Rivanna Futures

Due Diligence Study Supporting Purchase of Real Property

County of Albemarle, Virginia

November 17, 2023

A Due Diligence Study by:

LINE AND GRADE

Civil Engineering

In Association with:

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ACSA - Albemarle County Service Authority

ALTA - American Land Title Association

APE - Area of Potential Effect

BLA - Boundary Line Adjustment

CDD - Community Development Department

DCR - Virginia Department of Conservation & Recreation

DEQ - Virginia Department of Environmental Quality

DHR - Virginia Department of Historic Resources

DWR - Virginia Department of Wildlife Management

ESA - Environmental Site Assessment

FEMA - Federal Emergency Management Agency

GPD - Gallons per day

JPA - Joint Permit Application

NEPA - National Environmental Protection Act

NWI - National Wetland Inventory

NGIC - National Ground Intelligence Center

NHPA - National Historic Preservation Act

PA - Programmatic Agreement

PE - Preliminary Engineering

REC - Recognized Environmental Condition

RaEC - Rappahannock Electric Cooperative

RWSA - Rivanna Water and Sewer Authority

SSWD - State Surface Water Determination

TIA - Traffic Impact Analysis

USACE - U.S. Army Corps of Engineers

USFWS - U.S. Fish & Wildlife Service

UST - Underground Storage Tank

V-CRIS - Virginia Cultural Resource Information System

VMRC - Virginia Marine Resources Commission

VWP - Virginia Water Protection Permit

WOTUS - Waters of the United States

WPO - Water Protection Ordinance

By virtue of this land purchase, the County of Albemarle is investing in the future of Rivanna Station. This opportunity will afford the County of Albemarle a chance to establish economic development partners who find the County a desirable place to locate their future facility needs - whether they be agencies of the Federal Government, their contractors, or perhaps light industrial enterprises.

This due diligence study focuses on investigating the purchased land in several specific ways. First the land is reviewed from an entitlement and land use perspective. Next, the land is assessed for environmental and cultural resources, and finally, the physical attributes of the land are analyzed.

Having established a working knowledge of what the land can support, this study turns toward understanding the intended improvements. Namely, identifying key aspects of how the future Rivanna Station development will integrate with existing infrastructure or identifying what improvements will need to be made in order to support the development. An important consideration of these network and infrastructure integrations is to understand the potential density at Rivanna Station. This study does not recommend a specific development layout or density, but rather considers a spectrum of what is possible.

The study concludes with a distilled list of liabilities and the risks associated with this land purchase as well as a list of pragmatic next steps for the County.

All said, the land is suitable for development and the risks associated with the discovered liabilities are low. Nothing discovered during the due diligence study would suggest the land is not suitable for purchase or for the future Rivanna Station.

INTRODUCTION

The intent of this due diligence study is to comprehensively and thoroughly evaluate the eleven (11) parcels for which the County of Albemarle entered into a Purchase and Sale Agreement (the "Agreement") on May 18th, 2023. Per the terms of the Agreement, the County has ninety (90) days to investigate the property. This due diligence study serves to document the findings of such an investigation as developed by Line and Grade, with our partner firms, and in collaboration with many County staff members across multiple departments. Specifically, this due diligence study has focused on the physical, environmental, legal, and development potential aspects of the subject parcels; both in their existing and future states. The study is organized as follows:

PART 1 - ENTITLEMENT

1. Parcels
2. Boundary Line Adjustment
3. Development Area and the Comprehensive Plan
4. Zoning and Rezoning
5. Economic Development

PART 2 - NATURAL, CULTURAL, AND ENVIRONMENTAL RESOURCES

1. NEPA Summary
2. Cultural and Historic Resources
3. Streams and Wetlands
4. Phase 1 Environmental Assessment
5. Phase 2 Environmental Assessment (Limited)

PART 3 - PHYSICAL CONDITIONS AND BOUNDARIES

1. Dams and Earthen Structures
2. Preliminary Geotechnical Investigation
3. Topography
4. Summary of ALTA Surveys and Title Work
5. Open Bonds and Zoning Violations

PART 4 - CONSIDERATIONS FOR PROPOSED CONDITIONS

1. Road Design - Boulders Road Extended
2. Development Density and Buildout
3. Intersection Improvements, Traffic Generation, and Coordination with VDOT
4. Utility Coordination with Service Providers

PART 5 – SUMMARY

1. Identification of Liabilities, Risks and Items to be Resolved
2. Next Steps
3. Estimated Budgetary and Planning Figures with Schedules

1.1 PARCELS

The real property to be purchased by the County is comprised of eleven (11) parcels (the subject parcels) as shown in Figure 1. These parcels are contiguous and surround the National Ground Intelligence Center on Boulders Road, also known as Rivanna Station.

Of the property to be purchased, the parcels are designated as either solicited property or unsolicited property. The solicited parcels comprise 385 acres of the real property and will be purchased as-is, whereas the unsolicited parcels will be purchased in addition to the solicited property and are subject to a boundary line adjustment (see Section 1.2, below). Per the purchase and sale agreement the total land area of the unsolicited property was estimated to be 77 acres, bringing the total land area to 462 acres.

The purchase price of the solicited property is set, and the purchase price of the unsolicited property is subject to the final area delineations established by the boundary line adjustment. Thus, the final purchase price and area of real property will not be known until the Boundary Line Adjustment has been approved and recorded.

It is worth noting that the County's intention for purchasing this additional real property, designated as unsolicited property in the contract, was to ensure a natural buffer around the proposed development to prevent the risk of encroachment by incompatible land uses and bad actors. Given the current and anticipated occupants of this land, this buffer is an attractive amenity.

In addition to the eleven parcels purchased within this contract there is a twelfth parcel which the County has already purchased (33-1G), which is adjacent to the eleven (11) parcels subject to this purchase and sale agreement. This parcel is designated as Parcel A within this study and is shown herein for context, but this parcel is not the subject of this due diligence study.

Figure 1 - Eleven (11) Subject Parcels

1.2 BOUNDARY LINE ADJUSTMENT

Per the purchase and sale agreement, the unsolicited parcels will be adjusted via a Boundary Line Adjustment (BLA). The contract language suggests that the boundary line adjustment should be in general accordance with an exhibit which was attached to the contract and designated as Exhibit A. This exhibit delineates conceptual boundaries of the adjustment. A copy of Exhibit A is shown at right.

Exhibit A per the Contract

The language of the purchase contract suggests that the BLA should, to the greatest extent practicable, follow watersheds, water courses and other natural topographic features. Furthermore, the details and limits of the BLA are subject to approval by the Seller, and if an agreement cannot be reached the unsolicited parcels may not be purchased.

As currently conceived, the proposed BLA, brings the final purchased area (solicited and unsolicited) to 461.85 acres - which is less than the original estimate per the contract. However, there is one important distinction to make; the contract did not identify that parcel 33-1B was subject to the boundary line adjustment. Upon studying the possible BLA alternatives and balancing the interests of the County, the seller, and working to honor natural topographic features, it was realized that parcel 33-1B should be subject to the BLA as well. Therefore, in Figure 2, below, Parcel 33-1B is shown as adjusted whereas it was not identified as an unsolicited parcel in Figure 1, above.

The BLA is a work in progress and subject to coordination with the Seller and the project surveyor. As such, the final land area to be purchased is currently an estimate and subject to the final ALTA Survey boundaries and seller agreement.

Figure 2 - Proposed Boundary Line Adjustment

1.3 DEVELOPMENT AREA AND THE COMPREHENSIVE PLAN

A portion of the properties to be purchased fall within the Places 29 Master Plan Northern Development Areas. Figure 3, right, shows how the current comprehensive plan overlays upon the subject parcels. Given the 461± acres purchased, approximately 232 acres fall within the current defined development area, which is to say approximately half of the land purchased will serve as a permanent buffer around Rivanna Station (subject to the final delineations of the BLA, discussed above).

For the purposes of this study the term development area is a designation of the land that falls within the limits of the Places 29 Master Plan Northern Development Area. This area is shown in Figure 4, right, as the area within the thin red line. Real property purchased by the County that falls beyond this line is designated as Rural Area (RA) in the Comprehensive Plan. As of the writing of this study, the County is working on an update to the comprehensive plan which is anticipated to be completed in 2024.

If the updates to the comprehensive plan expand the development area, then land that is currently identified to be outside the development area could become a part of the development area. The purchase of unsolicited property as a part of this sale agreement serves to mitigate the potential for future developments to encroach toward Rivanna Station.

As a part of this due diligence study the consultant team held several pre-application meetings with Albemarle County's office of Community Development. The guidance from these pre-application meetings regarding the comprehensive plan, zoning, and future entitlement was not conclusive, which is to suggest that the County is in a state of transition with matters related to the current and future comprehensive plans.

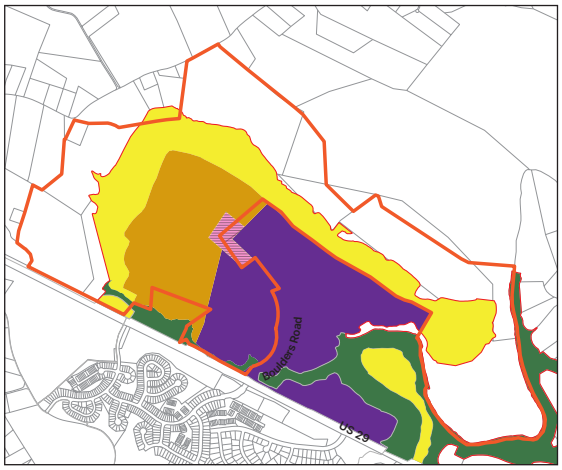


Figure 3 - Comprehensive Plan Northern Development Area

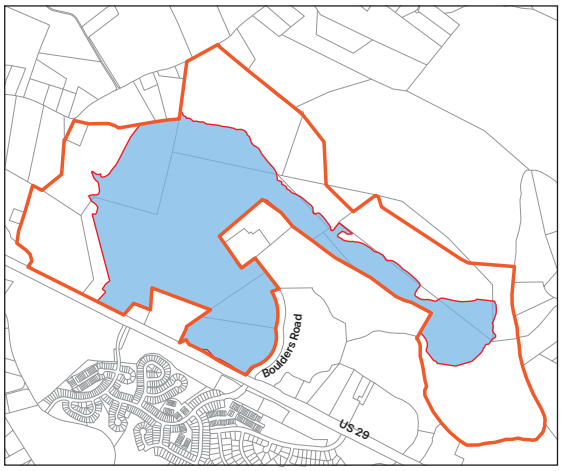


Figure 4 - Development Area

Legend

- NEIGHBORHOOD DENSITY RESIDENTIAL
- URBAN DENSITY RESIDENTIAL
- OFFICE/R&D/FLEX/LIGHT INDUSTRIAL
- PRIVATELY OWNED OPEN SPACE/ ENVIRONMENTAL FEATURES
- NEIGHBORHOOD SERVICE CENTER
- DEFINED ***DEVELOPMENT AREA***
- LIMITS OF DEVELOPMENT AREA PER COMP PLAN
- BOUNDARY OF PURCHASED PROPERTY

Notes

1 - Rural Areas can still be developed, but not to the development area standards for land use and density.

1.4 ZONING AND REZONING

It can reasonably be assumed that the matters related to the comprehensive plan will be sorted out and that the vision of Rivanna Station will be consistent with updates to the comprehensive plan. Once the comprehensive plan update is finished, then the parcels which are located within the development area can be rezoned to a designation which is consistent with the (new) comprehensive plan.

Rezoning will be necessary since the current zoning of the parcels is inconsistent with the zoning required to support the vision at Rivanna Station. As can be seen in Figure 5, below, the zoning designations of the parcels within the development area are either Planned Residential Development (PRD) or Rural Areas (RA). Neither of these zoning designations support the required flexible nature of this planned Rivanna Station expansion.

In consideration of rezoning the parcels, several zoning designations have been discussed with County planning staff including Light Industrial (LI), Planned Development Industrial Park (PDIP), or perhaps a new zoning overlay for defense or government facilities which could be established via the comprehensive plan amendment.

Flexibility within the zoning designation will be key to the success of Rivanna Station because as of the writing of this study the occupants of the future development, their business types, land uses, and development needs are largely unknown. Generalizations can be made based on the current occupants at Rivanna Station; however, it is to the County's benefit to allow this land to be adaptive and flexible depending on the needs which arise from future development partners.

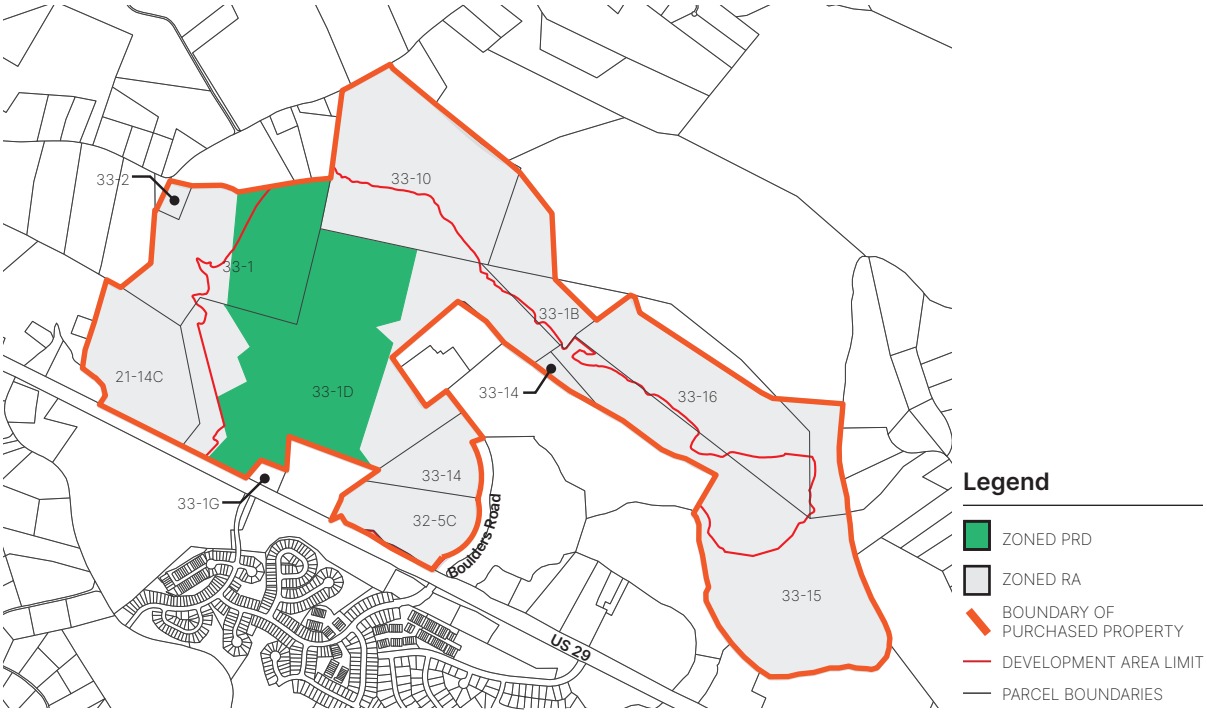


Figure 5 - Parcel Zoning Designations

Zoning and Rezoning (continued)

In order to successfully rezone these parcels, a masterplan of the County's Vision for Rivanna Station needs to be completed. For the purposes of this due diligence study a prior concept for Rivanna Station, as developed by Matrix Design Group (Matrix), and as shown in Figure 6, right, has been used as the basis of development. However, the concept as developed by Matrix falls short of the development potential for this facility and it does not take into account the ancillary uses that may be necessary to support this development including additional commercial and retail establishments which would support the occupants at Rivanna Station.

The process of finishing the comprehensive plan (anticipated 2024) and then undertaking a rezoning of 232 acres of land (which could take at least 12 months) could pose a significant challenge to the timelines needed by prospective partners and future occupants at Rivanna Station. The County is no stranger to the challenges of many developments in the area which take years to entitle and years to design and construct.

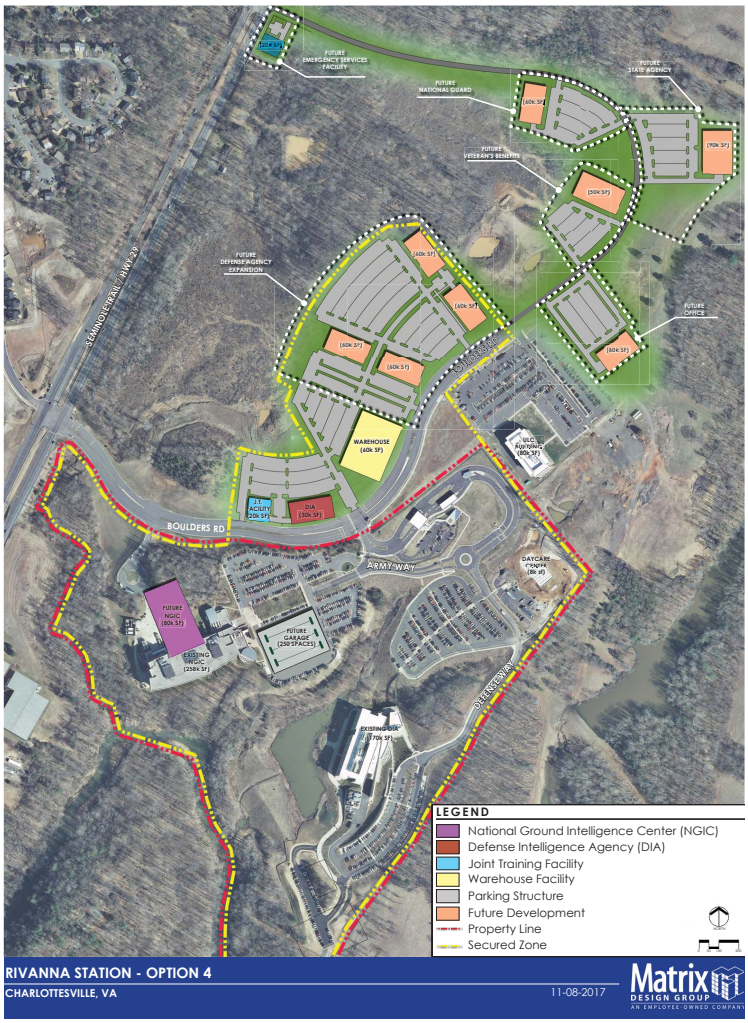


Figure 6 - Concept Plan created by Matrix Design Group as developed for the Secretary of Veterans and Defense Affairs (2017). Please note this plan is rotated to a different orientation than other figures included in the study thus far (US 29 is plan left).

1.5 ECONOMIC DEVELOPMENT

Economic development is not a specific aspect of this due diligence study; however, it is worth noting that there is a connection between the entitlement process (rezoning), as discussed above, and the ability to attract potential development partners for Rivanna Station.

As defined by the Virginia Economic Development Partnership (VEDP), the odds of successful partnership greatly increase based on the Tier of the project. A graphic indicating the Tier System Analysis for Site Selection is included below in Figure 7.

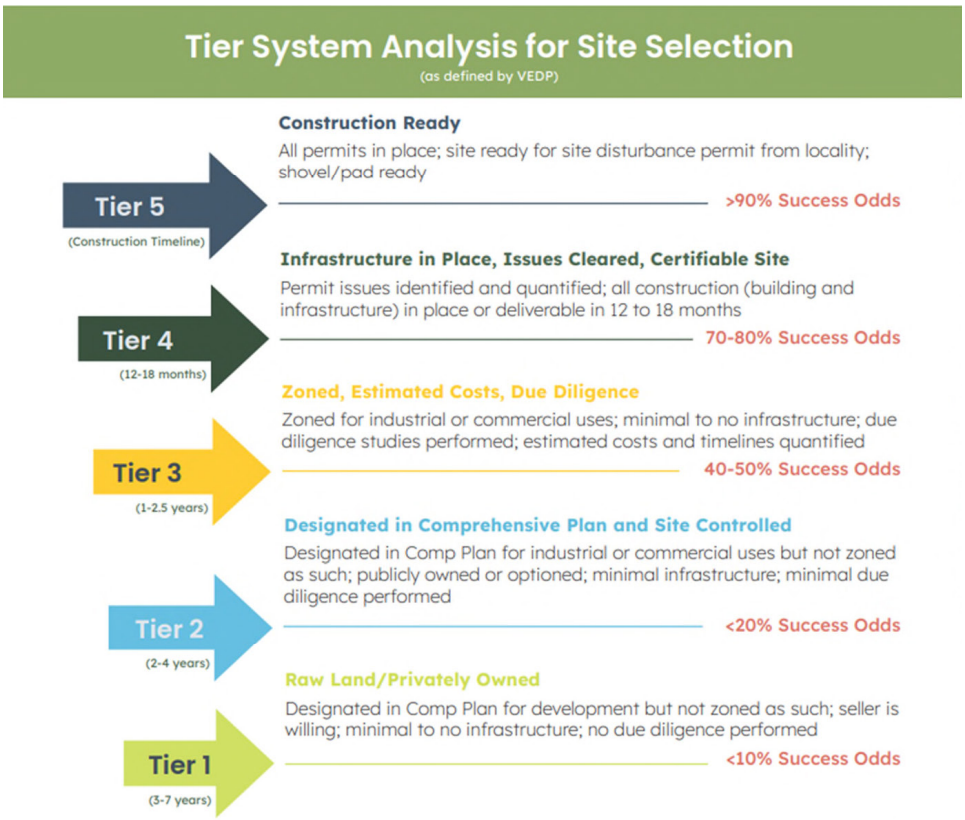


Figure 7 - Tier System Analysis for Site Selection as defined by Virginia Economic Development Partnership

As Figure 7 suggests, Rivanna Station has much higher odds in development partnership if it can reach a Tier 4 status, meaning it is zoned properly, has a masterplan with costs and timelines identified, and has infrastructure (roads and utilities) in place or at least permitted.

2.1 NEPA SUMMARY

The intent of the National Environmental Policy Act (NEPA) is to ensure that any Federally involved action considers the potential environmental impacts of that action. In other words, anyone using Federal dollars or Federal land must think about how their actions might impact waterways, plants, animals, cultural resources, and humans. In some cases, NEPA requires only consideration of these impacts while in other situations actual permits must be requested and received. Review agencies may request additional studies to assess the presence of threatened and endangered species or impacts on cultural resources.

Although the County of Albemarle is not currently using Federal funds or engaging in Federally supported activities, it is presumed that the land may eventually be occupied by a Federal agency. As such, this NEPA summary outlines what a formal NEPA process may uncover and whether such findings could limit development on the parcels within the development area.

Based on the preliminary research findings and without formal comment from NEPA reviewers, it appears that there are no critical limitations to future development within the Rivanna Station development area. It must be noted, however, that unknown limitations may arise during the official NEPA submittal process.

The findings in this NEPA Summary are informal and are intended to provide an overview for the sole purpose of offering information to the County regarding potential environmental impacts that must be addressed if the land were to be developed using Federal funds, or if it has the potential to become Federal land, specifically by the U.S. Department of the Army. Should construction and/or land disturbing activities be proposed and should Federal and/or State involvement or funding be utilized, the Developer(s) must follow all Federal and State environmental regulatory requirements.

2.1.1 - US Fish and Wildlife Service

It is the responsibility of the developer to identify any federally listed threatened or endangered animal species, critical animals, migratory birds, marine mammals, wildlife refuges, coastal barrier units, and wetlands. Furthermore, the developer must submit database findings to the USFWS to request an official species list, which is then submitted to agency reviewers for comment. It is important to begin this process early in the project schedule to avoid potential impacts and delays.

There are a number of known threatened and endangered species and environmental features within the parcels to be purchased by the County. Refer to Appendix F for a detailed list of preliminary findings related to species and resources on the subject parcels. At this time the presence of bald eagles cannot be confirmed or denied. A Virginia database did not indicate any bald eagles but a Federal USFWS database did. Therefore a biologist or environmental scientist should be hired to perform an on-site assessment.

Based on these findings it is unlikely that proposed construction activities will be significantly limited. There may be substantial time-of-year restrictions for some construction operations, and the proposed design work should minimize impacts to natural resources.

2.1.2 – US Army Corps of Engineers

The USACE is responsible for reviewing Federally involved projects for impacts to wetlands and Waters of the United States (WOTUS). (The USACE is also involved in projects that have impacts to WOTUS, whether Federal dollars are included or not). If impacts are anticipated, the USACE will issue permits that specify which activities are and are not allowed so that sensitive resources are not adversely impacted.

NEPA summary (Continued)

Preliminary findings suggest that there are WOTUS located within the parcels to be purchased by the County including:

- North Fork of the Rivanna River (Parcels 33-15 and 33-16)
- Herring Branch (Parcels 32-5C, 33-1D, and 21-14C)
- Greens Pond & Dam (Parcels 33-16)
- Freshwater Ponds (3) (Parcels 33-1B, 33-10, and 33-14)
- Freshwater Forested/Shrub Wetlands (Parcels 33-15, 33-16, 32-5C, and 33-14)

The presence of WOTUS on the subject parcels is unlikely to prohibitively limit development. Proposed designs must take into consideration these resources and attempt to avoid or mitigate impacts. Any new construction activities that may impact WOTUS—including filling or dredging waterways, impacting wetlands in any way, placing culverts or crossings in streams, placing pilings in waterways, or re-shaping the banks of waterways—will require a permit from the USACE. Any new development proposal will require an updated field delineation of regulated wetlands and streams.

The developer, applicant, or owners' consultants should determine if a Joint Permit Application (JPA) option is available. A JPA is a programmatic agreement (PA) with Virginia Department of Environmental Quality (DEQ) and Virginia Marine Resources Commission (VMRC) and the USACE that combines application requirements into one submittal to streamline review of environmental impacts. Typically USACE approvals take 3-6 months, with an average of 60-90 days for an official response. Time frames vary based on complexity and reviewer availability.

2.1.3 – Virginia Department of Environmental Quality

Should the proposed improvements within the subject parcels include any activities which degrade or otherwise negatively impact state waters (wetlands and streams) the developer will need a Virginia Water Protection Permit (VWP). The WOTUS associated with the subject parcels are defined in section 2.1.2, above, and Virginia DEQ may also require a State Surface Water Determination (SSWD) depending on the regulatory circumstances at the time of submittal. Similar to the USACE findings, if the proposed improvements impact WOTUS and/or state waters, including crossing streams, impacting wetlands, reshaping the banks of a waterway, or similar activities, the project will require a permit from the DEQ.

Note: this project will propose crossing a perennial stream, and thus it is assumed a VWP permit is necessary. Refer to Section 4.1.1, below, for additional information regarding this stream crossing.

2.1.4 – Virginia Marine Resource Commission

The Virginia Marine Resource Commission reviews and issues permits by way of the USACE's Joint Permit Application process, discussed above in Section 2.1.2. The VMRC should be contacted prior to initiating the NEPA process to discuss the proposed development to determine if the VMRC needs to be involved directly or if a JPA will suffice.

Unless the project proposes the construction of docks, canoe launches, piers or other work that will impact the banks or bottom of rivers and wetlands within the project area, it is unlikely that VMRC will have significant remarks related to the planned improvements.

Note: If the County intends to make improvements to the banks of Greens Pond (where currently timber siding is rotting and falling apart) then the VMRC may take

NEPA summary (Continued)

additional interest in the project. Refer to Section 3.1, below, for additional information regarding Greens Pond and Dam.

2.1.5 – Virginia Department of Conservation and Recreation

The developer must contact DCR to request a formal review of the project. DCR will provide a list of natural heritage occurrences including plants, rare animals, significant ecological communities, and significant geological formations (such as karst). DCR will issue a letter stating their findings. This letter of findings will be included in submittal packages for other environmental agencies, such as USFWS. Please refer to Appendix F for a preliminary list of natural resources present on the subject parcels.

The presence of threatened and endangered species on or near the subject parcels is unlikely to prohibitively limit development.

DCR will also take an interest in the dams on the property; this is discussed in detail in Section 3.1.

2.1.6 – Virginia Department of Wildlife Resources

DWR's role is to determine likely impacts upon wildlife resources and habitats, and to recommend appropriate measures to avoid, reduce, or compensate for those impacts. The developer must contact DWR and allow them to review and comment on potential impacts to threatened and endangered species potentially located within the project area. DWR provides comments about what to do if a species of concern is identified within the project area and recommends other agencies that should be contacted.

Similar to the preliminary research for DCR, refer to Appendix F for a preliminary list of species and environmental features which may be affected by construction activities on the subject parcels.

The North Fork of the Rivanna River is listed as a Virginia Wildlife Action Plan Tier 1 waterway, meaning that it has been determined the river is a Critical Conservation Need and has the potential to contain Federal and State threatened and endangered species.

Greens Dam, within the project area, is considered an "Impediment to Fish Passage" which means that the dam may prevent important migratory fish from reaching necessary feeding and breeding habitats.

The 2007 Environmental Assessment contacted DWR (formerly the Department of Game & Inland Fisheries) and indicated the presence of the James Spinymussel and Atlantic Pigtoe within 0.5 and 1.75 miles from the project site. At the time, DWR indicated that field surveys might be necessary to "determine the presence or absence of the freshwater mussels."

As with the findings for DCR, the presence of threatened and endangered species on or near the subject parcels is unlikely to prohibitively limit development. Projects may be subject to time-of-year construction limitations to protect animal species during specific breeding and/or hibernation periods.

2.1.7 – Virginia Department of Historic Resources

As part of the NEPA review process, the Department of Historic Resources (DHR) must be consulted to provide comment on potential cultural and historic resources located within the development area. As part of this study, a full review of cultural resources – along with findings related to development impacts – is provided in Section 2.2, below.

2.2 CULTURAL AND HISTORIC RESOURCES

The Developer must contact DHR and request a Federal Project Review. The review ensures that Federally involved agencies and activities make a reasonable and good-faith effort to identify and evaluate historic properties and assess the project's effects when historic properties are present. If adverse effects are expected—those that would undermine or destroy historic character or physical integrity—the Developer must consult on ways to avoid, minimize, or mitigate those effects.

Although DHR is a state agency, it is tasked with reviewing Federally involved projects within Virginia. A Finding of No Adverse Impact means that DHR does not believe that significant cultural resources will be harmed. DHR may also request additional information or return comments with ways to mitigate harm to resources.

Refer to Appendix H for a thorough list of cultural resources associated with the subject parcels.

2.2.1 – Summary of Previous Cultural Resource Investigations

Several Cultural Resource studies have been undertaken within and adjacent to the subject parcels. These studies are listed here, and detailed summaries can be found in Appendix H.

a) Route 29 Corridor Study, City of Charlottesville and Albemarle County. Phase I Historic Architecture Survey (Alexandria: John Milner Associates, Inc., 1988).

A Phase I historic architectural survey was conducted in association with the U.S. Route 29 corridor study in Charlottesville and Albemarle County, Virginia. The purpose of the survey was to identify historic architectural properties which were listed on, or were potentially eligible for listing on, the National Register of Historic Place.

b) Phase I Intensive Cultural Resources Survey, Piney Mountain Project, Piney Mountain Substation, Piney Mountain 115 kV line. (Richmond: Browning & Associates, 1992).

A Phase I survey of a 4.5-acre substation, 3,000-foot-long access road, and a 100-foot-wide by 23,000-foot-long transmission line corridor was conducted in advance of the construction of a new Rappahannock Electric Cooperative facility.

c) Phase I Archaeological Survey of the Proposed Piney Mountain Project, Albemarle County, Virginia. VDHR File No. 97-0823F. (Williamsburg: William and Mary Center for Archaeological Research, 1997).

A Phase I archaeological survey was initiated in an approximately 28-acre area located predominantly within Albemarle County parcel 32-5C1, adjacent to and south of the intersection of Rte. 29 and Boulders Road but not part of the subject parcel area.

d) Phase I Cultural Resources Survey of Proposed Expansion North of Boulder Way, NGIC Facility, Albemarle County, Virginia. VDHR 1997-0823. (Norfolk: Cultural Resources, Inc., January 2004).

In advance of the proposed acquisition of land and the future expansion of NGIC, a Phase I archaeological survey was initiated in an approximately 33-acre area located within all of Albemarle County parcels 32-5C and 33-14, and an undetermined southern portion of Albemarle County parcel 33-1D.

Cultural and Historic Resources (continued)

A single cultural resource, the historic Pritchett Cemetery (VDHR 002-5044 / 44AB0528) was identified in the southeastern portion of the project area, within parcel 33-14 but along its border with parcel 33-1D. At the time of documentation the Pritchett Cemetery was described as containing 14 graves, 6 of which possessed headstone markers and five of which possessed broken foot stone markers, and 3 of which were unmarked.

e) Phase I Cultural Resources Survey of the Proposed Expansion South of Boulder Way, NGIC Facility, Albemarle County, Virginia. VDHR 1997-0823. (Norfolk: Cultural Resources, Inc., March 2004).

In advance of the proposed acquisition of land and the future expansion of NGIC, a Phase I archaeological survey was initiated in an approximately 66-acre area located exclusively within Albemarle County parcel 32-5C4, currently a developed parcel owned by the U.S. Army, United States of America.

One isolated find (495-2) and a single archaeological site (44AB0514) were identified during Phase I survey. A single Hardaway-Dalton type point was recovered from along the southeastern boundary of the parcel.

2.2.2 – Critical Resources

A total of nine (9) critical resources have been identified as lying wholly or partially within the subject parcels. Five (5) of these critical resources, two (2) architectural sites, two (2) archaeological sites, and one (1) site that is both an architectural and archaeological resource, have been formally documented by VDHR, Refer to Figure 8. Four (4) critical resources, the general location of which are known only from historic maps and aerial photographs, are undocumented but are believed to be present within the subject parcels (Figure 8)

Documented Resource: *An architectural or archaeological resource for which a VDHR site form exists. These resources may also have site files in Richmond.*

Undocumented Resource: *An architectural or archaeological resource for which no VDHR site form exists.*

Each of the nine (9) historic properties that are critical to the subject parcels are discussed briefly, below. Refer to Appendix H for a thorough description of each of these resources.

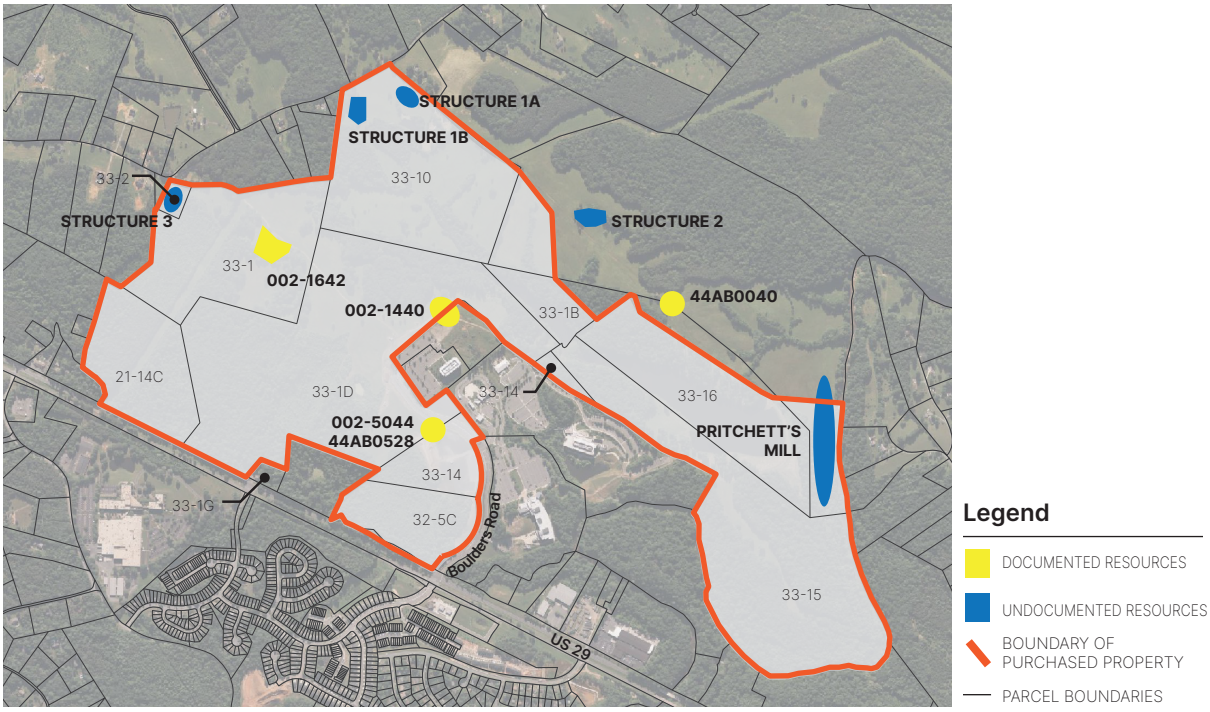


Figure 8 - Subject parcels showing location of documented and undocumented resources.

Cultural and Historic Resources (continued)

a) VDHR 002-1440 – Michie Farm Ruins
(VDHR Documented Resource)

Initially identified in 2004 and designated as a farm complex and cemetery associated with the Michie Farm complex, this property is reported to have been demolished in the 1970s. 002-1400 was examined again in 2006 and found to consist solely of five quarried stone piers. As a result, 002-1400 was reinterpreted as a partially demolished granary. It is assumed that the 3-foot-tall stone piers were initially misinterpreted as grave markers. (Photograph 1)

Photograph 1: VDHR 002-1440 Michie Farm Ruins

b) VDHR 002-1642 – House, Route 574
(VDHR Documented Resource)

At the time of its survey in 1998, 002-1642 consisted of a primary wood frame dwelling and two secondary sheds. Historic maps also show a structure in this location as early as the mid-1930s. 002-1642 is dated to ca. 1900 and sits along the western side of a historic road corridor extending in a northeast-southwest direction from its intersection with Watts Passage Road. The VDHR site form notes that the resource has not yet been evaluated. 002-1642 is located within AC parcel 33-1.

c) VDHR 002-5044 / 44AB0528 – Pritchett Cemetery
(VDHR Documented Resource)

The Pritchett Cemetery (Photograph 2) was identified during a Phase I archaeological survey conducted in 2003 by CRI, Inc. As documented during the survey, the cemetery consists of 14 burials in three discrete rows. Numerous engraved headstones documented burials dating to the early twentieth century. Vegetation associated with the historic cemetery includes cedar trees, yucca plants, a rose bush, and periwinkle ground cover. Although only 14 graves were identified, the VDHR site form notes the potential for additional unmarked graves at the site.

Photograph 2: VDHR 002-5044 Pritchett Cemetery

The archaeological consultant recommended that a 50-foot buffer extending beyond the visible graves on all sides be maintained, that fencing and signage providing context for the burial ground be provided, that a long-term maintenance plan for the cemetery be developed, and that an easement be recorded to allow descendants access to the cemetery. Although the VDHR site form notes that the resource has not yet been evaluated, the consultant noted that the Pritchett Cemetery was likely not eligible for listing on the National Register of Historic Places.

Cultural and Historic Resources (continued)

The current property owner, and any future property owner, is not legally obligated to maintain or do anything to the Pritchett Cemetery. However there are several Virginia laws that regulate cemeteries and burial grounds including 1) a property owner's obligations to provide access and visitation to descendants of those interred in a cemetery (§57-27.1), and 2) prohibiting willful damage or destruction to a known cemetery (§18.2-127).

Because there is the possibility that unmarked and unidentified human interments could be located beyond the visible grave markers, any future development work within 50 feet of the visible boundaries of the Pritchett Cemetery, to include any type of ground disturbing activity (e.g., road construction, utility work, etc.), may require a more robust cemetery delineation effort.

Note: The current owner has developed a parking lot in the direct vicinity of the cemetery. 50 foot buffers have not been maintained on all sides of the cemetery. Refer to Photographs 3 and 4, right.

d) VDHR 44AB0040 – Domestic Complex
(VDHR Documented Resource)

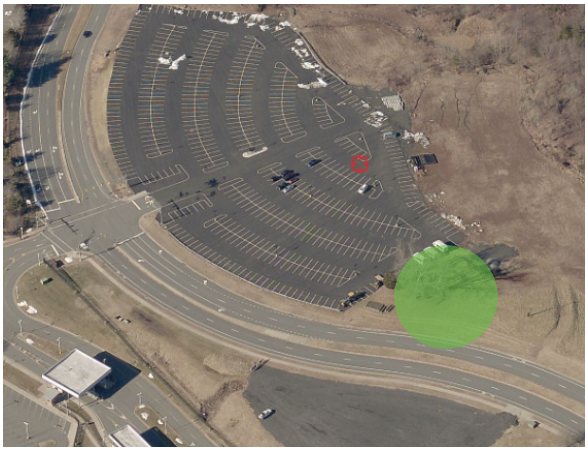
This resource was identified during a reconnaissance level pedestrian survey in 1966 by C. G. Holland and recorded in the VDHR database in 1984. At the time of its survey 44AB0040 consisted of a chimney and foundations with refuse scattered over the ground surface. Site 44AB0040 was estimated to date to the nineteenth century.

Site 44AB0040 lies on the eastern boundary of parcel 33-16 and may straddle the boundary between it and 33-13 to the east. Because there were no subsurface archaeological investigations undertaken during its initial identification, it is not yet clear how large the site is, nor if there are any buried archaeological resources or deposits that retain integrity. The VDHR site form notes that the resource has not yet been evaluated.

e) VDHR 44AB0414 – Prehistoric Site
(VDHR Documented Resource)

Site 44AB0414 was initially identified during a Phase I archaeological survey conducted in 1992 in advance of the construction of a transmission power line through what is now the northern portion of the subject parcels. 44AB0414 was identified as a Native American site and material culture collected during Phase I survey included 10 white quartz lithics, predominantly non-diagnostic fragments and flakes. Due to the non-diagnostic nature of the site, 44AB0414 was initially interpreted as an Archaic period lithic scatter.

Photograph 3: Aerial Image Circa 2008 (Gravel Lot)



Photograph 4: Aerial Image Circa 2020 (Paved Lot with Lights)

Legend

DOCUMENTED RESOURCES

Cultural and Historic Resources (continued)

Because the site was not near any proposed construction it was avoided. The VDHR site form notes that the resource has not yet been evaluated. 44AB0414 is located along the eastern boundary of AC parcel 33-10 adjacent to and west of a historic road corridor.

f) Pritchett's Mill – Historic Mill Seat
(Undocumented Cultural Resource)

A single cultural resource that does not appear in VDHR's VCRIS database is a site called 'Pritchard's' or 'Pritchett's' Mill. This site is not to be confused with 44AB0040 located in an upland setting along the boundary between AC parcels 33-16 and 33-13 which historic maps also show may be the residence or domestic site called 'Pritchard's' or 'Pritchetts.' 'Pritchard's' or 'Pritchett's' Mill appears on numerous mid-nineteenth-century maps of Albemarle County and is most likely located in a lowland-floodplain setting on the north side of the Rivanna River somewhere along the southern boundary of AC parcel 33-13. The mill seat may have been composed of a merchant or toll mill, a miller's house, as well as additional landscape features such as a dam, canal, and/or mill race. The mill appears to have been active into the twentieth century.

Figure 9 - Albemarle County, Virginia, showing the general Rivanna Station vicinity and 'Pritchard's' mill on the north bank of the Rivanna River. Jed. Hotchkiss, 1867. Library of Congress Map Collection, Digital ID: http://hdl.loc.gov/loc.gmd/g3883a.csh00275.

Cultural and Historic Resources (continued)

g) Structure 1A and 1B
(Undocumented Cultural Resource)

Structure 1A and Structure 1B are identified only from aerial photographs dating from 1937 forwards. Structure 1A appears to possess four structures all west of and adjacent to a historic road corridor only 500 feet southwest of Watts Passage. Given its location adjacent to a road, Structure 1A is believed to be a residential complex. Structure 1A does not show up in the 1957 aerial and is presumed to have been demolished by then. A structure in this general location appears on late nineteenth-century maps.

Additionally, a small family graveyard was identified by surveyors southwest of and adjacent to the formal location of Structure 1A. The cemetery is accessed by a dirt road and is currently surrounded by a trailer and two small sheds. The cemtery is believed to be part of the larger former domestic complex.

h) Structure 2
(Undocumented Cultural Resource)

Structure 2 is identified only from aerial photographs dating from 1957 forwards. Two structures are identified in this location, one on either side of the historic road corridor. Because it lies immediately adjacent to a historic road corridor, it is presumed that Structure 2 may be a residence, with an adjacent agricultural outbuilding. Nothing else is known about these historic structures. Structure 2 is located within AC Parcel 33-13.

i) Structure 3 (4856 Watts Passage)
(Undocumented Cultural Resource)

Structure 3 is identified only from aerial photographs dating from 1957 forwards. At least two structures are identified in this location. Because it lies immediately adjacent to a historic road corridor, it is presumed that Structure 3 may likely be a residence, with at least one adjacent outbuilding. Nothing else is known about these historic structures. Structure 3 is located within AC Parcel 33-2.

A total of thirteen (13) cultural resources, seven (7) architectural sites, and six (6) archaeological sites have been identified either adjacent to or in the vicinity of the subject parcels. Although lying outside of the current proposed project area, these resources may have a bearing on potential future cultural resource surveys associated with the subject parcels. Future development work associated with the subject parcels may be required to assess the non-direct visual impact of the project on historic properties located adjacent to but outside of the project area. Please refer to Appendix H for a list of these resources.

2.2.3 – Potential Future Cultural Resource Recommendations

Any development work undertaken by the U.S. Government within any of the subject parcels, or any development work undertaken by other non-governmental entities but tied to Federal monies, permits or licenses, may require additional cultural resource studies.

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires all Federal agencies to take into account the effects of their undertakings on historic properties. Minimally this work may entail archaeological work in areas of proposed development that have the potential to impact known or potential cultural resources. This would include all areas proposed for construction, road work, utility work, landscaping, and possibly construction lay down areas. If potentially significant cultural resources are identified during the initial phase of archaeological fieldwork, the consultant may recommend additional expanded investigations to better understand

Cultural and Historic Resources (continued)

its eligibility for listing on the National Register of Historic Places. In addition, depending upon the type and scale of development undertaken, a cultural resource survey may be required that will determine if there are non-direct adverse visual effects on adjacent historic properties.

2.2.4 – Potential Future Cultural Resource Recommendations

The Pritchett Cemetery (002-5044 / 44AB0528) is located within Albemarle County parcel 33-14. Because a field survey of the Pritchett Cemetery is not yet complete, it is not yet clear how close development has come to the approximately 25 by 50-foot area of visible graves. Aerial photos (Photographs 3 and 4, Page 15) document that the Pritchett Cemetery is currently bounded on its southwest side by a large asphalt-surfaced parking lot.

The purchaser of the property will inherit responsibilities and ethical obligations related to this cemetery including:

1) A 50-foot buffer be established around the known burials,

2) Fencing and signage identifying the cemetery be erected,

3) A long-term plan for the maintenance of the cemetery be developed, and

4) An easement be recorded that provides access to descendants of those that are buried there.

An undocumented family cemetery is located adjacent to Structure 1A within Albemarle County parcel 33-10. Given how little is known about the cemetery, its size, condition or who is buried there, the following recommendations are made:

1) Conduct a preliminary site visit to map the visible boundaries and document the cemetery with photographs,

2) Conduct limited archival research in the Albemarle County Courthouse to determine when the cemetery was established, whom might be buried there, and if there are any legal reservations.

2.2.5 – Areas of Potential Archaeological Sensitivity

Although the Virginia Department of Historic Resources V-CRIS database records known architectural and archaeological resources that have already been identified, there is the potential that currently undocumented archaeological resources may be discovered during future archaeological investigations within the subject parcels. Refer to Appendix H for a thorough documenting of additional areas for potential archaeological sensitivity.

Based on these initial determinations related to Cultural and Historic Resources it can be said that cultural resources within the development parcels may be impacted by Rivanna Station expansion, but these impacts will be mitigated during Section 106 process. Cultural resources outside of the development area will likely not be impacted by Rivanna Station expansion. Based on this initial study it can be stated that most of the cultural resources identified (documented and undocumented) have not yet had their eligibility determined.

Notwithstanding, it is likely that work done as part of Rivanna Station will not be limited by the presence of known cultural resources. The final determination regarding impacts, additional studies, and necessary mitigation efforts, however, will be made by DHR through their project review process.

2.3 STREAMS AND WETLANDS

The subject parcels exhibit moderate topographic variability. The ground surface is hilly and heavily dissected by valleys, and many of the valleys contain streams. Refer to Section 3.3, below, for additional information regarding the topography. For the purposes of this study the streams are classified as intermittent streams or perennial streams and defined as:

> ***Intermittent Stream:*** *(also known as an ephemeral stream) a natural stream or portion of a natural stream that has a defined bed and defined banks within which water flows in response to precipitation, through near surface groundwater flow, or from springs, and which is not a perennial stream.*
>
> ***Perennial stream:*** *any stream that is depicted as a continuous blue line on the most recent United States Geological Survey 7.5 minute topographic quadrangle maps (scale 1:24,000), which is determined by the program authority to be perennial following a site-specific evaluation using the guidance entitled "Determinations of Water Bodies with Perennial Flow," dated September 2003, issued by the Chesapeake Bay Local Assistance Department, or which is delineated as a perennial stream by the United States Army Corps of Engineers, the Virginia Department of Environmental Quality, or under the Virginia Water Protection program.*

Both the Army Corps of Engineers (USACE) and the Virginia Department of Environmental Quality (DEQ) regulate jurisdictional streams and wetlands. Virginia regulates these resources through Virginia Water Protection Permit program and regulates isolated wetlands as well as Waters of the U.S., as determined by the Army Corps and EPA. The latter are generally waters that either have a continuous surface connection to relatively permanent waters or tributaries and wetlands that affect the chemical, physical, or biological integrity of downstream water bodies. The subject parcels related to this study list the WOTUS in section 2.1.2, above.

Any proposed impacts to jurisdictional waters will require permitting at the state and/or federal level, likely via the JPA process described above in Section 2.1.2.

The natural resource regulatory requirements discussed above, will be considered as an initial part of project planning. A full stream and wetland delineation should be conducted during the master planning process so that these resources are adequately delineated and can be incorporated into development plans, and any necessary permitting should be initiated as soon as reasonable. Any updates or mapping associated with perennial streams and WPO buffers should be coordinated with County staff. Refer to Appendix G for additional detail related to streams and wetlands.

2.3.1 - Albemarle County Water Protection Policies

Article VI of the County's Water Protection Ordinance (WPO) contains requirements for stream buffers. In Development Areas, these buffers are required along perennial streams as opposed to intermittent or ephemeral streams. In order to determine applicability of a County stream buffer to a certain site, it is necessary to delineate perennial streams on the property, as discussed below. In Rural Areas and Water Supply Protection Areas, WPO buffers are also required on intermittent streams.

A stream buffer is a minimum 100-foot riparian buffer on each side of a perennial stream or wetland. Figure 10, next page, indicates known perennial streams, wetlands and WPO buffers on the subject parcels. However, formal site-specific evaluations, as referenced in the perennial stream definition, should be performed to verify and

Streams and Wetlands (continued)

validate this preliminary finding in the Development Area portions of the subject properties. Future field studies in consultation with County staff may indicate perennial streams, and thus WPO buffers, beyond those currently mapped on the County GIS within the sections of the property designated as Development Areas.

Furthermore, the WPO includes regulations specific to riparian buffers and the activities that are permitted within them. Albemarle County's Zoning Ordinance Section 4.3 also restricts tree removal adjacent to perennial streams and water supply impoundments throughout the county.

2.3.2 - Floodplains

In some cases (e.g., Herring Branch, North Fork Rivanna), WPO buffers partially overlap with designated 100-year flood plains. In these situations, the Flood Hazard Overlay (Section 30.3 of the Zoning Ordinance) applies as well as the WPO.

In terms of process, any fill in the floodplain would require a flood study, coordination with FEMA, and approval of the special use permit (Zoning Ordinance, Section 30.3). Any disturbance of a stream buffer would require a mitigation plan as per the Water Protection Ordinance (Section 17-406). A road crossing of Herring Branch within the 100-year floodplain limits would require both as well as permitting through the Army Corps and Virginia DEQ, likely through Joint Permit Application process (see section 2.1.2, above for information related to a JPA).

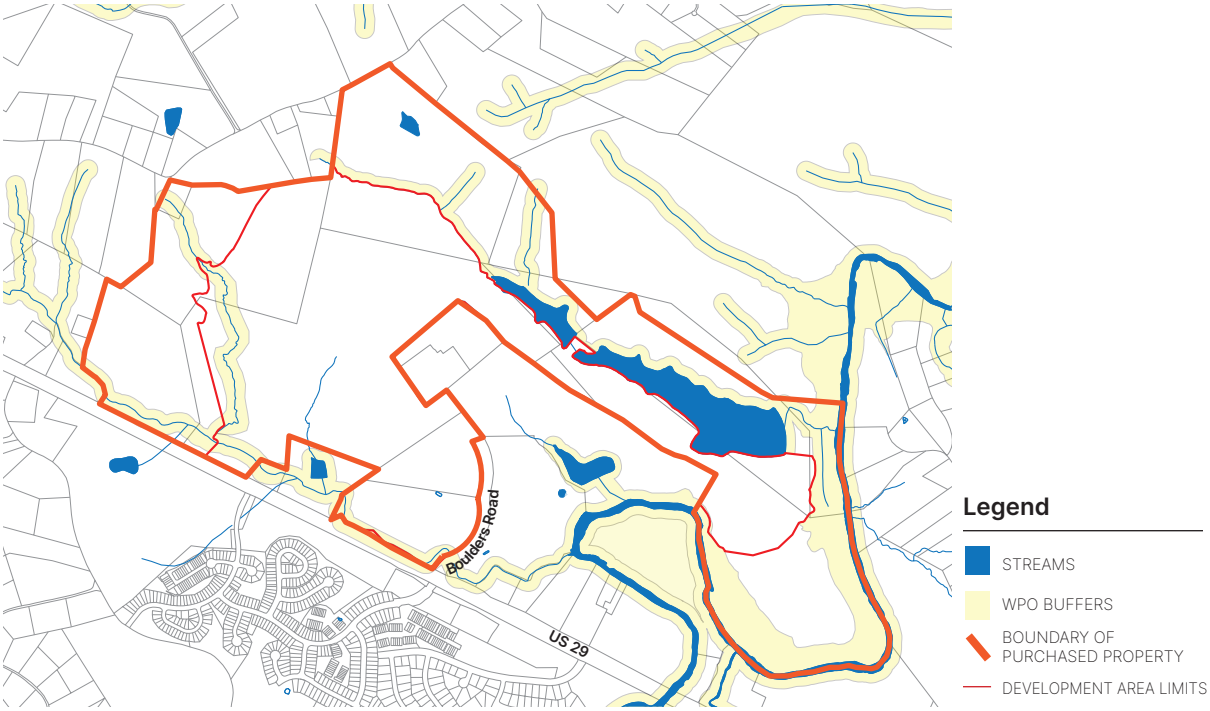


Figure 10 - Surface Waters, Streams and WPO Buffers

Streams and Wetlands (continued)

2.3.4 - Wetlands

In Albemarle County, wetlands generally occur alongside streams, as seeps into floodplains, and behind impoundments, although other wetland areas are possible. At present, the Army Corps is evaluating the May 25, 2023 Supreme Court ruling in Sackett vs. Environmental Protection Agency, and will make any necessary interpretations to ensure that Waters of the U.S. are consistent with the ruling.

The 2007 Environmental Assessment conducted by Paciulli Simmons & Associates for the Department of the Army (refer to Appendix H) identified several small wetland areas based on a survey by the Williamsburg Environmental Group (now Stantec). These are associated with backwater areas of existing impoundments, refer to Figure 11, below.

Beyond this 2007 study, the National Wetland Inventory (NWI) shows major river and wetland resources. As such, the NWI identifies the site's impoundments and significant rivers (e.g., North Fork Rivanna). However, due to the topography of Albemarle County, most wetlands tend to be small and distributed along stream valleys and as such they are not identified by the NWI and need to be delineated in the field.

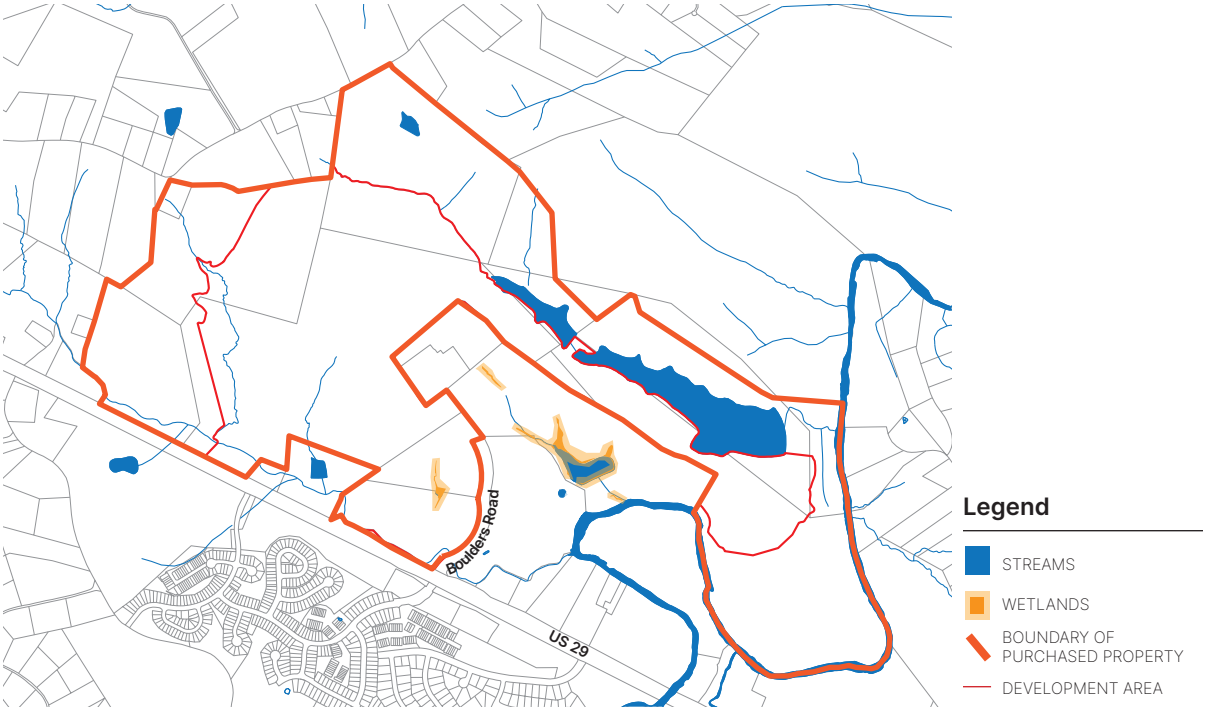


Figure 11 - Wetlands

2.4 PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

As a part of this study a Phase 1 Environmental Site Assessment (PH1 ESA) was performed on the subject parcels. The full PH1 ESA can be found in Appendix C, and a summary of the findings, conclusions and recommendations is included below.

2.4.1 Summary of Findings

a) Based on information obtained from records review of publicly available information, the subject parcels appear to have consisted of predominantly open pasture and wooded land at least as far back as the 1930's. Several agricultural and residential structures (most of which are in poor condition) were observed on the property during Site reconnaissance.

b) A "user questionnaire" reported a former underground storage tank (UST) on parcel 33-1. The UST was reportedly used to store farm fuel and was removed years ago. We have not obtained any environmental records documenting the former UST at this time. Based on our conversations with the User, the potential for petroleum impacts from this former UST is considered an REC and HydroGeo has completed limited Phase 2 sampling to investigate whether any impacts exist. Refer to section 2.5 for a summary of findings related to the Phase 2 ESA.

c) No signs of existing petroleum storage tanks were observed in the vicinity of any of the structures observed during site walks.

d) De minimis conditions: several stockpiles of fill material and/or debris were observed during site reconnaissance. Materials observed included soil, concrete, asphalt, railroad ties, and construction debris. Several paint cans, empty kerosene cans, and other small quantities of unknown apparently construction-related material were observed in various locations onsite. While these items are not thought to pose an environmental risk, they should be removed and disposed of properly.

e) All surface water observed onsite appeared clear and absent of any odor or sheen.

f) Envirosite Corporation (Envirosite) was retained to perform a basic search of local, state and federal regulatory agency databases and information was reviewed to determine if the subject parcels and facilities within the appropriate ASTM search radii are listed in any environmental databases and if the Subject Property or other nearby facilities have been the subject of reported violations or complaints. No databases within the search radii returned results of potential past environmental concerns or incidents on the Site or in the vicinity which may impact the property.

Phase 1 Environmental Site Assessment (continued)

2.4.2 Summary of Conclusions

a) Former farm fuel UST, located behind a barn that is currently being used on Parcel 33-1, is the only Recognized Environmental Condition (REC).

b) The items listed in 2.4.1 Paragraph (d), above, should be removed and disposed of properly.

2.4.3 Summary of Recommendations

a) Soil (and if possible, groundwater) sampling in the vicinity of the former farm fuel UST should be performed to investigate if there have been any impacts from the potential post release of petroleum into the environment. (Please note, the County has performed this work and it is summarized in Section 2.5, below)

b) Small-volume containers (less than 50 gallons each) of household cleaners, paints, oil, fuel, etc. and construction debris should be removed from the subject parcels and properly disposed of based on local regulatory guidance. Any small-volume containers of petroleum products and/or potentially hazardous substances that will remain onsite should be consolidated and stored in a way to prevent accidental releases to the environment.

   i. If greater certainty is required regarding the nature of the observed fill material, soil sampling may be conducted to characterize the material.

2.5 PHASE 2 ENVIRONMENTAL SITE ASSESSMENT (LIMITED)

Based on initial findings during the Phase 1 ESA, namely the presence of a recognized environmental condition (REC) on parcel 33-1, a limited Phase 2 ESA was performed to further investigate and characterize any potential release of hazardous substances as a result of the REC. The full findings of this Limited Phase 2 ESA can be found in Appendix C, and a summary of these findings is below.

2.5.1 Summary of Findings

a) Three (3) soil borings were taken to screen for the release of hazardous substances or petroleum products and to investigate and otherwise characterize the potential environmental impacts and risks to human health.

b) Laboratory analytics based on the collected samples did not detect any total petroleum hydrocarbons for gasoline range organics (TPH-GRO) or diesel range organics (TPH-DRO) nor were any VOC's detected.

c) No further environmental action or sampling is required or recommended.

3.1 DAMS AND EARTHEN STRUCTURES

The subject parcels contain two (2) lakes created by earthen embankments (dams). The larger lake/dam known as Greens Dam is located on parcel 33-16, and the smaller lake/dam denoted as Mosby Mountain Dam #2 is located on parcel 33-1B. The two lakes are in series, where Mosby Mountain Lake flows into Greens Lake, and Greens Lake subsequently flows into the North Fork of the Rivanna River. Refer to Figure 12, below, for a representative image of this configuration.

The contributing watershed of the lakes, shown in Figure 13, is small relative to the size of the lakes (compare to that of Chris Greene Lake) – likely limiting the spatial impact of a dam failure to the stream valley between the dams and the North Fork. Both dams are classified by DCR as low-hazard potential dams due to there being no roads or structures within this area of potential impact. DCR has a special hazard potential classification for low hazard dams for which a failure would cause no damage except on property owned by the dam owner.

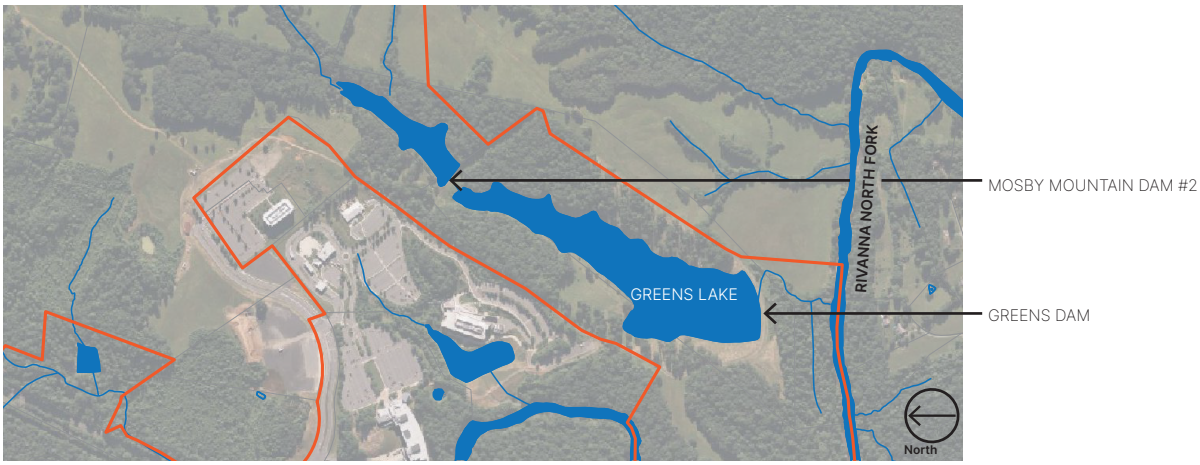


Figure 12 - Earthen Embankment Structures

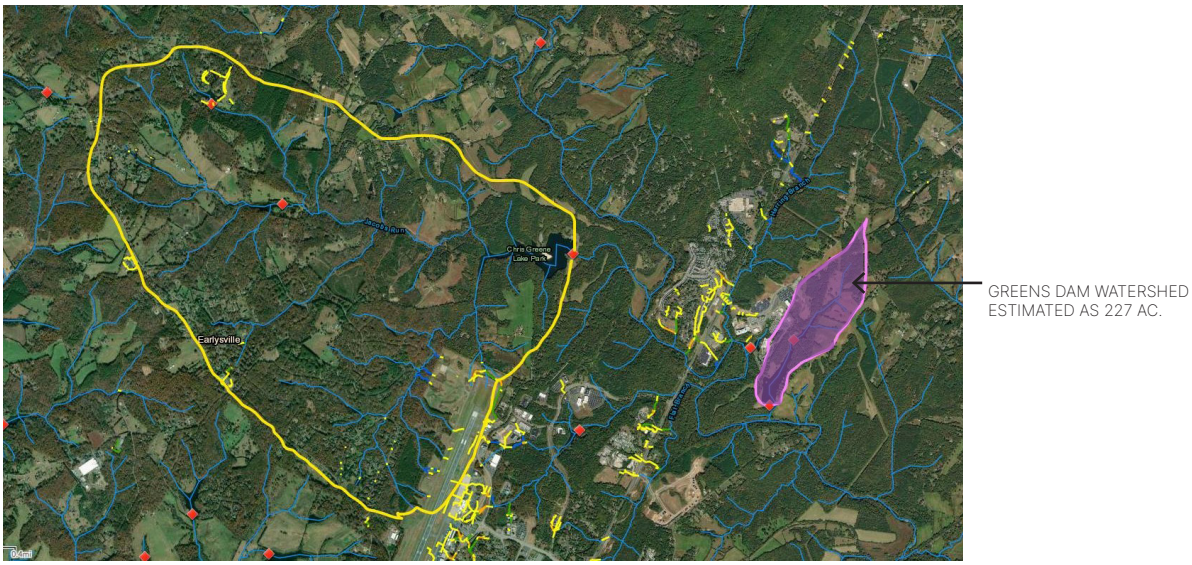


Figure 13 - Contributing Watersheds to Greens Dam and Chris Green Lake (yellow) shown for context.

Dams and Earthen Structures (continued)

3.1.1 – Responsibilities of Dam Owner

The records and documentation associated with this dam are virtually non-existent. If the County becomes the owner of these dams, assuming the proposed boundary line adjustment is found to be acceptable to the seller, the County will need to bring the dam into compliance with the current DCR regulations, including:

- confirmation that the spillway(s) can safely pass the 50-year storm
- development of an Operations and Maintenance Plan
- conducting annual inspections

Owners of dams having low-hazard potential are relieved from many of the regular responsibilities of owning a conventional regulated dam. Low Hazard Potential Dams **do not require:**

- a dam break analysis or development of maps of the dam break inundation zones
- an Emergency Preparedness Plan (EPP)
- a professional engineer to conduct the annual inspection
- annual permit fees

3.1.2 – Cursory Inspection and Repairs

A cursory inspection was performed by County Staff and several members of the consultant team providing this study. The conditions observed suggest that the dams are generally in serviceable and stable condition. However, both dams will require moderate repairs to ensure they can meet the requirements set forth by DCR. The initial repairs likely consist of replacing/repairing the corrugated metal pipes serving as primary, auxiliary, and emergency spillways and providing stable downstream channels for these spillways and some minor vegetation clearing (~0.25 Acres) at the dam toe of slope.

Note: further investigation will be required to locate the primary spillway. Based on visual evidence it appears to be working, but the structure itself cannot be visually identified as it is located below the water surface elevation.

A detailed condition report for the two dams can be found in Appendix E.

Photograph 5: Greens Dam (looking south)

3.2 PRELIMINARY GEOTECHNICAL INVESTIGATION

The Geotechnical Investigation of the subject properties consists of twenty (20) soil profile borings organized along the anticipated alignment of Boulders Road and within the vicinity of potential building pad locations. The geotechnical boring locations can be seen in Figure 14, below.

A full copy of the Preliminary Geotechnical Engineering Report can be found in Appendix D. A brief summary of significant findings is as follows:

Along the Boulders Road extension alignment, it is expected that approximately 12 inches of over excavation will be required, and this volume should be replaced with select fill. If, during construction, particularly soft soils are encountered a geogrid fabric can be installed at the bottom of the over excavation depth prior to filling back with subgrade materials. It is expected that some portions of the alignment will require this subgrade stabilization.

Two borings (R10 and R11) were performed in the vicinity of the Herring Branch stream crossing location where it is anticipated that a bridge or another structure will be required. The blow counts in this area were fairly high so it is likely that shallow foundations can be used along the eastern bank. Note, there were no geotechnical borings made on the west bank of Herring Branch due to the steep grades and limited access.

Several borings did encounter disintegrated rock at depths of approximately 7-10 feet. Based on the preliminary vertical profile of Boulders Road extension it seems plausible that the maximum cut near the northern connection to US 29 can be kept at approximately this depth. Further design, topographic data and geotechnical evaluations will need to be acquired to make final determinations about the likelihood of encountering rock. Out of the twenty (20) borings taken across the site, six (6) borings encountered disintegrated rock at varying depths. (Along Road: R10 @ 8.5 feet; R11 @ 7.5 feet; R5 @ 7 feet; At Potential Building Pads: B1 @ 9 feet; B4 @ 6 feet; B9 @ 2 feet.)

Please note that these geotechnical findings are preliminary and additional subsurface investigation work will be required during the preliminary engineering (PE) phase of the project. Nonetheless, the findings here are a helpful look at the underlying conditions at the project site.

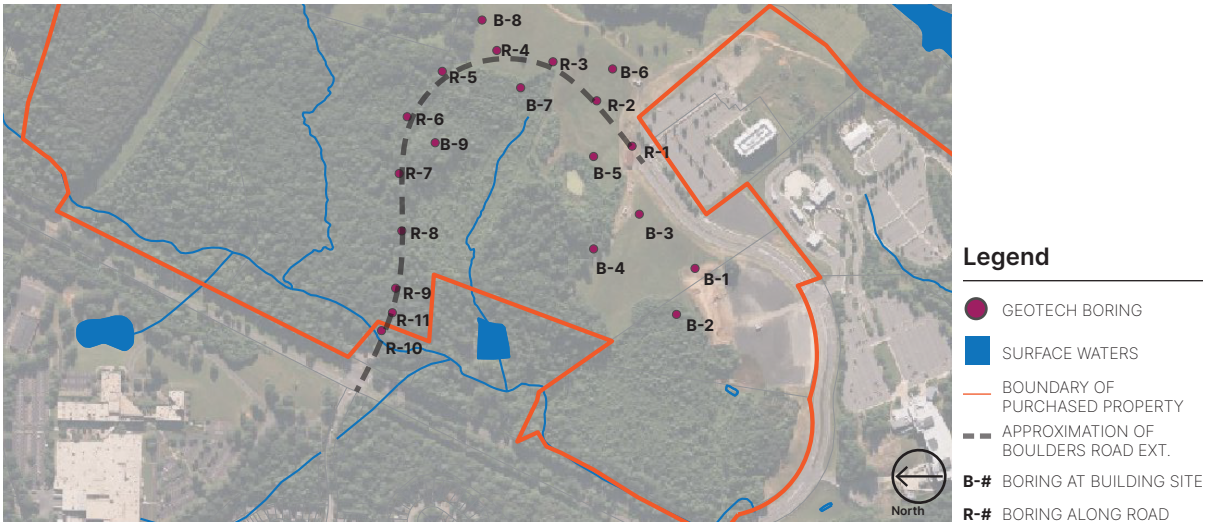


Figure 14: Geotechnical Boring Locations

3.3 TOPOGRAPHY

The physical characteristics of existing landforms (namely slope and soil type) have a significant impact on the development potential of any site. Therefore, a cursory analysis was performed on the existing topography within the development area of the site utilizing the publicly available USGS LiDAR and USDA web soil survey data sets. The results of the analysis are discussed below.

3.3.1 - Slope Analysis

Topography across the study area is best characterized as rolling to hilly. Landforms generally consist of wide, relatively flat ridges changing gradually to steep slopes which lead to numerous drainages and hydrologic features.

SLOPES WITHIN DEVELOPMENT AREA	
0% - 10%	89 Acres *
10% - 25%	103 Acres **
25% - 50%	33 Acres ***
> 50%	7 Acres
Dev. Area	232 ACRES

**10% is the maximum road grade*

***25% is the lower limit of the Albemarle County steep slope ordinance*

****50% is the absolute maximum graded slope allowed in Albemarle County*

Site development costs are positively correlated with slope, as steeper sites require longer tie-down slopes, retaining walls, permanent slope stabilization and erosion protection, and complex solutions for ADA accessibility and connectivity. Therefore, to maximize developable area, the County should aim to provide access to the flattest areas of the property (the exception to this being areas within the floodplain boundary, as the development potential of these areas is restricted). However, this goal must be balanced with the cost to provide such access. Refer to Figure 15 (next page) for a slope map of the subject parcels.

As the study area is developed, it is likely that flat sites with the easy access will be the first to see improvements. As the prime sites are occupied, any further density that is desired would need to occur where site conditions are marginal. It is likely that the costs to develop the sites will increase exponentially as the land nears its development capacity. This places a fixed limit on development, although this limit is difficult to quantify.

The Albemarle County Zoning Ordinance restricts development on preserved steep slopes, as defined in 18-30.7.3. While some limited areas of the County's steep slopes overlay within the study area are managed steep slopes, these restrictions generally correlate with the slopes. Refer to Figure 16 (next page) for a map of slopes and their respective designations on the subject parcels.

3.3.3 - Soils

Soil types found within the development area are generally consistent with those found across northern Albemarle County within similar landforms. According to available USDA data, depth to restrictive layers and depth to water table is greater than 6-feet across a vast majority of the pertinent development area. Refer to Section 3.2 and Appendix D for site specific data related to soils tests.

Topography (continued)

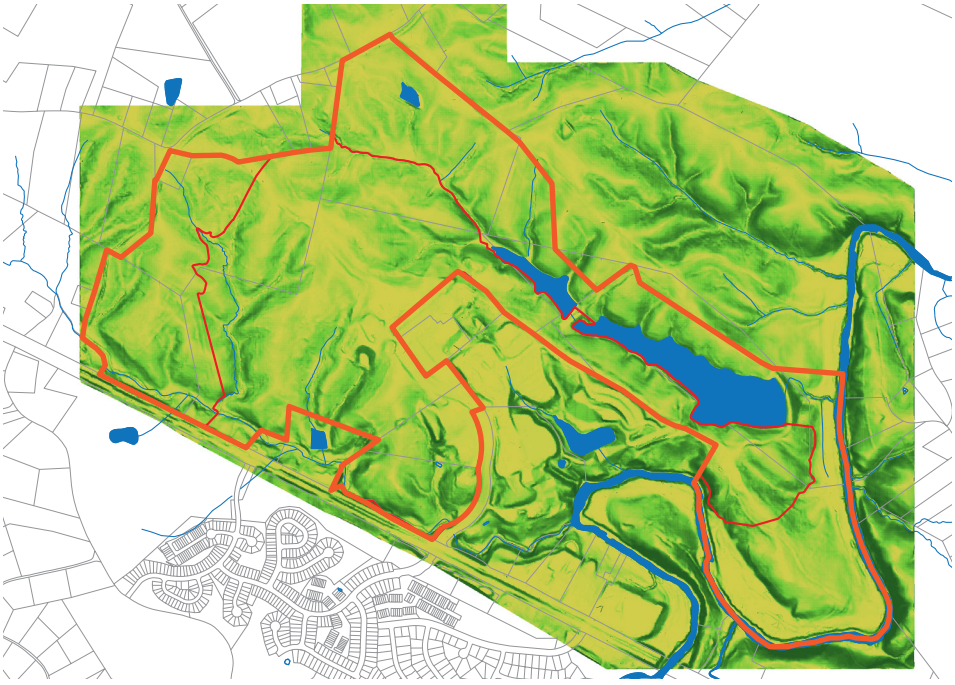


Figure 15 - Slope Mapping

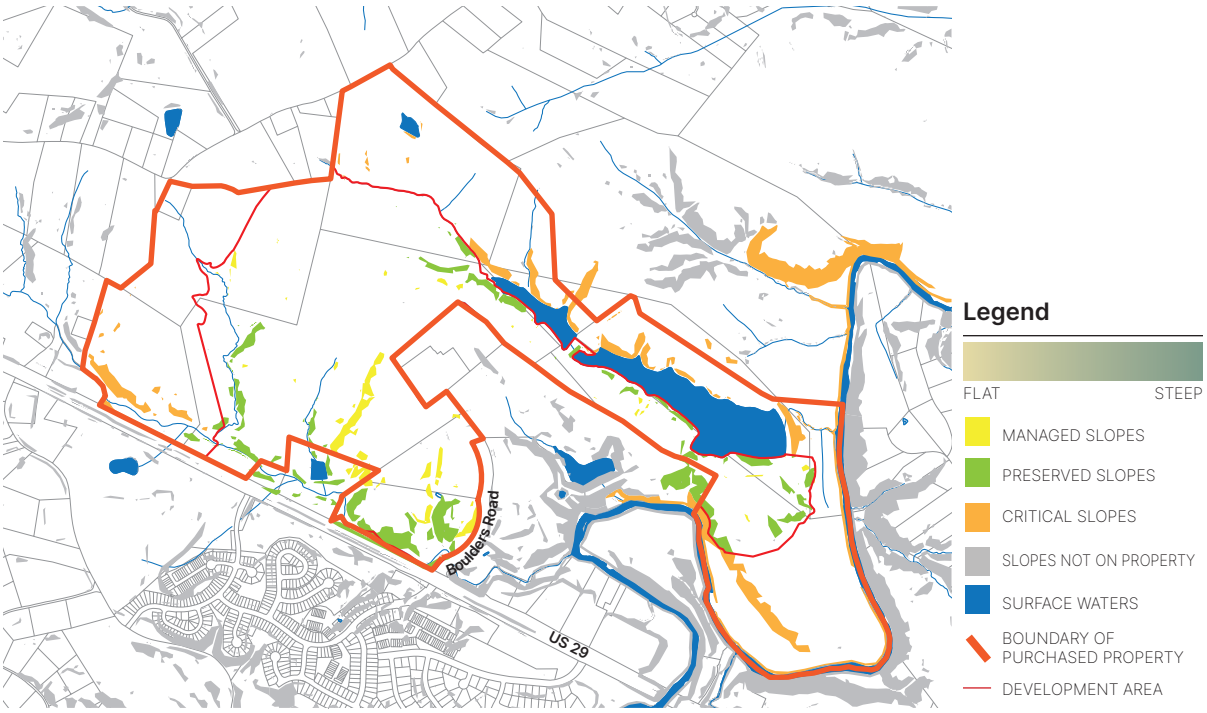


Figure 16 - Slope Designations on the Subject Parcels

3.4 SUMMARY OF ALTA SURVEYS AND TITLE WORK

In support of this planned transaction the team of consultants is preparing eleven (11) American Land Title Association (ALTA) surveys, one for each parcel. This survey work includes closing the boundary of each parcel and noting the exceptions to the title reports.

Revisions to the ALTA surveys associated with parcels which contribute to the planned Boundary Line Adjustment will need to be revised once the BLA is final.

Please refer to Appendix B to view the ALTA Surveys.

3.5 OPEN BONDS AND ZONING VIOLATIONS

3.5.1 – Open Water Protection Ordinance (WPO) Bond

The current landowner has an open WPO bond related to construction activities dating back to 2009. Based on discussions and correspondence with the current owner, it has been more financially advantageous to keep the current WPO bond open and pay the annual renewal fee than to close out the bond by finishing the work.

The open bond (WPO-2009-00020) is in the amount of $315,000 and renews annually in June. The bond is associated with a development project known as University Village Retirement Community – Phase 1. The selling party has asked that the bond convey to the purchasing party as a result of this transaction. However, County staff have advised that the bond will not transfer in this manner.

It is recommended that the County require the selling party to close out the bond. The purchase agreement makes provisions that the selling party can access the property after closing, if necessary, to complete this work.

Refer to Appendix J for detailed documentation related to this matter.

3.5.2 – Zoning Violations

Parcel 33-14, adjacent to Boulders Road, contains an asphalt parking lot serving Rivanna Station. Archival aerial imagery suggests that this parking lot started out as a gravel surface and over time was improved to be an asphalt parking lot complete with lights, guardrails, retaining walls, and bus shelters. (Refer to Photograph 4 on Page 15).

Based on a conversation with County staff, there was a record of a zoning complaint associated with this parking area. The complaint was investigated, and no violation was found.

CONSIDERATIONS FOR PROPOSED DEVELOPMENT

In 2017, Matrix Design Group (Matrix), working for the Secretary of Veterans and Defense Affairs, developed a concept plan of an expanded Rivanna Station. A copy of this concept plan was shown in Section 1.4 as Figure 6. The recommendations of the Matrix study included expanding Rivanna Station to the north of the existing NGIC installment. This proposed expansion included the extension of Boulders Road, which is a 4-lane divided boulevard, to US 29, and thereby connecting to an existing signalized intersection at Austin Drive. As such, Boulders Road would be a looping road providing two (2) points of egress for Rivanna Station on US 29. The Matrix plan also delineated approximately 600,000 square feet of facility space for a myriad of potential occupants such as Joint Training Facilities, Defense Intelligence Agencies, Warehouse Facilities, and unknown future facilities.

At the time this Matrix study was developed the consultant did not have access to the volume of supplementary information which has been generated as a part of this due diligence study. In light of the many aspects of the subject parcels which have come to light, this study will suggest some subtle or moderate changes to the Matrix plan but will preserve the design intention of an expanded Rivanna Station.

As a part of this due diligence study, Line and Grade, in partnership with County staff members, held several meetings to discuss and explore the potential of this Rivanna Station development. It was during these meetings where it was expressed by County executive leadership that the due diligence report should evaluate the property for opportunities to best utilize its infrastructure, preserve area resources, promote industries and economic development, in consideration of the Comprehensive Plan objectives.

The development area on these subject parcels does allow for additional facility space beyond that conceived by Matrix. In the following sections of this study, we will explore considerations of the proposed development at Rivanna Station, the capacity of this land to host these facilities, and the implications this development will have on County infrastructure. One thing remains clear, the exploration herein is helpful to consider what Rivanna Station can become, and the importance of the County to develop a formal masterplan of Rivanna Station cannot be understated.

Beyond the ability to use a masterplan to navigate the entitlement process (discussed below in section 5.1), the masterplan can help guide the coordination with VDOT, utility service providers, and future occupants of Rivanna Station facilities. As will be expounded upon below, developments of this magnitude generate a large number of vehicular trips and require a substantial commitment from utility providers. Narrowing down the range of these impacts and demands will be an important consideration for the next phase of the Rivanna Station project. For the purposes of this study, we will provide ranges of development density, which will be further explored in future phases of the project.

4.1 ROAD DESIGN - BOULDERS ROAD EXTENDED

Extending Boulders Road from the existing terminus around to US 29 requires nearly 3,000 linear feet of new public roadway. As shown in Figure 17, below, the proposed alignment of Boulders Road Extended begins at the existing roadway terminus and follows natural topographic features as it wraps around to the north and west, where it descends toward Herring Branch and will cross the stream, the FEMA floodplain, and the County WPO buffer. Appendix A includes Boulders Road Concept Plans.

It is anticipated that the proposed roadway section will resemble the existing Boulders Road, which is comprised of 2 travel lanes in each direction (4 total), divided by a raised median. Right-hand and left-hand turn lanes will be provided where warranted, which is assumed to be at the entrance of most facility building locations. That said, it may not be necessary to build all four (4) travels lanes initially. In the next phase of the project, it can be investigated as to whether Boulders Road Extended can be a 2-lane road with the intention to expand to a 4-lane road when the traffic demands require additional capacity. This can save on initial infrastructure investments associated with the project.

Boulders Road is currently, and will continue to be, a public road. This means the road will be incorporated into VDOT's inventory and will need to be designed and constructed in accordance with VDOT standards. Given the (assumed) security requirements of certain facilities along Boulders Road, it is expected that security and/or access restrictions will be implemented at the facility level and not along Boulders Road itself.

As will be expounded upon in Section 4.2, there are opportunities to provide additional roadway infrastructure to support additional development density at Rivanna Station.

It is noteworthy to express that the Boulders Road extension can be designed, permitted, and built without the need to update the comprehensive plan or rezone the parcels. The road project can stand alone and move forward uninhibited by the entitlement process. Nonetheless, the road plan designs should reflect the integral nature of this development and be based on a masterplan for the full buildout of the property. Refer to section 4.2 for additional information regarding the development potential of the subject parcels.

As for the crossing of Herring Branch, it is recommended that the County pursue a structure selection study to determine the appropriate infrastructure for crossing this stream. For the purposes of this study, it is assumed that the crossing will be a bridge, but it is possible that an alternative crossing structure, such as an open bottom culvert, may also be a likely candidate.

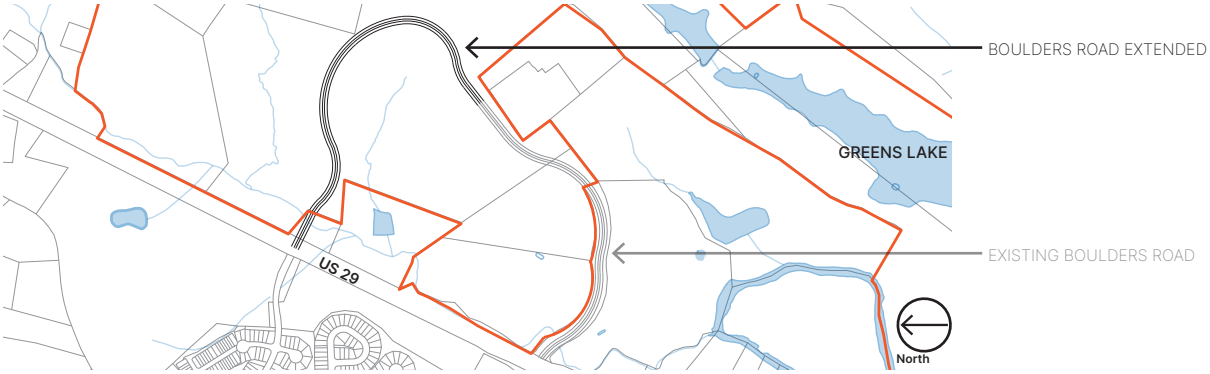


Figure 17: Alignment of Boulders Road Extended

Road Design - Boulders Road Extended (continued)

4.1.1 Crossing Herring Branch

Considerations Related to Oversight by the US Army Corps of Engineers and Virginia DEQ

The crossing of Herring Branch at the intersection with US 29 North is anticipated to impact Herring Branch stream, if only in a temporary manner. As such, the project will likely require a review and permit issued by the Army Corps of Engineers and/or Virginia DEQ. As detailed in Section 2.1, the permit will most likely be filed via the Joint Permit Application and will be reviewed concurrently by the USACE, DEQ, and the VMRC.

The crossing itself could be achieved using a bridge, an open-bottom culvert, or another relevant design. This will be further explored during the master planning phase of the project which should include a structure selection study. The crossing at Herring Branch is certainly complex given the proximity to US 29 and the anticipated intersection improvements associated with this intersection, not to mention the steep terrain surrounding Herring Branch.

Once the USACE has been provided with a detailed description of the project, the USACE (or their consultant) will define the Area of Potential Effect (APE) for the project. Additional archaeological investigations may also be required to determine the direct effects of the project on historic properties within the APE, if any, and a viewshed analysis to determine the project's indirect effects on other adjacent historic properties within and outside the APE. Given the cursory findings of the cultural and historic resources, it is not currently anticipated that this project would have an adverse impact on the documented or undocumented resources.

Considerations Related to Oversight by the County of Albemarle

Per County Ordinance Sec. 30.3.11, bridges, ferries, and culverts not serving single-family dwellings are only allowed in Flood Hazard Overlay districts by Special Use Permit. Therefore, this project, regardless of Zoning and Comprehensive plan designations, will require a special use permit for this public road facility.

The Boulders Road Extension, where the alignment crosses Herring Branch, will also disturb preserved slopes. Per County Ordinance Sec 30.7.4, the disturbance of preserved slopes will be a by-right allowance if the alignment of the public facility (road) is consistent with the alignment of public facilities depicted or described in the comprehensive plan. This crossing of Herring Branch is consistent with the comprehensive plan as it is clearly depicted within the Future Transportation Network and Future Land Use Maps.

4.2 DEVELOPMENT DENSITY AND BUILDOUT

The vision for what Rivanna Station will become is flexible. It can be expected that the future occupants will, in some manner of speaking, be providing services consistent with the existing organizations currently located at the site. It is also possible that this land acquisition could help achieve additional County land use objectives, namely, adding to the inventory of light industrial space.

The Matrix Study proposed approximately 600,000 SF of potential facility space for a myriad of occupant types. That said, the development area of the Matrix Study, including the Boulders Road extension, is approximately 50 acres, as shown in Figure 18a, right. Given the acreage available to development on the subject parcels it can reasonably be assumed that there are alternative concepts yet to be developed that can increase the development footprint and therefore increase the inventory of space associated with Rivanna Station. The development area on the subject parcels (currently) is 232 acres (refer to Section 1.3). Please note, even within the 232 acres of development area, not all this area is developable due to topographic, environmental, or other natural constraints (refer to Section 3.3 for additional detail regarding topographic constraints of development).

It is also noteworthy to express that certain facility uses or facility occupants could require additional buffer and separation requirements. Examples of this are specifically detailed in the 2007 Environmental Assessment by Paciulli, Simmons & Associates. Such requirements could have an impact on the development density potential at Rivanna Station.

For the purposes of this study, and as a simple exercise in land planning, it can be estimated that the facility area at this location could be approximately double what the Matrix Plan indicated, within the order of magnitude of 1.0 – 1.2 MM SF of facility space as shown in Figure 18c, right. This estimate assumes that the comprehensive plan updates and subsequent rezonings are congruent with the vision for Rivanna Station.

Figure 18: Rivanna Station Facility Development Concepts

a) top, Concept Similar to Plan Developed by Matrix

b) middle, Additional Development Utilizing Boulders Road Extended

c) bottom, Additional Development with Additional Road Infrastructure

4.3 INTERSECTION IMPROVEMENTS, TRAFFIC GENERATION AND COORDINATION WITH VDOT

Taken at face value, a development in the order of magnitude of what the Matrix plan showed is a substantial development and as a result the traffic generated by the development is a substantial consideration of the project.

VDOT has recently completed a study of an approximately six-mile stretch of US 29 extending from Deerfield Drive in Greene County to Airport Road in Albemarle County. VDOT classifies US 29 as a principal arterial, and the corridor is a part of the National Highway System (NHS). Refer to Figure 19, below, indicating the limits of this study.

The study did not account for the expansion of Rivanna Station, which is unfortunate given the anticipated impact this expansion will have on the corridor. Early conversations with VDOT have indicated that their priority is arterial preservation, which loosely describes the intent to maintain through-traffic and incorporate innovative intersection improvements.

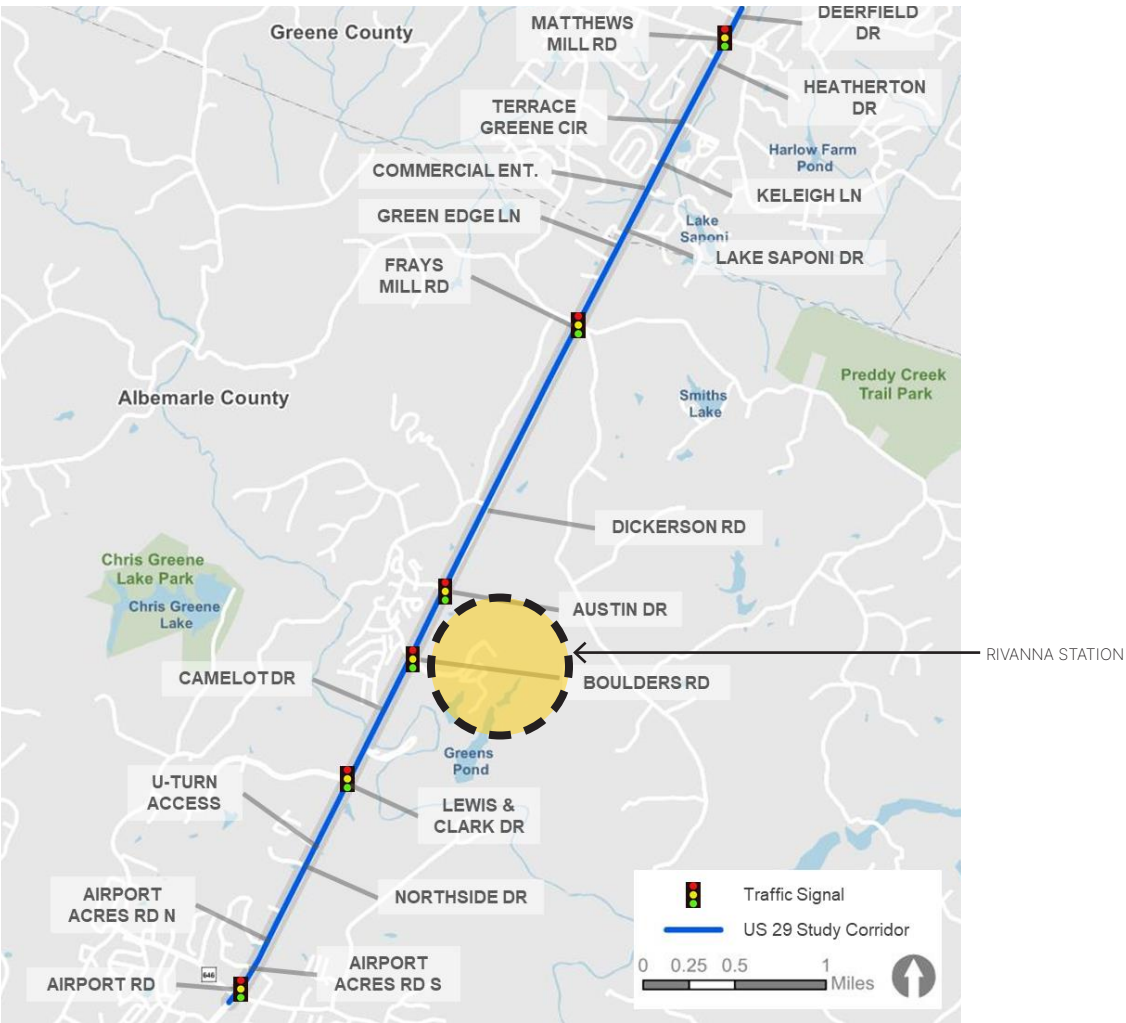


Figure 19: VDOT US 29 Corridor Study Limits (Source: Kittelson and Associates)

Intersections Improvements, Traffic Generation and Coordination with VDOT (continued)

Initial calculations suggest the traffic generation figures associated with the existing facilities at Rivanna Station are in the range of 5,000 vehicles per day. The expansion of Rivanna Station in general accordance with the Matrix plan could add approximately 7,000 additional vehicles per day (at full buildout, 600,000 SF of facility space). Refer to Appendix I for preliminary engineering calculations.

Should the County desire to increase the development density two-fold (refer to Section 4.2), the projected traffic generation figures could be anticipated to double – 14,000 trips per day in addition to existing figures. (This assumes the facility types remain generally consistent with the current Rivanna Station facilities. Certain facility types may have substantially less trips per day.) In any event, the implications this development will have on the US 29 corridor cannot be overlooked.

Intersection improvements will certainly be required where the Boulders Road Extended meets US 29 at Austin Drive. Further improvements will also likely be warranted at the existing intersection of US 29 and Boulders Road.

These improvements and the timing of the improvements will be the subject of study via a Traffic Impact Analysis (TIA). It is recommended the TIA be completed soon after the desired masterplan is established. This TIA can then inform the relationship between traffic generation, infrastructure improvements, and development timelines.

It has not yet been determined which funding mechanisms might be appropriate to help fund intersection improvements. Revenue Sharing (RS), the Economic Development Access Program (EDAP), and SmartScale are potential candidates depending on the timing and the nature of the recommended improvements. Furthermore, it should be noted that the time elements and commitments associated with funding programs may not support the County's development goals and time frames at Rivanna Station Futures.

Given the degree of variability of traffic generation potential and the unknowns associated with the Rivanna Station development density, this study cannot make specific recommendations as to what intersection improvements may be required.

4.4 UTILITY COORDINATION AND SERVICE PROVIDERS

The proposed expansion at Rivanna Station is anticipated to require water, sewer, gas, power, and communication utilities for the occupant facility sites. The following summaries record the current understanding and requirements known and unknown related to utilities.

4.4.1 – Water Service

Water service at the project location will be served by the Rivanna Water and Sewer Authority (RWSA), specifically the Piney Mountain Pressure Band (north zone) which has water mains along US 29. While RWSA provides the network capacity to serve Rivanna Station, while the Albemarle County Service Authority (ACSA) owns the water mains which feed from US 29 into the Rivanna Station site.

The consultant team for this study met with RWSA representatives to discuss the future prospects of Rivanna Station as currently conceived. Having reviewed the concepts, RWSA staff have expressed that their water service does not currently have capacity to support the full buildout as conceived by Matrix Design Group. Preliminary calculations suggest that this buildout could require 35,000 – 55,000 gallons per day (GPD) if the proposed facilities are similar to the existing NGIC facilities (refer to Appendix I for preliminary utility calculations). Should the County prefer to increase the density beyond what the Matrix plan showed, then the water demand could increase accordingly, to perhaps as much as 100,000 GPD. (Refer to Section 4.2 for insights related to development density.)

It is noteworthy to express that even though RWSA does not have capacity to support the full development buildout at this time, that does not mean they do not have capacity for initial facilities nor that they will not have additional capacity in the future. Based on information provided by RWSA staff, and included in Appendix H, the RWSA has detailed plans to accommodate the growth in this northern area of Albemarle County. Their growth plans include incremental increases, year after year.

The capacity of the utility networks will require a construction phasing strategy as Rivanna Station is developed. An appropriate strategy for occupying the future facilities at Rivanna Station should include a detailed analysis of when RWSA's capacities increase and how the proposed facilities at Rivanna Station can come on-line in sync with the additional capacities expected within the RWSA service area. This phasing strategy should be an integral part of the master planning effort.

If it is likely that future occupants of Rivanna Station require large or dedicated utility services, this should be discussed specifically with RWSA and appropriate planning measures should be taken to ensure adequate capacity to support such uses.

Utility Coordination and Service Providers (continued)

4.4.2 – Sewer Service

Similar to the water service, adequate sanitary sewer capacity is currently unavailable to support the full buildout at Rivanna Station. The Albemarle County Service Authority (ACSA) owns sanitary mains from the site and feeding towards US 29. The existing pump station servicing this area likely has adequate capacity for the proposed expansion; however, the gravity collector for this site will likely need to be upgraded at the cost of the developer. Refer to Figure 20, right, which delineates the sanitary upgrade area.

ACSA has expressed concern regarding the maintenance of current and expanded services due to security restrictions in the area. However, it is anticipated that Boulders Road and the right-of-way along the corridor will be public right-of-way. Access restrictions will likely occur at an individual facility access point.

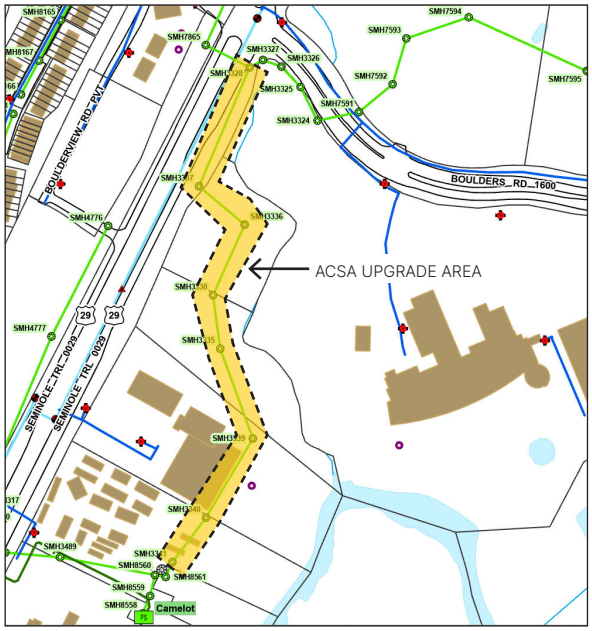


Figure 20: ACSA Upgrade Area (Source ACSA)

"The sanitary sewer between MH's SMH8561 and SMH3328 is 10-inch diameter gravity sewer that would likely need upgrading depending on the projected sanitary sewer flows from Rivanna Station Futures and an expanded Growth Area (AC44). Approximate total footage is 2,000 linear feet. Sewers upstream of that point would need to be evaluated,but it's less likely that upgrades would be warranted." (Jeremy Lynn, PE, Director of Engineering ACSA)

4.4.3 – Electric Service

The Rappahannock Electric Cooperative (RaEC) reached out to County staff as soon as the word of this development was made public. The County hosted a meeting with RaEC early in the due-diligence study to determine if RaEC has capacity for the proposed development.

In short, RaEC, does have capacity. At this time, it is not anticipated that the development would require an additional substation to meet the estimated power demand. RaEC is currently working to expand the service of this substation for additional demands. Even still, RaEC anticipates adequate capacity within their network for the Rivanna Station expansion.

RaEC has an existing sub-station adjacent to US 29 approximately half mile north of where the Boulders Road extension will connect to US 29 at Austin Drive. RaEC also has an existing transmission easement across several of the subject parcels. Refer to Figure 21, right.

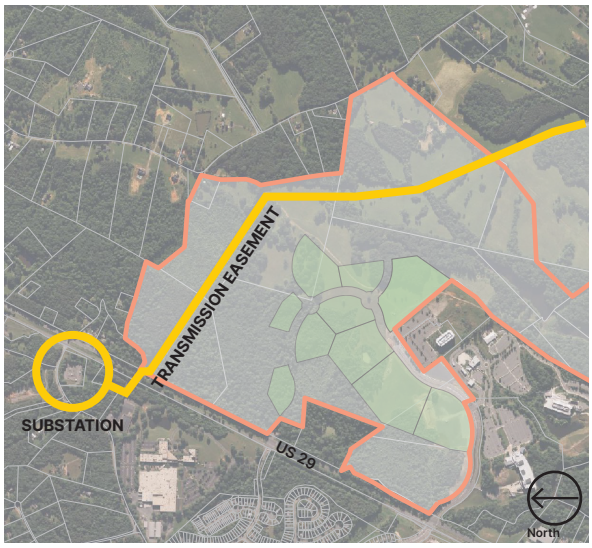


Figure 21: RaEC Substation and Easement

4.4.4 – Natural Gas Services

Rivanna Station is within the service area of the City of Charlottesville natural gas utility. There is an existing gas line along the north side of Boulders Road and initial correspondence with the City indicates that this utility has capacity for additional development at Rivanna Station. Refer to Appendix H for additional information.

5.1 LIABILITIES, RISKS AND ITEMS TO BE RESOLVED

This memo has outlined many of the factors which should be considered prior to purchasing the property. None of the findings or determinations suggest that the land is unsuitable for the planned intentions to expand Rivanna Station. That said, there are several key items which need to be specifically stated as liabilities or items for concern which will require resolution either prior to the land being purchased or after the land has been purchased.

5.1.1 Items for Resolution Prior to Closing

1. The County should convey to the selling party that they WPO Bond will need to be closed, and that it will be the responsibility of the seller to close out the open WPO Bond (WPO-2009-00020, refer to Section 3.5). The purchase agreement language does allow for the seller to perform this work after closing if needed.
2. The Seller and Purchaser shall resolve the Boundary Line Adjustment (refer to Section 1.2)

5.1.2 Items for Resolution After Closing

1. Perform necessary improvements to Greens Dam and Mosby Mountain Dam #2 as well as maintain operation and maintenance certification with DCR (refer to Section 3.1)
2. Determine responsibilities and ethical obligations to Pritchett Cemetery (refer to Section 2.2.4)
3. County shall develop a Rivanna Station masterplan to guide entitlement and initial land planning tasks including Traffic Impact Analysis and utility demand estimates
4. County shall integrate the vision for Rivanna Station into the comprehensive plan update, paving the way for the future rezonings

5.1.3 Expression of Risk Based on Liabilities Discovered

The largest risk items discovered during the due diligence study are as follows:

a) Taking ownership of Greens Dam and Mosby Mountain Dam #2 is a liability. The risk is low by virtue of the classification of the dam as a low-potential-hazard structure. The watershed contributing to the dam is small and in the event of catastrophic failure the breeched waters would flow directly into the North Fork of the Rivanna River. ***Ultimately this is a low-risk item.***

   Unless the County requires the Seller to make repairs to the dam, the County will incur financial liability to execute the necessary repairs and bring the dam into conformance with regulatory agencies. Please refer to Section 5.5 for a budgetary and planning number associated with this financial liability.

b) Traffic impacts associated with the development is a liability. Because the full build-out potential of Rivanna Station is speculative at this point, perhaps 600,000 SF to 1.2MM SF, this leaves a large range of potential traffic generation. Furthermore, the US 29 Study recently released by VDOT did not include any expansion of Rivanna Station within the analysis.

Liabilities, Risks and Items to be Resolved (continued)

Whether the final build-out condition is on the lower end of the potential range or the higher end of the potential range, the traffic generation will be large and will require intersection improvements at Boulders Road and US 29 at Austin Drive. Improvements at the existing intersection of Boulders Road and US 29 are also likely.

Because a TIA has not yet been performed the degree to which this additional traffic demand will require improvements to this intersection is unknown and is therefore a risk to the project. The risk is low because the timeline to full buildout will be performed over many years, if not decades, but the expectations of what costs the County will incur or whether or not financial partners or funding sources can be identified is unknown.

The worst-case scenario would be that a development partner wants to occupy a portion of Rivanna Station before the intersection or infrastructure improvements have been made. Even so, ***this is a low-risk item***.

c) The Rivanna Water and Sewer Authority (RWSA) and the Albemarle County Service Authority (ACSA) have expressed that their utilities do not currently have capacity to support the full buildout of Rivanna Station.

Similar to the traffic impacts discussed above, Rivanna Station will not achieve full buildout instantaneously. Continued coordination between the utility providers and the County can ensure that the County is aware of how much capacity is available and how that capacity can be leveraged to support a phased approach to the Rivanna Station buildout.

The utility providers intend to continue increasing their network capacities, but these projects happen over many years. ***This is a low-risk item.***

d) The parking lot on parcel 33-14 requires additional evaluation with regard to stormwater management infrastructure and the County should consider improvements.

e) If it is determined that the development of the property is contingent upon the comprehensive plan update and several parcels being rezoned then this could be ***considered a low risk*** item.

5.2 NEXT STEPS

The following steps are relevant near-term tasks:

- Develop a Masterplan for Rivanna Station Futures based on close collaboration with the Office of Economic Development, Community Development, and insights from potential partner agencies.
    - Masterplan should include project phasing based on TIA, intersection capacities, utility provider capacities and network upgrades, and stream crossing structure selection study
    - Field Delineations of Streams and Wetlands
- Determine the appropriate entitlement steps this project shall navigate based on the comprehensive plan (current or updated), the current and proposed zoning, and the schedule for which the first partner organizations wish to occupy the site.
- Perform a topographic survey of the development area. Note: this is additional to the ALTA surveys already completed, but much of the work for the ALTA Surveys will inform the topographic surveys.
- Perform environmental survey by a certified biologist or environmental scientist to confirm/deny presence of bald or golden eagles.
- Perform a Structure Selection Study for Herring Branch Crossing.
- Perform a Traffic Impact Analysis and coordinate intersection concept improvements with VDOT.
- Perform Preliminary Engineering (PE Phase) for Boulders Road extended.
- Develop Concepts for innovative intersection improvements.
- Contact USACE and Virginia DEQ to discuss impacts to Herring Branch as a result of Boulders Road Extension.
- Contact DCR and prepare to make necessary repairs to Greens Dam.
- Submit Road Plans to County CDD for review.
- Office of Economic Development to advise on partner organizations and timelines for site occupancy.

5.3 ESTIMATED BUDGETARY AND PLANNING FIGURES WITH SCHEDULES

Please note, the following cost and schedule estimates are Rough Order of Magnitude (ROM) and for planning purposes only. Each of these estimates will need to be revisited and reconsidered based on preliminary engineering and initial traffic analysis.

Boulders Road Extension including 3-Span Bridge at Herring Branch:

Cost: $36MM; Schedule: 30-42 months

Intersection Improvements at US 29 / Boulders Road / Austin Drive:

Cost: $3MM; Schedule: 24-36 Months

Intersection Improvements at US 29 / Boulders Road:

Cost: $4MM; Schedule: 24-36 months

Utility Upgrades:

Cost: Unknown at this time; Schedule: Unknown at this time

Improvements to Dams:

Cost: $500,000; Schedule: 12 months

GRAPHIC SUMMARY MAPS

ELEVEN (11) SUBJECT PARCELS

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA

1 32-5C | 19.28 AC | RA

2 33-14 | 15.21 AC | RA

3 33-1D | 118.47 AC | PRD/RA

4 21-14C | 32.84 AC | RA

5 33-1 | 48.5 AC | PRD/RA

6 33-2 | 2 AC | RA

7 33-10 | 61.3 AC | RA

8 33-1B | 12.59 AC | RA

9 33-13 | 153.8 AC | RA

10 33-16 | 46.75 AC | RA

11 33-15 | 89.08 AC | RA

A 33-1G | 0.93 AC | RA

Legend

SOLICITED PARCELS

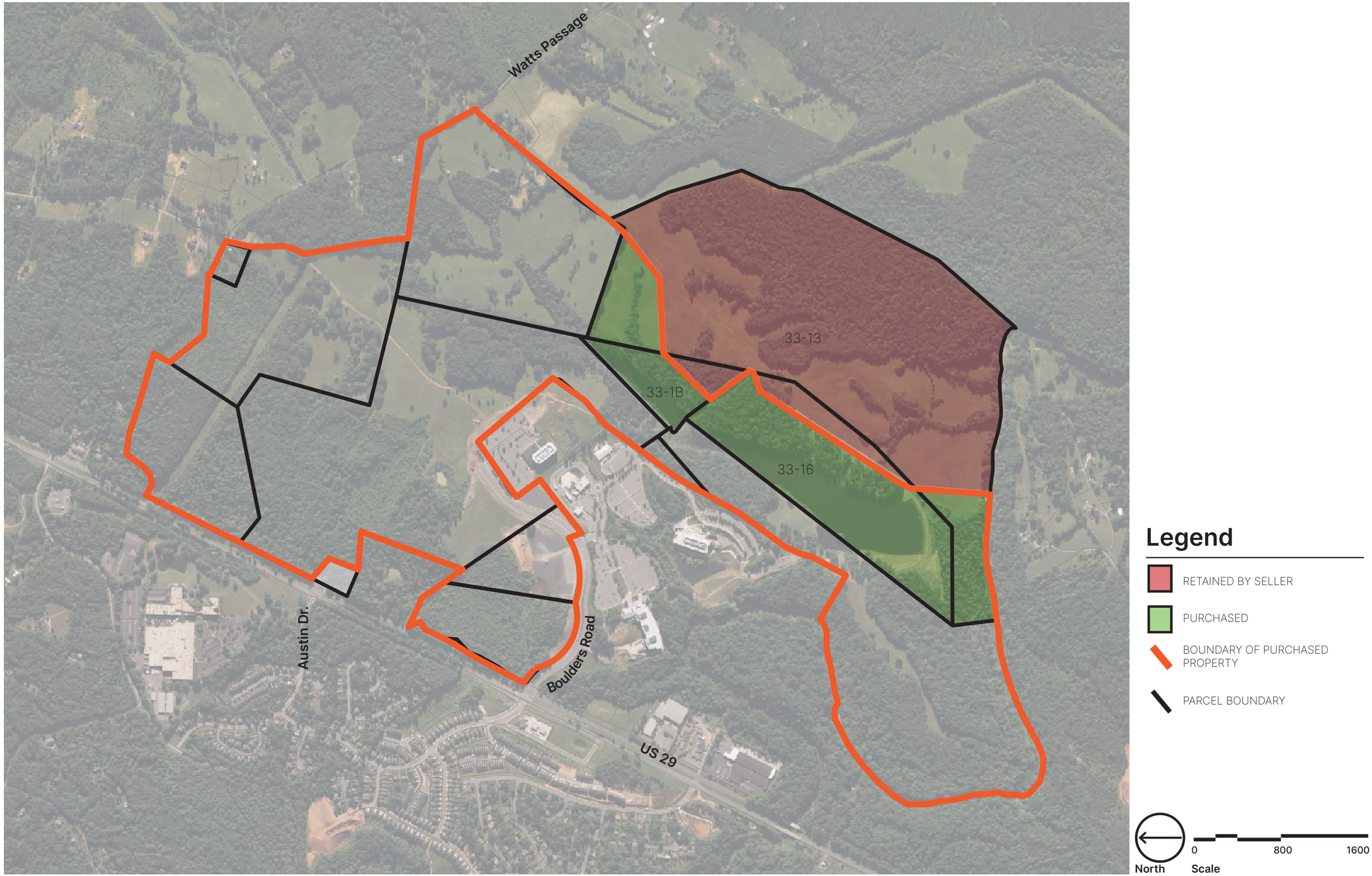
UNSOLICITED PARCELS

North

0 800 1600

Scale

07.31.2023



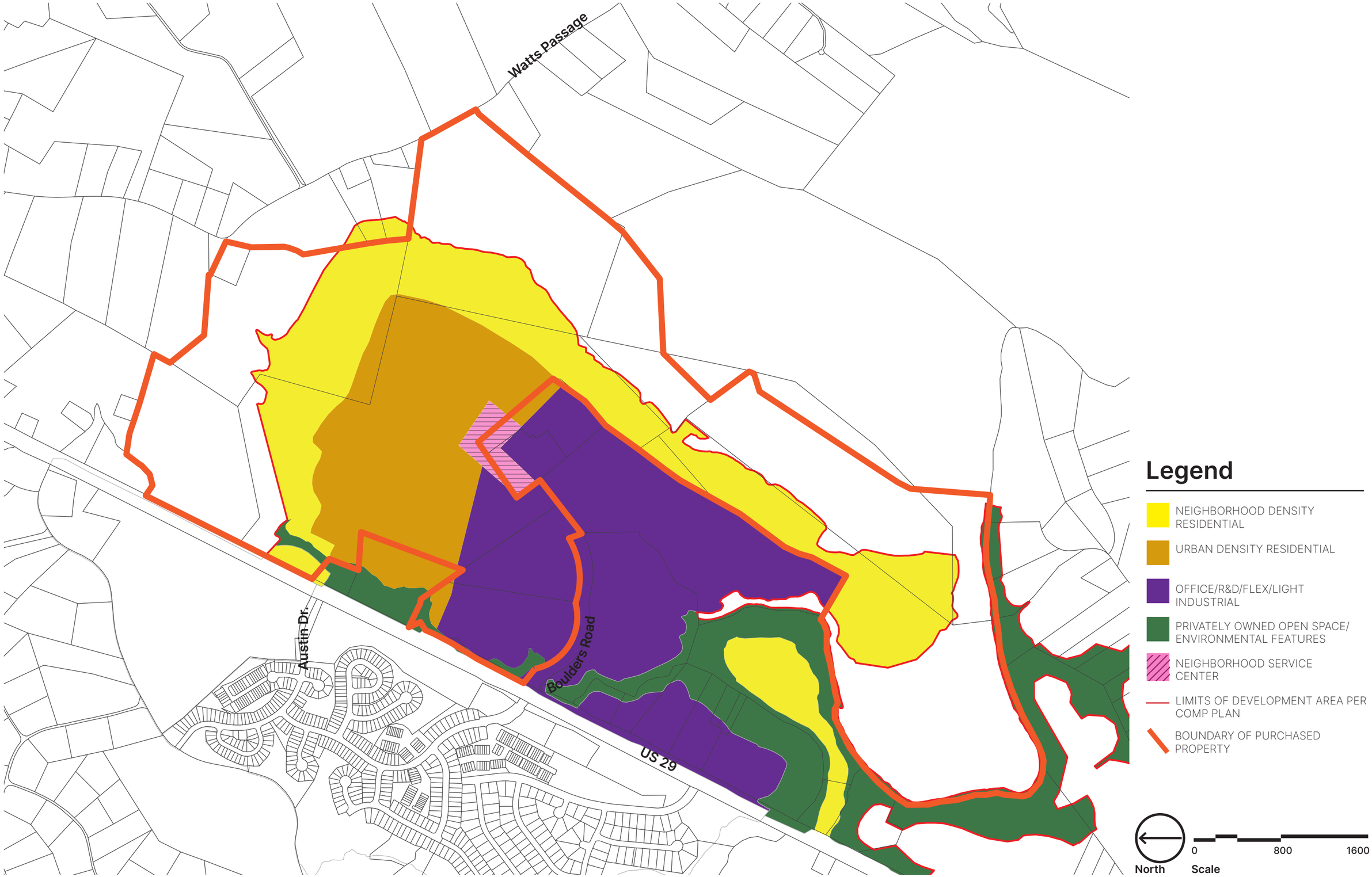
LINE AND GRADE

BOUNDARY LINE ADJUSTMENT

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA

07.31.2023

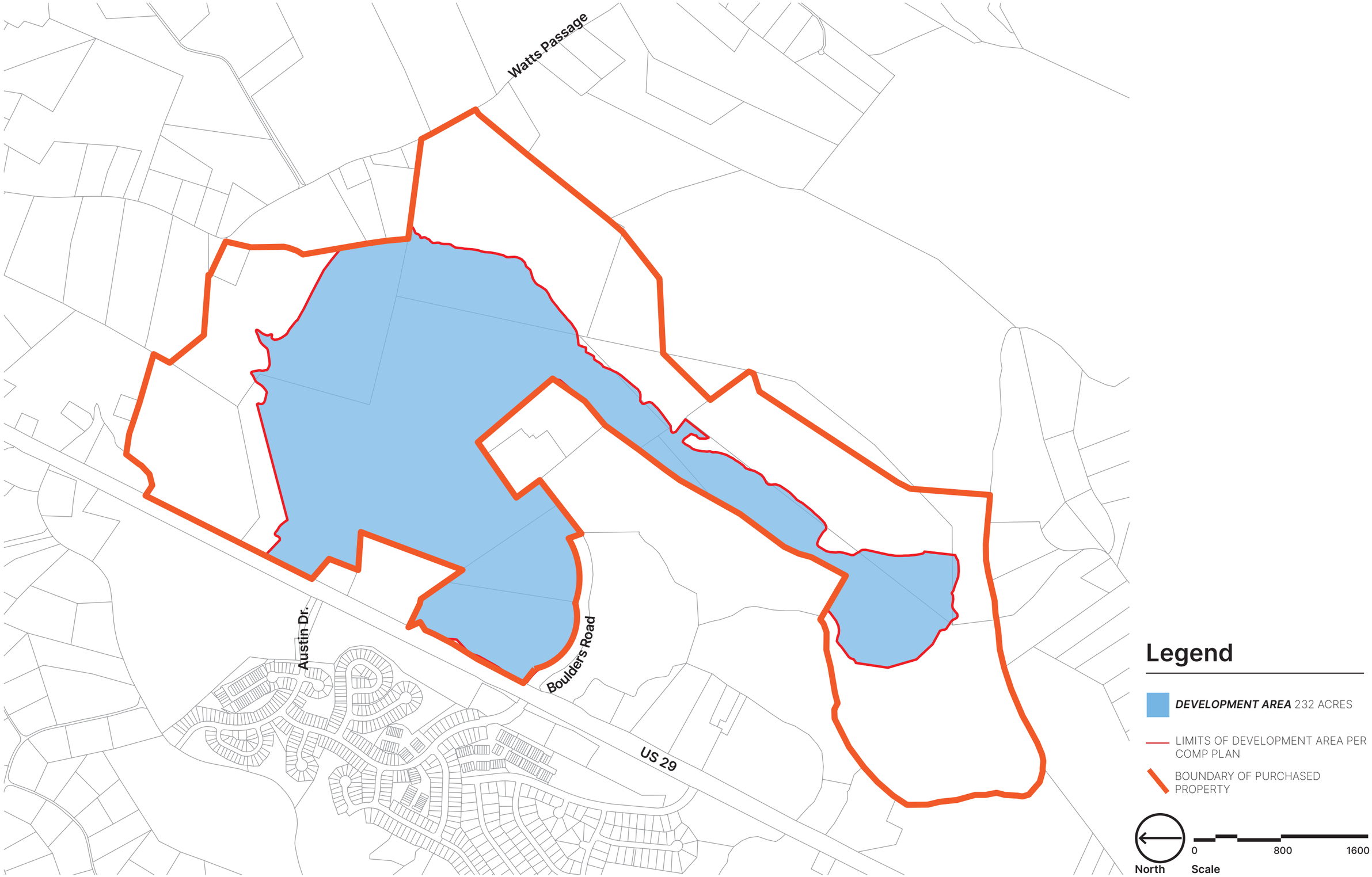


COMPREHENSIVE PLAN NORTHERN DEVELOPMENT AREA

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA

07.31.2023



RIVANNA STATION DEVELOPMENT AREA

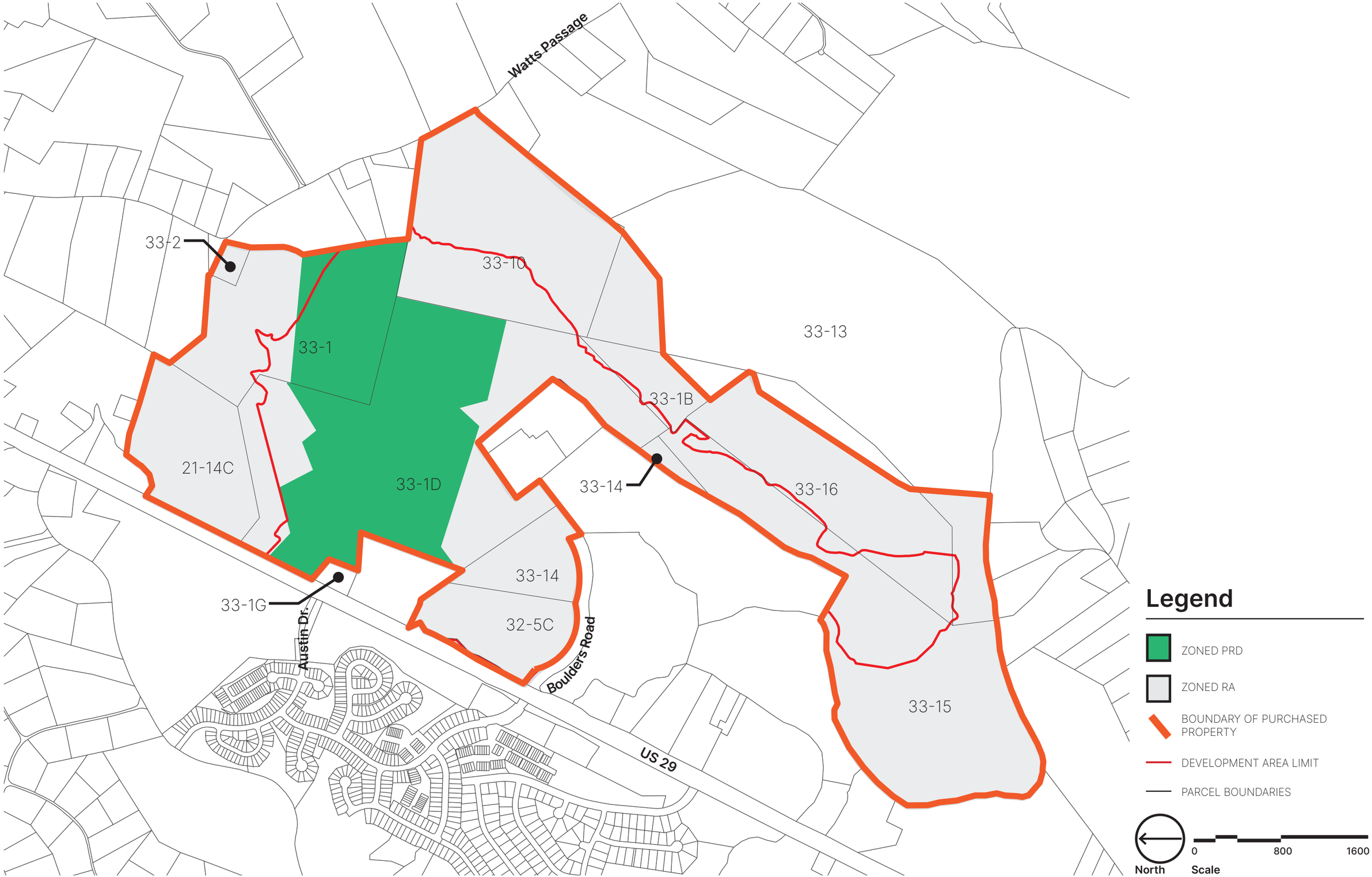
RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA

PARCEL ZONING

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA



Legend

- National Ground Intelligence Center (NGIC)
- Defense Intelligence Agency (DIA)
- Joint Training Facility
- Warehouse Facility
- Parking Structure
- Future Development
- Property Line
- Secured Zone
- BOUNDARY OF PURCHASED PROPERTY
- DEVELOPMENT AREA LIMIT
- PARCEL BOUNDARIES

North

Scale 0 800 1600

OVERLAY OF MATRIX DESIGN GROUP CONCEPT (2017)

RIVANNA STATION FUTURES

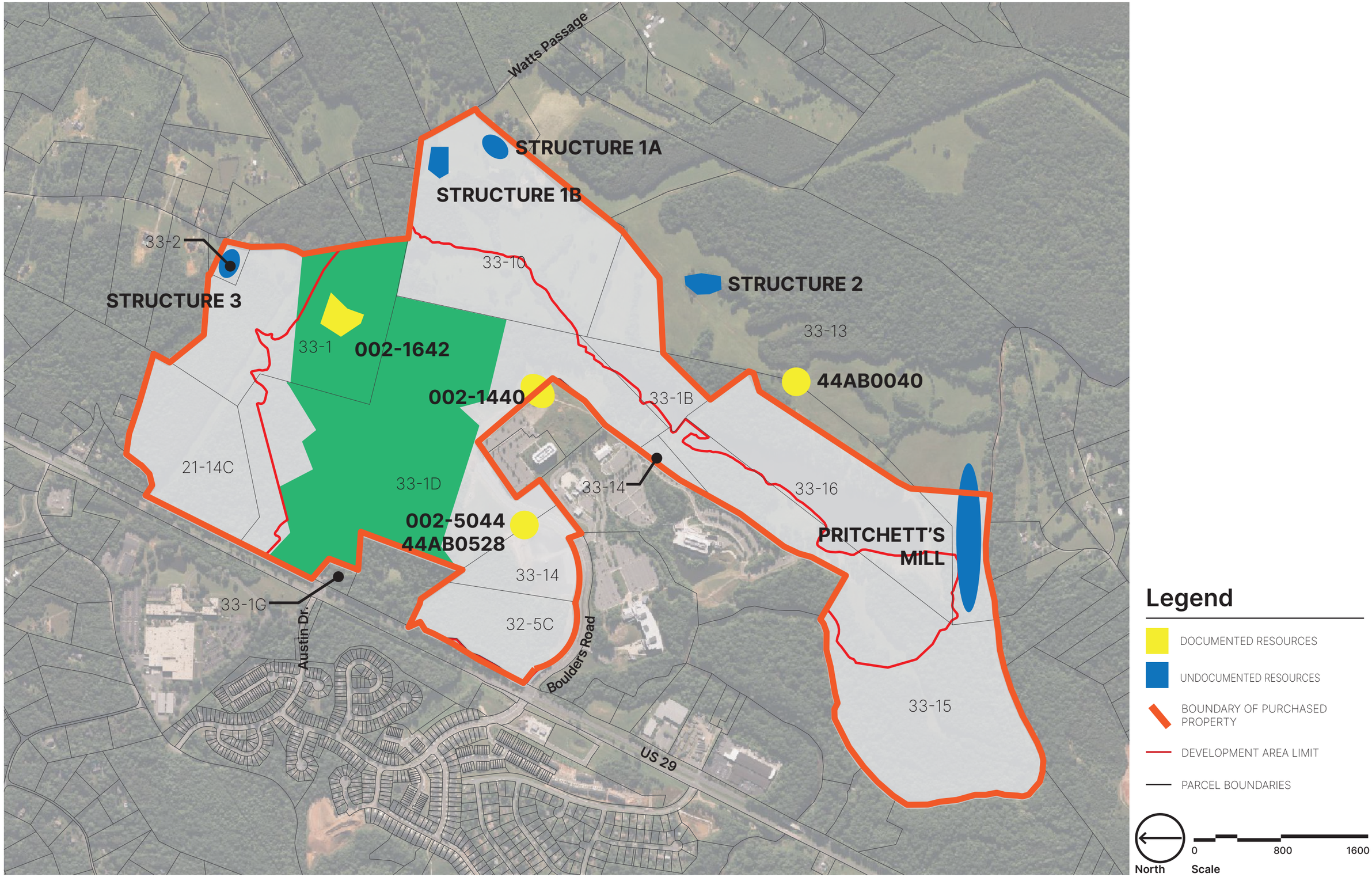
ALBEMARLE COUNTY, VIRGINIA

07.31.2023

CULTURAL RESOURCES

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA



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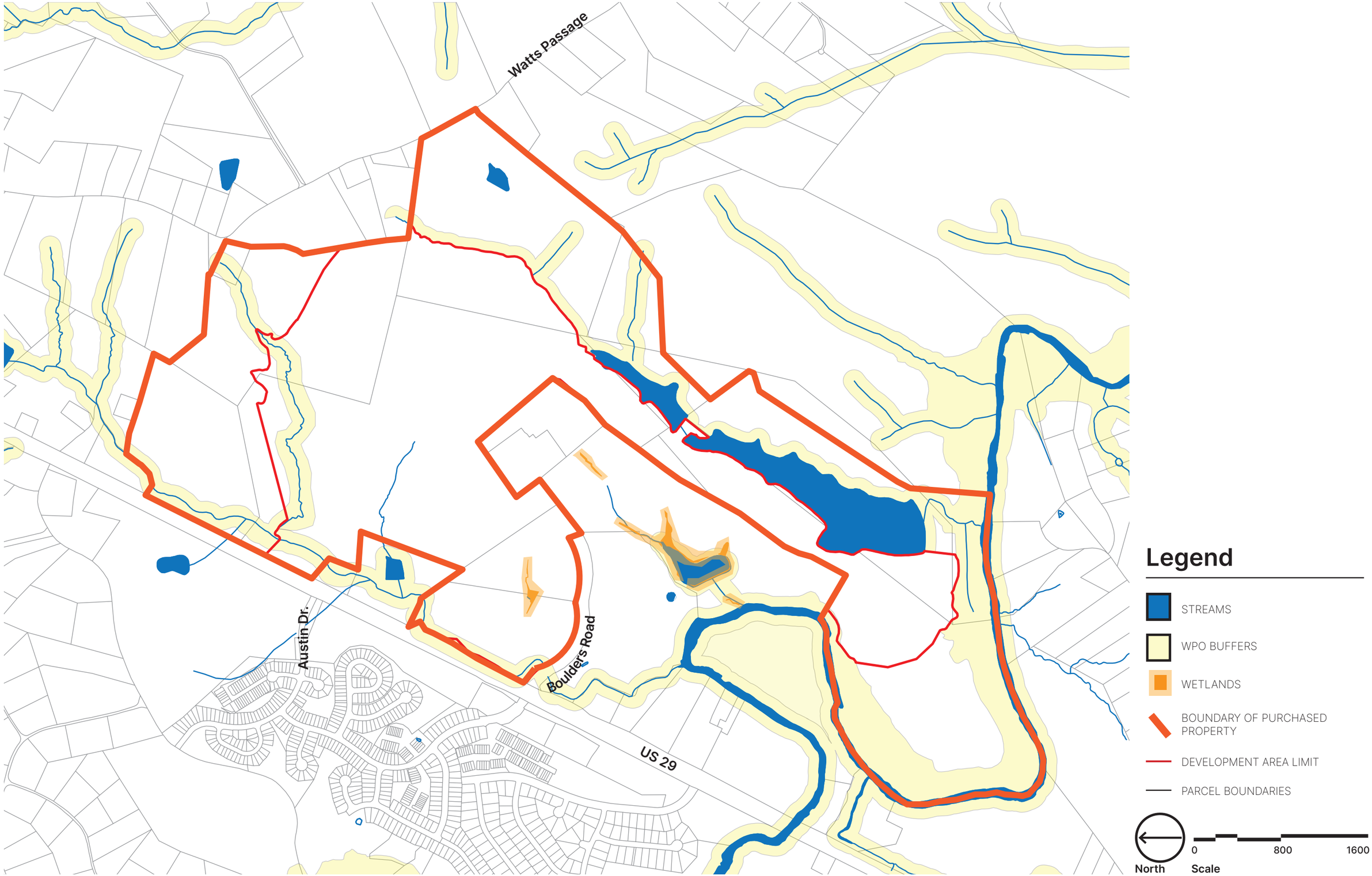
STREAMS, WETLANDS, AND WPO BUFFERS

RIVANNA STATION FUTURES

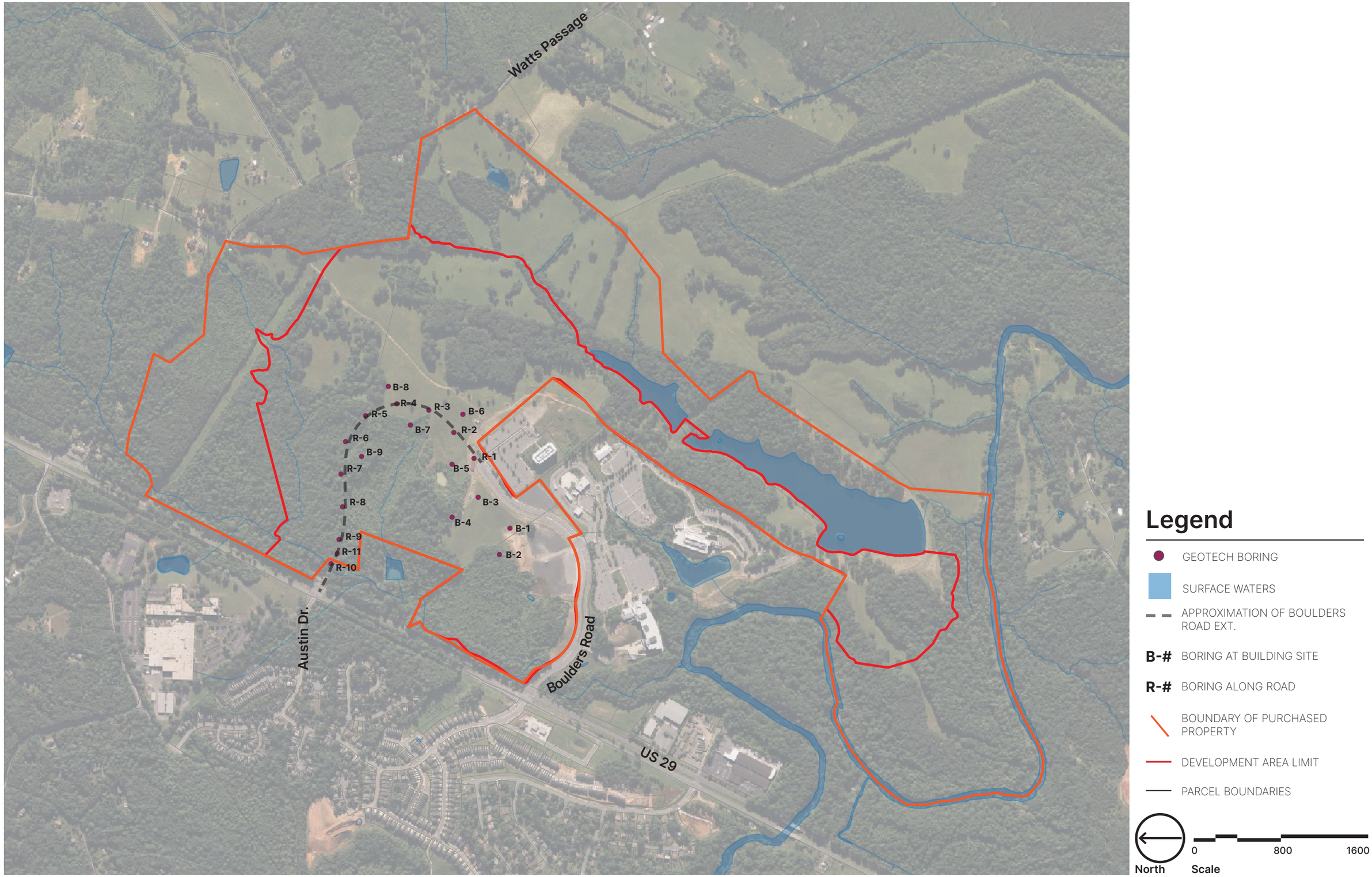
ALBEMARLE COUNTY, VIRGINIA



GEOTECH BORING LOCATIONS

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA

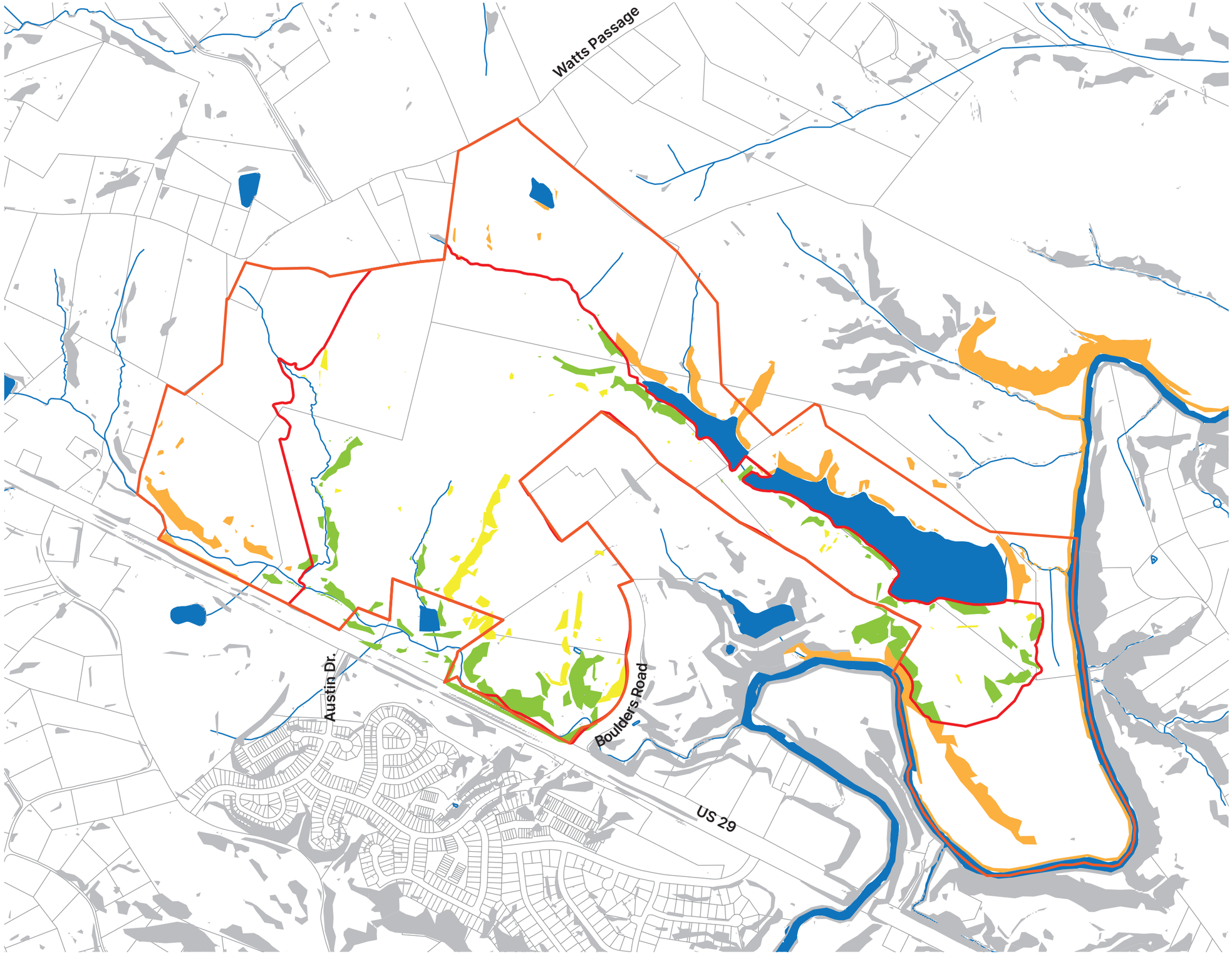


07.31.2023

SLOPE DESIGNATIONS

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA



Legend

- MANAGED SLOPES
- PRESERVED SLOPES
- CRITICAL SLOPES
- SLOPES NOT ON PROPERTY
- SURFACE WATERS
- BOUNDARY OF PURCHASED PROPERTY
- DEVELOPMENT AREA

North

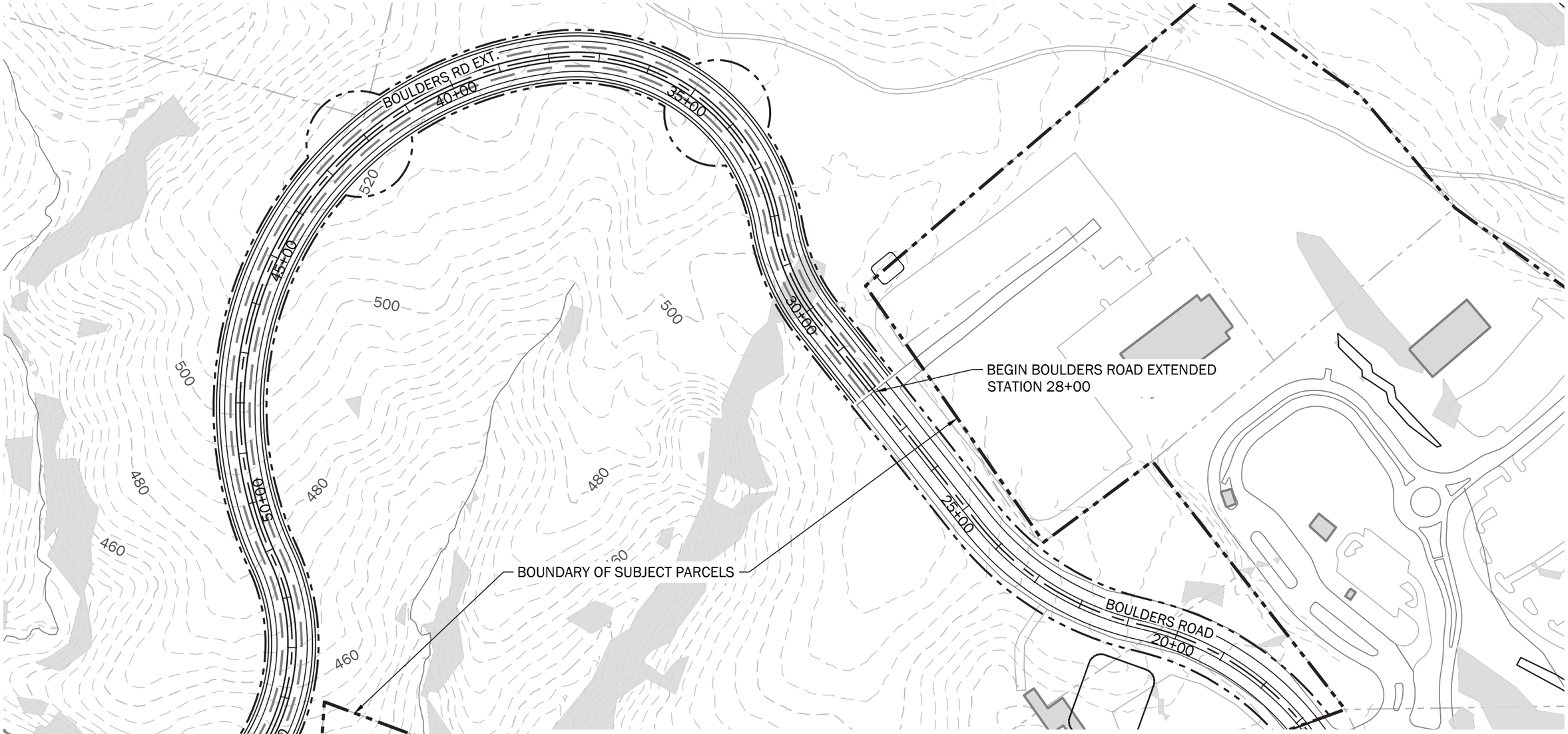
Scale: 0 800 1600

07.31.2023

BOULDERS ROAD EXTENDED CONCEPT PLAN

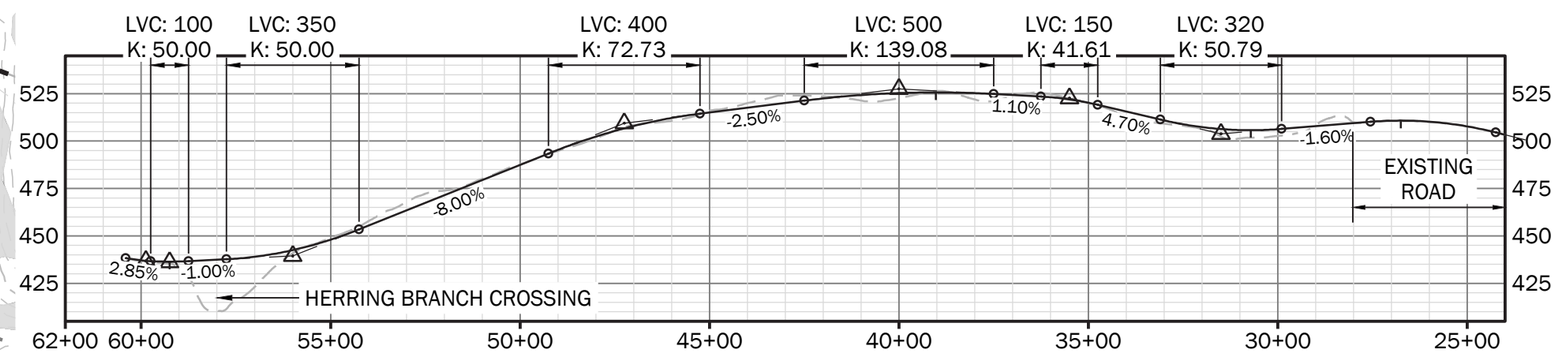
RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA



1 CONCEPT PLAN

1" = 200': 0 200 400



2 CONCEPT PROFILE

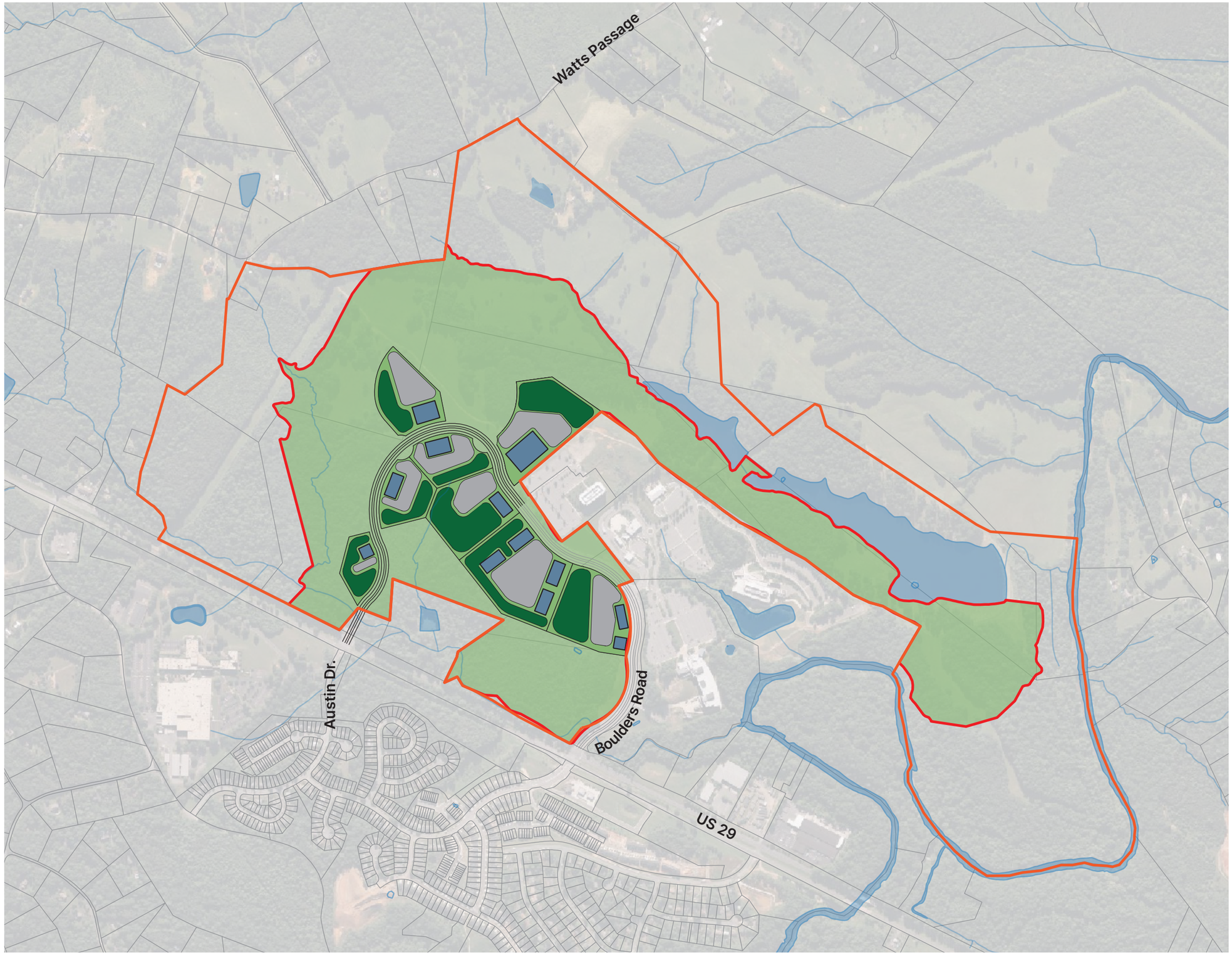
H:1" = 400': 0 400 800
V: 1" = 80': 0 80 160

07.31.2023

SITE LAYOUT PLAN (ADAPTED FROM MATRIX)

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA



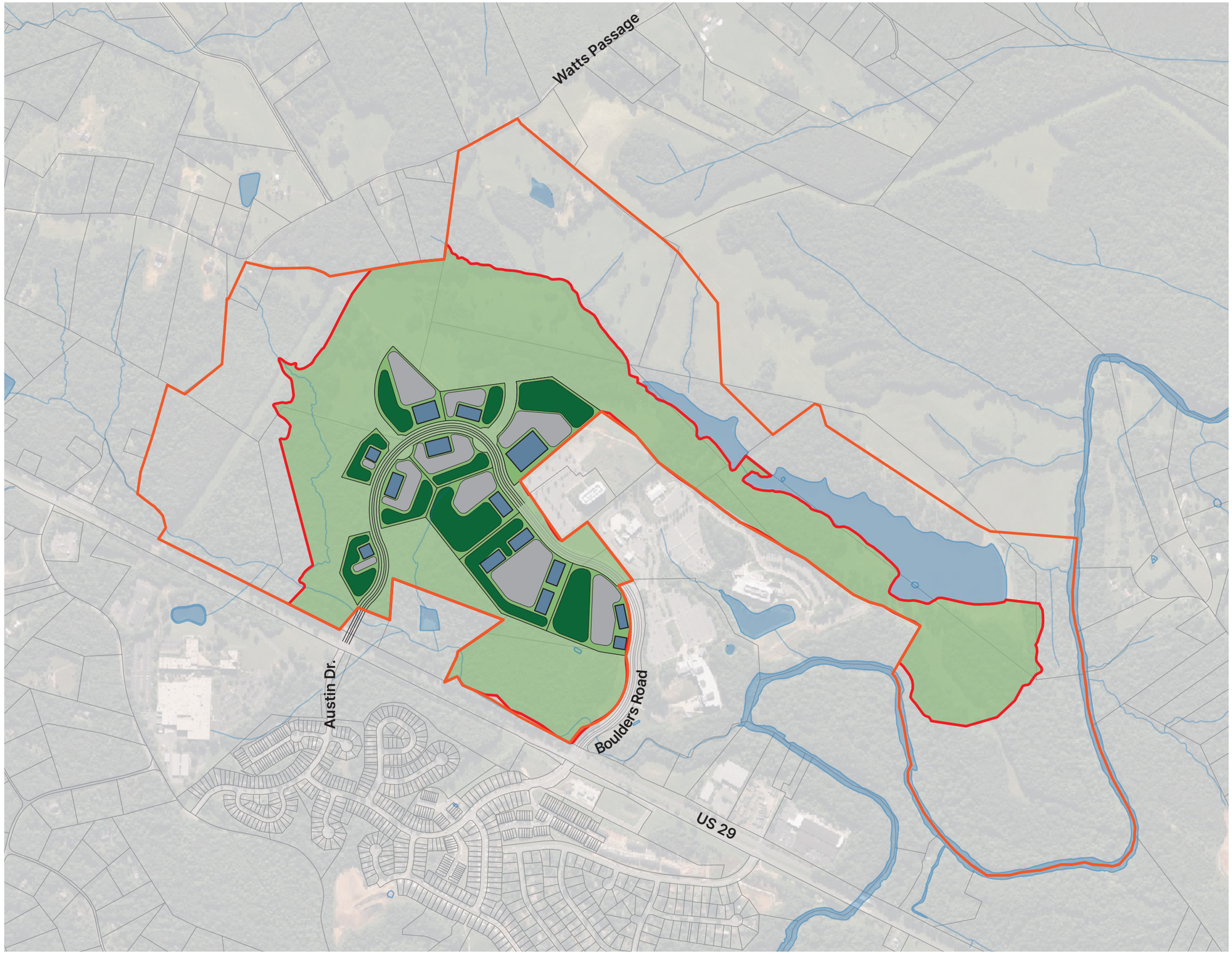
Legend

- BUILDINGS
- PARKING
- PRESERVED / OPEN SPACE
- SURFACE WATERS
- BOUNDARY OF PURCHASED PROPERTY
- DEVELOPMENT AREA

North

Scale: 0 800 1600

07.31.2023



Legend

- BUILDINGS
- PARKING
- PRESERVED / OPEN SPACE
- SURFACE WATERS
- BOUNDARY OF PURCHASED PROPERTY
- DEVELOPMENT AREA

North

0 800 1600

Scale

ADDITIONAL DEVELOPMENT UTILIZING BOULDERS ROAD EXTENDED

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA

Legend

- BUILDINGS
- PARKING
- PRESERVED / OPEN SPACE
- SURFACE WATERS
- BOUNDARY OF PURCHASED PROPERTY
- DEVELOPMENT AREA

North

0 800 1600

Scale

ADDITIONAL DEVELOPMENT WITH ADDITIONAL ROAD INFRASTRUCTURE

RIVANNA STATION FUTURES

ALBEMARLE COUNTY, VIRGINIA