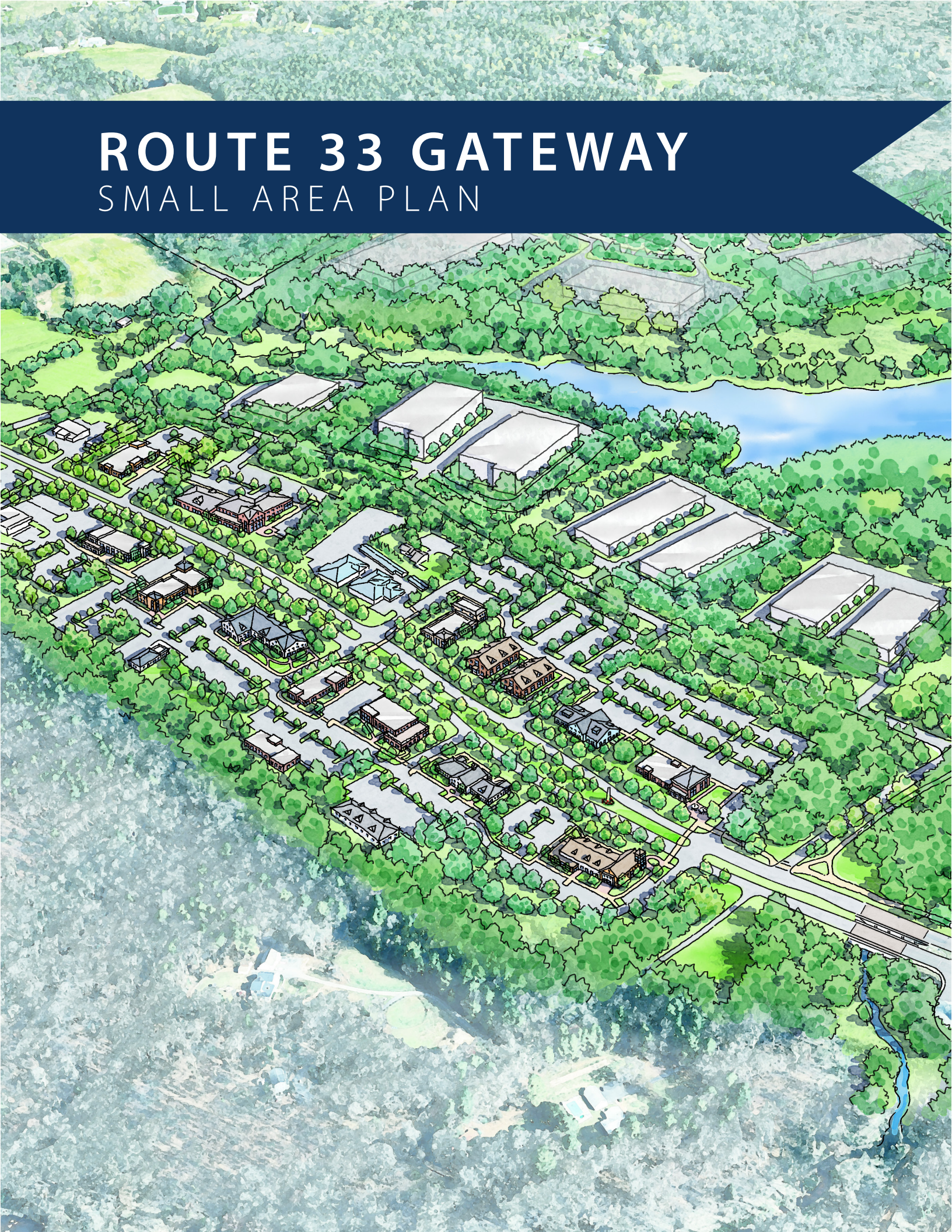
ROUTE 33 GATEWAY

SMALL AREA PLAN



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STUDY AREA

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1. INTRODUCTION

Goals and Objectives

The goal of the U.S. Route 33 Gateway Economic Development Zone (EDZ) is to generate high-quality jobs and economic opportunities for the residents of Hanover County. The objective of this small area plan for the EDZ is to create and agree upon a physical framework for future industrial and commercial development in the zone that maximizes economic benefits while minimizing any negative impacts on the surrounding communities.

The industrial development aims to capture a share of the demand for new facilities in the industrial market in central Virginia today, including data processing centers and clean manufacturing facilities. The commercial development proposed along Route 33 would serve local communities as well as visitors driving along Route 33 or exiting I-295 just south of the site.

While Hanover County's residents and businesses support the future delivery of jobs and economic development opportunities at the EDZ, local communities near the site want to avoid undue negative impacts of industrial development such as increased traffic and visual obstruction by large industrial buildings. People in Hanover appreciate the rural "look and feel" and want to maintain it as part of their quality of life going forward. The framework and guidelines presented in this plan strive to satisfy both of these goals.

The methodology for the preparation of this small area plan (SAP) included community consultation and visioning, identification of stakeholder preferences and priorities, review of the comprehensive plan, and analysis of the site. The draft recommendations for the development framework and design guidelines were reviewed at a May 2025 public meeting and incorporated into this complete small area plan draft document.

Existing Conditions

The existing conditions map reveals a diverse mix of land uses, infrastructure, and natural features within the study area. Residential areas are characterized primarily by large-lot, single-family detached homes, contributing to the area's low-density, rural character. Route 33, also known as Mountain Road, serves as the primary commercial corridor, lined with small-scale, auto-oriented businesses and other commercial uses. Its function as a key north-south route supports both local access and economic activity. The former Tyson's chicken processing plant is located on Route 33.

Natural features play a defining role in shaping the study area's boundaries. The Chickahominy River forms the southern edge, while Grassy Swamp Creek defines the eastern boundary—both offering ecological value, wildlife habitat, and natural stormwater management. Much of the interior remains undeveloped and forested, providing additional environmental benefits and contributing to the area's rural feel.

In the southern portion of the study area, Holtzgrefe Pond is located near a new, high-capacity wastewater pump station and transmission line. High-voltage power lines pass near the northern and western boundaries of the site. The landscape also includes agricultural land, local roads, and streams, creating a varied, multifunctional, and bucolic setting.

Planning Context

The Route 33 Gateway Economic Development Zone (EDZ) is guided by Hanover County's 2023 Comprehensive Plan, which designates most of the area as an Employment Center, supporting industrial, business, and flex development. Additional land use designations include Highway/Neighborhood Commercial for retail and service-oriented uses along Route 33, Suburban Neighborhood Residential for limited residential growth, and Natural Conservation Areas to preserve environmentally sensitive land.

Existing land uses in the study area—including industrial facilities, retail sites, and large-lot residential properties—generally support continued commercial and employment-focused growth. These uses also create a foundation for incremental redevelopment, particularly along Route 33, where access and visibility are strongest.

As a designated Economic Development Zone, this area is expected to accommodate large-format development such as data centers, light industrial facilities, and supporting infrastructure. The EDZ designation emphasizes coordinated site planning, access management, and the use of setbacks and buffers to manage impacts on adjacent residential areas and natural features. This guidance helps shape the physical character of future development while aligning with infrastructure capacity and policy goals for job-generating land uses.

2. ANALYSIS

Land Ownership

The seven largest landowners within the study area collectively own more than 700 acres of land, representing the large majority of the EDZ. Many of these parcels are contiguous, which facilitates development. With the exception of the former Tyson plant and some parcels along the southern segment of Route 33, most of the area remains undeveloped or only lightly developed.

All of the large landowners' properties front one of the two primary roads in the study area—Route 33 and Winns Church Road—with most fronting Route 33. However, there is currently limited road infrastructure or direct access from these roadways into the interior of the properties.

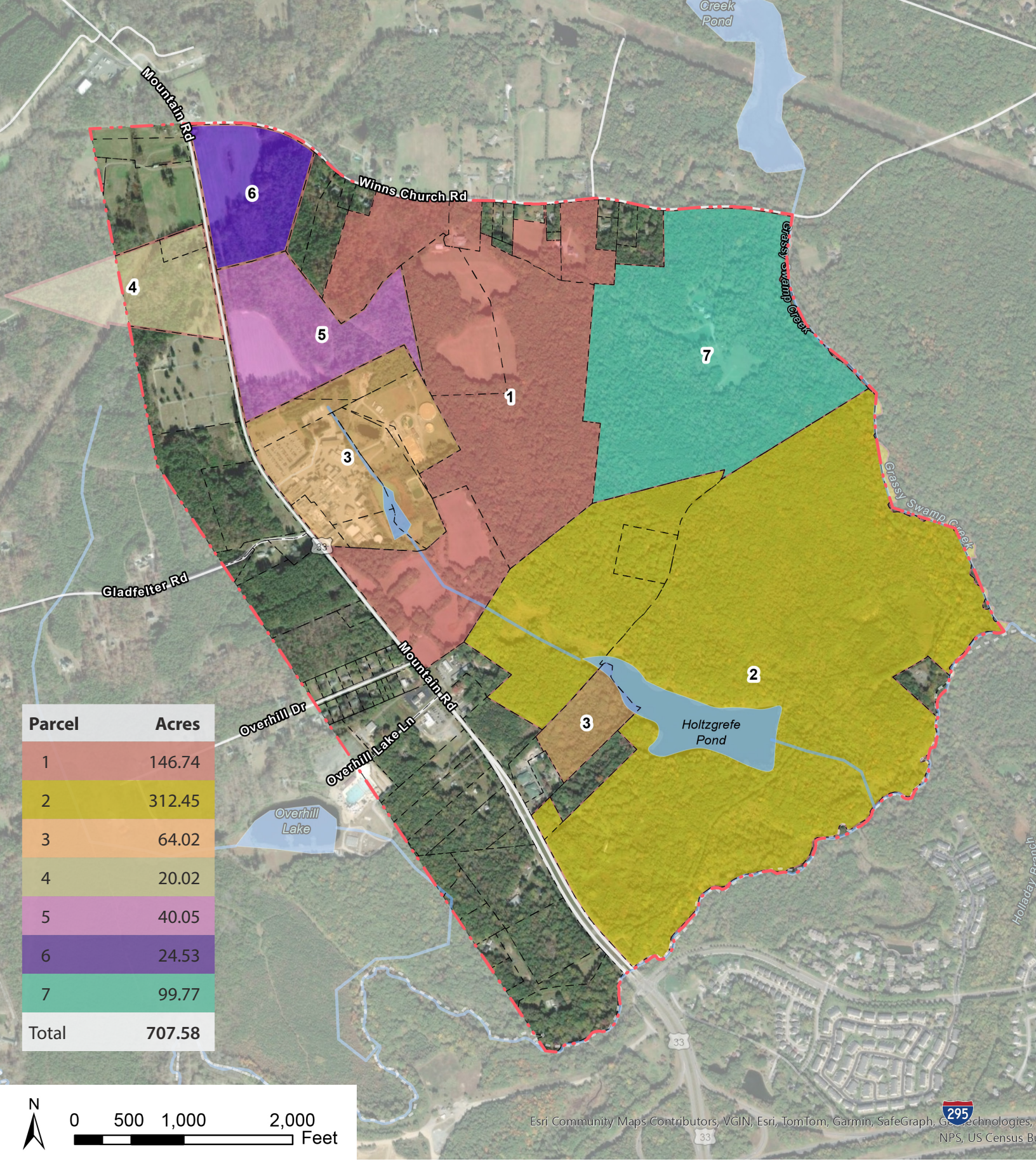
Community Engagement on the Small Area Plan

As part of the planning process, Hanover County organized and conducted two in-person community meetings, one on January 30, 2025 attended by 94 people and another on May 12, 2025 attended by 76 people. Participants learned about the project, expressed their preferences and priorities for future development in the economic development zone, and provided feedback on draft recommendations for the concept plan and design guidelines. Community members also participated in the planning process by completing the online survey (251 participants) and/or commenting on the draft recommendations on the project website.

The main preferences expressed by the community at the first meeting were for:

- Maintaining the rural character of the area
- Using wooded buffers to screen future industrial development
- Minimizing visibility of parking lots from major roads
- Specifying land uses that would not generate a lot of traffic on U.S. Route 33
- Taking advantage of opportunities to create new parks or open space, including along the Chickahominy River.

The draft concept plan and design guidelines presented at the second meeting and in this report are responsive to community preferences. The feedback from participants at the second meeting was mostly positive, as people found that their ideas were reflected in the preliminary recommendations.



Parcel	Acres
1	146.74
2	312.45
3	64.02
4	20.02
5	40.05
6	24.53
7	99.77
Total	**707.58**

N

0 500 1,000 2,000 Feet

Esri Community Maps Contributors, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, NPS, US Census Bu

SELECTED MAJOR LANDOWNERS

- Study area
- Tax Parcels
- Waterbodies
- Rivers and Streams

Viewshed Analysis

With a view to limiting the visibility of industrial buildings from the perimeter roads of the EDZ, a viewshed analysis was undertaken. Buildings of various heights up to 60 feet tall were located in five different locations, including the highest and lowest points of the industrial zone. Sections from Winns Church Road and Route 33 were drawn to those locations and the site lines drawn. Even when the buildings were tall and located near one of the perimeter roads, they were not visible through the 200-foot-wide forested buffer. The location of a building on higher ground or lower ground did not seem to impact visibility. Variations of 10-15 feet between roadway elevation and building pad elevation have a negligible effect on visibility across a 200-foot distance. Locating the buildings in lower locations at the eastern and southern portions of the site also does not result in a major decrease in visibility, since the elevation differences between those locations and the nearest perimeter road are not significant.

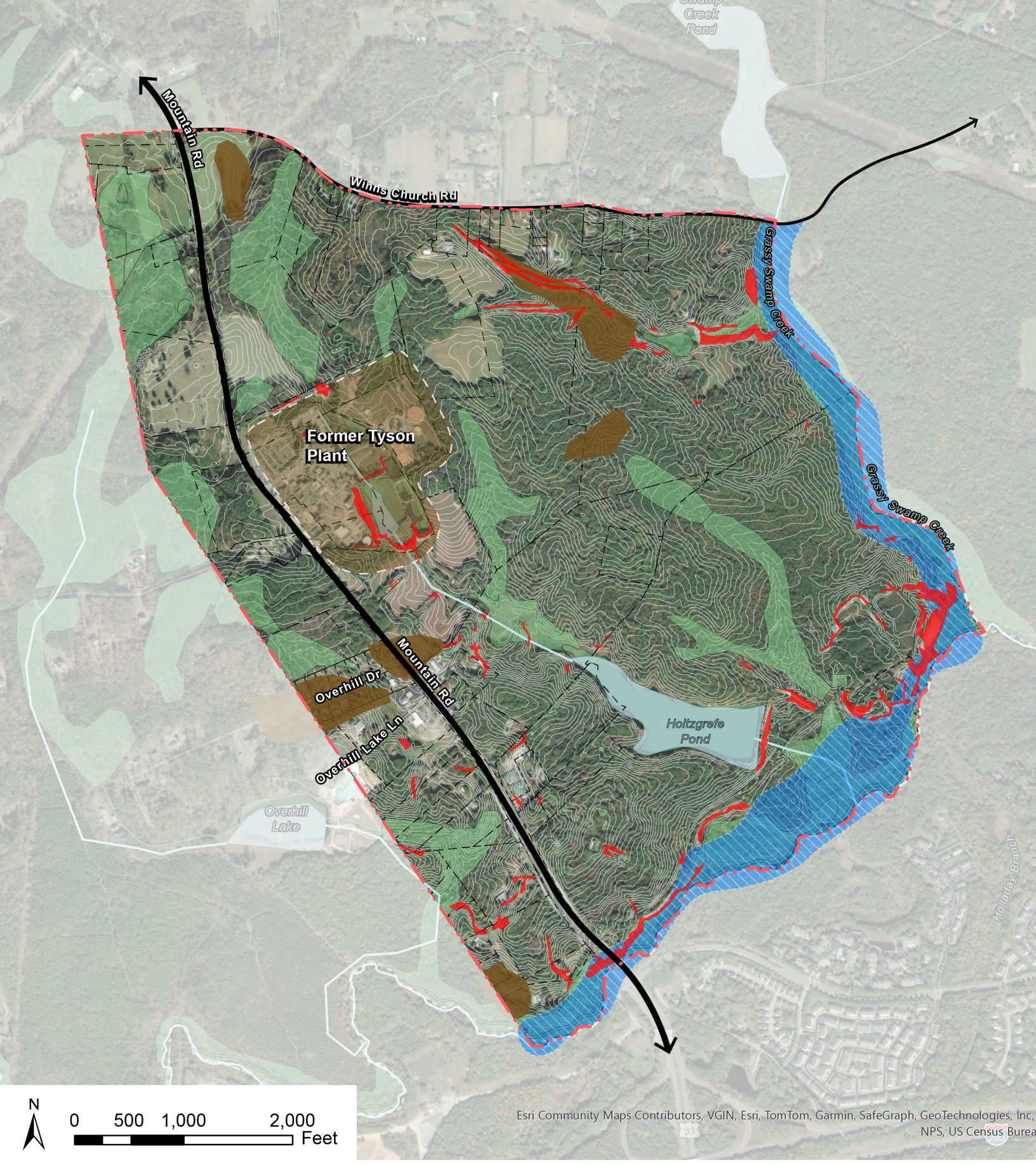
Developability

The study area is subject to a variety of environmental and physical constraints that impact its development potential. Areas along the southern and eastern boundaries of the site are located within the 100-year floodplain, making them particularly vulnerable to flooding and subject to strict regulatory limitations that hinder development and infrastructure placement. In addition to flood risk, poor soils are a concern throughout the area. These soils are primarily concentrated in the northern portion but are also scattered across other parts of the landscape. They pose challenges for construction due to issues with stability and drainage. Some properties—notably the former chicken processing plant—also contain potentially contaminated soils, which may require environmental remediation before any development can proceed.

Relatively small areas of steep slopes, defined as areas with a gradient greater than 15%, are distributed throughout the study area, with notable concentrations along the Chickahominy River and Grassy Swamp Creek. These slopes complicate development due to erosion risks, grading difficulties, and limited buildable space—especially where they intersect with other environmental constraints. Generally, while grading will be required, the topography of the site is suitable for industrial development.

Wetlands bisect many properties, forming ecologically sensitive corridors that further limit development opportunities.

Several large properties, including those along the southern and eastern boundaries, exhibit a number of these key development constraints. The combination of floodplain exposure, poor soils, steep slopes, and wetlands presents challenges for future development and redevelopment.



DEVELOPABLE AREA

- Study area
- Tax Parcels
- Waterbodies
- Wetlands
- Contours (10' Interval)
- Steep Slope (>15%)
- Potentially Contaminated Soil
- Flood-prone (100+ year floodplain)
- Poor Soils

Strengths, Opportunities, Weaknesses, and Threats (SWOT)

The following analysis provides a high-level summary of the Strengths, Weaknesses, Opportunities, and Threats (SWOT) influencing future development within the study area. It identifies existing strengths, potential opportunities, and current weaknesses and threats that may shape how the site evolves over time. This analysis informs the strategic direction for land use, infrastructure, and economic development, helping to identify where the site is best positioned for growth and where additional planning or mitigation may be needed.

One of the most significant opportunities is the potential for industrial development that brings long-term economic value to the County, including job creation and increased tax revenue. The site's regional access via Route 33, I-295, I-64, and I-95 makes it well-positioned to meet demand for data centers and light industrial uses. However, future development must also navigate several key challenges—including the lack of centralized wastewater infrastructure and the need to protect nearby residential areas and natural resources from visual and environmental impacts.

The SWOT findings reflect both technical review and community feedback gathered throughout the planning process. A companion map on the opposite page spatially represents these insights, highlighting physical constraints, infrastructure gaps, and locational advantages that will guide future recommendations.

STRENGTHS

- Road access to I-295, I-95, I-64 (2 exits west), and Route 33
- Route 33 serves as a major arterial road connecting the study area to the region and nearby centers
- Land consolidation with fewer property owners
- Access to utilities, including power and water
- Access to nearby natural features (trees, rivers, and water bodies)
- Existing policy supports industrial transformation
- Comprehensive Plan designates the area for economic development

WEAKNESSES

- Lack of centralized wastewater collection and treatment
- Steep slopes in select portions of the site
- While current zoning does not permit buildings more than 35 feet in A-1 and 45 feet in M-2, approval of a Special Exception may allow for taller buildings that conflict with the rural context
- Proximity to residential uses that may not align with industrial activity

OPPORTUNITIES

- Support industrial development to create new jobs
- Enhance public access to natural amenities (e.g., trails, linear parks along the floodplain)
- Incorporate natural stormwater and environmental management strategies
- Meet strong demand for industrial land (e.g., data centers, flex uses)
- Introduce small-scale retail and services for local residents
- Improve multimodal access (cars, trucks, bikes) while maintaining strong transitions to buffer nearby residential neighborhoods
- Connect the site to regional services while preserving its rural character

THREATS

- Flood risk along the eastern and southern edges of the site
- Challenging environmental conditions for development
- Risk of development that is visually incompatible with surrounding residential areas
- Historic and archaeological sites (e.g., Chickahominy River Tavern) may constrain or delay development
- Potential for contamination of nearby rivers and water bodies from industrial pollutants

STRENGTHS, OPPORTUNITIES, WEAKNESSES, AND THREATS (SWOT)

3. FRAMEWORK

This section establishes the physical development framework for the Route 33 Gateway Economic Development Zone (EDZ), outlining the recommended arrangement of land uses, roadways, buffers, and open space. The framework plan sets the stage for future development by organizing the site in a way that balances economic growth with environmental stewardship and community character. It guides how the site should function and evolve over time, supporting the policy intent of the EDZ designation while maintaining compatibility with surrounding rural and residential areas.

The framework's core principle is to concentrate industrial activity in the interior of the site while preserving the visual and environmental integrity of key roadways, natural areas, and adjacent neighborhoods. The concept promotes a layered approach—screening higher-intensity uses behind deep buffers, connecting them through a clear circulation network, and reserving targeted locations for commercial and recreational uses that enhance community value.

This structure informs the more detailed design guidelines presented in Section 4. By establishing where development should occur, how access is managed, and where transitions and protections are needed, the framework serves as the foundation for applying site-specific design standards. The following pages describe the mobility network, land use strategy, and buffer system that work together to support a cohesive, functional, and context-sensitive plan for the EDZ.

Mobility

The two main vehicular access points to the interior of the zone are from Route 33, at either end of an expanded commercial corridor. Most truck traffic arriving from I-295 and points south will enter at Entrance #1, just north of the Chickahominy River. A new stop-controlled or signal-controlled intersection will be required to accommodate this access point. The existing gravel access road to the wastewater pump station leads to the back of the site and loops back to Route 33 at Entrance #2, near the intersection with Overhill Drive.

Two additional north-south secondary roads are aligned along the edges of large land parcels to maximize site access. The road on the east terminates at the 200-foot-wide buffer along Winns Church Road. The road on the west may be extended to Winns Church Road in the future (Entrance #4); however, this connection is currently reserved as a 50-foot right-of-way and will only be constructed if a future analysis deems it necessary for emergency access or connectivity.

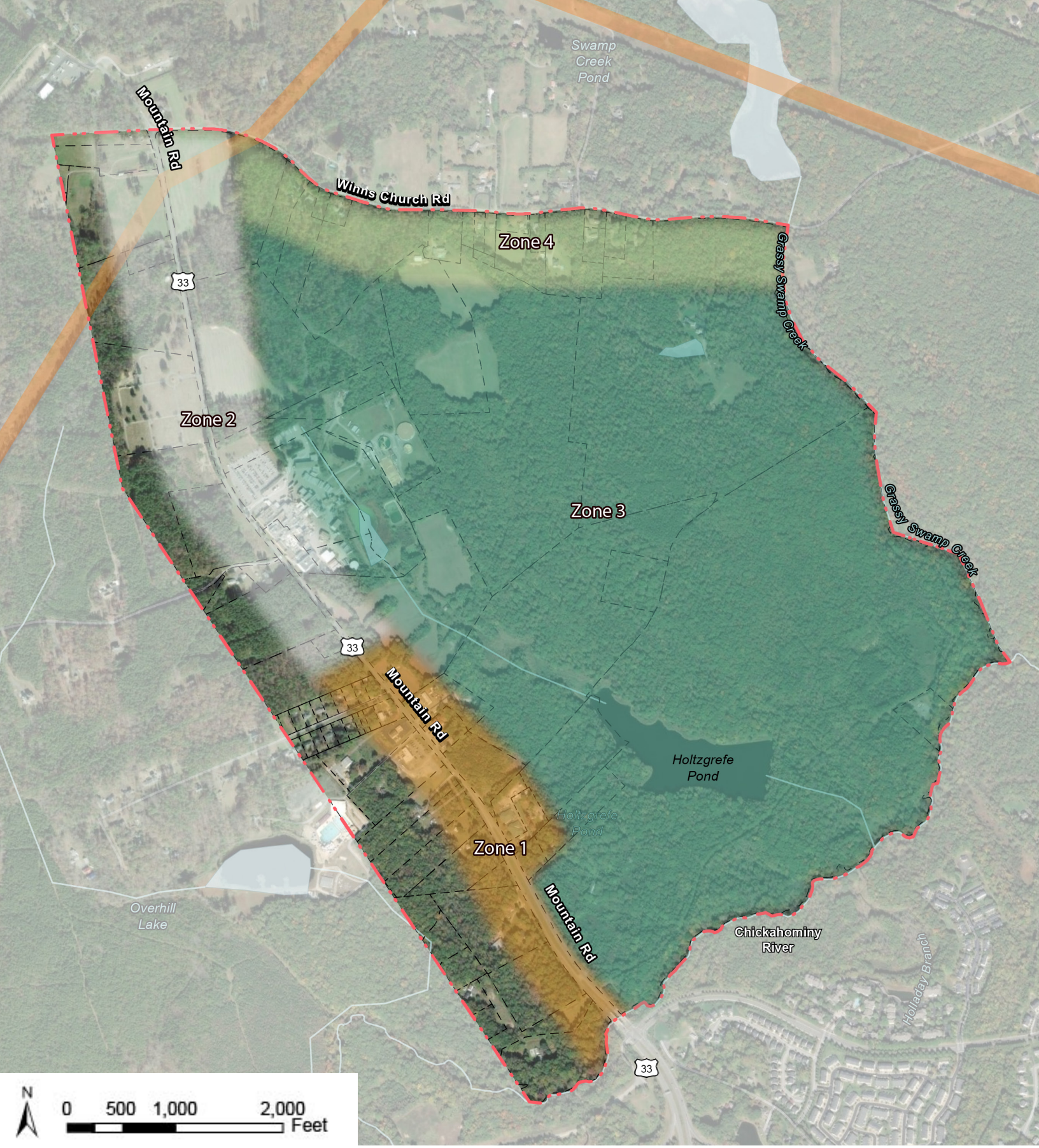
To minimize truck traffic through the Commercial Zone, truck traffic will be encouraged to use Entrance #1 if arriving from the south and Entrance #2 if arriving from the north. Preserving the rural character of Winns Church Road is a priority, and general site related traffic will not be encouraged along this corridor. No direct site access to Winns Church Road is proposed at this time. If implemented in the future, the internal road network may offer local residents an alternate route to Route 33, reducing reliance on the existing Winns Church Road intersection while minimizing impacts to the existing roadway.

VDOT intends to extend the four-lane segment of Route 33 northward to Winns Church Road and beyond. The design for that improvement can incorporate the corridor design guidelines outlined in Section 4. The existing four-lane segment can also be upgraded to reflect the higher level of landscaping specified in the guidelines, including a potential landscaped island near the county boundary to create a stronger gateway experience for vehicles traveling north.

Land Use

The land use framework for the study area establishes a balance between economic development and compatibility with surrounding residential and rural areas. It identifies targeted locations for new industrial and commercial development while reinforcing the

Study area
Proposed Road Network
Optional Internal Road
Trails
Indicative Location of Parcel Access
Proposed Forested Buffer (200'-300')
Commercial Zone
Data Centers/ Clean Manufacturing
Entrance to Zone
Cul-de-sac
Planted Island
Future Emergency Access Point (w/in 50' public right-of-way)



CHARACTER ZONES

Zone 1 Zone 2 Zone 3 Zone 4

importance of buffering, transitions, and limited intensity at the edges. The framework supports a mix of economic development uses—including data processing, clean manufacturing, and retail—that meet market demand while aligning with community preferences for low-traffic, well-screened, and visually cohesive development. No changes are proposed for residential areas outside the EDZ, ensuring that new growth is directed to appropriate locations and designed to respect local context.

INDUSTRIAL:
The recommended uses within the industrial zone include data processing and clean manufacturing. Not only are these uses experiencing robust demand in Virginia this decade, they have been responsive to community concerns, in that they do not generate much traffic, when expanding into new areas.

M-1 Limited Industrial might be the appropriate future zoning district for the industrial zone, with land use refinements being further specified in an overlay district. It is recommended to exclude some uses generally permitted in M-1, such as agriculture and forestry, dwellings for caretakers and watchman, earth fill storage, and warehousing, storage, wholesaling and distribution.

Recommended Industrial Uses	• Light Industrial • Clean Manufacturing • Data Centers • Supporting Uses (e.g., Battery Storage)
Prohibited/ Discouraged Industrial Uses	• Logistics/Distribution • Heavy Industrial • Industrial Flex • Outdoor Storage

COMMERCIAL:
The primary land uses along the Route 33 commercial corridor will be retail and food and beverage establishments. Commercial development in this area is expected to respond to the needs of nearby communities in Hanover County as well as those in Henrico County across I-295. Some highway-oriented commercial uses are also appropriate. The B-2, Community Business zoning district is likely the most suitable for this portion of the EDZ, as it aligns with the desired mix of uses. B-2 prohibits car dealerships and allows large-scale gas stations only as a conditional use, with the requirement that fuel pumps be located to the side or rear of the building.

No land use or zoning changes are proposed along Winns Church Road or along Route 33 north of Overhill Drive.

Buffers and Open Space

Buffers and open space are foundational components of the development framework for the EDZ. They help ensure compatibility between new industrial and commercial development and the surrounding rural, residential, and environmental context. These elements help organize the site, minimize visual impacts, and maintain the corridor's established character.

A continuous 200-foot-wide forested buffer is planned along both Route 33 and Winns Church Road, creating a consistent visual and spatial separation between the roadway and the more intensive land uses located within the interior of the site. These buffers are designed to help retain the rural character of these roads by screening industrial buildings and infrastructure from view. Where tree cover is insufficient, new native plantings and landscape restoration will reinforce their effectiveness and ecological value.

In addition to perimeter buffers, internal landscape buffers are used to transition between zones of differing intensity—such as between industrial and commercial uses. These transitions help reduce conflicts between uses, protecting existing community character and environmental features while making the site attractive for investment.

The framework also introduces a linear park and walking trail along the Chickahominy River and Grassy Swamp Creek. These green corridors will provide passive recreation opportunities, stormwater benefits, and environmental protection. The trail will follow an existing cleared path where trees have already been removed and stumps remain in place, requiring no additional grading or planting. Minor boardwalks or bridges may be added at water crossings. A small parking lot will serve as the trailhead, and spurs will connect the main trail to adjacent industrial properties.

4. DESIGN GUIDELINES

The design guidelines provide a unified approach for shaping new development and reinvestment along the corridor. Building on the Framework established in Section 3, the guidelines support high-quality design outcomes that reflect the character of the surrounding landscape, protect adjacent uses, and guide reinvestment as the area evolves.

Design guidance for the character zones is divided into site design, building design, and placemaking techniques—helping to ensure that both the public realm and private development contribute to a cohesive and context-sensitive environment.

The Guideline Elements are organized into three categories:

Placemaking

Placemaking techniques consider elements such as gateway treatments, lighting, signage, and fencing to create a memorable, distinct, and welcoming experience.

Site Design

Site design addresses landscaping, buffering, screening, and the overall arrangement of uses on each site or parcel, allowing development to fit comfortably within the surrounding landscape.

Building Design

Building Design includes expectations for building setbacks, architectural elements, building height, and building materials, ensuring new structures enhance the area's identity.

Together, these categories ensure that future development reinforces the corridor's evolving role as a transition between rural and suburban development patterns while supporting a high-quality, consistent appearance. The guidelines apply across distinct character zones and provide direction tailored to the unique context of each zone. However, not all character zones include guidance in each category, with the level of direction provided varying based on the character, use, and expected level of change in each zone.

In the Route 33 Commercial Zone and the Industrial Zone, the guidelines are more prescriptive to help manage future development, while in the Route 33 North and Winns Church Road zones, they are minimal or not needed. This approach allows the design framework to remain flexible while reinforcing the unique identity of each Character Zone.

Character Zone 1 – Route 33 Commercial

The Route 33 Commercial Zone is a central and highly visible part of the gateway, where change is most likely to occur. This zone offers an opportunity to introduce new neighborhood-scale commercial uses that are compatible with the surrounding rural and residential context. The design guidelines for this zone are more detailed to help ensure that future development responds to both the setting and the community's priorities.

The Route 33 Commercial Zone is envisioned as a cohesive, high-quality corridor that reflects the rural character of Hanover County while supporting well-designed commercial development. The design guidelines aim to establish a recognizable and consistent identity through the use of traditional materials, regionally inspired architectural features, and coordinated site elements. Buildings are encouraged to incorporate pitched or gabled roofs, vertically oriented windows, and muted color palettes to reinforce the traditional architectural tone and rural surroundings.

A unifying design approach will provide a flexible but coherent visual language for the corridor. This zone emphasizes the use of traditional architecture and materials, thoughtfully integrated landscaping and buffers, and site layouts that reduce the visual prominence of parking. Buildings should be oriented to define site edges, with parking located to the side or rear whenever possible. Smaller-scale signage with a traditional appearance helps maintain a cohesive look and reinforces the area's rural-to-suburban transition. These elements work together to support a welcoming, neighborhood-scale commercial environment.

While new development will be subject to these guidelines, they are also intended to provide a framework for gradual enhancements across the corridor. The guidelines apply to redevelopment, site reconfigurations, expansions, and replacement signage—but they are not retroactively imposed on existing buildings. Over time, as properties are improved or change ownership, the adoption of consistent architectural and placemaking elements will create a more unified district. In this way, the guidelines not only direct future development but also offer a pathway for existing businesses to contribute to a shared identity for Route 33.

The design guidance that follows reflects these values. It emphasizes careful building placement, pedestrian-friendly site layout, attractive and scaled-down signage, and materials that blend with the surrounding environment. Together, these strategies aim to create a commercial area that feels both functional and distinctly local in character.

ROUTE 33 COMMERCIAL

1 PLACEMAKING

The following placemaking elements reinforce a unified identity for the Route 33 Commercial Zone. These components should be considered early in project design to ensure cohesive and context-sensitive development:

A. Building Orientation

The orientation of buildings plays a key role in defining the character of the Route 33 Commercial Zone. Buildings should be sited close to Route 33, within the required setback range, with primary façades and entrances facing the street.

When applied across multiple sites, this approach establishes a clear development pattern that strengthens the identity of the corridor over time. See Site Design Guidelines for specific recommendations.

B. Architectural Elements

Establishing a consistent architectural character is essential to reinforcing the identity of the Route 33 Commercial Zone. The following guidelines promote building elements that reflect the region's rural heritage, ensuring visual cohesion throughout the corridor.

i. A key unifying feature is a stone or brick water table along the base of street-facing façades. Between two and three feet in height, the water table will use materials such as fieldstone, sandstone, or red/brown brick with neutral mortar to reflect the region's historic influences and rural character.

ii. Building form will emphasize pitched roofs with gables, a prevalent feature of traditional architecture in Hanover County. Most roofs will be pitched, and gables will be used to break up long building masses. Roofs should be pitched between 4:12 and 12:12.

iii. Eaves should project a minimum of 18 inches from finished wall surfaces to emphasize shadow lines and roof articulation. Deeper overhangs may be used on porches or entry features.

C. Signage

i. Signage should be scaled to the pedestrian environment and not exceed height limits specified in zoning.

ii. Multiple signs within a development should be part of a coordinated signage plan, using consistent fonts, materials, and colors.

iii. Freestanding signage should follow a monument-style format, with a masonry base that matches the building water table in material and color. Signs should incorporate a consistent design motif—such as an arched top—and maintain uniform sizing of tenant panels and lettering. This approach helps visually link businesses while supporting clear, legible wayfinding.

See recommended dimensions at right.

iv. Wall signs can be attached to buildings to increase visibility to motorists. Maximum area is 40 sq. ft.; maximum height is 4 ft.; maximum width is 12 ft. Maximum one wall sign per tenant.

v. All signs must be externally illuminated. Internally illuminated sign cabinets are prohibited.

vi. Street signs throughout the EDZ will use the same design to enhance cohesiveness.

D. Lighting

i. Coordinated building and site lighting should be used throughout the zone to support a unified corridor identity. Fixtures should have a consistent, high-quality appearance with clean detailing and a neutral finish—such as black or dark bronze powder coating—that complements the area's vernacular architectural styles. Design should prioritize durability, simplicity, and visual clarity without leaning heavily traditional or overly modern.

ii. Lighting must be full-cutoff and downward-directed to reduce glare, maintain dark-sky compliance, and support a safe, visually consistent nighttime environment.

Monument Signs

Element	Recommended Dimension
Overall Height	Max 6 feet (including base)
Sign Face Area	Max 32-40 sq. ft. (total face area)
Base Height	Min 18-24 inches of stone or brick base
Width	Proportional to height, typically 6-10 feet
Setback	Minimum of 10 feet from the right-of-way

iii. Pedestrian-scale street lighting (12–16 feet in height) is encouraged along internal access roads and walkways to enhance visibility and comfort for pedestrians.

iv. All freestanding street lighting must use full cutoff, downward directional fixtures to minimize glare and light spill. (Specification: Brandon Industries Decorative Street Lights and Pathway Lighting CL5-H-02, or equivalent with black and/or dark bronze dry powder coating.)

E. Landscape

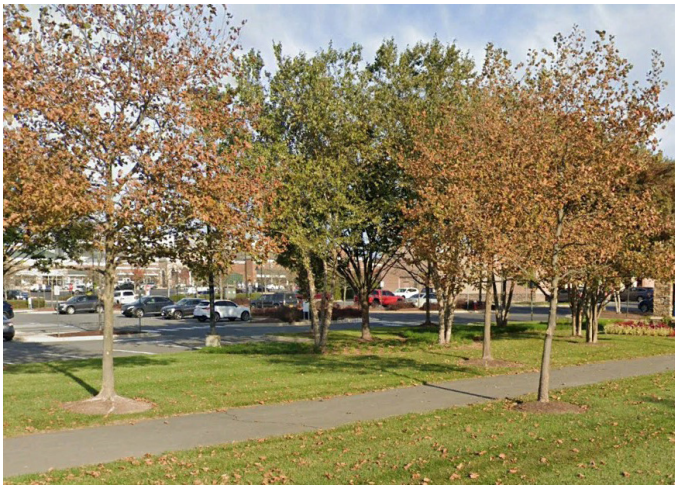
i. Street trees should be planted along Route 33 at consistent intervals of no greater than 50 feet.

ii. Foundation plantings should be used to soften building edges and enhance pedestrian experience at building entrances.

iii. Parking lots must include perimeter and internal landscaping, with a focus on canopy tree preservation and long-term shade coverage.

iv. The following species are recommended due to their suitability to the region's climate and streetscape conditions, providing shade, seasonal interest, and long-term durability along Route 33 and pedestrian areas within the commercial zone.

- Valley Forge Elm
- White Oak
- Red Maple
- Sweetgum (seedless)
- Blackgum



F. Gateway Treatment

i. A landscaped gateway buffer approximately 50 feet wide (measured from the ultimate right-of-way) should be provided along Route 33, incorporating a mix of preserved vegetation and supplemental native plantings.

ii. Gateway areas should include enhanced landscaping, low monument signage, and potentially a small plaza, seating area, or public art to visually define the commercial district's identity.

iii. Where feasible, hardscape elements such as stone walls, decorative fencing, or vertical markers should be used to reinforce the gateway presence without obstructing visibility.

G. Thoroughfare Buffer Requirements

i. A consistent landscape buffer of at least 50 feet should be maintained between Route 33 and commercial development to create a cohesive visual edge and preserve a rural-to-commercial transitions.

ii. Buffers should include layered plantings with a mix of canopy trees, understory vegetation, and seasonal color to provide year-round interest.

iii. Signage, fencing, or lighting located within the buffer area should be coordinated in design and scale to support a unified corridor appearance.

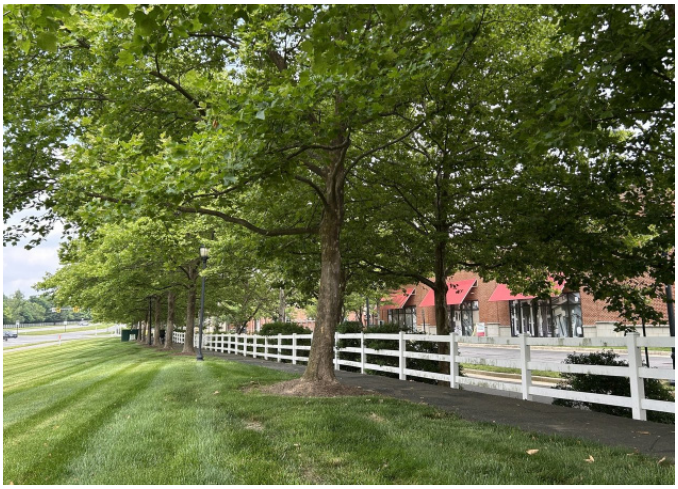
H. Fencing

i. Fencing design should take cues from the area's rural character, using split-rail, board-and-batten, or mixed-material designs where appropriate.

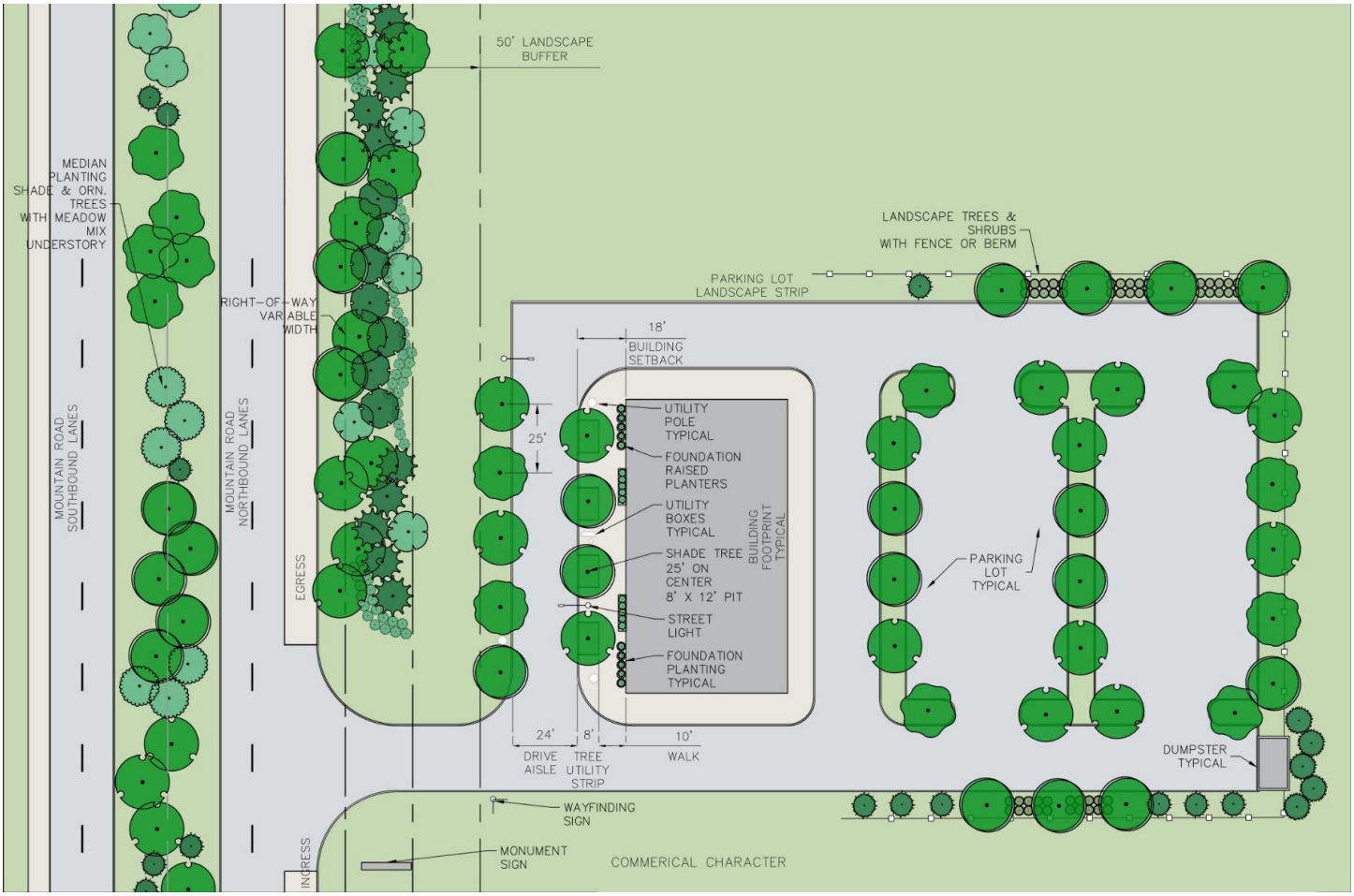
ii. Fencing visible from Route 33 should be constructed of decorative materials, such as wood, stone, or ornamental metal, and should be consistent in style across a development.

iii. Chain link fencing is prohibited in front setbacks and highly visible areas.

iv. Where used for screening, fences should be softened with landscape plantings or integrated into broader site design features.



ROUTE 33 COMMERCIAL



2 SITE DESIGN

A. Setbacks

i. For buildings abutting Route 33, a minimum setback of 50 feet is required from the front property line to the façade of the main building or to the nearest paved surface (i.e., drive aisle).

ii. The maximum setback of the main building from the front property line is 75 feet.

iii. The minimum side setback is 10 feet. Pedestrian facilities connecting to adjacent commercial properties are exempt from this requirement.

iv. The minimum rear setback is 25 feet.

B. Placement and Orientation

i. The primary façade of the main building should face Route 33.

ii. Surface parking areas should be located primarily at the rear of the main building; side parking is permitted where rear access is not feasible.

iii. One access lane is permitted between the front façade and the front property line, accessible by a single drive aisle. The drive aisle must be outside of the buffer.

C. Pedestrian Access & Circulation

i. Clearly marked and safely designed pedestrian connections must be provided from parking areas to building entrances.

ii. Pedestrian facilities should connect adjacent commercial properties and should be oriented parallel to Route 33, located near the building frontage.

iii. Shade trees or other landscape elements should be used to enhance comfort and define pedestrian pathways.

D. Screening

i. Parking lots, loading areas, trash enclosures, and utility infrastructure should be screened from public roads and adjacent properties using a combination of landscaping, fencing, or low masonry walls. Screening elements should be at least 3 feet in height at installation and consist of materials that complement the building architecture and surrounding landscape.

ii. Rooftop mechanical equipment should be fully screened from view through parapets or integrated architectural features.

iii. Reference the Hanover County Zoning Ordinance for additional requirements and standards for utility and service area screening.

E. Parking

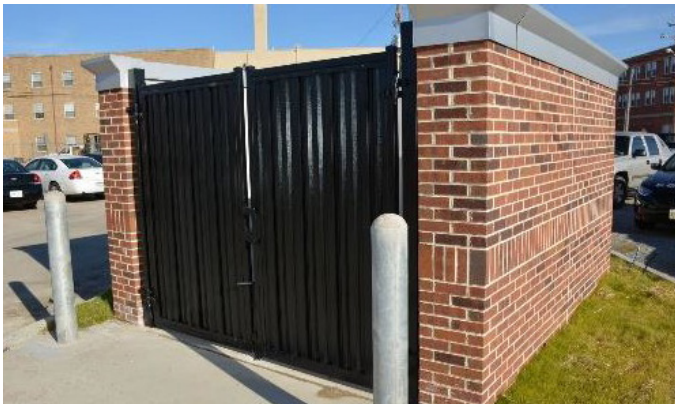
i. Parking ratios shall conform to Hanover County's Zoning Ordinance. Shared parking strategies are encouraged to reduce excessive impervious surfaces.

ii. Parking areas should be located to the side or rear of buildings where feasible.

iii. Large parking areas (more than 30 spaces) should be broken into smaller pods with internal landscape islands to reduce heat gain and improve aesthetics.

iv. Bicycle racks or other multimodal accommodations are encouraged near building entrances where appropriate.

v. Gas stations should locate pumps to the side or rear of the building. If located to the side of the building, a continuous evergreen hedge should be provided between the pump area adjacent streets. Canopies should use colors and materials similar to those used on the main building, with complementary masonry on support columns.



ROUTE 33 COMMERCIAL

F. Lighting

i. All freestanding lighting must use full cutoff, downward directional fixtures to minimize glare and light spill. (Specification: Brandon Industries Decorative Street Lights and Pathway Lighting CL5-H-02, or equivalent with black and/or dark bronze dry powder coating.)

ii. Light sources must be shielded from direct view from adjoining residential properties and public rights-of-way.

iii. Decorative lighting may be used at building entrances or pedestrian areas but should be consistent with the building's architectural character and remain within appropriate illumination levels.

G. Stormwater Management Facilities

i. Stormwater management facilities should be integrated into the site layout and located within open space areas, along greenways, or at the edges of parking lots where they can serve both functional and aesthetic roles.

ii. Wet ponds and larger basins should be designed as visual amenities, incorporating native landscaping, natural contours, and, where feasible, pedestrian features such as seating or overlook areas.

iii. Avoid placing stormwater basins at primary entrances or key frontages unless they are fully landscaped and screened or designed as a feature that enhances the site's appearance.

iv. Dry basins and swales should be planted with native vegetation to support infiltration and reduce maintenance needs.

3 BUILDING DESIGN

A. Building Height:

   i. Maximum building height is 35 feet. This will accommodate ground floor commercial and one or two stories above.

B. Roofs:

   i. Roofs should be predominantly pitched or gabled at a slope to reflect the traditional architectural character of the region (between 4:12 and 12:12).

   ii. Flat roofs are discouraged for primary structures but may be permitted for secondary elements if screened with parapets or other architectural detailing.

   iii. Rooflines should incorporate changes in height or slope to break up the massing of larger buildings. Dormers, overhangs, and other traditional features are encouraged.

   iv. Eaves should project a minimum of 18 inches from finished wall surfaces to emphasize shadow lines and roof articulation. Deeper overhangs may be used on porches or entry features.

C. Colors and Materials:

   i. Primary building materials should be durable and visually compatible with the surrounding context. Preferred materials include brick, stone, and fiber-cement siding.

   ii. Accent materials such as stucco or architectural block may be used for no more than 25% of any building façade.

   iii. Color palettes should consist of muted or natural tones. High-contrast, overly bright, or reflective materials are discouraged, particularly on primary façades.

   iv. Materials should wrap around building corners and continue along visible side façades to avoid unfinished appearances.

   v. A key unifying feature is a stone or brick water table along the base of street-facing façades. Between two and three feet in height, the water table will use materials such as fieldstone, sandstone, or red/brown brick with neutral mortar to reflect the region's historic influences and rural character.

ROUTE 33 COMMERCIAL

D. Windows and Transparency:
   i. Buildings facing Route 33 must provide a minimum of 30% transparency on the ground-level front façade (measured between 3 and 8 feet above grade).
   ii. Most windows should be rectangular, taller than they are wide, and spaced to create a consistent rhythm that enhances the pedestrian scale of the building.

E. Façade Articulation:
   i. Long façades should be broken up into smaller increments to reduce the scale of large buildings.
   ii. Blank walls exceeding 40 feet in length are not permitted along façades that face Route 33. Where necessary, they should be broken up with windows, changes in roofline, use of gables, and/or wall plan offsets.

F. Discernible Main Entryways:
   i. Main entrances should be clearly visible from Route 33 and should face the street or a prominent pedestrian pathway.
   ii. Entryways should be articulated through features such as overhangs, awnings, porches, transom windows, or changes in material.
   iii. Where provided, rear or side entrances should be connected by pedestrian pathways and designed to match the quality and character of the primary façade.

Character Zone 2 – Route 33 North

The Route 33 North character zone is envisioned as a rural parkway that maintains its natural setting and reinforces the existing character of this segment of Route 33. The goal is to minimize the visual and auditory impact of adjacent industrial development through thoughtful buffering and low-intensity roadside treatments.

No direct site access to industrial parcels will be permitted from Route 33, and minimal changes are anticipated beyond the planned road widening to four lanes. A minimum 200-foot wide buffer (measured from the ultimate right-of-way) should be provided along Route 33, with existing vegetation preserved (and supplemented as needed) to minimize views of new development.

The guidelines in this section focus exclusively on Placemaking strategies to preserve the road's rural identity while complementing the overall EDZ framework.

While this zone is not expected to change significantly in the near term, the guidelines help ensure that any new investment is respectful of its setting. The goal is to create a quiet and green edge to the corridor that supports long-term compatibility between uses while reinforcing the area's natural and rural identity.

All placemaking elements in this zone should be designed to visually recede into the landscape and avoid cues that signal a developed, commercial, or industrial environment.

1 SITE DESIGN

A. Gateway Treatment

i. A landscaped median should be installed near the transition from the commercial zone to the northbound approach of Route 33 to signal entry into a distinct, more rural segment.

ii. The gateway median should feature native plantings and trees to reflect the surrounding natural context, differentiating it from the more formal landscaping to the south.

iii. A minimum 200-foot wide buffer (measured from the ultimate right-of-way) should be provided along Route 33, with existing vegetation preserved. Additional buffer planting and tree preservation on either side of the roadway should frame the gateway, enhancing the corridor's character and screening adjacent uses.

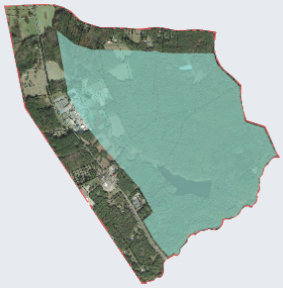
ROUTE 33 NORTH

B. Street Lighting
   i. Street lighting should be limited to intersections or necessary safety locations and designed to be unobtrusive and downward-directed.
   ii. Decorative or thematic fixtures are not required and may detract from the intended rural parkway character.
   iii. Lighting should be coordinated with any future VDOT improvements to maintain consistency along the corridor.

C. Signage
   i. Wayfinding or corridor identification signs should be low-profile, monument-style, and constructed of natural or neutral-toned materials.
   ii. Signage should avoid branding this area as a commercial or industrial district; the focus is on maintaining a subdued, rural visual language.
   iii. Consistency with any signage types or standards for the area should be maintained but deemphasized compared to the Route 33 Commercial zone.

D. Fencing
   i. Fencing along Route 33 should be avoided where possible to preserve open views of the forested buffer.
   ii. Where necessary for security or screening purposes, fences should be located behind vegetation and constructed of materials that visually recede into the landscape (e.g., dark-coated metal or wood).
   iii. Chain link fencing should not be visible from Route 33 and must be screened with landscaping or berms if used.

Character Zone 3 – Industrial Zone



The Industrial Zone supports the County's long-term economic development objectives by accommodating advanced manufacturing, data centers, and other light industrial uses in a way that respects the rural character of the corridor. While this area is envisioned as a future employment center, it must balance function and visibility, particularly given its proximity to residential areas and a high-visibility corridor.

Design guidelines in this zone focus on managing the visual and environmental impacts of larger buildings and infrastructure. Site planning emphasizes deep setbacks, enhanced landscape buffers, and transitions that screen buildings from public view while maintaining a natural appearance along roadways.

Where views of buildings do occur, high-quality materials, restrained signage, and coordinated lighting are encouraged to reduce visual clutter.

Environmental stewardship is encouraged through measures such as preserving existing vegetation, minimizing runoff, and using landscape buffers to support both screening and water quality. These approaches help reinforce a clean, cohesive, and functional industrial district that fits into the surrounding landscape.

The following placemaking elements, site design guidelines, and building standards will help achieve a consistent built environment, ensuring that the character of approach that will reinforce the character of this zone is representative of the vision expressed by the community.

1 PLACEMAKING

The placement and orientation of buildings in the Industrial Zone contribute to a cohesive development character while balancing operational needs and visual compatibility. Buildings will be sited in consistent alignment with primary façades or office components oriented toward the street, reinforcing a well-organized and landscaped industrial zone. Loading areas, mechanical equipment, and service functions will be located to the sides or rear of buildings and screened from view. As multiple sites develop, this coordinated approach supports a clear, orderly visual identity and ensures that the zone remains compatible with adjacent roadways and land uses.

INDUSTRIAL ZONE

The following guidelines promote a consistent, high-quality public realm, and offer design strategies that maintain the zone's character amidst future development.

A. Building Siting & Orientation

The orientation of buildings in the Industrial Zone plays a key role in creating a unified development pattern that fits sensitively within its natural setting. Buildings should be arranged in a consistent manner with primary façades or office components facing the public roadway to establish a clear, organized frontage. Sites should be designed to weave into the landscape, using existing vegetation and new plantings to frame views, screen service areas, and soften the visual impact of large structures. This approach ensures that industrial development remains compatible with the surrounding environment, while presenting an orderly and visually cohesive identity from adjacent roads and neighboring properties.

B. Architectural Elements

In the Industrial Zone, architectural elements help establish visual consistency and support a subdued, integrated character that complements the surrounding landscape. While buildings are primarily functional, applying a shared set of design principles can reinforce a cohesive identity and contribute to a well-composed corridor.

i. Buildings should use earthtone color palettes—such as tans, grays, warm browns, or muted greens—for both wall surfaces and trim. These tones help reduce visual prominence and blend buildings into the wooded and rural context. High-gloss finishes and white tones are discouraged.

ii. Large wall surfaces should be visually broken up using articulation, changes in material or texture, or scored paneling to reduce perceived scale and monotony.

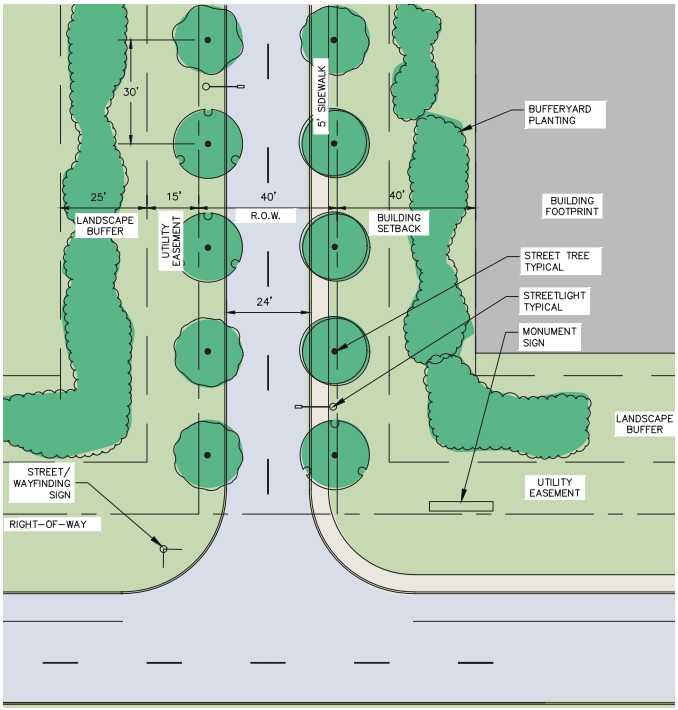
iii. Architectural treatments should emphasize clean, minimal forms and simple proportions. Ornamentation is discouraged in favor of restrained detailing that reinforces the utilitarian character of the zone.

iv. Building materials should be durable, low-maintenance, and visually cohesive across façades. Acceptable materials include brick, stone, pre-cast concrete, architectural metal paneling, and similar finishes that support long-term performance.

C. Buffer Integration

A unified landscape character across front setbacks will help organize the visual identity of the Industrial Zone and reduce the prominence of large-scale buildings. Front-yard areas visible from public rights-of-way should be treated as coordinated landscape zones, combining layers of native trees, shrubs, and low-maintenance groundcover to soften building edges and create visual rhythm along the corridor.

While buffers should obscure service areas and parking where possible, they should also allow views of building entries and signage, balancing screening with a sense of openness. Consistent use of planting types, spacing, and structure across multiple sites will reinforce the cohesive, campus-like quality of the district. Low decorative fencing or walls may be incorporated where appropriate to further define the landscape or street edges.



D. Signage

Signage within the Industrial Zone should be coordinated to create a unified identity for the corridor while remaining understated and functional. Monument signs are the preferred freestanding format, and wall-mounted signs should complement the building architecture in placement and material.

i. Monument Signs: All freestanding signs should be monument-style, with a solid base constructed of materials that reflect or match the principal building's water table or façade materials—such as brick, stone, or architectural concrete.

INDUSTRIAL ZONE

ii. Design Consistency: A shared design motif—using rectangular proportions, flat or gently curved tops, and subdued earthtone finishes—should be used throughout the zone to reinforce visual cohesion.

iii. Materials & Illumination: Sign faces should be made from durable, high-quality materials and may include externally lit or halo-lit lettering. Internally illuminated box signs are discouraged. Lighting should be shielded and downward-directed to minimize glare and preserve the nighttime character of the area.

iv. Wall-Mounted Signs: Where used, wall signage should be scaled to the building façade, placed near main entries, and designed as integral architectural elements. Font styles, colors, and materials should be visually compatible with the building's overall design.

v. Tenant Coordination: Multi-tenant developments should establish a coordinated signage plan to ensure consistency in tenant panel size, font, and placement on both monument and wall signs.

E. Lighting Fixtures

i. All freestanding lighting must use full cutoff, downward directional fixtures to minimize glare and light spill. (Specification: Brandon Industries Decorative Street Lights and Pathway Lighting CL5-H-02, or equivalent with black and/or dark bronze dry powder coating.)

ii. Light sources must be shielded from direct view from adjoining residential properties and public rights-of-way.

F. Gateway Treatment

i. Gateway identity should be created through consistent landscaping, building setbacks, materials, and monument signage.

ii. Design elements should visually signal arrival into the industrial district while remaining low-profile and compatible with adjacent areas.

Monument Signs

Element	Recommended Dimension
Overall Height	Max 6 feet (including base)
Sign Face Area	Max 40 sq. ft. (total face area)
Base Height	Min 18-24 inches of stone or brick base
Width	Proportional to height, typically 6-10 feet
Setback	Minimum of 10 feet from the right-of-way

G. Fencing

i. Fencing should be of consistent, high-quality design, especially along road frontages and public edges. Decorative metal with black powder coating finish is recommended.

ii. Where security fencing is required, it should be softened with landscaping or incorporated into overall site design.

iii. Chain link fencing should not be used along streets without screening.

2 SITE DESIGN

A. Building Placement and Orientation

i. Buildings should be oriented toward interior public or private streets.

ii. A minimum 40-foot setback is required from the right-of-way along internal roads.

iii. Substations and backup power equipment must not be placed near existing residential parcels or visible from key roadways.

B. Access and Circulation

i. All vehicular access to industrial sites must be from interior roads; direct access from Route 33 or Winns Church Road is not permitted.

ii. Sidewalks or shared-use paths should be provided on at least one side of primary interior roads.

iii. Pedestrian access should connect building entrances with parking areas and open space corridors, including trails along streams where applicable.

C. Parking Lots

i. Surface parking must be located to the side or rear of buildings and not between the primary building façade and the street.

ii. Parking areas should incorporate landscaped islands and perimeter plantings to manage stormwater and reduce visual impact.

iii. Large parking lots should be visually broken up and buffered from public view.

INDUSTRIAL ZONE

D. Landscape and Buffers

i. A 25-foot landscaped buffer is required along all public and interior roads.

ii. Transitional buffers should be provided between industrial development and adjacent residential or sensitive land uses. To protect the existing residential properties along the south side of Winns Church Road, developers will create a 150 ft.-wide buffer between the residential property line and any industrial buildings. See building height restrictions under Building Design below.

iii. The preservation of existing forested areas and tree canopy is strongly encouraged, especially in perimeter and buffer zones.

E. Screening

i. Screening is required for substations, parking lots, loading areas, and buildings visible from residential uses or public roads.

ii. Ground-mounted mechanical equipment must be fully screened from public view using landscaping, fencing, or architectural enclosures that are compatible with the primary building. Rooftop mechanical equipment must also be screened.

F. Stormwater Management Facilities

i. Stormwater basins should be located at the edges of development sites and integrated with landscape buffers.

ii. Facilities visible from roads should include landscaped treatments and, if wet ponds, should include aeration features.

iii. Stormwater areas near building entrances or streetscapes should be designed to function as amenities with natural plantings.

3 BUILDING DESIGN

A. Building Height:

i. Building heights in the industrial zone are limited to 62 feet.

ii. At transition points between industrial and residential development, additional restrictions apply. To protect the existing residential properties along the south side of Winns Church Road, developers will create a 150 ft.-wide buffer between the residential property line and any industrial buildings. The maximum height of industrial buildings within 200 feet of the buffer line will be 35 feet. Beyond 200 feet, building heights will be allowed to increase to 62 feet.

B. Roofs

i. Roofs should be predominantly flat to accommodate mechanical systems and rooftop infrastructure.

ii. Parapets or architectural detailing must be used to screen rooftop equipment and create a finished appearance from public view.

iii. Where pitched or sloped roofs are used on office or visible building components, they should be consistent with regional forms and materials.

C. Colors and Materials

i. Primary building materials should be industrial-grade, durable, and visually compatible with the natural and rural context.

ii. Buildings should use earthtone color palettes—such as tans, grays, warm browns, or muted greens—for both wall surfaces and trim. These tones help reduce visual prominence and blend buildings into the wooded and rural context. High-gloss finishes and white tones are discouraged.

iii. Accent materials such as architectural concrete, metal paneling, or high-performance siding may be used if applied consistently and limited in surface area.

INDUSTRIAL ZONE

D. Windows and Transparency

   i. Administrative or office portions of buildings visible from public roads should include windows and transparent elements to break up massing.

   ii. Where included, windows should be vertically oriented and spaced regularly.

   iii. Large wall surfaces should be visually broken up using articulation, changes in material or texture, or scored paneling to reduce perceived scale and monotony.

E. Discernible Main Entryways

   i. Primary entrances should face internal streets or campus circulation areas and be clearly visible and accessible.

   ii. Entryways should be emphasized using changes in material, overhangs, or signage to distinguish them from loading and service areas.

   iii. Where side or rear entrances are used, they must maintain a consistent design treatment and be connected by safe, direct pedestrian pathways.

Character Zone 4 – Winns Church Road

The Winns Church Road zone is a rural, residential area that is not expected to change in the near term. Current land uses—primarily large-lot homes and farmland—will remain in place unless and until property owners choose to make changes. The goal of this zone is to preserve its rural character and ensure that future development in nearby areas, particularly the Economic Development Zone (EDZ), does not negatively impact the visual or environmental quality of Winns Church Road.

Because no significant redevelopment is anticipated, these guidelines do not introduce new building or site design standards. Instead, the focus is on maintaining deep setbacks and vegetated buffers that protect existing homes and preserve views along the roadway. A minimum 200-foot wide buffer (measured from the ultimate right-of-way) should be provided along Winns Church, with existing vegetation preserved (and supplemented as needed) to minimize views of new development.

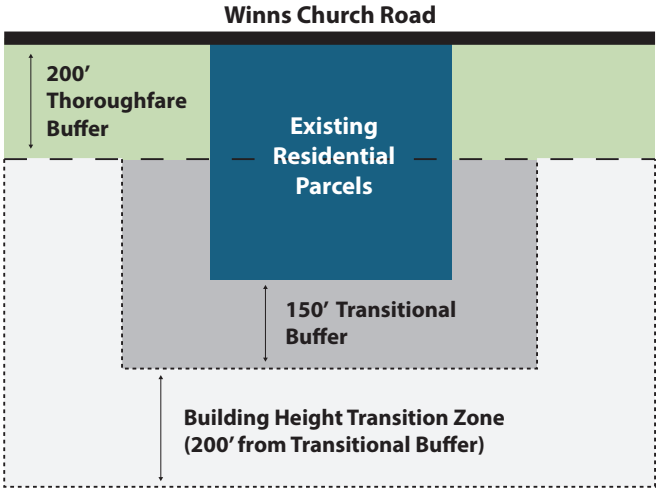
To protect the existing residential properties on the south side of Winns Church Road, developers will create a 150 ft.-wide buffer between the residential property line and any industrial buildings, with building heights transitioning into the industrial area as recommended on p.31. Buffers will help reduce visual impacts from future development outside the zone and ensure that Winns Church Road continues to feel quiet and rural.

No branding or placemaking elements are proposed for this area, helping respect the existing landscape and reinforcing the distinct character of Winns Church Road as a low-impact, residential edge to the broader gateway area.

1 SITE DESIGN

The primary guidance for the Winns Church Road zone is illustrated in the accompanying graphic, which establishes three key strategies to preserve the rural character of the corridor: a transitional buffer surrounding existing residential homes, a thoroughfare buffer along Winns Church Road, and a Building Height Transition Zone to reduce the scale of adjacent development. These elements are designed to preserve the rural, low-density character of the corridor by minimizing visual and physical impacts from adjacent development. No additional site design guidelines are proposed, as existing zoning standards—paired with these buffer and height strategies—are sufficient to maintain the character of the zone.

* A reserved 50-foot right-of-way may accommodate a future emergency-only connection or secondary access to the industrial area, subject to further study based upon proposed uses and specific development patterns (See Section 3 - Conceptual Site Layout - Entrance #4).



5. IMPLEMENTATION

Regulatory

Future development within the EDZ will be shaped by a coordinated framework that includes existing zoning districts, a forthcoming overlay district, this Small Area Plan, the Envision Hanover Comprehensive Plan, and the design guidelines outlined in Section 4.

The County intends to adopt a new overlay district for the industrial zone and Route 33 South to refine and supplement base zoning standards. This overlay will incorporate dimensional standards, tree canopy requirements, and building coverage limits that support a less intense, more open, and greener development pattern. In the Route 33 commercial corridor, the overlay will also encourage incremental upgrades to existing development in alignment with the design guidelines. Building height limits recommended in this plan may also be codified in the overlay district.

Capital Improvements

The capital improvements needed to support the EDZ vary by character zone.

- In the Industrial Zone, significant investment is required to convert raw land into serviced parcels suitable for development. As detailed in the cost table on the following page, this includes construction of access roads, installation of utilities and stormwater drainage within rights-of-way, and connections to nearby high-voltage power lines. While the site is equipped with a sanitary sewer pump station and transmission line, the network must be extended through new easements to serve industrial parcels. Additional easements will be needed for roads and electrical infrastructure. Virginia Natural Gas has expressed interest in serving the area.

- The Route 33 commercial corridor already has access and utility infrastructure in place (water, sanitary, storm sewer), and will benefit from VDOT's planned extension of Route 33's four-lane segment to the north. Features from this plan—such as a landscaped gateway island—can be incorporated into the design. As with the industrial zone, sewer extensions from the existing pump station will be necessary.

- The Route 33 North corridor requires only the VDOT-planned road widening to four lanes, extending to Winns Church Road and beyond.

- Along Winns Church Road, future assessment may identify the need for upgrades, such as the construction of a two-lane major collector.

The primary investment to catalyze development of the industrial zone is the loop road between Entrances #1 and #2 (see Development Framework). The County will pursue opportunities for cost-sharing with landowners, particularly within the approximately 300-acre land assemblage the loop road traverses. Because this road provides access to multiple parcels, shared investment based on proportional benefit may be appropriate. Coordination with VDOT will also be needed to evaluate improvements at the Route 33 intersections that serve the industrial zone.

Parcel-level infrastructure—such as internal roads, parking, utility extensions, stormwater management, and buildings—will be the responsibility of individual landowners and is not included in this section.

A summary table of order-of-magnitude infrastructure costs for the industrial zone follows.

Adaptive Re-Use

The former Tyson Foods chicken processing plant on U.S. Route 33 presents a notable brownfield redevelopment opportunity within the EDZ. The 64-acre site, located in the Route 33 North character zone, includes a large structure sited close to the roadway. Once VDOT widens this segment of Route 33 to four lanes, the travelway may be uncomfortably close to the existing building, potentially triggering safety concerns or requiring partial demolition.

Reusing the facility presents design and functional challenges. Its proximity to the road limits the ability to implement the planned 200-foot forested buffer along this corridor segment—from Winns Church Road to Overhill Road. Additionally, the irregular geometry and low ceiling heights suggest the building was expanded incrementally over time, reducing its adaptability to modern industrial or commercial uses. A desktop review confirms that adaptive reuse of poultry processing

Capital Projects and Preliminary Cost Estimate

Capital Project Type	Capital Project	Unit	Quantity	Unit Cost	Total Cost
Roads	Main loop road on southern end of site	Linear Foot	10,373	$ 1,891	$ 19,615,488
	Road from main loop road to entrance #3	Linear Foot	3,783	$ 1,891	$ 7,153,706
	Road from main loop road to 200 foot buffer, east of entrance #3	Linear Foot	2,534	$ 1,891	$ 4,791,829
Streetlighting	Streetlights at intersections and parcel access points*	Per light	18	$ 20,000	$ 360,000
Tree Planting	Along all three new roads	Per Tree	848	$ 500	$ 424,000
Parks and Landscaping	Trail in linear park along Chickahominy River and Grassy Swamp Creek	Linear Foot	9,106	$ -	$ -
Electrical Power	Transmission line to adjacent service at NE corner of site	Linear Foot		$ -	$ -
			Total Cost:		**$32,345,024**

Notes:

Costs are for construction only and are exclusive of design costs and financial costs.

Costs are "order of magnitude" only, based on unit costs.

Road project costs include water, sewer, storm sewer, and landscaping. See breakdown of costs per LF.

Linear park includes only the construction of a walking path.

Substation costs are not included.

*9 intersections and parcel access points in total. 2 lights each.

Costs do not include Mountain Road widening to 4 lanes to be undertaken by VDOT.

Unit Cost Calculation

Street Construction Costs	Unit	Unit Cost
Curb and Gutter	Linear Foot	$ 62
Bituminous Concrete (base, intermediate, & top + coat)	Linear Foot	$ 639
5' Wide Sidewalk	Linear Foot	$ 112
Storm Sewer	Linear Foot	$ 599
Water Line	Linear Foot	$ 86
Sanitary Sewer	Linear Foot	$ 129
Fire Hydrant	Linear Foot	$ 18
SubTotal Cost	Linear Foot	$ 1,644
15% Contigency		$ 247
Total		**$ 1,891**

Additional Costs	Unit	Unit Cost
Streetlighting	Per Llight	$ 20,000
Tree Planting	Per Tree	$ 500
Electrical Power Transmission to New Substation(s)	Linar Foot	$ -

Sources: Fairfax County 2025 Unit Price Schedule; Town of Leesburg Unit Price List; Stantec. Northern VA average unit costs were reduced by 10% to account for lower construction costs in Hanover County.

Notes:

These estimates are for construction cost only.

Sidewalk is assumed to be 5' wide. Sidewalk is 4" deep concrete, no base.

2' Curb and Gutter assumed along right of way for all curbs.

Shade tree was estimated as 1 tree planting every 40 FT on internal connector roads and 15 FT trails.

Storm is assumed at 18" RCP on one side of the street. Manholes assumed every 100 FT and DI-3B assumed every 5

Water is assumed as 8" to 12" DIP.

Sanitary Sewer is assumed as 6" to 12" PVC. Sanitary Manholes assumed every 200 FT.

Streetlights are assumed to be at road intersections and parcel access points only. Prices vary by type of light.

Fire Hydrant is assumed to be every 300 FT.

The cost estimate excludes costs of survey, earthwork, and stormwater management facilities outside of ROW.

facilities is rare in brownfield redevelopment, and Stantec's Mid-Atlantic reuse experts are aware of only one such proposal in the region—which ultimately did not proceed due to insufficient market demand.

If a future owner proposes to reuse the structure, it is strongly recommended that any redevelopment incorporate the site, building, and placemaking guidelines outlined in this report.

As with many brownfield sites, actual or perceived environmental contamination from previous industrial use may present barriers to reuse. Poultry processing operations can result in residual fats, oils, grease, excess nutrients (such as nitrogen and phosphorus), and petroleum products from equipment and fuel sources. Organic waste and processing byproducts can also lead to soil and water contamination.

To reduce uncertainty and mitigate these risks, the following steps are recommended:

Phase I Environmental Site Assessment (ESA):
Collect baseline environmental data to assess risks and fulfill due diligence requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This helps protect prospective buyers and supports informed redevelopment planning.

Phase II ESA (if warranted):
Conduct site-specific sampling and analysis to characterize the type, extent, and distribution of any petroleum or hazardous compounds in soil and groundwater that may hinder redevelopment.

Analysis of Brownfield Cleanup Alternatives (ABCA):

Tyson Chicken Processing Plant

If contamination is identified, the ABCA will help evaluate potential remediation strategies, estimate cleanup costs and timelines, and identify approaches that align with community goals and redevelopment feasibility.

If contamination is identified, the development of an Analysis of Brownfield Cleanup Alternatives (ABCA) could be warranted. The purpose of the ABCA is to identify potentially applicable remediation alternatives and estimating the nature, extent, duration, and cost of implementing site remediation activities. Data collected from site assessment activities in conjunction with any other data available for the properties will be used as the basis for evaluating potential remedial alternatives. The level of remedial action can then determine how to best meet the needs of the community and a future developer.

Federal and state programs can help offset assessment and remediation costs. The EPA Brownfields Program offers competitive grants to municipalities for environmental assessments and cleanups. The Virginia Brownfields Restoration and Economic Redevelopment Assistance Fund (VBAF) provides grants and loans to local governments for remediation and site readiness, supporting economic reuse of brownfield properties. VBAF applications are accepted on a rolling quarterly basis.