considered (parallel to the streambank) to minimize degradation of bank fishing locations, as appropriate.
- Sinclair Mill - An appropriate area for bank fishing should be identified. Bank fishing should be restricted to specific location(s) to reduce impacts and degradation to the streambank.
- Doves Landing - Restoration of the wetland area along the Occoquan River frontage of the property should be considered a high priority. The health and diversity of the wetland is beneficial for several environmental/ecological reasons. Improvements to this wetland would also create programming and interpretative opportunities.
- Sensitive areas and areas within drainage ways are not recommended for development.
- Existing forest stands that serve as visual buffers to off-site uses should be preserved and maintained.
- Development in areas with larger trees and denser tree canopy should be limited.
- Opportunities to remove/eliminate invasive species during design/development and/or as part of a program plan, should be evaluated.
- Doves Landing - Forest management practices should consider the establishment of native meadows in areas with pine-dominant forest cover. The creation of meadow areas would enhance the ecological diversity of the site and potentially reduce the threat of fire when conditions are drier, given that pine-

dominant areas often create a greater amount of understory forest fuel as a result of downed limbs and dried needles.

- Doves Landing - In conjunction with the above forest management goals, evaluate opportunities to create overlooks and additional opportunities to view the river where there is a predominantly pine forest along the ridgeline that parallels the Occoquan River. Opening the canopy in these areas could enhance views of the planes that often fly over the property, as well as provide wider views of the river.

Cultural

- Additional cultural resource studies should be performed, as determined to be appropriate in areas of development. Cultural resource studies provide support to the interpretive program plans for the respective properties. As appropriate, Phase I archaeological and cultural resources surveys should be conducted.
- For the safety of visitors and the protection of the site's cultural and historical resources, protective/barrier fencing should be considered in areas where access is to be deterred.
- Given their relationship to each other, a cohesive interpretive program plan should be developed for both the Doves Landing and Sinclair Mill properties.
- Sinclair Mill - Use of the old mill race as a hand-carried/accessible launch location should be evaluated. The mill race currently appears to be the most suitable location for this amenity, but it should not be placed at this location at the expense of degrading the resource or its integrity.

VII. PROGRAM DEVELOPMENT

As a guide for identifying and addressing recreational needs within the county, DPRT updates its system-wide master plan every 10 years. The most recent update, the Prince William County Parks, Recreation & Open Space Master Plan, was adopted by the Board of County Supervisors in October 2020. This plan includes an overview of DPRT's 2019 Needs Assessment survey. Some of the broader needs that county residents have identified are a continued support and investment in existing park land, greater trail connectivity, and wider awareness for the park system. When it comes to specific facilities within a park, the needs assessment data shows that residents primarily desire more trails, walking and biking alike, with other needed facilities consisting of picnic shelters, waterfront parks, and historic properties. During the development of this Master Plan, the comments received from the public expressed similar preferences for the Doves Landing Park and Sinclair Mill properties, including improved trails, water access for fishing/boating, and preservation of environmental and cultural resources. Picnic areas and improved trail marking were also identified as needed upgrades, along with proper management and maintenance of all amenities. Placing the Doves Landing Park site under a conservation easement also generated a high response rate, but with the passive nature of the Natural/Cultural Resources Park designation, this type of easement would not significantly affect the program plan for the park.

The classification as a Natural/Cultural Resources Park allows for a primarily passive recreational program on each of the properties, with a limited amount of development and associated infrastructure. Below are the recreation activities that were ultimately selected for consideration within the larger park area, along with details of where each activity should be located on the respective properties based on the constraints analysis. It is noted that while tent camping received mixed reviews during this master plan process, it was considered in conjunction with the 2013 Master Plan for Doves Landing Park, and DPRT staff has elected to keep it as a possible future use in this Plan, but with the caveat that small primitive group camping to support service projects be provided rather than large family campsites. The following is a general overview

of how each of the planned program elements will fit into and enhance visitor experiences at each of the properties:

Trails – Trails are the most sought-after passive recreation amenity in the county. 72% of respondents to DPRT's 2019 Needs Assessment indicated that "walking and biking trails" were the most important facility for their household.

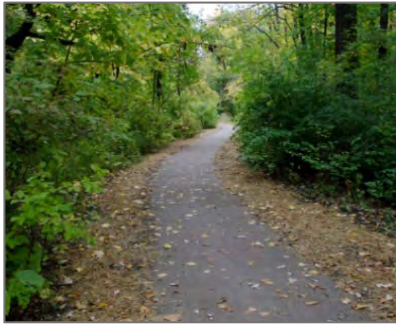
Doves Landing Park currently has an approximately 5-mile trail network and with the recent acreage addition, it can support additional trail opportunities. The existing trails are natural surface and a bit rugged, and currently most conducive to walking/hiking, even though they are also currently used to a limited extent by equestrians. Per this Master Plan it is recommended that the trail system in Doves Landing Park be enhanced to improve areas with drainage concerns and redesigned in areas where there are opportunities to support multimodal users, including mountain bikers and expanded opportunities for equestrians. Generally, DPRT allows pedestrians, equestrians, and mountain bikers to share park trails under a yield system, but with the space available within Doves Landing Park, additional consideration should be given to developing use-specific trails. In addition, it is important to note that while there is currently a continuous trail system around the perimeter of the park, not all of these trails fall within the park boundary. While it is possible to realign the trail to be entirely within the park boundary, DPRT fears that desired use patterns will make this an on-going maintenance and security concern. It is therefore recommended that DPRT continue to evaluate resolutions to this situation.

Overall, trails within the park should also be improved/aligned to take advantage of viewsheds and interpretive features both interior to the property and outward facing. In rapidly developing Prince William County, the opportunity to observe and experience a hardwood forest is declining. Trails that wind through the property will enable people to walk comfortably through the woods and enjoy the solitude that only a large stand of trees can provide. Along the paths, interpretative plaques can be used to illustrate unique features within the forest that otherwise may not be noticed. To maintain a level of solitude and protect the natural and cultural resources of the park, DPRT's policy of prohibiting motorized uses such as ATVs and motorbikes should be enforced at all properties. The amount of environmental degradation caused by these uses is not sustainable and not consistent with the objectives of a Natural/Cultural Resources Park.

At the Sinclair Mill/Long Branch parcels, trails will be constructed by the developer in accordance with the Preserve at Long Branch development proffers. These proffers call for approximately 2-miles of natural surface trail following Long Branch. The alignment of this trail was recently approved with the Preserve at Long Branch Section 1 site plan. A parking lot is being constructed with this trail network off the future Classic Springs Drive extension. DPRT will need to establish a parking area and trailhead at the Sinclair Mill property once it is conveyed. In the short term this trail should require minimal maintenance, given that it is to be constructed to County standards prior to being dedicated with the property. As with all County-park trails, motorized uses such as ATVs and motorbikes should be prohibited on this trail system with regular monitoring of trail users.

To improve opportunities for visitors with mobility limitations, wider accessible trail loops should also be constructed, and should start from and return to all primary parking areas. The County's parks system does not currently contain many facilities of this type, and accessible trail loops will allow all visitors easier access to a greater portion of each site. The recommended surface for this type of trail would be stabilized stone dust, as this surface type provides a natural aesthetic, with minimal maintenance, and satisfies the requirements for accessibility. Ultimately the preference would be to provide an accessible route to all

major features within the park and the level of accessibility should therefore be evaluated with each phase of development.



To enhance and expand the outdoor experience for trail users of all ages it is also recommended that trail design include supplemental features that provide navigation, shelter, and an increased level of play. At a minimum, these features should consist of kiosks with maps/QR codes at the trail entrances, revised signage throughout the system for easier navigation, and seating areas or benches at select intervals/locations, including some with overhead cover for instances when trail users get caught in inclement weather. Examples of accessible and supplemental trail features are provided in the photos above.

Picnicking – Picnic areas and shelters were the fifth most important facility for households, based on DPRT’s 2019 Needs Assessment survey.

Picnicking is a desired but limited passive recreation opportunity in this area of the county. Doves Landing Park offers the potential for a variety of picnic experiences ranging from primitive, which would consist of tables interspersed to mini shelters suitable for a single family, to medium shelters suitable for a small group. Large family-reunion style picnic shelters are not proposed. Shelters will be located adjacent to parking areas.

On the eastern side of Doves Landing Park, it is envisioned that there will be an accessible loop trail along which separate picnic nodes will be available for small groups or individual families. Each node will have a small or individual picnic shelter, and/or limited number of picnic tables, to limit the number of users within a given node. This will create more privacy within each node and minimize impacts.



Although picnicking is considered passive, picnic areas that are in close proximity to one another can negatively impact the natural area. Soil compaction, erosion, stress on the tree canopy, and loss of forest understory are some of the negative impacts. In defining and developing the picnic areas at Doves Landing Park, consideration should be given to mixing the size of individual shelters in the picnic loop area, dispersing some of the smallest picnic shelters throughout the park, and locating larger group shelters by themselves but in close proximity to parking. To address the environmental impacts over time, it may also be beneficial to



establish a small secondary picnic area or individual picnic sites for cyclical rotation. Cyclical rotation, which is similar to crop rotation in farming, minimizes the negative effects on the resource by giving the land time to recuperate from intensive use. Regardless of design, continued public education on the impacts of over-use and the care of park resources should be part of the program and management plans for the park. The photos in this section show examples of the more individualized picnic experiences that should be considered at Doves Landing Park. At Sinclair Mill picnic areas should be provided with the type and number (tables, pavilions, etc.) evaluated at the time of site plan.

Water Access – Boating and fishing access were the eighth most important facility per household, as identified on DPRT’s 2019 Needs Assessment survey.

DPRT’s Parks, Recreation & Open Space Master Plan identifies a need to increase water-based recreational access and/or opportunities along public waters in the County (Strategy 5.6) and specifically evaluate hand-carried boat launches at Doves Landing Park where the water depth is suitable (PPD 6, Page 75). This plan specifically references Doves Landing Park for this use and also identifies the need to evaluate and develop blueway (i.e. water trail) opportunities along Broad Run and the Occoquan River, specifically between DPRT’s Brentsville Courthouse property and Doves Landing Park.



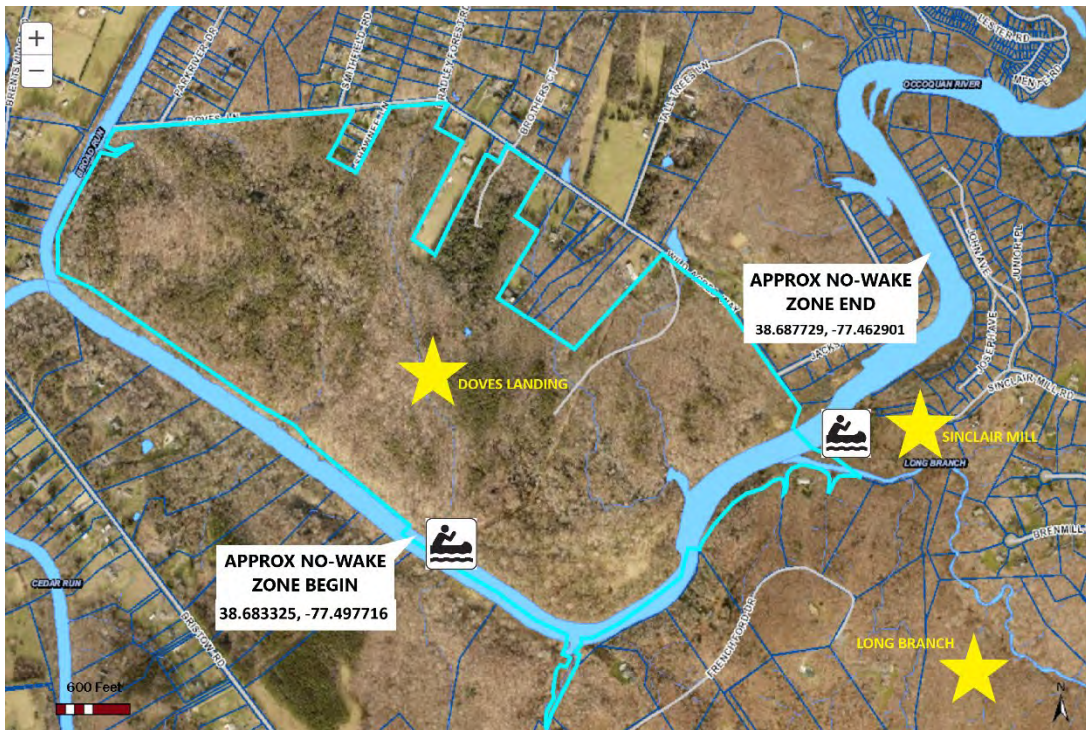
At Doves Landing Park the distance from the current parking lot to the most suitable water access point, is too long to be feasible. Given that it will be a challenge to establish this passive recreational opportunity without a closer access point to the water, consideration has been given to locating a parking lot interior to the property and closer to the water (and the southeastern portion of the park where the County owns land at the water’s edge). To minimize construction impacts on the park, the most suitable location for this access (and related parking) is the powerline corridor on the eastern side of the property. A put-in/take-out area will need to be designed for this location, and to the degree possible, an accessible launch should be considered.



At Sinclair Mill the best location for a put-in/take-out is anticipated to be near the old mill race. This area is the most level section on the property and the race creates a calm water area just off the main river channel. Overall, the Sinclair Mill site still requires additional analysis, however, given its history as a mill. The location of any amenities at this site should avoid impacts to the existing natural and cultural resources. The location of a launch at this property will also need to be designed in conjunction with the parking area to ensure that the distance for carrying paddle craft is not overly long or treacherous.

As identified, both properties border the Occoquan River at the confluence of Cedar Run and Broad Run. To the northeast, the Occoquan River becomes Lake Jackson, which is created by a dam near Route 234. The Occoquan River is currently used by motorboats and paddlers that primarily access the river at Lake Jackson. Public feedback during this master planning process identified concerns for boater safety given the water channel width, current motorboat speeds, and lack of enforcement on the waterway.

No Wake Zone – If water access is provided at either Doves Landing and/or Sinclair Mill, the area in the vicinity of the access should be posted as a No Wake Zone to warn boaters of the concerns and enforcement assistance should be sought as part of the management plan for the park and this specific use. The introduction of boating from County property should be supported by dedicated staff to enforce No Wake Zones and ensure boater safety. No Wake Zones requires boat operators to limit their speed to idle speed (a speed no greater than that which is necessary to maintain steerage and headway). The general location of the No Wake Zone is provided below. The County has the authority to establish a No Wake Zone with permission from the Department of Wildlife Resources. The request must be authorized by the Board of County Supervisors.



Fishing – Fishing is one of the easiest activities to accommodate where water access is available, but attention needs to be paid to protection of the shoreline/streambank, as intense use can cause degradation.

Given the waterfront location of both the Doves Landing Park and Sinclair Mill properties, the opportunity certainly exists to utilize portions of the shoreline at each site for fishing access. Fishing is an outdoor activity where there is very limited public access in Prince William County. More investigation will need to be undertaken to ensure that there are safe places along the bank to fish without adversely impacting the streambank. Access nodes should be disbursed along the shoreline to minimize degradation and, as appropriate, small fishing platforms should be considered as an option for protecting the shoreline.



At Doves Landing it is noted that a fair amount of the Occoquan River frontage is along the portion of the property that is not currently within the boundary of the park. With this, care should be given in locating fishing access points along the river and every attempt should be made to deter users from accessing private property for this activity. In support of this activity, DPRT staff should work with the Virginia Department of Game and Inland Fisheries to assess the condition of the Occoquan River and Broad Run and utilize this information as part of the interpretive/educational program for the park. The management plan for the park should also identify guidelines for addressing fishing regulations and enforcement.

Interpretation and Environmental Education – Well designed interpretive and environmental education programs allow individuals to explore issues, engage in problem-solving, and take action to improve the situation, and are a vital form of communication about park resources.

Both the Doves Landing Park and Sinclair Mill properties contain a multitude of resources that could form the basis for interpretive/ environmental education programs, some of which have already been mentioned. Interpretation and environmental education programs are some of the easiest to implement through signage or in-person programs. With the unique characteristics at each site, the respective program should identify key resources for natural, cultural, and historic interpretation. This information should be transformed into a variety of interpretive programs and environmental education initiatives, such as nature hikes, historical timelines, science-in-the-park programs, birding walks, and the like. Based on the cultural resource analysis undertaken with this Plan, there is also an opportunity to create a unique interpretive trail that connects the cultural sites within Doves Landing Park to those at Sinclair Mill, utilizing the old ford location to connect the properties. In the immediate future this could be achieved by utilizing boats to link the properties and their respective interpretive components, but in the long-term it might be beneficial to consider an actual pedestrian bridge to bridge the gap between the two sides of this large Natural/Cultural Resources Park.

The wetland area in Doves Landing Park also offers a multitude of interpretive and environmental education opportunities. With the proposal to locate a parking area and water access point more central to the park site, there is potential to also improve access to the wetland area. If the wetland is restored this would also offer opportunities to interpret the restoration of the wetland and the flora/fauna located therein. Overall, it is recommended that the wetland have a raised boardwalk trail (or similar) that improves accessibility without impacting the wetland vegetation and water flows in the area. A boardwalk could certainly be designed to include interpretive panels and be a destination for education programs. In conjunction with environmental education programming, consideration should also be given to establishing a location within the park for an outdoor classroom. DPRT hosts a science-in-the-park program at other park sites and Doves Landing Park would provide new opportunities to expand this program. The parking/access area close to the water would be most suitable for this outdoor classroom given its proximity to the waterfront and the wetland area, as well as a mix of forest types and inland trails.



Primitive Service-Related Camping - Tent camping within Doves Landing Park was a consideration of the 2013 Master Plan. Although camping has not yet been provided at Doves Landing Park, tent-only camping is a passive use that staff believes could be sustainably accommodated at the park with appropriate management and maintenance. Future opportunities to accommodate tent camping should therefore be evaluated once this plan has been fully implemented and the park has been fully operational for some time.

If provided, camping uses should be limited to small group tent camping programs with a focus on scout and service-based groups where campers assist with resource management activities in the park, in return for this experience. Service projects could include litter and debris pickup, stream cleanup, the removal of invasive plant communities, trail development and maintenance work, and other resource management-based projects on an as-needed basis. If this use can be accommodated without adverse impacts to the environment, options for changing to individual/family camping could then be explored at a later date.

If tent camping is offered, it should be contained to an area that can be monitored and patrolled. With this, the proposed picnic loop is the only location within the park that is recommended for tent camping. This portion of the park has site characteristics that would reduce site grading and the number of large trees removed during construction, and access control measures could more readily be integrated into the design of this area as part of a new access drive. The identified picnic loop could potentially be modified and used as a tent camping loop on a trial and/or intermittent basis. Again, group tent camping that is related to scout or service groups should be accommodated first, and individual/family tent



camping opportunities should only be provided once use levels are established and the ability to maintain and manage this use can be done successfully. To manage this use and minimize impacts, rotating use patterns should also be part of the management plan. Rotating use areas within the larger loop will help distribute and minimize the impact footprint. Tent camping at the Sinclair Mill and Long Branch parcels is not proposed in this Plan, given the site and use constraints of those parcels. With this, camping should be identified as a prohibited use in the management plans for those properties. The photo above is an example of the small-scale group tent camping use proposed with this Plan.

Restrooms – Permanent accessible restrooms are a necessity for all visitors and should be one of the first facilities provided with new park development.

In support of the programs proposed in this Plan, consideration must also be given to restroom facilities. Neither Doves Landing Park or the Sinclair Mill site are currently served by public water or sewer. Portable toilets are also not currently provided at Doves Landing Park. There is an existing single-family residence at the Sinclair Mill site that has a restroom, but it is served by well and septic and capacity would obviously need to be evaluated as part of a development plan for the site. Portable restrooms are always an option but should only be considered for short-term use given that they require regular servicing and are generally undesirable.



Prefabricated restrooms that are utility-independent should be considered for placement at both Doves Landing and Sinclair Mill, preferably near all main parking areas. In these locations these restrooms would be accessible to all visitors, and likely serve all identified park programs, particularly those of a longer duration. While public water and sewer are preferred, they may never become available. There are several designs of prefabricated utility-independent restrooms that would be compatible with DPRT's vision for a Natural/Cultural Resources Park. Overall, the addition of restrooms is a high priority and should be one the first facilities installed at either site when funding becomes available. The picture within above is an example of a prefabricated utility-independent restroom in a remote location.

VIII. RESOURCE MANAGEMENT

As this Master Plan is implemented, resource management will be key for balancing the new amenities and use patterns. Site sustainability is vital to the health of the resources and a management plan for these resources should be developed. The following sections are derived from management goals and objectives identified in the 2013 Master Plan for Doves Landing Park and are still considered applicable today. These management goals should be reviewed in conjunction with all future development proposals so that any development, as well as the use that follows, has the least impact on the site's resources.

Forest Management

A forest management program consists of various practices designed to enhance the existing vegetation and provide a hospitable habitat for the regeneration and development of new vegetation. The forest is a dynamic entity, slowly developing over centuries and gradually changing from one type of dominant vegetation to another. Due to the influence of humans, this process has been radically altered, so that most forests today bear little resemblance to the vast forests that once covered the entire eastern seaboard. Many species of native forest plants are rare today due to the degradation of the habitats they once flourished within. The forest management goals for this Natural/Cultural Resources Park should be directed at highlighting and using as an asset, all of the native vegetation on site. Undesirable, invasive plants, such as Japanese honeysuckle, should be targeted for removal while native species, such as Virginia Creeper, should be allowed to grow. In this way the forest moves towards the condition that nature would have created in its own time.

The importance of the forest to this site as a whole cannot be overstated. One look at the Master Plan illustrates how the forest is used not only as a program element, but also to define activity nodes. An attempt was made to limit tree removal and guide development toward areas that were historically most recently cleared on the respective properties. The forest management goals should ensure that proper views and screening remain viable. Not only should tree stands be used to frame viewsheds, select stands – particularly around the perimeter of each property – should also be retained and supplemented to screen adjoining properties and less desirable views. Overall, implementation of forest management goals will make the experience of being in the forest more enjoyable.

In rapidly developing Prince William County, the opportunity to observe and experience a hardwood forest is declining. Paths that wind through the property enable people to walk comfortably through the woods and enjoy the solitude that only a large stand of trees can provide. Along the paths, interpretative plaques should be used to illustrate unique features within the forest that otherwise may not be noticed. Educational programs should also be developed using these resources so that the programs appeal to both school children and adults. The practice of forest management itself could be a focus of environmental education, particularly on the Doves Landing side of the park. For instance, selective cutting may be used to remove less desirable, invasive, or diseased trees and other vegetation from the forest. Many people are not aware that thinning a stand of trees in such a way is beneficial to the vigor of the forest. A program could be initiated that would explain this and other similar forest management practices. Just as the forest changes and adapts over time, so too should the programs designed to educate park visitors about those changes.

As part of a forest management program consideration should also be given to the establishment of managed meadows. Although the Doves Landing Park site is 95% forested, a significant portion of the land has recently begun forest succession. These areas are dominated by young cedar and pine trees that often

break in high winds and create their own set of management concerns. The establishment of meadows in these areas would provide more diverse habitat, additional passive recreation, and environmental education opportunities, and potentially reduce areas with poor forest health. This would be particularly beneficial on the west side of the property, where a pine stand could be converted to a meadow that could ultimately be used as a destination for viewing the river from an elevated location and/or viewing planes flying to and from Manassas Airport.

Each of the properties that are to be part of this larger Natural/Cultural Resources Park are fortunate to have forests worth managing. The forest cover and type on each property have essentially guided the program plans and development areas proposed for each parcel. Through proper management, the forests can remain viable and also accommodate the passive recreation uses considered in this Plan. It is recommended that forest management be considered as part of any site development plans, so that forest resources around the more intense activity nodes are considered in conjunction with the design and future maintenance of those areas.

Natural and Cultural Resource Protection

The setting of Doves Landing Park is unique due to the blending of the site's natural and cultural resources. The same holds true for the Sinclair Mill and Long Branch parcels. As a Natural/Cultural Resources Park it will be imperative to preserve the natural and cultural resources of the site in balance with public use of the respective properties. All uses should therefore be passive in nature and limit impacts to environmentally sensitive areas. In addition, additional natural and cultural resource studies should be undertaken, particularly on the newly acquired parcels within Doves Landing Park and at the Sinclair Mill site. These studies will assist in identifying resources that should be preserved and protected and should be undertaken prior to or in association with any development plans on the respective properties.

The trail network that currently exists inside the Doves Landing Park property should continue to be maintained and utilized for the purpose of passive recreation (i.e. hiking, bird watching). Areas of erosion within the existing trail network should be identified and addressed. Water crossings should be established at all perennial and intermittent streams to concentrate use and impact along trails. Water crossings currently do not exist in most areas resulting in braided trail networks at stream crossings. Once crossings are established, these areas should be restored with native plantings to prevent continued bank erosion. The trail network should continue to be shared-use, open to hikers, equestrians, and mountain bikers. If use conflicts arise, or erosion issues develop due to a specific use, the shared-use nature of the trails should be re-evaluated and separate trail networks considered. All trails should be closed to motorized vehicles and the current use of the park by ATV/motorbike users should be monitored and patrolled. This use has occurred over several year – particularly within Doves Landing Park – and enforcement is likely needed to fully curb this activity, particularly in the area of the park that was most recently acquired by the County. Without appropriate signage along the property boundary, some users may not yet be aware that this area is now County-owned, so marking the property boundary is a first step in stopping this activity, with monitoring and enforcement of these rules being equally as important.

At the Doves Landing Park site, it is not recommended at this time to provide public access to the homestead and cemetery sites. Providing this access should be evaluated after use patterns are better established and there is more monitoring of uses occurring on the property. Access to these areas would provide interpretive opportunities, but that cannot occur at the expense of the resource. If public access is eventually proposed, protective fencing should be installed for both the safety of the visitors and the safety

and protection of the resources. On the Sinclair Mill property access to the resources is vital to the interpretation of the site. Again, however, this access cannot be provided at the detriment of the resource, so design considerations will need to be identified as to how best to interpret and protect the resource with increased levels of site use/public access.

Prior to the development of any new facilities on any of the properties, a Phase I archaeological and cultural resources survey should be undertaken by the County, with no further development taking place until such surveys are complete. Phase I surveys have not been completed for most of Doves Landing Park, or the Sinclair Mill/Long Branch parcels. These surveys are needed to more clearly identify the resources which will require protection and guide development decisions. The surveys will also help identify cultural resources that should be the focus of future interpretive programs and related facilities.

IX. FINAL MASTER PLAN

The Final Master Plan map is the result of the analysis and recommendations contained in this document as well as the feedback received from the community during this process. The final maps for the Doves Landing Park and Sinclair Mill/Long Branch sections are included in Appendix B. While there are several aspects of the master plan that will ultimately need to be addressed through the future operations and management procedures for the park, the location and mix of identified uses generally constitute the future master plan with regard to park development.

In the final plan, an attempt was made to limit the development of new facilities to select areas on the property, with a concerted effort to avoid areas with more significant forest cover and/or natural or cultural resources. The final plan(s) also attempt to balance the restoration and enhancement of existing facilities with the development of new facilities. Again, the overall goal of this plan is to create a premier Natural/Cultural Resources Park for county residents that provides a variety of passive outdoor recreation activities in balance with natural/cultural resource management. Overall, the highlights of the Master Plan for each sub-area are as follows:

Doves Landing Park

- Additional access and trailheads, including improved maintenance access to the interior of the park.
- Accessible nature trails that will expand outdoor access for visitors with mobility impairments.
- A picnic loop that provides secluded/individual picnic nodes; walk-in access with separated parking.
- An outdoor classroom space to support environmental education programs.
- An accessible wetlands boardwalk/elevated walkway with interpretive features.
- Trail enhancements to include interpretive features and nature-based play features.
- A pavilion at each of the primary trailheads for shelter during inclement weather and small group functions/outdoor classroom.
- Public water access for hand-carried paddle craft and stream fishing.
- Potential meadow areas where stands of pine create management and maintenance hazards.
- Potential future small-group tent camping nodes – to overlap with picnic nodes if determined to be suitable at this site.
- Utility-independent restrooms at primary trailheads.

Sinclair Mill/Long Branch

- New historic site with several interpretive features (mill race, ford, civil war earthworks, etc).
- Public water access for hand-carried paddle craft and stream fishing.

- New 2-mile Long Branch recreational trail – from Sinclair Mill to and past Classic Springs Drive.
- Small picnic pavilion to provide shelter during inclement weather and prep space for pre- and post-paddling outings.
- Restroom (type to be determined).
- Potential paddle craft rental facility.
- Potential future pedestrian bridge connection to Doves Landing Park in the location of the historic ford.

X. IMPLEMENTATION/FINAL RECOMMENDATIONS

After adoption this Master Plan will move into the implementation phase. In the implementation phase, the next steps will be to conduct any additional analysis that may be needed prior to beginning design and engineering of any new facilities. The Board of County Supervisors has already allocated \$2.4 million for improvements to the Doves Landing Park property, so DPRT will now begin to prioritize that work and develop a phased implementation plan based on this available budget. Any facilities not constructed with the current funding will be prioritized and developed in phases, as future budgets allow. To recap, these are some of the considerations that need to be addressed as this Plan moves into the implementation phase:

- Accept the dedication of the Sinclair Mill and Long Branch parcels in accordance with the proffer stipulations.
- Recommend that the Board of County Supervisors consider placing a conservation easement on the Doves Landing Park property to preserve this site for passive recreational uses. A conservation easement would comport with the conservation easements required (per the proffers) for the Sinclair Mill and Long Branch parcels, creating a contiguous tract of protected land, as well as align with the following Recreation and Natural/Cultural Resource goals in the Park's Chapter of the County's Comprehensive Plan:
 - REC 1.6: Seek to preserve/protect lands adjacent to the County's blueways.
 - NCR 1.1: Inventory and map current park land holdings to identify rare and sensitive natural or cultural resources and identify means to preserve and protect these areas on park land.
 - NCR 1.3: Where appropriate, develop park management plans that include measures to survey and protect cultural resources on County park land.
- Conduct a Phase I study of parcels on which such a survey has not yet been completed.
- Conduct more in-depth constraints analysis in areas where development is proposed.
- Mark the property boundaries and post signs to inform users of the non-motorized restrictions on trails; monitor and enforce any illegal activities.
- Evaluate access concerns and conduct a traffic impact analysis to identify any needed roadway improvements leading to the park's entrances. Also evaluate methods to prohibit access to the properties after normal operating hours.
- Develop a maintenance plan for each site (particularly the Sinclair Mill and Long Branch parcels), including a budget that aligns with the phased implementation of facilities.
- Develop standard operating procedures for the Doves Landing and Sinclair Mill areas of this new larger park and identify staffing needs, including park rangers.
- Consolidate all parcels (Doves Landing, Sinclair Mill, and Long Branch) into a single parcel.

DPRT will conduct additional community outreach during the design phase of the project to address specific concerns shared during this master plan process.

Moving forward it is also noted that full implementation of this plan should include adequate operating expenses for maintaining and staffing the park. This should occur in conjunction with site development, given that the amenities proposed in this plan will be implemented in phases and as funding allows. Additional staff should include, but not limited to:

Staffing	
	FTEs
Grounds Maintenance Technician	1
Grounds Maintenance Worker	2.5
Facility Maintenance Specialist	0.5
Park Ranger	1
Sr Park Ranger	1
Recreation Supervisor	1
Recreation Technician	0.5
Total	7.5

XI. CONCLUSION

It cannot be stressed enough the unique opportunities that will be provided by creating this 500-acre Natural/Cultural Resources Park in the center of the County. This Plan not only assists in preserving this acreage for passive recreational uses it also sets up measures for protecting and preserving the natural and cultural resources of these parcels. With the on-going development pressures and increased population growth occurring in Prince William County, preserving lands for passive recreation and environmental protection are even more important for the health and well-being of the county's residents. Having 500 acres of essentially undisturbed waterfront forest that is available for hiking, biking, fishing, and paddling, creates a respite for residents to enjoy the outdoors. In turn, through proper management of the site, the site's flora and fauna can flourish, and through interpretive programs residents can establish a connection to the landscape and the county's history.

APPENDIX A
REGIONAL CONTEXT MAP

DOVES LANDING PARK

REGIONAL CONTEXT MAP
SCALE: 1" = 688'
MARCH 23, 2022



APPENDIX B

SITE INVENTORY/ANALYSIS MAPS

- LEGEND**
- PROPERTY BOUNDARY
 - STREAMS
 - CONTOURS (10 FT.)
 - PREDICTIVE WETLANDS
 - RESOURCE PROTECTION AREA (RPA)
 - FEMA FLOODPLAIN
 - APPROXIMATE OLD GROWTH FOREST
 - AIRPORT BUFFERS
 - POWER LINE
 - TRAIL HEAD
 - MEWSHED
 - PARKING
 - PEDESTRIAN BRIDGE
 - EXISTING TRAILS
 - FUTURE COUNTY GREENWAY TRAIL
- HISTORIC LOCATIONS**
- 1 GOODWIN FARMSTEAD
 - 2 FORD OVER BROAD RUN
 - 3 OLD BRIDGE ABUTMENT
 - 4 SINCLAIR MILL & FORD
 - 5 LOG CABIN SITE
 - 6 MILL RACE
 - 7 POSSIBLE GOLD MINE
 - 8 POSSIBLE CIVIL WAR EARTHWORKS & PICKET POST

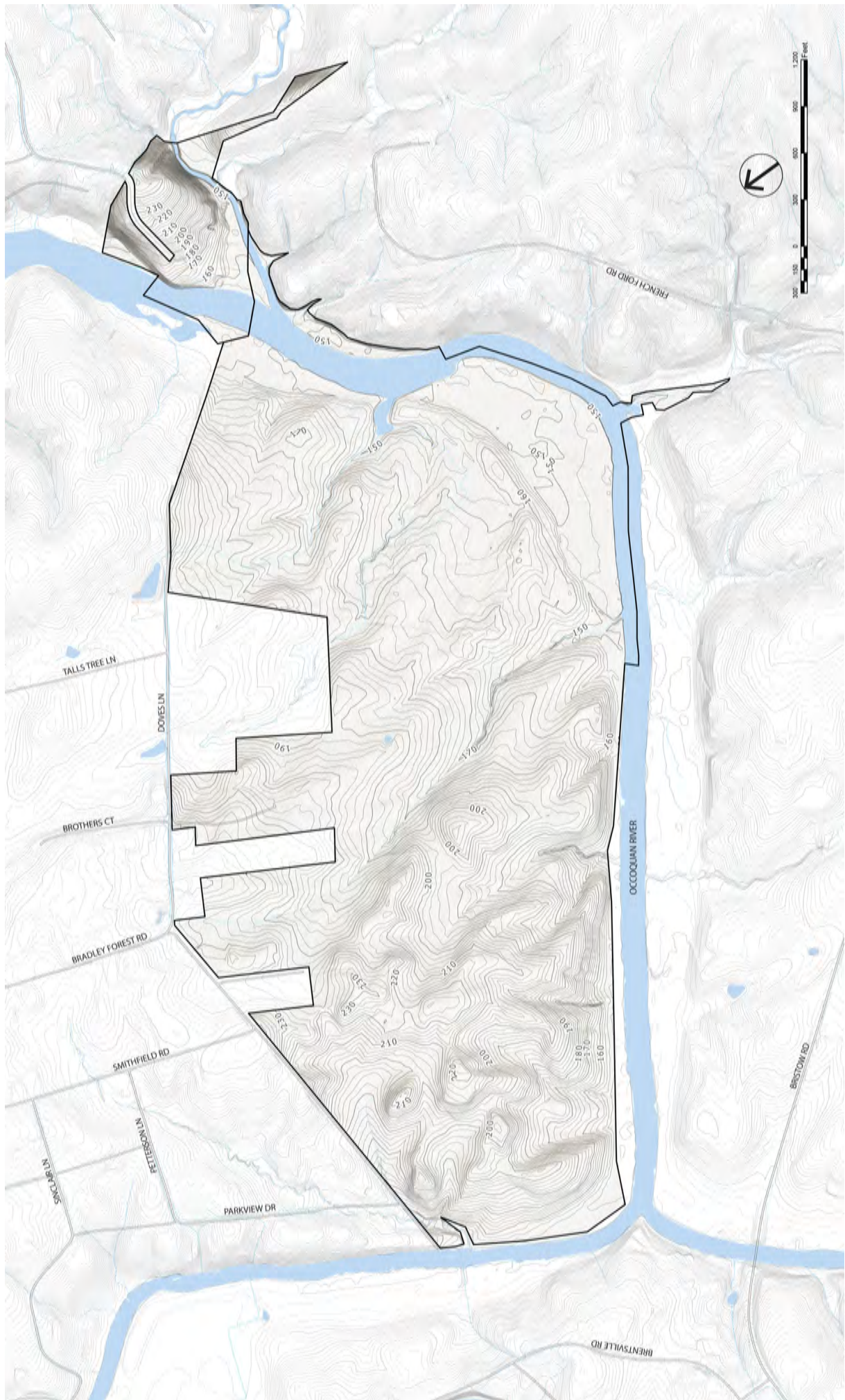
DOVES LANDING PARK

SITE ANALYSIS

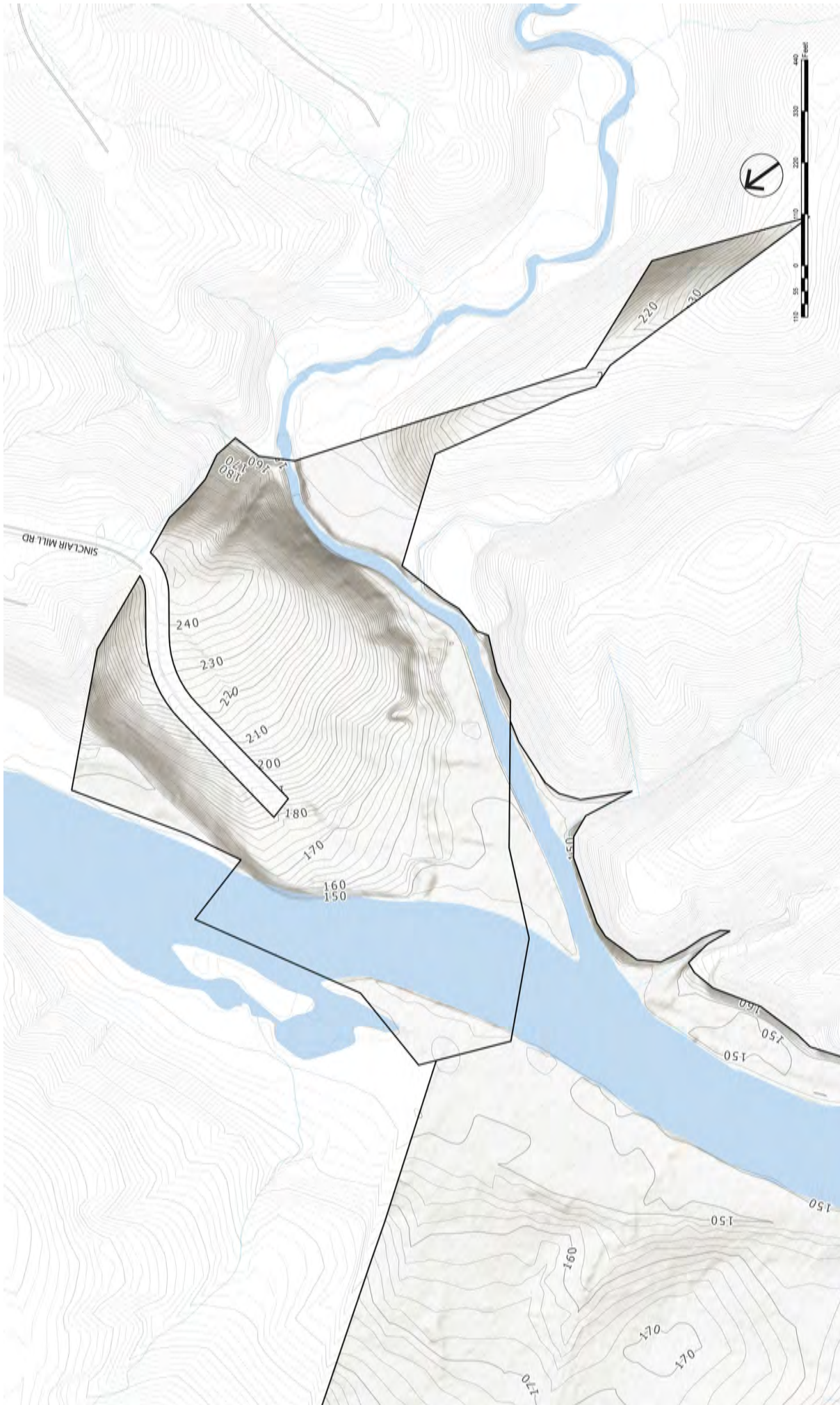
SCALE: 1" = 300'
APRIL 15, 2022



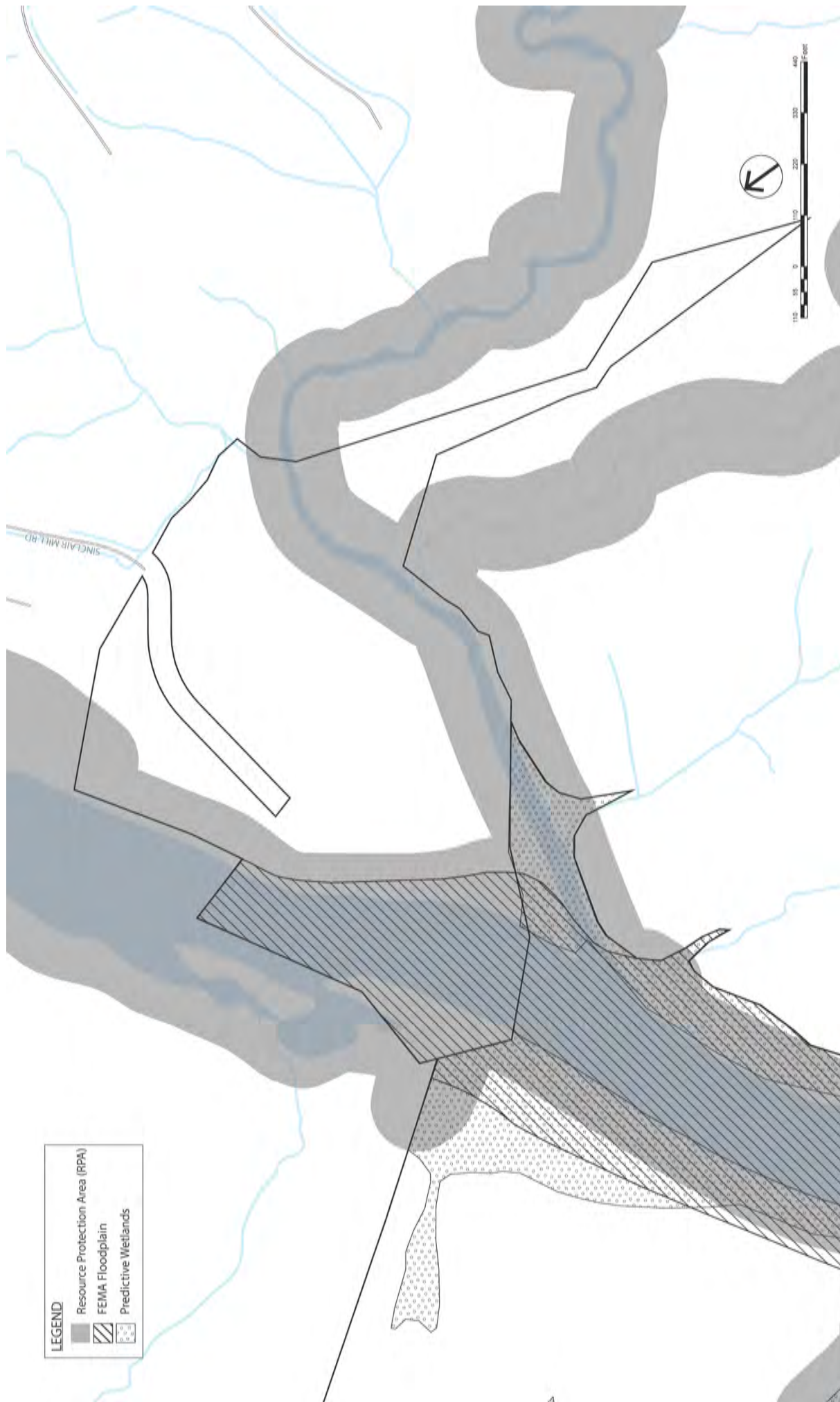

DOVES LANDING PARK - Topography Map



SINCLAIR MILLS - Topography Map



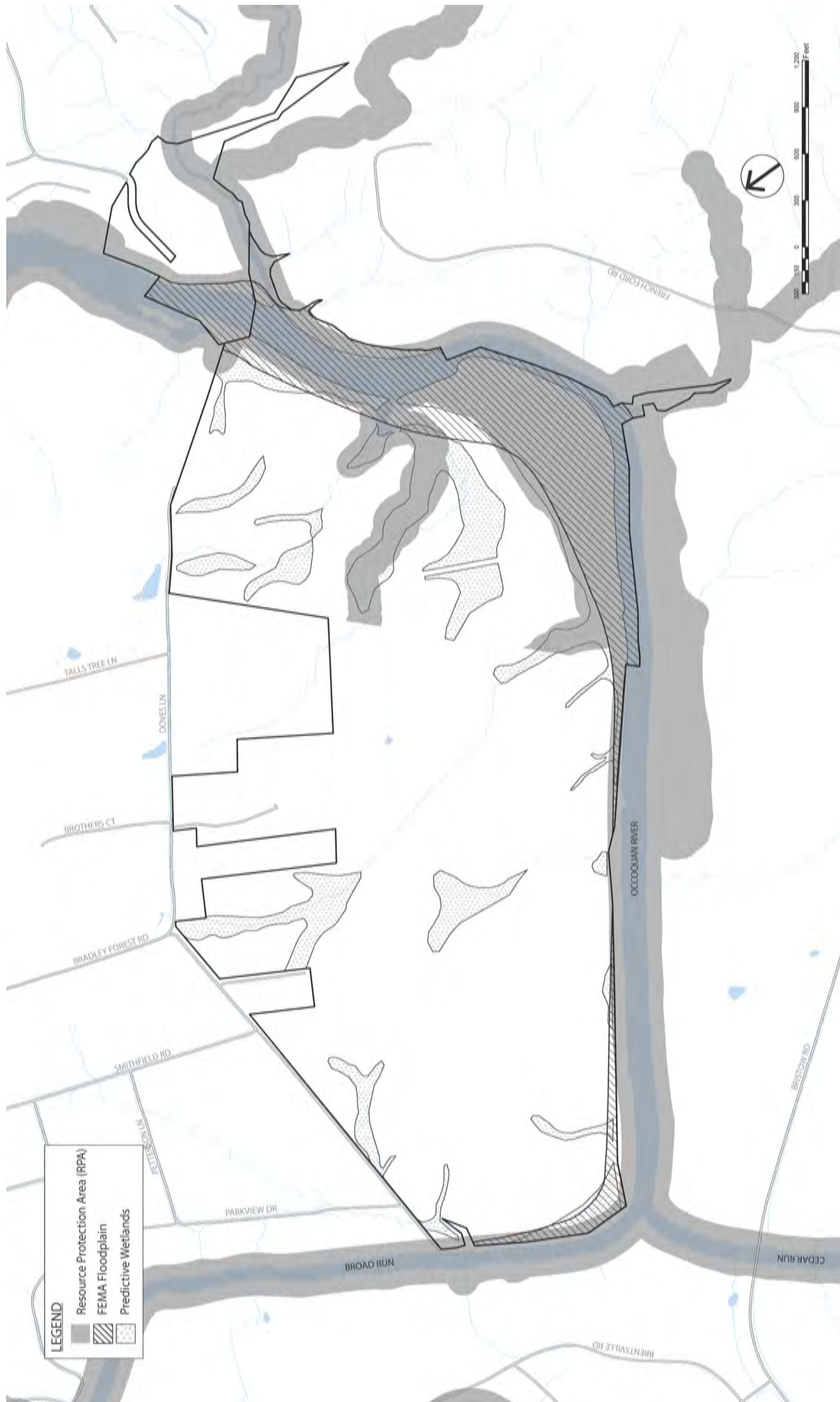
SINCLAIR MILLS - Soils Map



SINCLAIR MILLS - Soils Map



DOVES LANDING PARK - Hydrology Map



DOVES LANDING PARK - Soils Map



Doves Landing Park Soils

Map Unit Symbol	Map Unit	Acres in AOI	Percent of AOI
1A	Aden silt loam, 0 to 2 percent slopes	1.4	0.40%
3A	Albano silt loam, 0 to 4 percent slopes	4.6	1.50%
4B	Arcola silt loam, 2 to 7 percent slopes	4.8	1.60%
5C	Arcola-Nestoria complex, 7 to 15 percent slopes	5.9	1.90%
5D	Arcola-Nestoria complex, 15 to 25 percent slopes	2.1	0.70%
7A	Bermudian silt loam, 0 to 2 percent slopes	29.1	9.40%
8C	Braddock loam, 7 to 15 percent slopes	12.3	4.00%
9B	Brentsville sandy loam, 2 to 7 percent slopes	0.2	0.10%
9C	Brentsville sandy loam, 7 to 15 percent slopes	66.4	21.50%
11B	Calverton silt loam, 0 to 7 percent slopes	78	25.20%
14A	Codorus loam, 0 to 2 percent slopes	2.2	0.70%
19B	Elioak loam, 2 to 7 percent slopes	0.1	0.00%
19C	Elioak loam, 7 to 15 percent slopes	0	0.00%
20B	Elsinboro sandy loam, 2 to 7 percent slopes	8.9	2.90%
23C	Gaila sandy loam, 7 to 15 percent slopes	0.9	0.30%
24C	Glenelg-Buckhall complex, 7 to 15 percent slopes	2	0.60%
27A	Hatboro-Codorus complex, 0 to 2 percent slopes	0.6	0.20%
35B	Manassas silt loam, 2 to 7 percent slopes	39.6	12.80%
38B	Meadowville loam, 0 to 5 percent slopes	4.1	1.30%
43E	Nestoria gravelly silt loam, 25 to 50 percent slopes	0.1	0.00%
46B	Panorama silt loam, 2 to 7 percent slopes	17.8	5.80%
46C	Panorama silt loam, 7 to 15 percent slopes	2.8	0.90%
49A	Rowland silt loam, 0 to 2 percent slopes	13.4	4.40%
51E	Stumptown very flaggy loam, 25 to 50 percent slopes	1.4	0.50%
W	Water	10.2	3.30%
Totals for Park Area		308.9	100.00%

Sinclair Mill Soils

Map Unit Symbol	Map Unit	Acres in AOI	Percent of AOI
7A	Bermudian silt loam, 0 to 2 percent slopes	1.0	5.0%
14A	Codorus loam, 0 to 2 percent slopes	2.0	10.0%
19C	Elioak loam, 7 to 15 percent slopes	2.7	13.5%
38B	Meadowville loam, 0 to 5 percent slopes	0.8	4.0%
44D	Occoquan sandy loam, 7 to 25 percent slopes	5.7	28.5%
49A	Rowland silt loam, 0 to 2 percent slopes	0.6	3.0%
50D	Spriggs silt loam, 15 to 25 percent slopes	0.7	3.5%
51E	Stumptown very flaggy loam, 25 to 50 percent slopes	4.0	20.0%
W	Water	2.5	12.5%
Totals for Park Area		20.0	100.0%

APPENDIX C

MASTER PLAN MAPS

LEGEND

- PROPERTY BOUNDARY
- STREAMS
- CONTOURS (10 FT)
- WETLAND RESTORATION
- PROPOSED ROADWAY
- TRAIL HEAD
- VIEWSHED
- PARKING
- PEDESTRIAN BRIDGE
- SHELTER
- RESTROOMS
- CANOE, KAYAK LAUNCH
- FISHING SITE
- EXISTING TRAIL
- PROPOSED TRAIL
- PROPOSED ACCESSIBLE TRAIL
- PROPOSED COUNTY GREENWAY TRAIL
- PROPOSED COUNTY BLUEWAY TRAIL
- RAISED PATHWAY
- FUTURE PROFFERED TRAIL (OFFSITE)

HISTORIC LOCATIONS

- Ⓐ GOODWIN FARMSTEAD
- Ⓑ FORD OVER BROAD RUN
- Ⓒ OLD BRIDGE ABUTMENT
- Ⓓ SINCLAIR MILL & FORD (FUTURE KAYAK LAUNCH)

AMENITIES

- ① EMERGENCY MAINTENANCE ACCESS ROAD
- ② WETLAND TRAIL

NOTES

- POTENTIAL PEDESTRIAN CROSSING FROM DOVES TO SINCLAIR WILL ALLOW BOAT TRAFFIC UNDERNEATH

DOVES LANDING PARK MASTER PLAN

SCALE: 1" = 200'
SEPTEMBER 1, 2022

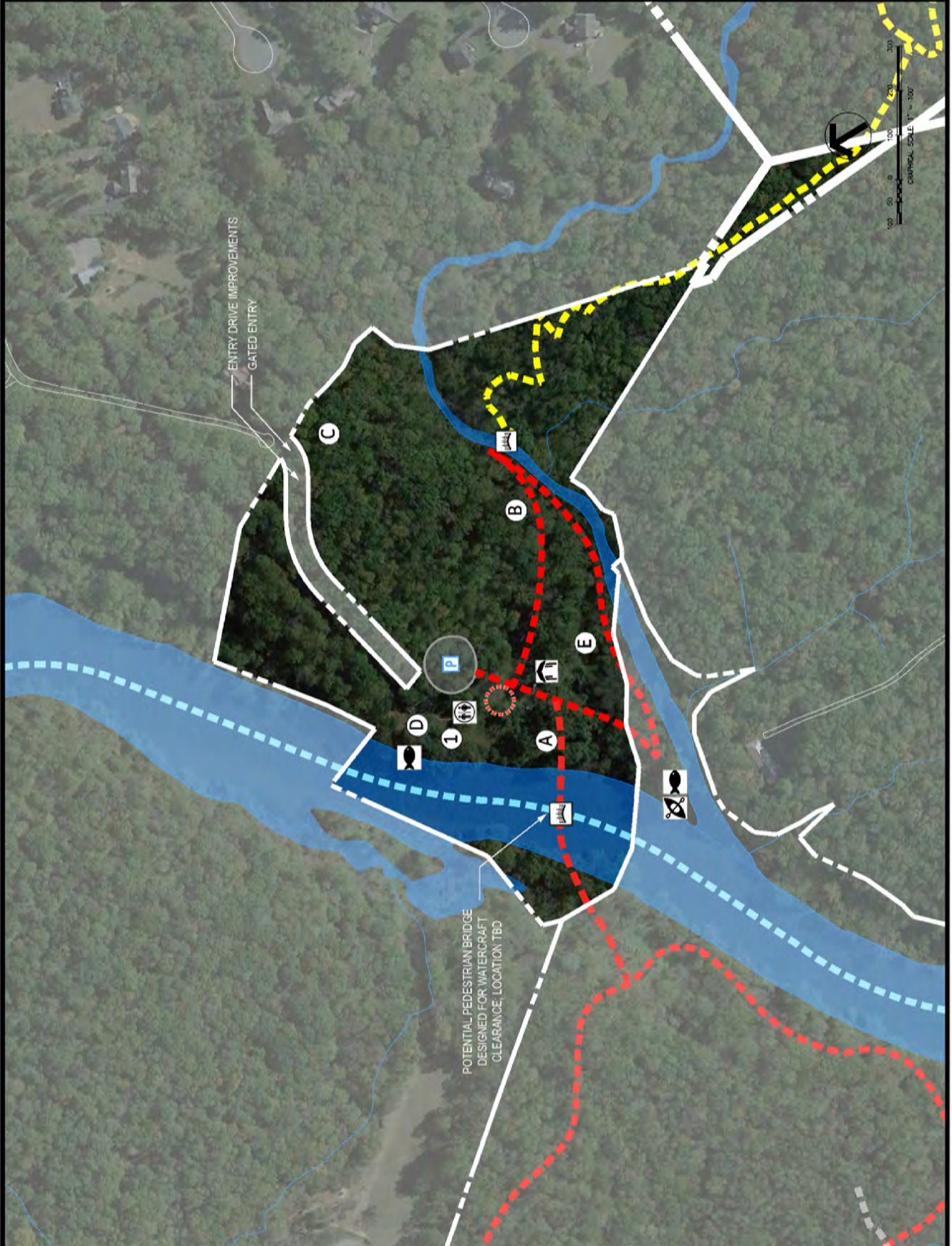


LEGEND

- PROPERTY BOUNDARY
- STREAMS
- CONTOURS (10 FT.)
- PROPOSED ROADWAY
- TRAIL HEAD
- PARKING
- PEDESTRIAN BRIDGE
- SHELTER
- RESTROOMS
- CANOE/KAYAK LAUNCH
- EXISTING TRAIL
- PROPOSED TRAIL
- FUTURE PROFFERED TRAIL (OFFSITE)
- PROPOSED COUNTY BLUEWAY TRAIL

- HISTORIC LOCATIONS**
- A SINCLAIR MILL & FORD
 - B POSSIBLE GOLD MINE
 - C POSS. CIVIL WAR EARTHWORKS & PICKET POST
 - D LOG CABIN SITE
 - E MILL RACE
- AMENITIES**
- 1 ADMINISTRATION BUILDING/BOAT RENTALS

SINCLAIR MILL SITE MASTER PLAN
 SCALE: 1" = 300'
 JULY 11, 2022



APPENDIX D

2013 Doves Landing Master Plan

**MASTER PLAN REPORT
DOVES LANDING
PRINCE WILLIAM COUNTY, VA**



Coles Magisterial District
Prince William County, Virginia

OUTLINE

- I. Project History/Background
- II. Project Objectives
- III. The Master Plan Process
- IV. Site Inventory/Analysis
 - Land Use/Comprehensive Plan
 - Viewsheds
 - Forest
 - Flora/fauna
 - Existing Utilities
 - Hydrology
 - Topography
 - Soils/Geology
 - Cultural Resources
- V. Site Development Constraints
 - Sensitive Environmental Areas
 - Habitat inventory
 - Wetlands
 - Flood plains
 - Historic Significance Areas
 - Potential Development Areas
- VI. Program Development
 - Citizen Input
 - Program Uses
- VII. Development Concept Plans
 - Concept Plan (A)
 - Concept Plan (B)
 - Concept Plan (C)
 - Citizen Meetings
- VIII. Master Site Development Plan
 - Plan Recommendations
 - Watershed Management
 - Forest Management
 - Cultural Landscape
 - Archeological Resources
 - Site Development
 - Phasing
- IX. Conclusion

I. PROJECT HISTORY/BACKGROUND

This master plan proposal is consistent with the current Parks and Open Space Chapter of the Comprehensive Plan. The development of Doves Landing as a passive recreational natural area offers a unique opportunity to fulfill the County's goals to provide a countywide system of well-maintained and managed parks. This will allow the County to continue to strike the balance between development and infrastructure needs with the protection and conservation of land and historic sites. Open space and outdoor experiences provide a greater quality of life for our citizens. In addition, open space and corridors help

- protect stream water quality including sources of drinking water
- provide food, water and habitat for wildlife
- minimize environmental damage from development
- conserve natural and cultural resources
- provide outdoor opportunities for the community

A network of trails offers users a chance to safely and confidently experience the outdoors by providing a well-marked path to follow. The user can explore natural, historic and cultural resources. Trails can connect parks and natural areas to other areas of interest. By promoting and highlighting all the available trails, whether maintained by the County or others, the County can advise the community about the full range of hiking experiences and the opportunity to access various destinations in Prince William County.

II. PROJECT OBJECTIVES

The objective of the Master Plan is to establish a physical plan that addresses the long term preservation, use and protection of Doves Landing. This Master Plan is based upon an analysis of the site's physical capacities, the market that it serves and the needs and desires of the citizens of Prince William County.

As a vehicle by which the project objectives are achieved, the Master Plan plays a critical role in the long term success of the project. As a road map, it will guide use and development of Doves Landing. The decision making process used in the Master Plan process allows the concepts of the project objectives to be translated into physical reality.

This proposal for the management of the Dove's Landing property is based on the mission of protection of natural and cultural resources. The stewardship mission of the County will be the guiding factor in all decisions regarding the site and all planned and proposed activities. The passive recreation footprint will be limited in scope and focused on the areas of historical use and existing facilities. The County's cultural resource ethic will be a component of the management of Dove's Landing.

III. THE MASTER PLAN PROCESS

The Master Plan Process for Doves Landing has been broken down into five phases:

- Site Analysis Phase
- Site Development/Constraints Phase
- Program Development Phase
- Conceptual Development Phase
- Master Plan Development

IV. SITE INVENTORY ANALYSIS

The Site Inventory/Analysis for Doves Landing includes an evaluation of the 234+ acre parcel that comprises the County owned property.

LAND USE/COMPREHENSIVE PLAN

The land uses and zoning that surround Doves Landing have changed significantly on the past 270 years. The most drastic changes have occurred within the past 50 years. Prior to the late 1950's most of Prince William County was comprised of small farms and undeveloped land. The second half of the twentieth century has seen thousands of new homes and businesses constructed in the County. The Coles District, in which Doves Landing sits, continues to evoke a more rural context within the County. The land use around Doves Landing consists of private residences.

Today Doves Landing and its 234+ acres remain undisturbed from recent development. The County Comprehensive Land Use Plan was recently amended to identify the land that contains Doves Landing as Parks/Open Space. This designation has recently changed from governmental. The County acquired the parcels through the settlement of two court actions regarding the development of the parcels. In 1986, Omni Homes, Inc. (Omni) executed a contract to purchase a 72.68-acre parcel of unimproved land located in Prince William County and, in 1989, bought the parcel for \$436,091. The property was zoned R-10, urban residential development, and Omni proposed to develop the land as Doves Landing subdivision with 106 residential lots. The property was located adjacent to an undeveloped 188-acre parcel owned by Doves Landing Associates (DLA). DLA planned to develop its property as Doves Overlook subdivision with approximately 405 residential lots. Prince William County, objected to adding a three mile extension to the water and sewer service for the Doves Overlook property. On October 6, 1993 the ensuing litigation was settled by a consent decree, in which the County paid DLA \$3.7 million for Doves Overlook under a three-year lease/purchase agreement.

Omni Homes brought suit against the County as the development of Doves Landing was predicated on the development of Doves Overlook. In 1997, at the conclusion of the legal process, the Virginia Supreme Court ruled in favor of Prince William County. The County then acquired the second parcel which comprises Doves Landing.

In 2013, a Comprehensive Plan Amendment was approved by the Board of county Supervisors that changed the land use designation from Public Lands to Parks and Open Space. The Parks, Open Space and Trails Chapter of the Comprehensive Plan includes the goal to protect and preserve environmentally sensitive land, habitat connectivity, and water resources, and areas of archaeological, historical and/or cultural significance; and to provide opportunities for residents, workers and visitors to pursue leisure activities in safe, accessible, and enjoyable parks and community recreational facilities.

VIEWSHEDS

The Doves Landing property's is comprised of wetlands, forest, and waterfront. This provides for views of the Occoquan River as well as Broad and Cedar Runs. The adjacent properties are single family homes and are only visible from the property line. There are a number of residential houses visible from the trail along the Occoquan River. These houses are located in the rural area of the County and do not negatively impact the property.

The importance of maintaining vegetative buffers in critical areas along the perimeter of the property is a key to maintaining the natural beauty of the Doves Landing property as well as acting as a buffer for adjacent landowner

FOREST

The Doves Landing site has changed during its two hundred and seventy year history, as has most of Prince William County. The forest that is visible today is the result of land use changes that have occurred within the past fifty to sixty years. Changing from a rural area of small farms to vacant land, the farms that once occupied the hillsides and bottomland along the Occoquan River are gone. These areas have been replaced with a forest cover of varying age and succession.

Today, the Doves Landing property is covered with forests that comprise approximately 95 percent of the land area. The forest area within the current two hundred and sixty acre parcel has increased since farming operations ended thirty to forty years ago. There are three dominant forest types on the property. Acidic Oak Forest, Mesic Mixed Hardwood, Piedmont Floodplain Forest.

Acidic Oak Hickory Forest comprises a significant portion of the property. The overall vegetation condition is fair. This stand is heavily oak dominant, is likely 40 to 60 years old and shows moderate soil disturbance resulting in relatively low invasive cover and moderate species diversity. It is likely that this site was cut over in the mid to late 20th century and either went through succession from old field and pine-cedar forest or was deciduous forest prior to cut over (given the moderate diversity of this stand while the stand immediately to the north and east was heavily disturbed and has very low species diversity.).

Another interesting note within this forest stand is the presence of a few large eastern hemlocks. This species is found along the Bull Run-Occoquan River basin further east, but the presence in the oldest forest stand of this otherwise heavily disturbed landscape may indicate that eastern hemlock had a larger presence in forests in this region prior to massive land conversion for agriculture.

Within this forest type, is in the oldest, most mature forest stand on the site. This forest shows up as a woodlot on the 1937 aerial images of the site. The largest age class of trees is oaks in the 30 to 32" diameter breast height range and tulip trees up to 40" diameter breast height. The forest is very oak dominant with northern red oak, white oak and black oak forming the majority. Tulip tree and scattered hickories have been present in the stand since it began growing approximately 150 years ago. This age is evidenced by the size and branching patterns of the largest trees which are uniform both in diameter and branching pattern. Branching in these oldest trees is between halfway to two-thirds of the way up, indicating that the trees were in a fairly crowded condition when young but were released from some competition when they reached about 30 to 40 feet in height. At this point they grew in a fairly spreading branch pattern until they encountered each other. This would indicate that either the area was deciduous forest that was cut over all at once with intermittent smaller trees left standing which outgrew newer seedlings and saplings, or the area succeeded in pine forest that was evenly colonized by oak, tulip tree and hickory. It is more likely that the stand was deciduous forest that was cut over sometime around the Civil War and then was left to grow almost undisturbed from then on.

The southern portion of the stand was cut over about 80 years ago but the soil was not disturbed and the stumps left in place, resulting in a very uniform re-sprouting from the stumps in that portion of the forest, with the southernmost trees growing out over a field that was present 80 years ago close to the floodplain for the Occoquan River.

The second forest type is the Mesic Mixed Hardwood Forest. The forest stand is less than 60 years old evidenced by the remaining Virginia pine co-dominant with tulip tree. Larger tulip trees (20 to 40 inch diameter breast height) near and adjacent to the stream indicate that the 20th century land use practices disturbed uplands and side slopes but generally retained trees along stream courses. American beech is dominant in the understory demonstrating the stress on the system by heavy deer browse which is limiting regeneration to beech which is a non-preferred species by deer. The relatively good diversity in the herbaceous layer indicates that despite clearing, this site underwent moderate soil disturbance in the 20th century.

Piedmont Floodplain Forest makes up the remainder of the forest type located in the floodplain of the Occoquan

River just downstream of the confluence of Cedar Run and Broad Run. Ash-leaved maple completely dominates the over story with river birch and tulip tree also well represented but not co-dominant. The shrub layer and understory are in poor condition. There is little to no recruitment or regeneration. The forest appears to be less than 60 years old and may be growing on sediments that accumulated after construction of the Lake Jackson dam.

Another aspect of this forest is that although ash-leaved maple is still dominant, there were more tulip tree, some sycamore, both slippery and American elm and black walnut in the over story. The presence of tulip tree in both floodplain plots and especially the presence of black walnut are indicators of a levee forest condition where the floodplain is elevated high enough above the groundwater table that species that are not wet-tolerant can thrive.

Beeches occur almost ubiquitously as small trees in the understory. One can infer from this that at some point in the future the mature forest will contain significant amounts of beech. Other areas will have healthy oak populations, and may come to look like stand eleven, the most mature stand at Doves Landing. A couple of areas of concern exist, including the less than stellar reforestation occurring around the old farm house archeological site, and the low stocking levels along the river-especially in light of a probable emerald ash borer infestation. Overall the forest cover of Doves Landing is in the early to mid-stages of reforestation following an extended period of farming and shows signs that it is a functioning forest ecosystem. Two forest summaries were completed for the master plan. They are included as **Appendix I: Doves Landing Initial Forest Inventory Summary**, February 7, 2013, and **Appendix II: Doves Landing – Prince William County Preliminary Vegetation Classification**, December 11, 2012.

FLORA/FAUNA

Flora and fauna refer to plant and wildlife, respectively. The term is often used to refer to the indigenous plant and wildlife of a geographical region. Both are collective terms, referring to groups of plant or wildlife specific to a region or a time period. The Doves landing parcel is located in the piedmont region of Virginia with plant and animal population indicative to the Piedmont. As 95% of the land is forested, the plant and animal life reflects the existing condition. The significant riparian and wetlands areas also determine the existing communities.

The existing plant list for Doves Landing has been developed by volunteers and is heavily skewed towards spring plants. Additional surveys will be undertaken to more fully identify seasonal plant species. There are significant populations of non-native species. These species compete for survival with native species and should be eradicated as time and resources allow. **Appendix III** outlines the various species list to date. Due to the seasonal nature of species surveys, County and volunteers will continue to update the surveys.

The indigenous fauna are comprised of animal species commonly found in the Piedmont and in Prince William County. There is a potential for endangered species on the property. According to The U.S. Fish and Wildlife Service two such species could occupy the project area. The Dwarf wedgemussel (*Alasmidonta heterodon*) is listed by the USFWS as endangered as is the harperella (*Ptilimnium nodosum*). Ground reconnaissance has not identified either species but development should avoid areas where they could be found.

The complete list of potential fauna provided by the Virginia Department of Game and Inland Fisheries is listed in **Appendix IV**. The forest survey indicates that there is a fair to significant amount of plant damage related to the overpopulation of White tail Deer in the project area. This damage is not unique to this parcel and a county wide approach to the issue should be developed.

EXISTING UTILITIES

As the character of the area surrounding Doves Landing has changed little over the past 50 years, the development of utilities in the area is scarce. The County leases a cell tower site to Verizon. All utilities are residential in nature. The adjacent property owners rely on well and septic. Electric service of various levels is

available along Doves Lane. Phone service is available on Doves Lane as well. In addition there is a phone line easement that enters the property along the waterfront.

HYDROLOGY

Doves Landing is situated at the confluence of Kettle Run and Broad Run as they merge to form the Occoquan River. The property drains into the Occoquan River which is part of the Chesapeake Bay watershed. The 240 acre site includes over 25 acres of wetlands as well as extensive floodplain. The site is 95% forested and the forest acts as a filter for rainwater and off site drainage. This serves as an important feature that greatly improves the water quality of the surrounding water resources. It is essential that any improvements to the property protect the existing forested condition and its value to the areas water quality. **Appendix V: Wetlands Delineation Map, Appendix VI: Floodplain map**

TOPOGRAPHY

The topography of Doves Landing is similar to the surrounding landscape. The property is within the piedmont region of Virginia. Virginia's piedmont is the gently rolling land between the mountains and the Tidewater. It begins at the foot of the Blue Ridge Mountains and extends eastward, becoming less undulating the closer it comes to the fall line. Prince William County lies in the northern portion of the region where the Piedmont is narrow as it approaches the tidewater of the Potomac River.

Doves Landing topography features moderately steep slopes to the approaches of the Occoquan River and Broad Run. Project area elevations vary from 145 to 225 feet above sea level. The existing trails along the downward slopes are forested and thus absorb rain water well. **Appendix VII: Topographic Map**

SOILS/GEOLOGY

The project area is located on the interface of the Culpeper Basin and the Piedmont Plateau Physiographic Provinces. The project area is located where Broad Run and Cedar Run join to form the Occoquan River, approximately 26 miles upstream from the confluence of the Occoquan River and the Potomac River, in central Prince William County, Virginia. Project area elevations vary from 145 to 225 feet above sea level.

This portion of the piedmont plateau formed in the residuum of sedimentary rocks of siltstone, sandstone conglomerate, and basic rocks of diabase and basalt. The mapped soil complex for the project area is the Arcola-Panoram-Nestoria. This soil complex is moderately deep, deep, and shallow soils that are well drained and have loamy subsoil. The major soils types' onsite are Arcola Silt Loam, Arcola-Nestoria Complex, Bermudian Silt Loam, Braddock Loam, Brentsville Sandy Loam, Calverton Silt Loam, Manassas Silt Loam, Meadowville, Silt Loam, Panorama Silt Loam, and Rowland silt loam (United States Department of Agriculture, Soil Conservation Service 1989). The soil types have slopes that range from 0 to 50 percent slopes and are mapped on the custom soils report included in **Attachment XXX** (U.S. Department of Agriculture, Natural Resources Conservation Service, Prince William County Soil Survey). Below is a chart which highlights the major soil types and includes the percentages of area encompassed by the soil. **Appendix VIII: Soil Report**

Prince William County, Virginia (VA153)

Map Unit Symbol	Map Unit	Acres in AOI	Percent of
1A	Aden silt loam, 0 to 2 percent slopes	0.1	
3A	Albano silt loam, 0 to 4 percent slopes	2.2	
4B	Arcola silt loam, 2 to 7 percent slopes	4.9	
5C	Arcola-Nestoria complex, 7 to 15	5.7	
5D	Arcola-Nestoria complex, 15 to 25	2.2	
7A	Bermudian silt loam, 0 to 2 percent	43.3	1
8C	Braddock loam, 7 to 15 percent slopes	6.4	
9C	Brentsville sandy loam, 7 to 15 percent	68.1	2
11	Calverton silt loam, 0 to 7 percent slopes	36.8	1
14	Codorus loam, 0 to 2 percent slopes	0.3	
19	Elioak loam, 2 to 7 percent slopes	0.0	
20	Elsinboro sandy loam, 2 to 7 percent	1.9	
24	Glenelg-Buckhall complex, 7 to 15	1.7	
35	Manassas silt loam, 2 to 7 percent slopes	42.4	1
38	Meadowville loam, 0 to 5 percent slopes	2.5	
43	Nestoria gravelly silt loam, 25 to 50	0.7	
46	Panorama silt loam, 2 to 7 percent	17.1	
46	Panorama silt loam, 7 to 15 percent	2.6	
49	Rowland silt loam, 0 to 2 percent slopes	4.2	
51	Stumptown very flaggy loam, 25 to	1.9	
E	50 percent slopes		
W	Water	25.1	9.3%
Totals for Area of		270.1	100.0%

CULTURAL RESOURCES

The intention of the cultural resource assessment is to identify avenues of future research, identify known cultural resources and offer a preliminary assessment of their eligibility for listing on the National Register of Historic Places, and identify areas of high potential for finding cultural resources. The study area consisted of the entire property. The investigation was conducted in accordance with the most recent version of the *Virginia Department of Historic Resources (VDHR) Guidelines For Conducting Cultural Resource Survey In Virginia*. The full cultural resources assessment is located in **APPENDIX IX** and is summarized here.

Archival and historic map research identified numerous cultural resources on or potentially on the Dove's Landing property. Reconnaissance pedestrian surveys identified one historic farmstead and one cemetery on the property. Additionally, the property exhibits a high potential for finding prehistoric archaeology sites. Any new infrastructure will likely require archaeological testing and excavation before project approval.

Previous Investigations

Site file research was conducted at VDHR to determine if any recorded archaeological or architectural sites are present in the project area or in the vicinity. Three archaeology sites have been recorded within a one-mile radius of the project area. These sites are classified as prehistoric camp sites. None of these sites were evaluated for their eligibility for listing on the National Register of Historic Places (NRHP).

Four architectural resources were recorded within a one mile radius of the project area. These sites include two steel truss bridges (now destroyed), a cemetery, the Sinclair Mill and an historic house. The Sinclair Mill is located on the east side of Occoquan River across from the Dove's Landing property. The Brentsville National Register Historic District and the County's Brentsville Courthouse Historic Centre are also located within the one-mile radius.

Site History

Lands in the vicinity of Dove's Landing were likely vacant or sparsely occupied by colonists through the first half of the 1600s. Not until the 1730s does the historical record suggest land use and occupation in the vicinity of the project area.

By the nineteenth century onwards, maps of the region reveal land ownership and indicate the presence of at least two possible farmsteads in the project area. These maps also suggest potential sites of archaeological interest as well as a woodlot and two river crossing fords. Further investigation of these sites may yield information regarding how the project area was utilized and how the landscape evolved.

Prepared in 1862 at the division headquarters of General Irvin McDowell, the "McDowell Map" shows one possible farmstead belonging to Goodwin. Both tax lists and land deeds demonstrate that in August of 1847, William E. Goodwin acquired a 120 acre tract situated on the Broad and Occoquan Runs, which adjoined the lands of a Mr. John Molair and included the road leading from Brentsville to both runs. Listed as Ivy Mill in subsequent tax rolls, he resided there with his wife, Anne, for a number of years. In July 1869, this tract was deeded to F. C. Rorabaugh, who is named on the 1901 William Brown Map of the area. For a sum of three thousand dollars, Rorabaugh then sold the tract in 1914 to Charles L. Dove. The Dove family owned a majority of the 250 acres under investigation prior to selling many of their individual tracts to the Commonwealth of Virginia from 1930 through the 1970s.

Cultural Resources Conclusions and Recommendations

Historical maps and aerial photographs show a number of historic cultural resources either located in or potentially in the project area. These historic resources include two farmsteads and possibly a third, one ford across Broad Run and one ford across the Occoquan River, fence lines, farm roads, and wood lots. Pedestrian reconnaissance survey found one historic farm complex including two cut stone foundations and a well and a cemetery.

There is the potential for finding significant prehistoric sites. The property's topography and location on Broad Run and the Occoquan River, with substantial flood plain and bluffs overlooking the rivers, are conducive to prehistoric land occupation and land use.

Having outlined the cultural and historical significance of the 250 acres at Dove's Landing, the following recommendations are proposed to protect these resources:

- Public activity and site planning for Dove's Landing should be limited to non-motorized passive recreation. Historic Preservation and Passive Recreation are mutually supporting activities. Support for passive recreation infrastructure may require additional cultural resource studies. The setting of Dove's Landing is inherently unique due to the blending of both cultural and natural resources on-site.
- For the safety of visitors and the protection of cultural and historic resources on-site, protective fencing should be installed to preserve significant features on the property and ensure public safety.
- The trail network currently existing inside the 250 acres of Dove's Landing property should continue to be maintained and utilized for the purposes of passive recreation (i.e. hiking, bird watching).
- Motor vehicles and bikes should not be permitted on the trail system.
- Following selection of an area suitable for vehicle and visitor parking, a Phase I archaeological and cultural resources survey should be undertaken by the County, with no further development on-site taking place until the Phase I survey is completed.
- Continued phased archaeological surveys should be performed on site, and pursued through grant programs offered at the state and federal level. Development of public archaeology programs would also allow for additional educational and interactive recreation at Dove's Landing.

V. SITE DEVELOPMENT CONSTRAINTS

With the completion of the site analysis phase, site conditions were evaluated to determine where development was appropriate. In the case of Doves Landing, suitability for development means what is suitable from the standpoint of physical limits and historic limits. A given area on the site may be considered suitable for construction of a parking lot/driveway but not be appropriate in the context of maintaining or preserving the cultural and natural resources of the site.

The site contains extensive forest canopy, wetlands, and floodplain. The Forest makes up 95% of the land mass, the 25.51 acres of wetlands are primarily found along the Occoquan River and Broad Run. The floodplain is also extensive. Overlaying both cultural and site physical criteria, potential development areas could be located in the northeast corner of the property adjacent to Doves Lane. Development should only include a gravel parking lot in accordance with the local roads, the use of existing trails, and limited gathering spots for citizens recreating on the parcel.

Sensitive areas within steep slopes or drainage ways are not recommended for development. Existing forest stands that serve as visual buffers to off-site uses should be preserved and maintained.

Overall development should remain low-profile with limited activities and access.

VI. PROGRAM DEVELOPMENT

Doves Landing is intended to be developed and maintained as a passive recreational natural area. This allows for a limited amount of uses and associated infrastructure.

There are many passive recreation opportunities available at Dove's Landing. The previous activities on the site appear to have included farming and timber clearing. The topography of the land, resource protection areas, flood plain, existing open water and wetlands resources as well as bottom land and upland forest types allow for water and land based passive recreation and environmental education. The placement and scale of passive recreation facilities must be compatible with the land and adjacent lands. They must also be located away from

sensitive environmental features, and any identified important natural communities. These passive recreation opportunities should generate revenue to help offset the operation and maintenance costs but revenue generation is a secondary outcome to proper stewardship of the natural resource. Additionally passive recreation offerings should be consistent with the County and the State's identified needs.

The *Virginia Outdoors Plan* is the state's official document regarding land conservation, outdoor recreation and open space planning. Based on the Virginia Outdoors Survey of 2006, "the two highest needs for outdoor recreation in the next five years are access to passive recreation waters of the State and trails close to home." The proposed passive recreation offerings are consistent with the Virginia Outdoors Plan as well as the identified desires of County citizens for passive recreation opportunities. This proposal utilizes the current five mile trail system that is kept open by unauthorized ATV activity. This will minimize the passive recreation footprint on the land and will allow for significant access to the entire parcel

Appropriate passive recreation activities on the site include, canoeing and kayaking group tent camping, hiking and horseback riding. These activities will be augmented with interpretive programming, environmental education and adventure program offerings.

1. **Trails**

Trails are the most sought after passive recreation amenities in the county. Dove's Landing supports terrific trail opportunities. The trail system will be developed to support multi users wherever possible. These users will include hikers, mountain bikers and equestrians. The trails will be developed to take advantage of opportunities for bird watching and environment education opportunities. The trail system will, when possible, utilize existing trails, roads, and paths. This will minimize the need to disturb the land. **Appendix X** outlines the existing trails on the property.

Forest management will ensure that the proper views and screening remain viable. It will also make the experience of being in the forest more enjoyable. In rapidly developing Prince William County, the opportunity to observe and experience a hardwood forest is declining. Paths that wind through the property will enable people to walk comfortably through the woods and enjoy the solitude that only a large stand of trees can provide. Along the paths, interpretative plaques will be used to illustrate unique features within the forest that otherwise may not be noticed.

2. **/Interpretation and Environmental Education**

Doves Landing is a unique County natural and cultural resource. As such, the County should utilize the property for natural and historic interpretive programs and environmental education initiatives. Programs such as nature hikes, tree identification, and bird watching are activities that can easily be accommodated on the site.

3. **Group Camping**

Camping is a resource intensive use and should be managed to protect the resources, Camping will be limited to group tent camping only with focus on scout and service based groups. Individual camp sites are not contemplated due to the topography of the land and the need for more intensive service facilities needed to provide this type of camping. Camping should be restricted to designated areas as to not negatively impact the resource. Camping should only be offered as part of a service project to assist with resource management activities on the resource. Service projects can include litter and debris pickup, the removal of invasive plant communities, trail development and maintenance, and other resource management based projects as needed.

4. **Water Access**

Dove's Landing borders the Occoquan River at the confluence of Cedar Run and Broad Run. The distance from the proposed parking area to potential water access points will require a long hike to portage of canoe and kayaks. This will be a challenge to the establishment of this passive recreational opportunity. In lieu of individual access points, water access will be provided through staff guided programs. During the spring and fall, if water levels allow, staff will conduct guided canoe and kayak programs. The program will be fee based with floats starting at the Brentsville Courthouse Historic Centre and ending at Doves Landing. A long term goal could include a limited canoe and kayak access point and site based guided programs on weekends from April – October.

5. Fishing

The potential exists to utilize portions of the shoreline for fishing opportunities. Fishing is an outdoor activity where there is very limited public access in Prince William County. The County will work with the Virginia Department of Game and Inland Fisheries to assess the condition of the Occoquan River and Broad Run for fishing. More investigation will need to be undertaken to ensure that there are safe places along the bank to fish without damaging the resource protection areas. The potential exists for the development of small fishing platforms, this will allow for bank access without the associated environmental damage to the bank and riparian area.

6. Picnicking

Picnicking is a very important and limited passive recreation opportunity in this area. Dove's Landing offers the potential for small, primitive picnicking to accommodate the users of the facility. The picnic area will support use by the general public and educational groups. Picnic areas are intense passive recreation areas that can negatively impact the natural area. Soil compaction, erosion, stress on the tree canopy and loss of vegetative cover and forest under story are some of the negative impacts. This proposal will limit the size of the picnic area as well as establish a secondary picnic area for cyclical rotation. Rotation, similar to crop rotation minimizes the negative effects on the resource by giving the land time to recuperate from the intense use. Intensive public education on the care of the picnic area will be part of park management.

VII. DEVELOPMENT CONCEPT PLANS

- **Concept Plan (A)**
- **Concept Plan (B)**
- **Concept Plan (C)**

VIII. MASTER SITE DEVELOPMENT PLAN

The Master Site Development proposed for the Doves Landing property is the development scenario proposed in Concept Plan (A).

As part of the Master Plan process, this report makes several recommendations:

1. Forest Management

A forest management program consists of various practices designed to enhance the existing vegetation and provide a hospitable habitat for the regeneration and development of new vegetation. The forest is a dynamic entity, slowly developing over centuries and gradually changing from one type of dominant vegetation to another. Due to the influence of humans, this process has been radically altered, so that

most forests today bear little resemblance to the vast forests that once covered the entire eastern seaboard. Many species of native forest plants are very rare today due to the degradation of the habitats they once flourished within. The forest management program for Doves Landing will not create a pristine example of a forest from the 18th Century, but it will be designed to take advantage of all the native vegetation on site. Undesirable, invasive plants, such as Japanese honeysuckle, will be targeted for removal while native species, such as Virginia Creeper, will be allowed to grow. In this way the forest moves towards the condition that nature would have created in its own time.

The importance of the forest to this site cannot be overstated. One look at the Master Plan illustrates how the forest is used not only as a program element, but also defines other uses. The property can be likened to several large rooms, with the trees acting as the walls. The tree stands in several locations screen less desirable offsite elements from view.

The forest management program will ensure that the proper views and screening remain viable. It will also make the experience of being in the forest more enjoyable. In rapidly developing Prince William County, the opportunity to observe and experience a hardwood forest is declining. Paths that wind through the property will enable people to walk comfortably through the woods and enjoy the solitude that only a large stand of trees can provide. Along the paths, interpretative plaques will be used to illustrate unique features within the forest that otherwise may not be noticed. Educational programs can be developed using these resources that will appeal to both school children and adults.

Part of the education may be centered on the practices of forest management. For instance, selective cutting may be used to remove less desirable, invasive, or diseased trees and other vegetation from the forest. Many people are not aware that thinning a stand of trees in such a way is actually beneficial to vigor of the forest, but a program could be initiated that would explain this practice as well as a host of others. Just as the forest changes and adapts over time, so too can the programs designed to educate us about it.

One such program could be the establishment of managed meadows. Although the site is 95% wooded, a significant portion of the land has recently begun forest succession. These areas are dominated by young cedar and pine trees. The establishment of meadows would provide more and diverse habitat, additional passive recreation and environmental education activities.

The Doves Landing property is fortunate to have a forest worth managing. It forms the basis or is at least part of many of the program elements that have been identified. Imagine the site with no forested areas, and it is quickly apparent how much character and value is added to the site with the forests in place. Through proper management, this attribute will remain viable for generations to come.

2. Cultural and Natural Resource Protection

Public activity and site planning for Dove's Landing should be limited to non-motorized passive recreation. Cultural and natural resources and passive recreation are mutually supporting activities. Support for passive recreation infrastructure may require additional cultural resource studies. The setting of Dove's Landing is inherently unique due to the blending of both cultural and natural resources on-site.

For the safety of visitors and the protection of cultural and historic resources on-site, protective fencing should be installed to preserve significant features on the property and ensure public safety.

The trail network currently existing inside the 240 acres of Dove's Landing property should continue to be maintained and utilized for the purposes of passive recreation (i.e. hiking, bird watching).

Motor vehicles and bikes should not be permitted on the trail system.

Following selection of an area suitable for vehicle and visitor parking, a Phase I archaeological and cultural resources survey should be undertaken by the County, with no further development on-site taking place until the Phase I survey is completed.

Continued phased archaeological surveys should be performed on site, and pursued through grant programs offered at the state and federal level. Development of public archaeology programs would also allow for additional educational and interactive recreation at Dove's Landing.

3. **Site Development**

The Master Plan and Site Development Program should be reviewed by County staff at 5 year intervals to assure ongoing compliance and to address the need for revision and changes to the plan and program. Citizen input into the review process should be maintained.

Roadways, driveways and parking lots should be constructed of materials that reduce runoff and are visually compatible with the site's natural setting. Ditch section roadways should be used in lieu of curb and gutter and storm drainage systems. Site Development as a whole should embrace low impact design. Stormwater management should be bioretention, infiltration trenches or wet ponds where possible.

Phasing of development and improvements to the Doves Landing site will depend to a great extent on funding that is available. To best determine the true and accurate costs of this Master Plan, additional Preliminary Design and Final Development drawings should be prepared for improvements to the site.

Preliminary cost estimates will identify the potential general costs for the work that is identified in the Master Plan. Detailed plans, specifications and cost estimates will provide the County with a more accurate idea of how and when to phase development and improvements.

IX. CONCLUSION

Doves Landing is unique from the standpoint that it has lay fallow for a significant portion of time. The Master Plan that has been developed for Doves Landing and its 240 acres is intended to guide the protection and use. The Master Plan is not a static document and it should be reviewed periodically to ensure that it is providing the programs and enjoyment that it was planned for.

Limited infrastructure improvements should be carried out with great care and study. Materials and installation should be used in such a way to maintain the natural and cultural context of the site.