REZ2025-00010, TRADEPORT HANOVER LAND, L.L.C.

Industrial Rezoning Report
Beaverdam Magisterial District
Planning Commission Meeting Date: August 20, 2026

Overview

Request	Rezone to M-1(c), Limited Industrial District with conditions
Current Zoning	MX(c), Mixed Use District with conditions [C-7-09(c), Am. 1-13]
Acreage	77.62 acres
Address	10171 East Patrick Henry Road
Location	South line of East Patrick Henry Road (State Route 54) at its intersection with Woodside Lane (State Route 1055)
GPIN	7880-70-4924
General Land Use Plan	Employment Center
Major Thoroughfare Plan	East Patrick Henry Road: Minor Arterial (Urban: 120' right-of-way)
Suburban Service Area	Inside (Edge)
Case Planner	Gretchen Biernot/Andrew Pompei
Previous PC Action	Applicant-Requested Deferral Accepted: June 18, 2026
Related Case	SE2025-00009

Executive Summary

This is a request to rezone property along East Patrick Henry Road (State Route 54) adjacent to the eastern boundary of the Town of Ashland to allow data centers and supporting uses. There is a related request (SE2025-00009) to allow buildings and fences taller than permitted in the M-1 zoning district to support data center operations, with data center buildings being up to 75 feet tall.

Portions of the proposed development are located within the Town of Ashland and have already been rezoned to permit data centers.

Outstanding Issues

- The applicant has not yet provided information regarding electricity usage from the energy provider, as required per § 15.2-2209.5 of the Code of Virginia, but has indicated that Dominion Energy has been contacted. This information must be submitted prior to approval of a rezoning application by the Board of Supervisors.
- The applicant has not yet submitted a sound profile, as required per § 15.2-2209.5 of the Code of Virginia, but has indicated that the study is underway. A sound profile must be submitted prior to approval of a rezoning application by the Board of Supervisors.
- The Community Development Committee (a subcommittee of the Board of Supervisors) has begun development of a data center policy and ordinance, which is anticipated to take 12 to 18 months to complete.

Draft Motions

I move that the Planning Commission recommend:

a. Approval of REZ2025-00010, with proffers dated August 12, 2026.

b. Approval of REZ2025-00010, with the following amendments: _____.

c. Denial of REZ2025-00010.

d. Defer REZ2025-00010, until the Planning Commission's September 17, 2026, meeting.

Report Contents

Planning Analysis	p. 3
Project Overview	p. 3
Project Location	p. 3
Existing Conditions	p. 4
Zoning History	p. 5
Conceptual Plan	p. 8
Building Elevations and Design	p. 10
Transportation	p. 12
Public Utilities	p. 15
Electrical Infrastructure	p. 19
Stormwater Management	p. 20
Comprehensive Plan Analysis	p. 20
Historic Resources	p. 24
Surrounding Uses and Potential Impacts	p. 24
Potential Fiscal Impacts	p. 29
Public Feedback	p. 30
Proffers (Analysis)	p. 31
Summary of Considerations	p. 36
List of Attachments	p. 37

Planning Analysis

Project Overview

The applicant proposes a master-planned technology park that would accommodate multiple data centers and supporting uses, with portions of the development within the Town of Ashland and unincorporated Hanover County. Adjacent properties owned by the applicant within the Town of Ashland are already zoned to accommodate data centers and supporting infrastructure.

Data centers are specialized facilities that house servers, storage, and networking equipment, providing infrastructure needed to run information technology systems. This use is permitted in the M-1, Limited Industrial District (Sec. 26-163.4).

Project Location

The subject property has frontage along East Patrick Henry Road (State Route 54) at the Town of Ashland's eastern boundary, just east of the Interstate 95/State Route 54 interchange.

Project Location



Existing Conditions

The subject property is mostly wooded. Mechumps Creek forms the southern boundary of the property, with some floodplains and wetlands along that creek extending into the subject property and along its eastern boundary.

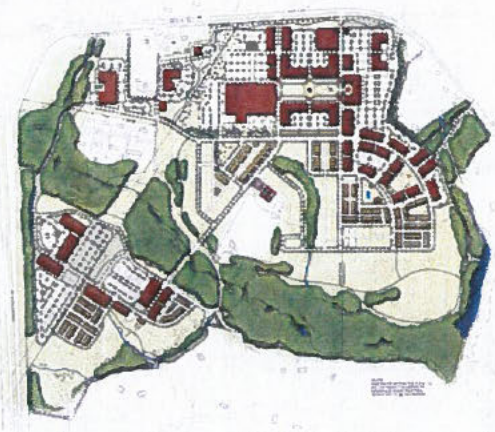
Site Conditions (Northeastern Corner of Property at State Route 54 – February 2025)



Zoning History

Current Zoning

The applicant is requesting rezoning, as the current zoning, proffered conditions, and conceptual plan do not allow the proposed uses or site design. The current zoning, originally approved in 2010, accommodates a mixed-use development (mix of residential and commercial uses).

Current Zoning	MX(c), Mixed Use District with conditions
Applicable Zoning Cases	C-7-09(c): Approved April 28, 2010 C-7-09(c), Am. 1-13: Approved July 24, 2013 (eliminated cash proffers)
Current Proffers	12 approved proffers address the following topics: • Project phasing (residential vs. commercial uses) • Road improvements • Right-of-way dedication • Tree preservation • Buffers • Prohibited uses • Conformity with master plan • Screening of HVAC and trash receptacles • Use of low impact development (LID) techniques • Age restriction for certain residential units • Potential entrance aligned with existing State Route 54/Woodside Lane intersection
Approved Uses	Residential Uses: Up to 599 units • Mix of housing types (single-family detached, single-family attached, and multi-family residential) • Mix of age-restricted and non-age-restricted units Commercial Uses: Up to 335,200 square feet • Mix of retail and office uses
Conceptual Plan[1] (Current Zoning)	

[1] The portion of this conceptual plan that is within the Town of Ashland is no longer applicable.

Note that since the proposed rezoning to accommodate a technology park has been approved within the Town of Ashland, the mixed-use project within the County will likely require an amendment to the rezoning, as the two portions of the mixed-use development are strongly interconnected.

If this request is approved, a portion of the East Ashland development along Mount Hermon Road (outside of the Town of Ashland) would still be zoned MX(c) and subject to the proffers approved with C-7-09(c), Am. 1-13.

Recent Zoning Requests

On December 11, 2024, the Board of Supervisors denied a similar zoning request, which involved:

- Rezoning the subject property to M-1 to allow development of a technology park with data centers, along with a special exception to allow buildings taller than permitted; and
- Rezoning other properties along Mount Hermon Road that were part of the East Ashland development to RS and AR-6 to allow single-family detached homes.

The current request was submitted on March 27, 2025, and does not include rezoning properties that are currently zoned MX along Mount Hermon Road.

Town of Ashland

The applicant owns adjacent parcels within the Town of Ashland, which regulates land use within its boundaries. On October 15, 2024, Ashland Town Council approved rezoning approximately 102 acres to B-2 and M-1 to accommodate the development of data centers, along with conditional use permits to allow a substation and buildings up to 110 feet in height. With the rezoning request (RZ24-0325/ORD2024-12), 24 proffered conditions were accepted, which relate to the following:

- Adherence to the Conceptual Plan
- Permitted Uses
- Setbacks
- Buffers
- Building Heights
- Protective Covenants
- Stormwater Management
- Construction
    - Hours of Construction
    - Construction Entrance
- Signage
- Lighting
- Dumpster Enclosures
- Screening of Mechanical Equipment
- Outdoor Storage
- Building Architecture and Materials

- Fencing
- Noise Control
- Open Space
- Transportation Improvements (including pedestrian/bicycle improvements)

If approved, this zoning request would allow properties inside and outside of the Town of Ashland to be developed in a coordinated manner. Access will be provided from East Patrick Henry Road (State Route 54) through the portion of the project located within the Town of Ashland.

If this request is not approved, data centers could still be constructed in the portion of the property within the Town of Ashland in accordance with zoning regulations adopted by the Town of Ashland. That area includes a transmission line, permitted access to public roads, and zoning approval for a substation, along with sufficient acreage for data center buildings.

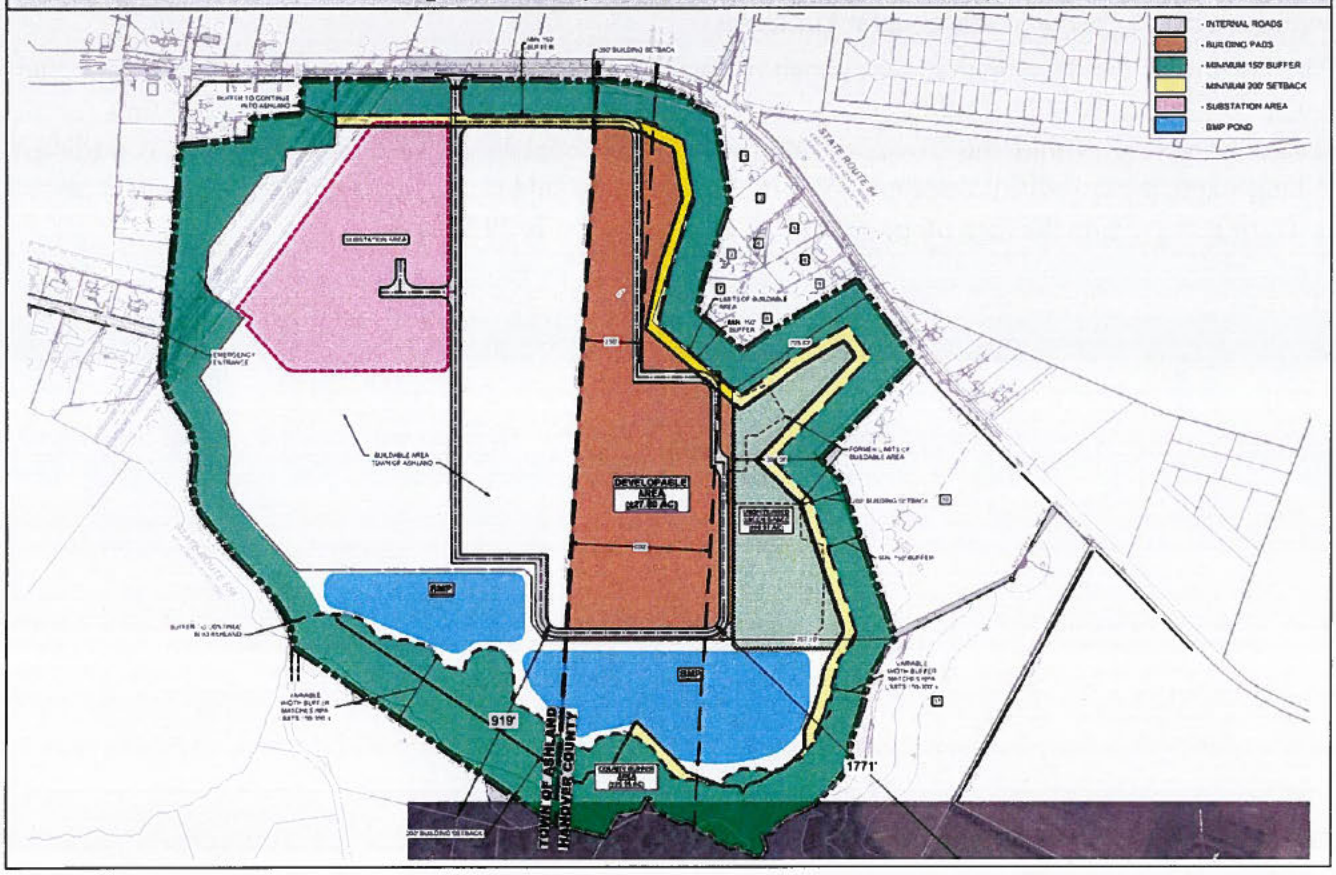
The portion of the development that is part of this rezoning request in Hanover County would include some building areas, but would not have a substation, transmission lines, or any access points (access would be solely within the Town of Ashland per the conceptual plan and proffered conditions). According to the approved conceptual plan in the Town of Ashland, the developable area for data centers is 47.24 acres, while the area proposed as part of this request is 27.8 acres.

Conceptual Plan

The conceptual plan shows a general layout of the project, including building areas, internal roads, perimeter buffers, open space, and stormwater management facilities. While conceptual plans are not required within the M-1 zoning district, the applicant has proffered that development will occur in substantial conformance with the conceptual plan provided (Proffer #1).

Note that this project is a speculative development, with the end user not publicly announced. Due to the speculative nature of the development, the conceptual plan does not show specific building footprints, nor were specific building elevations submitted. Proffered conditions have been submitted to address potential impacts associated with the unknown end user.

Conceptual Plan (Latest Revision: June 1, 2026)



Key features shown on the conceptual plan include the following:

- Access

  The proposed development will be accessed from East Patrick Henry Road (State Route 54) within the Town of Ashland, between Mount Hermon Road and Woodside Lane. There will be no additional access points along East Patrick Henry Road (State Route 54) east of Woodside Lane in unincorporated Hanover County.

- Internal Circulation

  Internal roads will be private and generally run along the perimeter of the buildable area.

- Development and Building Areas

  The developable area totals 27.8 acres (*brown*). Per Proffer #2.d, data centers and accessory uses may only be in the buildable area shown on the conceptual plan. For comparison, the approved developable area in the Town of Ashland is 47.24 acres.

  Specific building footprints are not shown on the conceptual plan. If the rezoning is approved, a site plan must be submitted and approved prior to development that shows building footprints. The site plan will not be approved unless the proposed layout conforms to zoning requirements, proffered conditions, and conditions imposed by a special exception.

- Open Space and Buffers

  Natural areas, resource protection areas (RPAs), and perimeter buffers are shown on the conceptual plan (shades of *green*) as follows:

  - 150' buffer along the perimeter of the project (larger where RPAs extend farther into the site, particularly along the southern and southeastern boundaries), with buffer areas totaling 25.55 acres.
  - 10.51 acres of undisturbed green space in the eastern portion of the development between the developable area and the perimeter buffer.

  Proffered conditions establish additional requirements regarding open space and buffers:

  - Open space, buffers, undeveloped land, and stormwater management facilities must be no less than 49.82 acres of the proposed development (64%). Note that this calculation includes stormwater management facilities, which are disturbed areas and will not be left in their natural state.
  - Perimeter buffers are intended to remain in their natural state. Existing vegetation must be inventoried and supplemented to ensure there is an adequate mix of deciduous and evergreen trees and shrubs to limit the visibility of proposed development.
  - The area designated as undisturbed green space must be placed in an open space easement.

- Setbacks

  A perimeter setback of 200 feet is shown on the conceptual plan (*yellow*).

- Stormwater Management Facilities

  The general location of stormwater management facilities is shown between the developable area and Mechumps Creek (*blue*). Per proffered conditions, stormwater management facilities may not be located within perimeter buffers.

Although the proffered conceptual plan shows areas within the Town of Ashland, Hanover County does not regulate zoning within the Town of Ashland (and vice versa), so Hanover County could not enforce or control the design or construction of features shown on the conceptual plan within the Town of Ashland.

Building Elevations and Design

Exhibit C (*WestDulles/Iron Horse Data Center Elevations*, dated September 19, 2024) includes illustrative data center elevations, with key architectural features identified for each elevation provided. Since the development is speculative (no end user has been announced), specific building elevations were not provided. Proffer #20 states that data center buildings will be in general conformance with the elevations provided "with respect to quality of design, massing, architecture, and variety of features." That proffered condition also establishes requirements for the design of data center buildings, including the following:

- Building orientation
- Building colors
- Building fenestration (changes in building height, variations in roofline, projections/recesses, and similar features that add architectural interest and avoid long, monotonous facades)
- Location of loading areas
- Prohibition of eastern-facing windows

If the rezoning request is approved, specific building elevations must be reviewed and approved by the Planning Director at the time of site plan review to ensure compliance with the proffered conditions.

Illustrative Data Center Elevations
(*WestDulles/Iron Horse Date Center Elevations*, dated September 19, 2024)







Requirements regarding other building features are included in different proffers:

- Proffer #16 establishes requirements for exterior mechanical equipment.

- Proffer #21 establishes requirements for building materials.
- Proffer #22 specifies what building codes must be adhered to.

There is a companion request (SE2025-00009) to allow buildings taller than permitted within the M-1 zoning district. The maximum permitted building height in M-1 is 35 feet, and the applicant is requesting increased building heights up to 75 feet. Each level of a data center has increased ceiling heights compared to most other buildings, so a data center with a maximum height of 75 feet would typically have two stories. Proffer #6 identifies maximum building heights (subject to approval of a Special Exception by the Board of Supervisors).

As part of a previous zoning request, the applicant organized a balloon test (November 7, 2024). Balloons were flown at 75 feet and 110 feet at different locations (Note: The applicant is no longer proposing buildings up to 110 feet as part of this request). Below are photos from that balloon test. While the balloons flown at 75 feet were visible from East Patrick Henry Road (State Route 54), they were not visible from the nearby Wintercrest subdivision; since the balloon test, buffers and open space along the eastern boundary of the project (closest to Wintercrest) have increased in width.

For comparison, the existing support structures for the nearby transmission line (which bisects the portion of the development within the Town of Ashland) are 65 to 71 feet tall on average.

Balloon Test: REZ2022-00008 (November 7, 2024)
View from East Patrick Henry Road (State Route 54) near Woodside Lane
(Balloons 75 feet up approximately 200 feet from the property line)





Transportation

Road Frontage and Access

The proposed development has frontage on East Patrick Henry Road (State Route 54), but there will be no entrances to the proposed development within unincorporated Hanover County. The area to be rezoned will be accessed through properties in the Town of Ashland, with an entrance farther west along East Patrick Henry Road (State Route 54) between Mount Hermon Road and Woodside Lane. While the Virginia Department of Transportation (VDOT) maintains public roads in unincorporated Hanover County, the Town of Ashland maintains roads within its boundaries.

Roadway Characteristic	**East Patrick Henry Road (State Route 54)**
Functional Classification: VDOT	Minor Arterial
Functional Classification: Major Thoroughfare Plan	Minor Arterial (Urban)
Traffic Volumes (VDOT: 2023)	Interstate 95 to Ashland Town Limits: 6,200 ADT Ashland Town Limits to U.S. Route 301: 4,700 ADT
Planned Improvements Nearby	Reconfigure Interstate 95/State Route 54 Interchange to a Diverging Diamond (SmartScale Funding)

Major Thoroughfare Plan

The portion of East Patrick Henry Road (State Route 54) immediately adjacent to the subject property has the following designations within the Major Thoroughfare Plan (component of the 2023 Comprehensive Plan):

- *Minor Arterial (Urban)*: East Patrick Henry Road (State Route 54) is classified as a *Minor Arterial (Urban)*, with an ultimate right-of-way of 120 feet. It is classified as *urban* since it is located within the Suburban Service Area (SSA). The applicant has proffered right-of-way dedication along the property's frontage to accommodate the ultimate right-of-way width, and some roadway improvements are currently underway as part of the adjacent Hickory Grove development.
- *Focus Corridor*: East Patrick Henry Road (State Route 54) between the Town of Ashland and Goddins Hill Road is designated as a *focus corridor*, as portions of the roadway are projected to be approaching capacity or overcapacity under potential future conditions in 2045.

  The Comprehensive Plan recommends that rezoning requests and other land use proposals located along focus corridors be thoroughly reviewed and analyzed to identify potential transportation impacts and mitigating improvements (Comprehensive Plan: p. 106). The applicant prepared a traffic impact analysis to determine impacts to the local transportation network.
- *Active Living*: The portion of East Patrick Henry Road (State Route 54) between the Town of Ashland and Taylor Park is identified as part of the pedestrian and bicycle "spine network." This network includes improvements within or near the Suburban Service Area (SSA) that could provide safe and connected facilities for walking and biking. The "spine network" links communities to necessities

(such as schools, libraries, and grocery stores) and can be used as a starting point to guide further improvements to active living facilities. Specific sidewalk and pedestrian crossing improvements are recommended along the "spine network." The applicant has proffered construction of a shared-use path along the East Patrick Henry Road (State Route 54) frontage subject to County and VDOT approval.

Traffic Impact Analysis (TIA)

The applicant submitted a traffic impact analysis (TIA) that estimates the number of trips that may be generated by the development and how those trips may impact the local transportation network.[2]

- *Trip Generation*: When complete (2033), the proposed development will generate 2,475 average weekday daily trips, with 297 external AM peak hour trips and 99 external PM peak hour trips. This is based upon a total of 3.3 million square feet of data center buildings (1.8 million within the Town of Ashland + 1.5 million within Hanover County).
- *Level of Service and Impacts to the Transportation Network*: The TIA reviewed existing conditions and future conditions at full buildout for ten intersections along State Route 54 from Washington Highway (U.S. Route 1) to Goddins Hill Road.

  The study considered an annual growth rate of 1.5%, with counts taken in 2022. This analysis was originally submitted with the previous rezoning application and then revised with the current request.

  The following findings are described within the study:

  - *Existing Conditions*: The 2022 existing conditions analysis indicates that the State Route 54 corridor operates well during both peak hours. No major queueing or delay challenges are noted at the study intersections, except for the southbound approach experiencing long delays at the State Route 54/Interstate 95 southbound on/off ramp.
  - *Future Conditions*: Under 2033/2039 Background analyses, the State Route 54 corridor is able to handle increases in traffic volumes without degrading operations until year 2039. By 2039, many movements at the State Route 54/U.S. Route 1 intersection are overcapacity, and excessive queues impact operations.
- *TIA Recommendations*

  Based on the analysis, left- and right-turn lanes are recommended at the primary entrance to the proposed development from East Patrick Henry Road (State Route 54), which will be in the Town of Ashland. The applicant has proffered those improvements as part of the approved rezoning case in the Town of Ashland.

  An addendum was prepared analyzing impacts if previously-proposed entrances along Mount Hermon Road and East Patrick Henry Road (State Route 54) were removed, so that there was only one entrance in the Town of Ashland along East Patrick Henry Road (State Route 54). This analysis

[2] TIA entitled Traffic Impact Analysis: Iron Horse Data Cener Rezoning (Formerly East Ashland – Tradeport95), dated February 2024, last revised February 2025, and prepared by Timmons Group, with an addendum dated November 30, 2025, with VDOT consenting via email to the addendum on June 9, 2026.

did not recommend any additional improvements from the original analysis and was found acceptable by VDOT.

Transportation-Related Proffers

The applicant is proffering the following conditions related to transportation (Proffers #7 and #8):

- There will be no access to and from the proposed development directly from East Patrick Henry Road (State Route 54) within the County. All access must come from public roads within the Town of Ashland.
- A shared-use path at least ten feet wide must be built along State Route 54 adjacent to the property, subject to VDOT approval.
- Right-of-way will be dedicated along East Patrick Henry Road (State Route 54) to accommodate future road improvements (60 feet from the centerline).

As part of the approved rezoning within the Town of Ashland, the following conditions related to transportation were proffered:

- The primary entrance from East Patrick Henry Road (State Route 54) will include right- and left-turn lanes.
- Construction of right- and left-turn lanes at the East Patrick Henry Road (State Route 54)/Mount Hermon Road intersection if an entrance to the project (other than an emergency access) is located along that roadway.
- A cash contribution of $135,000 towards improvements at the East Patrick Henry Road (State Route 54)/Mount Hermon Road intersection.
- A cash contribution of $80,000 towards improvements at the Interstate 95/East Patrick Henry Road (State Route 54) interchange.
- Right-of-way dedication along East Patrick Henry Road (State Route 54) (50 feet from the centerline).
- Right-of-way dedication along Mount Hermon Road (25 feet from the centerline).
- A shared-use path at least ten feet wide must be built along East Patrick Henry Road (State Route 54) adjacent to the property.

Public Utilities

Existing Infrastructure

The project is located within the Suburban Service Area (SSA), which is the portion of the County where public water and sewer may be provided. There is existing water and sewer infrastructure in the area:

- There are public sewer lines in the Providence subdivision, with new infrastructure being installed within the Hickory Grove subdivision. A sewer gravity main crosses under Interstate 95 west of Mechumps Drive, and a sewer force main serves the gas station at the northwest corner of East Patrick Henry Road (State Route 54)/Telcourt Road.
- There are public water lines along East Patrick Henry Road (State Route 54).

All public water in the Hanover Suburban Water System (HSWS) comes from surface water sources (North Anna River and James River).

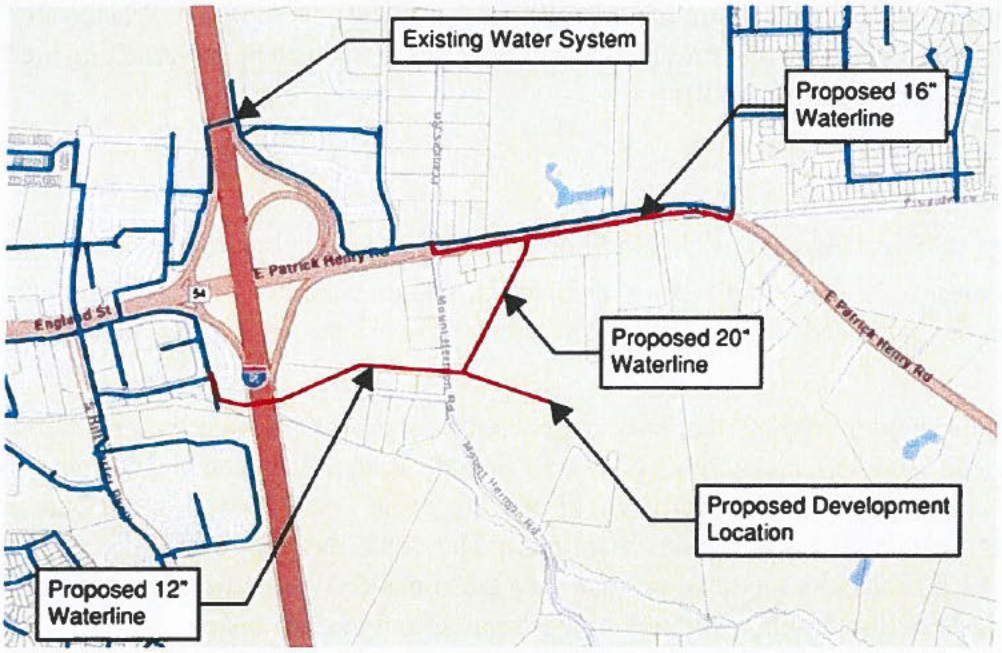
Modeling: Water Usage

The applicant contracted Dewberry Engineers to utilize the current Hanover Suburban Water System (HSWS) hydraulic model to evaluate the existing water distribution system (Technical Memorandum: East Ashland Ironhorse Development Water Service Hydraulic Evaluation, dated July 27, 2026). The hydraulic modeling was based on the following water demands:

- Average Daily Demand: 1.0 million gallons per day (MGD)
- Maximum Day Demand (MDD): 1.2 MGD
- Peak Instantaneous Flow: 1,000 gallons per minute (gpm) over an 18-hour period

Waterline extensions are proposed to serve the development (figure below).

Existing System + Proposed Development (p. 2 of technical memorandum)



The final page of the technical memorandum states the following:

> Based on the results of the hydraulic model of the HCWS, there is sufficient capacity for the anticipated demands of the Ironhorse Development. Pressure above 40 psi during MDD conditions was observed at the development location; however, due to the increased demands in the Ashland Pressure Zone, a small area near the Elmont Booster Pump Station was observed to briefly drop below 40 psi. Pressure throughout the Ashland Pressure Zone remained above 20 psi during the 2,000-gpm fire event located at the Ironhorse Development.
>
> To maintain a minimum system-wide pressure of 40 psi during MDD conditions, either operational adjustments at the Airport East facility or transmission infrastructure improvements are required. Increasing the Airport East discharge pressure from 84 psi to 94 psi will resolve the low-pressure concerns; however, it will cause over pressurization in several areas of Ashland. A beneficial long-term improvement to support this initiative would be the construction of the proposed 20-inch parallel water main along Ashcake Road, consistent with the recommendations identified in the 2020 Water Master Plan.

In summary, the existing water system can accommodate the anticipated maximum daily demand with operational adjustments during peak days.

Modeling: Wastewater/Sewer

The applicant contracted Dewberry Engineers to utilize the current Hanover County wastewater hydraulic model to evaluate the capacity of the existing wastewater collection system to serve the proposed development (Technical Memorandum: East Ashland Ironhorse Development Water Service Hydraulic Evaluation – Sewer Model, dated July 28, 2026).

The proposed development is estimated to generate an average of 0.25 MGD of wastewater and a peak hourly flow of 261 gallons per minute or 0.38 MGD.

The model assumed that a 12-inch gravity line will extend to the development. Wastewater generated by the development will be conveyed through the following infrastructure before reaching the Totopotomoy Wastewater Treatment Plan (WWTP):

- 67,200 linear feet of gravity sewer
- 27,050 linear feet of force main
- Four pump stations (Mechumps Creek, Sliding Hill, Middle Chickahominy, and Shelton Pointe)

The study recommends additional testing, evaluation, and/or updates at some of the pump stations to accommodate the proposed development. The final page of the technical memorandum states the following:

> The hydraulic model predicts that two gravity sewer segments downstream of the Mechumps Creek PS and Middle Chickahominy PS will operate at depths exceeding 80 percent of pipe diameter under peak flow conditions. However, these conditions are attributable to the operational characteristics of the upstream pump stations rather than insufficient gravity sewer capacity. As a result, the modeled deficiencies are considered operationally driven and do not indicate capacity limitations within the downstream gravity sewer system.

For Mechumps Creek PS, the model indicates that both pumps operate during Scenario 2 peak flow conditions and do so under elevated head conditions relative to existing operations. Although the pump station is projected to convey the modeled peak flow, Dewberry recommends performing drawdown testing to verify pump performance and confirm the operating head conditions when both pumps are running.

Based on the projected increase in flow and the current operating condition of the Mechumps Creek PS, upgrades to the existing facility are expected to be required to accommodate the proposed Ironhorse development.

For Middle Chickahominy PS, the model predicts that all three pumps are operating during peak flow conditions in both Scenario 1 and Scenario 2. Under this operating configuration, the total discharge is projected to exceed approximately 7.3 MGD, resulting in force main velocities greater than the County's 8 ft/s deficiency criterion. Dewberry recommends conducting drawdown testing and a detailed pump station performance evaluation to verify the pumping rate achieved with all three pumps in operation and to assess the corresponding impacts on force main hydraulics.

In summary, the gravity sewer system has adequate capacity to serve the proposed development, but upgrades to the Mechumps Creek Pump Station may be needed.

Proffered Conditions

The applicant has submitted the following proffered conditions that relate to water usage:

- The proposed project will connect to public water and sewer. The use of private well water for cooling is prohibited.
- The proposed project will use air cooling systems, recirculating evaporative cooling systems, and/or closed loop systems to reduce water usage. Single-pass cooling may not be used.
- The applicant has proffered to pay for any on-site accessory water storage tanks required by the Department of Public Utilities.
- The applicant will pay for the design and construction of all off-site water and wastewater improvements needed to meet the project's utility demands.
- A maximum of 1,200,000 gallons of water will be used daily.
- A maximum of 250,000 gallons of wastewater will be generated daily.

Post-Approval Requirements

If the requested rezoning is approved, the applicant would be required to adhere to the proffered conditions and address the following:

- Most large users generally have water/sewer service agreements. If this development is approved, the users will likely enter into a water/sewer service agreement with the Department of Public Utilities.
- An evaluation is conducted for each proposed development to ensure there is adequate water capacity for the end user and existing customers. System pressure and fire flow capacity are evaluated to

ensure existing customers are not impacted. Water quality would not be impacted by connecting a data center to the public water system.

Comments: Department of Public Utilities

The Department of Public Utilities provided the following comments (dated April 17, 2025):

1. All water and sanitary sewer extensions and services will be constructed in accordance with DPU requirements.
2. A Utility Master Plan shall be approved for the entire development prior to DPU recommending approval of any included site plan or construction plan.
3. The public water and sanitary sewer improvements must be coordinated with the improvements for proposed development in the Town of Ashland.
4. Specific public water and sanitary sewer improvements will be based on the proposed development. With appropriate improvements, the public water and sanitary sewer systems can support the development of the property for most of the likely uses of the property. The following items will be required during the construction plan approval process for this development:
    a. A sewer shed analysis will be required.
    b. Replacement of the existing sanitary sewer crossing under I-95 and additional improvements downstream including wastewater pump station upgrades may be required once the overall sewer demands are determined.
    c. A waterline crossing under I-95 may be required.
    d. The equivalent of a 20" waterline shall be extended through the development. The waterline will extend from the southwest end of the residential part of the development to the northeast end or main entrance of the development.
    e. Easements shall be dedicated for a future 20" waterline extension under I-95.
    f. A waterline extension will be required along Entry B across Route 54.
5. If improvements are proposed to Mount Hermon Road as part of the development, a public waterline will need to be constructed along the road as part of the improvements.
6. After the zoning process, but prior to initiating site design or construction drawings, the developer should meet with the Fire Marshal's office to discuss the proposed layout and determine the location of the fire hydrants and then meet with DPU to discuss the layout of the waterlines that will supply the hydrants.

Since preparing these comments, the Department of Public Utilities has reviewed the technical memorandums submitted by the applicant and generally agrees with their content and findings.

Electrical Infrastructure

- *Existing Infrastructure*

  An existing transmission line bisects the portion of the proposed development that is within the Town of Ashland. Currently, the transmission corridor includes single-circuit 115 kilovolt (kV) and 230 kV H-frame structures.

  As part of its Chickahominy Junction – Elmont – Fredericksburg project, Dominion Energy plans to rebuild this transmission corridor with double-circuit 500/230 kV and 230 kV monopole structures within the existing right-of-way. Construction is anticipated to begin in Summer 2028 and be completed in Summer 2030.

- *Applicant Coordination with Dominion Energy*

  The applicant must coordinate with Dominion Energy to ensure there is adequate capacity and infrastructure to meet the proposed project's electricity needs. The applicant has indicated that energization will occur between 2030 and 2032, but no documentation from Dominion Energy has been provided.

  As of July 1, 2026, § 15.2-2209.5 of the Code of Virginia requires that, prior to approval of a rezoning application (or other legislative zoning approval) permitting a "high energy use facility" (HEUF), the electricity provider must give the following information to the locality:

  - Any new or existing substations that will be used to serve the HEUF; and
  - Anticipated transmission voltage required to serve the HEUF.

  An HEUF is defined as "a facility that an applicant reasonably anticipates at the time of filing a rezoning application, special exception application, or special use permit application will require 100 megawatts or more of electrical power from an electric utility providing retail service to the facility." In its entirety (including portions of the proposed development within the Town of Ashland), the proposed development is anticipated to use approximately 600 megawatts.

  The applicant has indicated that they have contacted Dominion Energy to obtain this information but had not received a response prior to the agenda packet being published.

- *Data Centers and Electricity Usage*

  Data centers tend to use significant amounts of energy and tend to locate near existing transmission lines. According to the JLARC report, "Modern data centers consume substantially more energy than other types of commercial or industrial operations. Consequently, the data center industry boom in Virginia has substantially driven up energy demand in the state, and demand is forecast to continue growing for the foreseeable future. The state's energy demand was essentially flat from 2006 to 2020 because, even though population increased, it was offset by energy efficiency improvements. However, an independent forecast commissioned by JLARC shows that unconstrained demand for power in Virginia would double within the next 10 years, with the data center industry being the main driver" (p. ii).

- *Substations*

  Up to two substations are permitted within the Town of Ashland (CUP24-0325: Condition #1). Approved conditions require that substations be located at least 200 feet from the project's perimeter boundary and that they be screened from State Route 54 and residentially-zoned properties.

Stormwater Management

If approved, the proposed development will have to adhere to all applicable regulations related to stormwater management. The general location of stormwater management facilities is shown on the conceptual plan, with these facilities being located between the developable area and Mechumps Creek. Proffered conditions address the location and design of stormwater management facilities:

- Stormwater basins may not be within the proffered perimeter buffers (Proffer #4.d).
- Any wet ponds must be aerated (Proffer #13)
- All ponds will include liners made of clay or synthetic material or any other material suitable as determined by a geotechnical engineer (Proffer #13).

Stormwater management facilities will collect runoff from buildings, parking areas, and other impervious surfaces; any water used for cooling or other purposes within buildings will generally be directed to the public sewer system. Proffered conditions require that water used for data center operations must be discharged into the public sewer system, and that any fluids used in the cooling systems be free of per- and polyfluoroalkyl substances (PFAs), further minimizing negative impacts to water quality.

The location of Resource Protection Areas (RPAs) is shown on the conceptual plan along Mechumps Creek and adjacent wetlands. These undisturbed buffers help protect water quality. Portions of Mechumps Creek have been identified as impaired (Slayden Creek to Pamunkey River downstream from site and headwaters areas west of U.S. Route 1 upstream from the site).

Comprehensive Plan Analysis

Growth Management Plan

The subject property is within the *Suburban Service Area (SSA)*, which is the County's designated growth area. The SSA is the portion of the County where public water and sewer service are planned to be made available, allowing higher-density development to occur. The SSA is intended to concentrate development, so it occurs in a logical, compact, and contiguous manner and to maintain rural character in areas where utilities are not provided. Approximately 22% of Hanover County is within the SSA.

While the subject property is within the SSA, it is located on its edge. Properties just to the east are outside of the SSA and designated *Rural Areas*, so the State Route 54 corridor east of Ashland serves as a transition between suburban and rural areas.

General Land Use Plan

Most of the subject property is designated *Employment Center* on the General Land Use Map, with areas along Mechumps Creek designated *Natural Conservation*.

Areas designated *Employment Center* are intended to accommodate employment-generating businesses and limited industrial uses within cohesive, master-planned developments that are at least twenty acres in area. A description of the *Employment Center* land use designation is on p. 47 – 48 of the 2023 Comprehensive Plan. This proposal has been evaluated based on the recommendations for that land use designation (below).

Analysis: Proposed Project and Consistency with *Employment Center* Land Use Designation	
Overall Intent	The request **generally aligns** with the overall intent of the land use designation, accommodating limited industrial uses within a master-planned development exceeding 20 acres in area.
Appropriate Uses	Data centers are specifically listed as an appropriate use. Proffered conditions limit uses within the project to data centers and supporting uses.
Appropriate Zoning Districts	The M-1 District is included as an appropriate zoning district.
Project Framework	The request **generally aligns** with the following recommendations: • Proposed development exceeds minimum recommended project size of 20 acres. • Proposed development will only have light industrial uses (Recommendation: 70 – 100% of total acreage should be used for commercial and/or light industrial purposes). • The conceptual plan and proffered conditions indicate that at least 64% of the project will be preserved as open space (Recommendation: 10% of project area). • The proposed development will connect to public utilities.
Community Character	The request **generally aligns** with the following recommendations: • Buffers at least 150' wide will be provided along East Patrick Henry Road (State Route 54). Existing vegetation will be maintained and supplemented per proffered conditions. • Street trees and other landscaping are required within the M-1 zoning district [Sec. 26-162(5)]. • The conceptual plan and proffered conditions indicate that existing vegetation will be preserved within the perimeter buffers and the area designated as "undisturbed green space". • The applicant has proffered that buildings will generally incorporate higher-quality materials and architectural features on

	street-facing facades to add visual interest to buildings and visually break long facades. • The applicant has proffered that all freestanding signs will be designed as monument signs with a masonry base. • The applicant has proffered that at least 30% of plantings shown on each site plan or landscape plan must be native to Hanover County or adjacent counties. The applicant has proffered that landscaping within parking areas must be provided at a rate of at least ten square feet per parking space.
Transitions	The request **generally aligns** with the following recommendations: • A buffer at least 150' wide is provided around the perimeter of the project, with wider buffers along the eastern and southern boundaries where Resource Protection Areas (RPAs) extend farther into the site. An undisturbed green space is provided along the eastern boundary of the project, providing additional buffering. • A minimum building setback of 200' is required along the perimeter of the project. • Freestanding exterior lights are limited in height to 18', with building-mounted lights limited to 35'. Light levels will be limited along the perimeter of the project to minimize negative impacts to adjacent properties. The applicant has also proffered that eastern-facing facades must have minimal windows to prevent glare from being directed towards the rural areas to the east. Noise studies must be completed within 30 days of the "ready to service" date, which is the date when all exterior equipment is installed and operational. The noise study will verify whether the completed project conforms with local noise ordinance requirements and proffered conditions. The applicant has proffered that the proposed development will not exceed certain sound levels (Daytime: 57 dBA and 73 dBC/Nighttime: 52 dBA and 68 dBC). Additionally, the applicant proffered that physical sound attenuation measures will be installed on mechanical equipment associated with buildings within 1,200' of any adjoining residential home, if the equipment is installed on a rooftop or on the side of the building facing residential uses. The testing of back-up generators is limited to Monday – Friday, 8:00 a.m. – 4:00 p.m. The requirements in this condition are intended to minimize noise impacts on adjacent properties.

Transportation	The request **aligns** with the transportation-related recommendations within the *Employment Center* land use designation: • Access to adjacent thoroughfares is restricted, and individual buildings will not have direct access to public roadways.
Active Transportation	The request **aligns** with recommendations regarding active transportation within areas designated *Employment Center*: • The applicant has proffered that sidewalks will be provided along at least one side of primary vehicular circulation areas. • The applicant has proffered construction of a 10' shared-use path along East Patrick Henry Road (State Route 54) along the property's frontage, subject to approval by Hanover County and VDOT.

This area has been part of the Suburban Service Area since the late 1980s, and it has been designated for business uses since 2007:

Plan Year	Land Use Designations on General Land Use Plan
1988	Low-Density Residential (1 – 2 units/acre)
1994	Low-Density Residential (1 – 2 units/acre)
1997	Low-Density Residential (1 – 2 units/acre)
2003	Suburban Transitional (1 – 2 units/acre)
2007	Business Park
2013	Planned Business
2018	Planned Business
2023	Employment Center

Major Thoroughfare Plan

An analysis of how the proposed development addresses recommendations within the Major Thoroughfare Plan (Comprehensive Plan: Chapter 8) is included on p. 12 within the *Transportation* section.

Economic Vitality

The proposed project is not located within any of the ten Economic Development Zones (EDZs) designated within the Comprehensive Plan, but it is within an area designated *Employment Center*.

Historic Resources

Chapter 10: History and Culture provides recommendations regarding the consideration of historic resources as zoning cases are reviewed. The Historical Commission reviews potential impacts to historic resources that are considered Category 1 and Category 2 sites and located either on-site or within 1,350 feet of the development. Category 1 and Category 2 sites include the following (Comprehensive Plan: p. 128):

- National Historic Landmarks: Hanover Courthouse, Scotchtown, and Marlbourne (Edmund Ruffin Plantation)
- Exceptional Resources: Hanover Tavern, Polegreen Church (Hanover Meeting House), Garthwright-Kelley House, Gaines Mill Battlefield, Cold Harbor Battlefield, and Rural Plains
- Sites and districts listed on the National Register of Historic Places
- Sites determined eligible or potentially eligible for listing on the National Register of Historic Places
- Century Farms
- Battlefield sites which are not included in Category 1 but determined by the National Park Service to have a significant degree of integrity
- Documented historic cemeteries

None of the historic resources in the area meet the criteria identified above, so review by the Historical Commission is not required for the current zoning application.

A previously-denied zoning request that included the subject property was reviewed by the Historical Commission because it encompassed a larger area. There were additional parcels along Mount Hermon Road proposed for single-family residential development, and one of those parcels includes a documented cemetery (Luck/King cemetery). That parcel is not included with the current zoning request.

Surrounding Uses and Potential Impacts

The subject property is in a transitional area, adjacent to the Town of Ashland and near the edge of the Suburban Service Area (SSA) along the State Route 54 corridor. There are a mix of existing and planned uses in the area:

- *Commercial Uses near Interstate 95/State Route 54 Interchange*

  There are smaller-scale commercial uses, including gas stations and professional offices, near the Interstate 95/State Route 54 interchange and along State Route 54 near its intersection with Mount Hermon Road/Frances Road within the Town of Ashland. As part of the Patriot Glen development at the northwest corner of State Route 54/Woodside Lane, commercial uses are planned along State Route 54 (zoning approved).

- *Planned Data Centers within the Town of Ashland*

  Immediately to the west of the site within the Town of Ashland, approximately 102 acres was rezoned in 2024 to accommodate the development of data centers, along with conditional use permits to allow a substation and buildings up to 110 feet in height. The property remains mostly undeveloped, with transmission lines running north/south.

- *Existing and Planned Residential Development near State Route 54/Woodside Lane Intersection*

  North of the proposed development, there is existing residential development, most of which is on the north side of State Route 54 along or near Woodside Lane:

  - *Hilltop Drive*: There are six houses along or near Hilltop Drive, which were primarily built from the 1930s to the 1980s on lots approximately one acre in size. The property subject to this rezoning request surrounds these properties on three sides, but the conceptual plan shows buffers at least 150 feet wide adjacent to the residential properties and a significant open space area to the east.
  - *Hickory Grove*: Hickory Grove is currently under construction on the north side of State Route 54 at Providence Church Road. That development was rezoned in 2023 (REZ2023-00003) to permit 150 age-restricted single-family detached homes.
  - *Providence*: Providence is an existing residential development along the east side of Woodside Lane just north of State Route 54 and includes single-family detached homes.

  Patriot Glen is a planned development at the northwest corner of State Route 54/Woodside Lane within the Town of Ashland and will include a mix of housing types, with commercial development along State Route 54. Land clearing has begun on that project.

- *Rural Residential Uses East and South*

  There are rural residential uses along Camden Lane (off of Mount Hermon Road) to the southwest and along State Route 54 to the east, including the Wintercrest subdivision.

The conceptual plan includes landscaped buffers, increased setbacks, and open space areas along the perimeter of the project to provide a transition between the proposed data centers and adjacent uses. With the increased buffers, setbacks, and open space areas, the conceptual plan indicates that the nearest home in Wintercrest is approximately 1,770 feet from the edge of the developable area within the proposed development. Some residential uses along Hilltop Drive and State Route 54 will be closer to the developable area, but the minimum setback from the property line will be 200 feet.

Data centers and supporting uses are industrial in nature. To accommodate the proposed use, the applicant is requesting rezoning to an industrial zoning district (M-1). Due to their industrial nature, data centers can impact nearby residential communities. According to a 2024 study completed by the Joint Legislative Audit and Review Commission (JLARC), "the industrial scope of data centers makes them largely incompatible with residential uses" (p. 74).[3] The chart on the following pages identifies potential impacts and how the applicant is proposing to mitigate those impacts.

Potential Impact	Proposed Mitigation Measures
Visual Impacts/Aesthetics: Large-scale data centers (as proposed with this request) can have an industrial appearance. They can be similar in size and scale to a distribution center or manufacturing facility. According to the 2024	• Perimeter buffers surround the development area, with existing vegetation maintained and supplemented (conceptual plan/proffered conditions).

[3] Data Centers in Virginia: Report to the Governor and General Assembly of Virginia – December 9, 2024

JLARC report (p. 74), different components of these facilities can be unsightly: • Trailer-sized generators are often lined up beside the data center building or housed in large generator sheds. • Industrial-scale cooling equipment, such as chillers or water towers, often sit on the roof or outside the main building. • Tall security fences surround data centers. • Data centers require industrial-scale electrical infrastructure, including substations and above-ground transmission lines.	• Increased building setbacks from the perimeter of the development area exceed ordinance requirements (conceptual plan/proffered conditions). • Standards for building design, materials, and colors (proffered conditions). • Requirements to screen mechanical equipment (proffered conditions). • Requirement to locate perimeter security fencing interior to the perimeter buffer (landscaping between adjacent properties and security fence) (proffered conditions). • Requirement that freestanding exterior lights be limited in height to 18 feet, with building-mounted lights limited to 35 feet (proffered conditions). • Requirement that lighting levels must not exceed 0.5-foot candles, measured at the interior edge of the perimeter buffer (proffered conditions).
Noise: The equipment generated by data centers can create noise. According to the JLARC Report (p. 75), "the constant nature of data center noise has been a reported problem when data centers are located near residential areas. Whether data center noise can be heard past the facility's property line depends on its design and type of cooling system, which can cause noise. In addition, local geography and surrounding buildings can affect how sound travels. While some data centers have been noisy enough to cause complaints, the noise is not loud enough to damage nearby residents' hearing and rarely loud enough to violate noise ordinances." While residents near some data centers have complained of a constant noise, a minority of data centers have generated noise complaints per the JLARC Report (p. 77).	• Requirement that the project not exceed 57 dBA/73 dBC during the day or 52 dBA/68 dBC during the night at the exterior boundary of the project. • Requirement that a baseline noise study be completed and additional noise studies be conducted within 30 days of the "ready for service" date for each data center building to ensure compliance with the Noise Ordinance and proffered maximum sound levels. • Requirement that physical sound attenuation measures must be installed on data center buildings within 1,200 feet of any adjoining residential home if equipment is installed on the rooftop or on the exterior side facing residential uses (proffered conditions). • Prohibition regarding exterior alarms or speaker systems on buildings (proffered conditions).

	• Requirement that generators be within a manufacturer-approved enclosure (proffered conditions). • Limitations on when generators can be tested (Monday – Friday, 8:00 a.m. – 4:00 p.m.) (proffered conditions). • Perimeter landscaped buffers and increased building setbacks provide greater distances between data center buildings and adjacent properties. • The applicant has not yet submitted a sound profile, as required per § 15.2-2209.5 of the Code of Virginia, but has indicated that the study is underway. A sound profile must be submitted prior to approval of a rezoning application.
Construction Activities: Due to their size and scale, the construction of data centers can take a significant amount of time (12 to 18 months per building), requiring large numbers of workers and truck deliveries. Some residents of nearby data centers report being negatively impacted by construction activity, including noise and traffic (JLARC Report: p. 77).	• Limitations on the hours of exterior construction (Monday – Saturday, 7:00 a.m. – 7:00 p.m.) (proffered conditions). • There will be no construction entrances in unincorporated Hanover County. The construction entrance will be in the Town of Ashland.
Water Usage: The amount of water used by data centers varies depending on its size, computing density, and the type of cooling system. According to the JLARC Report (p. 62), "while some data centers use substantial amounts of water, most use similar or less than other large commercial and industrial water users. Based on available data, most data centers use the same amount of water (or less) as an average large office building (6.7 million gallons per year), although a few require substantially more, and some require less than a typical household." The applicant has proffered that no more than 1,200,000 gallons of water will be used daily and no more than 250,000 gallons of wastewater will be generated.	• The proposed project will connect to public water and sewer. The use of private well water for cooling is prohibited (proffered conditions). • The proposed project will use air cooling systems, recirculating evaporative cooling systems, and/or closed loop systems to reduce water usage. Single-pass cooling may not be used (proffered conditions). • The applicant has proffered to pay for any on-site accessory water storage tanks required by the Department of Public Utilities (proffered conditions). • The applicant has proffered to pay for all off-site improvements necessitated by the development (proffered conditions).

Electricity Usage: Data centers tend to use significantly more electricity than other types of commercial and industrial operations.	• No proposed mitigation measures related to land use. The supply and usage of electricity is not regulated by localities.
Air Pollution (Generators): To ensure constant operations during a power outage, data centers maintain generators to create on-site backup power. Most data centers use diesel generators for backup power. Since these generators emit several harmful pollutants, their commercial use is regulated by the state and federal agencies, including the Virginia Department of Environmental Quality. Due to their limited use and air quality regulations, most adverse impacts to surrounding areas are minimized (JLARC Report: p. 58 – 61).	• Requirement that all generators meet Tier 4 emission standards or better (proffered conditions). According to the JLARC Report (p. 60), Tier 4 generators emit significantly less pollutants than the Tier 2 generators most data centers use (up to 90 percent less nitrogen oxides and particulate matter).

According to the JLARC study, "only a minority of data centers in Virginia have been reported to impose negative impacts on residents. While some localities have allowed data centers to be built in areas incompatible with residential uses, those localities now appear to be taking actions to avoid future impacts by reviewing and changing local zoning ordinances. Other localities that have not experienced negative impacts on residents yet appear to be taking proactive action to minimize impacts" (p. 83).

While mitigation measures are proposed to address potential impacts, the Planning Commission may consider whether the degree of mitigation is appropriate, based upon surrounding land uses, nearby environmental resources, and the capacity of public infrastructure.

Potential Fiscal Impacts

The applicant submitted an analysis with the previous rezoning proposal regarding potential fiscal impacts (*Economic and Fiscal Impact Analysis of Data Center Development in Hanover County, VA*, prepared for Tradeport Ashland Land, LLC, dated February 2024), but this report has not been updated. The developable area associated with the previous zoning request (REZ2022-00008) that was denied was larger, and that study assumed the first data center building would come online in 2026.

The analysis estimates that the proposed data center campus (including portions of the project in the Town of Ashland) could generate $5.5 million in property tax revenue when the first building comes online (which the study estimated would be 2026) and increase to $65.5 million nearly 20 years later (study estimated that increased, stabilized level in 2045) (p. 5 – 6 of the study).

The Commissioner of the Revenue reviewed this study in October 2024 and indicated that the revenue projections seem generally accurate, although the methodology used differs from what his office would use.

Table 3 (p. 5 – 6 of the report)

Table 3: Estimates for the Entire Data Center Campus Used to Calculate Annual Property Tax Revenue Gained (in millions)[3]

Year	Cumulative Real Property Value	Annual Real Property Tax Paid	Cumulative Personal Property Invested	Deprec'd Cumulative Personal Property Value	Annual Personal Property Tax Paid	Annual Total Property Tax Paid
2026	$540.1	$4.4	$370.3	$244.4	$1.1	$5.5
2027	$1,080.1	$8.7	$802.4	$497.0	$2.2	$11.0
2028	$1,620.2	$13.1	$1,296.2	$742.9	$3.3	$16.5
2029	$2,160.3	$17.5	$1,820.8	$984.1	$4.4	$21.9
2030	$2,700.3	$21.9	$2,376.3	$1,229.8	$5.5	$27.4
2031	$3,240.4	$26.2	$2,931.8	$1,460.2	$6.6	$32.8
2032	$3,780.5	$30.6	$3,487.3	$1,676.7	$7.5	$38.2
2033	$4,320.6	$35.0	$4,042.8	$1,886.9	$8.5	$43.5
2034	$4,860.6	$39.4	$4,598.3	$2,092.4	$9.4	$48.8
2035	$5,400.7	$43.7	$5,153.8	$2,298.0	$10.3	$54.1
2036	$5,594.9	$45.3	$5,472.1	$2,347.0	$10.6	$55.9
2037	$6,134.9	$49.7	$5,988.1	$2,547.3	$11.5	$61.2
2038	$6,675.0	$54.1	$6,504.0	$2,757.1	$12.4	$66.5
2039	$6,675.0	$54.1	$6,669.4	$2,721.2	$12.2	$66.3
2040	$6,675.0	$54.1	$6,773.1	$2,671.3	$12.0	$66.1
2041	$6,675.0	$54.1	$6,834.8	$2,640.7	$11.9	$66.0
2042	$6,675.0	$54.1	$6,865.7	$2,614.0	$11.8	$65.8
2043	$6,675.0	$54.1	$6,865.7	$2,577.9	$11.6	$65.7
2044	$6,675.0	$54.1	$6,865.7	$2,555.9	$11.5	$65.6
2045 and after	$6,675.0	$54.1	$6,865.7	$2,545.0	$11.5	$65.5

Public Feedback

Two community meetings were held regarding the current request.

Community Meeting #1

Date	Tuesday, July 29, 2025
Meeting Location	Ashland Theater 200 England Street Ashland, VA 23005
Number of Attendees	Approx. 30

Following the applicant's presentation, participants shared the following concerns and comments:

- Requested additional information regarding the proposed substation and other supporting uses.
- Concerns regarding potential transportation impacts and increased traffic.
- Concerns regarding proposed building heights.
- Concerns regarding potential lighting impacts.
- Concerns regarding stormwater runoff and potential water quality impacts (including impacts to wells).

Community Meeting #2

Date	Monday, May 11, 2026
Meeting Location	Randolph Macon Copley Science Center 300 Caroline Street Ashland, VA 23005
Number of Attendees	Approx. 55

Following the applicant's presentation, participants shared the following concerns and comments:

- Questions regarding the type of cooling systems used and water usage
- Questions regarding historic resources and studies completed
- Questions and concerns regarding environmental and/or health impacts
- Concerns regarding the number of jobs that will be created
- Questions about the owner/developer, end user, and the project review process
- Concerns regarding potential impacts to water quality (including nearby wells)
- Questions about the buffer and concerns regarding its ability to effectively screen buildings
- Concerns regarding potential noise from generators
- Questions regarding the current zoning and potential development if this request is denied

Planning Commission Meeting: June 18, 2026

A public hearing regarding this proposed project was advertised for the Planning Commission meeting on June 18, 2026, but the Planning Commission voted to accept the applicant's deferral request, so the public hearing was not held. Although there was no public hearing, several members of the public spoke during Citizens' Time and expressed concerns regarding the negative impacts of data centers.

Proffers

The latest proffers submitted by the applicant are dated August 12, 2026. A summary of the proffers is below, along with a staff analysis as to whether the proffers should be accepted if the rezoning request is approved. Note that proffered conditions are offered by the applicant to address potential impacts associated with the proposed development. Proffered conditions run with the land, meaning that subsequent owners must adhere to them unless they are amended through the public hearing process.

The applicant revised the following proffers since the previously-prepared staff report:

- Proffer #6 regarding buildings has been revised to remove language related to building heights within the Town of Ashland, as Hanover County has no land use authority within Town boundaries.
- Proffer #9 regarding utilities has been revised to add language regarding maximum water/wastewater usage and contributions to utility system improvements.
- Proffer #26 regarding the decommissioning plan has been revised to require that a financial surety be provided to Hanover County to cover the costs of decommissioning, should the owner not complete the decommissioning activities required per this condition.
- A previously-submitted proffer (Proffer #20) regarding outdoor storage was removed. The outside storage of materials and supplies is not permitted within the M-1 zoning district (Sec. 26-162.1), so a proffer is not necessary.

Latest Proffers: August 12, 2026 – Staff Analysis

1. **Conceptual Plan**. **Accept.** While conceptual plans are not required within the M-1 zoning district, the applicant has proffered that development will occur in substantial conformance with the conceptual plan. Minor adjustments may occur during the subdivision and/or site plan review process (based on final engineering and feedback from regulatory agencies), if approved by the Director of Planning.

   The proffered conceptual plan is entitled "Iron Horse Data Center, Buildable Area Plan," prepared by Timmons Group, dated June 1, 2026.

2. **Land Use. Accept.** The project would be limited to data centers and supporting uses. Note that some of the uses listed in Proffer #2.b require approval of a conditional use permit (CUP) or special exception (SE) in the M-1 zoning district, and Proffer #2.c indicates that such uses must be approved by the Board of Supervisors. Proffer #2.d limits approved uses to the buildable area shown on the conceptual plan.

3. **Building Setbacks. Accept.** The applicant is proffering building setbacks from the perimeter of the proposed development, which exceed minimum ordinance requirements and aligns with the

conceptual plan. Buildings may not be located more than 250 to 600 feet from the Town of Ashland boundary (depending upon the specific location), as shown on the conceptual plan.

4. **Natural Perimeter Buffers. Accept.** The applicant is proffering perimeter buffers that are at least 150 feet wide, which generally exceed minimum ordinance requirements and minimum recommendations outlined within the Comprehensive Plan. Existing vegetation will be generally maintained and supplemented.

   Note that the last zoning request reviewed by the Planning Commission that proposed data centers (REZ2026-00023) included thoroughfare buffers 200 to 300 feet wide.

5. **Buffer Protection Measures. Accept.** A tree save plan must be submitted if land disturbance occurs within 20 feet of required buffers, which must identify measures to help ensure existing vegetation within these areas is maintained. It establishes replanting requirements if any existing tree is damaged within six months of construction being completed.

6. **Building Height. Accept.** The applicant is proffering a maximum building height of up to 75 feet, including any rooftop screening or parapet walls, subject to approval of a special exception (SE).

   Note that the last zoning request reviewed by the Planning Commission that proposed data centers (REZ2026-00023) included buildings up to 62 feet in height.

7. **Transportation. Accept.** The applicant is proffering that:

   - There will be no access to and from the proposed development directly from State Route 54 within the County. All access must come from public roads within the Town of Ashland.
   - Internal roads will be private.
   - A shared-use path at least ten feet wide must be built along State Route 54 adjacent to the property, subject to VDOT approval. This proposed improvement aligns with recommendations in the Comprehensive Plan.

   Since the project entrance will be within the Town of Ashland, most impacts to the transportation network will likely occur to roads maintained by the Town of Ashland. There are additional proffers associated with the zoning in the Town of Ashland intended to mitigate transportation impacts.

8. **Right-of-Way Dedication. Accept.** The applicant has agreed to dedicate right-of-way along State Route 54 as recommended in the Major Thoroughfare Plan. Most rezoning requests located along major thoroughfares include similar conditions.

9. **Utilities. Accept.** The applicant agrees to connect to public water and sewer, and the discharge of operational water must be made to the public sewer system. The proposed project is within the Suburban Service Area (SSA), there are existing utilities in the area that have available capacity, and the Comprehensive Plan recommends that development within areas designated *Employment Center* connect to public water and sewer. The use of private wells for cooling is prohibited, but that language does allow private wells for other purposes (such as irrigation). If on-site water storage is required to meet peak demand, the applicant will be responsible for the design and construction of those improvements.

Since this is a speculative development (no end user has been announced), the applicant has indicated that information regarding typical water usage or peak demand is unknown, but the latest proffers (Proffer #9d) indicate that the development will not use more than 1,200,000 gallons of water a day or generate more than 250,000 gallons of wastewater a day. A hydraulic analysis has been conducted and reviewed by the Department of Public Utilities based on the maximum usage proffered. The applicant has proffered that funds will be contributed to support the design and construction of off-site utility improvements needed to support the proposed development.

Note that the last zoning request reviewed by the Planning Commission that proposed data centers (REZ2026-00023) offered similar provisions, including cash contributions towards infrastructure improvements recommended in a hydraulic analysis and through a countywide water resilience plan.

10. **Data Center Cooling**. **Accept.** To reduce water usage, the applicant is proffering that air cooling systems, recirculating evaporative cooling systems, and/or recirculating sealed liquid-based cooling systems (closed loop) will be used. Single pass cooling systems will not be used. Neither on-site groundwater nor surface water may be used for cooling. Any fluid within the cooling system must be free of per- and polyfluoroalkyl substances (PFAs).

    Note that the last zoning request reviewed by the Planning Commission that proposed data centers (REZ2026-00023) offered similar provisions.

11. **Generators. Accept.** Only Tier IV (or better) generators may be used within the proposed development. Tier 4 generators emit significantly less pollutants than the Tier 2 generators most data centers use (up to 90 percent less nitrogen oxides and particulate matter). Generators may only be used for backup emergency power and must be enclosed within a manufacturer-approved enclosure.

    Note that the last zoning request reviewed by the Planning Commission that proposed data centers (REZ2026-00023) offered similar provisions. Additionally, HB507 approved by the General Assembly in the 2026 Regular Session requires generators to meet or exceed Tier 4 requirements as of July 1, 2026 (§ 10.1-1322.6 of the Code of Virginia).

12. **Utility Lines Underground**. **Accept.** Per this proffered condition, utility lines, such as electric, telephone, CATV, or other similar lines will be installed underground, except (a) for major transmission lines with a voltage of 64 kV or more and (b) existing lines that now traverse the property. This is a requirement in the subdivision ordinance (Sec. 25-65.1), but this language would require underground utilities even if only a site plan is submitted.

13. **BMPs/Retention Ponds. Accept.** Retention ponds must be lined with clay or synthetic material, and wet ponds must be aerated.

14. **Hours of Construction. Accept.** Land disturbance and exterior construction would be limited to Monday through Saturday (7:00 a.m. – 7:00 p.m.). The proposed exterior construction hours are more restrictive than ordinance requirements, as Sec. 16-8(1) of the Hanover County Code only prohibits construction noise between 9:00 p.m. and 7:00 a.m.

15. **Construction Traffic and Entrances. Accept.** The construction entrance will be in the portion of the project within the Town of Ashland, but this proffer requires that a mud wash for construction vehicles must be provided to serve the development to help prevent debris from entering public roads.

16. **Screening Exterior Mechanical Equipment. Accept.** The applicant must screen roof-mounted, ground-mounted, and wall-mounted mechanical equipment from view of all public roads and perimeter project boundary lines, which exceeds ordinance requirements (but is a proffer typically accepted with commercial and industrial rezoning requests).

17. **Signs**. **Accept.** Except for on-site directional signs, freestanding signs must be monument signs with a masonry base, and they may be either internally illuminated or lit with down lighting. Building-mounted signage may not be illuminated. These requirements are more restrictive than ordinance requirements and align with Comprehensive Plan recommendations.

18. **Lighting. Accept.** The applicant is proffering a maximum height of freestanding and building-mounted lighting that is more restrictive than ordinance requirements. Freestanding lighting may be up to 18 feet in height, while building-mounted exterior lighting may be up to 35 feet high. This proffer also establishes lighting requirements that generally exceed minimum ordinance requirements and provide greater protections against light pollution, stating the lighting levels will not exceed 0.50 foot-candles at the internal edge of the perimeter buffer. House-side shields, louvers, or similar devices must be used to shield the source of exterior lighting from residentially-zoned properties.

19. **Trash Enclosures. Accept.** Trash enclosures must be screened on three sides with a masonry material and landscaping.

20. **Elevations. Accept.** Exhibit C (WestDulles/Iron Horse Date Center Elevations, dated September 19, 2024) includes illustrative data center elevations, with key architectural features identified for each elevation provided. Due to the speculative nature of the development (end user has not been identified), specific building elevations were not provided. This proffer states that data center buildings will be in general conformance with the elevations provided "with respect to quality of design, massing, architecture, and variety of features." This proffered condition also establishes requirements for the design of data center buildings, including the following:

    - Building orientation
    - Building colors
    - Building fenestration (changes in building height, variations in roofline, projections/recesses, and similar features that add architectural interest and avoid long, monotonous facades)
    - Location of loading areas
    - Prohibition of eastern-facing windows

    If the rezoning request is approved, specific building elevations must be reviewed and approved by the Planning Director at the time of site plan review to ensure compliance with the proffered conditions.

21. **Building Materials. Accept.** Higher-quality building materials are proffered that exceed ordinance requirements. On the principal façade of data center buildings visible from public roads and/or adjacent residences, at least 50% of the façade must be brick, stone, concrete, decorative metal panels, or other systems.

22. **Building Standards. Accept.** Data center buildings must meet certain building code requirements.

23. **Security and Fencing. Accept.** The applicant is proffering details regarding the location and design of fencing.

24. **Noise Control. Accept.** This proffered condition establishes different standards and requirements related to noise that meet or exceed ordinance requirements:

    a. *Permitted Sound Levels*: The applicant has proffered that noise generated by the proposed development will not exceed 57 dBA/73 dBC during the day or 52 dBA/68 dBC during the night, as measured at the exterior boundary of the project. The proffered dBA levels align with standards set forth in the Hanover County Noise Ordinance; however, that ordinance does not set maximum dBC levels, and (if approved) this would be the first known project to set maximum dBC levels (lower-frequency sounds).

    b. *Noise Studies*: A baseline noise study must be conducted prior to land disturbance. The applicant has agreed to conduct noise studies within 30 days of the "ready for service" date, which is the date when all exterior equipment is installed and operational. The noise study will verify whether the completed project conforms with local noise ordinance requirements.

    c. *Physical Sound Attenuation*: The applicant has proffered that physical sound attenuation measures will be installed on mechanical equipment associated with buildings within 1,200 feet of an adjoining residential home, if the equipment is installed on a rooftop or on the side of the building facing residential uses.

    d. *Generator Testing*: The testing of any back-up generators will be limited to Monday through Friday (8:00 a.m. – 4:00 p.m.), unless otherwise required by applicable state/federal regulations [previously Monday through Saturday (7:00 a.m. –7:00 p.m.)].

    e. *Exterior Alarms and Speaker Systems*: No exterior alarms or speaker systems are permitted on any building.

    This proffer meets or exceeds requirements set forth in proffered conditions accepted with another approved data center development. Note that the last zoning request reviewed by the Planning Commission that proposed data centers (REZ2026-00023), which was not approved, included slightly lower nighttime dBA standards and required physical sound attenuation measures for equipment within 1,200 feet of any property line (versus 1,200 feet of an adjoining residential home).

25. **Open Space. Accept.** The applicant has proffered that at least 49.82 acres (64%) of the site will be open space, buffers, undeveloped land, and stormwater management facilities. An area noted as "Undisturbed Green Space" on the conceptual plan must be placed with an open space easement. There are no open space requirements with the M-1 zoning district, so this proffer exceeds ordinance requirements. For residential development, stormwater management facilities are typically not considered open space unless they are amenitized.

26. **Decommissioning Plan. Accept.** A decommissioning plan must be submitted and approved by the Planning Director, with the plan specifying how hazardous materials on the property will be removed and disposed of if operations cease within any building (with such materials being removed and disposed of within two years of operations ceasing). A financial surety must be provided to Hanover

County to cover the costs of decommissioning, should the owner not adhere to the requirements of this condition.

27. **Pedestrian Circulation. Accept.** Sidewalks must be provided along the primary internal streets, and pedestrian connections must be provided between parking lots and building entrances. There are no requirements for sidewalks within the M-1 zoning district, so this proffer would exceed ordinance requirements.

Summary of Considerations

- *Growth Management Plan (Comprehensive Plan)*: The subject property is within the *Suburban Service Area (SSA)*, which is the County's designated growth area. The SSA is the portion of the County where public water and sewer service are planned to be made available, allowing higher-density development to occur. Approximately 22% of Hanover County is within the SSA.
- *General Land Use Plan (Comprehensive Plan)*: Most of the subject property is designated *Employment Center*, and the proposed development generally aligns with recommendations for that land use designation.
- *Outside of an Economic Development Zone*: The subject property is not within one of Hanover County's ten Economic Development Zones (EDZs).
- *Community Gateway and Transitional Area*: The proposed development is on the edge of the SSA and the Town of Ashland, in an area that transitions from suburban to rural areas. State Route 54 is a major gateway from Interstate 95 to the historic courthouse area and surrounding rural areas. The applicant has proffered the provision of wide buffers and setbacks along State Route 54, but the balloon test indicated that buildings 75 feet in height will likely be visible from adjacent roadways.
- *Public Utilities*: There are public utilities (water and sewer) in the area that could serve the proposed development. The applicant has proffered maximum water usage, maximum wastewater generation, and to pay for off-site utility improvements needed to support the development.
- *Mitigation Measures*: The applicant has proffered different measures to offset potential visual impacts and impacts related to noise, traffic, construction, and air pollution. The Planning Commission and the Board of Supervisors must determine whether the proffered conditions are reasonable and adequately offset potential impacts.
- *Potential Countywide Policy*: The Community Development Committee (a subcommittee of the Board of Supervisors) has begun development of a data center policy and ordinance, which is anticipated to take 12 to 18 months to complete.

List of Attachments

- ☑ Maps (land use, vicinity, zoning, aerial)
- ☑ Application
- ☑ Estimated Tax Generation (Prepared by the Applicant)
- ☑ Approved Proffers + Conceptual Plan
- ☑ Town of Ashland Approvals
- ☑ Traffic Study
- ☑ Water Service Hydraulic Evaluation
- ☑ Sewer Model
- ☑ Community Meeting Notes
- ☑ Citizen Correspondence
- ☑ Proffers (Clean)
- ☑ Proffers (Redline changes since July 28, 2026)
- ☑ Conceptual Plan

Initials: GJWB/AJP

Maps

Hanover County, Virginia

Land Use Map

Legend

- Rural/Agricultural
- Town of Ashland
- Business Flexible
- Parks and Conserved Lands
- Destination commerce
- Employment Center
- Multi-Family Residential
- Highway Commercial
- Industrial
- Limited Industrial
- Suburban Neighborhood Residential
- Suburban High Residential
- Suburban Center
- Neighborhood Commercial
- Natural Conservation
- Rural Crossroads
- Rural Village
- Suburban Transitional Residential

REZ2025-00010

Tradeport Hanover Land, L.L.C.

Rezone MX to M-1

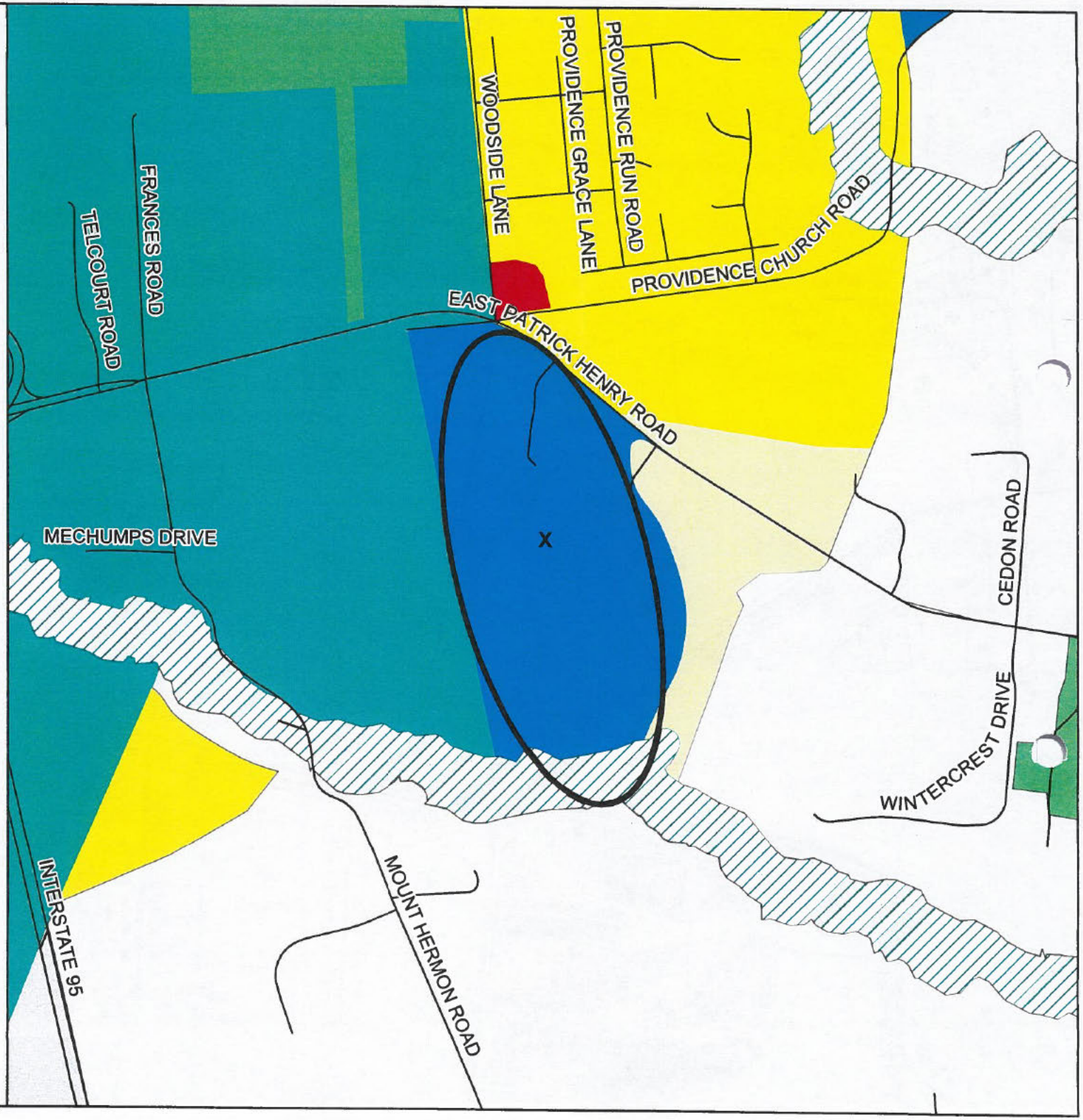
Employment Center & Natural Conservation Land Use

GPIN: 7880-70-4924
Beaverdam Magisterial District

N
W E
S

1 inch = 900 feet

March 31, 2025



Hanover County, Virginia

General Parcel Map

Legend

- Roads
- Water
- Structures
- Parcels
- Trees

REZ2025-00010

Tradeport Hanover Land, L.L.C.

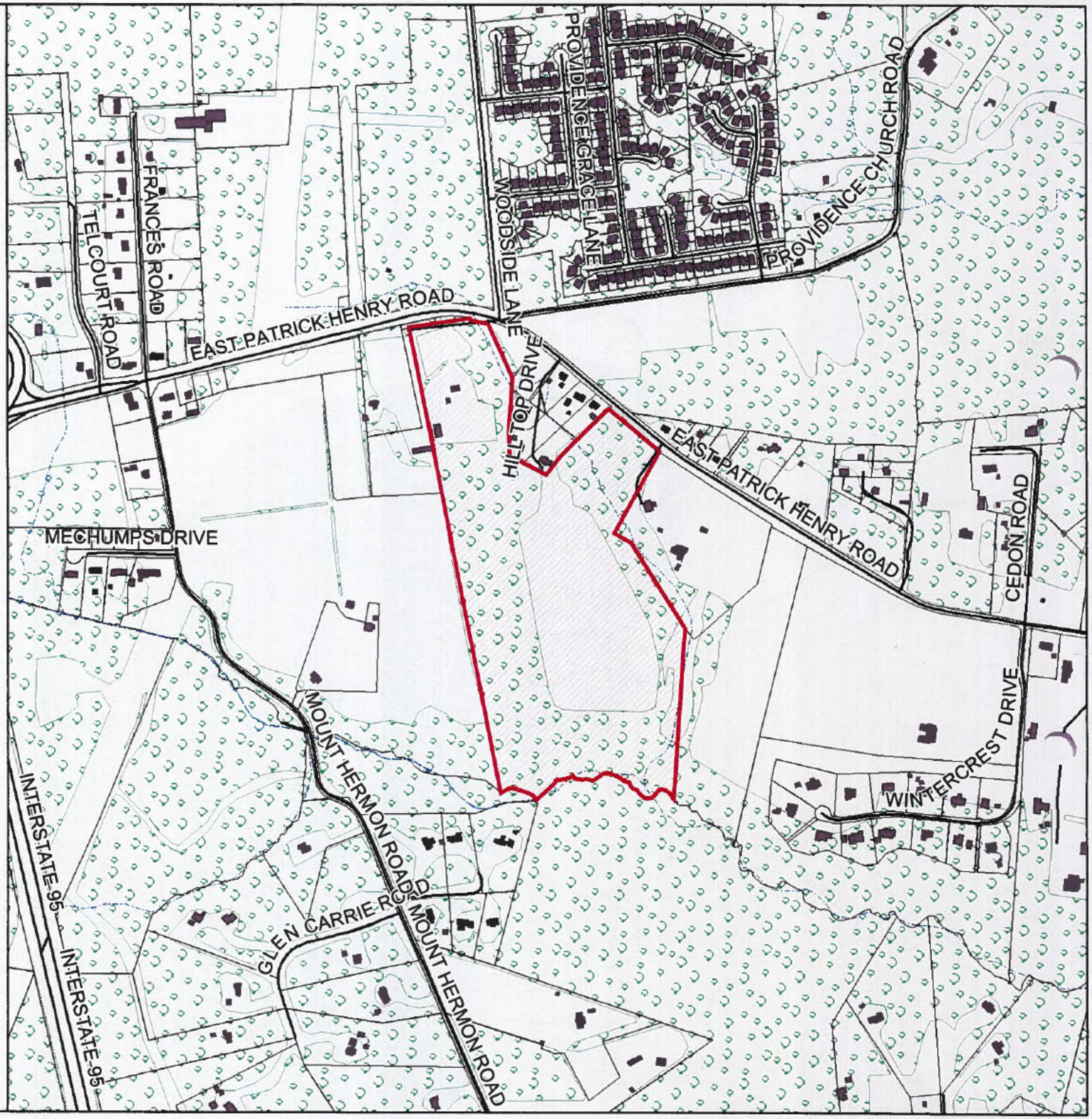
Rezone MX to M-1

GPIN: 7880-70-4924
Beaverdam Magisterial District

N
W E
S

1 inch = 900 feet

March 31, 2025



Hanover County, Virginia

Zoning Map

Legend

Roads	R-1
Water	R-2
Parcels	R-3
CUP	R-4
A-1	R-5
PUD	R-6
RRC	RM
RR-1	MX
RO-1	B-1
PSC	B-2
POB	B-3
PMH	B-4
HE	O-S
AR-1	B-O
AR-2	M-1
AR-6	M-2
RC	M-3
RS	

REZ2025-00010

Tradeport Hanover Land, L.L.C.

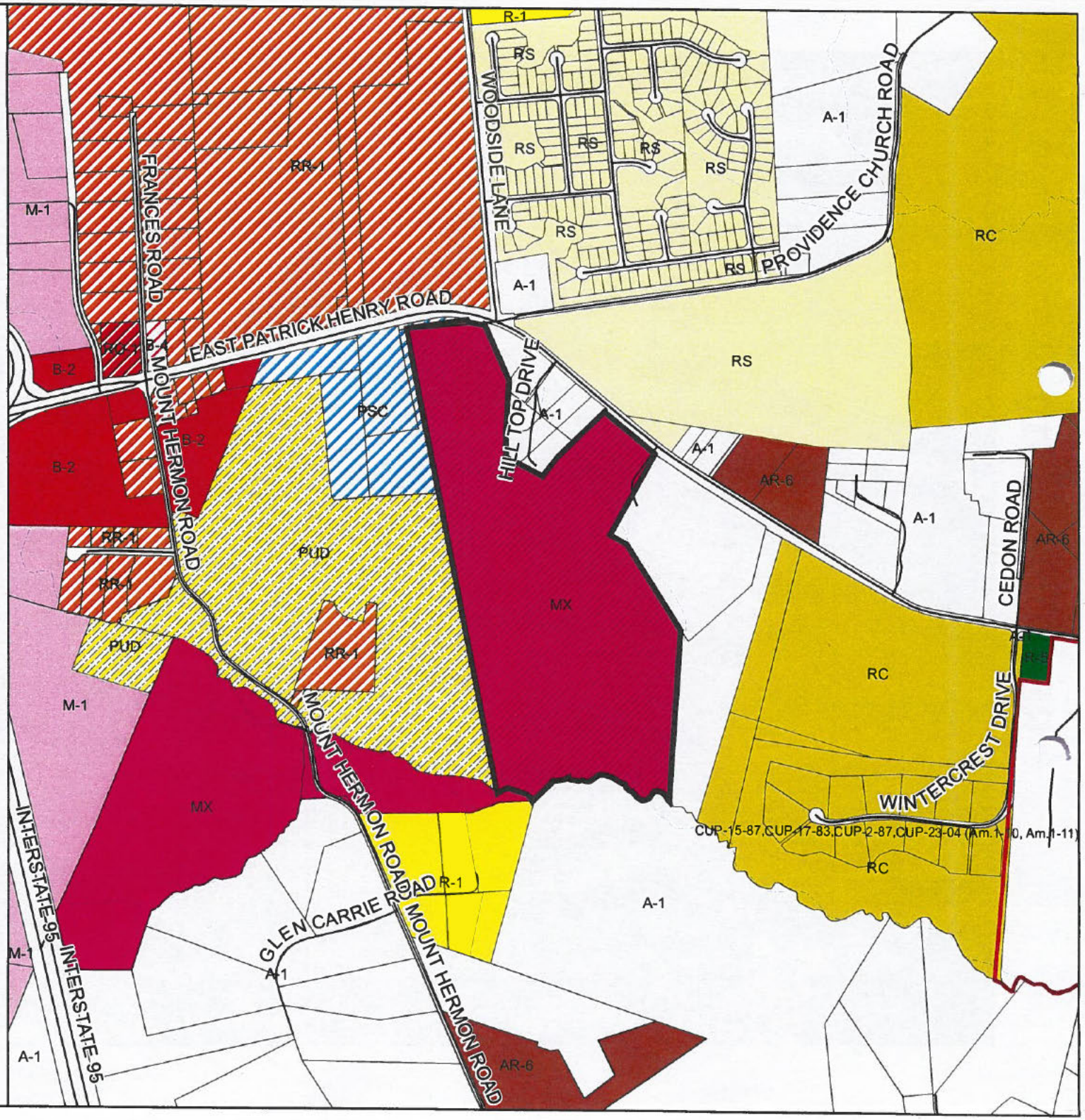
Rezone MX to M-1

GPIN: 7880-70-4924
Beaverdam Magisterial District

N
W E
S

1 inch = 900 feet

March 31, 2025



REZ2025-00010



Application

Hanover County Planning Department Application

Request for REZONING

Case #: REZ2025-00010

Please type or print in **black** ink.

APPLICANT INFORMATION

Owner: Tradeport Hanover Land, LLC Contact Name: Andrew M. Condlin - Roth Jackson Gibbons Condlin, pLC Address: 1519 Summit Avenue, Suite 102 Richmond, Virginia 23230	Telephone No. [redacted] Fax No. [redacted]
Applicant/Contract Purchaser: Tradeport Hanover Land, LLC Contact Name: Eric Wells Address: 4800 Montogomery Lane, Suite 1000 Bethesda, Maryland 20814	Telephone No. [redacted] Fax No. Email Address [redacted]

PARCEL INFORMATION — For multiple parcels, please complete Page 4 ☐

GPIN(s) (Tax ID #'s) 7880-70-4924	Total Area (acres/square feet) 77.62 acres
Deed Book 3376 Page 778	Current Zoning MX
Magisterial District Beaverdam	Requested Zoning M-1(C)
Location Description (Street Address, if applicable) ✔ 10171 E. Patrick Henry Road near Mount Herman Road.	Requested Use Data center and accessory uses.

SIGNATURE OF OWNER ☐ POWER OF ATTORNEY ☑ CONTRACT PURCHASER ☐ *(attach contract)*

As owner or authorized agent of this property, I hereby certify that this application is complete and accurate to the best of my knowledge, and I authorize County representatives entry onto the property for purposes of reviewing this request.

Signature _____ Date 3-27-25

Print Name Andrew M. Condlin by Power of Attorney

Signature _____ Date _____

Print Name _____

QUESTIONS/ LETTERS/ REPORTS SHOULD BE FORWARDED TO THE FOLLOWING:**

Name Andrew M. Condlin Address: Roth Jackson Gibbons Condlin, PLC 1519 Summit Avenue, Suite 102 Richmond, Virginia 23230	Telephone No. [redacted] Fax No. [redacted]

**It is the responsibility of the contact person to provide copies of all correspondence to other interested parties to the application.

RECEIVED

MAR 2 7 2025

HANOVER COUNTY
PLANNING DEPARTMENT

FOR APPLICATIONS WITH MULTIPLE PARCELS, PLEASE LIST:					
GPIN	**Property Owner(s)** Tradeport Hanover Land, LLC By Power of Attorney	**Deed Book and Page Number**	**Area (acres/square feet)**	**Current Zoning**	**Requested Zoning**
7880-70-4924	Print Andrew M. Condlin Sign	3376/778	77.62 acres	MX	M-1(C)
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				
	Print Sign				

ATTACHMENTS - For ALL REQUESTS you must submit the following:

- [x] a. **Acknowledgement of Application Fee Payment Procedure** (Page 6)
- [x] b. **Adjacent property owners, Board of Supervisors, and Planning Commissioner notification form** (Page 7) – please list all adjacent property owners including those across roadways, watercourses, and/or railroads as well as the members of the Board of Supervisors and Planning Commission for the magisterial district in which the property is located. Adjacent property owners, Board members, and Planning Commissioners must be notified prior to submittal of this application. The form must include owners' names, address, and GPINs for all adjacent property owners. (This information is available from the County website or may be obtained from the Planning Department.) A sample letter has been provided (Page 9), and may be used to notify the adjacent property owners.
- [x] c. **A plat of the subject property,** which accurately reflects the current property boundaries, includes metes and bounds, is drawn to scale, and shows existing structures. If the full-size plat is larger than 8 ½" x 11", the plat must be folded no larger than 9" x 12", and a reduction of the plat must be submitted which is 8 ½" x 11" in size. (Typically available from the County Clerk's Office in the Circuit Court building.)
- [x] d. **Responses to questions on Pages 10 and 11**
- [x] e. **Historic Impact Information** (Page 12) (This information is available on the County website or may be obtained from the Planning Department.)
- [x] f. **Traffic Impact Analysis Certification Form** (Page 13) In compliance with VDOT's new Traffic Impact Analysis Regulations (24 VAC 30-155 *et seq.*, commonly known as "Chapter 527"), rezonings that meet certain thresholds require Traffic Impact Analyses (TIA).
  The process for submitting a TIA is as follows:
  1) Submit the number of copies of the TIA required by VDOT to the Hanover County Planning Department with your comprehensive plan amendment/rezoning/conditional use permit submittal.
  2) The Hanover County Planning Department will stamp "received" on all copies of the TIA, and will keep a copy for its files.
  3) The applicant will deliver the remaining copies of the TIA to VDOT and pay the necessary TIA review fee directly to VDOT.
- [x] g. **Community Meeting Guide** (Check the box if you have read and understand Pages 14 & 15. **Please note that applicants that schedule community meetings without coordinating with the staff may be required to reschedule the meeting, which may cause the application process to be delayed.**)
- [ ] h. **USPS Cluster Box Units (CBUs),** please show the general location of USPS' Central Box Units (CBUs) along with elevations, access, parking and lighting, if provided. Please contact the local postmaster to obtain specific guidelines.
- [x] i. **For applications requiring plans,** please submit ten (10) full-size plans, with sheets no larger than 24" x 36", folded to 9" x 12" in size, and **one – 8 ½" x 11" reduction**.
  Specific district requirements:
  RS* - Conceptual plans that meet the requirements of Section 26-67 of the Zoning Ordinance.
  RC - Existing Feature and Site Analysis plans that meet the requirements of Section 26-54(a).
  RM* - Conceptual plans that meet the requirements of Section 26-84.
  MX - Master Plan that meets the requirements of Section 26-93.
  BP - Master Plan that meets the requirements of Section 26-157.

*RS and RM conceptual plans may also serve as the subdivision preliminary plat. In addition to the Zoning Ordinance requirements noted above, the preliminary plat requirements in Section 25-25 of the Subdivision Ordinance must also be addressed.

☐ **Check here** if the conceptual plan will serve as the preliminary plat.

NOTE: When **conceptual plans and/or elevations** are requested by the Director of Planning which are larger in size than 8½" x 11" or are in color, please submit ten (10) full-size or colored plans, with sheets no larger than 24" x 36", folded to 9" x 12" in size, and **one - 8 ½" x 11" reduction.**

ACKNOWLEDGEMENT OF APPLICATION FEE PAYMENT PROCEDURE

Application fees are not accepted at the time of submittal. I hereby acknowledge that this application is not complete until the payment for all applicable application fees has been received by the Hanover County Planning Department. The Hanover County Planning Department shall notify me by mail, email and/or fax, (if selected below) of the applicable fee(s) at such time that they determine that the application is complete and acceptable. I acknowledge that I am responsible for ensuring that such fees are received by the Hanover County Planning Department by the Tuesday the week following the application deadline. I further acknowledge that any application fee submitted after this date shall result in the application being considered filed for the next application deadline.

Should the applicable fees not be submitted within forty-five (45) days of the date of the notification letter, it shall be my responsibility to arrange for the retrieval of all application materials. The application and any supplementary materials for incomplete applications that are not retrieved within forty-five (45) days of the date of the notification letter shall be destroyed by the Hanover County Planning Department.

Should my application be accepted, my fee payment will be due by _____. (To be filled in by a Planning Staff member.)

Signature of applicant/authorized agent _____ Date 3-27-25

Print Name Andrew M. Condlin by Power of Attorney

Signature of applicant/authorized agent _____ Date _____

Print Name _____

Address to which notification letter is to be sent:

Andrew M. Condlin - Roth Jackson Gibbons Condlin, PLC

1519 Summit Avenue, Suite 102

Richmond, Virginia 23230

If you would like your letter emailed and/or faxed, please make selections, and provide the information below:

☑ Email [redacted] ☐ Fax _____

FEES

Following application acceptance, make checks payable to Treasurer, Hanover County:

A-1, OHP	$500
AR-6 (>2 lots), RC, RS, RM, MX	$1500 + $75/acre* for 1st 200 acres; $30/acre* for acreage>200 acres
B, OS, M, BP	$1100
Amendment of Proffer or Planned Unit Development	$1500

*Fractions of acreage are rounded up to the nearest whole number.

Please note: Applicants which request tax-exempt status may have their application fee waived upon presentation of official documentation of such status.

FOR STAFF USE ONLY:

Base Fee _____	
Acreage Fee _____	Accepted by: _____
TOTAL FEE _____	HTE #: _____

NOTIFICATION OF ADJOINING PROPERTY OWNERS, BOARD OF SUPERVISORS, AND PLANNING COMMISSIONERS

Applicant's Statement:

I hereby certify that I have notified all adjacent property owners to the property, which is the subject of this request, as well as the members of the Board of Supervisors and Planning Commission for the magisterial district in which the property is located. Adjacent property includes all property across roadways, watercourses, railroads, and/or municipal boundaries. I further certify that the names and addresses below are those of the adjacent property owners as listed in the tax records of the Commissioner of Revenue of Hanover County.

Applicant's Signature: _____

COMMONWEALTH OF VIRGINIA)
City of Richmond) to-wit:
~~COUNTY OF HANOVER~~)

The foregoing instrument was acknowledged before me this 27th day of March, 2025, by Andrew M. Condlin for Tradeport Hanover Land, LLC by Power of Attorney (Name of Applicant).

My commission expires: 11/30/2025 _____
Notary Public

Tracy Gibrall Craddock
Commonwealth of Virginia
Notary Public
~~Commission No. 7714399~~
My Commission Expires 11/30/2025

Board of Supervisors Representative: Jeff S. Stoneman

Planning Commission Representative: Edmonia Iverson

List of Adjacent Property Owners: ☑ **Check here if list is attached.**

GPIN	Name	Address
Please see the attached list.		

ROTH JACKSON
ROTH JACKSON GIBBONS CONDLIN, PLC

Andrew M. Condlin
Richmond Office
(804) 977-3373 (direct)
acondlin@rothjackson.com

March 27, 2025

VIA U. S. MAIL

Interested and Adjacent Neighbors

Re: Hanover County Rezoning and Special Exception Permit Applications

Dear Interested and Adjacent Neighbors:

We represent Tradeport Hanover Land, LLC. (the "Applicant"). We write to inform you that the Applicant filed new rezoning and special exception applications for the property located at 10171 E. Patrick Henry Road in Hanover County, GPIN No. 7880-70-4924, formally known as East Ashland, and as shown on the attached (the "Property").

The Property was part of previous rezoning and special exception applications, REZ2022-00008 and SE2024-00005, respectively, denied by the Board of Supervisors on December 11, 2024. We have since incorporated feedback and prepared new applications to include the following 2 significant changes: (1) we removed the residential portion of the project on Mount Hermon Road due to safety and traffic concerns, and (2) we reduced the maximum height of the data center buildings from 110 feet to 75 feet (which includes any rooftop screening or parapet walls) to mitigate the visual impact of the project. This application continues to propose a minimum of 150' wide buffers and 200' building setbacks, and proffers related to a noise study requirement, building design, screening, lighting and construction requirements.

We will notify you as to when a community meeting is scheduled once the County accepts and reviews these new applications. In the meantime, if you have any questions, please contact me at 804-977-3373 or acondlin@rothjackson.com.

Sincerely,

Andrew M. Condlin

Enclosure
cc: The Honorable Jeff S. Stoneman, Board of Supervisor
Ms. Edmonia Iverson, Planning Commissioner

{01704854;v2}

Tradeport Hanover Land, LLC

Adjacent Neighbor List

GPIN	Property Owner Name	STREET ADDRESS	CITY STATE AND ZIP CODE
7880-72-5367/7880-65-2797	Hanover County	P.O. Box 470	Hanover Virginia 23069
7880-72-7200	CORKER, JOYCE M REVOCABLE TRUST	11101 WYCHWOOD DRIVE	MECHANICSVILLE , VA 23116
7880-72-8161	GONNER, JOLENE F	10125 EAST PATRICK HENRY ROAD	ASHLAND VA 23005
7880-72-7041	BABER, KIMBERLY MATTHEWS , DONALD R/S	13097 HILL TOP DR	ASHLAND VA 23005
7880-71-9959	DYSON, JAMES O JR VIRGINIA H	10115 EAST PATRICK HENRY ROAD	ASHLAND VA 23005
7880-81-0951	HOPKINS, LEWIS O JR	10109 EAST PATRICK HENRY ROAD	ASHLAND VA 23005
7880-71-8619	FLAGG, JOSEPH FLAGG, LISA R/S	12452 FLAGGSTEAD LANE	ASHLAND VA 23005
7880-71-6798	CULLEY, CHRISTOPHER S	13083 HILL TOP DRIVE	ASHLAND VA 23005
7880-81-7146	POND, D RUSSELL JOANIE A	10067 EAST PATRICK HENRY ROAD	ASHLAND VA 23005
7880-90-0121	HARRIS & DOUGLAS PROPERTIES, LLC	2800 PATTERSON AVE, SUITE 101	RICHMOND VA 23226
7890-00-0204	JASWAL, HARNEET KAUR JASWAL, SARBJIT KAUR R/S	9988 E PATRICK HENRY ROAD	ASHLAND VA 23005
7789-98-9809	WINTERCREST ASSOCIATION INC	5097 OLD TRAVELLER LANE	MECHANICSVILLE , VA 23111
7789-99-2491	ARMUTH, JOEL B SANDRA	10021 WINTERCREST DRIVE	ASHLAND VA 23005
7789-99-4506	EPPERLY, DAVID L & ASHLEY C	10020 WINTERCREST DRIVE	ASHLAND VA 23005
7789-88-7149	PERSON, RODNEY H PERSON, GERALDINE C	11410 DUBLIN ROAD	GLEN ALLEN , VA 23060
7799-08-1022	ATKINSON, NEAL W & WENDY V	12371 COTTAGE WOODS DRIVE	ASHLAND VA 23005
7789-97-9337	THOMPSON, MARC & THOMPSON, DIANA L R/S	9994 STONE PATH DRIVE	ASHLAND VA 23005
7789-96-4924	POZNANCZYK, RYAN M POZNANCZYK, KOURTNEY E	12708 MOUNT HERMON RD	ASHLAND VA 23005
7789-96-1420	BURTON, KATHY J	12711 MOUNT HERMON ROAD	ASHLAND VA 23005
7789-86-6588	HANNON, MITCHELL J	12731 MOUNT HERMON ROAD	ASHLAND VA 23005
7789-86-2906	MALLORY, CYNTHIA H	12771 MOUNT HERMON ROAD	ASHLAND VA 23005
7789-77-6552/7789-77-8708	SHAKESHAFT, CHAROL MANN, DALE	12778 MOUNT HERMON ROAD	ASHLAND VA 23005
7789-78-4536	DERRICOTT, CARA J	10133 CAMDEN LANE	ASHLAND VA 23005
7789-79-4099	POWELL, MICHAEL W & DEBORAH L	10133 CAMDEN LANE	ASHLAND VA 23005
7789-69-9500	HARRIS & DOUGLAS PROPERTIES, LLC	2800 PATTERSON AVE, SUITE 101	RICHMOND VA 23226

Tradeport Hanover Land, LLC

Adjacent Neighbor List

7789-79-2011	HUBBARD, THOMAS M SUSAN MARSHALL R/S	10132 CAMDEN LANE	ASHLAND VA 23005
7789-69-8093	LUCK, SHEARER T	12902 MOUNT HERMON ROAD	ASHLAND VA 23005
7880-60-4701	TRADEPORT ASHLAND LAND LLC	1984 ISACC NEWTON SQUARE W STE 102	RESTON , VA 20190
7880-50-1881	ATTKISSON, LINWOOD P REVOCABLE TRUST	101 MECHUMPS DRIVE	ASHLAND VA 23005
7880-51-2100	BLEVINS, HALLIE & REED, AUSTIN R/S	100 MECHUMPS DRIVE	ASHLAND VA 23005
7880-50-6302	ASHLAND PROPERTIES LLC	1904 BYRD AVENUE SUITE 308	RICHMOND VA 23230
7880-41-5563	EAI LC	403 EAST GRACE STREET	RICHMOND , VA 23219
7880-51-1429/7880-51-0784	RANDOLPH MACON PROPERTIES LLC	310 NORTH CENTER STREET	ASHLAND VA 23005
7880-51-0937	AR GROUP LLC	10281 EAST PATRICK HENRY ROAD	ASHLAND VA 23005
7880-51-2999	VAUGHAN, JUDSON T JR	PO BOX 1716	ASHLAND VA 23005
7880-51-4966	TAYLOR, AUBREY H & CHERYL S	PO BOX 20	ASHLAND VA 23005
7880-52-5121/7880-52-6124	EVANS, SCOTT CARROLL EVANS, MARK GARLAND	154 SHADY VALLEY DR	CARROLLTON , GA 30116
7880-63-9486	LOWE, RILEY B REVOCABLE TRUST LOWE, HELEN F REVOCABLE TRUST	PO BOX 175	MECHANICSVILLE VA 23111
7880-72-6758	SMITH, BILLIE T	19036 HEWLETT ROAD	RUTHER GLEN , VA 22546
7880-83-0625	PROVIDENCE HOMEOWNERS ASSOCIATION INC	7231 FOREST AVENUE SUITE 102	RICHMOND , VA 23226

PLEASE RESPOND FOR ALL REZONING APPLICATIONS:

1. What is the General Land Use Plan Map designation for the subject property? Employment Center

2. What, if any, is the Major Thoroughfare Plan designation for the public road on which the subject property has frontage? Route 54 is shown as a Minor Arterial road.

3. Describe in detail the proposed use of the property. The rezoning of a very dense East Ashland case (as located in the County of Hanover) to allow data center and associated uses as shown on the attached concept plan and as described in the attached proffered conditions.

4. List any sensitive environmental or unique features on the property. Are there any 150kV or greater transmission lines, transmission lines for natural gas, other public utilities, or other entity? There are various environmental areas on the property as shown on the attached concept plan.

5. Is the subject property located in a Dam Break Inundation Zone? ☐ Yes ◉ No (Please contact the Department of Planning or Public Works for assistance in addressing this question.) If yes, please contact the Department of Public Works for further information.

RESPOND FOR RS AND RM REZONING APPLICATIONS: (Attach additional pages, if needed)

1. Have you provided a conceptual plan of the proposed development, including general lot configurations and road locations?
2. How does your proposal preserve or protect the existing trees on the property? If the property is treeless, does your proposal contain provisions to provide trees on the property?
3. Are recreational amenities being proposed for the project? If so, specify in detail the amenities planned.
4. What provisions will be made to ensure safe and adequate access to the subject property? (Note: A second means of access should be provided for any project in which there will be fifty-one (51) or more lots.)

RESPOND FOR AR-6 and RC REZONING APPLICATIONS: (Attach additional pages, if needed)

1. For **AR-6** rezoning requests: Have you provided a conceptual plan of the proposed development, including general lot configurations and road locations? Are the proposed lot sizes compatible with existing parcel sizes in the area? ____

2. How is the proposed subdivision compatible with the rural setting and sensitive to natural and cultural features? ____

3. What provisions will be made to ensure safe and adequate access to the subject property? (Note: A second means of access should be provided for any project in which there will be fifty-one (51) or more lots.) ____

RESPOND FOR B-1, B-2, B-3, BO, OS, M-1, M-2, M-3 REZONING APPLICATIONS: (Attach additional pages, if needed)

1. Has a conceptual plan of the proposed development been provided, showing proposed building locations, parking lots, entrances, and other features? Yes, please see the attached concept plan.

2. What provisions will be made to ensure safe and adequate access to the subject property? Two access points have been provided in the County for the site as shown on the attached concept plan.

3. How will the traffic impact of this development be addressed?: Please see the Traffic Impact Analysis (TIA) provided.

4. Describe why the proposed use is desirable and appropriate for the area. What measures will be taken to assure that the proposed use will not have a negative impact on the surrounding vicinity? The current zoning of the site allows for significantly dense mixed use development with residential uses (including apartments) and retail uses. The proposed use is a much lower density than the current zoning, and limits uses as described in the proffered conditions.

5. What type of signage is proposed for the site? Please see the proffered conditions.

6. Have architectural/building elevations been submitted with this application? Yes, please see the proffered conditions.

HISTORIC SITE IMPACT ANALYSIS

Please identify any **known or suspected historic resources on both the subject property and adjacent properties**, to include both structural and non-structural resources, such as trenches, cemeteries, and archeological sites. Please include the GPIN (Tax Parcel Number) associated with the resource. Please attach additional sheets, if necessary. Should you need assistance completing this form, please contact the Planning Staff.

1. Historic Resource/File No. N/A GPIN 7880-70-4924
2. Historic Resource/File No. _____ GPIN _____
3. Historic Resource/File No. _____ GPIN _____
4. Historic Resource/File No. _____ GPIN _____
5. Historic Resource/File No. _____ GPIN _____

If you have identified known or suspected historic resources on the subject property or adjacent property, please provide the following information on each site:

a) Is the historic site listed as a National or State Registered Landmark? _____

b) Is the historic site open to the public? _____

c) Describe the impact the proposed request will have on the identified historic resources with regard to noise, traffic, dust, vibration, visual impact, and air pollution. _____

d) Describe voluntary measures that will be undertaken to help mitigate the impact that the proposed use may have on the identified historic resources. _____

If there are no known or suspected historic resources on the subject property or immediately adjacent, including structural and non-structural resources, trenches, cemeteries, and archeological sites, **please sign and date.**

Signature: _____ Date: 3-27-25

Andrew M. Condlin by Power of Attorney

COMPLIANCE WITH VDOT & COUNTY TRAFFIC IMPACT ANALYSIS REQUIREMENTS

The following must be completed for all applications: The selection below is based on a projected daily trip generation of 2,475 vehicles per day and a site peak hour trip generation of 297 (A) / 97 (P) vehicles per hour, based on the stipulations of 24 VAC 30-155. The 11th edition (latest edition) of the ITE Trip Generation Manual was used in determining the trip generation (Code Number 160 and Page Number 187).

Choose one of the two options below:

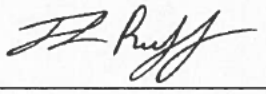
☐ I certify that this proposal **DOES NOT EXCEED** 380 vehicle trips per day that would require submittal of a Traffic Impact Analysis.

☑ I certify that this proposal **DOES EXCEED** 380 vehicle trips per day that would require a Traffic Impact Analysis be submitted.

Choose one of the two options below:

☐ I certify that this proposal DOES NOT MEET any of the VDOT thresholds identified in the Traffic Impact Analysis Regulations Administrative Guidelines (24 VAC 30-155) that would require a Traffic Impact Analysis to be submitted in conjunction with this application.

☑ I certify that this proposal MEETS at least one of the VDOT thresholds identified in the Traffic Impact Analysis Regulations Administrative Guidelines (24 VAC 30-155) that would require a Traffic Impact Analysis to be submitted in conjunction with this application. A Traffic Impact Analysis, prepared in accordance with the Traffic Impact Analysis Regulations Administrative Guidelines (24 VAC 30-155), has been prepared and will be submitted to VDOT the same day.



(Signature of Applicant/Applicant's Representative)

02/25/2025
(Date)

Thomas Ruff
(Applicant/Applicant's Representative – Print Name)

Estimated Tax Generation

FEBRUARY 2024

ECONOMIC AND FISCAL IMPACT ANALYSIS OF DATA CENTER DEVELOPMENT IN HANOVER COUNTY, VA

PREPARED FOR TRADEPORT ASHLAND LAND, LLC

MANGUM economics

4198 COX ROAD, SUITE 104
GLEN ALLEN, VIRGINIA 23060
804-346-8446
MANGUMECONOMICS.COM

© 2024 Mangum Economics

About Mangum Economics, LLC

Mangum Economics is a Glen Allen, Virginia based firm that was founded in 2003. Since then, we have become known as a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. The Mangum Team specializes in producing objective and actionable quantitative economic research that our clients use for strategic decision making in a variety of industries and environments. We know that our clients are unique, and that one size does not fit all. As a result, we have a well-earned reputation for tailoring our analyses to meet the specific needs of specific clients, with a specific audience.

Most of our research falls into four general categories:

- **Information Technology:** Working with some of the largest names in the industry, to date the Mangum Team has produced analyses of the economic and fiscal impact of the data center industry in multiple states. Among those, were studies conducted in Arizona, Illinois, and Maryland that were instrumental in the passage of industry-specific legislation.
- **Economic Development and Special Projects:** The Mangum Team has performed hundreds of analyses of proposed economic development projects. One recent example was an analysis of the proposed $2.3 billion Green City "net-zero eco district." The Mangum Team has also authored multiple economic development plans, including identifying industry recruitment opportunities created by the high-speed MAREA and BRUSA sub-sea cable landings in Virginia Beach.
- **Energy:** The Mangum Team has produced analyses of the economic and fiscal impact of over 13 GW of proposed solar, wind, battery, and hydro projects spanning at least fifteen states. Among those projects was Dominion Energy's 2.6 GW Coastal Virginia Offshore Wind project off of Hampton Roads. In addition, the Mangum Team has also performed economic and fiscal impact analyses for the natural gas, nuclear, oil, and pipeline industries.
- **Policy Analysis:** The Mangum Team also has extensive experience in identifying and quantifying the intended and unintended economic consequences of proposed legislative and regulatory initiatives.

The Project Team

David Zorn, Ph.D., *Director – Technology & Special Projects Research*

Wyatt Parson, *Research Analyst*

A. Fletcher Mangum, Ph.D., *Founder and CEO*

Table of Contents

Executive Summary 1

Introduction 2

The Proposed Hanover Data Center Campus 2

- Estimates and Assumptions 3

Real & Personal Property Tax Revenues from the Proposed Data Center Campus 4

- Property Tax Calculation Inputs and Assumptions 4
- Additional Annual Property Tax Revenue from the First Data Center 4
- Total Additional Annual Property Tax Revenue for the Entire Campus 5

Economic Impact of the Data Center Campus 7

- Method of Analysis 7
- Construction Phase for the First Data Center 8
- Ongoing Operations Phase for the First Data Center 9
- All Phases of the Entire Data Center Campus 10
  - Direct Economic Impact 10
  - Total Supported Economic Impact 11

Total Annual New Tax Revenue for Hanover County 12

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

Executive Summary

This report provides an estimate of the ways that the data center campus will impact Hanover County, Virginia. The data center campus would occupy approximately 200 acres. Thirteen buildings will make up about 3.2 million gross square feet. The first data center is planned to come online in 2026. We estimate that the project at full buildout and occupancy will create about 346 new data center operational jobs.

New Hanover County tax revenues from the data center campus are expected to rise from $1.6 million (before operations begin) to $69.2 million in 2045 when they level out. Total new supported jobs in the county range from about 740 in 2024 to almost 2,600 when the final two data centers are being constructed and eleven are already operating. Once the entire campus is operating, the total supported jobs levels out at over 1,300.

Estimates of Construction and Operational Jobs for the Data Center Campus and Total New Annual Tax Revenue for Hanover County

Year	Total New Direct Jobs	Total New Supported Jobs	Total New Annual Tax Revenue Generated for Hanover County (in millions)
2024	550	740	$1.6
2025	1,100	1,480	$3.2
2026	1,128	1,588	$9.0
2027	1,156	1,696	$14.8
2028	1,184	1,804	$20.6
2029	1,212	1,912	$26.3
2030	1,240	2,020	$32.1
2031	1,268	2,128	$37.8
2032	1,296	2,236	$43.5
2033	1,324	2,344	$49.1
2034	1,002	1,982	$53.6
2035	1,030	2,090	$59.2
2036	1,390	2,590	$62.2
2037	868	1,958	$66.2
2038	346	1,326	$70.2
2039	346	1,326	$70.0
2040	346	1,326	$69.8
2041	346	1,326	$69.7
2042	346	1,326	$69.5
2043	346	1,326	$69.4
2044	346	1,326	$69.3
2045 and after	346	1,326	$69.2

The assumptions that we used for calculating the tax revenues have the effect of underestimating the actual tax revenue that Hanover County will gain from the development of the data center campus. The value of the business personal property data center equipment is likely to increase over time due to inflation, and we do not attempt to calculate business license revenue.

Introduction

This report provides an estimate of the new tax revenue and additional economic contribution that the data center campus will make to Hanover County, Virginia. The report was commissioned by TradePort Ashland Land, LLC and produced by Mangum Economics.

The Proposed Hanover Data Center Campus

The proposed Hanover County data center campus will occupy roughly 200 acres. It will be comprised of thirteen buildings totaling about 3.2 million gross square feet. The first data center (257,176 square feet) is planned to come online in 2026, assuming a 2-year construction period beginning in 2024. The remaining twelve, all of which occupy 257,176 square feet (apart from building eleven, which is 92,455 square feet), will come online at a rate of one per year until the final building comes online in 2038. We estimate that, once the campus is fully operational, it will create about 346 new data center operational jobs. Table 1 shows the construction and operation schedule for the thirteen buildings on the campus.

Table 1: Schedule for Construction and Operation of the Buildings on the Hanover Campus

Year	Construction	Operation	Direct Operational Jobs
2024	Building 1		0
2025	Buildings 1 & 2		0
2026	Buildings 2 & 3	Building 1	28
2027	Buildings 3 & 4	Buildings 1 - 2	56
2028	Buildings 4 & 5	Buildings 1 - 3	84
2029	Buildings 5 & 6	Buildings 1 - 4	112
2030	Buildings 6 & 7	Buildings 1 - 5	140
2031	Buildings 7 & 8	Buildings 1 - 6	168
2032	Buildings 8 & 9	Buildings 1 - 7	196
2033	Buildings 9 & 10	Buildings 1 - 8	224
2034	Buildings 10 & 11	Buildings 1 - 9	252
2035	Buildings 11 & 12	Buildings 1 - 10	280
2036	Buildings 12 & 13	Buildings 1 - 11	290
2037	Building 13	Buildings 1 - 12	318
2038 and after		Buildings 1 - 13	346

Estimates and Assumptions[1]

The cost of constructing data centers and the amount of data center equipment (e.g., computer servers and switches) inside these facilities varies depending on their purpose and the workload that they serve. For this analysis, we have outlined an illustrative data center campus to show the anticipated economic and fiscal impact on Hanover County. The full build-out is planned to be completed in 2037. Our assumptions and calculations are based on information supplied by TradePort Ashland Land LLC, expert opinion, other actual data center projects, similar research projects, and information about expenditures from data center sources.

In total, we estimate that the project will cost $14.3 billion for the construction of all thirteen buildings, the construction and installation of associated infrastructure, and the purchase and installation of the data center equipment housed inside. Of that total, $7.6 billion will be for the data center (computer) equipment, and $6.7 billion will be for the construction of the buildings and all of the fixed (non-data center) equipment. We estimate that construction will extend over a two-year period for each building.

We assume that it will take 5 years for each building to reach peak occupancy, with each building being 60, 70, 80, and 85 percent occupied in the first 4 years of operation, respectively, and achieving 90 percent occupancy in year 5 and afterward.

The computer equipment inside data centers is replaced regularly. Depending on the type of equipment and its use, refresh rates vary. We assume that the data center equipment is refreshed on a five-year cycle, which is fairly common. During the ramp-up to full occupancy, one-fifth of existing data center equipment in each building is refreshed each year even as the cumulative amount of data center equipment increases to the peak capacity of each building.

[1] All monetary values are in 2024 dollars.

Real & Personal Property Tax Revenues from the Data Center Campus

Property Tax Calculation Inputs and Assumptions

In addition to the description of the data centers included above, our analysis is based on the following information and assumptions:

- Real property is assessed at the cost of its original construction.
- The Hanover County real property tax rate is $0.81 per $100 of assessed value.
- The County personal property tax rate for data center equipment is $0.45 per $100 of depreciated value.
- According to Hanover County's schedule of depreciation, cumulative depreciation on data center equipment is 34 percent in the first year, 45 percent in the second year, 65 percent in the third year, 76 percent in the fourth year, and 95 percent in the fifth year. Because we are using a five-year refresh rate on all data center personal property, Hanover County's 99 percent depreciation rate in the sixth and following years does not affect our calculations.
- Tax and depreciation rates remain constant throughout the years covered by the analysis.

Our assumptions have the effect of underestimating the actual tax revenue that Hanover County will gain from the development of the data center campus. The value of the business personal property data center equipment is likely to increase over time due to inflation. Additionally, we do not include any business license revenue from the data centers.

Additional Annual Property Tax Revenue from the First Data Center

Before providing estimates of the new tax revenue generated by the entire data center campus, we show the tax revenue generated by only a single data center – the first data center in the development.

Tradeport Ashland Land, LLC plans a 257,176 gross-square-foot data center employing about 28 people. The total investment for a data center of this size would be almost $1.16 billion – over $617 million for the data center equipment and over $540 million for the shell of the facility plus the fixed power, cooling, and networking infrastructure.

Hanover County's data center personal property depreciation schedule applies to the initial investments and to the refreshed computer equipment. Taking into account the ramp-up to full occupancy, the refresh rate of the data center equipment, and the way in which data center business personal property equipment is depreciated for tax purposes, it takes seven years for a data center to reach a stable stream of tax revenue in Hanover County.

Table 2 shows how the investment in the first data center would contribute to the Hanover County tax base. Total real property investment (column two) is $540 million and business personal (column four) property investment increases from $370 million to nearly $556 million. Column five shows the depreciated value of the personal property according to its age and the County's depreciation schedule

for computer equipment. The depreciated value of the computer equipment stabilizes in 2034 at $206 million. Columns three and six show the totals of the real and of the personal property taxes (respectively) paid each year. The total of property taxes paid to Hanover County is shown in column seven. **The first data center will provide Hanover County with an additional $5.5 million in property tax revenue in 2026. Even after all of the data center business personal property is on a regular refresh cycle and the County's depreciation schedule is fully applied, for the first data center alone, Hanover County will receive an additional $5.3 million annually in tax revenue beginning in 2034.**

Table 2: Estimates for the First Data Center and Hanover County Property Tax Revenue Gained Annually (in millions)[2]

Year	Cumulative Real Property Value	Annual Real Property Tax Paid	Cumulative Personal Property Installed	Deprec'd Cumulative Personal Property Value	Annual Personal Property Tax Paid	Annual Total Property Tax Paid
2026	$540.1	$4.4	$370.3	$244.4	$1.1	$5.5
2027	$540.1	$4.4	$432.1	$252.6	$1.1	$5.5
2028	$540.1	$4.4	$493.8	$245.9	$1.1	$5.5
2029	$540.1	$4.4	$524.6	$241.2	$1.1	$5.5
2030	$540.1	$4.4	$555.5	$245.7	$1.1	$5.5
2031	$540.1	$4.4	$555.5	$230.5	$1.0	$5.4
2032	$540.1	$4.4	$555.5	$216.5	$1.0	$5.4
2033	$540.1	$4.4	$555.5	$210.2	$0.9	$5.3
2034 and after	$540.1	$4.4	$555.5	$205.5	$0.9	$5.3

Total Additional Annual Property Tax Revenue for the Entire Campus

Table 3 shows how total real (column two) and personal (column four) property investment develops over time. The real property value will be assessed at about $540 million in 2026 with the first data center and rise to $6.7 billion in 2038. The total personal property invested in the development increases from $370 million in 2026 as the first data center opens to $6.9 billion in 2045. Column five shows the depreciated value of the personal property that is invested according to the age of the personal property in each data center and the County's depreciation schedule for computer equipment. The depreciated value stabilizes in 2045 once all thirteen data centers on the campus are on a stable five-year refresh cycle. Columns three and six show the totals of the real and the personal property taxes (respectively) paid each year. The total of property taxes paid to Hanover County is shown in column seven. **Development of the data center campus will provide Hanover County with an additional $5.5 million in property tax revenue in 2026 increasing to a stable level of $65.5 million in 2045.**

[2] All monetary values are in 2024 dollars.

Table 3: Estimates for the Entire Data Center Campus Used to Calculate Annual Property Tax Revenue Gained (in millions)[3]

Year	Cumulative Real Property Value	Annual Real Property Tax Paid	Cumulative Personal Property Invested	Deprec'd Cumulative Personal Property Value	Annual Personal Property Tax Paid	Annual Total Property Tax Paid
2026	$540.1	$4.4	$370.3	$244.4	$1.1	$5.5
2027	$1,080.1	$8.7	$802.4	$497.0	$2.2	$11.0
2028	$1,620.2	$13.1	$1,296.2	$742.9	$3.3	$16.5
2029	$2,160.3	$17.5	$1,820.8	$984.1	$4.4	$21.9
2030	$2,700.3	$21.9	$2,376.3	$1,229.8	$5.5	$27.4
2031	$3,240.4	$26.2	$2,931.8	$1,460.2	$6.6	$32.8
2032	$3,780.5	$30.6	$3,487.3	$1,676.7	$7.5	$38.2
2033	$4,320.6	$35.0	$4,042.8	$1,886.9	$8.5	$43.5
2034	$4,860.6	$39.4	$4,598.3	$2,092.4	$9.4	$48.8
2035	$5,400.7	$43.7	$5,153.8	$2,298.0	$10.3	$54.1
2036	$5,594.9	$45.3	$5,472.1	$2,347.0	$10.6	$55.9
2037	$6,134.9	$49.7	$5,988.1	$2,547.3	$11.5	$61.2
2038	$6,675.0	$54.1	$6,504.0	$2,757.1	$12.4	$66.5
2039	$6,675.0	$54.1	$6,669.4	$2,721.2	$12.2	$66.3
2040	$6,675.0	$54.1	$6,773.1	$2,671.3	$12.0	$66.1
2041	$6,675.0	$54.1	$6,834.8	$2,640.7	$11.9	$66.0
2042	$6,675.0	$54.1	$6,865.7	$2,614.0	$11.8	$65.8
2043	$6,675.0	$54.1	$6,865.7	$2,577.9	$11.6	$65.7
2044	$6,675.0	$54.1	$6,865.7	$2,555.9	$11.5	$65.6
2045 and after	$6,675.0	$54.1	$6,865.7	$2,545.0	$11.5	$65.5

[3] All monetary values are in 2024 dollars.

Economic Impact of the Data Center Campus

In this section, we quantify the economic contribution that the data center campus will make to Hanover County. We separately evaluate the one-time pulse of economic activity that will occur during the construction phase of the project, as well as the annual economic activity that the data center campus will generate during its ongoing operational phase.

Method of Analysis

To estimate the likely local economic impact attributable to the proposed data center campus project, we use a regional economic impact model called IMPLAN.[4] The IMPLAN model is one of the most commonly used economic impact models in the United States. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impacts.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, data centers spend money to pay employees and purchase goods and services which provides income to the employee households and the businesses of the vendors. Those employees and vendors then have money to spend on goods and services, which again provides income for other businesses – and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

One of the primary advantages of the IMPLAN model is that it uses regional and national production and trade flow data to construct region-specific and industry-specific economic multipliers. These multipliers are then further adjusted to reflect anticipated actual spending patterns within the specific geographic area that is being evaluated. As a result, the economic impact estimates produced by IMPLAN are not generic. They reflect as precisely as possible the economic realities of the specific industry and the specific geographic area – in this case, data centers in Hanover County.

We divide these impact estimates into three categories.

1. The first-round direct impact measures the direct economic contribution of the entity being evaluated (e.g., own employment, wages paid, goods and services purchased by the proposed data centers).
2. The second-round indirect and induced impact measures the economic ripple effects of this direct impact in terms of business-to-business and household/employee-to-business transactions.
3. The total impact is simply the sum of those two.

These impacts are defined in terms of jobs, the pay and benefits associated with those jobs, and economic output (the total amount of economic activity that is created in the economy).

[4] IMPLAN is produced by IMPLAN Group, LLC.

Construction Phase for the First Data Center[5]

On a per-facility basis, total capital investment in the first data center is estimated to be $1.2 billion with $540 million for the real property investment in the facility. Construction of the data center is expected to take two years.

As shown in Table 4, we estimate that in each year of the two-year construction period, the construction of the first data center will directly provide about:

- 550 construction jobs,
- $37.3 million in pay and benefits, and
- $115.7 million in economic output to Hanover County.

Taking into account the economic ripple effects that the direct investment will generate throughout the Hanover County economy, we estimate that in each year of the two-year construction period, the first data center will, in total, support about:

- 740 jobs,
- $47.2 million in pay and benefits, and almost
- $149.1 million in economic output.

Table 4: Annual Impact on Hanover County Economy from Construction of the First Data Center

Economic Impact	Jobs	Pay & Benefits (millions)	Output (millions)
1st Round Direct Construction Impact	550	$37.3	$115.7
2nd Round Indirect and Induced Economic Activity	190	$9.9	$33.4
Total Economic Activity	**740**	**$47.2**	**$149.1**

[5] All monetary values are in 2024 dollars.

Ongoing Operations Phase for the First Data Center[6]

Once the first data center is operational, we estimate that it will employ about 28 people.

As shown in Table 5, we estimate that the operation of the first data center will, on an annual basis, directly provide approximately:

- 28 operational jobs,
- $2.7 million in pay and benefits, and
- $40.9 million in economic output to Hanover County.

Taking into account the economic ripple effects of the annual operational spending by the first data center in the Hanover County economy, we estimate that it will, in total, support about:

- 108 jobs,
- $6.1 million in pay and benefits, and almost
- $56.2 million in economic output.

Table 5: Annual Impact on Hanover County Economy from Operation of the First Data Center

Economic Impact	Jobs	Pay & Benefits (millions)	Output (millions)
1st Round Direct Data Center Operational Impact	28	$2.7	$40.9
2nd Round Indirect and Induced Economic Activity	80	$3.4	$15.3
Total Economic Activity	**108**	**$6.1**	**$56.2**

[6] All monetary values are in 2024 dollars.

All Phases of the Entire Data Center Campus

Direct Economic Impact[7]

While the construction of the data center campus is occurring the number of operational data centers will increase. Using the per-facility estimates from Tables 4 and 5, Table 6 shows the direct impact of the entire data center campus, in terms of construction and operational jobs, total pay and benefits, and total economic output. In the year of peak construction, the total number of direct jobs (construction of buildings 12 and 13 plus operation of buildings 1-11) reaches 1,390. Once construction is completed, direct operational jobs at the data center campus should remain stable at about 346.

Table 6: Direct Impact on Hanover County from All Phases of the Data Center Campus

Year	Direct Construction Jobs	Direct Operational Jobs	Total Direct Jobs	Total Direct Pay & Benefits (millions)	Total Direct Output (millions)
2024	550	0	550	$37.3	$115.7
2025	1,100	0	1,100	$74.6	$231.4
2026	1,100	28	1,128	$77.3	$272.3
2027	1,100	56	1,156	$80.0	$313.2
2028	1,100	84	1,184	$82.7	$354.1
2029	1,100	112	1,212	$85.4	$395.0
2030	1,100	140	1,240	$88.1	$435.9
2031	1,100	168	1,268	$90.8	$476.8
2032	1,100	196	1,296	$93.5	$517.7
2033	1,100	224	1,324	$96.2	$558.6
2034	750	252	1,002	$75.0	$525.4
2035	750	280	1,030	$77.7	$566.3
2036	1,100	290	1,390	$102.6	$654.5
2037	550	318	868	$68.0	$579.7
2038 and after	0	346	346	$33.4	$504.9

During the construction phase between 2024 and 2037, the direct impact of the data center campus on Hanover County in terms of direct economic activity will range from $116 million to $655 million. After that, the direct impact of the project on the County will be about $505 million per year.

[7] All monetary values are in 2024 dollars.

Total Supported Economic Impact[8]

Similarly, using the per-facility estimates from Tables 4 and 5, Table 7 shows the total supported economic impact of the entire data center campus including the indirect and induced impacts. In the year of peak construction, the total number of total supported jobs reaches about 2,600. Once construction is completed, the total jobs supported by the entire data center campus should remain stable at about 1,330.

Table 7: Total Supported Impact on Hanover County from All Phases of the Data Center Campus

Year	Total Direct Jobs	Additional Indirect & Induced Jobs	Total Supported Jobs	Total Supported Pay & Benefits (millions)	Total Supported Output (millions)
2024	550	190	740	$47.2	$149.1
2025	1,100	380	1,480	$94.4	$298.2
2026	1,128	460	1,588	$100.5	$354.4
2027	1,156	540	1,696	$106.6	$410.6
2028	1,184	620	1,804	$112.7	$466.8
2029	1,212	700	1,912	$118.8	$523.0
2030	1,240	780	2,020	$124.9	$579.2
2031	1,268	860	2,128	$131.0	$635.4
2032	1,296	940	2,236	$137.1	$691.6
2033	1,324	1,020	2,344	$143.2	$747.8
2034	1,002	980	1,982	$119.1	$708.5
2035	1,030	1,060	2,090	$125.2	$764.7
2036	1,390	1,200	2,590	$157.5	$879.6
2037	868	1,090	1,958	$116.4	$786.7
2038 and after	346	980	1,326	$75.3	$693.8

During the construction phase between 2024 and 2037, the data center campus will support $149 million to $880 million of new economic output activity in Hanover County. After that, the project will support $694 million of economic output activity in the County every year.

[8] All monetary values are in 2024 dollars.

Total Annual New Tax Revenue for Hanover County[9]

The direct property taxes (calculated above) are shown in column two of Table 8. We report the IMPLAN estimates of Hanover County taxes generated by direct, indirect, and induced activity supported by the construction and operation of data centers in column three. The sum of those equals the total new tax revenue for Hanover County, shown in the last column of Table 8.

Table 8: Total Supported County Tax Revenues from All Phases of the Data Center Campus

Year	Total Property Taxes Directly Paid on the Data Centers	Total Taxes Generated by Direct, Indirect & Induced Activity Supported by the Data Centers	Total Annual Tax Revenue Generated for Hanover County
2024	$0.0	$1.6	$1.6
2025	$0.0	$3.2	$3.2
2026	$5.5	$3.5	$9.0
2027	$11.0	$3.8	$14.8
2028	$16.5	$4.1	$20.6
2029	$21.9	$4.4	$26.3
2030	$27.4	$4.7	$32.1
2031	$32.8	$5.0	$37.8
2032	$38.2	$5.3	$43.5
2033	$43.5	$5.6	$49.1
2034	$48.8	$4.8	$53.6
2035	$54.1	$5.1	$59.2
2036	$55.9	$6.3	$62.2
2037	$61.2	$5.0	$66.2
2038	$66.5	$3.7	$70.2
2039	$66.3	$3.7	$70.0
2040	$66.1	$3.7	$69.8
2041	$66.0	$3.7	$69.7
2042	$65.8	$3.7	$69.5
2043	$65.7	$3.7	$69.4
2044	$65.6	$3.7	$69.3
2045 and after	$65.5	$3.7	$69.2

In total, the construction and operation of the data center campus will produce between $1.6 million and over $70 million in new annual tax revenue for Hanover County. The County's annual additional tax revenue will level out at $69.2 million beginning in 2045.

[9] All monetary values are in 2024 dollars.

Approved Proffers + Conceptual Plan

BOARD OF SUPERVISORS

W. CANOVA PETERSON, IV, CHAIRMAN
MECHANICSVILLE DISTRICT

SEAN M. DAVIS, VICE-CHAIRMAN
HENRY DISTRICT

WAYNE T. HAZZARD
SOUTH ANNA DISTRICT

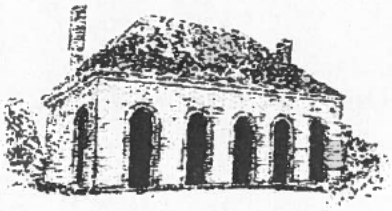
ANGELA KELLY-WIECEK
CHICKAHOMINY DISTRICT

AUBREY M. STANLEY
BEAVERDAM DISTRICT

G.E. VIA, III
ASHLAND DISTRICT

ELTON J. WADE, SR.
COLD HARBOR DISTRICT

CECIL R. HARRIS, JR.
COUNTY ADMINISTRATOR



HANOVER COURTHOUSE

HANOVER COUNTY

ESTABLISHED IN 1720
WWW.HANOVERCOUNTY.GOV

PLANNING DEPARTMENT

DAVID P. MALONEY, AICP
DIRECTOR OF PLANNING

JOHN A. BENDER
DEPUTY DIRECTOR OF PLANNING

J. KEITH THOMPSON
PRINCIPAL PLANNER

LEE W. GARMAN, AICP
PRINCIPAL PLANNER

MARY B. PENNOCK
PRINCIPAL PLANNER

P. O. BOX 470
HANOVER, VIRGINIA 23069

PHONE 804-365-6171
FAX: 804-365-6232

July 24, 2013

Harris & Douglas Properties, L.L.C.
c/o Doug Godsey
2461 Charles City Road
Richmond, VA 23231

RE: Approval of C-7-09(c), Am. 1-13, Harris & Douglas Properties, L.L.C.

Dear Mr. Godsey:

At their meeting of July 24, 2013, the Hanover County Board of Supervisors, on a motion by Mr. Stanley, seconded by Mr. Wade, voted to **APPROVE** the above-captioned request to amend the proffers on GPINs 7880-70-4924, 7880-72-4067, 7880-70-9482, 7880-71-9467, 7789-69-9500, 7789-59-1517, 7789-69-3553 and 7880-80-6263(part), zoned MX(c), Mixed Use District with conditions, with your proffered conditions 1 through 12 as set forth in the attached Ordinance for C-7-09(c), Am. 1-13, Harris & Douglas Properties, L.L.C. The Board's approval incorporates adoption of the attached Ordinance.

Should you require any additional information or assistance concerning this matter, please do not hesitate to contact Gretchen W. Biernot, Applicant Liaison, or me at (804) 365-6171.

Sincerely,

David P. Maloney, AICP
Director of Planning

GJWB/sm/hte

cc: The Honorable Aubrey M. Stanley
Sherri A. Carneal
Gretchen W. Biernot
Richard W. Paul
Kevin R. Nelson
Jennifer A. Pendergrass
Lee W. Garman
C. Jason Hazelwood
Dawn R. Hardman

ORDINANCE C-7-09(c), AM. 1-13

OWNER OF RECORD: HARRIS & DOUGLAS PROPERTIES, L.L.C.

WHEREAS the Planning Commission of Hanover County has held an advertised public hearing and forwarded this case to the Board of Supervisors with a recommendation of **APPROVAL** of the adoption of the following amendment to the Zoning Ordinance and Zoning District Map of Hanover County; and

WHEREAS the Board of Supervisors has held public hearings on the 24th day of July, 2013, and advertised in the ***Hanover Herald-Progress*** once a week for two successive weeks as required by Virginia Code Section 15.2-2204; and

WHEREAS the Board of Supervisors has determined that the public necessity, convenience, general welfare, and good zoning practices require this amendment.

NOW, THEREFORE, BE IT ORDAINED by the Board of Supervisors of Hanover County that the Zoning Ordinance and the Zoning District Map of this County are amended (with conditions) by amending the proffers approved with rezoning request C-7-09(c), Ashland Properties, L.L.C. of the property described as GPINs 7880-70-4924, 7880-72-4067, 7880-70-9482, 7880-71-9467, 7789-69-9500, 7789-59-1517, 7789-69-3553 and 7880-80-6263(part), located on the south line of East Patrick Henry Road (State Route 54) at its intersection with Woodside Lane (Town of Ashland road) and on the east and west lines of Mount Hermon Road (State Route 656) approximately 2,400 feet south of its intersection with East Patrick Henry Road (State Route 54) (a detailed description is filed with the Board's papers), zoned MX(c), Mixed Use District with conditions, subject to the following conditions which were proffered by the Applicant on June 4, 2013, and accepted by the Board:

1. Phasing Plan. Development shall occur in accordance with the following phasing plan:

East Ashland Phasing Plan

Hanover County

	Residential Units	Square Footage
Phase 1	359	83,800
Phase 2	120	83,800
Phase 3	120	167,600

2. Transportation Improvements. The following transportation improvements shall be provided at the time of complete development of each phase as set forth in Proffer 3. Any improvement may be provided by the Owners earlier than the designated phase but the Owners shall not be required to provide the improvements prior to the phasing set forth in the Phasing Plan. [Note: Many of these improvements are also provided for in the proffers for the rezoning of the Property within the Town of Ashland.]

A. Phase I Improvements:

(i) Widen eastbound Route 54 from the end of the existing taper from I-95 northbound to the intersection of Mount Hermon Road. The widening shall form an auxiliary lane that will serve as a free-flow channelized right-turn lane from Route 54 to southbound Mount Hermon Road.

(ii) Mount Hermon Road/Frances Road/Route 54 Intersection

(a) Bond and install traffic signal (when warranted) at the intersection or convert Mount Hermon Road access to a right-in/right-out based on the final interchange design.

(b) If the intersection remains full movement, construct a westbound left-turn lane with 200 feet of storage and a 200 foot taper on Route 54 at the intersection of Mount Hermon Road/Frances Road.

(c) If the intersection remains full movement, construct an additional northbound left-turn lane (in addition to the current northbound left-turn lane that already exists) and construct a shared through/right-turn lane with 200 feet of storage and a 200 foot taper on Mount Hermon Road at Route 54.

B. Phase III Improvements:

(i) At the time of the first site plan or construction plan submittal for Phase III development, the Owner shall widen Route 54 to a four lane section from Mount Hermon Road through the intersection with Entrance 2.

(ii) The design shall be in accordance with VDOT standards and specifications.

C. Timing of Entrance Improvements. In addition to the Phasing set forth above, the improvements required for Entrances 1, 2, and 3 along Route 54, and Entrance 4 on Mount Hermon Road, shall be designed with the first site plan or construction plan for the section of the development each serves. Those improvements shall include the following:

(i) Prior to installation of any traffic signals, and where required for internal roadways, such intersections shall be designed as a STOP control intersections.

(ii) Site Entrance 1 and Route 54

(a) Construct a westbound left turn lane and an eastbound right-turn lane with 200 feet of storage and a 200 foot taper on Route 54 at the intersection of Site Entrance 1.

(b) Construct Site Entrance 1 as a five-lane roadway (two southbound lanes and dual left and one right northbound turn lane).

(c) Bond and install traffic signal (when warranted) at the intersection.

(iii) Site Entrance 2 and Route 54

(a) Construct a westbound left turn lane and an eastbound right-turn lane with 200 feet of storage and a 200 foot taper on Route 54 at the intersection of Site Entrance 2.

(b) Construct Site Entrance 2 as a four-lane roadway (two southbound lanes and one left and one right northbound turn lane).

(c) Bond and install traffic signal (when warranted) at the intersection.

(d) Construct a transition lane drop (four lane section to two lane section) east of the intersection of Site Entrance 2 and Route 54 from the outside through lane for a distance to be determined at the time of subdivision and/or site plan process.

(iv) Site Entrance 3 and Route 54

(a) Construct Site Entrance 3 as a two lane road.

(b) Construct a right-out only from Site Entrance 3.

(v) Site Entrance 4 and Mount Hermon Road

(a) Construct one westbound shared left/right-turn lane.

(b) Construct one in-bound lane.

3. Dedication of Right-of-Way. The Owners shall dedicate all right-of-way on the Property required for the transportation improvements identified herein for the new roads or needed turn lanes to be constructed, free of cost to the County and free of encumbrances, upon request of the County or VDOT. For existing roadways, dedication shall include along 50' of right-of-way from the centerline of East Patrick Henry Road (State Route 54) and 25' of right-of-way from the centerline of Mount Hermon Road to the property for future road widening, free of cost to the County, and free of encumbrances, upon request of the County or VDOT.

4. Tree Preservation. Existing trees of five (5) inch caliper or greater on the Property shall not be removed with the exception of dead or diseased trees or parts thereof. This shall not prevent the removal of trees necessary for the construction of improvements and mass grading related thereto, driveways, drainfields, or drainage facilities. A clause including the text of this proffer shall be included in the required restrictive covenants for this development.

5. MX 50' Residential Buffer. No structures shall be constructed within the area of the MX 50' residential buffer including fencing, decks, patios, playground equipment, etc. At the prerogative of the Owners, the buffer can be supplemented with additional vegetation beyond that which is required to be retained through the tree preservation proffer above. The 50' MX Residential Buffer shall be in an easement conveyed to the Homeowners' Association where the buffer crosses lot lines of individual lots, and shall be landscaped and maintained by the Homeowners' Association. A clause including the text of this proffer shall be included in the required restrictive covenants for this development.

6. Use Restrictions.

A. The following permitted and accessory uses for the MX district shall not be permitted.

(i) All listed manufacturing and compounding uses.

(ii) Nursery for growing or propagation of plants, trees, and shrubs.

(iii) Railroad spur tracks.

(iv) Laboratories, research, experimental or testing.

(v) Wholesale merchandising or storage warehouses or distribution center.

(vi) Agricultural and forestry, as permitted in the A-1 District.

B. The following conditional uses for MX district shall not be permitted.

(i) Railroad rights-of-way of any kind.

(ii) Convenience store with a floor area of 5,000 square feet or greater.

(iii) Heliport or helistop.

C. The following special exceptions for the MX district shall not be permitted.

(i) Archery ranges.

(ii) Asphalt batching plants or concrete batching plants.

(iii) Commercial dog kennels.

(iv) Miniature golf courses or driving ranges.

(v) Raising for sale of birds, bees, fish, rabbits, and other small animals.

(vi) Rifle or pistol ranges, trap, or skeet shooting.

(vii) Sawmill or cutting timber not grown on the premises.

(viii) Cemetery for pets.

(ix) Frog or fish farms

(x) Mobile home for living quarters.

(xi) Equipment storage yards accessory to a business office.

(xii) Storage of commercial vehicles.

(xiii) Fences up to seven feet in height in the front yard.

7. Development Areas. The areas labeled "Development Area 01" and "Development Area 02" on the Site Overview sheet of the Master Plan for East Ashland, prepared by Lessard Group and Higgins & Gerstenmaier, dated 4/6/10, will be in general conformity with the Master Plan. These areas must comply with the "East Ashland Design Guidelines" dated April 6, 2010, but may be modified in accordance with the following requirements (based on the development of the whole Property) and as approved by the Planning Director:

   A. The number of multi-family units does not exceed 286 units.

   B. There is a minimum of 64,600 square feet of office space.

   C. There is a minimum of 45,600 square feet of office/retail space.

   D. The road network remains relatively the same.

   E. The same amount of open space is provided.

8. HVAC and Trash Receptacles. Mechanical units and trash receptacles shall be screened in a manner that is architecturally compatible, including materials and color, with the structure served. Any mechanical units placed on the rooftops of buildings shall be screened by architectural features which are compatible with the architecture of the building façade. The method of screening shall be included on the building elevations to be reviewed and approved by the Planning Director prior to site plan approval.

9. Low Impact Development (LID). The development shall incorporate LID techniques throughout the project. The exact methods to be used and that are feasible for the project shall be determined at the time of subdivision and/or site plan process.

10. Age Restriction. The dwellings identified at the time of site plan/subdivision approval are intended to be occupied only by persons age 55 years and older and the occupancy of these dwellings shall comply with the provisions of the Virginia Fair Housing Law (found at Section 39-96.7 *et seq.* of the Code of Virginia). Persons under the age of 19 shall not be housed or domiciled and shall not reside on the Property. A covenant shall be recorded to limit the use and occupancy of the dwellings as specified above; the owners' association shall be responsible for the enforcement of the covenant.

11. Age-Restricted Unit.

   A. A minimum of twenty-two (22) age-restricted dwelling units shall be provided within the overall project (the Town of Ashland property and/or the County of Hanover Property).

   B. Any age-restricted dwelling unit shall be exempt from the payment of the Public School portion of the cash proffer ($8,989) as set forth in Proffer 1 above.

C. All Age-restricted units shall be identified on the site plan and/or construction plans prior to site plan and/or construction plan approval.

12. Entrance Opposite Woodside Lane.

A. Acquisition. The Owners shall make a good faith effort to acquire GPIN 7880-72-5367 (the "Dyson Property") for the purpose of creating an entrance to the Property opposite Woodside Lane across State Route 54.

B. Reservation of right-of-way for entrance. If the Owners acquire the Dyson Property, the Owners shall reserve a fifty foot right-of-way in the area generally shown on Exhibit A for the entrance opposite Woodside Lane. This right-of-way shall be dedicated by the Owners to Hanover County or VDOT upon request of the County or VDOT, free of cost and encumbrances restricting the right-of-way for road purposes. If, within the first 10 years after the date of this rezoning, the Board of Supervisors determines that this entrance road is required to serve the Property and VDOT approves all necessary permits, the Owners will construct a two lane road as generally shown on Exhibit A; provided however, the Owners shall not be responsible for the acquisition or dedication of right-of-way, other than that on the Property and the Dyson Property. If VDOT and the County approve the design for a public road, the right-of-way reserved shall be adequate for a two lane public road. If the Owners decide that a commercial entrance is to be utilized, the Owners shall reserve the right-of-way, as determined to be necessary by the County, for the commercial entrance. The reservation of right-of-way shall be determined and made at the time of site plan or construction plan approval for the affected section.

C. Effect of reservation of right-of-way on Site Entrance 3. If the Owners reserve the right-of-way for an entrance opposite Woodside Lane, then construction of the road identified as Site Entrance 3 shall not be required; however, the owner shall reserve fifty feet of right-of-way as generally shown on Exhibit A, and shall dedicate the right-of-way to Hanover County or VDOT upon request of the County or VDOT, free of cost and encumbrances restricting the right-of-way for road purposes.

BE IT FURTHER ORDAINED that this Ordinance is effective on the date of adoption and the Planning Director is hereby directed to designate the boundaries of the foregoing area as rezoned, subject to conditions, on the Zoning District Map of Hanover County.

On motion of Mr. Stanley, seconded by Mr. Wade, the members of the Board of Supervisors voted to approve Ordinance C-7-09(c), Am. 1-13, Harris & Douglas Properties, L.L.C., as follows:

	Vote:
W. Canova Peterson, IV	Aye
Sean M. Davis	Aye
Wayne T. Hazzard	Aye
Angela Kelly-Wiecek	Aye
Aubrey M. Stanley	Aye
G. E. Via, III	Aye
Elton J. Wade, Sr.	Aye

Public Hearings:

Planning Commission June 20, 2013

Board of Supervisors July 24, 2013

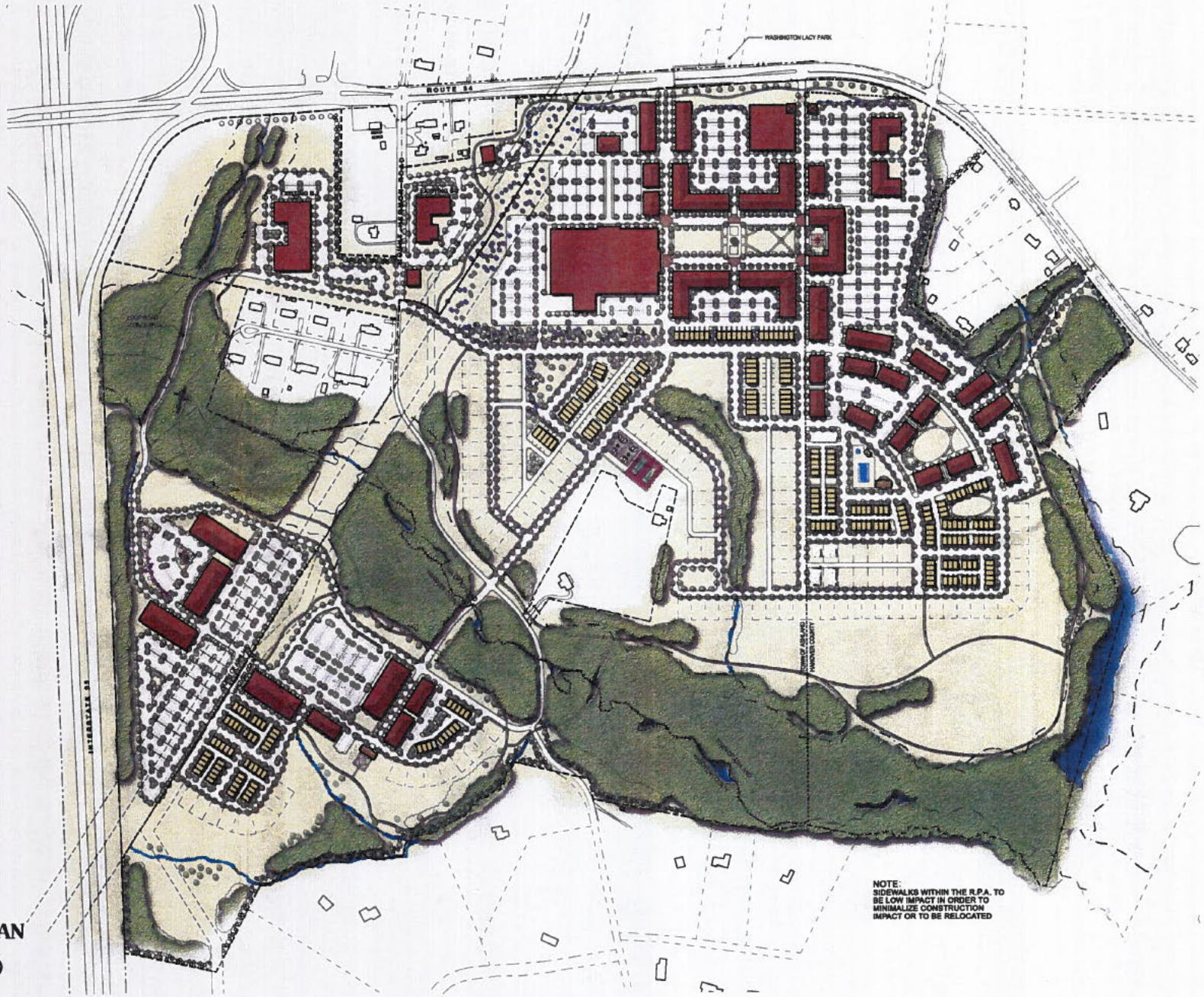
Adopted July 24, 2013

This is to certify that the above is a true copy C-7-09(c), Am. 1-13, adopted by the Hanover County Board of Supervisors on July 24, 2013.

Dated: July 29, 2013

Cecil R. Harris, Jr., County Administrator
Clerk, Hanover County Board of Supervisors

GJWB/sm/hte



East Ashland
Hanover County, VA

MASTER PLAN

lessard group

Higgins & Gerstenmaier

Town of Ashland Approvals

20251120000120960 DEED BK: 3432 Pg: 40
11/20/2025 09:55 AM Pages: 13
OTHER (LAND RECORD)
FRANK D. HARGROVE JR., CLERK
BY: SWEBB HANOVER CO. VA

Town of Ashland
Rezoning REZ24-0325 & ORD2024-12
Iron Horse Business Park

Property Owner Name and Address:

TRADEPORT ASHLAND LAND LLC
1984 Issac Newton Sq. W. Suite 102
Reston, VA 20190

Applicant's Name

Eric Wells
WestDulles Properties Inc.
1984 Issac Newton Sq. W. Suite 102
Reston, VA 20190

Property Address/GPIN:

Address: N/a

GPIN(s): 7880-61-7681, 7880-61-4768, 7880-60-4701, 7880-61-6987, 7880-72-0523, 7880-60-4343, 7880-60-1053

Description of Property:

The subject properties are located along the southern line of East Patrick Henry Road (State Route 54), approximately 700 feet west of its intersection with Woodside Lane. The properties measure 102.051 acres in total. The area is mostly cleared and wooded. The future land use for the site includes Government, Interstate Commercial, Town Edge, and Traditional Neighborhood.

Requested Use for the Property:

Rezone properties from their current mixed-use commercial and residential zoning designations (PSC, PUD, and RR-1) to interstate commercial and industrial zoning (B-2 and M-1). The property will host data centers and substations.

PROFFERS

The undersigned, owner of the property identified as GPIN Nos. 7880-61-7681, 7880-61-4768, 7880-60-4701, 7880-61-6987, 7880-72-0523, 7880-60-4343 and 7880-60-1053 located in the Town of Ashland, Virginia (the "Property"), hereby voluntarily proffers for itself, its personal representatives, successors and assigns (collectively, the "Property Owner") that, in the event the Property is rezoned from PSC, PUD and RR-1 to B-2 (+/- 13.351 acres) and M-1 (+/- 88.70 acres), the development and use of the Property will be subject to the following conditions which will replace in their entirety, all previous proffers applicable to the Property:

1. Definitions. All capitalized terms used herein, which are not otherwise defined herein, will have the following meaning:

   a. *Concept Plan* means that certain plan entitled "IRON HORSE DATA CENTER CONCEPT PLAN", prepared by Timmons Group, dated September 19, 2024, and attached hereto as **Exhibit A**.

   b. *County* means Hanover County, Virginia.

   c. *Data Center Use* means any use of the Property for data processing, which includes data centers, data equipment, data storage and other technological services, for the creation of a technology park for the storage of data, such as data processing centers, internet service providers (ISPs), search portals, and related services, such as offices.

   d. *Data Center Campus* means the portion of the Property to be used exclusively for Data Center Uses.

   e. *Data Center Elevations* mean the renderings entitled "WestDulles/Ironhorse Data Center Elevation Examples," dated September 19, 2024, attached hereto as **Exhibit B**.

   f. *Data Center Landscape Plans* mean the plans prepared by LandDesign and MGMA, entitled "IRON HORSE DATA CENTER" and designated as Sheets L-100, L-101, L-102, L-102A, L-103, l-103A and L104, attached hereto as **Exhibit C**.

g. *Jurisdictional Boundary* means the jurisdictional boundary line separating the Town and the County.

h. *Project* means that area of real property located within the Town and the County and as shown as "SITE PROPERTY LINE" on the Concept Plan. It is understood that reference to the Project within these proffers only apply to the portion of the Project located within the Town.

i. *Property* means GPIN Nos. 7880-61-7681, 7880-61-4768, 7880-60-4701, 7880-61-6987, 7880-72-0523, 7880-60-4343 and 7880-60-1053 located in the Town.

j. *Town* means the Town of Ashland, Virginia.

2. BMPs/Retention Ponds. Any retention pond or BMP facilities on the Property will be maintained in accordance with all applicable laws, rules, regulations, and the Town's Maintenance Agreement and any wet pond will be aerated.

3. Hours of Construction. The hours of any land disturbance activities, including operating of bulldozers and other earthmoving equipment, within five hundred (500) feet of any existing single-family home, will be limited to between 7:00 a.m. and 7:00 p.m. (or dusk, whichever is earlier), except in emergencies or where unusual circumstances require extending the specific hours in order to complete work, such as concrete pours or utility connections. Signs, in both English and Spanish, stating the above referenced provisions will be posted and maintained at all construction entrances to the Property prior to any land disturbances activities thereon.

4. Construction Entrance. Any construction entrance for use by construction vehicles (not including maintenance and repair) must have a mud wash for the washing of construction vehicle tires as necessary to prevent mud and debris from getting on public roads when leaving the Property.

5. Severance. The unenforceability, elimination, revision or amendment of any proffered condition set forth herein, in whole or part, will not affect the validity or enforceability of the other proffered conditions or the unaffected part of any such proffered condition.

6. Concept Plan. The Property will be developed in substantial conformance with the Concept Plan and subject to the requirements and adjustments permitted in the conditions and notes stated therein and these proffered conditions. All parcel lines, private road locations, access points and entrances, pedestrian pathways or sidewalks, boundaries of buildable areas, accessory use locations, utility locations (including substations), stormwater management facilities, and dimensions of undeveloped areas shown on the Concept Plan may be adjusted for purposes of final engineering of site or subdivision plans (for multiple phases) and to further allow for compliance with the requirements of state and federal agency regulations including, but not limited to, Virginia Department of Historical Resources, Virginia Department of Transportation ("VDOT"), Virginia Department of Conservation and Recreation, Virginia Department of Environmental Quality, U.S. Army Corps. of Engineers, and the Town's Zoning Ordinance, Subdivision Ordinance, and other applicable design standards. The determination as to whether adjustments are in substantial conformance with the layout illustrated on the Concept Plan will be made by the Director of Planning. The Concept Plan shows areas of the Project designated as "PROPOSED DEVELOPMENT AREA" (the "Development Area"), which is located across the Jurisdictional Boundary and it is intended that a building may be constructed across the Jurisdictional Boundary so long as any building is contained within the Development Area.

7. Construction Traffic. Construction vehicles servicing the Property will only be permitted to access the Property by way of East Patrick Henry Road (State Route 54).

8. Protective Covenants. Prior to, or concurrent with, the approval of any site plan on the Data Center Campus, there will be recorded a document in the Clerk's Office of the Circuit Court of the County setting forth controls on the development, architectural compatibility and maintenance of the Property (the "Covenants"). Different Covenants may be provided for various portions of the Property provided a property owners' association will be responsible for the maintenance of all common areas within the relevant portion of the Property, as set forth in the Covenants. Notwithstanding the foregoing, if the entire Data Center Campus (less any areas dedicated to a public entity) is owned in fee by the same owner (but not including any governmental entity or quasi-governmental entity, such as the Town, VDOT, or Dominion Energy, Inc. ("Dominion Power")), the Covenants will not be required as set forth herein.

9. Signs. With the exception of on-site directional signs, all free standing signs will be monument type. Such signs may be either internally illuminated or lit with down lighting; directional signs will be internally illuminated only. Building or façade

mounted signs will not be illuminated. The materials and design of any signs will be compatible with the proposed materials and architectural theme of the proposed structures.

10. Lighting. No wall pack lighting will be permitted on exterior building walls facing and adjoining property currently used for residential purposes unless required by the applicable Building Code or Town Code.

11. Trash Enclosures. Any proposed enclosure area for dumpsters, if provided, that can be seen from a public right-of-way (not including Interstate 95) or existing residential homes must be constructed of masonry, tilt, or other cementitious product on three (3) sides that is complementary to the buildings and the fourth side must be gated with an opaque material. Any such trash enclosures will be additionally screened from view with landscaping or other screening materials.

12. Uses. Only the following uses will be permitted on the Property:

    a. Data Center Uses.

    b. Uses related to Data Center Uses, including, but not limited to (i) electric generation, distribution, transmission and substation facilities (including solar facilities designed to serve the electricity or thermal needs of any building used for a Data Center Use located on the same parcel as the solar facility), (ii) energy and fuel storage facilities, (iii) security buildings and facilities, (iv) storage, logistics and maintenance buildings and facilities, (v) water and sewer facilities, (vi) water and sewer treatment facilities, (vii) water storage facilities (storm water, potable and non-potable water) and associated water pumps, (viii) communication, broadband, fiber optic utilities and facilities, and (ix) and other private utilities, all public utilities, and other supporting uses that relate to and support Data Center Uses.

13. Outside Storage. Outside storage of materials or supplies will be prohibited, however, this will not preclude the loading, unloading, or parking of trucks or trailers in designated loading and parking areas.

14. Elevations. Buildings used for Data Center Uses will (i) generally be in conformance with the Data Center Elevations with respect to quality of design, massing, architecture, and variety of features and (ii) principal building facades will meet the following standards:

a. For the purposes of this subsection, the term "principal building facades" will include all building facades substantially visible to abutting public roads or adjacent to planned or existing residential or agricultural districts.

b. Principal building facades will avoid the use of undifferentiated surfaces by including at least four (4) of the following design elements:
   i. change in building height
   ii. building step-backs, projections or recesses
   iii. fenestration
   iv. changes in building material, pattern, texture, color
   v. use of accent material
   vi. overhangs
   vii. canopies or porticos
   viii. arcades
   ix. variations in the roof line

c. Principal building facades will use one or more neutral colors (such as taupe, tan, brown, beige, ivory, cream, white, black, grey) with accent colors to complement the dominant building color. High contrast colors will be avoided.

d. When a building has more than one principal facade, such facades will be consistent in their design, materials, details, and treatments.

e. Building elevations must be submitted with the site plan application for each building. In the event a building's architectural style is not in accordance with the foregoing, deviations may be approved by the Planning Director, upon the Planning Director's finding that the deviations are generally in keeping with the spirit and concept of the illustrations.

15. Building Materials. Exposed exterior wall surfaces (above finished grade) of all individual buildings (excluding rooftop screening materials for mechanical equipment) must be constructed with one or more of the following siding materials: decorative concrete block (including, without limitation, split face block, smooth face block, fluted block, and ground face block), tilt-up or pre-cast concrete, brick, brick veneer, glass, metal (other than corrugated metal), stone, cast stone, stone veneer, stucco, synthetic stucco, glass block, cementitious siding, insulated panels, concrete tile, or ceramic tile, unless other material is approved at time of site plan review. In no case will unpainted concrete block, unfinished corrugated metal, or

unfinished sheet metal be permitted. For purposes of these proffered conditions, "wall surfaces" will not be deemed to include columns, pilasters, trim, gutters, accent materials, architectural features, windows, doors, bay doors, piers, wall sections and headers near roll up doors and loading doors.

16. Building Setbacks. Any building will be set back at least two hundred feet (200') from the exterior boundary lines of the Project, which such setback will be measured from the ultimate right-of-way line of the Project after any right-of-way dedications (the "Setback Line"). The Setback Line is more particularly shown on the Concept Plan as "200' SITE SETBACK" and is intended that no building setback will be required by this proffer with respect to the Jurisdictional Boundary or any internal parcel, lot, property or boundary line, regardless of fee ownership, such that a building, access road, parking, stormwater facility or other improvement may be constructed across the Jurisdictional Boundary.

17. Building Height. Any building constructed on the Property will be subject to the Town Zoning Ordinance and any conditions of a special exception granted for height of buildings.

18. Buffers. The exterior boundary lines of the Project will contain a buffer a minimum of one hundred fifty feet (150') in width as generally shown on the Concept Plan as "Natural Buffer" and developed generally as shown on the Data Center Landscape Plans. Any trees within such buffer will remain undisturbed; provided, however, this will not prevent the removal of trees necessary for the construction of drainage or public utility improvements, access drives, or the planting of other trees pursuant to an approved landscape plan. Further, any buffer required herein will include supplemental plantings necessary to provide additional screening from Route 54 adjoining such buffer and for existing single-family dwellings adjoining the Property or across Mount Hermon Road as determined at the time of landscape plan review. Supplemental landscaping will be provided from time to time if any trees or landscaping is removed or dies and is necessary to provide screening for Route 54 adjoining such buffer and for existing single-family dwellings adjoining the Property or across Mount Hermon Road. No buffer will be required by this proffer with respect to the Jurisdictional Boundary or any internal parcel, lot, property or boundary line, regardless of fee ownership. Any buffer required by this proffer will be measured from the ultimate right-of-way of Route 54 or Mount Hermon Road, as the case may be, after any dedications and widening of such roads by the Property Owner, including required turn lanes.

19. Security and Fencing. Fencing, security gates, and guard buildings may be installed to surround the perimeter of the Project or any portion thereof, but inside of any buffer required herein. Security fencing will also be installed around the perimeter of any substation serving a Data Center Campus unless otherwise approved at the time of site plan review. Fencing will appear generally as shown on the Iron Horse Data Center Fencing Exhibit dated February 23, 2024, attached hereto as **Exhibit D**, and will not be chain-link, and will not include barbed wire. The design and final location of the perimeter fencing and security fencing must be approved at the time of site plan review and approval.

20. Noise Control. The applicant will engage a certified professional to conduct a noise study for any building on the Data Center Campus within thirty (30) days of the date such building becomes operational. The noise study will include recommendations for any necessary mitigation measures required to ensure conformity with the requirements of the Town Code. Such recommended mitigation measures will be implemented within sixty (60) days after the noise study, unless a particular mitigation measure will be implemented within a longer period of time as approved by the Planning Director. Any required mitigation measures may be noted on the approved plans as an administrative amendment. Any required mitigation measures may be noted on the approved plans as an administrative amendment. In addition to the foregoing, physical sound attenuation on any mechanical equipment (including but not limited to ground supported barriers, earthen berms, mechanical screening or other attenuation techniques as specifically called out in subsequent sound studies) will be installed for any building on the Data Center Campus that is located within 1,000 feet of any adjoining residential home and that is either (i) installed on the rooftop of such building or (ii) installed on the exterior side of such building and directly facing such residential home, in each case unless a noise study demonstrates that there is no incremental noise from such mechanical equipment as a result of the foregoing installation locations. Emergency operations will adhere to Virginia Department of Environmental Quality requirements and/or other relevant federal regulation. There will be no exterior alarms or speaker systems permitted on any building located on the Data Center Campus except for emergency alarms and alarms or beepers located on vehicles. Testing of any back-up generators on the Data Center Campus will be limited to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, unless otherwise required by applicable state or federal law or regulation.

21. Open Space. No less than thirty percent (30%) of the Property will be open space, buffers and undeveloped land not consisting of buildings, structures,

parking areas and drive aisles.

22. Transportation Improvements.

a. Phasing. Prior to any site plan approval, a phasing plan for all improvements required herein will be submitted to and approved by the Town. The improvements will be made in accordance with the approved phasing plan to the extent not otherwise completed. Prior to each site plan approval, an update of such phasing plan for these road improvements will be submitted to and approved by the Town.

b. Entrances. Entrances will be installed at the general locations shown on the Concept Plan. The final locations and design of the entrances will be completed as required during the site plan review and approval process, subject to the approval of the Town.

c. Turn Lanes. Any turn lanes warranted by the Town will be constructed in accordance with VDOT standards. The final locations and design of any turn lanes will be completed as required during the site plan review and approval process. Any work done outside the Town limits is subject to the approval of VDOT.

d. Internal Roads. Roads internal to the Property will be private. The final locations and design of the internal roads will be completed as required during the site plan review and approval process.

e. Entrance at Route 54. The development of the entrance shown on the Concept Plan located on Route 54 within the Town will include one (1) eastbound right turn lane and one (1) westbound left turn lane on Route 54 into such entrance.

f. Mount Hermon Road Access. The entrance shown on the Concept Plan located Mount Hermon Road (the "Mount Hermon Access") may only be used as an emergency access until such time as (a) the Mount Hermon Road Route 54 Access Improvements (as defined below) are completed, and (b) the Mount Hermon Road Impact Fees (as defined below) are made as required herein.

g. Route 54 at Mount Hermon Road. To the extent a connection from the Property to Mount Hermon Road is requested (other than an emergency

only access), the Mount Hermon Road and Route 54 intersection will be constructed to modify the Route 54 eastbound approach to have one (1) left turn lane, one (1) through lane, and one (1) right turn lane all as more generally shown on the plan entitled "IRON HORSE DATA CENTER CONCEPTUAL IMPROVEMENT EXHIBIT ROUTE 54 AND MT. HERMON ROAD" dated October, 2024, attached hereto as **Exhibit E** (the "Mount Hermon Road Route 54 Access Improvements").

h. Right-of-Way Dedication. The Property Owner will dedicate right-of-way along the south side of Route 54 adjoining the Property where right-of-way is needed for future road widening of fifty (50) feet from the centerline of Route 54. The Property Owner will also dedicate right-of-way along the east side of Mount Hermon Road adjoining the Property where right-of-way is needed for future road widening of twenty-five (25) feet from the centerline of Mount Hermon Road. Dedication in both instances will take place when requested by the Town.

i. Transportation Impact Fees. The Property owner, for itself, and its successors and assigns, agrees to pay the Town, or its assigns, the amount of $135,000.00 to be used for Mount Hermon Road and Rt. 54 improvements (the "Mount Hermon Road Impact Fees"), and the amount of $80,000.00 to be used for Route 54 and Interstate 95 interchange improvements (the "54/95 Impact Fees"). The Mount Hermon Road Impact Fees will be paid to the Town prior to the use of the Mount Hermon Access for any purpose other than for emergency use. The 54/95 Impact Fees will be paid to the Town as follows: one half of the 54/95 Impact Fees will be paid prior to a certificate of occupancy for the first building located on the Property, and the remainder of the 54/95 Impact Fees will be paid prior to a total of 1,000,000 or more square feet of building space with a certificate of occupancy on the Property. In the event Impact Fees are paid and are not used for such improvements, the Town will return the funds paid to the Owner or its successors in title within the timeframe required by Virginia Code Section 15.2-2303.2.

23. Mechanical Equipment Screening. Exterior mechanical equipment (including units used for heating, ventilation, air conditioning, permanent electrical generators, refrigeration equipment and ductwork, backflow prevention devices and similar feature) visible from a public right-of-way or existing residential homes will be screened from view by persons on any public rights-of-way immediately adjoining the Property or from adjacent residential homes must be screened by (a) if on a roof, by a parapet wall, roof screen, or similar

device that is integrated into the building's building form and of a height equal to or greater than the height of the mechanical equipment being screened, or (b) if on or near ground-level, or otherwise mounted on a building wall, must be screened by any combination of sight-obscuring vegetation or decorative walls or fences that incorporates at least one of the primary materials or colors of the nearest wall of the primary structure on the lot. The height of the vegetation, wall, or fence will equal or exceed that of the mechanical equipment being screened. Perforated surfaces on screening walls as necessary to permit ventilation of such mechanical equipment while still providing adequate screening will be permitted.

24. Pedestrian Path on Route 54. A minimum 10-foot wide shared use path to be located within the right-of-way along Route 54 across the frontage of the Property will be constructed pursuant to VDOT standards as required at the time of plans review.

[Signatures on following page.]

These proffers are being submitted prior to the Ashland Town Council Public Hearing on this request, scheduled to occur on October 15, 2024.

Andrew M. Condlin, by Power of Attorney
Date: 10/15/2024

COMMONWEALTH OF VIRGINIA,
CITY OF RICHMOND, to-wit:

I, Tracy Gibrall Craddock, a Notary Public for the Commonwealth of Virginia, do hereby certify that Andrew M. Condlin, whose name is signed to the above, bearing date on the 15th day of October, 2024, has acknowledged the same before me in the jurisdiction aforesaid.

Given under my hand this 15th day of October, 2024.

Tracy Gibrall Craddock (SEAL)
Notary Public

Tracy Gibrall Craddock
Commonwealth of Virginia
Notary Public
Commission No. 7714399
My Commission Expires 11/30/2025

My commission expires: 11/30/2025

Registration number: 7714399

Town of Ashland
Rezoning REZ24-0325 & ORD2024-12
Iron Horse Business Park

Property Owner Name and Address:

TRADEPORT ASHLAND LAND LLC
1984 Issac Newton Sq. W. Suite 102
Reston, VA 20190

Applicant's Name

Eric Wells
WestDulles Properties Inc.
1984 Issac Newton Sq. W. Suite 102
Reston, VA 20190

Exhibits:

Due to size and color, all Exhibits are recorded with the Town of Ashland on their Municode Land Use and Recordation Book online with the Town Code. (www.AshlandVa.gov)

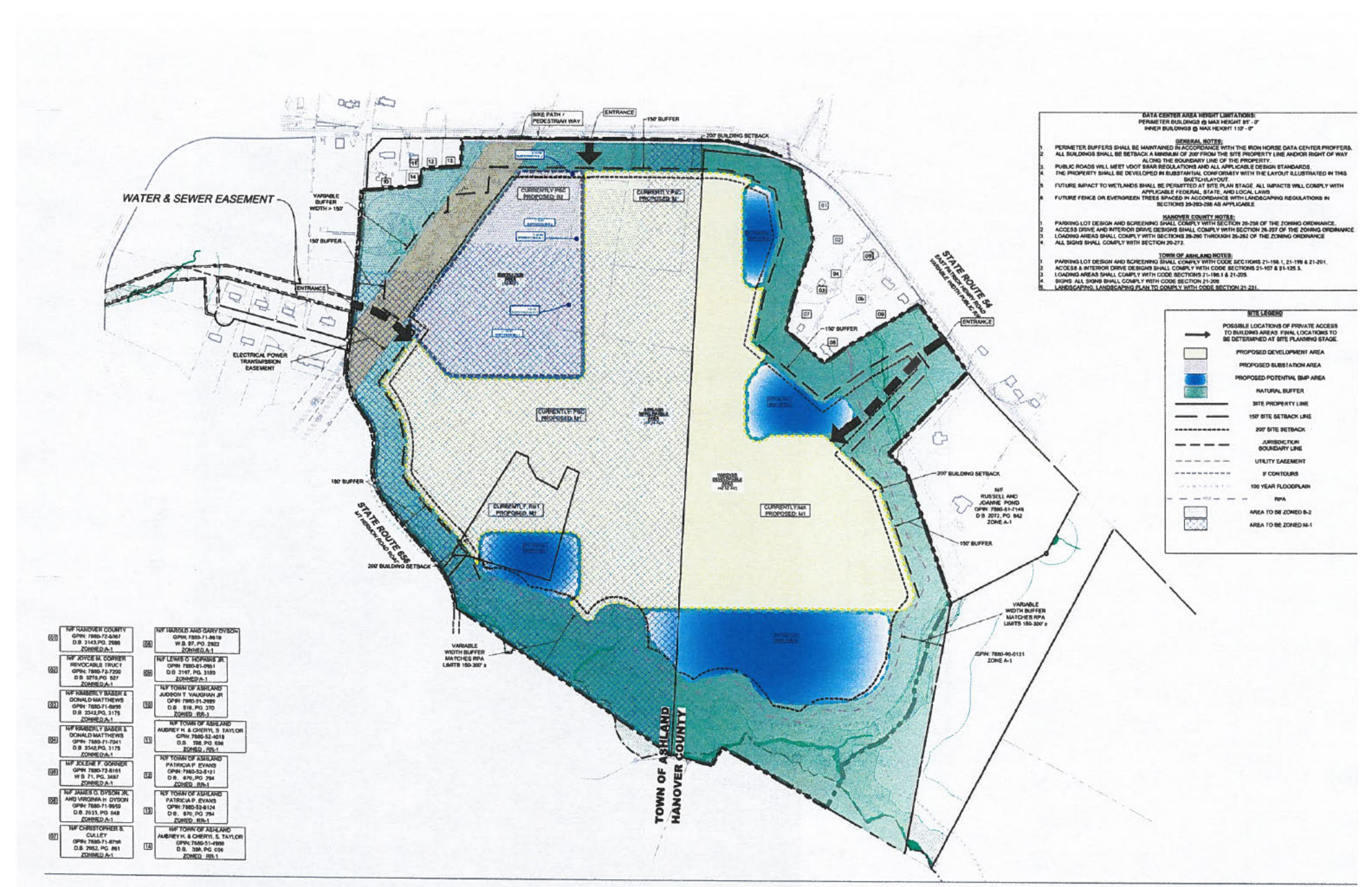
Exhibit A: "Iron Horse Data Center Concept Plan, prepared by Timmons Group, dated September 19, 2024. The document is in color and measures 36 inches by 24 inches.

Exhibit B: Color renderings entitled "WestDulles/Ironhorse Data Center Elevation Examples" dated September 19, 2024. (3 pages)

Exhibit C: Entitled " Iron Horse Data Center" prepared by LandDesign and MGMA. (7 pages L-100, L-101, L-102, L-102A, L-103, L-103A, and L-104)

Exhibit D: Entitled "Iron Horse Data Center Fencing Exhibit – February 23, 2024. The document is in color and measures 36 inches by 24 inches.

Exhibit E: Entitled "Iron Horse Data Center Conceptual Improvement Exhibit Route 54 and MT. Hermon Road – October 2024. Document is 11 inches by 17 inches.



01	N/F HANOVER COUNTY GPIN: 7880-72-5767 D.B. 3143,PG. 2986 ZONED A-1	06	N/F HAROLD AND GARY DYSON GPIN: 7880-71-8619 W.B. 87, PG. 2922 ZONED A-1
02	N/F JOYCE M. OSHNER REVOCABLE TRUST GPIN: 7880-72-7200 D.B. 3276,PG. 527 ZONED A-1	09	N/F LEWIS O. HOPKINS JR. GPIN 7880-81-0951 D.B. 3187, PG. 3189 ZONED A-1
03	N/F KIMBERLY BABER & DONALD MATTHEWS GPIN: 7880-71-6956 D.B. 3142,PG. 3179 ZONED A-1	10	N/F TOWN OF ASHLAND JUDSON T. VAUGHAN JR GPIN: 7880-91-2999 D.B. 516, PG. 270 ZONED RR-1
04	N/F KIMBERLY BABER & DONALD MATTHEWS GPIN: 7880-71-7041 D.B. 3142,PG. 3179 ZONED A-1	11	N/F TOWN OF ASHLAND AUBREY H. & CHERYL S. TAYLOR GPIN: 7880-52-4019 D.B. 788, PG. 636 ZONED RR-1
05	N/F JOESHE F. OSHNER GPIN 7880-72-8161 W.B. 71, PG. 3487 ZONED A-1	12	N/F TOWN OF ASHLAND PATRICIA P. EVANS GPIN 7880-53-8131 D.B. 870, PG 794 ZONED RR-1
08	N/F JAMES O. DYSON JR. AND VIRGINIA H. DYSON GPIN: 7880-71-9950 D.B. 2033, PG. 648 ZONED A-1	13	N/F TOWN OF ASHLAND PATRICIA P. EVANS GPIN: 7880-53-8124 D.B. 870, PG 794 ZONED RR-1
07	N/F CHRISTOPHER S. CULLEY GPIN: 7880-71-8798 D.B. 2952, PG. 861 ZONED A-1	14	N/F TOWN OF ASHLAND AUBREY H. & CHERYL S. TAYLOR GPIN: 7880-51-4998 D.B. 398, PG. 636 ZONED RR-1

DATA CENTER AREA HEIGHT LIMITATIONS:
PERIMETER BUILDINGS @ MAX HEIGHT 85' - 0"
INNER BUILDINGS @ MAX HEIGHT 110' - 0"

GENERAL NOTES:
1. PERIMETER BUFFERS SHALL BE MAINTAINED IN ACCORDANCE WITH THE IRON HORSE DATA CENTER PROFFERS.
2. ALL BUILDINGS SHALL BE SETBACK A MINIMUM OF 200' FROM THE SITE PROPERTY LINE AND/OR RIGHT OF WAY ALONG THE BOUNDARY LINE OF THE PROPERTY.
3. PUBLIC ROADS WILL MEET VDOT SSAR REGULATIONS AND ALL APPLICABLE DESIGN STANDARDS.
4. THE PROPERTY SHALL BE DEVELOPED IN SUBSTANTIAL CONFORMITY WITH THE LAYOUT ILLUSTRATED IN THIS SKETCH/LAYOUT.
5. FUTURE IMPACT TO WETLANDS SHALL BE PERMITTED AT SITE PLAN STAGE. ALL IMPACTS WILL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS.
6. FUTURE FENCE OR EVERGREEN TREES SPACED IN ACCORDANCE WITH LANDSCAPING REGULATIONS IN SECTIONS 26-283-286 AS APPLICABLE

HANOVER COUNTY NOTES:
1. PARKING LOT DESIGN AND SCREENING SHALL COMPLY WITH SECTION 26-258 OF THE ZONING ORDINANCE.
2. ACCESS DRIVE AND INTERIOR DRIVE DESIGNS SHALL COMPLY WITH SECTION 26-257 OF THE ZONING ORDINANCE
3. LOADING AREAS SHALL COMPLY WITH SECTIONS 26-260 THROUGH 26-262 OF THE ZONING ORDINANCE
4. ALL SIGNS SHALL COMPLY WITH SECTION 26-272.

TOWN OF ASHLAND NOTES:
1. PARKING LOT DESIGN AND SCREENING SHALL COMPLY WITH CODE SECTIONS 21-198.1, 21-199 & 21-201.
2. ACCESS & INTERIOR DRIVE DESIGNS SHALL COMPLY WITH CODE SECTIONS 21-107 & 21-125.3.
3. LOADING AREAS SHALL COMPLY WITH CODE SECTIONS 21-198.1 & 21-205.
4. SIGNS: ALL SIGNS SHALL COMPLY WITH CODE SECTION 21-209.
5. LANDSCAPING: LANDSCAPING PLAN TO COMPLY WITH CODE SECTION 21.231.

SITE LEGEND

- POSSIBLE LOCATIONS OF PRIVATE ACCESS TO BUILDING AREAS. FINAL LOCATIONS TO BE DETERMINED AT SITE PLANNING STAGE.
- PROPOSED DEVELOPMENT AREA
- PROPOSED SUBSTATION AREA
- PROPOSED POTENTIAL BMP AREA
- NATURAL BUFFER
- SITE PROPERTY LINE
- 150' SITE SETBACK LINE
- 200' SITE SETBACK
- JURISDICTION BOUNDARY LINE
- UTILITY EASEMENT
- 5' CONTOURS
- 100 YEAR FLOODPLAIN
- RPA
- AREA TO BE ZONED B-2
- AREA TO BE ZONED M-1

IRON HORSE DATA CENTER

CONCEPT PLAN - August 23, 2024

SCALE 1" = 200'
0 200' 400'

TIMMONS GROU
ENGINEERING | DESIGN | TECHNOLO

Exhibit B



Building step-backs and projections
Changes in building material, pattern, texture, & color
Neutral colors



Changes in building height
Changes in building material, pattern, texture, & color
Neutral colors
Use of accent material
Variations in the roof line
Main entrance feature



Changes in building material, pattern, texture, & color
Neutral colors
Fenestration
Variations in the roof line
Building step-backs, projections or recesses

EXHIBIT D

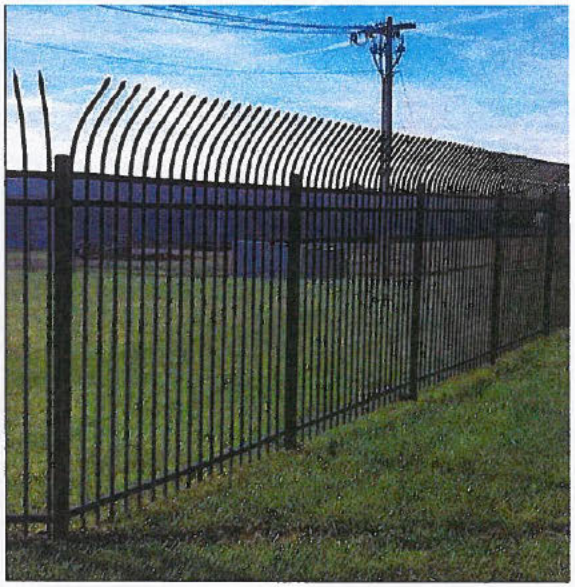
PERIMETER/SECURITY FENCING



EXAMPLE PERIMETER/SECURITY FENCING



EXAMPLE PERIMETER/SECURITY FENCING



EXAMPLE PERIMETER/SECURITY FENCING

NOTE:

1. PERIMETER FENCING MAY BE INSTALLED AROUND THE PERIMETER OF THE PROJECT OR AS OTHERWISE APPROVED BY THE PLANNING DIRECTOR AT THE TIME OF SITE PLAN REVIEW AND APPROVAL. THE DESIGN AND FINAL LOCATION FOR THE PERIMETER FENCING AND SECURITY FENCING SHALL BE APPROVED BY THE PLANNING DIRECTOR FOR CONSISTENCY IN THE CONCEPT PLAN AT THE TIME OF SITE PLAN REVIEW AND APPROVAL.
2. FENCING WILL BE A MINIMUM OF 6 FEET IN HEIGHT AND A MAXIMUM OF 7 FEET.
3. FENCING IMMEDIATELY ADJACENT TO PUBLIC OR PRIVATE STREETS SHALL NOT BE CHAIN-LINK, WITH OR WITHOUT SLATED INSERTS, AND SHALL NOT INCLUDE BARBED WIRE OR OTHER SIMILARLY VISIBLY INTRUSIVE DETERRENCE DEVICE.
4. SECURITY FENCING SHALL BE USED AROUND THE PERIMETER OF ANY SUBSTATION (UNLESS PROHIBITED BY DOMINION POWER), UNLESS OTHERWISE APPROVED BY THE PLANNING DIRECTOR AT THE TIME OF SITE PLAN REVIEW AND APPROVAL.
5. THE IMAGES ARE REPRESENTATIVE FENCING STYLES THAT WILL BE USED AS PERIMETER AND SECURITY FENCING THROUGHOUT THE PROJECT SITE.

TOWN OF Ashland VIRGINIA

December 17, 2024

Eric Wells
1984 Isaac Newton Sq. W. Suite 102
Reston, Virginia 20190

RE: REZ24-0325 & ORD2024-12 & CUP24-0325 (Height) & CUP24-0326 (Substation)

Dear Mr. Wells,

On October 15th, 2024, Ashland Town Council voted unanimously to **approve** REZ24-0325 Iron Horse Business Park and ORD2024-12 Iron Horse Business Park, which rezoned 102.051 acres from a mixture of PSC, PUD, and RR-1 to B-2 and M-1 as presented with proffers. Town Council then voted (4-1) to **approve** the Conditional Use Permit, CUP24-0325 Iron Horse Business Park (Height), to allow for buildings over 45 feet in height on 81.48 acres of the total property and CUP24-0326 Iron Horse Business Park (Substation) (5-0) to allow for the construction of substations on 16.4 acres of newly rezoned B-2 and M-1 properties.

To complete the CUP process, please return a signed and notarized copy of the attached conditions for recordation. These documents must be signed by the property owner and printed single-sided
If you have any questions regarding the recordation process, please get in touch with me at (804) 798-1073 or BLuckert@ashlandva.gov.

Sincerely,

Bannon Luckert

Bannon Luckert, Planner I/GIS Analyst
PLANNING AND COMMUNITY DEVELOPMENT

CC: Bob Roop, Timmons Group
Andy Condlin, Roth Jackson

Town of Ashland
Conditional Use Permit
CUP24-0325 Ironhorse Business Park (Height)

Property Owner Name and Address:

Tradeport Ashland Land, LLC
1984 Issac Newton Sq. W.
Suite 102
Reston, Virginia 20190

Applicant's Name:

Eric Wells
1984 Issac Newton Sq. W.
Suite 102
Reston, Virginia 20190

Address: 13058 Mount Hermon Road, Ashland, Virginia 23005

GPIN(s): 7880-61-4768, 7880-60-4701, 7880-61-6987, 7880-72-0523, 7880-60-4343, 7880-80-1053

Description of Property (Location, Land use, Zoning District, acreage, closest cross streets):

The property is located along the southern line of East Patrick Henry Road (State Route 54), approximately 700 feet west of its intersection with Woodside Lane. The Comprehensive Plan classifies the Future Land Use as Open Space, Interstate commercial, and Office/Industrial. The property is zoned M-1 Limited Industrial. The total acreage of the properties is 81.48 Acres.

Requested Use for the Property:

To allow for the construction of buildings taller than 45 feet in the M-1 portions of the properties identified as GPINs: 7880-61-4768, 7880-60-4701, 7880-61-6987, 7880-72-0523, 7880-60-4343, and 7880-80-1053. This is in accordance with Town Code Section 21-124 (b) Height Regulations.

Conditions:

1. The applicant shall participate as necessary in the recordation of this Conditional Use Permit in the Clerk's Office of the Hanover County Circuit Court.

2. Overall Maximum Building Height: No building on the Property shall exceed 110' in height.

3. Building Setback along Perimeter Boundary Line:
   A. Buildings between 45-85 feet tall shall have a minimum setback of 200'.
   B. For every one foot of height increase above 85 feet in building height, the building setback must increase by 6 feet. For example, a building with a height of 110 feet must have a minimum building setback of 350 feet.

TOWN OF ASHLAND

By _____
Joshua S. Farrar, Town Manager

STATE OF VIRGINIA}
To-Wit:
COUNTY OF HANOVER}

The foregoing instrument was acknowledged before me this _____ day of

_____ *2024,*

by _____.

Notary Public _____

My Commission Expires: _____

PROPERTY OWNER OR APPLICANT WITH COPY OF POWER OF ATTORNEY

Signature: _____

STATE OF VIRGINIA}
To-Wit:
COUNTY OF HANOVER}

The foregoing instrument was acknowledged before me this _____ day of

_____ 2024,

by _____

Notary Public _____

My Commission Expires_____

Town of Ashland
Conditional Use Permit
CUP24-0325 Ironhorse Business Park (Substation)

Property Owner Name and Address:

Tradeport Ashland Land, LLC
1984 Issac Newton Sq. W.
Suite 102
Reston, Virginia 20190

Applicant's Name:

Eric Wells
1984 Issac Newton Sq. W.
Suite 102
Reston, Virginia 20190

Address: 13058 Mount Hermon Road, Ashland, Virginia 23005

GPIN(s): 7880-61-7681, 7880-61-4768, 7880-60-4701

Description of Property (Location, Zoning District, acreage, closest cross streets):

The property is located along the southern line of East Patrick Henry Road (State Route 54), approximately 700 feet west of its intersection with Woodside Lane. The Comprehensive Plan classifies the Future Land Use as Open Space, Interstate commercial, and Office/Industrial. The property has a mix of zoning districts, including M-1 Limited Industrial and B-2 Highway Commercial. The total acreage of the properties is 16.4 Acres.

Requested Use for the Property:

To allow for two (2) electric substations in the B-2 and M-1 zoned properties as shown of the Concept Plan dated August 23, 2024, identified as GPINs: 7880-61-7681, 7880-61-4768, 7880-60-4701. This is in accordance with Town Code Section 21-119 (bg) and 21-101(be) Permitted Uses.

Conditions:

1. The applicant shall participate as necessary in the recordation of this Conditional Use Permit in the Clerk's Office of the Hanover County Circuit Court.

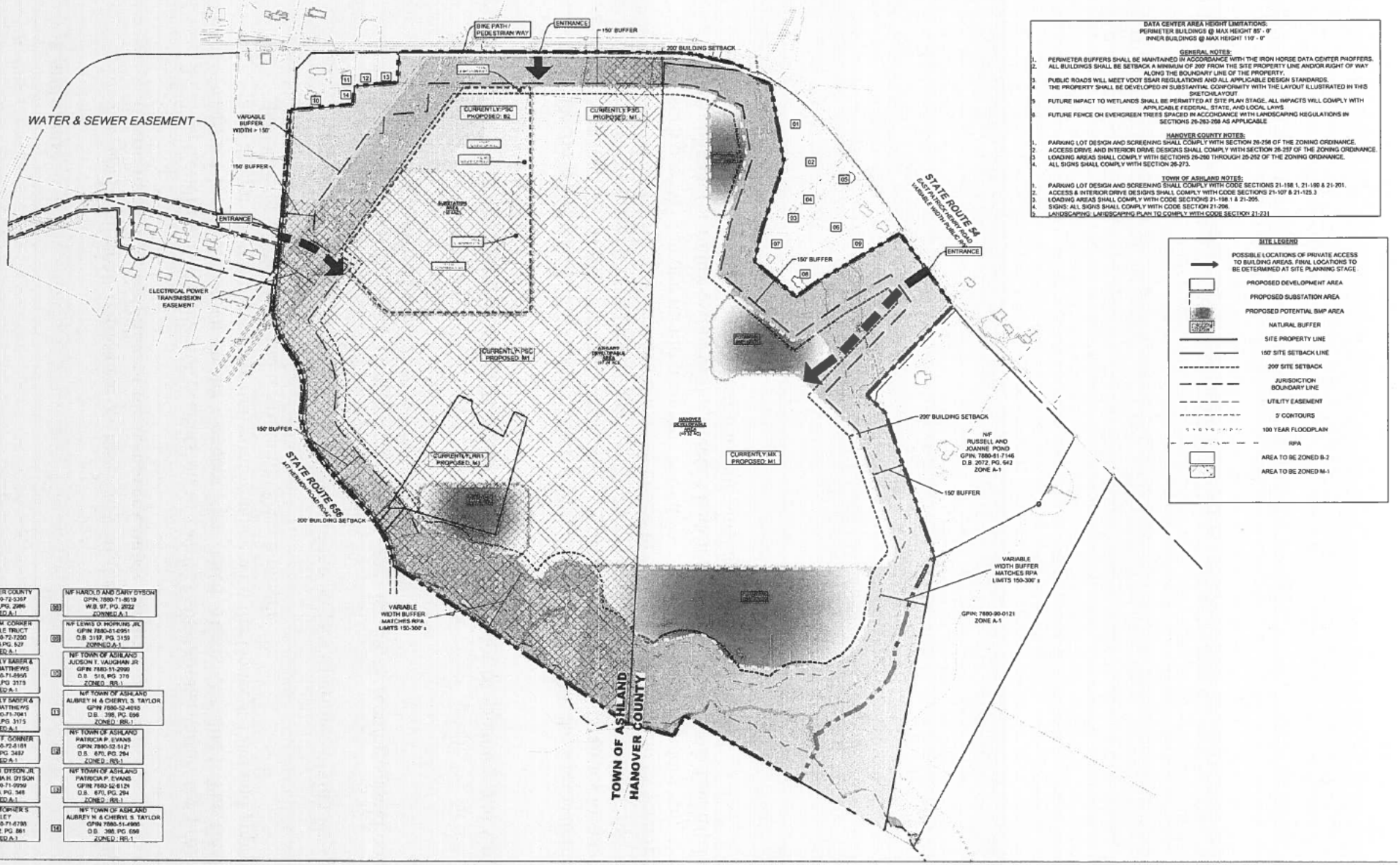
2. The Conditional Use Permit permits up to two (2) substations within the project in the general locations shown on the Concept Plan dated August 23, 2024. The final location and design must be in substantial conformance with the Concept Plan and approved by the Director of Planning and Community Development.

3. No substation may be located within 200 feet of the project's perimeter boundary property.

4. Substations must be fully screened from view from Rt. 54. Screening should consist of a mix of evergreen and deciduous trees and vegetation.

5. Substations shall be fully screened from residentially zoned property. Screening may consist of fencing or landscaping approved by the Director of Planning and Community Development.

6. Decommissioning of Electric Facilities - No less than ninety (90) days prior to the planned abandonment of the electric transmission and substation facilities located on the Property (the "Electric Facilities"), the Applicant (or future owner of the Electric Facilities) will provide written notice to the Town of its intent to abandon such use. Within one hundred eighty (180) days of the notice of abandonment, the Applicant (or future owner of the Electric Facilities) will dismantle the Electric Facilities and restore the Property to its natural state pursuant to the prevailing industry standards.



DATA CENTER AREA HEIGHT LIMITATIONS:
PERIMETER BUILDINGS @ MAX HEIGHT 85' - 0"
INNER BUILDINGS @ MAX HEIGHT 110' - 0"

GENERAL NOTES:

1. PERIMETER BUFFERS SHALL BE MAINTAINED IN ACCORDANCE WITH THE IRON HORSE DATA CENTER PROFFERS.
2. ALL BUILDINGS SHALL BE SETBACK A MINIMUM OF 200' FROM THE SITE PROPERTY LINE AND/OR RIGHT OF WAY ALONG THE BOUNDARY LINE OF THE PROPERTY.
3. PUBLIC ROADS WILL MEET VDOT SSAR REGULATIONS AND ALL APPLICABLE DESIGN STANDARDS.
4. THE PROPERTY SHALL BE DEVELOPED IN SUBSTANTIAL CONFORMITY WITH THE LAYOUT ILLUSTRATED IN THIS SKETCH/LAYOUT.
5. FUTURE IMPACT TO WETLANDS SHALL BE PERMITTED AT SITE PLAN STAGE. ALL IMPACTS WILL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS.
6. FUTURE FENCE OR EVERGREEN TREES SPACED IN ACCORDANCE WITH LANDSCAPING REGULATIONS IN SECTIONS 26-283-288 AS APPLICABLE.

HANOVER COUNTY NOTES:

1. PARKING LOT DESIGN AND SCREENING SHALL COMPLY WITH SECTION 26-256 OF THE ZONING ORDINANCE.
2. ACCESS DRIVE AND INTERIOR DRIVE DESIGNS SHALL COMPLY WITH SECTION 26-257 OF THE ZONING ORDINANCE.
3. LOADING AREAS SHALL COMPLY WITH SECTIONS 26-260 THROUGH 26-262 OF THE ZONING ORDINANCE.
4. ALL SIGNS SHALL COMPLY WITH SECTION 26-273.

TOWN OF ASHLAND NOTES:

1. PARKING LOT DESIGN AND SCREENING SHALL COMPLY WITH CODE SECTIONS 21-198.1, 21-198 & 21-201.
2. ACCESS & INTERIOR DRIVE DESIGNS SHALL COMPLY WITH CODE SECTIONS 21-107 & 21-125.3
3. LOADING AREAS SHALL COMPLY WITH CODE SECTIONS 21-198.1 & 21-205.
4. SIGNS: ALL SIGNS SHALL COMPLY WITH CODE SECTION 21-206.
5. LANDSCAPING: LANDSCAPING PLAN TO COMPLY WITH CODE SECTION 21-231

SITE LEGEND

- POSSIBLE LOCATIONS OF PRIVATE ACCESS TO BUILDING AREAS. FINAL LOCATIONS TO BE DETERMINED AT SITE PLANNING STAGE
- PROPOSED DEVELOPMENT AREA
- PROPOSED SUBSTATION AREA
- PROPOSED POTENTIAL SMP AREA
- NATURAL BUFFER
- SITE PROPERTY LINE
- 150' SITE SETBACK LINE
- 200' SITE SETBACK
- JURISDICTION BOUNDARY LINE
- UTILITY EASEMENT
- 5' CONTOURS
- 100 YEAR FLOODPLAIN
- RPA
- AREA TO BE ZONED B-2
- AREA TO BE ZONED M-1

IRON HORSE DATA CENTER

CONCEPT PLAN - August 23, 2024

SCALE 1"=200'
0 200' 400'

TIMMONS GROUP
ENGINEERING | DESIGN | TECHNOLOGY

TOWN OF ASHLAND

By _____
Joshua S. Farrar, Town Manager

STATE OF VIRGINIA}
To-Wit:
COUNTY OF HANOVER}

The foregoing instrument was acknowledged before me this _____ day of

_____ *2024,*

by _____.

Notary Public _____

My Commission Expires: _____

PROPERTY OWNER OR APPLICANT WITH COPY OF POWER OF ATTORNEY

Signature: _____

STATE OF VIRGINIA}
To-Wit:
COUNTY OF HANOVER}

The foregoing instrument was acknowledged before me this _____ day of

_____ 2024,

by _____

Notary Public _____

My Commission Expires_____

Traffic Study

(Appendix Available Upon Request)

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

7053 Celebration Park Avenue
Suite 300
Richmond, VA 23225

P 804.200.6500
www.timmons.com

To: Gretchen Biernot, AICP
Hanover County Planning Department

From: Thomas Ruff, PE, PTOE, AICP

RE: Iron Horse Data Center Rezoning TIA
Addendum for Removal of Site Entrance C on Mt. Hermon Road

Date: November 30, 2025

CC: Evan Robohm, PE (Timmons Group)

This addendum presents the findings of a change in trip distributions and subsequent traffic impact analysis prepared for WestDulles Properties' rezoning of the Iron Horse Data Center project in Hanover County and the Town of Ashland, Virginia. The latest edition of the TIA report was submitted on February 24, 2025. A copy of the original TIA is included in Appendix A.

Upon review of the February 2025 TIA, VDOT provided Hanover County with a final comment related to the proposed Site Entrance C located on Mt. Hermon Road. Changes to the site layout and agreements with the Town of Ashland required that Site Entrance C be converted from a full access entrance to emergency access only. Therefore, all trips associated with Site Entrance C needed to be relocated.

With Site Entrance C fully removed, the 30% of site traffic proposed for that entrance shift from Mt. Hermon Road to Site Entrance A. All 30% of trips intended to access Mt. Hermon Road in the study would shift to Site Entrance A given the I-95 proximity and Site Entrance A being the main entrance to the site, bringing the total up to 90% of the site trips entering via Site Entrance A.

As a result, the trips entering via the eastbound right on Route 54 at Site Entrance A would increase from 98 to 147 in the AM peak and from 18 to 27 in the PM peak. Exiting trips from northbound Site Entrance A would increase from 80 to 120 in the AM peak and from 21 to 62 in the PM peak. All trips that were previously entering or exiting Mt. Hermon Road have been removed and were shifted to through movements on Route 54 at the Mt. Hermon Road intersection. See updated Figures 7-1 and 7-2 at the end of this memo that documents the change in trip distribution and peak hour site generated trips. Changes were made to Intersections 8, A, and C only.

The resulting changes to the peak hour site generated trips on Figure 7-1 were applied to the 2033 Total Future Traffic Volumes shown on Figure 8-1 and the 2039 Total Future Traffic Volumes shown on Figure 9-1. See updated Figures 8-1 and 9-1 at the end of this memo.

The Synchro analysis was updated for only the 2 intersections that were affected by this change in trip distribution – the unsignalized intersections of Route 54 with Mt. Hermon Road and with Site Entrance A. All other analysis results remain the same as the February 2025 TIA.

Table 1 shows the analysis updates for intersections 8 and A under the new 2033 total future traffic volumes shown in Figure 8-1 and Table 2 shows the analysis updates for intersections 8 and A under the new 2039 total future traffic volumes shown in Figure 9-1.

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Table 1: Intersection Level of Service and Delay Summary
Revised 2033 Tota Traffic Volumes (Intersections 8 & Site Entrance A Only)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
8. Patrick Henry Hwy (E-W)	EB Left	150	8.8	A	4	43	8.5	A	2	32
Mt. Hermon Rd/Frances Rd (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	EB Right†		0.0	A	-	0	0.0	A	-	2
	EB Approach		*0.8*	*A*	-	-	*0.3*	*A*	-	-
	WB Left	150	8.5	A	1	25	8.7	A	1	25
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Right†	110	0.0	A	0	0	0.0	A	0	0
	WB Approach		*0.2*	*A*	-	-	*0.2*	*A*	-	-
	NB Left-Thru-Right		40.7	E	31	49	34.9	D	42	66
	NB Approach		*40.7*	*E*	-	-	*34.9*	*D*	-	-
	SB Left-Thru-Right		16.1	C	13	50	13.8	B	7	48
	SB Approach		*16.1*	*C*	-	-	*13.8*	*B*	-	-
11. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Site Entrance A (N-S)	EB Right†	150	0.0	A	-	0	0.0	A	-	0
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left	150	8.3	A	1	22	8.6	A	0	15
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*0.1*	*A*	-	-	*0.0*	*A*	-	-
	NB Left - Right		20.9	C	42	91	23.6	C	26	60
	NB Approach		*20.9*	*C*	-	-	*23.6*	*C*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

Table 2: Intersection Level of Service and Delay Summary
Revised 2039 Total Traffic Volumes (Intersections 8 & Site Entrance A Only)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
8. Patrick Henry Hwy (E-W)	EB Left	150	9.0	A	5	37	8.7	A	2	36
Mt. Hermon Rd/Frances Rd (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	EB Right†		0.0	A	-	2	0.0	A	-	7
	EB Approach		*0.9*	*A*	-	-	*0.3*	*A*	-	-
	WB Left	150	8.6	A	1	27	8.8	A	1	22
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Right†	110	0.0	A	0	2	0.0	A	0	0
	WB Approach		*0.2*	*A*	-	-	*0.2*	*A*	-	-
	NB Left-Thru-Right		50.9	F	43	52	47.6	E	59	61
	NB Approach		*50.9*	*F*	-	-	*47.6*	*E*	-	-
	SB Left-Thru-Right		17.3	C	15	63	15.6	C	10	49
	SB Approach		*17.3*	*C*	-	-	*15.6*	*C*	-	-
11. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Site Entrance A (N-S)	EB Right†	150	0.0	A	-	4	0.0	A	-	0
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left	150	8.4	A	1	29	8.8	A	0	18
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*0.1*	*A*	-	-	*0.0*	*A*	-	-
	NB Left - Right		23.6	C	48	105	27.3	C	31	58
	NB Approach		*23.6*	*C*	-	-	*27.3*	*C*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

From an operational standpoint, the intersection of Route 54 at Site Entrance A (#11 in the report) shows that the EB right turn movement operates at LOS A during both peak hours and has no queueing issues with a standard 100' x 100' turn lane in the 2033 or 2039 total buildout analysis. The increase in traffic volumes will not change the results of the operational or queuing analysis since this is an uncontrolled right turn movement for the eastbound approach that will not be opposed by any other movement to require vehicles to stop. For the exiting site traffic from Site Entrance A, there will be some additional delay internal to the site, going from 10.3 seconds of delay to 23.6 seconds of delay and going from 71 feet of maximum queue to 105 feet of maximum queue (looking at the 2039 volume comparisons to the original TIA).

For the intersection of Route 54 at Mt. Hermon Road, there are no changes to the operations of Route 54 with the additional through traffic and the side street of NB Mt. Hermon Road improves from 78.8 seconds of delay to 50.9 seconds of delay and reduces from 85 feet of maximum queue to 52 feet of maximum queue. Overall, the reduction of new traffic to Mt. Hermon Road takes it back to the operational levels of the background analysis, which did not find any issues with the traffic operations at this location.

The HCS and SimTraffic outputs associated with the above analysis is shown at the end of this memo.

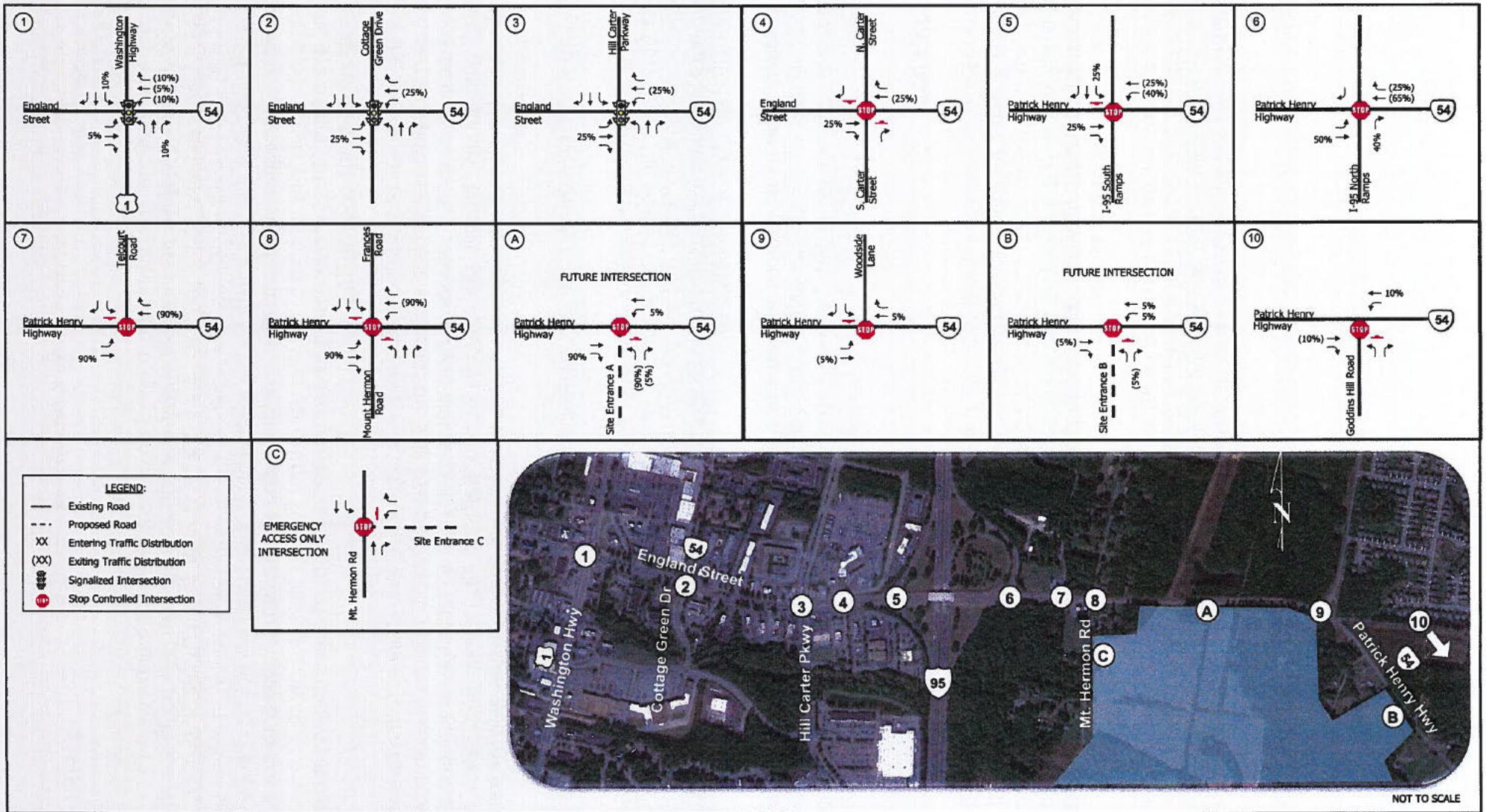
Looking at the turn lane warrant analysis for Site Entrance A, a right turn lane and taper was already warranted and the shift in traffic volumes would not change that result or change the sizing. The operational analysis shows that the standard 100' storage by 100' taper turn lane is sufficient. No changes in volume were applied to the EB approach of Route 54 at Site Entrance A and the previously warranted turn lane was maintained.

In addition, the traffic volumes generated by the data center land use will not meet any of the peak hour, 4-hour, or 8-hour warrants for the volumes on Route 54, therefore, there are no further improvements needed at Site Entrance A to address impacts to Route 54 or the safety of the site entrance. The installation of warranted turn lanes will be sufficient to provide access to the site.

Conclusion

The result of the change in trip distribution to remove Site Entrance C on Mt. Hermon Road and shift all traffic to the proposed Site Entrance A on Route 54 is that there are no operational issues at the two affected unsignalized intersections along Route 54. Both intersections continue to operate similarly to the original analysis conditions and do not present any challenges to the existing or background roadway network. There are no changes to the recommendations of the February 2025 TIA based on the revised analysis.

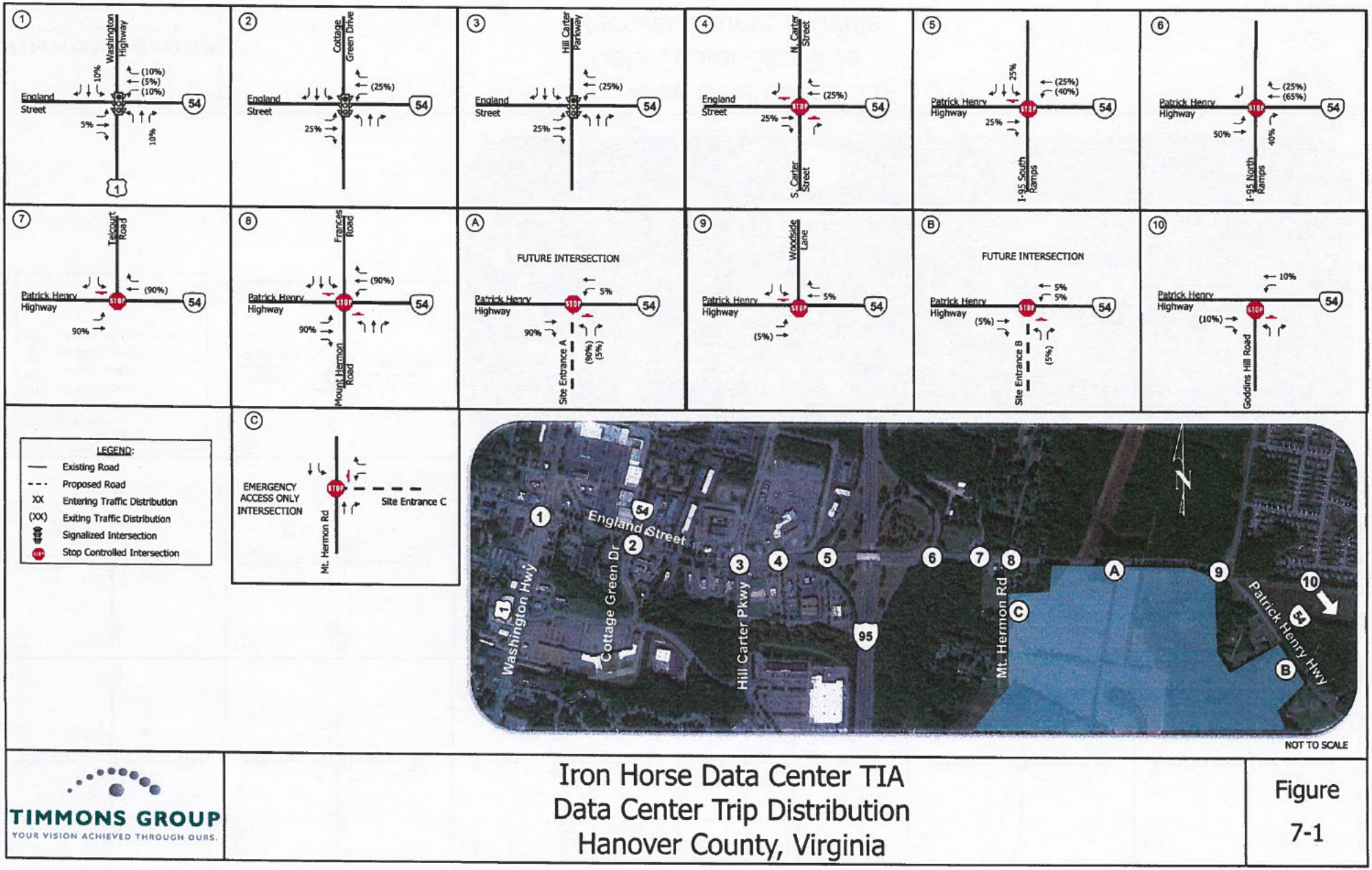
Eastbound and westbound turn lanes on Route 54 at Site Entrance A will be further warranted but were already included as recommended by the February 2025 TIA and included in the proffers. No edits to the previous improvements and recommendations (or additions) are recommended to be made to the February 2025 TIA as a result of this addendum.



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Data Center Trip Distribution
Hanover County, Virginia

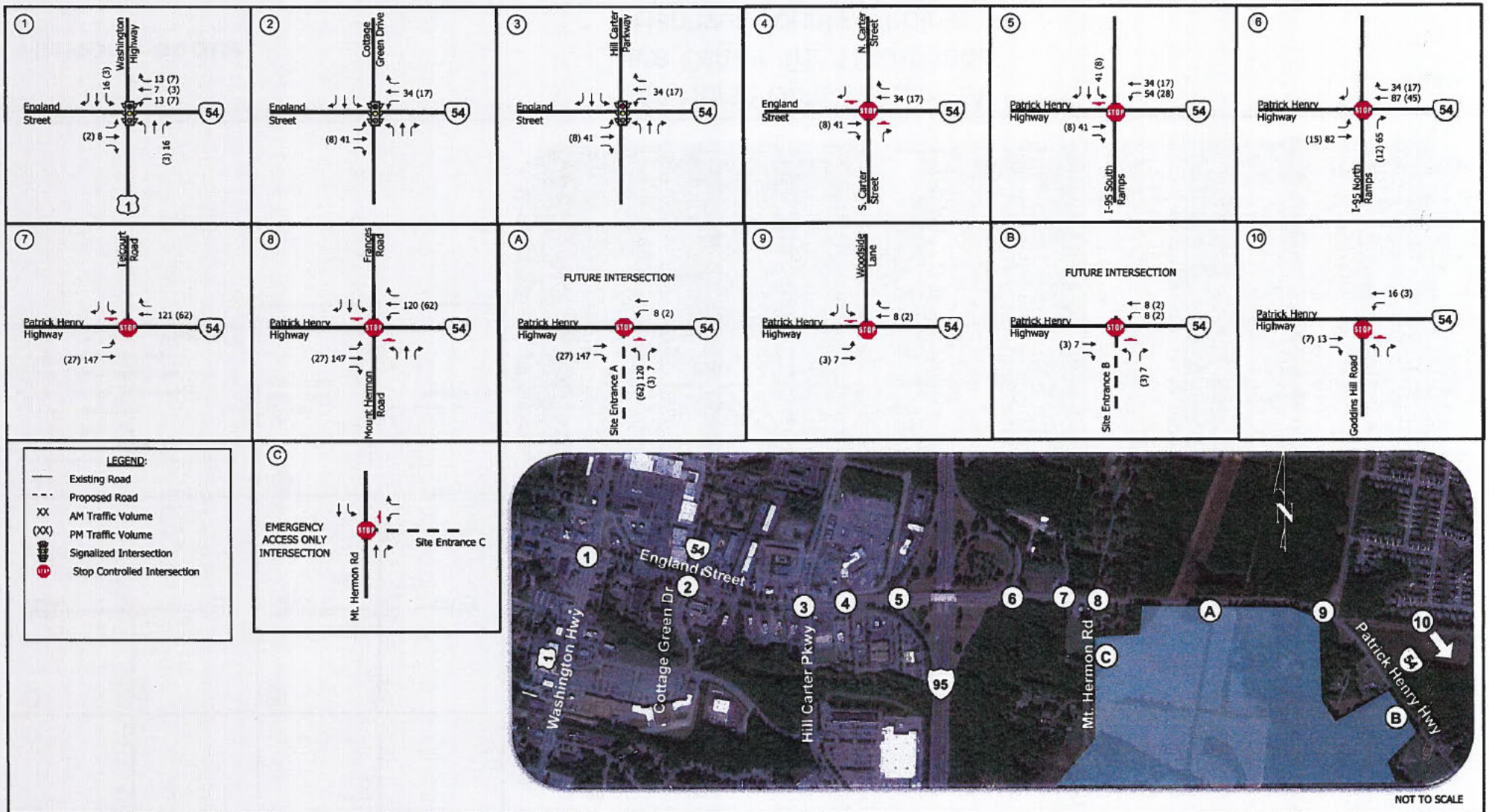
Figure 7-1



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Data Center Trip Distribution
Hanover County, Virginia

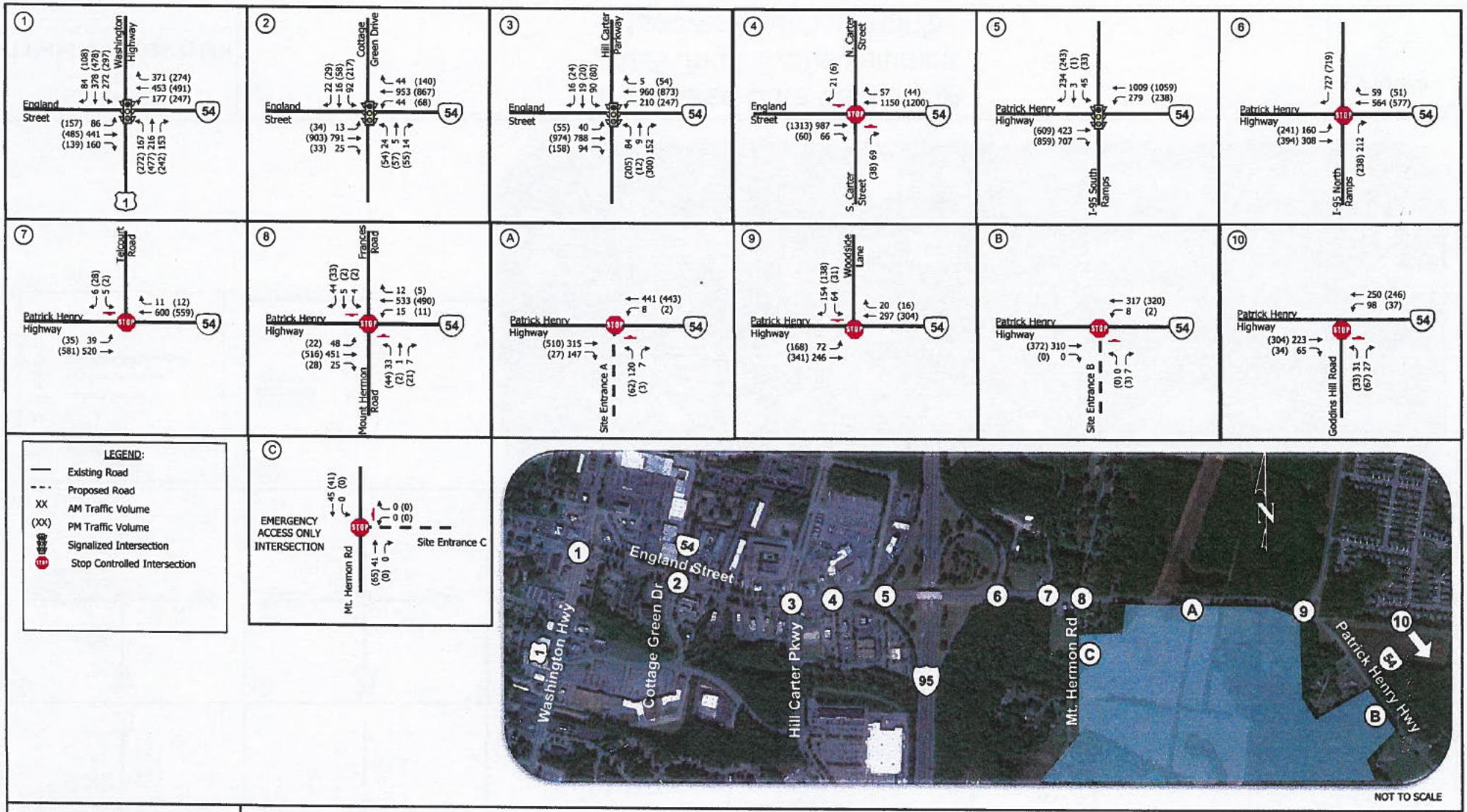
Figure 7-1



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Data Center Site Trips
Hanover County, Virginia

Figure 7-2

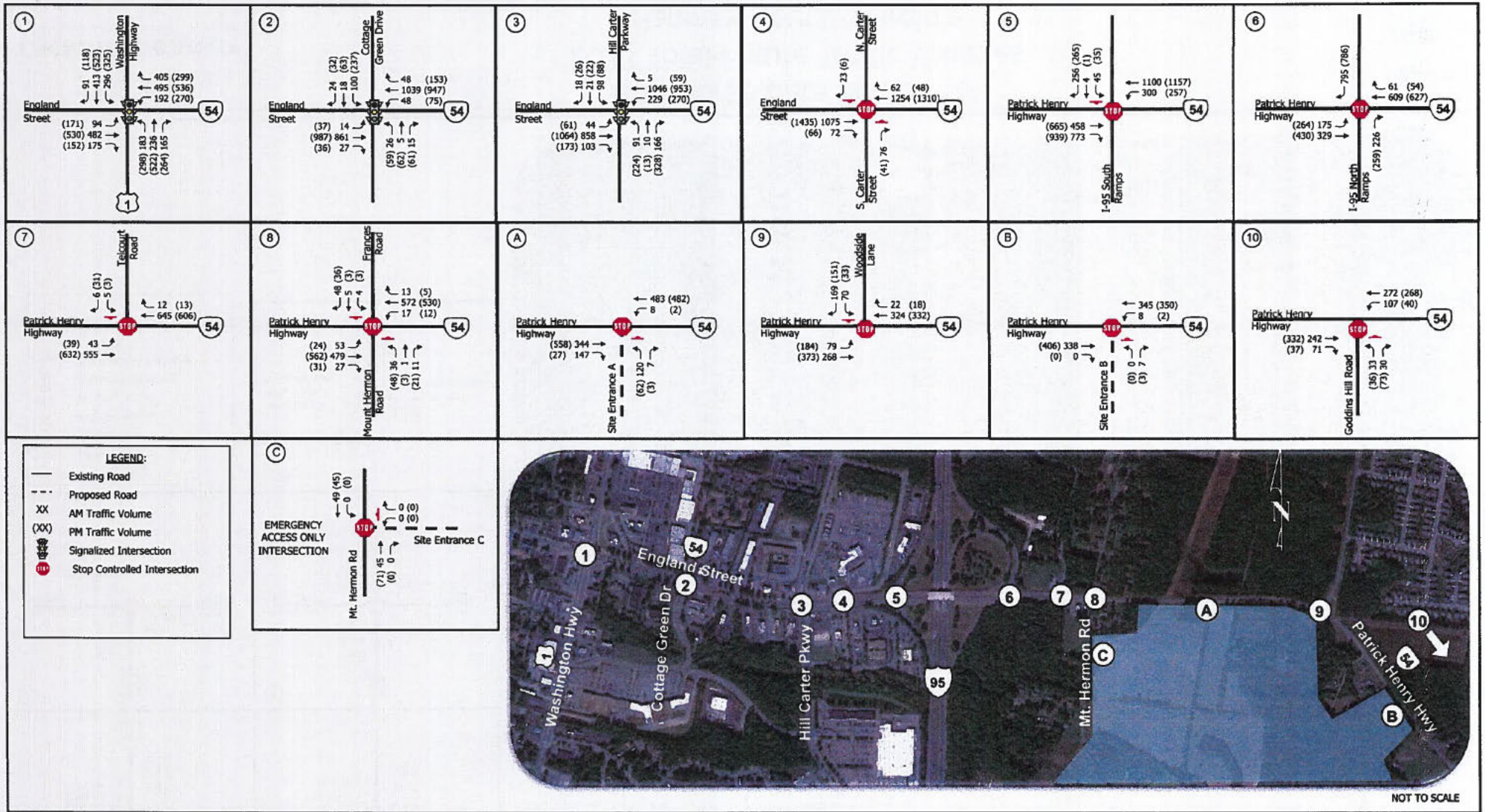


NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
2033 Total Future Traffic Volumes
Hanover County, Virginia

Figure 8-1



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
2039 Total Traffic Volumes
Hanover County, Virginia

Figure 9-1

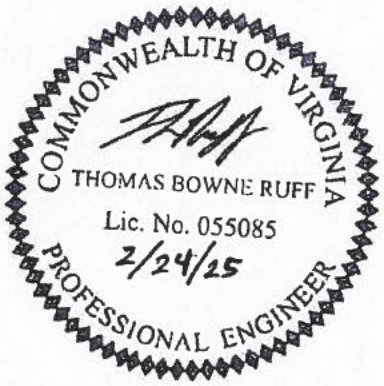
IRON HORSE DATA CENTER REZONING

(FORMERLY EAST ASHLAND – TRADEPORT95)

Traffic Impact Analysis

Hanover County
Town of Ashland

February 2024
Revised July 2024
Revised February 2025



Prepared For:

WestDulles Properties, Inc.
on behalf of
TradePort Ashland Land, LLC
TradePort Hanover Land, LLC

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Contact: Thomas Ruff, PE, PTOE, AICP

1001 Boulders Parkway, Suite 300 • Richmond, VA 23225
(804) 200-6500 phone • (804) 560-1438 fax
www.timmons.com

PAGE INTENTIONALLY BLANK

TABLE OF CONTENTS

TABLE OF CONTENTS I

APPENDICES II

LIST OF TABLES III

LIST OF FIGURES III

1 EXECUTIVE SUMMARY 1-1

1.1 Project Overview 1-1
1.2 Study Limits 1-2
1.3 Principal Findings 1-4
1.4 Recommendations 1-4

2 BACKGROUND INFORMATION 2-1

2.1 Description of On-Site Development 2-1
2.2 Study Limits 2-1
2.3 Existing Roadways 2-2
2.4 Future Improvements 2-3
2.5 Other Modes of Transportation 2-3

3 2022 EXISTING CONDITIONS 3-1

3.1 Existing Traffic Volumes 3-1
3.2 Capacity Analyses 3-2
3.3 2022 Existing Conditions Analysis 3-4

4 APPROVED BACKGROUND DEVELOPMENTS 4-1

5 2033 BACKGROUND CONDITIONS 5-1

5.1 Background Forecasting Methodology 5-1
5.2 Background 2033 Capacity Analyses 5-1

6 2039 BACKGROUND CONDITIONS 6-1

6.1 Background Forecasting Methodology 6-1
6.2 Background 2039 Capacity Analyses 6-1

7 TRIP GENERATION AND DISTRIBUTION 7-1

7.1 Site Trip Generation 7-1
7.2 Primary Trip Distribution Methodology 7-2
7.3 Traffic Assignment 7-2

8 2033 TOTAL FUTURE CONDITIONS 8-1

8.1 Total Future Traffic Volumes 8-1
8.2 2033 Total Future Capacity Analyses 8-1

9 2039 TOTAL FUTURE CONDITIONS 9-1

9.1 Total Future Traffic Volumes 9-1
9.2 2039 Total Future Capacity Analyses 9-1

10 ADDITIONAL ANALYSIS 10-1

10.1 Turn Lane Warrant Analysis 10-1

11 CONCLUSIONS 11-1

11.1 Principal Findings 11-1
11.2 Recommendations 11-1

APPENDICES

Appendix A – Hanover County and VDOT Comments and Responses

Appendix B – Scoping Agreement

Appendix C – Traffic Counts

Appendix D – Conceptual Drawings of Site Improvements

Appendix E – Existing Traffic Signal Timings and Signal Plans

Appendix F – SYNCHRO Calibration Worksheets

Appendix G – Capacity Analysis Worksheets for Existing Conditions

Appendix H – Capacity Analysis Worksheets for 2033 Background Conditions

Appendix I – Capacity Analysis Worksheets for 2039 Background Conditions

Appendix J – Bowman Data Center Study, March 2023

Appendix K – Capacity Analysis Worksheets for 2033 Total Conditions

Appendix L – Capacity Analysis Worksheets for 2039 Total Conditions

Appendix M – Turn Lane Warrant Analysis

LIST OF TABLES

TABLE 3-1: 2019 VDOT TRAFFIC DATA 3-1
TABLE 3-2: TRAFFIC DATA COMPARISON 3-1
TABLE 3-3: LEVEL OF SERVICE DEFINITIONS 3-3
TABLE 3-4: UNSIGNALIZED AND SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA 3-4
TABLE 3-5: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2022 EXISTING TRAFFIC (PART 1) 3-6
TABLE 3-6: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2022 EXISTING TRAFFIC (PART 2) 3-7
TABLE 5-1: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2033 BACKGROUND TRAFFIC (PART 1) 5-3
TABLE 5-2: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2033 BACKGROUND TRAFFIC (PART 2) 5-4
TABLE 6-1: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2039 BACKGROUND TRAFFIC (PART 1) 6-3
TABLE 6-2: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2039 BACKGROUND TRAFFIC (PART 2) 6-4
TABLE 7-1: TRIP GENERATION SUMMARY 7-1
TABLE 8-1: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2033 TOTAL FUTURE TRAFFIC (PART 1) 8-3
TABLE 8-2: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2033 TOTAL FUTURE TRAFFIC (PART 2) 8-4
TABLE 8-3: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2033 TOTAL FUTURE TRAFFIC (PART 3) 8-5
TABLE 9-1: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2039 TOTAL FUTURE TRAFFIC (PART 1) 9-3
TABLE 9-2: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2039 TOTAL FUTURE TRAFFIC (PART 2) 9-4
TABLE 9-3: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY 2039 TOTAL FUTURE TRAFFIC (PART 3) 9-5

LIST OF FIGURES

FIGURE 1-1: VICINITY MAP/STUDY INTERSECTIONS
FIGURE 1-2: DATA CENTER CONCEPTUAL SITE PLAN
FIGURE 1-3: DATA CENTER CONCEPTUAL SITE PLAN
FIGURE 2-1: EXISTING INTERSECTION GEOMETRY
FIGURE 2-2: PROPOSED INTERSECTION GEOMETRY
FIGURE 3-1: 2022 EXISTING TRAFFIC VOLUMES
FIGURE 5-1: 2033 BACKGROUND TRAFFIC VOLUMES
FIGURE 6-1: 2039 BACKGROUND TRAFFIC VOLUMES
FIGURE 7-1: DATA CENTER TRIP DISTRIBUTION
FIGURE 7-2: DATA CENTER SITE TRIPS
FIGURE 8-1: 2033 TOTAL FUTURE TRAFFIC VOLUMES
FIGURE 9-1: 2039 TOTAL FUTURE TRAFFIC VOLUMES

PAGE INTENTIONALLY BLANK

1 EXECUTIVE SUMMARY

This report presents the findings of the traffic impact analysis prepared for WestDulles Properties' rezoning of the Iron Horse Data Center project in Hanover County and the Town of Ashland, Virginia. The first edition of this report was submitted on February 29, 2024. Review comments were received from VDOT on April 22, 2024 and from Hanover County on May 23, 2024. A copy of the comments and Timmons Group responses are included in Appendix A.

1.1 PROJECT OVERVIEW

The proposed data center development is located to the south of Route 54 (Patrick Henry Hwy), east of Mt. Hermon Road, and west of Woodside Lane in both Hanover County and the Town of Ashland. The proposed residential development is located to the east of I-95, south of Mechumps Creek, and west of Mt. Hermon Road. A site location map is shown on Figure 1-1 (all figures located at the end of their respective chapter).

East Ashland is currently zoned as a Planned Unit Development (PUD) within the Town of Ashland and mixed use (MX) within Hanover County. The Applicant is proposing to rezone a portion of the site to Business (B-2 Ashland; B-3 Hanover) and Light Industrial (M-1 Ashland; M-2 Hanover) which will accommodate the development of data center as a land use option.

The Applicant is proposing to develop the site in one phase, consisting of the following (with the understanding that explicit site plans will be required for each part of development):

- 3.3 million GSF Data Center
  - 1,800,000 GSF within the Town of Ashland
  - 1,500,000 GSF within Hanover County

The buildout of the development is anticipated to occur by 2033. For the purposes of this analysis, all of the data center buildings will be constructed in one phase by 2033. A conceptual site plan is shown on Figures 1-2 and 1-3.

Access to the data center site will be provided via two (2) driveways connecting to Route 54 (Entrances A and B) and one (1) driveway connecting Mt. Hermon Road (Entrance C).

The site plan provided is intended for informational purposes only and is conceptual in nature. The proposed driveways shown do not represent the final site layout and are subject to site plan approval with the Town, County, and VDOT. Therefore, for the purposes of this analysis, it was assumed that there would be no partial access driveways along the parcel's frontage on Route 54. All proposed entrances will require entrance permit approval at such time that development plans occur.

As shown in Table 8-1, when complete, the total proposed development will generate 297 external trips (163 in and 134 out) during the AM peak, 99 external trips (30 in and 69 out) during the PM peak, and 2,475 external weekday daily trips.

The purpose of this analysis is to determine the impact of the traffic generated by the proposed development on the surrounding roadway network. The scope of this study was developed in conjunction with the Virginia Department of Transportation (VDOT), Town of Ashland, and Hanover County staff at a scoping meeting held virtually on March 18, 2022. A copy of the scoping agreement is included in Appendix B.

1.2 Study Limits

As outlined in the scoping agreement, the study limits include the following 10 existing intersections (see Figure 1-1):

1. Route 54 and US Route 1 (Washington Hwy) (signalized);
2. Route 54 and Cottage Green Drive (signalized);
3. Route 54 and Hill Carter Parkway (signalized);
4. Route 54 and Carter Road (unsignalized);
5. Route 54 and I-95 SB ramps (unsignalized);
6. Route 54 and I-95 NB ramps (unsignalized);
7. Route 54 and Telecourt Road (unsignalized);
8. Route 54 and Mt. Hermon Road (unsignalized);
9. Route 54 and Woodside Lane (unsignalized); and
10. Route 54 and Goddins Hill Road (unsignalized).

In accordance with the scoping agreement, analyses were completed for the weekday AM and PM peak hours for the following scenarios:

1. 2022 Existing Traffic Conditions
2. 2033 Background Traffic Conditions (without the development of the site)
3. 2033 Future Traffic Conditions (with total development of the site)
4. 2039 Background Traffic Conditions (without the development of the site)
5. 2039 Future Traffic Conditions (with total development of the site)

The following steps were taken to determine the potential traffic impacts associated with this project:

1. Data Collection – Directional turning movement counts (TMCs) were conducted at the study intersections on May 5, 2022 when public schools were in session. In addition, 12-hour TMCs were collected at the intersection of Route 54/Mt. Hermon Rd. The TMCs were comparable to the 2019 VDOT average daily traffic along Route 54. Therefore, in agreement with VDOT, the Town of Ashland, and Hanover County, the 2022 peak hour TMCs were not adjusted for COVID factors since the counts indicate normal traffic conditions in the study area.

2. Traffic Growth – In order to be conservative and account for development outside the study area, a 1.5% annual growth rate was applied to the study area road network. The growth rate was compounded annually for each future scenario.

3. Other Development Trip Generation – The traffic generated by one (1) other development in the vicinity was included in the analyses under background conditions, including improvements to the roadway network proffered by the other development.

4. Trip Generation – Traffic generated by the proposed development was estimated using the 11th Edition of the Institute of Transportation Engineers' *Trip Generation Manual* and data collected at existing data center sites in Virginia.

5. Traffic Distributions – The distribution of trips generated by the proposed development was based on the existing traffic volumes, the nature of the proposed uses, and the surrounding roadway network.

6. Traffic Projections – Future traffic volumes were determined using the existing traffic counts, the 1.5% growth rate noted above, the trips generated by the other approved development, and the trips generated by the site.

7. Traffic Capacity Analysis – Level of service calculations for existing, background, and future conditions were performed using SYNCHRO for signalized and unsignalized intersections.

8. Queuing Analysis – The simulated maximum and HCS 95th percentile queue lengths were reviewed at the study intersections to determine turn lane storage needs.

This traffic impact analysis (TIA) has been prepared in accordance with (1) the procedures outlined in the VDOT Traffic Impact Analysis Regulations (henceforth referred to as Chapter 527), (2) the VDOT Traffic Operations and Safety Analysis Manual (TOSAM), and (3) the Scope of Study agreed upon between Hanover County, VDOT, Town of Ashland, and Timmons Group (See Appendix B for the original scoping agreement).

1.3 PRINCIPAL FINDINGS

The 2022 existing conditions analysis indicates that the Route 54 corridor operates well during both peak hours. No major queueing or delay challenges are noted at the study intersections, with the exception of the southbound approach experiencing long delays at Route 54/I-95 SB on/off ramp intersection.

Under 2033, and 2039 Background analyses, the Route 54 corridor is able to handle increases in traffic volumes without degrading operations until year 2039. By 2039, many movements at Route 54/ US Route 1 are over capacity and excessive queues impact operations of the overall intersection.

The Iron Horse Data Center development (2033) will be accommodated through constructing VDOT-approved standard turn lanes at the intersection of Site Entrance A and Route 54.

At Site Entrances B and C, no right or left turn lanes are warranted.

With the site improvements described above and under 2033 and 2039 Total conditions, there are no significant capacity or queueing issues noted at the study intersections beyond those background issues previously noted. Retiming traffic signals along Route 54 will provide added capacity to the corridor.

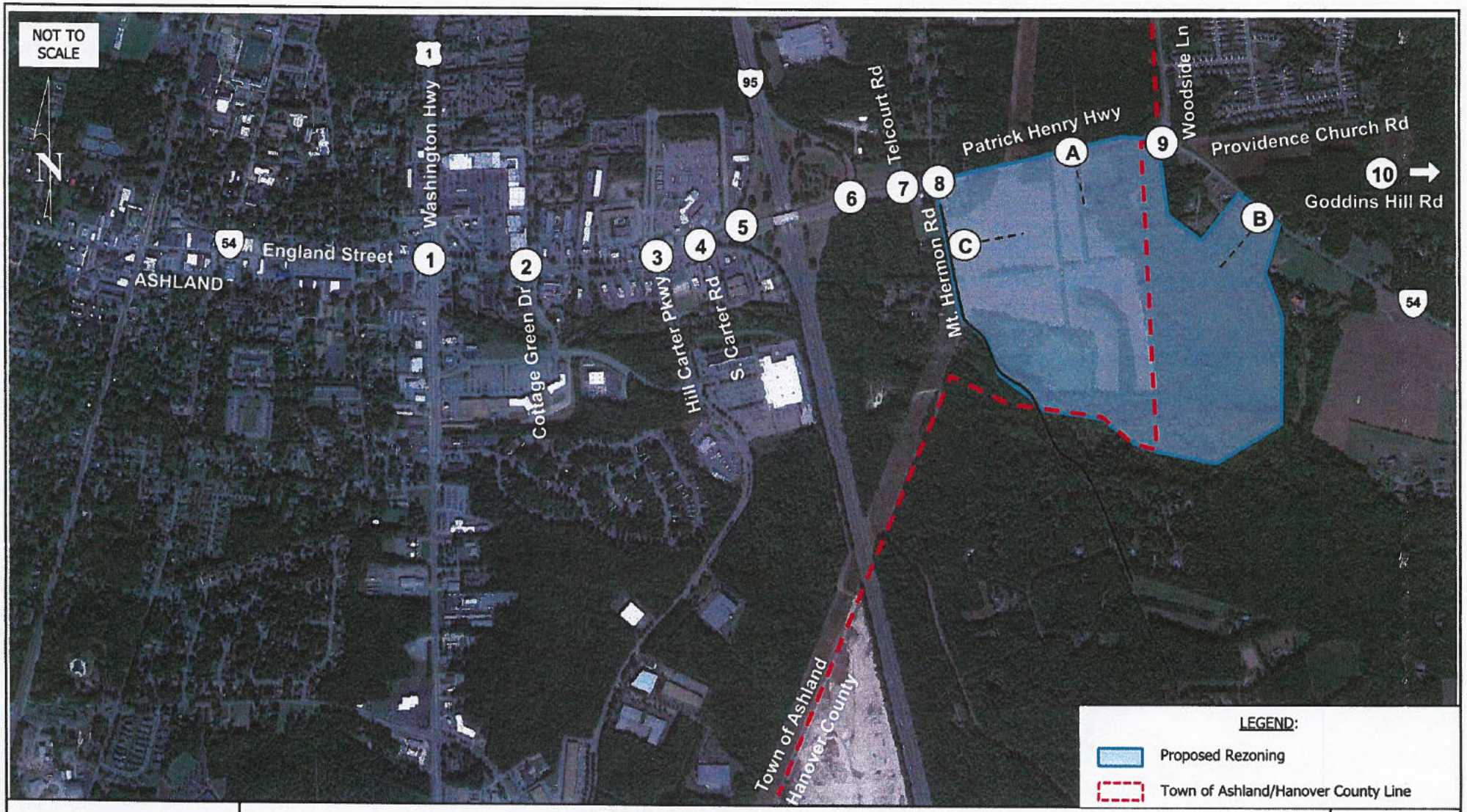
1.4 RECOMMENDATIONS

The focus of this report is to identify a comprehensive access plan that provides functional access to the site and preserves the capacity of the surrounding roadway network. This report identifies the proposed phasing of the development and the roadway improvements associated with each phase. To accommodate the anticipated traffic associated with the Iron Horse Data Center development, the recommended improvement plan is as follows:

- Route 54 at Site Entrance A
    - Construct one (1) eastbound left turn lane and one (1) westbound left turn lane.

Given the preliminary nature of the development plan, the exact location of the site entrances along Route 54 (or other internal site roadways) will be defined during the site plan stage. All construction of roadway improvements is subject to Town, County, and VDOT approval, including assistance on obtaining any required right-of-way not owned by the Applicant. Additional entrances to individual parcels within the development, or other modifications to access along Route 54 that may be developed as part of the site plan review process, are not explicitly discussed within this report. If the development pattern changes and additional traffic is shifted to different entrances, the turn lane warrant analysis will need to be performed for the prevailing layout and traffic volumes at that time of construction.

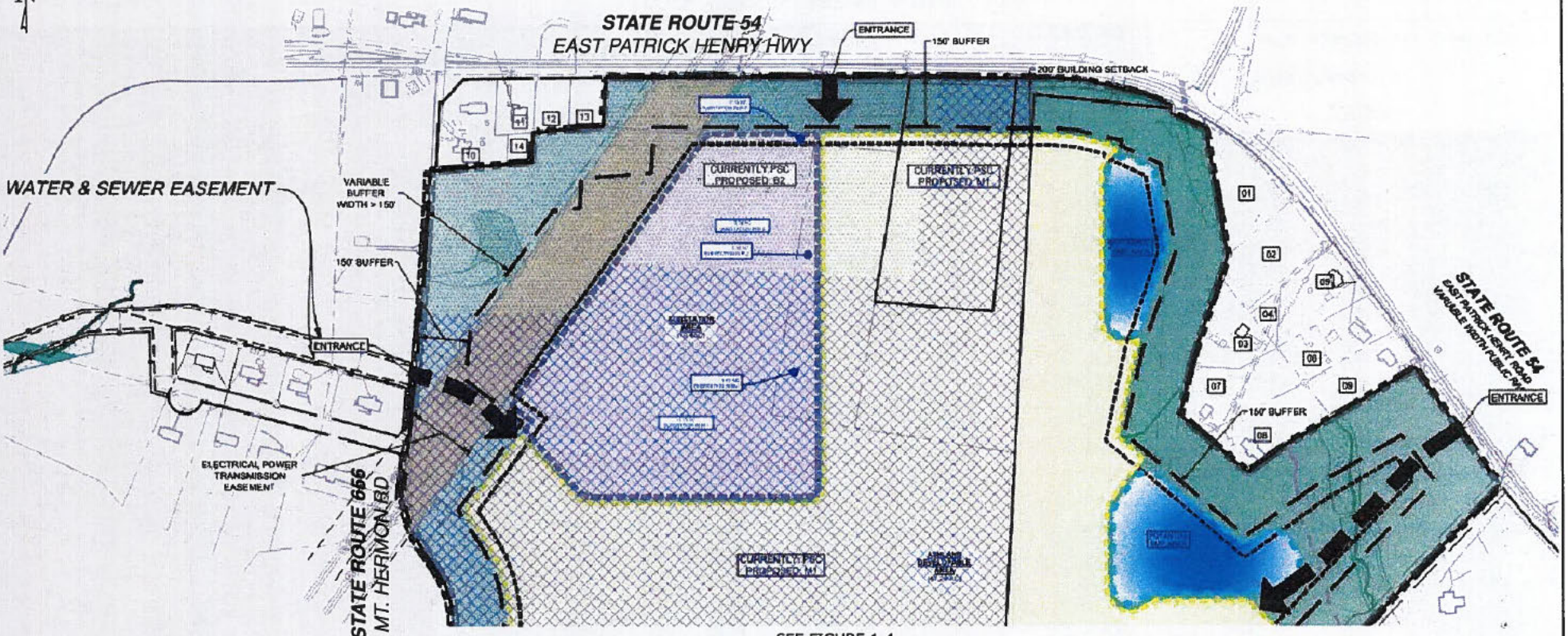
During the site plan review process, the Applicant will submit a Construction Traffic Management Plan (CTMP) for review and approval by VDOT, Hanover County, and the Town of Ashland to mitigate any traffic impacts caused by construction. The number and location of construction entrances, as well as construction traffic access routes will be presented in the CTMP.



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Vicinity Map / Study Intersections
Hanover County, Virginia

Figure 1-1

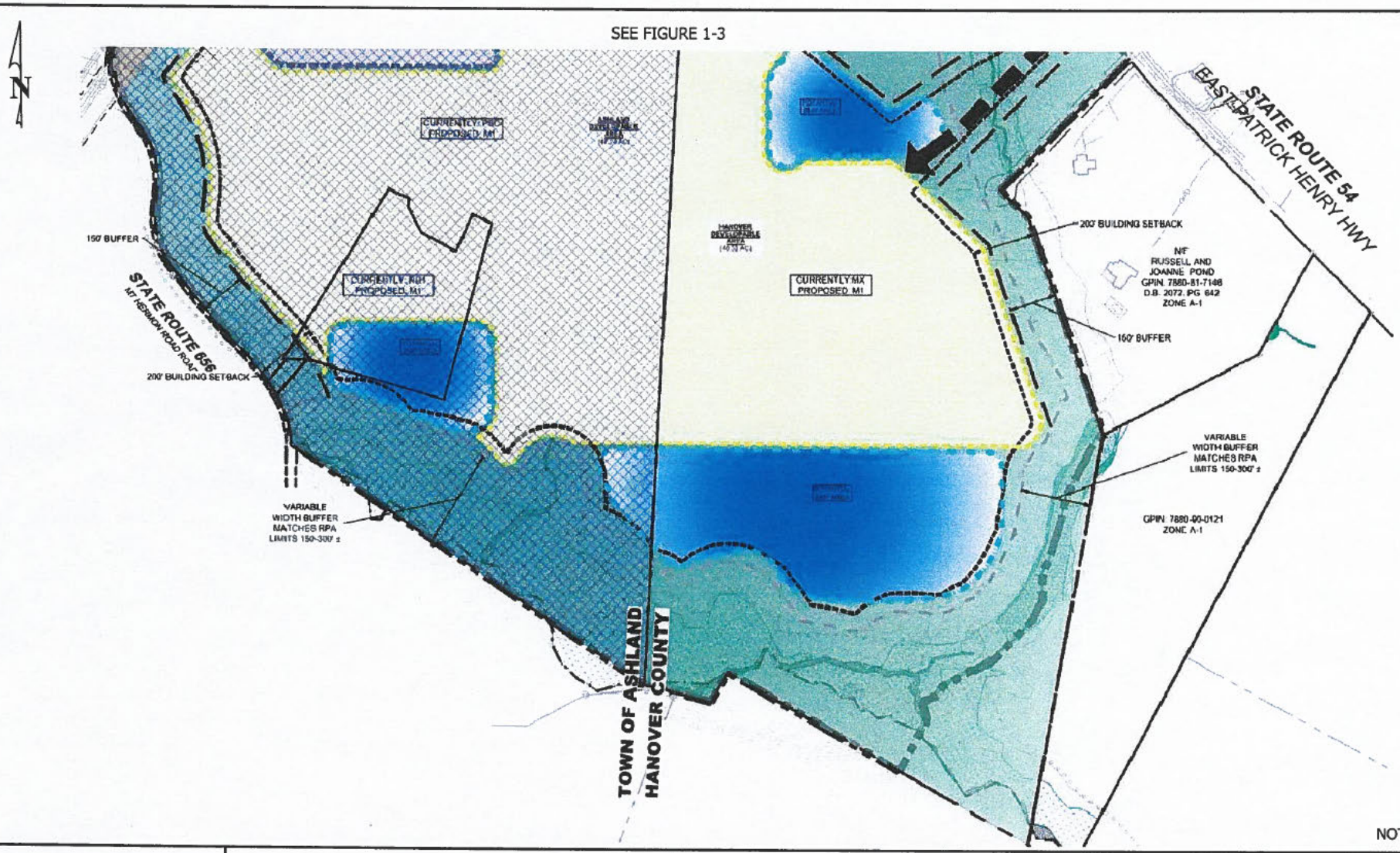


NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Data Center Conceptual Site Plan
Hanover County, Virginia

Figure
1-2



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Data Center Conceptual Site Plan
Hanover County, Virginia

Figure
1-3

PAGE INTENTIONALLY BLANK

2 BACKGROUND INFORMATION

2.1 DESCRIPTION OF ON-SITE DEVELOPMENT

The proposed data center development is located to the south of Route 54 (Patrick Henry Hwy), east of Mt. Hermon Road, and west of Woodside Lane in both Hanover County and the Town of Ashland. A site location map is shown on Figure 1-1 (all figures located at the end of their respective chapter).

East Ashland is currently zoned as a Planned Unit Development (PUD) within the Town of Ashland and mixed use (MX) within Hanover County. The Applicant is proposing to rezone a portion of the site to Business (B-2 Ashland; B-3 Hanover) and Light Industrial (M-1 Ashland; M-2 Hanover) which will accommodate the development of data center as a land use option.

The Applicant is proposing to develop the site in one phase, consisting of the following (with the understanding that explicit site plans will be required for each part of development):

- 3.3 million GSF Data Center
  - 1,800,000 GSF within the Town of Ashland
  - 1,500,000 GSF within Hanover County

The buildout of the development is anticipated to occur by 2033. For the purposes of this analysis, all of the data center buildings will be completed by 2033. A conceptual site plan is shown on Figures 1-2 and 1-3.

Access to the data center site will be provided via two (2) driveways connecting to Route 54 (Entrances A and B) and one (1) driveway connecting Mt. Hermon Road (Entrance C).

The site plan provided is intended for informational purposes only and is conceptual in nature. The proposed driveways shown do not represent the final site layout and are subject to site plan approval with the Town, County, and VDOT. Therefore, for the purposes of this analysis, it was assumed that there would be no partial access driveways along the parcel's frontage on Route 54. All proposed entrances will require entrance permit approval at such time that development plans occur.

2.2 STUDY LIMITS

As outlined in the scoping agreement, the study limits include the following 10 existing intersections:

1. Route 54 and US Route 1 (Washington Hwy) (signalized);
2. Route 54 and Cottage Green Drive (signalized);
3. Route 54 and Hill Carter Parkway (signalized);
4. Route 54 and Carter Road (unsignalized);
5. Route 54 and I-95 SB ramps (unsignalized);
6. Route 54 and I-95 NB ramps (unsignalized);
7. Route 54 and Telcourt Road (unsignalized);
8. Route 54 and Mt. Hermon Road (unsignalized);
9. Route 54 and Woodside Lane (unsignalized); and
10. Route 54 and Goddins Hill Road (unsignalized).

2.3 EXISTING ROADWAYS

Route 54 (England Street/Patrick Henry Hwy) is a divided highway with six lanes between US Route 1 and I-95. It is an undivided 2-lane roadway outside this segment. It is functionally classified as a Minor Arterial and has a posted speed limits of 25 mph west of US Route 1, 35 mph between US Route 1 and Carter Rd, 45 mph between Carter Rd and Woodside Ln, and 55 mph east of Woodside Ln. According to the 2019 VDOT Traffic Counts, Route 54 carries approximately 25,000 vehicles per day between US Route 1 and I-95 and 6,000 vpd between I-95 and eastern Ashland Town Line. The roadway only has sidewalks west of Hill Carter Pkwy. There are no on-street bike lanes in the study area.

Hill Carter Parkway is a four-lane divided roadway with auxiliary turning lanes. It is functionally classified as a major collector with a posted speed limit of 35 mph. There are sidewalks along one side and shared-use path on the other side. There are no on-street bike lanes.

Goddins Hill Road is a two-lane undivided roadway functionally classified as a major collector with a speed limit of 45 mph. According to the 2019 VDOT Traffic Counts, Goddins Hill Road carries approximately 820 vehicles per day. The roadway does not have sidewalks or on-street bike lanes.

The remaining roadways within the study area are functionally classified as local roadways and are generally two-lane undivided roadways with a posted speed limit of 25 mph, with the exception of Mt. Hermon Road that has a posted speed limit of 40 mph. Only Cottage Green Drive has sidewalks of these local roads; all roadways have no on-street bike lanes.

The 2022 existing lane use and traffic control at the study intersections is shown on Figure 2-1.

2.4 Future Improvements

The proposed development will construct improvements at the intersection of Route 54/Site Entrance A.

Improvements recommended with build out of the proposed development (completed by 2033):

- Route 54 and Site Entrance A
  - Construct 100' storage x 100' taper WB left turn lane.
  - Construct 100' storage x 100' taper EB right turn lane.

For the purposes of this analysis, the above improvements were analyzed starting in 2033 total conditions.

The future lane uses and traffic control at the study intersections are shown on Figure 2-2. Conceptual drawings of the proposed improvements are included in Appendix D.

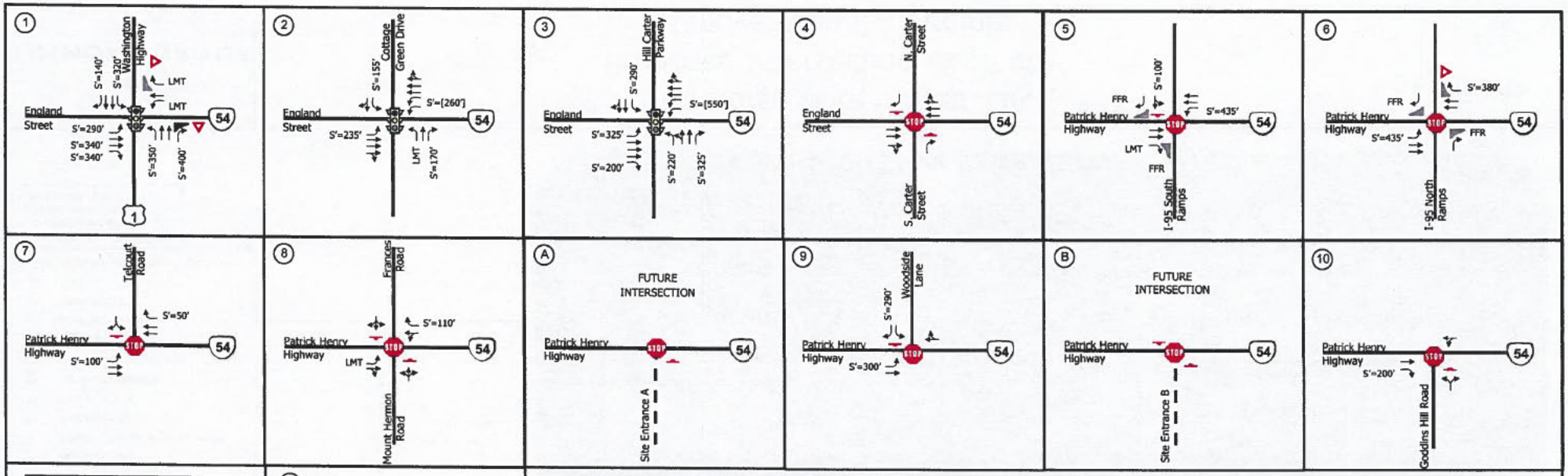
Based on information contained in the 2015 Ashland Transportation Plan, the Town and Hanover County have long-range plans to reconstruct the Route 54/I-95 interchange as a diverging diamond interchange. This project has been submitted to VDOT's SMART SCALE and has recently been approved for funding as of January 2025. The diverging diamond interchange was not analyzed as part of this report.

It was assumed that VDOT will retime the traffic signals along Route 54 periodically due to expected background development and overall growth in the study area. To reflect this, the traffic signal timings and offsets were optimized for all future conditions (2033 and 2039).

2.5 Other Modes of Transportation

Currently, there are no sidewalks/shared use paths in the vicinity of the project site as outlined in Section 2.3. The sidewalks/paths do not form a network connecting to other roadways inside or outside the study area. There are currently no transit routes within the study area.

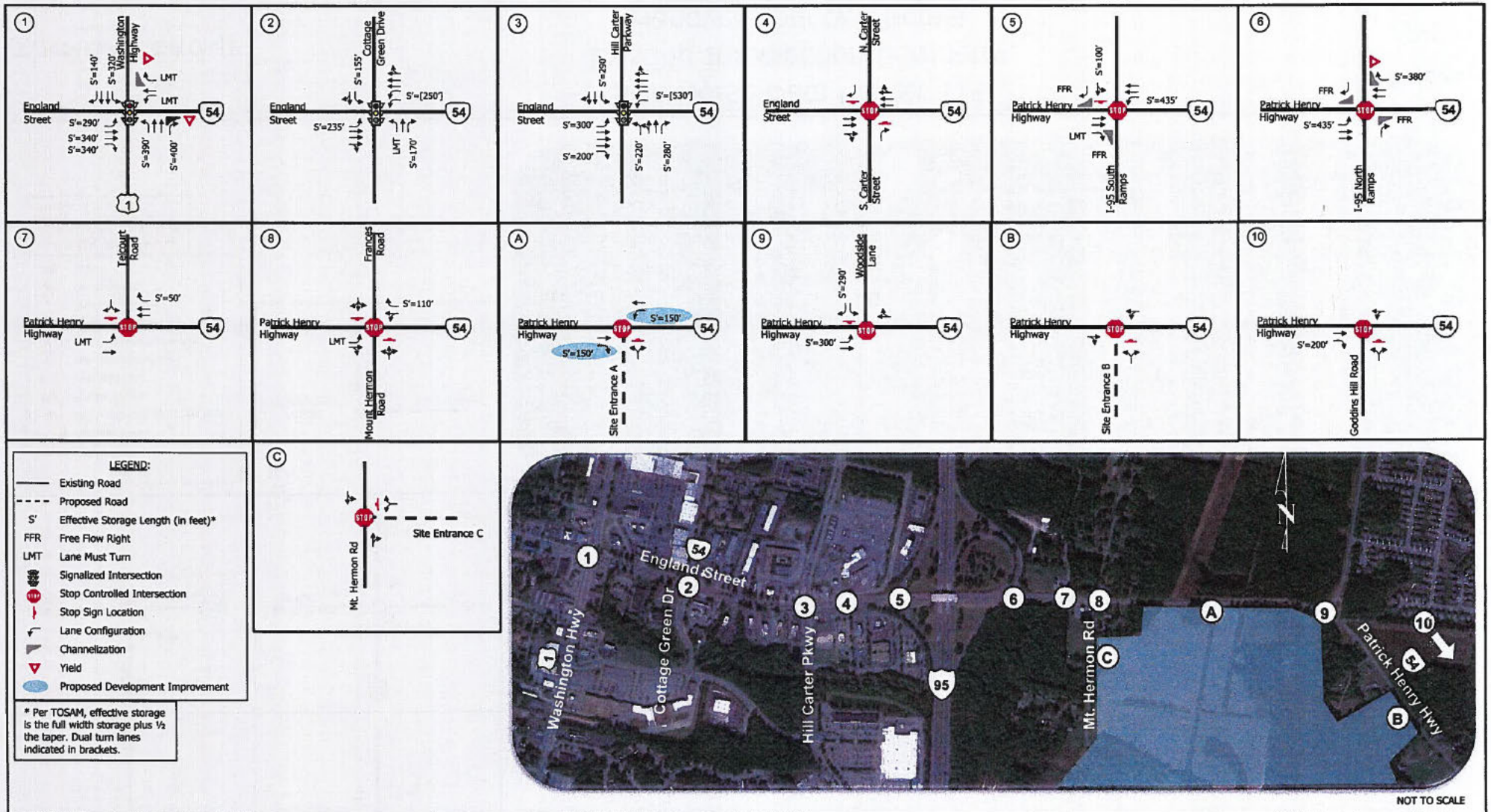
PAGE INTENTIONALLY BLANK



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Existing Intersection Geometry
Hanover County, Virginia

Figure 2-1



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Proposed Intersection Geometry
Hanover County, Virginia

Figure 2-2

3 2022 EXISTING CONDITIONS

3.1 EXISTING TRAFFIC VOLUMES

Existing peak hour turning movement counts (TMC) were conducted at each of the ten (10) study intersections during the AM (7:00-9:00) and PM (4:00-6:00) peak hour timeframes. The counts were conducted on May 5, 2022 on a typical weekday when public schools were in session. In addition, 12-hour TMCs were collected at the intersection of Route 54 and Mt. Hermon Road. The counts included heavy vehicles by movement, pedestrians, and bikes.

The 2022 TMCs were compared to the 2019 VDOT Traffic Data (AADT) to determine the impact COVID-19 may have had on the traffic patterns within the study area. The 2019 data was selected to provide a more conservative comparison because the 2021 data is lower and traffic patterns had not returned to pre-COVID levels in 2021. As shown in Table 3-1, there were 25,000 vehicles per day on Route 54 between US Route 1 and I-95 with a K-Factor of 0.096 and Directional Factor of 0.566. The AADT was multiplied by the K- and Directional Factors to find the estimated peak hour traffic volumes.

Table 3-1: 2019 VDOT Traffic Data
Route 54 between US Route 1 and I-95

VDOT 2019 AADT	Hourly Volume (higher direction)	Hourly Volume (lower direction)
25,000	1358	1042

The 2022 peak hour traffic volumes on mainline Route 54 were compared to the estimated peak hour volumes calculated from the 2019 VDOT AADT in the same location. As shown in Table 3-2, the 2022 traffic volumes are within 80% - 99% of the pre-COVID traffic volumes in 2019. Therefore, it was found that traffic volumes have returned to similar pre-pandemic levels and the 2022 TMCs were not adjusted.

Table 3-2: Traffic Data Comparison
Route 54 between US Route 1 and I-95

Direction		2022 Traffic Data (vph)	Departure From AADT Hourly Volume
Eastbound	AM	924	89%
	PM	1239	91%
Westbound	AM	1027	99%
	PM	1091	80%

The raw traffic counts are included in Appendix C and the existing peak hour counts shown on Figure 3-1. The common peak hours for all study intersections were found to be 7:30-8:30 AM and 4:30-5:30 PM.

Existing signal timings and traffic signal plans for all intersections were provided by VDOT and are included in Appendix E.

3.2 CAPACITY ANALYSES

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Highway Capacity Manual methodologies govern how the capacity analyses are conducted and how the results are interpreted. Levels of service (LOS) are determined for each part of the roadway network, with LOS A through D representing acceptable results and LOS E and F representing unacceptable results. Table 3-3 shows in detail how each of these levels of service are interpreted.

Capacity analyses were performed to assess existing (2022), background 2033/2039), and total future (2033/2039) operational conditions for the AM and PM peak hours of the study area. The signalized and unsignalized intersections were analyzed using SYNCHRO Version 11 based on HCM 2000 methodologies with the following assumptions:

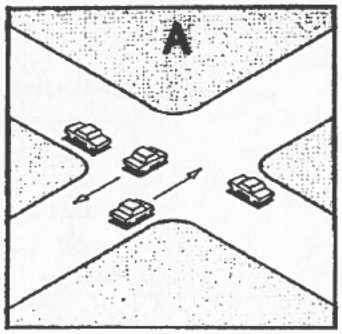
- Level terrain;
- 12-foot lane widths;
- No parking activity or bus stops;
- Existing peak hour factor as determined by traffic counts (by intersection) for existing scenario;
- The higher of the existing peak hour factor as determined by traffic counts (by intersection) or a peak hour factor of 0.92; and
- Heavy vehicle percentage as determined by the traffic counts (by movement).

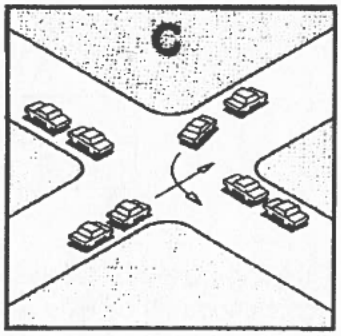
HCM 2000 methodologies were utilized for analysis as opposed to the latest HCM Sixth Edition or HCM 2010 methodologies. This selection is due to the non-standard NEMA phasing that is present at the some of the study intersections. The HCM Sixth Edition methodology only provides measures of effectiveness for signalized intersections following strict NEMA phasing.

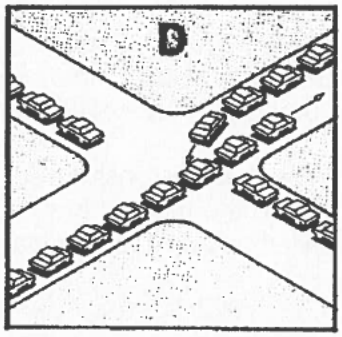
The study area 2022 Existing SYNCHRO models were calibrated to meet TOSAM methodologies for average speed using the VDOT Sample Size Determination Tool Version 2.0. The results worksheets are included in Appendix F.

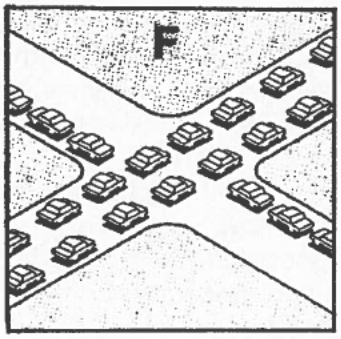
Table 3-3: Level of Service Definitions

Level of Service	Roadway Segments or Controlled Access Highways	Intersections
A	Free flow, low traffic density.	No vehicle waits longer than one signal indication.
B	Delay is not unreasonable, stable traffic flow.	On a rare occasion motorists wait through more than one signal indication.
C	Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.
D	Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive backups.
E	Actual capacity of the roadway invloves delay to all motorists due to congestion.	Very long queues may create lengthly delays, especially for left-turning vehicles.
F	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage ares during part or all of an hour.









SOURCE: *"A Policy on Design of Design of Urban Highways and Arterial Streets"* - AASHTO, 1973 based upon material published in *"Highway Capacity Manual"*, National Academy of Sciences, 1965.

For both unsignalized and signalized intersections, level of service is defined in terms of delay, a measure of driver discomfort, frustration, fuel consumption and lost travel time. Table 3-4 summarizes the delay associated with each LOS category:

Table 3-4: Unsignalized and Signalized Intersection Level of Service Criteria

Unsignalized Intersections		Signalized Intersections	
Level of Service	Delay per Vehicle (sec)	Level of Service	Delay per Vehicle (sec)
A	≤10.0	A	≤ 10.0
B	>10.0 to ≤15.0	B	>10.0 To ≤20.0
C	>15.0 to ≤25.0	C	>20.1 to ≤35.0
D	>25.0 to ≤35.0	D	>35.1 to ≤55.0
E	>35.0 to ≤50.0	E	>55.1 to ≤80.0
F	>50.0	F	> 80.1

Queuing analysis allows traffic engineers to identify where vehicles queues are not adequately accommodated by existing storage bays and impact adjacent travel lanes.

Queuing analyses were conducted using both the HCM 2000 methodology (as calculated by SYNCHRO) and SimTraffic simulations. The Synchro 95th percentile queue is the maximum back of queue for a particular lane within a lane group considering 95th percentile traffic volumes. The SimTraffic maximum queues are the average maximum queues after 10 runs of 60 minutes each.

Note that it is possible for the 95th percentile queue to be higher than the SimTraffic maximum queue due to the method in which each software calculates its respective value. The 95th percentile queue is based on an HCM formula while the SimTraffic maximum queue varies based on simulation results.

3.3 2022 Existing Conditions Analysis

Table 3-3 summarizes the 2022 existing intersection LOS, delay, 95th percentile (Synchro), and maximum (SimTraffic) queue lengths based on the 2022 existing peak hour traffic volumes shown on Figure 3-1, the existing lane geometry (Figure 2-1), and the existing timings at the traffic signals. The corresponding SYNCHRO worksheets are included in Appendix G.

Note at Intersection #3 that the eastbound right movement is reporting excessive delay. This is an error with how Synchro is reporting delay for the intersection and may be caused by the pedestrian phase associated with the eastbound approach being turned on all the time. However, the 95th Percentile queue length is low which shows that vehicles are not waiting for the amount of time suggested by the control delay.

Note at Intersection #6 the I-95 off-ramps (SB right and NB right) are coded in Synchro as yield controlled approaches due to the existing signs at the intersection. However, the existing lane geometry for those movements includes a receiving lane for merging traffic. As shown by the SimTraffic queue lengths (0 ft), these movements operate as free-flowing despite the HCM reports showing delay.

As shown in Table 3-5, under 2022 existing conditions:

- At the signalized intersection of Route 54 and US Route 1, the overall intersection operates at a LOS C during both peak hours.
    - The mainline movements all operate at a LOS C or better during both peak hours. The northbound left operates at a LOS C/D during the AM/PM peaks, respectively. The NB thru operates at a LOS D/E during the AM/PM peaks, respectively. The southbound approach operates at a LOS D during both peak hours. The SB thru operates at a LOS E during the PM peak hour.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Cottage Green Drive, the overall intersection operates at a LOS B/C during the AM/PM peaks, respectively.
    - The mainline through movements operate at a LOS B or better during both peak hours. The EB and WB lefts generally operate at a LOS D/E during both peak hours. The north- and southbound movements all operate at a LOS D during the AM peak hour. During the PM peak, The NB approach operates at a LOS E and the SB approach at a LOS D.
    - During the PM peak hour, the southbound left maximum queue exceeds the available storage, spilling back into the through lane. All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Hill Carter Parkway, the overall intersection operates at a LOS C/D during the AM/PM peaks, respectively.
    - The eastbound left and through movements operate at a LOS D and C, respectively during both peak hours. As previously mentioned, the delay for the EB right is not reported correctly at this intersection. The westbound left and through movements operate at a LOS D and B, respectively during both peak hours.
    - The northbound approach operates at a LOS D during both peak hours. The southbound approach operates at a LOS D/E during the AM/PM peaks, respectively. All 95th percentile and maximum queue lengths are contained within the available storage.

- At the unsignalized intersection of Route 54 and I-95 SB ramp, the mainline east- and westbound approaches operate at a LOS A during both peak hours. The southbound left/through movement operates at a LOS F during both peak hours.

- At the unsignalized intersection of Route 54 and I-95 NB ramp, the mainline east- and westbound approaches operate at a LOS A during both peak hours. As previously mentioned, the north- and southbound movements report delay due to the yield-control, however the movements behave more like free-flow right turns. The northbound right operates at a LOS B or better during both peak hours. The southbound right operates at a LOS D during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

- At all other unsignalized intersections (numbers 4, 7-10), the mainline east- and westbound movements all operate at a LOS A during both peak hours. All side street movements operate at acceptable levels (LOS C or better) during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

Table 3-5: Intersection Level of Service and Delay Summary
2022 Existing Traffic (Part 1)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. England St (E-W)	EB Left	290	22.0	C	56	143	24.3	C	101	178
US Route 1 (N-S)	EB Thru		31.1	C	160	192	33.9	C	196	215
Signalized	EB Right	340	27.5	C	0	79	29.9	C	0	75
	EB Approach		*29.1*	*C*	-	-	*31.3*	*C*	-	-
	WB Left		12.8	B	23	163	20.0	C	89	234
	WB Thru		25.4	C	#386	344	27.3	C	#460	543
	WB Right		0.3	A	39	0	0.2	A	0	27
	WB Approach		*14.0*	*B*	-	-	*18.3*	*B*	-	-
	NB Left	350	30.0	C	117	168	42.2	D	203	262
	NB Thru		38.2	D	95	162	56.7	E	225	227
	NB Right	400	0.1	A	0	0	0.2	A	0	0
	NB Approach		*25.6*	*C*	-	-	*39.0*	*D*	-	-
	SB Left	320	35.2	D	178	223	46.9	D	#226	256
	SB Thru		40.6	D	160	213	55.2	E	226	265
	SB Right	140	34.9	C	0	125	43.1	D	0	140
	SB Approach		*38.0*	*D*	-	-	*50.9*	*D*	-	-
	Overall		**25.6**	**C**	-	-	**34.6**	**C**	-	-
2. England St (E-W)	EB Left	235	72.8	E	m15	56	45.1	D	m45	71
Cottage Green Dr (N-S)	EB Thru - Right		19.1	B	149	223	15.7	B	132	216
Signalized	*EB Approach*		*20.0*	*C*	-	-	*16.8*	*B*	-	-
	WB Dual Left	260	78.2	E	32	76	70.5	E	47	93
	WB Thru - Right		2.4	A	38	180	11.0	B	75	223
	WB Approach		*5.6*	*A*	-	-	*14.8*	*B*	-	-
	NB Left		48.1	D	36	71	56.8	E	74	100
	NB Thru		46.0	D	13	53	56.6	E	77	100
	NB Right	170	45.6	D	0	33	53.0	D	0	61
	NB Approach		*47.0*	*D*	-	-	*55.5*	*E*	-	-
	SB Left	155	47.2	D	95	131	54.4	D	212	154
	SB Thru - Right		42.3	D	37	115	44.5	D	82	279
	SB Approach		*45.7*	*D*	-	-	*51.6*	*D*	-	-
	Overall		**15.0**	**B**	-	-	**22.8**	**C**	-	-
3. England St (E-W)	EB Left	325	41.5	D	m48	114	44.0	D	m82	97
Hill Carter Pkwy (N-S)	EB Thru		31.6	C	205	357	26.0	C	276	424
Signalized	EB Right	200	22.5	C	33	200	288.1	F	m84	200
	EB Approach		*31.1*	*C*	-	-	*61.9*	*E*	-	-
	WB Dual Left	550	38.8	D	90	116	48.6	D	125	139
	WB Thru - Right		19.3	B	201	203	19.9	B	220	256
	WB Approach		*22.9*	*C*	-	-	*26.0*	*C*	-	-
	NB Left	220	43.6	D	58	52	53.8	D	132	149
	NB Left - Thru		42.6	D	32	106	49.8	D	69	172
	NB Right	325	42.4	D	0	130	49.1	D	80	184
	NB Approach		*42.6*	*D*	-	-	*50.2*	*D*	-	-
	SB Left	290	51.9	D	91	220	61.2	E	101	181
	SB Thru - Right		40.3	D	18	70	50.8	D	23	52
	SB Approach		*48.6*	*D*	-	-	*57.5*	*E*	-	-
	Overall		**29.3**	**C**	-	-	**45.7**	**D**	-	-
4. England St (E-W)	EB Thru - Right†		0.0	A	-	82	0.0	A	-	64
Carter Rd (N-S)	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
Unsignalized	WB Thru - Right†		0.0	A	-	3	0.0	A	-	9
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		10.8	B	8	65	11.9	B	5	61
	NB Approach		*10.8*	*B*	-	-	*11.9*	*B*	-	-
	SB Right		11.3	B	2	52	10.9	B	1	27
	SB Approach		*11.3*	*B*	-	-	*10.9*	*B*	-	-

1 Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS

Table 3-6: Intersection Level of Service and Delay Summary
2022 Existing Traffic (Part 2)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
5. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
I-95 SB Ramps	EB Right†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left	435	8.7	A	16	70	9.2	A	16	85
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*1.6*	*A*	-	-	*1.5*	*A*	-	-
	SB Left - Thru	150	62.0	F	7	32	97.5	F	35	80
	SB Right		18.0	C	58	0	16.2	C	47	0
	SB Approach		*19.1*	*C*	-	-	*24.1*	*C*	-	-
6. Patrick Henry Hwy (E-W)	EB Left	435	9.2	A	13	108	9.3	A	19	135
I-95 NB Ramps	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*3.8*	*A*	-	-	*3.6*	*A*	-	-
	WB Thru†		0.0	A	-	5	0.0	A	-	2
	WB Right†	380	0.0	A	-	0	0.0	A	-	0
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		9.6	A	13	0	10.5	B	23	0
	NB Approach		*9.6*	*A*	-	-	*10.5*	*B*	-	-
	SB Right		30.1	D	252	0	29.7	D	242	0
	SB Approach		*30.1*	*D*	-	-	*29.7*	*D*	-	-
7. Patrick Henry Hwy (E-W)	EB Left		8.7	A	3	67	8.6	A	2	56
Telcourt Rd (N-S)	EB Thru†		0.0	A	-	4	0.0	A	-	-
Unsignalized	*EB Approach*		*0.8*	*A*	-	-	*0.5*	*A*	-	-
	WB Thru†		0.0	A	-	-	0.0	A	-	2
	WB Right†	50	0.0	A	-	24	0.0	A	-	21
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left - Right		11.8	B	1	31	10.3	B	3	40
	SB Approach		*11.8*	*B*	-	-	*10.3*	*B*	-	-
8. Patrick Henry Hwy (E-W)	EB Left		8.2	A	3	47	8.2	A	1	29
Mt. Hermon Rd/Frances Rd (N-S)	EB Thru - Right†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*1.1*	*A*	-	-	*0.3*	*A*	-	-
	WB Left - Thru		0.4	A	1	48	0.3	A	1	73
	WB Right†	110	0.0	A	-	-	0.0	A	-	-
	WB Approach		*0.4*	*A*	-	-	*0.3*	*A*	-	-
	NB Left-Thru-Right		19.5	C	11	72	22.3	C	21	64
	NB Approach		*19.5*	*C*	-	-	*22.3*	*C*	-	-
	SB Left-Thru-Right		11.9	B	7	42	12.0	B	5	35
	SB Approach		*11.9*	*B*	-	-	*12.0*	*B*	-	-
9. Patrick Henry Hwy (E-W)	EB Left	300	7.9	A	4	57	8.2	A	10	60
Woodside Ln (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*1.9*	*A*	-	-	*2.7*	*A*	-	-
	WB Thru - Right†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left		11.8	B	16	61	12.5	B	15	53
	SB Right	290	11.8	B	16	73	12.5	B	15	70
	SB Approach		*11.8*	*B*	-	-	*12.5*	*B*	-	-
10. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Goddins Hill Rd (N-S)	EB Right†	200	0.0	A	-	2	0.0	A	-	0
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left - Thru		2.8	A	6	53	1.3	A	2	34
	WB Approach		*2.8*	*A*	-	-	*1.3*	*A*	-	-
	NB Left - Right		12.4	B	9	49	11.8	B	14	48
	NB Approach		*12.4*	*B*	-	-	*11.8*	*B*	-	-

1 Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

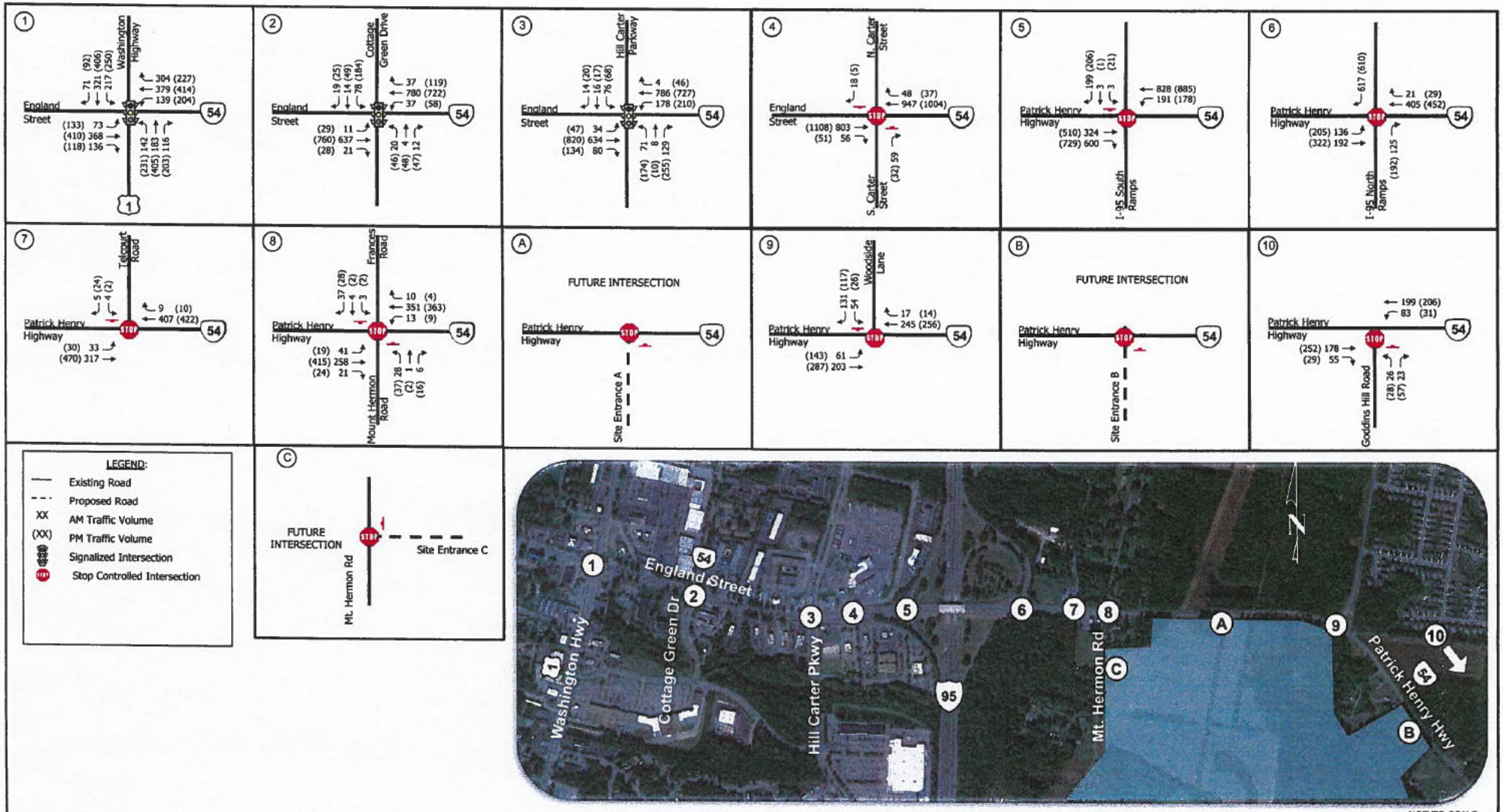
† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

PAGE INTENTIONALLY BLANK



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
2022 Existing Traffic Volumes
Hanover County, Virginia

Figure 3-1

PAGE INTENTIONALLY BLANK

4 APPROVED BACKGROUND DEVELOPMENTS

Background developments in the study were based on coordination with VDOT, Town of Ashland, and Hanover County staff. The most recent aerial imagery was used to identify which developments had already been built. There were no developments determined by this methodology.

One background development was identified within the project vicinity, Hickory Grove, and was analyzed with the August 2022 edition of this report. Since then, VDOT and Hanover County have confirmed that the development was not approved. As a result, the projected site traffic and roadway improvements associated with Hickory Grove have been removed from this report.

No background developments have been approved in the vicinity of the project and no background developments are included in this report.

PAGE INTENTIONALLY BLANK

5 2033 BACKGROUND CONDITIONS

The background 2033 volumes were analyzed assuming future intersection geometry in conjunction with projected background traffic volumes. The background traffic volumes were developed based on a 1.5% annual growth rate.

5.1 BACKGROUND FORECASTING METHODOLOGY

The 1.5% annual growth rate discussed above was compounded annually for the 10-year period from 2022 to 2033 and applied to the existing traffic volumes. The resulting 2033 Background Traffic Volumes are shown on Figure 5-1.

5.2 BACKGROUND 2033 CAPACITY ANALYSES

Tables 5-1 and 5-2 summarizes the 2033 background intersection LOS, delay, 95th percentile (Synchro), and maximum (SimTraffic) queue lengths based on the 2033 background peak hour traffic volumes shown on Figure 5-1, the existing conditions lane geometry (Figure 2-1), and the existing timings at the traffic signals. Note that intersections A-C are shown as numbers 11-13 in the following analysis. The corresponding SYNCHRO worksheets are included in Appendix H.

Note at Intersection #3 that the eastbound right movement is reporting excessive delay. This is an error with how Synchro is reporting delay for the intersection and may be caused by the pedestrian phase associated with the eastbound approach being turned on all the time. However, the 95th Percentile queue length is low which shows that vehicles are not waiting for the amount of time suggested by the control delay.

Note at Intersection #6 the I-95 off-ramps (SB right and NB right) are coded in Synchro as yield controlled approaches due to the existing signs at the intersection. However, the existing lane geometry for those movements includes a receiving lane for merging traffic. As shown by the SimTraffic queue lengths (0 ft), these movements operate as free-flowing despite the HCM reports showing delay.

As shown in Tables 5-1 and 5-2 under 2033 background conditions:

- At the signalized intersection of Route 54 and US Route 1, the overall intersection will operate at a LOS C/D during the AM/PM peaks, respectively.
    - The eastbound approach will operate at a LOS C/D during the AM/PM peaks, respectively. The westbound approach will operate at a LOS B/C during the AM/PM peaks, respectively. The WB through will operate at a LOS D during both peak hours.
    - The northbound left movement will operate at a LOS C/E during the AM/PM peaks, respectively. The NB through will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound left and through will both operate at a LOS D/E during the AM/PM peaks, respectively.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Cottage Green Drive, the overall intersection will operate at a LOS B/C during the AM/PM peaks, respectively.
    - The mainline through movements will operate at a LOS B or better during both peak hours. The EB left will operate at a LOS E/D during the AM/PM peaks, respectively. The WB left will operate at a LOS F/E during the AM/PM peaks, respectively.
    - The northbound approach will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach will operate at a LOS D during both peak hours. During the PM peak, the SB left maximum queue exceeds the available storage, spiling back into the through lane.
    - All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Hill Carter Parkway, the overall intersection will operate at a LOS C/D during the AM/PM peaks, respectively.
    - The mainline through movements will operate at a LOS C during both peak hours. The EB and WB lefts will operate at a LOS D during both peak hours. As previously mentioned, the delay for the EB right is not reported correctly at this intersection.
    - The northbound approach will operate at a LOS D during both peak hours. The NB left will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach will operate at a LOS D/E during the AM/PM peaks, respectively. The SB left will operate at a LOS E during both peak hours.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 SB ramp, the mainline east- and westbound approaches operate at a LOS A during both peak hours. The southbound left/through movement operates at a LOS F during both peak hours. All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 NB ramp, the mainline east- and westbound approaches operate at a LOS A during both peak hours. As previously mentioned, the north- and southbound movements report delay due to the yield-control, however the movements behave more like free-flow right turns. The NB right operates at a LOS B or better during both peak hours. The SB right operates at a LOS F during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

- At the unsignalized intersection of Route 54 and Mt. Hermon Road/Frances Road, the mainline east- and westbound movements will operate at a LOS A during both peak hours. The northbound approach will operate at a LOS C/D during the AM/PM peaks, respectively. The southbound approach will operate at a LOS B during both peak hours. All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At all other unsignalized intersections (numbers 4, 7, 9-10), the mainline east- and westbound movements all operate at a LOS A during both peak hours. All side street movements operate at acceptable levels (LOS B or better) during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

Table 5-1: Intersection Level of Service and Delay Summary
2033 Background Traffic (Part 1)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. England St (E-W)	EB Left	290	23.6	C	63	124	31.4	C	125	219
US Route 1 (N-S)	EB Thru		32.8	C	187	207	37.8	D	232	257
Signalized	EB Right	340	28.0	C	11	108	32.1	C	11	84
	EB Approach		*30.5*	*C*	-	-	*35.5*	*D*	-	-
	WB Left		18.1	B	67	205	36.8	D	208	529
	WB Thru		37.0	D	#487	456	50.0	D	#590	719
	WB Right		0.4	A	46	27	0.3	A	0	227
	WB Approach		*20.3*	*C*	-	-	*33.5*	*C*	-	-
	NB Left	350	31.8	C	135	178	53.0	D	#290	293
	NB Thru		38.6	D	109	169	64.8	E	#292	336
	NB Right	400	0.1	A	0	0	0.2	A	0	0
	NB Approach		*26.3*	*C*	-	-	*45.9*	*D*	-	-
	SB Left	320	42.0	D	#240	294	65.9	E	#342	316
	SB Thru		44.4	D	185	297	62.3	E	#295	373
	SB Right	140	35.1	D	0	140	42.4	D	0	140
	SB Approach		*42.4*	*D*	-	-	*61.1*	*E*	-	-
	Overall		**29.3**	**C**	-	-	**44.0**	**D**	-	-
2. England St (E-W)	EB Left	235	77.5	E	m13	53	47.9	D	m49	82
Cottage Green Dr (N-S)	EB Thru - Right		16.7	B	139	215	19.2	B	m186	242
Signalized	*EB Approach*		*17.7*	*B*	-	-	*20.2*	*C*	-	-
	WB Dual Left	260	80.2	F	37	77	68.4	E	m38	147
	WB Thru - Right		2.3	A	38	199	13.3	B	175	254
	WB Approach		*5.7*	*A*	-	-	*16.9*	*B*	-	-
	NB Left		48.6	D	42	66	56.8	E	83	119
	NB Thru		45.9	D	14	58	56.7	E	86	114
	NB Right	170	45.4	D	0	35	52.5	D	0	78
	NB Approach		*47.2*	*D*	-	-	*55.3*	*E*	-	-
	SB Left	155	48.3	D	107	136	49.0	D	239	154
	SB Thru - Right		41.6	D	40	116	41.0	D	92	316
	SB Approach		*46.4*	*D*	-	-	*46.7*	*D*	-	-
	Overall		**14.1**	**B**	-	-	**24.3**	**C**	-	-
3. England St (E-W)	EB Left	325	37.6	D	m48	115	43.5	D	m91	114
Hill Carter Pkwy (N-S)	EB Thru		30.2	C	239	421	29.8	C	330	504
Signalized	EB Right	200	22.7	C	28	200	151.7	F	117	200
	EB Approach		*29.8*	*C*	-	-	*46.8*	*D*	-	-
	WB Dual Left	550	39.1	D	104	144	49.9	D	143	152
	WB Thru - Right		20.4	C	231	234	22.0	C	245	254
	WB Approach		*23.9*	*C*	-	-	*27.9*	*C*	-	-
	NB Left	220	44.4	D	68	58	57.6	E	#205	155
	NB Left - Thru		42.9	D	37	115	50.0	D	85	187
	NB Right	325	42.7	D	0	152	49.2	D	#102	238
	NB Approach		*43.0*	*D*	-	-	*51.0*	*D*	-	-
	SB Left	290	61.7	E	109	214	68.2	E	116	203
	SB Thru - Right		40.2	D	20	61	49.8	D	26	56
	SB Approach		*55.6*	*E*	-	-	*61.6*	*E*	-	-
	Overall		**29.7**	**C**	-	-	**40.8**	**D**	-	-
4. England St (E-W)	EB Thru - Right†		0.0	A	-	49	0.0	A	-	140
Carter Rd (N-S)	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
Unsignalized	WB Thru - Right†		0.0	A	-	7	0.0	A	-	-
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		10.8	B	8	68	11.9	B	5	75
	NB Approach		*10.8*	*B*	-	-	*11.9*	*B*	-	-
	SB Right		11.3	B	2	63	10.9	B	1	27
	SB Approach		*11.3*	*B*	-	-	*10.9*	*B*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Table 5-2: Intersection Level of Service and Delay Summary
2033 Background Traffic (Part 2)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
5. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	13	0.0	A	-	2
I-95 SB Ramps	EB Right†		0.0	A	-	13	0.0	A	-	-
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left	435	9.0	A	22	73	9.9	A	22	102
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*1.7*	*A*	-	-	*1.7*	*A*	-	-
	SB Left - Thru	150	94.5	F	14	30	247.9	F	68	91
	SB Right		22.3	C	83	0	21.1	C	77	91
	SB Approach		*24.5*	*C*	-	-	*43.1*	*E*	-	-
6. Patrick Henry Hwy (E-W)	EB Left	435	9.7	A	16	110	9.9	A	26	126
I-95 NB Ramps	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*4.0*	*A*	-	-	*3.9*	*A*	-	-
	WB Thru†		0.0	A	-	2	0.0	A	-	10
	WB Right†	380	0.0	A	-	0	0.0	A	-	0
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		9.9	A	16	0	11.2	B	30	0
	NB Approach		*9.9*	*A*	-	-	*11.2*	*B*	-	-
	SB Right		74.4	F	502	0	73.8	F	487	0
	SB Approach		*74.4*	*F*	-	-	*73.8*	*F*	-	-
7. Patrick Henry Hwy (E-W)	EB Left		9.1	A	3	60	8.9	A	3	50
Telcourt Rd (N-S)	EB Thru†		0.0	A	-	3	0.0	A	-	-
Unsignalized	*EB Approach*		*0.9*	*A*	-	-	*0.5*	*A*	-	-
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Right†	50	0.0	A	-	27	0.0	A	-	24
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left - Right		12.9	B	2	33	10.7	B	4	42
	SB Approach		*12.9*	*B*	-	-	*10.7*	*B*	-	-
8. Patrick Henry Hwy (E-W)	EB Left		8.4	A	4	39	8.3	A	2	33
Mt. Hermon Rd/Frances Rd (N-S)	EB Thru - Right†		0.0	A	-	2	0.0	A	-	2
Unsignalized	*EB Approach*		*1.1*	*A*	-	-	*0.3*	*A*	-	-
	WB Left - Thru		0.4	A	1	55	0.4	A	1	83
	WB Right†	110	0.0	A	-	0	0.0	A	-	-
	WB Approach		*0.4*	*A*	-	-	*0.3*	*A*	-	-
	NB Left-Thru-Right		25.4	D	19	62	30.1	D	35	61
	NB Approach		*25.4*	*D*	-	-	*30.1*	*D*	-	-
	SB Left-Thru-Right		13.2	B	10	53	12.9	B	7	48
	SB Approach		*13.2*	*B*	-	-	*12.9*	*B*	-	-
9. Patrick Henry Hwy (E-W)	EB Left	300	8.1	A	5	50	8.5	A	13	76
Woodside Ln (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*1.9*	*A*	-	-	*2.8*	*A*	-	-
	WB Thru - Right†		0.0	A	-	5	0.0	A	-	6
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left		13.0	B	21	76	14.2	B	20	67
	SB Right	290	13.0	B	21	86	14.2	B	20	86
	SB Approach		*13.0*	*B*	-	-	*14.2*	*B*	-	-
10. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Goddins Hill Rd (N-S)	EB Right†	200	0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left - Thru		3.0	A	7	67	1.3	A	3	49
	WB Approach		*3.0*	*A*	-	-	*1.3*	*A*	-	-
	NB Left - Right		13.4	B	11	54	12.7	B	17	60
	NB Approach		*13.4*	*B*	-	-	*12.7*	*B*	-	-

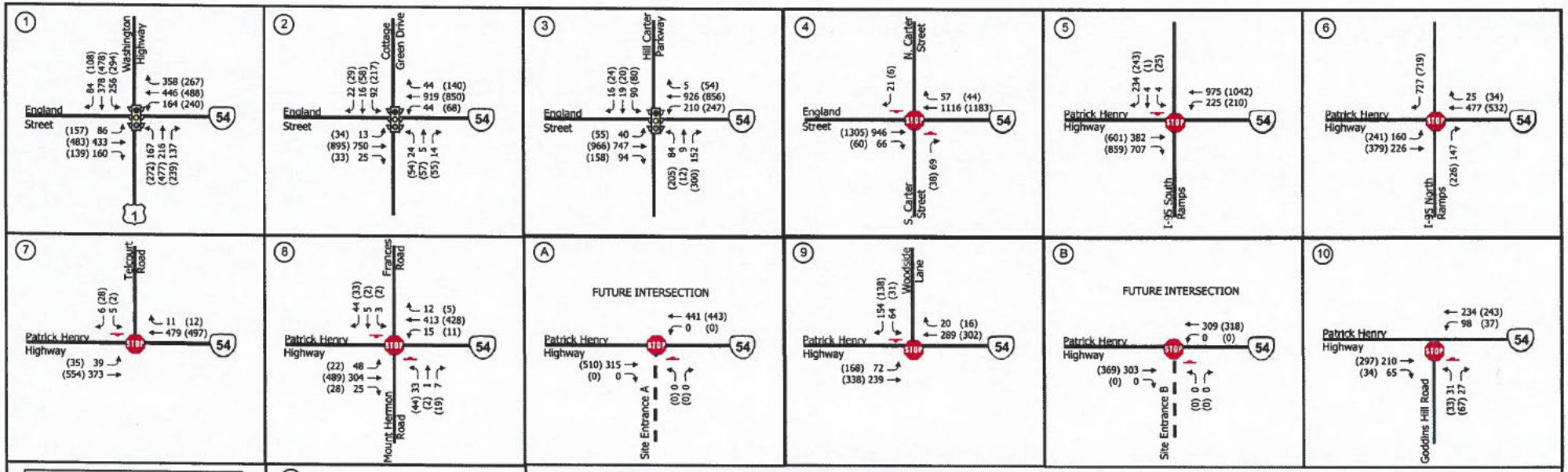
[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
2033 Background Traffic Volumes
Hanover County, Virginia

Figure 5-1

PAGE INTENTIONALLY BLANK

6 2039 BACKGROUND CONDITIONS

The background 2039 volumes were analyzed assuming future intersection geometry in conjunction with projected background traffic volumes. The background traffic volumes were developed based on a 1.5% annual growth rate.

6.1 BACKGROUND FORECASTING METHODOLOGY

The 1.5% annual growth rate discussed above was compounded annually for the 16-year period from 2022 to 2039 and applied to the existing traffic volumes. The resulting 2039 Background Traffic Volumes are shown on Figure 6-1.

6.2 BACKGROUND 2039 CAPACITY ANALYSES

Tables 6-1 and 6-2 summarizes the 2039 background intersection LOS, delay, 95th percentile (Synchro), and maximum (SimTraffic) queue lengths based on the 2039 background peak hour traffic volumes shown on Figure 6-1, the existing conditions lane geometry (Figure 2-1), and the existing timings at the traffic signals. Note that intersections A-C are shown as numbers 11-13 in the following analysis. The corresponding SYNCHRO worksheets are included in Appendix I.

Note at Intersection #3 that the eastbound right movement is reporting excessive delay. This is an error with how Synchro is reporting delay for the intersection and may be caused by the pedestrian phase associated with the eastbound approach being turned on all the time. However, the 95th Percentile queue length is low which shows that vehicles are not waiting for the amount of time suggested by the control delay.

Note at Intersection #6 the I-95 off-ramps (SB right and NB right) are coded in Synchro as yield controlled approaches due to the existing signs at the intersection. However, the existing lane geometry for those movements includes a receiving lane for merging traffic. As shown by the SimTraffic queue lengths (0 ft), these movements operate as free-flowing despite the HCM reports showing delay.

As shown in Tables 6-1 and 6-2 under 2039 background conditions:

- At the signalized intersection of Route 54 and US Route 1, the overall intersection will operate at a LOS C/E during the AM/PM peaks, respectively.
    - The eastbound approach will operate at a LOS C/D during the AM/PM peaks, respectively. The westbound approach will operate at a LOS C/D during the AM/PM peaks, respectively. The WB through will operate at a LOS D/E during the AM/PM peaks, respectively.
    - The northbound left will operate at a LOS C/E during the AM/PM peaks, respectively. The NB through will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound left will operate at a LOS D/F during the AM/PM peaks, respectively. The SB approach will operate at a LOS D/F during the AM/PM peaks, respectively.
    - During the PM peak, the NB left maximum queue fills the available storage. During the PM peak, the SB left maximum queue exceeds the available storage, spilling into the through lanes and backing up through the intersection of College Ave. All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Cottage Green Drive, the overall intersection will operate at a LOS B/C during the AM/PM peaks, respectively.
    - The mainline through movements will operate at a LOS C or better during both peak hours. The EB left will operate at a LOS D during both peak hours. The WB left will operate at a LOS E during both peak hours.
    - The northbound and southbound approaches will operate at a LOS D during both peak hours.
    - During the PM peak, the SB left maximum queue exceeds the available storage, spiling back into the through lane. All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Hill Carter Parkway, the overall intersection will operate at a LOS C/D during the AM/PM peaks, respectively.
    - The mainline through movements will operate at a LOS C during both peak hours. The EB and WB lefts will operate at a LOS D during both peak hours. As previously mentioned, the delay for the EB right is not reported correctly at this intersection.
    - The northbound approach will operate at a LOS D during both peak hours. The NB left will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach and left movement will operate at a LOS E during both peak hours.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 SB ramp, the mainline east- and westbound approaches operate at a LOS B or better during both peak hours. The southbound left/through movement operates at a LOS F during both peak hours.
    - All movements have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 NB ramp, the mainline east- and westbound approaches operate at a LOS B during both peak hours. As previously mentioned, the north- and southbound movements report delay due to the yield-control, however the movements behave more like free-flow right turns. The NB right operates at a LOS B during both peak hours. The SB right operates at a LOS F during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

- At the unsignalized intersection of Route 54 and Mt. Hermon Road/Frances Road, the mainline east- and westbound movements will operate at a LOS A during both peak hours. The northbound approach will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach will operate at a LOS B during both peak hours. All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At all other unsignalized intersections (numbers 4, 7, 9-10), the mainline east- and westbound movements all operate at a LOS A during both peak hours. All side street movements operate at acceptable levels (LOS B or better) during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

Table 6-1: Intersection Level of Service and Delay Summary
2039 Background Traffic (Part 1)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. England St (E-W)	EB Left	290	25.8	C	68	152	38.6	D	162	228
US Route 1 (N-S)	EB Thru		34.2	C	205	242	39.6	D	255	287
Signalized	EB Right	340	28.6	C	20	103	32.8	C	21	95
	EB Approach		*31.8*	*C*	-	-	*38.2*	*D*	-	-
	WB Left		21.4	C	95	248	49.4	D	#246	778
	WB Thru		51.6	D	#556	616	75.2	E	#679	876
	WB Right		0.5	A	51	45	0.3	A	0	571
	WB Approach		*27.6*	*C*	-	-	*48.9*	*D*	-	-
	NB Left	350	34.4	C	147	184	73.4	E	#374	350
	NB Thru		38.6	D	119	173	74.9	E	#335	628
	NB Right	400	0.2	A	0	0	0.2	A	0	80
	NB Approach		*27.2*	*C*	-	-	*56.4*	*E*	-	-
	SB Left	320	49.8	D	#214	311	101.9	F	#426	316
	SB Thru		47.5	D	#218	337	78.3	E	#338	658
	SB Right	140	35.1	D	0	140	42.7	D	0	140
	SB Approach		*46.8*	*D*	-	-	*81.8*	*F*	-	-
	Overall		**33.3**	**C**	-	-	**56.6**	**E**	-	-
2. England St (E-W)	EB Left	235	49.1	D	m12	62	50.3	D	m50	89
Cottage Green Dr (N-S)	EB Thru - Right		17.6	B	m123	267	22.8	C	m229	279
Signalized	*EB Approach*		*18.2*	*B*	-	-	*23.8*	*C*	-	-
	WB Dual Left	260	73.8	E	33	98	66.9	E	m41	178
	WB Thru - Right		4.5	A	31	229	14.9	B	194	332
	WB Approach		*7.5*	*A*	-	-	*18.2*	*B*	-	-
	NB Left		48.7	D	44	95	54.8	D	89	122
	NB Thru		45.8	D	14	52	54.7	D	93	110
	NB Right	170	45.3	D	0	39	51.2	D	0	76
	NB Approach		*47.3*	*D*	-	-	*53.5*	*D*	-	-
	SB Left	155	44.1	D	114	145	46.9	D	271	154
	SB Thru - Right		39.9	D	42	122	39.3	D	105	375
	SB Approach		*42.8*	*D*	-	-	*44.7*	*D*	-	-
	Overall		**15.0**	**B**	-	-	**26.0**	**C**	-	-
3. England St (E-W)	EB Left	325	36.2	D	m49	134	42.2	D	m99	146
Hill Carter Pkwy (N-S)	EB Thru		31.7	C	259	418	32.8	C	368	542
Signalized	EB Right	200	23.2	C	21	200	117.3	F	130	200
	EB Approach		*31.0*	*C*	-	-	*44.6*	*D*	-	-
	WB Dual Left	550	39.4	D	115	145	51.9	D	158	186
	WB Thru - Right		21.5	C	256	233	24.6	C	275	279
	WB Approach		*24.8*	*C*	-	-	*30.4*	*C*	-	-
	NB Left	220	44.5	D	72	70	60.6	E	#228	175
	NB Left - Thru		43.0	D	40	114	50.1	D	91	192
	NB Right	325	42.7	D	0	166	49.2	D	#120	268
	NB Approach		*43.0*	*D*	-	-	*51.6*	*D*	-	-
	SB Left	290	65.3	E	#118	219	60.2	E	127	201
	SB Thru - Right		39.9	D	22	72	47.9	D	27	54
	SB Approach		*58.0*	*E*	-	-	*55.9*	*E*	-	-
	Overall		**30.7**	**C**	-	-	**40.8**	**D**	-	-
4. England St (E-W)	EB Thru - Right†		0.0	A	-	112	0.0	A	-	143
Carter Rd (N-S)	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
Unsignalized	WB Thru - Right†		0.0	A	-	7	0.0	A	-	11
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		10.8	B	8	81	11.9	B	5	91
	NB Approach		*10.8*	*B*	-	-	*11.9*	*B*	-	-
	SB Right		11.3	B	2	58	10.9	B	1	27
	SB Approach		*11.3*	*B*	-	-	*10.9*	*B*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Table 6-2: Intersection Level of Service and Delay Summary
2039 Background Traffic (Part 2)

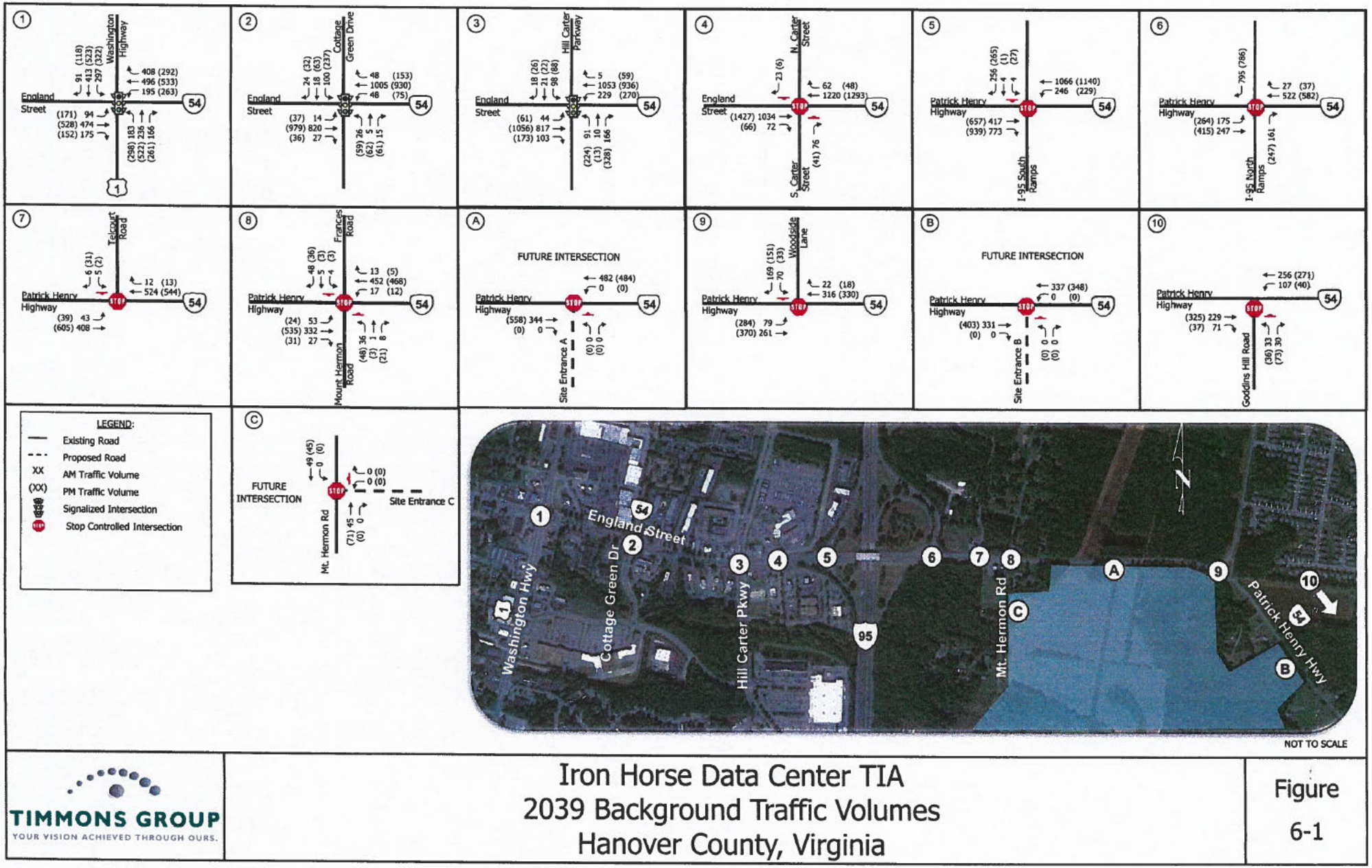
Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
5. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	2	0.0	A	-	3
I-95 SB Ramps	EB Right†		0.0	A	-	9	0.0	A	-	-
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left	435	9.3	A	26	97	10.3	B	26	118
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*1.7*	*A*	-	-	*1.7*	*A*	-	-
	SB Left - Thru	150	133.9	F	18	38	455.5	F	89	102
	SB Right		28.5	D	115	0	26.2	D	105	0
	SB Approach		*31.5*	*D*	-	-	*67.4*	*F*	-	-
6. Patrick Henry Hwy (E-W)	EB Left	435	10.1	B	19	125	10.4	B	31	144
I-95 NB Ramps	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*4.2*	*A*	-	-	*4.1*	*A*	-	-
	WB Thru†		0.0	A	-	13	0.0	A	-	17
	WB Right†	380	0.0	A	-	0	0.0	A	-	0
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		10.1	B	18	0	11.7	B	35	0
	NB Approach		*10.1*	*B*	-	-	*11.7*	*B*	-	-
	SB Right		126.3	F	724	0	126.0	F	703	0
	SB Approach		*126.3*	*F*	-	-	*126.0*	*F*	-	-
7. Patrick Henry Hwy (E-W)	EB Left		9.3	A	4	68	9.1	A	4	54
Telcourt Rd (N-S)	EB Thru†		0.0	A	-	5	0.0	A	-	-
Unsignalized	*EB Approach*		*0.9*	*A*	-	-	*0.5*	*A*	-	-
	WB Thru†		0.0	A	-	3	0.0	A	-	-
	WB Right†	50	0.0	A	-	25	0.0	A	-	29
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left - Right		13.7	B	2	33	11.3	B	5	50
	SB Approach		*13.7*	*B*	-	-	*11.3*	*B*	-	-
8. Patrick Henry Hwy (E-W)	EB Left		8.6	A	4	40	8.5	A	2	29
Mt. Hermon Rd/Frances Rd (N-S)	EB Thru - Right†		0.0	A	-	6	0.0	A	-	5
Unsignalized	*EB Approach*		*1.1*	*A*	-	-	*0.3*	*A*	-	-
	WB Left - Thru		0.5	A	1	75	0.4	A	1	74
	WB Right†	110	0.0	A	-	0	0.0	A	-	2
	WB Approach		*0.4*	*A*	-	-	*0.4*	*A*	-	-
	NB Left-Thru-Right		30.7	D	25	64	39.5	E	50	69
	NB Approach		*30.7*	*D*	-	-	*39.5*	*E*	-	-
	SB Left-Thru-Right		14.0	B	11	50	14.4	B	9	46
	SB Approach		*14.0*	*B*	-	-	*14.4*	*B*	-	-
9. Patrick Henry Hwy (E-W)	EB Left	300	8.2	A	5	51	8.6	A	15	99
Woodside Ln (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*1.9*	*A*	-	-	*2.9*	*A*	-	-
	WB Thru - Right†		0.0	A	-	7	0.0	A	-	2
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left		13.8	B	25	89	15.5	C	24	71
	SB Right	290	13.8	B	25	85	15.5	C	24	87
	SB Approach		*13.8*	*B*	-	-	*15.5*	*C*	-	-
10. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Goddins Hill Rd (N-S)	EB Right†	200	0.0	A	-	9	0.0	A	-	4
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left - Thru		3.1	A	8	72	1.4	A	3	55
	WB Approach		*3.1*	*A*	-	-	*1.4*	*A*	-	-
	NB Left - Right		14.2	B	13	63	13.4	B	20	62
	NB Approach		*14.2*	*B*	-	-	*13.4*	*B*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
2039 Background Traffic Volumes
Hanover County, Virginia

Figure 6-1

PAGE INTENTIONALLY BLANK

7 TRIP GENERATION AND DISTRIBUTION

7.1 SITE TRIP GENERATION

Data centers are relatively new uses and trip generation information is limited. Typically, trips are generated based on data contained in the 11th Edition of the ITE Trip Generation Manual. However, the ITE data contains studies for only two (2) similar uses both of which were studied in the 2010 timeframe and states *"caution should be used when applying trip generation rates for data centers, as the database contains a small number of sites with limited data".*

VDOT Traffic Impact Analysis Administrative Guidelines states that if certain criteria are not met (at least three data points, standard deviation less than 110% of the average rate, etc.), *"a rate based upon the study of similar local sites should be considered."*

In March 2023, Bowman Consulting Group published a trip generation study of six (6) existing data center sites in Virginia. The study analyzed the trips generated by each site over the course of a full year and averaged the trips to determine rates for the AM peak hour, PM peak hour, and average daily trips. The study was approved by VDOT Central Office and VDOT Richmond District as the preferred method for trip generation calculation for a data center. A copy of the Bowman study is included in Appendix J.

As shown in Table 7-1, when complete, the total proposed development will generate 297 external trips (163 in and 134 out) during the AM peak, 99 external trips (30 in and 69 out) during the PM peak, and 2,475 external weekday daily trips.

Table 7-1: Trip Generation Summary

Buildout - Iron Horse Data Center Development				Weekday						
				AM Peak Hour			PM Peak Hour			Average
Land Use	Size	Units	Land Use Code	In	Out	Total	In	Out	Total	Daily Trips
1. Data Center Trips[1]										
Data Center (Town of Ashland)	1,800,000	SF		89	73	162	16	38	54	1,350
Data Center (Hanover County)	1,500,000	SF		74	61	135	14	31	45	1,125
Total Data Center Trips				***163***	***134***	***297***	***30***	***69***	***99***	***2,475***
Total External Primary Trips				**163**	**134**	**297**	**30**	**69**	**99**	**2,475**

Notes:

(1) Trip generation based on *AWS Data Center Trip Generation Assessment* prepared by Bowman Consulting Group, March 2023. Entering & exiting distributions taken from the ITE *Trip Generation Manual,* 11th Edition.

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS

7.2 Primary Trip Distribution Methodology

The distribution of external trips generated by the proposed development was based on the existing travel patterns, the nature of the site, and local knowledge.

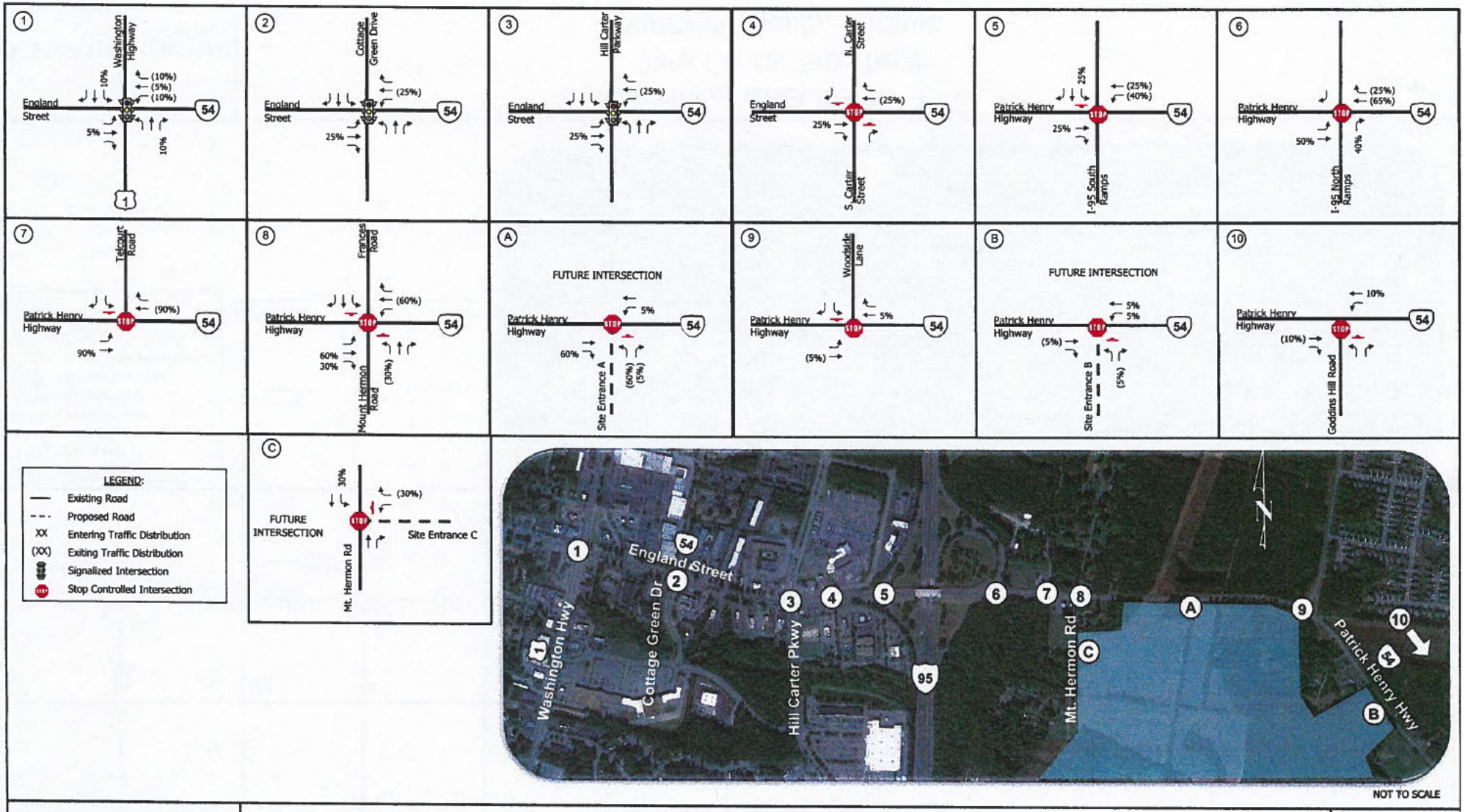
The following directional distributions were assumed for primary passenger vehicle trips to/from the proposed development:

- To/from the west on Route 54 – 5%
- To/from the north on US Route 1 – 10%
- To/from the south on US Route 1 – 10%
- To/from the north on I-95 –25%
- To/from the south on I-95 – 40%
- To/from the east on Route 54 – 10%

Directional distributions were then applied to the study intersections as shown on Figure 7-2.

7.3 Traffic Assignment

The trip distribution percentages described above for the external site trips were applied to the trip generation shown in Table 7-1 to distribute the external site trips the surrounding roadway network. The resulting site generated external trips are shown on Figure 7-3.

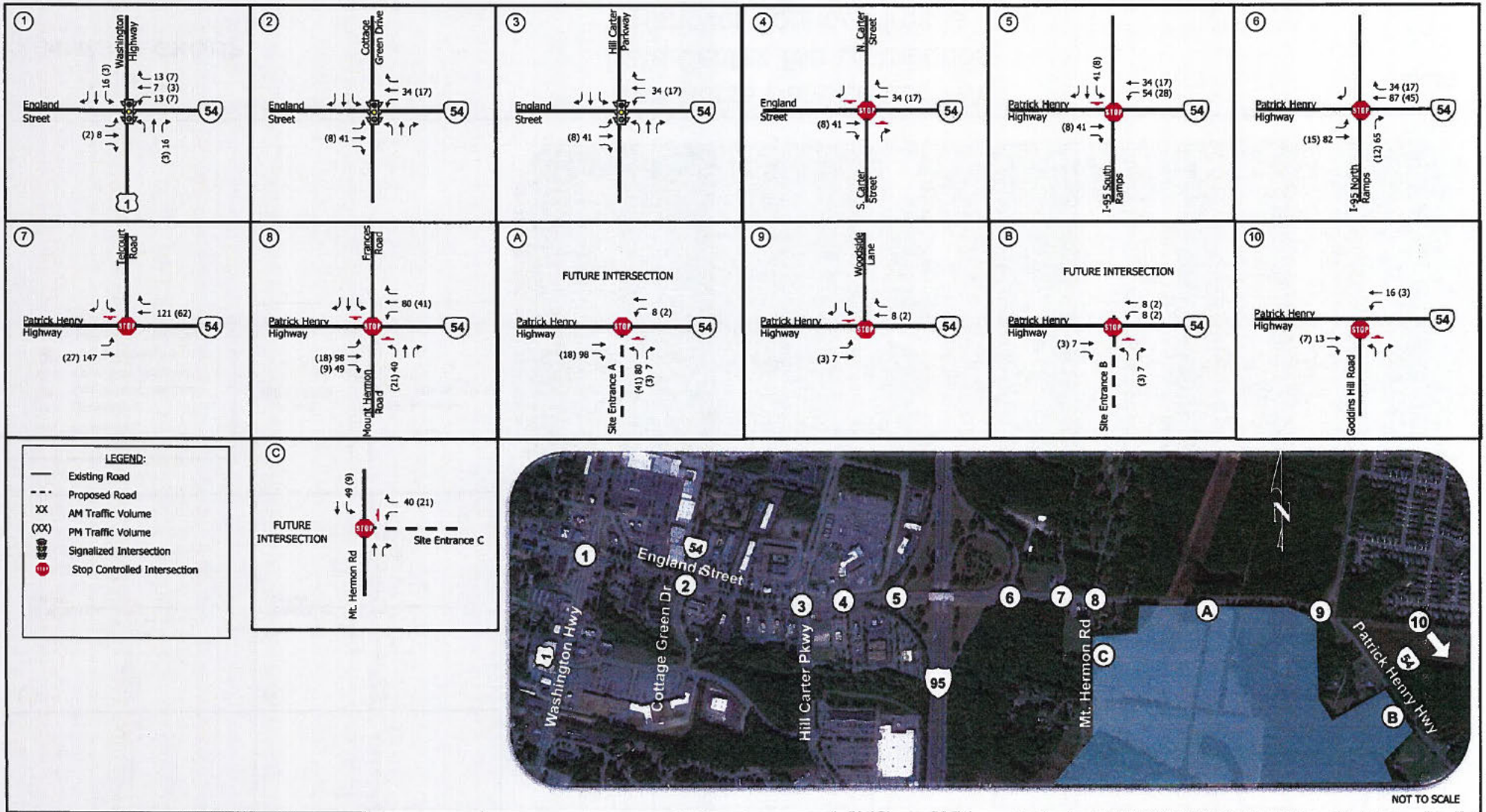


NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Data Center Trip Distribution
Hanover County, Virginia

Figure
7-1



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
Data Center Site Trips
Hanover County, Virginia

Figure 7-2

8 2033 TOTAL FUTURE CONDITIONS

To complete the analysis of the 2033 total conditions of the proposed development, the estimated site trips were added to the background 2033 volumes. The projected volumes were then used to complete the capacity analysis.

8.1 TOTAL FUTURE TRAFFIC VOLUMES

To generate the 2033 total future traffic volumes, the site trips (Figure 7-2) were added to the background 2033 traffic volumes (Figure 5-1). The resulting 2033 total future traffic volumes are shown on Figure 8-1.

8.2 2033 TOTAL FUTURE CAPACITY ANALYSES

Tables 8-1 through 8-3 summarizes the 2033 total future intersection LOS, delay, 95th percentile (Synchro), and maximum (SimTraffic) queue lengths based on the 2033 total future peak hour traffic volumes shown on Figure 8-1, the Phase 2 future lane geometry (Figure 2-3), and optimized timings at the traffic signals. Note that intersections A-C are shown as numbers 11-14 in the following analysis. The corresponding SYNCHRO worksheets for 2033 total future analyses are included in Appendix K.

Note at Intersection #3 that the eastbound right movement is reporting excessive delay. This is an error with how Synchro is reporting delay for the intersection and may be caused by the pedestrian phase associated with the eastbound approach being turned on all the time. However, the 95th Percentile queue length is low which shows that vehicles are not waiting for the amount of time suggested by the control delay.

Note at Intersection #6 the I-95 off-ramps (SB right and NB right) are coded in Synchro as yield controlled approaches due to the existing signs at the intersection. However, the existing lane geometry for those movements includes a receiving lane for merging traffic. As shown by the SimTraffic queue lengths (0 ft), these movements operate as free-flowing despite the HCM reports showing delay.

As shown in Tables 8-1 through 8-3 under 2033 total future:

- At the signalized intersection of Route 54 and US Route 1, the overall intersection will operate at a LOS C/D during the AM/PM peaks, respectively.
    - The eastbound approach will operate at a LOS D during both peak hours. The westbound approach will operate at a B/C during the AM/PM peaks, respectively. The WB through will operate at a LOS C/D during the AM/PM peaks, respectively.
    - The northbound left will operate at a LOS C/D during the AM/PM peaks, respectively. The NB through will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach will operate at a LOS D during both peak hours. The SB left will operate at a LOS D/E during the AM/PM peaks, respectively.
    - During both peak hours, the SB thru maximum queue blocks the storage for the SB right. All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Cottage Green Drive, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively.
    - The mainline through movements will operate at a LOS B or better during both peak hours. The EB left will operate at a LOS D during both peak hours. The WB left will operate at a LOS E/C during the AM/PM peaks, respectively.
    - The northbound approach and left movement will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach land left movement will operate at a LOS D during both peak hours.
    - During the PM peak, the SB left maximum queue exceeds the available storage, spiling back into the through lane. All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Hill Carter Parkway, the overall intersection will operate at a LOS C during both peak hours.
    - The mainline through movements will operate at a LOS C or better during both peak hours. The WB left will operate at a LOS D/E during the AM/PM peaks, respectively. As previously mentioned, the delay for the EB right is not reported correctly at this intersection.
    - The northbound approach will operate at a LOS D during both peak hours. The NB left will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach and left will operate at a LOS E during both peak hours.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 SB ramp, the east- and westbound mainline movements operate at a LOS B or better during both peak hours. The southbound left/through movement operates at a LOS F during both peak hours.
    - All other movements have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 NB ramp, the mainline east- and westbound approaches operate at a LOS B or better during both peak hours. As previously mentioned, the north- and southbound movements report delay due to the yield-control, however the movements behave more like free-flow right turns. The NB right operates at a LOS B during both peak hours. The SB right operates at a LOS E during both peak hours. All maximum queue lengths are contained within the available storage.

- At the unsignalized intersection of Route 54 and Mt. Hermon Road/Frances Road, the east- and west-bound mainline movements operate at a LOS A during both peak hours.
    - The northbound approach will operate at a LOS F during both peak hours. The southbound approach will operate at a LOS B during both peak hours.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.
- At the unsignalized intersection of Route 54 and Site Entrance A, the east- and west-bound mainline movements will operate at a LOS A during both peak hours. The northbound approach will operate at a LOS C during both peak hours. All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At all other unsignalized intersections (numbers 4, 7, 9-10, 12-13), the mainline movements (free-flowing) all operate at a LOS A during both peak hours. All side street movements (stop-controlled) operate at acceptable levels (LOS C or better) during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

Table 8-1: Intersection Level of Service and Delay Summary
2033 Total Future Traffic (Part 1)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. England St (E-W)	EB Left	290	34.8	C	62	180	57.3	E	#144	258
US Route 1 (N-S)	EB Thru		36.9	D	190	207	40.8	D	242	321
Signalized	EB Right	340	30.6	C	11	102	34.1	C	12	81
	EB Approach		*35.2*	*D*	-	-	*42.9*	*D*	-	-
	WB Left		14.1	B	86	264	25.4	C	67	314
	WB Thru		27.3	C	#418	441	39.0	D	#567	523
	WB Right		0.4	A	68	0	0.3	A	0	0
	WB Approach		*15.0*	*B*	-	-	*25.2*	*C*	-	-
	NB Left	350	34.4	C	138	169	50.5	D	#276	320
	NB Thru		39.5	D	111	154	63.3	E	#292	351
	NB Right	400	0.2	A	0	0	0.2	A	0	0
	NB Approach		*26.7*	*C*	-	-	*44.4*	*D*	-	-
	SB Left	320	52.3	D	#280	294	58.0	E	#336	318
	SB Thru		42.8	D	181	264	52.3	D	258	398
	SB Right	140	34.6	C	0	140	40.5	D	0	140
	SB Approach		*45.4*	*D*	-	-	*52.8*	*D*	-	-
	Overall		**29.4**	**C**	-	-	**40.8**	**D**	-	-
2. England St (E-W)	EB Left	235	50.3	D	m15	60	51.4	D	m46	82
Cottage Green Dr (N-S)	EB Thru - Right		5.2	A	101	174	16.1	B	m288	377
Signalized	*EB Approach*		*5.9*	*A*	-	-	*17.3*	*B*	-	-
	WB Dual Left	260	59.3	E	20	73	29.3	C	52	96
	WB Thru - Right		1.9	A	5	263	4.6	A	136	224
	WB Approach		*4.4*	*A*	-	-	*6.1*	*A*	-	-
	NB Left		48.6	D	42	82	56.8	E	83	98
	NB Thru		45.9	D	14	64	56.7	E	86	121
	NB Right	170	45.4	D	0	36	52.5	D	0	89
	NB Approach		*47.2*	*D*	-	-	*55.3*	*E*	-	-
	SB Left	155	48.8	D	107	145	54.2	D	239	154
	SB Thru - Right		41.7	D	40	114	42.9	D	91	306
	SB Approach		*46.8*	*D*	-	-	*50.9*	*D*	-	-
	Overall		**8.6**	**A**	-	-	**19.1**	**B**	-	-
3. England St (E-W)	EB Left	325	46.9	D	47	112	26.6	C	m62	102
Hill Carter Pkwy (N-S)	EB Thru		14.4	B	222	358	9.4	A	95	318
Signalized	EB Right	200	22.6	C	16	200	6.1	A	m6	200
	EB Approach		*16.6*	*B*	-	-	*9.8*	*A*	-	-
	WB Dual Left	550	40.0	D	106	138	56.5	E	#163	177
	WB Thru - Right		20.8	C	245	240	25.2	C	280	298
	WB Approach		*24.2*	*C*	-	-	*31.8*	*C*	-	-
	NB Left	220	43.6	D	64	53	57.0	E	157	165
	NB Left - Thru		42.3	D	36	106	49.8	D	80	194
	NB Right	325	42.1	D	0	160	49.0	D	89	90
	NB Approach		*42.4*	*D*	-	-	*50.8*	*D*	-	-
	SB Left	290	61.7	E	109	235	67.3	E	116	212
	SB Thru - Right		40.2	D	20	77	49.7	D	26	50
	SB Approach		*55.6*	*E*	-	-	*61.0*	*E*	-	-
	Overall		**24.8**	**C**	-	-	**27.6**	**C**	-	-
4. England St (E-W)	EB Thru - Right†		0.0	A	-	95	0.0	A	-	51
Carter Rd (N-S)	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
Unsignalized	WB Thru - Right†		0.0	A	-	2	0.0	A	-	30
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		11.7	B	10	73	13.0	B	7	74
	NB Approach		*11.7*	*B*	-	-	*13.0*	*B*	-	-
	SB Right		11.9	B	3	62	11.6	B	1	33
	SB Approach		*11.9*	*B*	-	-	*11.6*	*B*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

$ - Delay exceeds 300s

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Table 8-2: Intersection Level of Service and Delay Summary
2033 Total Future Traffic (Part 2)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
5. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	26	0.0	B	-	6
I-95 SB Ramps	EB Right†		0.0	A	-	-	0.0	B	-	-
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*B*	-	-
	WB Left	435	9.5	A	26	94	10.1	B	26	98
	WB Thru†		0.0	A	-	-	0.0	B	-	3
	WB Approach		*2.1*	*A*	-	-	*1.8*	*B*	-	-
	SB Left - Thru	150	585.2	F	149	119	386.0	F	96	104
	SB Right		23.5	C	88	94	21.5	C	79	84
	SB Approach		*120.4*	*F*	-	-	*66.1*	*F*	-	-
6. Patrick Henry Hwy (E-W)	EB Left	435	10.2	B	18	126	10.2	B	27	124
I-95 NB Ramps	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*3.5*	*A*	-	-	*3.9*	*A*	-	-
	WB Thru†		0.0	A	-	11	0.0	A	-	13
	WB Right†	380	0.0	B	-	0	0.0	B	-	0
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		13.3	B	38	0	15.3	C	51	0
	NB Approach		*13.3*	*B*	-	-	*15.3*	*C*	-	-
	SB Right		102.4	F	598	0	87.0	F	533	0
	SB Approach		*102.4*	*F*	-	-	*87.0*	*F*	-	-
7. Patrick Henry Hwy (E-W)	EB Left		9.6	A	4	61	9.2	A	3	54
Telcourt Rd (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*0.7*	*A*	-	-	*0.5*	*A*	-	-
	WB Thru†		0.0	A	-	4	0.0	A	-	2
	WB Right†	50	0.0	A	-	28	0.0	A	-	24
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left - Right		15.1	C	2	38	11.1	B	4	49
	SB Approach		*15.1*	*C*	-	-	*11.1*	*B*	-	-
8. Patrick Henry Hwy (E-W)	EB Left	150	8.7	A	4	47	8.5	A	2	35
Mt. Hermon Rd/Frances Rd (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	EB Right†		0.0	A	-	6	0.0	A	-	2
	EB Approach		*0.8*	*A*	-	-	*0.3*	*A*	-	-
	WB Left	150	8.5	A	1	23	8.7	A	1	22
	WB Thru†		0.0	A	-	-	0.0	A	-	0
	WB Right†	110	0.0	A	0	0	0.0	A	0	0
	WB Approach		*0.2*	*A*	-	-	*0.2*	*A*	-	-
	NB Left-Thru-Right		54.1	F	72	82	42.9	E	63	80
	NB Approach		*54.1*	*F*	-	-	*42.9*	*E*	-	-
	SB Left-Thru-Right		15.2	C	12	56	13.5	B	7	40
	SB Approach		*15.2*	*C*	-	-	*13.5*	*B*	-	-
9. Patrick Henry Hwy (E-W)	EB Left	300	8.1	A	5	53	8.5	A	13	68
Woodside Ln (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*1.8*	*A*	-	-	*2.8*	*A*	-	-
	WB Thru - Right†		0.0	A	-	4	0.0	A	-	4
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left		13.1	B	21	76	14.2	B	20	58
	SB Right	290	13.1	B	21	86	14.2	B	20	81
	SB Approach		*13.1*	*B*	-	-	*14.2*	*B*	-	-
10. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Goddins Hill Rd (N-S)	EB Right†	200	0.0	A	-	0	0.0	A	-	2
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left - Thru		2.9	A	7	60	1.3	A	3	52
	WB Approach		*2.9*	*A*	-	-	*1.3*	*A*	-	-
	NB Left - Right		13.8	B	11	61	12.8	B	17	55
	NB Approach		*13.8*	*B*	-	-	*12.8*	*B*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

$ - Delay exceeds 300s

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Table 8-3: Intersection Level of Service and Delay Summary
2033 Total Future Traffic (Part 3)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
11. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Site Entrance A (N-S)	EB Right†	150	0.0	A	-	0	0.0	A	-	0
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left	150	8.2	A	1	26	8.6	A	0	12
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*0.1*	*A*	-	-	*0.0*	*A*	-	-
	NB Left - Right		18.2	C	24	63	21.5	C	16	52
	NB Approach		*18.2*	*C*	-	-	*21.5*	*C*	-	-
12. Patrick Henry Hwy (E-W)	EB Thru - Right†		0.0	A	-	-	0.0	A	-	-
Site Entrance B (N-S)	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
Unsignalized	WB Left - Thru		0.3	A	1	31	0.1	A	0	8
	WB Approach		*0.3*	*A*	-	-	*0.1*	*A*	-	-
	NB Left - Right		10.1	B	1	30	10.5	B	0	30
	NB Approach		*10.1*	*B*	-	-	*10.5*	*B*	-	-
13. Site Entrance C (E-W)	WB Left - Right		8.6	A	3	44	8.7	A	2	33
Mt. Hermon Rd (N-S)	*WB Approach*		*8.6*	*A*	-	-	*8.7*	*A*	-	-
Unsignalized	NB Thru - Right†		0.0	A	-	-	0.0	A	-	-
	NB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left - Thru		3.9	A	3	17	1.4	A	0	22
	SB Approach		*3.9*	*A*	-	-	*1.4*	*A*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

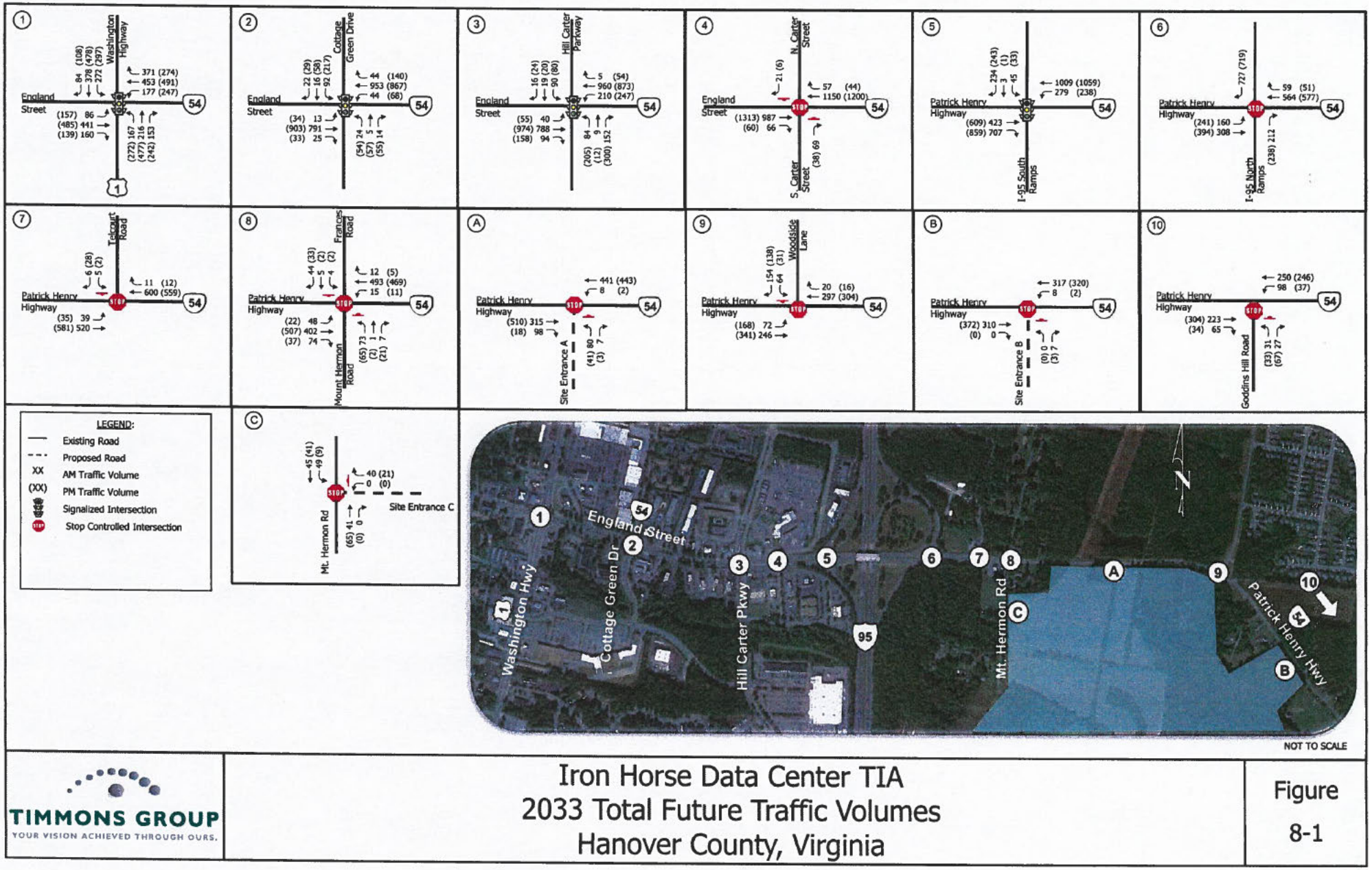
- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

$ - Delay exceeds 300s

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

PAGE INTENTIONALLY BLANK



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
2033 Total Future Traffic Volumes
Hanover County, Virginia

Figure 8-1

PAGE INTENTIONALLY BLANK

9 2039 TOTAL FUTURE CONDITIONS

To complete the analysis of the 2039 total conditions, the estimated site trips were added to the background 2039 volumes. The projected volumes were then used to complete the capacity analysis.

9.1 TOTAL FUTURE TRAFFIC VOLUMES

To generate the 2039 total future traffic volumes, the site trips (Figure 7-2) were added to the background 2039 traffic volumes shown on Figure 6-1. The resulting 2039 total future traffic volumes are shown on Figure 9-1.

9.2 2039 TOTAL FUTURE CAPACITY ANALYSES

Tables 9-1 through 9-3 summarizes the 2039 total future intersection LOS, delay, 95th percentile (Synchro), and maximum (SimTraffic) queue lengths based on the 2039 total future peak hour traffic volumes shown on Figure 9-1, the Phase 2 future lane geometry (Figure 2-3), and optimized timings at the traffic signals. Note that intersections A-C are shown as numbers 11-13 in the following analysis. The corresponding SYNCHRO worksheets for 2039 total future analyses are included in Appendix L.

Note at Intersection #3 that the eastbound right movement is reporting excessive delay. This is an error with how Synchro is reporting delay for the intersection and may be caused by the pedestrian phase associated with the eastbound approach being turned on all the time. However, the 95th Percentile queue length is low which shows that vehicles are not waiting for the amount of time suggested by the control delay.

Note at Intersection #6 the I-95 off-ramps (SB right and NB right) are coded in Synchro as yield controlled approaches due to the existing signs at the intersection. However, the existing lane geometry for those movements includes a receiving lane for merging traffic. As shown by the SimTraffic queue lengths (0 ft), these movements operate as free-flowing despite the HCM reports showing delay.

As shown in Tables 9-1 through 9-3 under 2039 total future conditions:

- At the signalized intersection of Route 54 and US Route 1, the overall intersection will operate at a LOS C/D during the AM/PM peaks, respectively.
    - The eastbound approach will operate at a LOS D/E during the AM/PM peaks, respectively. The EB left will operate at a LOS D/F during the AM/PM peaks, respectively.
    - The northbound left will operate at a LOS D/E during the AM/PM peaks, respectively. The NB through will operate at a LOS D/E during the AM/PM peaks, respectively. The southbound approach will operate at a LOS D/E during both peak hours. The SB left will operate at a LOS E/F during the AM/PM peaks, respectively.
    - During the PM peak: The EB left maximum queue exceeds the available storage, spilling back into the through lanes and backing up through the intersection with Louisiana St. The SB left maximum queue exceeds the available storage, spilling into the through lanes and backing up through the intersection with College Ave. During both peak hours, the SB thru maximum queue blocks the storage for the SB right.
    - All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Cottage Green Drive, the overall intersection will operate at a LOS B/C during the AM/PM peaks, respectively.
    - The mainline through movements will operate at a LOS B or better during both peak hours. The EB left will operate at a LOS C/D during the AM/PM peaks, respectively. The WB left will operate at a LOS E/C during the AM/PM peaks, respectively. The northbound and southbound approaches will operate at a LOS D during both peak hours.
    - During the PM peak, the SB left maximum queue exceeds the available storage, spiling back into the through lane. All other movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of Route 54 and Hill Carter Parkway, the overall intersection will operate at a LOS C during both peak hours.
    - The mainline through movements will operate at a LOS C or better during both peak hours. The EB left will operate at a LOS D/C during the AM/PM peaks, respectively. The WB left will operate at a LOS D/E during the AM/PM peaks, respectively. As previously mentioned, the delay for the EB right is not reported correctly at this intersection.
    - The northbound approach will operate at a LOS D during both peak hours. The southbound approach will operate at a LOS D/E during the AM/PM peaks, respectively. The SB left will operate at a LOS E during both peak hours.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 SB ramp, the overall intersection will operate at a LOS B during both peak hours.
    - The mainline movements all operate at a LOS B or better during both peak hours. The southbound left/through movement operates at a LOS F during both peak hours.
    - During the PM peak hour, the SB left/through movement maximum queue fills the available storage. All other movements have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Route 54 and I-95 NB ramp, the mainline east- and westbound approaches operate at a LOS C or better during both peak hours. As previously mentioned, the north- and southbound movements report delay due to the yield-control, however the movements behave more like free-flow right turns. The NB right operates at a LOS C or better during both peak hours. The SB right operates at a LOS F during both peak hours. All maximum queue lengths are contained within the available storage.

- At the unsignalized intersection of Route 54 and Mt. Hermon Road/Frances Road, the mainline east- and west-bound movements will operate at a LOS A during both peak hours.
    - The northbound approach will operate at a LOS F during both peak hours. The southbound approach will operate at a LOS C during both peak hours.
    - All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.
- At the unsignalized intersection of Route 54 and Site Entrance A, the east- and west-bound mainline movements will operate at a LOS A during both peak hours. The northbound approach will operate at a LOS C during both peak hours. All movements have adequate turn bay storage to accommodate 95th percentile and maximum queue lengths.

- At all other unsignalized intersections (numbers 4, 7, 9-10, 12-13), the mainline movements (free-flowing) all operate at a LOS B or better during both peak hours. All side street movements (stop-controlled) operate at acceptable levels (LOS C or better) during both peak hours. All 95th percentile and maximum queue lengths are contained within the available storage.

Table 9-1: Intersection Level of Service and Delay Summary
2039 Total Future Traffic (Part 1)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. England St (E-W)	EB Left	290	40.2	D	67	206	104.3	F	#229	274
US Route 1 (N-S)	EB Thru		38.4	D	209	262	43.4	D	265	452
Signalized	EB Right	340	30.8	C	20	96	35.1	D	22	122
	EB Approach		*36.8*	*D*	-	-	*54.1*	*D*	-	-
	WB Left		15.3	B	130	263	30.6	C	#99	487
	WB Thru		33.0	C	#485	578	51.2	D	#647	687
	WB Right		0.5	A	73	0	0.3	A	0	156
	WB Approach		*17.8*	*B*	-	-	*32.3*	*C*	-	-
	NB Left	350	39.4	D	#168	222	72.8	E	#355	345
	NB Thru		40.0	D	120	163	74.9	E	#335	610
	NB Right	400	0.2	A	0	0	0.3	A	0	39
	NB Approach		*28.6*	*C*	-	-	*56.1*	*E*	-	-
	SB Left	320	64.1	E	#333	313	82.7	F	#419	320
	SB Thru		43.5	D	197	445	55.9	E	#302	568
	SB Right	140	34.1	C	0	140	40.2	D	0	140
	SB Approach		*50.0*	*D*	-	-	*63.0*	*E*	-	-
	Overall		**32.2**	**C**	-	-	**50.8**	**D**	-	-
2. England St (E-W)	EB Left	235	33.3	C	m16	65	52.2	D	m44	130
Cottage Green Dr (N-S)	EB Thru - Right		7.1	A	m118	171	18.5	B	m317	430
Signalized	*EB Approach*		*7.5*	*A*	-	-	*19.7*	*B*	-	-
	WB Dual Left	260	55.8	E	m20	78	28.7	C	m55	109
	WB Thru - Right		4.5	A	299	284	5.7	A	224	252
	WB Approach		*6.7*	*A*	-	-	*7.2*	*A*	-	-
	NB Left		48.7	D	44	88	54.8	D	89	125
	NB Thru		45.7	D	14	49	54.7	D	93	123
	NB Right	170	45.3	D	0	43	51.2	D	0	97
	NB Approach		*47.3*	*D*	-	-	*53.5*	*D*	-	-
	SB Left	155	44.6	D	114	141	54.2	D	268	154
	SB Thru - Right		40.1	D	42	128	42.0	D	103	340
	SB Approach		*43.3*	*D*	-	-	*50.7*	*D*	-	-
	Overall		**10.2**	**B**	-	-	**20.4**	**C**	-	-
3. England St (E-W)	EB Left	325	46.1	D	m48	119	26.0	C	m69	133
Hill Carter Pkwy (N-S)	EB Thru		16.8	B	240	397	9.9	A	102	387
Signalized	EB Right	200	24.3	C	20	200	3.9	A	m6	200
	EB Approach		*18.9*	*B*	-	-	*9.8*	*A*	-	-
	WB Dual Left	550	40.2	D	114	137	60.7	E	#185	193
	WB Thru - Right		23.3	C	271	242	27.8	C	299	321
	WB Approach		*26.4*	*C*	-	-	*34.8*	*C*	-	-
	NB Left	220	43.5	D	69	77	57.3	E	169	164
	NB Left - Thru		42.2	D	39	114	49.4	D	87	188
	NB Right	325	42.0	D	0	154	50.5	D	133	270
	NB Approach		*42.3*	*D*	-	-	*51.6*	*D*	-	-
	SB Left	290	51.1	D	#121	240	62.5	E	129	232
	SB Thru - Right		38.4	D	22	67	48.3	D	28	94
	SB Approach		*47.5*	*D*	-	-	*57.5*	*E*	-	-
	Overall		**26.2**	**C**	-	-	**28.8**	**C**	-	-
4. England St (E-W)	EB Thru - Right†		0.0	A	-	100	0.0	A	-	80
Carter Rd (N-S)	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
Unsignalized	WB Thru - Right†		0.0	A	-	19	0.0	A	-	82
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		12.2	B	12	85	13.7	B	8	80
	NB Approach		*12.2*	*B*	-	-	*13.7*	*B*	-	-
	SB Right		12.4	B	4	71	12.0	B	1	32
	SB Approach		*12.4*	*B*	-	-	*12.0*	*B*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

$ - Delay exceeds 300s

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Table 9-2: Intersection Level of Service and Delay Summary
2039 Total Future Traffic (Part 2)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
5. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	49	0.0	B	-	11
I-95 SB Ramps	EB Right†		0.0	A	-	-	0.0	B	-	-
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*B*	-	-
	WB Left	435	9.9	A	30	123	10.6	B	30	126
	WB Thru†		0.0	A	-	-	0.0	B	-	3
	WB Approach		*2.1*	*A*	-	-	*1.9*	*B*	-	-
	SB Left - Thru	150	929.6	F	167	127	688.3	F	119	140
	SB Right		30.4	D	122	296	26.9	D	107	278
	SB Approach		*174.3*	*F*	-	-	*105.8*	*F*	-	-
6. Patrick Henry Hwy (E-W)	EB Left	435	10.7	B	22	142	10.8	B	33	154
I-95 NB Ramps	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*3.7*	*A*	-	-	*4.1*	*A*	-	-
	WB Thru†		0.0	A	-	11	0.0	A	-	11
	WB Right†	380	0.0	B	-	0	0.0	B	-	0
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	NB Right		14.1	B	44	0	17.1	C	64	0
	NB Approach		*14.1*	*B*	-	-	*17.1*	*C*	-	-
	SB Right		163.2	F	836	0	143.9	F	758	0
	SB Approach		*163.2*	*F*	-	-	*143.9*	*F*	-	-
7. Patrick Henry Hwy (E-W)	EB Left		9.9	A	5	72	9.4	A	4	58
Telcourt Rd (N-S)	EB Thru†		0.0	A	-	15	0.0	A	-	-
Unsignalized	*EB Approach*		*0.7*	*A*	-	-	*0.5*	*A*	-	-
	WB Thru†		0.0	A	-	2	0.0	A	-	-
	WB Right†	50	0.0	A	-	30	0.0	A	-	27
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left - Right		16.1	C	3	34	11.8	B	5	45
	SB Approach		*16.1*	*C*	-	-	*11.8*	*B*	-	-
8. Patrick Henry Hwy (E-W)	EB Left	150	8.8	A	5	41	8.6	A	2	32
Mt. Hermon Rd/Frances Rd (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	EB Right†		0.0	A	-	4	0.0	A	-	2
	EB Approach		*0.8*	*A*	-	-	*0.3*	*A*	-	-
	WB Left	150	8.6	A	1	25	8.8	A	1	25
	WB Thru†		0.0	A	-	-	0.0	A	-	2
	WB Right†	110	0.0	A	0	2	0.0	A	0	0
	WB Approach		*0.3*	*A*	-	-	*0.2*	*A*	-	-
	NB Left-Thru-Right		78.8	F	98	85	62.0	F	89	75
	NB Approach		*78.8*	*F*	-	-	*62.0*	*F*	-	-
	SB Left-Thru-Right		16.2	C	14	57	15.2	C	9	59
	SB Approach		*16.2*	*C*	-	-	*15.2*	*C*	-	-
9. Patrick Henry Hwy (E-W)	EB Left	300	8.2	A	6	52	8.6	A	15	79
Woodside Ln (N-S)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Unsignalized	*EB Approach*		*1.9*	*A*	-	-	*2.9*	*A*	-	-
	WB Thru - Right†		0.0	A	-	4	0.0	A	-	2
	WB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left		14.0	B	25	89	15.5	C	24	72
	SB Right	290	14.0	B	25	91	15.5	C	24	87
	SB Approach		*14.0*	*B*	-	-	*15.5*	*C*	-	-
10. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Goddins Hill Rd (N-S)	EB Right†	200	0.0	A	-	9	0.0	A	-	0
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left - Thru		3.0	A	8	78	1.4	A	3	52
	WB Approach		*3.0*	*A*	-	-	*1.4*	*A*	-	-
	NB Left - Right		14.6	B	14	72	13.6	B	21	63
	NB Approach		*14.6*	*B*	-	-	*13.6*	*B*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.

$ - Delay exceeds 300s

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Table 9-3: Intersection Level of Service and Delay Summary
2039 Total Future Traffic (Part 3)

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
11. Patrick Henry Hwy (E-W)	EB Thru†		0.0	A	-	-	0.0	A	-	-
Site Entrance A (N-S)	EB Right†	150	0.0	A	-	0	0.0	A	-	0
Unsignalized	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	WB Left	150	8.3	A	1	24	8.7	A	0	18
	WB Thru†		0.0	A	-	-	0.0	A	-	-
	WB Approach		*0.1*	*A*	-	-	*0.0*	*A*	-	-
	NB Left - Right		20.0	C	28	71	24.4	C	19	54
	NB Approach		*20.0*	*C*	-	-	*24.4*	*C*	-	-
12. Patrick Henry Hwy (E-W)	EB Thru - Right†		0.0	A	-	-	0.0	A	-	-
Site Entrance B (N-S)	*EB Approach*		*0.0*	*A*	-	-	*0.0*	*A*	-	-
Unsignalized	WB Left - Thru		0.3	A	1	35	0.1	A	0	24
	WB Approach		*0.3*	*A*	-	-	*0.1*	*A*	-	-
	NB Left - Right		10.3	B	1	30	10.8	B	0	27
	NB Approach		*10.3*	*B*	-	-	*10.8*	*B*	-	-
13. Site Entrance C (E-W)	WB Left - Right		8.7	A	3	46	8.7	A	2	35
Mt. Hermon Rd (N-S)	*WB Approach*		*8.7*	*A*	-	-	*8.7*	*A*	-	-
Unsignalized	NB Thru - Right†		0.0	A	-	-	0.0	A	-	-
	NB Approach		*0.0*	*A*	-	-	*0.0*	*A*	-	-
	SB Left - Thru		3.8	A	3	20	1.3	A	0	12
	SB Approach		*3.8*	*A*	-	-	*1.3*	*A*	-	-

[1] Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

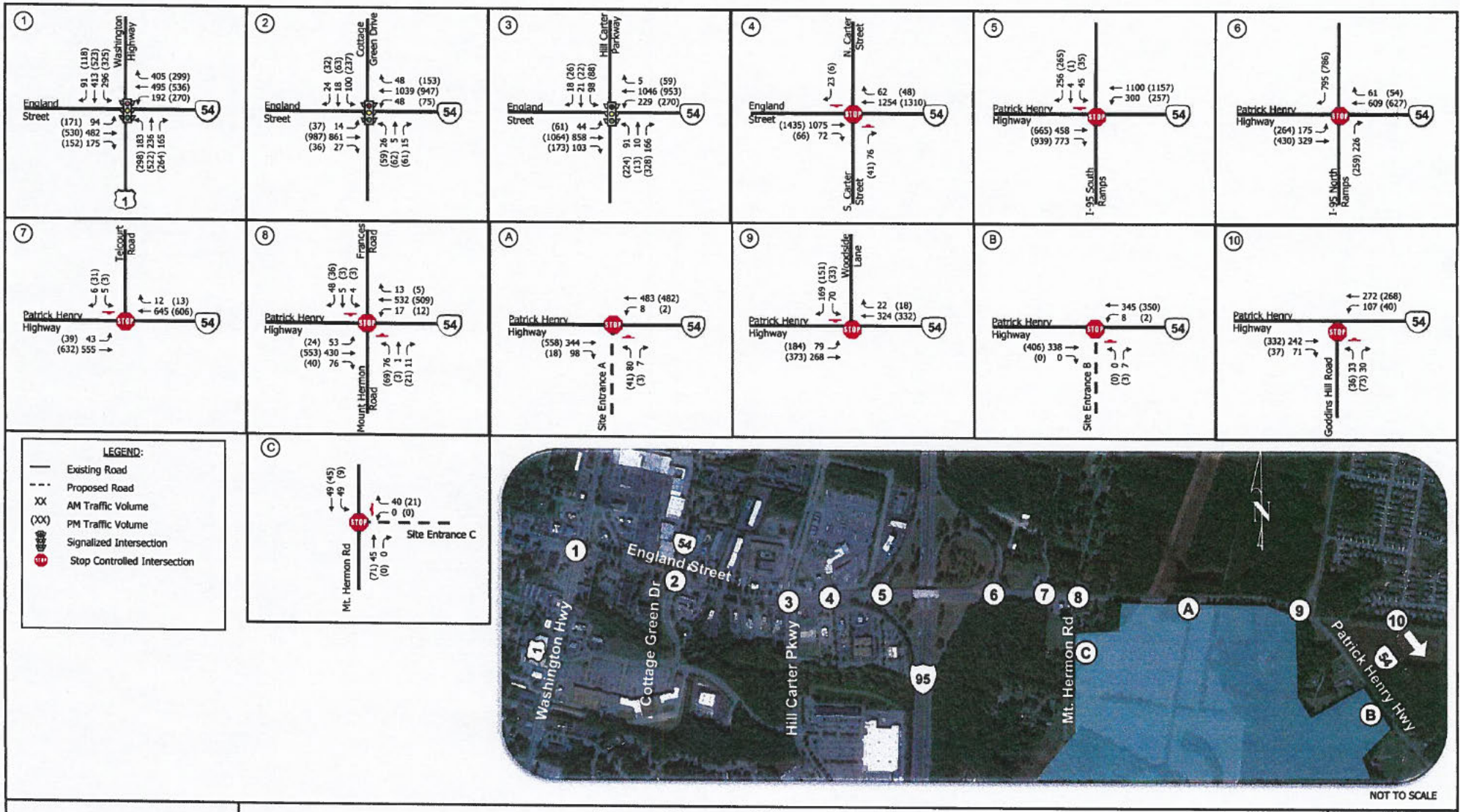
m - Volume for 95th percentile queue is metered by upstream signal.

$ - Delay exceeds 300s

PAGE INTENTIONALLY BLANK

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

PAGE INTENTIONALLY BLANK



NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Iron Horse Data Center TIA
2039 Total Traffic Volumes
Hanover County, Virginia

Figure 9-1

PAGE INTENTIONALLY BLANK

10 ADDITIONAL ANALYSIS

The goal of the following chapter is to provide an analysis of potential improvements within the study area that may impact the analysis or recommendations for the Iron Horse Data Center Development.

10.1 Turn Lane Warrant Analysis

The study area includes multiple unsignalized intersections that currently do not have turn lanes. To gauge the impacts of the proposed site trips on the existing roadway network, turn lane warrant analyses were completed for the following movements with the 2033 and 2039 total traffic volumes:

1. EB Right on Route 54 at Site Entrance "A";
2. WB Left on Route 54 at Site Entrance "A";
3. EB Right on Route 54 at Site Entrance "B";
4. WB Left on Route 54 at Site Entrance "B";
5. SB Left on Mt. Hermon Road at Site Entrance "C"; and
6. and NB Right on Mt. Hermon Road at Site Entrance "C".

The appropriate right and left turn lane warrant nomographs from Appendix F of the VDOT *Road Design Manual* were used to complete the turn lane warrant analyses for each of the listed movements.

The turn lane warrant analysis indicates that turn lanes are warranted for the following movements under 2033 total conditions:

1. EB Right on Route 54 at Site Entrance "A" (100' storage with 100' taper); and
2. WB Left on Route 54 at Site Entrance "A" (100' storage with 100' taper).

Given the posted 45 MPH speed limit and urban classification on Route 54 west of Woodside Lane, the minimum turn lane sizing for turn lanes at Mt. Hermon Road and Site Entrance "A" is 100 feet storage with 100 feet taper.

The remaining movements analyzed at Site Entrances "B" and "C" do not meet the warrants for installation of a turn lane under 2033 and 2039 total conditions (with build out of the proposed development).

Copies of the turn lane nomographs are included in Appendix M.

PAGE INTENTIONALLY BLANK

11 CONCLUSIONS

Analyses were performed for the 2022 existing volumes, the 2033/2039 background volumes (including all background developments and growth), and the 2033/2039 total volumes, which includes site traffic generated by the Iron Horse Data Center development.

11.1 PRINCIPAL FINDINGS

The 2022 existing conditions analysis indicates that the Route 54 corridor operates well during both peak hours. No major queueing or delay challenges are noted at the study intersections, with the exception of the southbound approach experiencing long delays at Route 54/I-95 SB on/off ramp intersection.

Under 2033, and 2039 Background analyses, the Route 54 corridor is able to handle increases in traffic volumes without degrading operations until year 2039. By 2039, many movements at Route 54/ US Route 1 are over capacity and excessive queues impact operations of the overall intersection.

The Iron Horse Data Center development (2033) will be accommodated through constructing VDOT-approved standard turn lanes at the intersection of Site Entrance A and Route 54.

At Site Entrances B and C, no right or left turn lanes are warranted.

With the site improvements described above and under 2033 and 2039 Total conditions, there are no significant capacity or queueing issues noted at the study intersections beyond those background issues previously noted. Retiming traffic signals along Route 54 will provide added capacity to the corridor.

11.2 RECOMMENDATIONS

The focus of this report is to identify a comprehensive access plan that provides functional access to the site and preserves the capacity of the surrounding roadway network. This report identifies the proposed phasing of the development and the roadway improvements associated with each phase. To accommodate the anticipated traffic associated with the Iron Horse Data Center development, the recommended improvement plan is as follows:

- Route 54 at Site Entrance A
    - Construct one (1) eastbound left turn lane and one (1) westbound left turn lane.

Given the preliminary nature of the development plan, the exact location of the site entrances along Route 54 (or other internal site roadways) will be defined during the site plan stage. All construction of roadway improvements is subject to Town, County, and VDOT approval, including assistance on obtaining any required right-of-way not owned by the Applicant. Additional entrances to individual parcels within the development, or other modifications to access along Route 54 that may be developed as part of the site plan review process, are not explicitly discussed within this report. If the development pattern changes and additional traffic is shifted to different entrances, the turn lane warrant analysis will need to be performed for the prevailing layout and traffic volumes at that time of construction.

During the site plan review process, the Applicant will submit a Construction Traffic Management Plan (CTMP) for review and approval by VDOT, Hanover County, and the Town of Ashland to mitigate any traffic impacts caused by construction. The number and location of construction entrances, as well as construction traffic access routes will be presented in the CTMP.

PAGE INTENTIONALLY BLANK

Water Service Hydraulic Evaluation

Dewberry

TECHNICAL MEMORANDUM

PREPARED FOR: Tradeport Hanover Land, LLC
PREPARED BY: Dewberry Engineers Inc.
DATE: July 27, 2026
SUBJECT: East Ashland Ironhorse Development Water Service Hydraulic Evaluation

1. Introduction

Tradeport Hanover Land, LLC (Tradeport) is currently engaged in the planning and design of a new 180-acre development (Ironhorse Development) located in the eastern area of the Town of Ashland in Hanover County, Virginia. Tradeport has contracted Dewberry Engineers Inc. (Dewberry) to utilize the current Hanover Suburban Water System (HSWS) hydraulic model to evaluate the existing water distribution system. The evaluation aims to ensure adequate service for the proposed Ironhorse Development and to identify any necessary infrastructure improvements. The hydraulic modeling was conducted based on project phasing and water demands projections provided by Tradeport, as summarized below:

- Average daily demand = 1.0 million gallon per day (MGD)
- Maximum day demand (MDD) = 1.2 MGD
- Peak instantaneous flow = 1,000 gallons per minute (gpm) over an 18-hour period

2. Proposed Development Water Service Overview

Tradeport's proposed 180-acre Ironhorse Development will be located on a parcel at the intersection of Mount Hermon Road and East Patrick Henry Road. The Ironhorse Development is within the Ashland Pressure Zone, where water is typically supplied by the Hill Carter, Airport East, and Airpark Booster Pump Stations. The Ironhorse Development includes the following proposed waterlines:

- A new 12-inch waterline extending from the existing 12-inch waterline located west of I-95, crossing I-95, and proceeding to the development site.
- A new 16-inch waterline along the property frontage on East Patrick Henry Road.
- A new 20-inch waterline routed through the proposed development to connect the proposed 12 inch waterline on the western side of the site to the proposed 16-inch waterline on the northern side of the site.
- A 12-inch water line will extend to the site where it will be connected to the onsite water treatment plant.

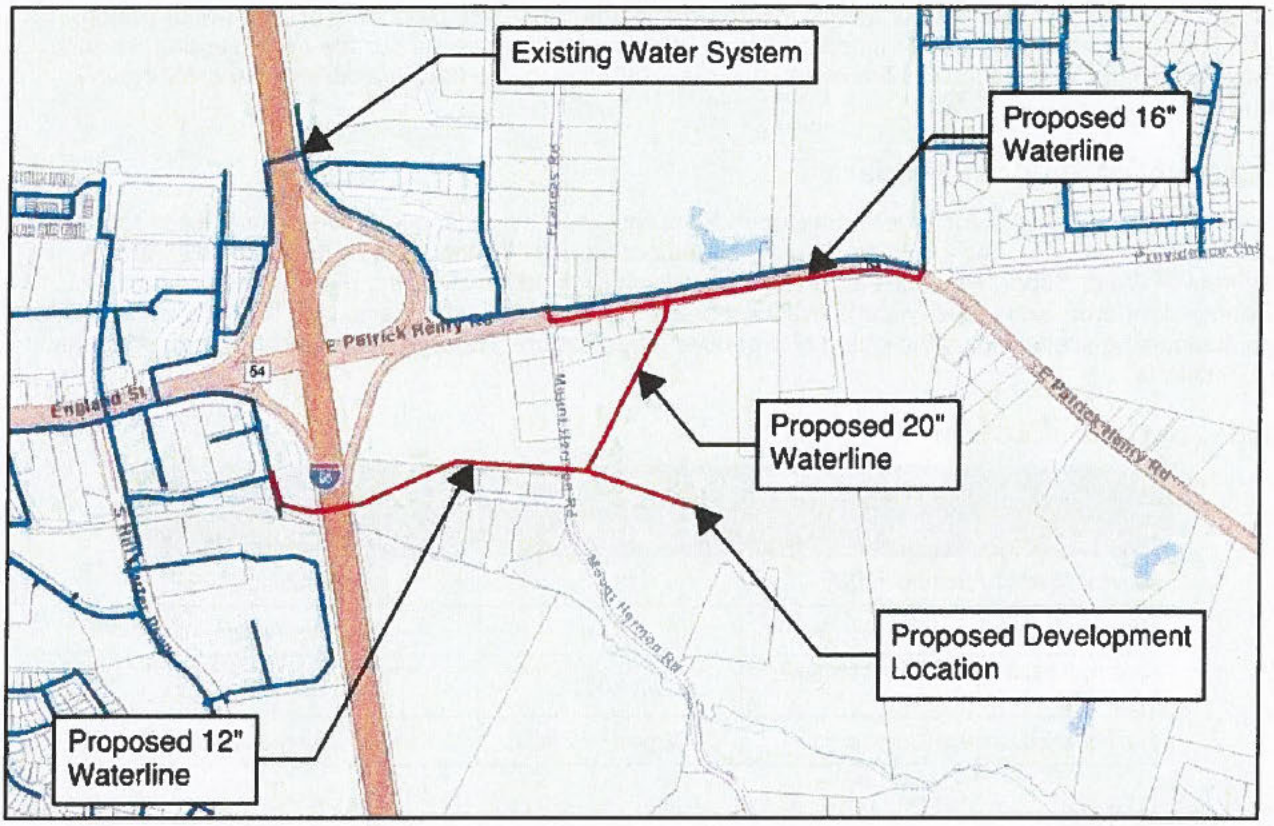


Figure 1 Existing System and Proposed Development

3. Hydraulic Evaluation

3.1 Modeling Scenarios

To evaluate the existing HSWS's ability to serve the Ironhorse Development, MDD extended period simulations (EPS) and fire flow EPS scenarios were developed. Each scenario was run using the existing infrastructure, and improvements were identified when necessary.

Table 1 Model Scenarios Summary

MODEL SCENARIOS SUMMARY			
NAME	DEMAND CONDITION	IRONHORSE DEMAND	WATER SYSTEM STATUS
S1	MDD	1,000 gpm over 18 hours	Existing
S1a	MDD	1,000 gpm over 18 hours	Existing with Operational Changes
S1b	MDD	1,000 gpm over 18 hours	Improved
S2	MDD + Fire Flow	1,000 gpm over 18 hours + 2,000 gpm fire over 2 hours	Existing

Each MDD scenario was conducted as a 24-hour extended period simulation (EPS), with the appropriate American Water Works Association (AWWA) diurnal curves applied to all existing demands. The

proposed 1,000 gpm demand for the Ironhorse Development was set to occur over an 18-hour period. The fire flow scenarios were simulated during an MDD scenario with a 2-hour fire event starting 8 hours into the 24-hour simulation. The fire event requires 2,000 gpm of fire flow availability over the 2-hour duration.

3.2 Level of Service Criteria

Level of service (LOS) criteria were developed for purposes of evaluating improvements necessary for each model scenario. The LOS criteria were based on the VDH Waterworks Regulations, the AWWA Manual of Water Supply Practices M68 Water Quality in Distribution Systems (AWWA M68), Hanover County standards, and industry standards/best practices. The LOS criteria are used for the evaluation of each modeling scenario and the sizing of proposed infrastructure. Refer to Table 2 for a summary of the LOS criteria.

Table 2 Level of Service Criteria

LEVEL OF SERVICE CRITERIA		
LEVEL OF SERVICE	CRITERIA	SOURCE
Minimum System Pressure (MDD)	40 psi	Industry Standard
Minimum System Pressure (Fire Flow)	20 psi	VDH Requirement
Maximum Head Loss Gradient for New Water Mains	2 ft/1,000 ft	AWWA M68
Fire Flow Requirement (Commercial)	2,000 gpm for 2 hours	Hanover County Standards

3.3 Scenario S1

Scenario S1 evaluates the existing HSWS's ability to serve the Ironhorse Development during MDD conditions. Demand is assumed to be the maximum specified demand of the development of 1,000 gpm for 18 hours. All proposed waterlines described above are assumed to be constructed and online.

Based on the results of this analysis, the existing HSWS has sufficient capacity to supply the water required by the Ironhorse Development during MDD conditions, however the additional demand in the HSWS causes pressure concerns elsewhere. Pressure at the development ranges from 50 pounds per square inch (psi) to 82 psi. Pressures throughout the Ashland Pressure Zone remain above 40 psi at all points of the day except for a small region in the southwestern edge of the Pressure Zone near the Elmont Booster Pump Station, where pressures dip to 35 psi during part of the simulation due to the increased demand in the Pressure Zone.

Operational adjustments at the Airport East facility are required to maintain a minimum system-wide pressure of 40 psi. Specifically, the Airport East discharge pressure must be increased from 84 psi to 94 psi to prevent depletion of the Air Park storage tank. If the tank drains, associated pumps shut down, resulting in system pressure drops and reduced reliability.

Increasing the discharge pressure, however, will cause over pressurization in several areas of Ashland. A beneficial long-term improvement to support this initiative would be the construction of the proposed 20-inch parallel water main along Ashcake Road, consistent with the recommendations identified in the 2020 Water Master Plan.

The County is currently updating the Water Master Plan using revised growth projections and demand forecasts. As a result, the recommended infrastructure improvements may be refined based on the updated hydraulic modeling and projected system needs.

3.4 Scenario S2

Scenario S2 evaluates the existing HSWS's ability to serve the County fire flow requirement for commercial or industrial areas of 2,000 gpm for 2 hours during MDD conditions. All proposed waterlines described above are assumed to be constructed and online.

Based on the results of this analysis, HSWS has sufficient capacity to meet the fire flow requirement at the Ironhorse Development. The minimum pressure at the development during the fire event is 30 psi. Pressures throughout the remainder of the Ashland Pressure Zone remain above 20 psi for the duration of the fire event.

4. Summary and Conclusions

Based on the results of the hydraulic model of the HCWS, there is sufficient capacity for the anticipated demands of the Ironhorse Development. Pressure above 40 psi during MDD conditions was observed at the development location, however, due to the increased demands in the Ashland Pressure Zone, a small area near the Elmont Booster Pump Station was observed to briefly drop below 40 psi. Pressure throughout the Ashland Pressure Zone remained above 20 psi during the 2,000-gpm fire event located at the Ironhorse Development.

To maintain a minimum system-wide pressure of 40 psi during MDD conditions, either operational adjustments at the Airport East facility or transmission infrastructure improvements are required. Increasing the Airport East discharge pressure from 84 psi to 94 psi will resolve the low-pressure concerns, however, it will cause over pressurization in several areas of Ashland. A beneficial long-term improvement to support this initiative would be the construction of the proposed 20-inch parallel water main along Ashcake Road, consistent with the recommendations identified in the 2020 Water Master Plan.

The County is updating the Water Master Plan with revised growth projections and demand forecasts, which may lead to refinements in recommended infrastructure improvements based on updated hydraulic models and system needs.

Sewer Model

Dewberry

TECHNICAL MEMORANDUM

PREPARED FOR: Tradeport Hanover Land, LLC
PREPARED BY: Dewberry Engineers Inc.
DATE: July 28, 2026
SUBJECT: East Ashland Ironhorse Development Water Service Hydraulic Evaluation – Sewer Model

1. Background

Tradeport Hanover Land, LLC (Tradeport) is currently engaged in the planning and design of a new 180-acre development (Ironhorse Development) located in the eastern area of the Town of Ashland in Hanover County, Virginia. Tradeport contracted with Dewberry to utilize the current Hanover County wastewater hydraulic model to evaluate the capacity of the existing wastewater collection to serve the proposed Ironhorse development.

2. Proposed Ironhorse Development

The proposed Ironhorse Development is located on a parcel at the intersection of Mount Hermon Road and East Patrick Henry Road (Highway 54) as shown in **Figure 1**. A 12-inch gravity line will extend to the Ironhorse Development property. Wastewater from the proposed development will be discharged into the proposed 12-inch sewer. Flow from the Ironhorse Development will be conveyed through 67,200 linear feet (LF) of gravity sewer, four PSs (Mechumps Creek PS, Sliding Hill PS, Middle Chickahominy PS and Shelton Pointe PS), and 27,050 LF of force main before reaching the Totopotomoy Wastewater Treatment Plant (WWTP).

3. Existing Modeled Infrastructure

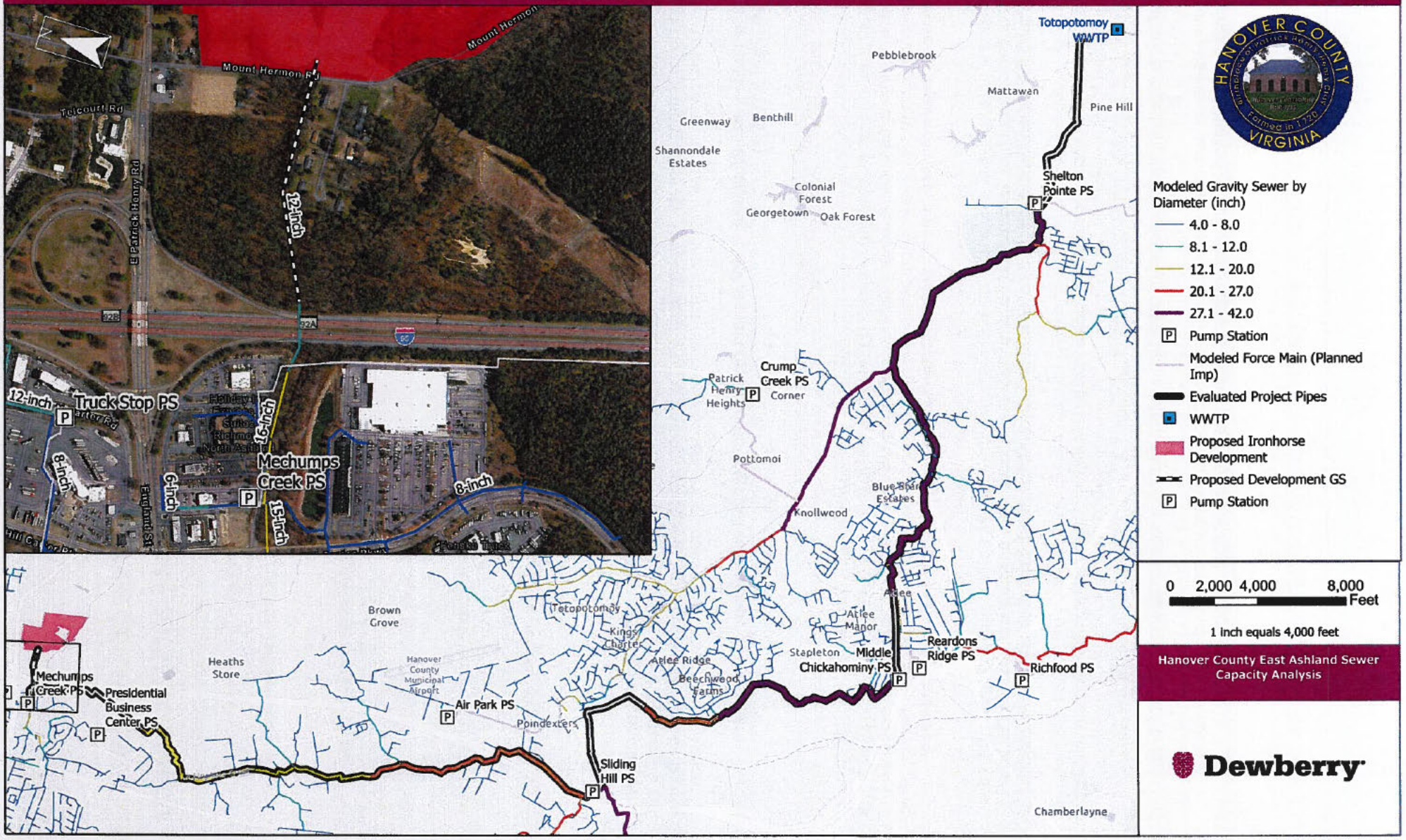
The hydraulic model originally developed for the Hanover County Water and Wastewater Facilities Master Plan (January 2021) was subsequently updated and converted to the InfoWorks ICM platform and served as the basis for this evaluation. A 12-inch gravity sewer extension was incorporated into the model and assumed to be constructed at a 0.22 percent slope from the existing sewer to the Ironhorse Development. The proposed sewer extension was connected to the existing sanitary sewer system at manhole ID 788040M01.

For purposes of this analysis, the Shelton Pointe Pump Station and force main improvements, which are currently under construction, were assumed to be fully operational. This assumption provides the basis for evaluating the collection system and pump station performance under projected future flow conditions.

Flow from the Ironhorse Development is conveyed through the Mechumps Creek PS, where it is pumped through a 12-inch force main consisting of ductile iron pipe (DIP) and high-density polyethylene (HDPE) segments before discharging to the downstream gravity sewer system. The wastewater is subsequently conveyed through the Sliding Hill PS, Middle Chickahominy PS, and Shelton Pointe PS service areas.

As part of this evaluation, the downstream collection system was reviewed to determine its ability to accommodate the additional flow from the Ironhorse Development. This evaluation included the capacity of the gravity sewer system, associated force mains, and the Mechumps Creek, Sliding Hill, Middle Chickahominy, and Shelton Pointe pump stations under projected peak flow conditions.

Figure 1 - Project Area



4. Flow Scenarios

4.1 Scenario 1: Existing Peak Flows (2025)

The original hydraulic model is based on average dry-weather flows measured during spring 2025. Typically, spring conditions correspond to the high groundwater levels, resulting in conservative dry-weather flows. Using these higher flows provides a conservative basis for planning and system evaluation.

Peak flows were calculated in accordance with the Hanover County Water and Sewer Standards as follows:

- For average daily flows less than 0.5 million gallons per day (MGD), a peaking factor of 4.0 was applied to the average daily flow.
- For average daily flows between 0.5 MGD and 6.0 MGD, peak flow was calculated using the following equation:

$$[4.136 - (0.273x Average\ Daily\ Flow)]x\ Average\ Daily\ Flow$$

- For average daily flows greater than 6.0 MGD, a peaking factor of 2.5 is applied to the average daily flow.

To represent the peak flow in the hydraulic model, a diurnal flow pattern was developed for each pump station service area. The patterns were scaled to apply the appropriate peaking factor simultaneously at midday, simulating systemwide peak-hour flow conditions.

4.2 Scenario 2: Existing Peak Flows + Proposed Ironhorse Development

Scenario 2 adds the proposed Ironhorse Development flows to the Scenario 1 peak flows. The Ironhorse Development flow is estimated to be an average of 0.25 MGD and peak hourly flow of 261 gallons per minute (gpm) or 0.38 MGD. A constant flow discharge was used to route peak flows from the Ironhorse development.

5. Capacity Analysis Results

The hydraulic model was used to evaluate system performance relative to the County's Level of Service (LOS) criteria summarized in **Table 1**.

Table 1 - Sewer Level of Service Criteria

SEWER LEVEL OF SERVICE CRITERIA		
FACILITY TYPE	LEVEL OF SERVICE	DEFICIENCY CRITERIA
Force Main	Maximum Velocity	8.0 ft/s
Gravity Sewer	Maximum ratio of flow depth to pipe diameter (d/D) during peak hourly low (PHF)	80% at PHF
Pump Station	Maximum Capacity	Convey PHF

5.1 Gravity Sewer Results

Capacity results are shown in **Figures 2** and **3**. The evaluated gravity sewer from the 24-inch proposed Ironhorse Development discharge point to the Topotomoy WWTP is highlighted with a black underlay. For gravity sewer, the percent of capacity used is calculated by comparing the peak depth of flow in the pipe compared to the diameter of the pipe. For example, if the depth in a 12-inch diameter pipe is 6 inches

during peak flow conditions, the percent of pipe capacity used is 50 percent. Capacity figures color-code the gravity sewer based on the modeled peak flow depth divided by the pipe diameter (d/D): blue pipes are those flowing less than 25 percent full, green pipes are those between 25 and 50 percent full, yellow pipes are those between 50 to 80 percent full, orange pipes are those between 80 to 100 percent full, and red pipes are those flowing more than 100 percent full (surcharged). Pipes more than 80 percent full (orange or red) are considered deficient by Hanover County. It should be noted that modeled surcharging may hold back flow in the existing system. When improvements are made, additional facilities may be identified.

Figure 2 presents the capacity analysis under Scenario 1 conditions (existing peak flows). Under Scenario 1, the majority of gravity sewer from the Ironhorse Development discharge to the Totopotomoy WWTP are predicted to be less than 50 percent full during peak flows. However, there are two locations that are predicted to be slightly greater than 80 percent full both are due to force main discharge and are not a capacity concern.

- Mechumps Creek FM discharge to gravity sewer
- Middle Chickahominy FM discharge to gravity sewer

Figure 3 presents the capacity analysis under Scenario 2 conditions (existing peak flows + proposed Ironhorse Development flow). The model predicts the same two pipes to gravity sewer downstream of force main discharge points to be more than 80 percent full during peak flows, but these are not a capacity concern. No other sewer are predicted to be deficient; however, additional pipes are more than 50 percent full.

5.2 Pump Station and Force Main Results

Peak flow to the pump station is used to evaluate the capacity of each station. Force mains predicted to exceed 8 feet per second (ft/s) are considered deficient. All four downstream pump stations and force mains were evaluated.

Mechumps Creek PS

Under both Scenario 1 and 2, the peak flow is conveyed with both pumps operating. During Scenario 2, the pump is operating under higher head conditions. Dewberry recommends drawdown testing to confirm pump operation.

Hydraulic modeling indicates that peak velocities in the force main remain below the County's deficiency criterion of 8 ft/s under both scenarios. Based on the modeling results, the Mechumps Creek PS and associated force main are expected to have adequate hydraulic capacity to convey the additional 0.38 MGD projected from the Ironhorse Development without exceeding the deficiency criteria.

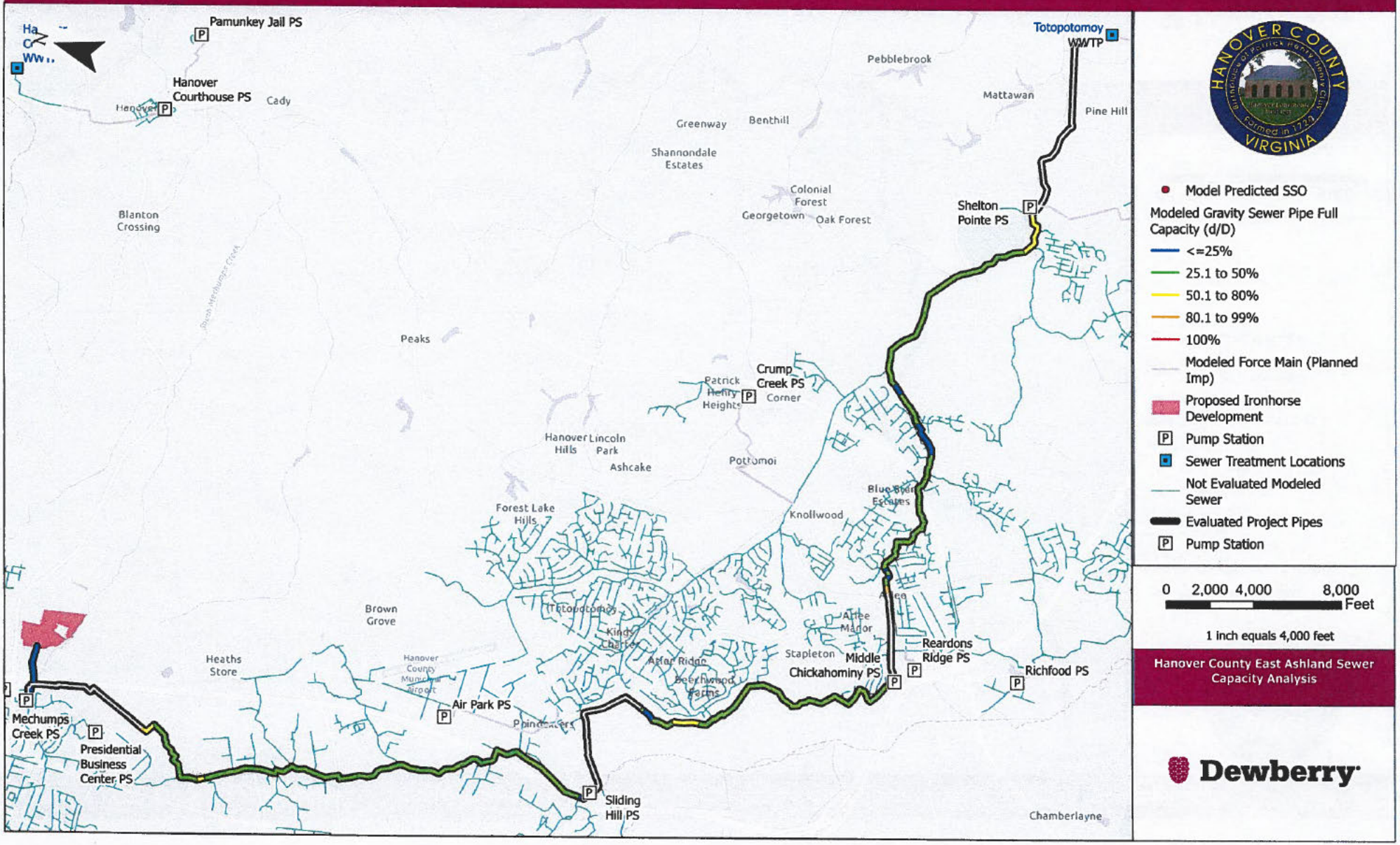
A review of the results with Hanover Department of Public Utilities staff indicated that the second pump is activated under existing conditions. This observation suggests that the current pump station is operating near its functional capacity and has limited ability to accommodate additional flow generated by the proposed Ironhorse Development without improvements.

Sliding Hill PS

Under both Scenario 1 and Scenario 2, hydraulic model results indicate that the projected peak flow can be conveyed with all three pumps operating. The model predicts that peak force main velocities will remain below the County's deficiency criterion of 8 ft/s under both scenarios.

Based on the hydraulic analysis, the Sliding Hill Pump Station and associated force main have sufficient capacity to convey the additional 0.38 MGD projected from the proposed Ironhorse development.

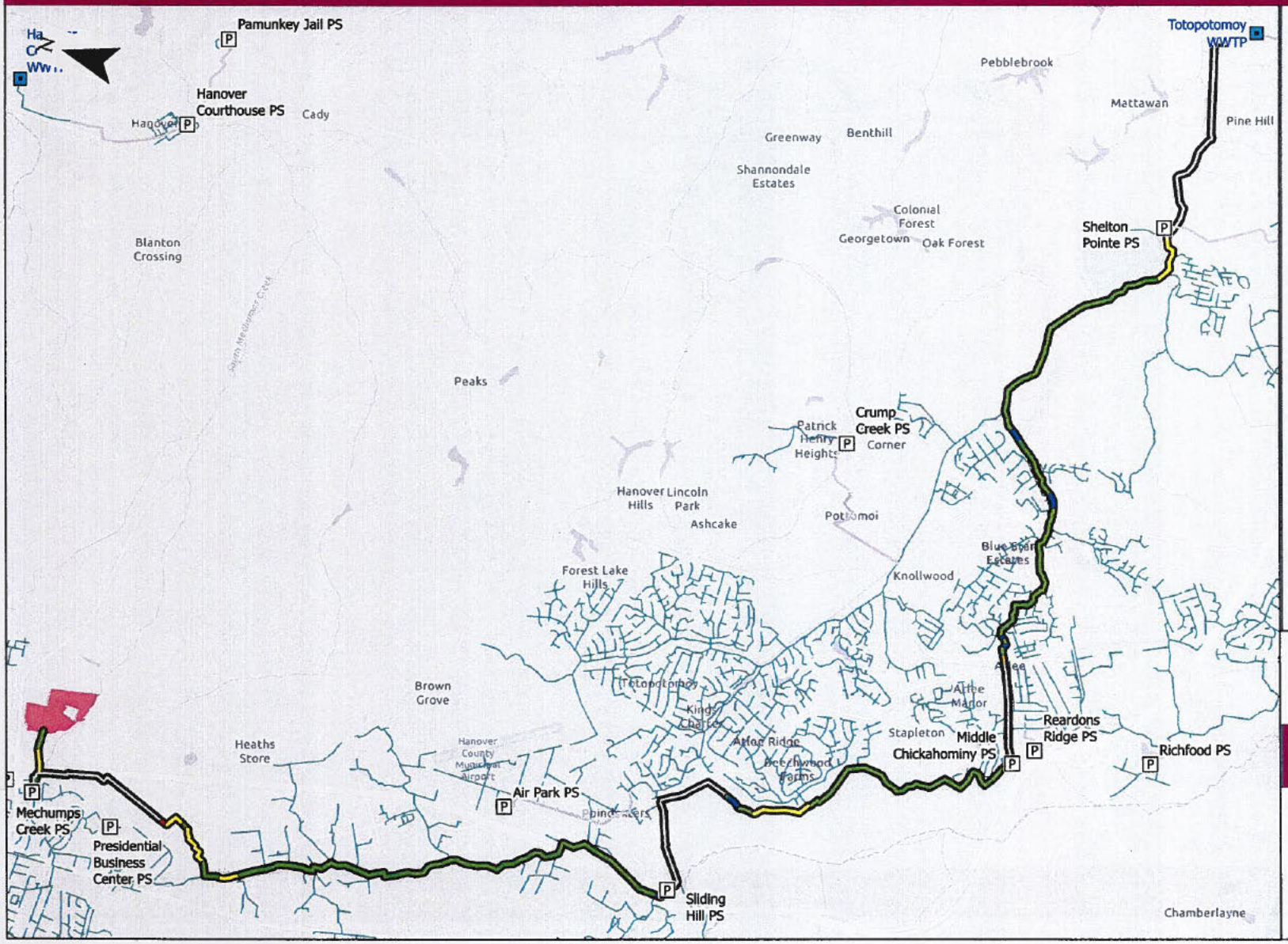
Figure 2 -Scenario 1 (Existing Peak Flows) Capacity Evaluation



Hanover County East Ashland Sewer Capacity Analysis

Dewberry

Figure 3 - Scenario 2 (Existing Peak Flows + Proposed Ironhorse Development Peak Flow) Capacity Evaluation



- Model Predicted SSO

Modeled Gravity Sewer Pipe Full Capacity (d/D)

- <=25%
- 25.1 to 50%
- 50.1 to 80%
- 80.1 to 99%
- 100%
- Evaluated Project Pipes
- WWTP
- Proposed Ironhorse Development
- Not Evaluated Modeled Sewer

0 2,000 4,000 8,000 Feet

1 inch equals 4,000 feet

Hanover County East Ashland Sewer Capacity Analysis

Dewberry

Middle Chickahominy PS

Hydraulic model results indicate that, under both Scenario 1 and Scenario 2, the projected peak flow is conveyed with all three pumps operating. However, when all three pumps are in service and the combined discharge exceeds approximately 7.3 MGD, velocities within the force main exceed the County's deficiency criterion of 8 ft/s.

Given the historical predicted operating conditions, Dewberry recommends conducting pump station drawdown testing and a detailed pump station performance evaluation to verify pump operation, confirm the active pump configuration under peak flow conditions, and assess the potential impacts of sustained operation at flow rates that result in force main velocities exceeding the established design criterion.

Shelton Pointe PS

Under both Scenario 1 and Scenario 2, hydraulic model results indicate that the projected peak flow is conveyed with 3 pumps operating. The model predicts that peak velocities within the 30-inch force main remain below the County's deficiency criterion of 8 ft/s under both scenarios.

Based on the hydraulic analysis, both the Shelton Pointe PS and its associated force main are expected to have sufficient capacity to convey the additional 0.38 MGD generated by the proposed Ironhorse development while maintaining compliance with applicable hydraulic design criteria. No capacity-related deficiencies are anticipated within the modeled pump station or force main facilities under the evaluated conditions.

6. Conclusion

The hydraulic model predicts that two gravity sewer segments downstream of the Mechumps Creek PS and Middle Chickahominy PS will operate at depths exceeding 80 percent of pipe diameter under peak flow conditions. However, these conditions are attributable to the operational characteristics of the upstream pump stations rather than insufficient gravity sewer capacity. As a result, the modeled deficiencies are considered operationally driven and do not indicate capacity limitations within the downstream gravity sewer system.

For Mechumps Creek PS, the model indicates that both pumps operate during Scenario 2 peak flow conditions and do so under elevated head conditions relative to existing operations. Although the pump station is projected to convey the modeled peak flow, Dewberry recommends performing drawdown testing to verify pump performance and confirm the operating head conditions when both pumps are running.

Based on the projected increase in flow and the current operating condition of the Mechumps Creek PS, upgrades to the existing facility are expected to be required to accommodate the proposed Ironhorse development.

For Middle Chickahominy PS, the model predicts that all three pumps are operating during peak flow conditions in both Scenario 1 and Scenario 2. Under this operating configuration, the total discharge is projected to exceed approximately 7.3 MGD, resulting in force main velocities greater than the County's 8 ft/s deficiency criterion. Dewberry recommends conducting drawdown testing and a detailed pump station performance evaluation to verify the pumping rate achieved with all three pumps in operation and to assess the corresponding impacts on force main hydraulics.

Community Meeting Notes

Community Meeting Notes:
REZ2025-00010/SE2025-00009, Tradeport Hanover Land, L.L.C.

Date/Time	Monday, May 11, 2026 (6:30 p.m.)
Meeting Location	Randolph Macon Copley Science Center 300 Caroline Street Ashland, VA 23005
Request	Rezoning to M-1, Limited Industrial District to permit a data center
Number of Attendees	55
Board of Supervisor Members Present	Faye Prichard (Ashland) Jeff Stoneman (Beaverdam)
Planning Commission Members Present	Edmonia Iverson (Beaverdam) Larry Leadbetter (South Anna)
Staff Members Present	Andrew Pompei Gretchen Biernot

Applicant Overview

The applicant's representative (Andy Condlin) provided an overview of the request, including the properties' zoning history and previous zoning proposals in both the Town of Ashland and unincorporated Hanover County. He discussed changes made to the application since previous community meetings, based upon stakeholder feedback, and how the current rezoning request relates to existing zoning within the Town of Ashland (which permits data centers with proffered conditions). Another representative for the applicant (Ashley Kyle) summarized major changes since previous proposals, including the following:

- Residential component removed
- Requested maximum height reduced from 110 feet to 75 feet
- Nonbuildable area increased from approximately 40 acres to nearly 50 acres (developable area approximately 27.80 acres)
- Open/green space increased
- Buffers increased in key areas
- Buffer protection measures added
- Layout revised to improve transition to nearby rural and residential areas

Some of these changes and the evolution of the application were discussed in greater detail.

Community Questions/Answers

Following the presentation, participants asked the following questions, with the applicant responding as follows:

- *Citizen*: Are you the owner or the developer?
    - *Applicant Response*: The presenters are representatives of the owner. The owners intend to develop the property, but an ultimate user has not been identified. Any future owners would have to comply with proffered conditions.
- *Citizen*: What if a future user does not want to use a closed-loop system?
    - *Applicant Response*: Future users would have to comply with the proffered conditions, but there are options for cooling systems that recycle or reduce water usage other than closed-loop systems.
- *Citizen*: Will fans be used for water cooling systems?
    - *Applicant Response*: It depends upon the specific system that is used.
- *Citizen*: Where is the emergency access?
    - *Applicant Response*: One point of access would be from State Route 54, but there will be an additional emergency access off of Mount Hermon Road.
- *Citizen*: Can additional setbacks be added to Mount Hermon Road?
    - *Applicant Response*: The portion of the property within unincorporated Hanover County does not have frontage on Mount Hermon Road.
- *Citizen*: Has a cultural resources study been completed and have any archaeological sites been found?
    - *Applicant Response*: A study has been completed, and no archaeological sites have been found.
- *Citizen*: What happens if there are any environmental or health issues?
    - *Applicant Response*: The current property owner and future owners must abide by applicable environmental regulations, and if those regulations are violated, fines are opposed. The applicant has proffered the use of high-quality cooling systems, and Tier IV generators are required.
- *Citizen*: Data centers do not generate jobs.
    - *Applicant Response*: The data centers generate jobs, including construction jobs. The project will create the need for tradesman and maintenance workers. The applicant anticipates a maximum of 415 on-site employees.

- Some participants expressed doubt that the project will generate that many jobs, and they expressed interest in having jobs reserved for Hanover County residents.

- *Citizen*: Who is responsible for managing the facility?
  - *Applicant Response*: A future user could own the entire campus, or a developer could construct the buildings and lease to operators. The applicant is intending to be the developer and must comply with applicable regulations.
- *Citizen*: How many existing data centers has the developer built? Where are other data centers owned by the applicant? Can the applicant refer stakeholders to an existing data center?
  - *Applicant Response*: Built the first in Loudoun County in 1996 and has built more than 20 data centers. The applicant has built data centers for other companies and/or undertaken development through joint partnerships. Many times, data centers are owned by public companies and do not want private investment. The applicant's representative indicated they would provide examples of other data centers, but there are few other data centers with significant setbacks and height limitations similar to what the applicant is proposing.
  - There was discussion about the White Oak Technology Park in Henrico County.
- *Citizen*: Were the supervisors asked to sign a non-disclosure agreement?
  - *Applicant Response*: They were not asked to sign a non-disclosure agreement, and no public incentives are being provided to support the project.
- *Citizen*: Would the operator be able to ask for a proffer amendment?
  - *Applicant Response*: Yes, but any proffer amendment would have to be reviewed through the public hearing process.
- *Citizen*: Will generator noise be limited in the Town of Ashland?
  - *Applicant Response*: There are limitations, but they are not as stringent as what is being proposed in unincorporated Hanover County.
- *Citizen*: Will this be a hyperscale data center?
  - *Applicant Response*: There are several large companies that own and operate hyperscale data centers, but they would have to comply with proffered conditions.
- *Citizen*: How many levels will these buildings be and how many servers will be within the building? Can you reduce the maximum height to 62 feet (including the parapet)?
  - *Applicant Response*: Data centers that are 75 feet tall are typically two stories. The applicant indicated that his brother has clients that want 75 feet.
- *Citizen*: How can the applicant prove that the proposed development will not impact nearby wells?

- *Applicant Response*: The property drains towards Mechumps Creek and not Wintercrest. All stormwater runoff must be captured and cleaned, so stormwater management facilities will be improved to address the quality and quantity of stormwater runoff, with the design of those facilities reviewed as part of the site plan review process.

- *Citizen*: Citizens in Wintercrest are generally opposed to the proposed development.
    - *Applicant Response*: Regardless if the current zoning request is approved, the portion of the property within the Town of Ashland, which already has the proper zoning, will be developed as data centers.

- *Citizen*: How is the property not rural?
    - *Applicant Response*: The property is currently vacant, but is zoned MX (Mixed Use). The Comprehensive Plan also designates the property as *Employment Center,* and the property is within the Suburban Service Area.

- *Citizen*: How will they use County water?
    - *Applicant Response*: There is public water in the area, and there is a plan by the applicant to extend public utilities to serve the proposed development. Proffered conditions require connections to the public water/wastewater system.

- *Citizen*: Hanover County cannot provide enough water to serve all proposed data centers. How will this impact other water users?
    - *Applicant Response*: The applicant has proffered the use of water systems that reduce water usage.

- *Citizen*: How much water do you plan to use per day? How will water usage be monitored (example: QTS over usage in Atlanta)?
    - *Applicant Response*: It depends upon the specific user and the approved usage by the Department of Public Utilities. One million gallons per day was allocated for the East Ashland project. The applicant will not proffer maximum water usage but will be limited by available capacity. The Department of Public Utilities monitors water usage by its customers.

- *Citizen*: What will the buffer look like from State Route 54?
    - *Applicant Response*: The existing vegetation will be maintained within the buffer, which will have a minimum width of 150 feet. A double row of evergreen trees will be planted within the interior edge of the buffer. There will be an additional open space area that offers additional screening.

- *Citizen*: Low-grade noise from existing data centers is causing health issues.

- *Applicant Response*: Generators can only be tested during daytime hours, and proffered conditions limit dBA and dBC sound levels.
- One participant wanted pro-active enforcement and monitoring of noise.
- Participants expressed concerns that the timing of the sound study (winter vs. summer) may result in different noise measurements.

- *Citizen*: Hickory Grove and Patriot Glen were not included in the traffic study.
  - *Applicant Response*: The TIA has been approved by VDOT. Data centers typically generate limited traffic once approved.
- *Citizen*: If this rezoning request was denied, would the owner move forward with mixed-use development? Have you threatened to sue Hanover County if the Planning Department indicates that you cannot adhere to the proffered conditions?
  - *Applicant Response*: That is not accurate. Staff has indicated that it will be difficult to meet the existing proffered conditions, but the applicant believes that all proffered conditions can be met. There was additional discussion regarding proffered conditions associated with East Ashland.
- *Citizen*: How much traffic is anticipated?
  - *Applicant Response*: 2,646 trips per day are anticipated within the proposed data center, compared to approximately 33,000 trips per day from East Ashland (approximately 15,000 trips per day for the portion of the project in unincorporated Hanover County).
- *Citizen*: Who will be responsible for enforcing proffers?
  - *Applicant Response*: Residents can complain if they feel like proffers are not being addressed. Proffers are enforced through the development review process as construction plans, site plans, and subdivision plats are reviewed. Proffers in the Town of Ashland and Hanover Couty must be adhered to, but practically the more stringent proffers will be met for buildings (and the proposed proffers in unincorporated Hanover County are generally more stringent than the proffers accepted in the Town of Ashland).
- *Citizen*: How do citizens benefit from data centers?
  - *Applicant Response*: This property is already zoned MX, and the portion of the Town of Ashland can already accommodate data centers. The proposed development will have less traffic and other impacts than East Ashland. Tax revenue is generated from real estate property taxes and business equipment taxes.
- There was discussion regarding projected revenues and tax rates/incentives.
- There was general opposition to data centers and "that AI is about surveillance."
- One adjacent property owner expressed support for this project, as the proposed development will generate less traffic than East Ashland.

- *Citizen*: How will construction traffic be managed? How long will buildout take?
    - *Applicant Response*: The applicant has experience building data centers, and a construction management plan will be provided. Hanover County requires a construction management plan, and there are limitations on construction hours. Buildout will take 6 – 10 years. The applicant provided information about the construction process, and there were general citizen concerns regarding the impacts of construction.
- *Citizen*: Where will the chillers be?
    - *Applicant Response*: They will be on the roof.
- *Citizen*: Will there be battery storage?
    - *Applicant Response*: There is some internal battery backup storage for on-site use within the building.
- *Citizen*: Will the substation be constructed at the applicant's cost?
    - *Applicant Response*: The upcharge for a substation is approximately $70 million and the developer pays the entire cost.
- *Citizen*: Can an existing vacant warehouse on Lakeridge Parkway be converted to a data center?
    - *Applicant Response*: Since 2005, data centers need to be "purpose built" to accommodate that use.
- *Citizen*: Can a data center building be repurposed into a warehouse?
    - *Applicant Response*: Based on the applicant's research, there will likely be long-term demand for data centers. A facility the applicant built 30 years ago is still a data center but has been reworked and retrofitted every 4 – 5 years to address changing technology. With the proposed proffered conditions, if the rezoning is approved, a proffer amendment would be required for any use other than data centers.
- *Citizen*: Where will the main entrance be?
    - *Applicant Response*: It will be in the Town of Ashland between Mount Hermon Road and Woodside Lane.

This rezoning request is tentatively scheduled for the June 18, 2026, Planning Commission meeting.

Full Set of Citizen Comments Available on eTrakIt

Proffers

Proffers (Clean)

PROFFERS – Case REZ-2025-00010
August 12, 2026

The undersigned, owner of the Property identified as GPIN No. 7880-70-4924 (the "Property") located in Hanover County, Virginia (the "County"), voluntarily agrees for itself, and its agents, personal representatives, successors and assigns (collectively, the "Property Owner") that, in the event the Property is rezoned from MX to M-1 (+/- 77.62 acres), the development and use of the Property will be subject to the following proffered conditions which will replace in their entirety, all previous proffers applicable to the Property:

1. Concept Plan. The Property will be developed in substantial conformance with that certain plan entitled "IRON HORSE DATA CENTER, BUILDABLE AREA PLAN", prepared by Timmons Group, dated June 1, 2026, and attached hereto as **Exhibit A** and subject to the requirements and adjustments permitted in the conditions and notes stated therein and these proffered conditions (the "Concept Plan"). All parcel lines, private road locations, interior roads and drives, boundaries of buildable areas, accessory use locations, utility locations (including substations), stormwater management facilities, and dimensions of undeveloped areas shown on the Concept Plan may be adjusted for purposes of final engineering of site or subdivision plans (for multiple phases) and to further allow for compliance with the requirements of state and federal agency regulations including, but not limited to, Virginia Department of Historical Resources, Virginia Department of Transportation ("VDOT"), Virginia Department of Conservation and Recreation, Virginia Department of Environmental Quality, U.S. Army Corps. of Engineers, and the County's Zoning Ordinance, Subdivision Ordinance, and other applicable design standards, provided that the minimum width of perimeter buffers and perimeter building setbacks remain unchanged. The determination as to whether adjustments are in substantial conformance with the layout illustrated on the Concept Plan will be made by the Director of Planning at his/her discretion. The Concept Plan shows an area of real property which includes the Property and adjoining real property located within the Town of Ashland, Virginia (the "Town") as shown as "BUILDABLE AREA OF TOWN OF ASHLAND" on the Concept Plan (the "Data Center Area"). It is understood that the Data Center Area crosses the jurisdictional boundary line separating the County and the Town as generally shown on the Concept Plan as "BOUNDARY LINE OF: TOWN OF ASHLAND/HANOVER COUNTY" (the "Jurisdictional Boundary"), and any building, road, drive, parking, stormwater facility or other improvements may be constructed across the jurisdictional Boundary within the Data Center Area but that these Proffers apply only to the portion of the Data Center Area located in the County. The Concept Plan shows certain areas of the Data Center Area located in

the County as "DEVELOPABLE AREA +/- 27.80 AC" (the "Developable Area"), in which certain improvements may be made.

2. Uses. Only the following uses will be permitted on the Property:

a. Data Center Uses. Data Center Uses, which means any use of the Property for data processing, which includes data centers, data equipment, data storage and other technological services, for the creation of a technology park for the storage of data, such as data processing centers, internet service providers (ISPs), search portals, and related services, such as offices.

b. Accessory Uses. Accessory uses related to Data Center Uses, including, but not limited to (i) electric generation, distribution, transmission and substation facilities (including solar facilities designed to serve the electricity or thermal needs of any building used for a Data Center Use located on the same parcel as the solar facility), (ii) energy and fuel storage facilities, (iii) security and office buildings and facilities, (iv) storage, logistics and maintenance buildings and facilities, (v) water and sewer facilities, (vi) water and sewer treatment facilities, (vii) water storage facilities (storm water, potable and non-potable water) and associated water pumps, (viii) communication, broadband, fiber optic utilities and facilities, and (ix) and other private utilities, all public utilities, and other supporting uses that relate to and support the permitted primary uses described herein.

c. CUP or SE Uses. Any supporting uses that relate to and support Data Center Uses that require a Conditional Use Permit (CUP) or Special Exception (SE) will be permitted only with approval of a Conditional Use Permit (CUP) or a Special Exception (SE) as applicable and required by the County Zoning Ordinance.

d. Uses Limited to Buildable Area. Any Data Center Use, and any accessory use related thereto, other than items addressed in these proffers, such as stormwater facilities, landscaping, roads, drives and utilities located on the Property, will be located entirely on the Developable Area.

e. Other Uses. The Planning Director may permit similar uses, not specified above, within the Developable Area upon the Director finding that the unspecified uses are generally in keeping with the spirit and type of uses listed above.

3. Building Setbacks.

   a. Exterior Boundary Line Building Setback. Any building will be set back at least two hundred feet (200') from the exterior boundary lines of the Data Center Area (which does not include the Jurisdictional Boundary), and such setback will be measured from the ultimate boundary line of the Data Center Area after any right-of-way dedications (the "Setback Line"). The Setback Line is more particularly shown on the Concept Plan as "MINIMUM 200' SETBACK" and is intended that no building setback will be required by this proffer with respect to the Jurisdictional Boundary or any internal parcel, lot, property or boundary line, regardless of fee ownership.

   b. Jurisdictional Boundary Building Build-To Line. Any building on the Property will be located no further from the Jurisdictional Boundary than 600 feet where marked on the Concept Plan as "600' " and no more than 250 feet where marked on the Concept Plan as "250' ".

4. Buffers.

   a. Exterior Buffer. The exterior boundary lines of the Data Center Area (not including the Jurisdictional Boundary) will contain a buffer a minimum of one hundred fifty feet (150') in width as generally shown on the Concept Plan as "MINIMUM 150' BUFFER" and developed generally as shown on those certain plans prepared by LandDesign entitled "IRON HORSE DATA CENTER" designated as Sheets L-100, L-101, L-102, L-102A, and L-103, and attached hereto as **Exhibit B** (the "Data Center Landscape Plans"). Any trees within such buffer will remain undisturbed; provided, however, this will not prevent the removal of trees necessary for the construction of public utility improvements, roads, drives, or the planting of the Thoroughfare Buffer, as shown on the Concept Plan. Such buffer will be measured from the ultimate right-of-way of State Route 54.

   b. Thoroughfare Buffer. This buffer will also include a thoroughfare buffer along East Patrick Henry Road (State Route 54) which will be provided and designed, at a minimum, in accordance with the standards set forth in Section 26-292.5(4) of the County Zoning Ordinance (the "Thoroughfare Buffer"). The existing vegetation within the area of the Thoroughfare Buffer will be inventoried and submitted to the Planning Department no later than the site plan submission for any building, or portion thereof, to be located within five hundred (500) feet of Route 54. A double row of large evergreen trees (i.e.

Leyland Cypress, Arborvitae, or similar evergreen tree species) must be planted and maintained behind the Thoroughfare Buffer. The Thoroughfare Buffer may include a berm, fence or wall. Any building in the County closest to State Route 54 must be screened from view from State Route 54.

c. Internal Buffer. No buffer will be required by this proffer with respect to the Jurisdictional Boundary or any internal parcel, lot, property or boundary line, regardless of fee ownership.

d. Maintenance of Existing Vegetation and Allowable Disturbance. Existing vegetation within natural buffers will be undisturbed, except for the limited purposes specifically set forth in this section. Dead or diseased trees may be removed and supplemental landscaping installed. Other improvements having minimal impact on the existing trees within these buffer areas (i.e. handholes, junction boxes, utility pedestals), but not stormwater basins or other improvements requiring mass grading and/or the removal of a significant number of trees, may be requested by the owner and approved by the Planning Director at the time of site plan review and approval. Fencing will not be located within natural buffers. Utility easements may pass through these buffer areas in a generally perpendicular manner (may not exceed 45 degrees), unless currently existing. Notwithstanding the foregoing, any resource protection areas (RPAs) and wetlands within these natural buffer area will be included in the required natural buffer area and must not be impacted, other than as may be required to comply with these proffered conditions. These natural buffers will be included within any required setback along the perimeter of the Property.

e. Supplemental Plantings.
    i. Existing vegetation will not need to be supplemented if the existing vegetation meets the following conditions:
        1. The buffer area is covered with at least 75% of naturally-established vegetation;
        2. The existing plant material is mature and in healthy condition;
        3. The existing plant material consists of a mix of evergreen and deciduous trees which satisfy the following:
            a. Existing deciduous trees having a minimum 4 inch caliper measured two feet from the ground;
            b. Evergreen trees that are a minimum of ten feet in height; and

c. Hardy shrubs that are a minimum of two feet in height and width with a full growth habit;
d. Any existing trees which are used to satisfy this requirement must have the entirety of their canopies located within the buffer area; and
e. There is an established understory of small trees and shrubs, both evergreen and deciduous, to provide significant buffering at the lower forested area.

ii. Existing vegetation that does not meet the requirements above must be supplemented, with preference given to the tree types of valley forge elm, white oak, red maple, sweetgum (seedless), blackgum, in accordance with the following standards:

1. Existing vegetation with no understory as required in this Section must be improved as follows:
    a. 3 small deciduous understory trees per 100 feet of buffer length;
    b. 3 small evergreen trees per 100 feet of buffer length;
    c. 5 large shrubs per 100 feet of buffer length; and
    d. 10 small to medium shrubs per 100 feet of buffer length.
2. Existing vegetation with no evergreen tree component as required in this Section must have the following, located along the inside or outside buffer line in a staggered pattern:
    a. 4 large evergreen trees per 100 feet of buffer length; and
    b. 6 small evergreen trees per 100 feet of buffer length.
3. Existing vegetation with no deciduous tree component as required in this Section will not qualify and the existing vegetation must be modified and replanted in accordance with subsection 4 below. Existing evergreen trees can be used to meet the requirements related to evergreen trees.
4. Where existing vegetation does not comply with subsection 3 above due to immature, inadequate or unhealthy trees and shrubs, the owner will plant a staggered pattern and placement in accordance with the following standards:
    a. Plantings may be clustered within the buffer as long as there are no vegetative gaps of ten (10) or more linear feet or the existing stand of trees have no branches or understory growth lower than six feet from the ground.

b. Clusters to be of no more than 50' in width consisting of:

i. 2 Large Deciduous Trees;
ii. 4 Small Deciduous Trees;
iii. 6 Large Evergreen Trees;
iv. 8 Small Evergreen Trees;
v. 7 large shrubs; and
vi. 15 Small to medium shrubs.

1. Unless otherwise specified, references to the size of required trees and the characteristics of required trees and shrubs are in accordance with Section 26-265. Shrub sizes are as follows: small shrubs are those that do not exceed 4 feet at maturity without pruning, medium shrubs are those that reach 4 to 8 feet at maturity without pruning, and large shrubs are those that reach greater than 8 feet at maturity. Maturity for shrubs is 7 years of age.

c. The determination of whether existing vegetation needs supplementing will be made at the time of site plan submittal for building construction and the determination will be made for the portion of the buffer shown within or adjacent to the area encompassed within the requested site plan approval. At the time of site plan review and approval the planting standards contained in this Section may be reasonably modified based on soil and plant growth needs as approved by the Planning Director.

f. Native Species: At least thirty (30%) of the plantings shown on each site plan or landscape plan submitted to the Planning Department for a Development Area (or portion thereof) will use species native to Hanover County and/or an adjacent locality.

g. Parking Lot Landscaping: Landscaping within a parking area will be provided on the basis of ten (10) square feet per parking space. This

required landscaping may be provided within landscaped islands with the parking area or at the perimeter of the parking area.

5. Buffer Protection Measures. If any construction activity or other land disturbance on the interior of the Property occurs within twenty feet (20') of the interior edge of any portion of a buffer then in order to protect that portion of the buffer, a tree save plan must be submitted to the Planning Department, identifying any trees on the perimeter of the one hundred and fifty foot (150') buffer that may be damaged by such construction activity or other land disturbance. Such tree save plan will identify all measures that may be taken to protect any such trees, including, as needed, a temporary construction fence, with a minimum height of four (4) feet, in a location appropriate to protect such trees. If any such construction activity or other land disturbance causes damage to any such tree as identified within six (6) months after completion of any such construction, the tree will be replaced with an evergreen tree, at least eight (8) feet in height at the time of planting.

6. Building Height. No building on the Property will exceed 75' in height (including any rooftop screening or parapet walls). This proffered condition is subject to the approval of a Special Exception by the County Board of Supervisors

7. Transportation.

   a. Entrances. There will be no access to and from the Property directly from and to Route 54 within the County. All access must be achieved from the Data Center Area located in the Town.

   b. Internal Roads. Roads internal to the Property will be private.

   c. Pedestrian Path on Route 54. A minimum 10-foot wide shared use path together with 2-foot wide planting strip to be located within the VDOT right-of-way along Route 54 across the frontage of the Property will be constructed subject to VDOT and County approval. Such shared-use path must be completed prior to the issuance of the certificate of occupancy for the first data center building on the Property.

8. Right-of-Way Dedication. The Property Owner will dedicate right-of-way along the south side of Route 54 adjoining the Property where right-of-way is needed for future road widening of sixty (60) feet from the centerline of Route 54. Dedication

will be free of cost and take place at the time of subdivision plat recordation or prior to site plan approval (if the Property is not subdivided), whichever comes first.

9. Utilities. County public water and sanitary sewer facilities will be used for the development of the Property.

    a. Design and Construction Costs. The Applicant will be responsible for the design and construction cost of any on-site accessory water storage improvement required by the Department of Public Utilities to meet peak demand.

    b. Private Wells for Cooling Prohibited. The use of private well water for water cooling data center equipment is strictly prohibited.

    c. Water Discharge. The discharge from the Property of operational water (which specifically does not include stormwater) must be made to the County public sanitary sewer system.

    d. Maximum Water Use. Any Data Center Use on the Property will not exceed a maximum of 1,200,000 gallons of water per day and a maximum of 250,000 gallons of wastewater per day.

    e. Public Water and Wastewater Infrastructure. To address peak water and wastewater demands for the development and operation of a Data Center Use on the Property, the Applicant will contribute funds to Hanover County for use by the Department of Public Utilities necessary for the design and construction of all off-site water and wastewater improvements needed to mitigate the impact of the water and wastewater demand from the Data Center Use on the Property as determined by the Director of the Department of Public Utilities, and as identified in the County's 2020 Water Master Plan and the technical memorandums submitted with the rezoning application (entitled Technical Memorandum: East Ashland Ironhorse Development Water Service Hydraulic Evaluation, dated July 27, 2026, and Technical Memorandum: East Ashland Ironhorse Development Water Service Hydraulic Evaluation – Sewer Model, dated July 28, 2026).

10. Data Center Cooling. Any building containing a Data Center Use will use air cooling systems, recirculating evaporative cooling systems, a recirculating sealed liquid based cooling system (closed loop), or other new technology intended to limit the use of water for cooling as evidenced by manufacturer printed material, and will

only use water provided by the County. Single pass cooling systems will not be used. No onsite groundwater or surface water will be used for cooling purposes for any building containing a Data Center Use. Any immersion or coolant fluid used for any cooling system for a building will be free of per- and polyfluoroalkyl substances (PFAS).

11. Generators. Only Tier IV (or better) generators will be used. All generators will be enclosed with manufacturer approved enclosures that are architecturally compatible with the color of the primary building façade, as approved by the Planning Director at the time of plans review. Generators may only be used for emergency purposes and will not be used as the main production of electrical power except as back-up, emergency purposes.

12. Utility Lines Underground. All utility lines, such as electric, telephone, CATV, or other similar lines will be installed underground, except (a) for major transmission lines with a voltage of 64 kV or more and (b) existing lines that now traverse the Property.

13. BMPs/Retention Ponds. Any retention pond or BMP facilities on the Property will be maintained in accordance with all applicable laws, rules, and regulations and will be aerated. All ponds will be lined with liners made of clay or synthetic material or any other material suitable as determined by a geotechnical engineer. Any wet ponds will be aerated.

14. Hours of Construction. The hours of any exterior construction, including operating of bulldozers and other earthmoving equipment, will be limited to between 7:00 a.m. and 7:00 p.m. Monday through Saturday, except as provided in Section 16-4 of the Hanover County Code, and except in emergencies or where unusual circumstances require extending the specific hours in order to complete work, such as concrete pours or utility connections. There will be no exterior construction on Sundays. Signs, in both English and Spanish, stating the above referenced provisions will be posted and maintained at all construction entrances to the Property prior to any land disturbances activities thereon.

15. Construction Traffic and Entrances. Any construction entrance for use by construction vehicles (not including maintenance and repair) working on the Property must have a mud wash for the washing of construction vehicle tires as necessary to prevent mud and debris from getting on public roads when leaving the Property. The mud wash may be located in the Town.

16. Screening Exterior Mechanical Equipment. Exterior mechanical equipment (including units used for heating, ventilation, cooling, air conditioning, permanent electrical generators, refrigeration equipment and ductwork, backflow prevention devices and similar feature) must be screened from view of all public roads and perimeter project boundary lines, as follows:

    a. Roof-mounted mechanical equipment. Mechanical equipment mounted on the roof of a building must be screened by a parapet wall, roof screen, or similar device that is integrated into the building's building form and of a height equal to or greater than the height of the mechanical equipment being screened.

    b. Ground-mounted and wall-mounted mechanical equipment. Mechanical equipment mounted on or near ground-level, or otherwise mounted on a building wall, must be screened by any combination of sight-obscuring dense evergreen vegetation or decorative walls or fences that incorporates at least one of the primary materials or colors of the nearest wall of the primary structure on the lot. The height of the vegetation, wall, or fence will equal or exceed that of the mechanical equipment being screened.

    c. Planning Director's Review. The method of screening will be submitted at the time of site plan review and line of sight profiles will be provided prior to site plan approvals. As determined by the Planning Director, screening for mechanical equipment for Data Center Uses may incorporate perforated surfaces on screening walls as necessary to permit ventilation of such mechanical equipment while still providing adequate screening.

17. Signs. With the exception of on-site directional signs, all free-standing signs will be monument type with a masonry base. Such signs may be either internally illuminated or lit with down lighting; directional signs will be internally illuminated only. Building or façade mounted advertising signs will not be illuminated. The materials and design of any signs will be compatible with the proposed materials and architectural theme of the proposed structures.

18. Lighting.

a. Shields. House-side shields, louvers, or similar devices must be used to shield the source of exterior lighting from residentially-zoned properties (which includes properties zoned A-1, Agricultural)..

b. Pole-Mounted Lights. Pole-mounted exterior lighting will not exceed eighteen feet (18') in height.

c. Wall Pack Lighting. No wall pack lighting will be permitted on exterior building walls facing and adjoining property currently used for residential purposes unless required by the applicable Building Code or County Code. Where building-mounted exterior lighting is installed, it may not be mounted more than thirty-five (35) feet above finished grade. The uplighting of buildings is prohibited.

d. Lighting Limits. Lighting will not exceed .50 foot-candles at the internal edge of the one hundred fifty foot (150') buffer generally shown on the Concept Plan as "Natural Buffer." Lighting that is exempt from these requirements includes temporary lighting and lighting provided for emergency or safety and security purposes as required by the Building Code, Electrical Code or otherwise within the County Code.

19. Trash Enclosures. Any proposed enclosure area for dumpsters, if provided, that can be seen from a public right-of-way or existing residential homes must be constructed of masonry, tilt, or other cementitious product on three (3) sides that is complementary to the buildings and the fourth side must be gated with an opaque material. Any such trash enclosures will be additionally screened from view with landscaping or other screening materials.
20. Elevations. Buildings used for Data Center Uses will (i) generally be in conformance with renderings entitled "WestDulles/Ironhorse Data Center Elevation Examples," dated September 19, 2024, and attached hereto as **Exhibit C** with respect to quality of design, massing, architecture, and variety of features and (ii) principal building facades will meet the following standards:

a. Applicability. For the purposes of this subsection, the term "principal building facades" will include all building facades substantially visible to abutting public roads or adjacent to planned or existing residential or agricultural districts as determined by the Planning Director.

b. Façade Features. Principal building facades will avoid the use of undifferentiated surfaces by including at least four (4) of the following design

elements (with such features occurring at least once every 150 horizontal linear feet):

i. change in building height
ii. building step-backs, projections or recesses
iii. fenestration
iv. changes in building material, pattern, texture, color
v. use of accent material
vi. overhangs
vii. canopies or porticos
viii. arcades
ix. variations in the roof line

c. Primary Building Colors. Principal building facades will use one or more neutral colors (such as taupe, tan, brown, beige, ivory, cream, black, grey) with accent colors to complement the dominant building color. High-gloss finishes and white tones must be avoided.

d. Consistency on Multiple Facades. When a building has more than one principal facade, such facades will be consistent in their design, materials, details, and treatments.

e. Windows on Eastern-Facing Facades. Unless required by the applicable Building Code, windows will not be permitted on eastern facing principal building facades, although emergency exit doors, faux windows and other architectural features may be used on such eastern elevations.

f. Main Entrance Feature. Each building containing a Data Center Use will include at least one main entrance feature. Main entrance features must either project or recess from the main building plane, and/or be differentiated from the remainder of the building façade by a change in building material. Architectural features used to meet this requirement can also be counted towards the requirement listed in subsection b listed above.

g. Windows/Transparency for Office Areas. Administrative or office portions of buildings visible from roads should include windows and transparent elements to break up massing.

h. Loading Areas. If loading docks or service entries located on the side or rear of buildings are visible from perimeter project boundary lines, then they must be screened using other buildings, and/or in accordance with standards set

forth in Sec. 26-263 (Screening and planting standards). Loading areas will not be located on the front side of a building.

i. Consistency on Multiple Facades. When a building has more than one principal facade, such facades will be consistent in their design, materials, details, and treatments.

j. Elevation Review. Building elevations must be submitted with the site plan application for each data center building. In the event a building's architectural style is not in accordance with the foregoing, deviations may be approved by the Planning Director, upon the Planning Director's finding that the deviations are generally in keeping with the spirit and concept of the illustrations.

21. Building Materials. Exposed exterior wall surfaces (above finished grade) of all individual buildings (excluding rooftop screening materials for mechanical equipment) must be constructed with one or more of the following siding materials: decorative concrete block (including, without limitation, split face block, smooth face block, fluted block, and ground face block), tilt-up or pre-cast concrete, brick, brick veneer, glass, metal (other than corrugated metal), stone, cast stone, stone veneer, stucco, synthetic stucco, glass block, cementitious siding, insulated panels, concrete tile, or ceramic tile, unless other material is approved at time of site plan review. In no case will unpainted concrete block, unfinished corrugated metal, or unfinished sheet metal be permitted. For purposes of these proffered conditions, "wall surfaces" will not be deemed to include columns, pilasters, trim, gutters, accent materials, architectural features, windows, doors, bay doors, piers, wall sections and headers near roll up doors and loading doors. For buildings containing Data Center Uses a minimum of 50% of the principal building façade(s) that can be seen from public rights-of-way or adjacent residential homes will consist of brick, brick veneer, stone, cultured stone, stone veneer, concrete (both precast and cast-in-place), decorative metal panels or anodized aluminum and/or glazing systems as finish materials.

22. Building Standards. In all instances, any building, including any energy storage standalone structures, on the Property will be constructed to NFPA code sections 75, 76 and 855, as applicable, as well as all other applicable codes, including the applicable provisions of the Virginia Uniform Statewide Building Code in effect at the time of building permit application.

23. Security and Fencing. Fencing, security gates, and guard buildings may be installed to surround the perimeter of the Data Center Area or any portion thereof, but may not be within the buffer area itself, but located up to the interior edge of the buffer such that it is screened from view of adjacent properties.. Fencing will appear generally as shown on the Iron Horse Data Center Fencing Exhibit dated February 23, 2024, attached hereto as **Exhibit D**. The design and final location of the perimeter fencing and security fencing must be approved at the time of site plan review and approval.

24. Noise Control.

    a. Permitted Sound Levels. The operation of any building for a Data Center Use may not exceed a maximum dBA level of 57 in the daytime and 52 at nighttime at the exterior boundary lines of the project. Additionally, the project may not exceed a maximum dBC level of 73 in the daytime and 68 at nighttime at the exterior boundary lines of the project. Daytime and nighttime hours must comply with the hours defined in Hanover County's Noise Ordinance.

    b. Baseline Study. A baseline sound study of ambient noise must be conducted prior to land disturbance for any portion of the Property subject to an approved site plan and the results of such study must be submitted to the County to establish a base line study of ambient noise surrounding the proposed development. This baseline sound study must demonstrate how the development will limit sound at the Property Line from any Data Center Use to ensure conformity with the County Noise Ordinance and proffered conditions.

    c. Noise Study. Thereafter, the applicant will engage a certified professional to conduct a noise study for any building in the Data Center Area within thirty (30) days of the date such building becomes operational. The noise study will include recommendations for any necessary mitigation measures required to ensure conformity with the County Noise Ordinance and proffered conditions. Such recommended mitigation measures will be implemented within sixty (60) days after the noise study, unless a particular mitigation measure will be implemented within a longer period of time as approved by the Planning Director. Any required mitigation measures may be noted on the approved plans as an administrative amendment. In addition to the foregoing, physical sound attenuation on any mechanical equipment (including but not limited to ground supported barriers, earthen berms, mechanical screening or other attenuation techniques as specifically called

out in subsequent sound studies) will be installed for any building used for Data Center Uses that is located within one thousand two hundred feet (1,200') of any adjoining residential home and that is either (i) installed on the rooftop of such building or (ii) installed on the exterior side of such building and directly facing such residential home, in each case unless a noise study demonstrates that there is no incremental noise from such mechanical equipment as a result of the foregoing installation locations.

d. Generator Testing. Testing of any back-up generators in the Property will be limited to between the hours of Monday – Friday, 8:00 a.m. – 4:00 p.m.,, unless otherwise required by applicable state or federal law or regulation.

e. Exterior Alarms and Speaker Systems. There will be no exterior alarms or speaker systems permitted on any building located on the Property except for emergency alarms and alarms or beepers located on vehicles.

f. Generators. Generators must be separated from adjacent residential homes to the east by a principal building or a screening wall.

25. Open Space. No less than 49.82 acres of the Property (64%) will be open space, buffers, undeveloped land and stormwater facilities, and not consisting of buildings, structures, parking areas, and drive aisles. Areas outside the Developable Area will generally remain undeveloped; however, crossings for utilities, infrastructure, and landscaping are permitted. Prior to approval of the first site plan, the applicant must record documents conveying open space easements applicable to the area noted as "Undisturbed Green Space" on the conceptual plan noted in Proffer #1, to the County, with content approved by the County, requiring preservation of features so designated on the plan, requiring maintenance in perpetuity of the open space, prohibiting further division of those areas, and prohibiting any use not permitted by the Zoning Ordinance and proffered conditions.

26. Decommissioning Plan. Applicants will commit to a Decommissioning Plan, to be approved by the Director of Planning, prior to issuance of any permit to build or install, for removal and proper disposal of any hazardous materials pursuant to any and all applicable laws and regulations from the Property within two (2) years of cessation of operations in or use of any building on the Property. Financial surety to the County will be provided in an amount sufficient to undertake decommissioning activities should the owner default in its decommissioning responsibilities. The surety shall continue in effect during the operation of the

facility and until the time when the County certifies that decommissioning activities have been satisfactorily completed.

27. Pedestrian Circulation.

a. Sidewalks. Sidewalks will be provided on at least one side of primary site vehicular circulation areas and internal site vehicular circulation areas, as such circulation areas are illustrated on the Concept Plan. Interior site vehicular circulation areas do not include drive-aisles.

b. Pedestrian Connections from Parking Areas to Building Entrances. Pedestrian walkways at least five feet in width will be provided through parking areas to provide connections from parking lots to the primary building entrance, with such walkways separated from parking spaces and drive aisles by curbing and/or landscaping.

c. Pedestrian Walkways to Secondary Entrance.: Any secondary entrance(s) will be connected by a pedestrian walkway to building parking.

[Signatures on following page.]

Andrew M. Condlin, by Power of Attorney
Date:

COMMONWEALTH OF VIRGINIA,
CITY OF RICHMOND, to-wit:

I, Tracy Gibrall Craddock, do hereby certify that Andrew M. Condlin has acknowledged the foregoing Proffers before me, this ____ day of _____, 2026.

_____(SEAL)
Notary Public

My commission expires: _____

Notary registration number: _____

EXHIBIT A

EXHIBIT B

EXHIBIT C

EXHIBIT D

Proffers (Redline changes since July 28, 2026)

PROFFERS – Case REZ-2025-00010
~~July 28~~August 12, 2026

The undersigned, owner of the Property identified as GPIN No. 7880-70-4924 (the "Property") located in Hanover County, Virginia (the "County"), voluntarily agrees for itself, and its agents, personal representatives, successors and assigns (collectively, the "Property Owner") that, in the event the Property is rezoned from MX to M-1 (+/- 77.62 acres), the development and use of the Property will be subject to the following proffered conditions which will replace in their entirety, all previous proffers applicable to the Property:

1. Concept Plan. The Property will be developed in substantial conformance with that certain plan entitled "IRON HORSE DATA CENTER, BUILDABLE AREA PLAN", prepared by Timmons Group, dated June 1, 2026, and attached hereto as **Exhibit A** and subject to the requirements and adjustments permitted in the conditions and notes stated therein and these proffered conditions (the "Concept Plan"). All parcel lines, private road locations, interior roads and drives, boundaries of buildable areas, accessory use locations, utility locations (including substations), stormwater management facilities, and dimensions of undeveloped areas shown on the Concept Plan may be adjusted for purposes of final engineering of site or subdivision plans (for multiple phases) and to further allow for compliance with the requirements of state and federal agency regulations including, but not limited to, Virginia Department of Historical Resources, Virginia Department of Transportation ("VDOT"), Virginia Department of Conservation and Recreation, Virginia Department of Environmental Quality, U.S. Army Corps. of Engineers, and the County's Zoning Ordinance, Subdivision Ordinance, and other applicable design standards, provided that the minimum width of perimeter buffers and perimeter building setbacks remain unchanged. The determination as to whether adjustments are in substantial conformance with the layout illustrated on the Concept Plan will be made by the Director of Planning at his/her discretion. The Concept Plan shows an area of real property which includes the Property and adjoining real property located within the Town of Ashland, Virginia (the "Town") as shown as "BUILDABLE AREA OF TOWN OF ASHLAND" on the Concept Plan (the "Data Center Area"). It is understood that the Data Center Area crosses the jurisdictional boundary line separating the County and the Town as generally shown on the Concept Plan as "BOUNDARY LINE OF: TOWN OF ASHLAND/HANOVER COUNTY" (the "Jurisdictional Boundary"), and any building, road, drive, parking, stormwater facility or other improvements may be constructed across the jurisdictional Boundary within the Data Center Area but that these Proffers apply only to the portion of the Data Center Area located in the County. The Concept Plan shows certain areas of the Data Center Area located in

the County as "DEVELOPABLE AREA +/- 27.80 AC" (the "Developable Area"), in which certain improvements may be made.

2. Uses. Only the following uses will be permitted on the Property:

a. Data Center Uses. Data Center Uses, which means any use of the Property for data processing, which includes data centers, data equipment, data storage and other technological services, for the creation of a technology park for the storage of data, such as data processing centers, internet service providers (ISPs), search portals, and related services, such as offices.

b. Accessory Uses. Accessory uses related to Data Center Uses, including, but not limited to (i) electric generation, distribution, transmission and substation facilities (including solar facilities designed to serve the electricity or thermal needs of any building used for a Data Center Use located on the same parcel as the solar facility), (ii) energy and fuel storage facilities, (iii) security and office buildings and facilities, (iv) storage, logistics and maintenance buildings and facilities, (v) water and sewer facilities, (vi) water and sewer treatment facilities, (vii) water storage facilities (storm water, potable and non-potable water) and associated water pumps, (viii) communication, broadband, fiber optic utilities and facilities, and (ix) and other private utilities, all public utilities, and other supporting uses that relate to and support the permitted primary uses described herein.

c. CUP or SE Uses. Any supporting uses that relate to and support Data Center Uses that require a Conditional Use Permit (CUP) or Special Exception (SE) will be permitted only with approval of a Conditional Use Permit (CUP) or a Special Exception (SE) as applicable and required by the County Zoning Ordinance.

d. Uses Limited to Buildable Area. Any Data Center Use, and any accessory use related thereto, other than items addressed in these proffers, such as stormwater facilities, landscaping, roads, drives and utilities located on the Property, will be located entirely on the Developable Area.

e. Other Uses. The Planning Director may permit similar uses, not specified above, within the Developable Area upon the Director finding that the unspecified uses are generally in keeping with the spirit and type of uses listed above.

3. Building Setbacks.

   a. Exterior Boundary Line Building Setback. Any building will be set back at least two hundred feet (200') from the exterior boundary lines of the Data Center Area (which does not include the Jurisdictional Boundary), and such setback will be measured from the ultimate boundary line of the Data Center Area after any right-of-way dedications (the "Setback Line"). The Setback Line is more particularly shown on the Concept Plan as "MINIMUM 200' SETBACK" and is intended that no building setback will be required by this proffer with respect to the Jurisdictional Boundary or any internal parcel, lot, property or boundary line, regardless of fee ownership.

   b. Jurisdictional Boundary Building Build-To Line. Any building on the Property will be located no further from the Jurisdictional Boundary than 600 feet where marked on the Concept Plan as "600' " and no more than 250 feet where marked on the Concept Plan as "250' ".

4. Buffers.

   a. Exterior Buffer. The exterior boundary lines of the Data Center Area (not including the Jurisdictional Boundary) will contain a buffer a minimum of one hundred fifty feet (150') in width as generally shown on the Concept Plan as "MINIMUM 150' BUFFER" and developed generally as shown on those certain plans prepared by LandDesign entitled "IRON HORSE DATA CENTER" designated as Sheets L-100, L-101, L-102, L-102A, and L-103, and attached hereto as **Exhibit B** (the "Data Center Landscape Plans"). Any trees within such buffer will remain undisturbed; provided, however, this will not prevent the removal of trees necessary for the construction of public utility improvements, roads, drives, or the planting of the Thoroughfare Buffer, as shown on the Concept Plan. Such buffer will be measured from the ultimate right-of-way of State Route 54.

   b. Thoroughfare Buffer. This buffer will also include a thoroughfare buffer along East Patrick Henry Road (State Route 54) which will be provided and designed, at a minimum, in accordance with the standards set forth in Section 26-292.5(4) of the County Zoning Ordinance (the "Thoroughfare Buffer"). The existing vegetation within the area of the Thoroughfare Buffer will be inventoried and submitted to the Planning Department no later than the site plan submission for any building, or portion thereof, to be located within five hundred (500) feet of Route 54. A double row of large evergreen trees (i.e.

Leyland Cypress, Arborvitae, or similar evergreen tree species) must be planted and maintained behind the Thoroughfare Buffer. The Thoroughfare Buffer may include a berm, fence or wall. Any building in the County closest to State Route 54 must be screened from view from State Route 54.

c. Internal Buffer. No buffer will be required by this proffer with respect to the Jurisdictional Boundary or any internal parcel, lot, property or boundary line, regardless of fee ownership.

d. Maintenance of Existing Vegetation and Allowable Disturbance. Existing vegetation within natural buffers will be undisturbed, except for the limited purposes specifically set forth in this section. Dead or diseased trees may be removed and supplemental landscaping installed. Other improvements having minimal impact on the existing trees within these buffer areas (i.e. handholes, junction boxes, utility pedestals), but not stormwater basins or other improvements requiring mass grading and/or the removal of a significant number of trees, may be requested by the owner and approved by the Planning Director at the time of site plan review and approval. Fencing will not be located within natural buffers. Utility easements may pass through these buffer areas in a generally perpendicular manner (may not exceed 45 degrees), unless currently existing. Notwithstanding the foregoing, any resource protection areas (RPAs) and wetlands within these natural buffer area will be included in the required natural buffer area and must not be impacted, other than as may be required to comply with these proffered conditions. These natural buffers will be included within any required setback along the perimeter of the Property.

e. Supplemental Plantings.
    i. Existing vegetation will not need to be supplemented if the existing vegetation meets the following conditions:
        1. The buffer area is covered with at least 75% of naturally-established vegetation;
        2. The existing plant material is mature and in healthy condition;
        3. The existing plant material consists of a mix of evergreen and deciduous trees which satisfy the following:
            a. Existing deciduous trees having a minimum 4 inch caliper measured two feet from the ground;
            b. Evergreen trees that are a minimum of ten feet in height; and

c. Hardy shrubs that are a minimum of two feet in height and width with a full growth habit;
d. Any existing trees which are used to satisfy this requirement must have the entirety of their canopies located within the buffer area; and
e. There is an established understory of small trees and shrubs, both evergreen and deciduous, to provide significant buffering at the lower forested area.

ii. Existing vegetation that does not meet the requirements above must be supplemented, with preference given to the tree types of valley forge elm, white oak, red maple, sweetgum (seedless), blackgum, in accordance with the following standards:

1. Existing vegetation with no understory as required in this Section must be improved as follows:
    a. 3 small deciduous understory trees per 100 feet of buffer length;
    b. 3 small evergreen trees per 100 feet of buffer length;
    c. 5 large shrubs per 100 feet of buffer length; and
    d. 10 small to medium shrubs per 100 feet of buffer length.
2. Existing vegetation with no evergreen tree component as required in this Section must have the following, located along the inside or outside buffer line in a staggered pattern:
    a. 4 large evergreen trees per 100 feet of buffer length; and
    b. 6 small evergreen trees per 100 feet of buffer length.
3. Existing vegetation with no deciduous tree component as required in this Section will not qualify and the existing vegetation must be modified and replanted in accordance with subsection 4 below. Existing evergreen trees can be used to meet the requirements related to evergreen trees.
4. Where existing vegetation does not comply with subsection 3 above due to immature, inadequate or unhealthy trees and shrubs, the owner will plant a staggered pattern and placement in accordance with the following standards:
    a. Plantings may be clustered within the buffer as long as there are no vegetative gaps of ten (10) or more linear feet or the existing stand of trees have no branches or understory growth lower than six feet from the ground.

b. Clusters to be of no more than 50' in width consisting of:
    i. 2 Large Deciduous Trees;
    ii. 4 Small Deciduous Trees;
    iii. 6 Large Evergreen Trees;
    iv. 8 Small Evergreen Trees;
    v. 7 large shrubs; and
    vi. 15 Small to medium shrubs.
        1. Unless otherwise specified, references to the size of required trees and the characteristics of required trees and shrubs are in accordance with Section 26-265. Shrub sizes are as follows: small shrubs are those that do not exceed 4 feet at maturity without pruning, medium shrubs are those that reach 4 to 8 feet at maturity without pruning, and large shrubs are those that reach greater than 8 feet at maturity. Maturity for shrubs is 7 years of age.

c. The determination of whether existing vegetation needs supplementing will be made at the time of site plan submittal for building construction and the determination will be made for the portion of the buffer shown within or adjacent to the area encompassed within the requested site plan approval. At the time of site plan review and approval the planting standards contained in this Section may be reasonably modified based on soil and plant growth needs as approved by the Planning Director.

f. Native Species: At least thirty (30%) of the plantings shown on each site plan or landscape plan submitted to the Planning Department for a Development Area (or portion thereof) will use species native to Hanover County and/or an adjacent locality.

g. Parking Lot Landscaping: Landscaping within a parking area will be provided on the basis of ten (10) square feet per parking space. This

required landscaping may be provided within landscaped islands with the parking area or at the perimeter of the parking area.

5. Buffer Protection Measures. If any construction activity or other land disturbance on the interior of the Property occurs within twenty feet (20') of the interior edge of any portion of a buffer then in order to protect that portion of the buffer, a tree save plan must be submitted to the Planning Department, identifying any trees on the perimeter of the one hundred and fifty foot (150') buffer that may be damaged by such construction activity or other land disturbance. Such tree save plan will identify all measures that may be taken to protect any such trees, including, as needed, a temporary construction fence, with a minimum height of four (4) feet, in a location appropriate to protect such trees. If any such construction activity or other land disturbance causes damage to any such tree as identified within six (6) months after completion of any such construction, the tree will be replaced with an evergreen tree, at least eight (8) feet in height at the time of planting.

6. Building Height. No building on the Property will exceed 75' in height (including any rooftop screening or parapet walls). This proffered condition is subject to the approval of a Special Exception by the County Board of Supervisors

7. Transportation.

   a. Entrances. There will be no access to and from the Property directly from and to Route 54 within the County. All access must be achieved from the Data Center Area located in the Town.

   b. Internal Roads. Roads internal to the Property will be private.

   c. Pedestrian Path on Route 54. A minimum 10-foot wide shared use path together with 2-foot wide planting strip to be located within the VDOT right-of-way along Route 54 across the frontage of the Property will be constructed subject to VDOT and County approval. Such shared-use path must be completed prior to the issuance of the certificate of occupancy for the first data center building on the Property.

8. Right-of-Way Dedication. The Property Owner will dedicate right-of-way along the south side of Route 54 adjoining the Property where right-of-way is needed for future road widening of sixty (60) feet from the centerline of Route 54. Dedication

will be free of cost and take place at the time of subdivision plat recordation or prior to site plan approval (if the Property is not subdivided), whichever comes first.

9. Utilities. County public water and sanitary sewer facilities will be used for the development of the Property.

   a. Design and Construction Costs. The Applicant will be responsible for the design and construction cost of any on-site accessory water storage improvement required by the Department of Public Utilities to meet peak demand.

   b. Private Wells for Cooling Prohibited. The use of private well water for water cooling data center equipment is strictly prohibited.

   c. Water Discharge. The discharge from the Property of operational water (which specifically does not include stormwater) must be made to the County public sanitary sewer system.

   d. Maximum Water Use. Any Data Center Use on the Property will not exceed a maximum of 1,2008,000 gallons of water per day and a maximum of 250,000 gallons of wastewater per day.

   e. Public Water and Wastewater Infrastructure. To address peak water and wastewater demands for the development and operation of a Data Center Use on the Property, the Applicant will contribute funds to Hanover County for use by the Department of Public Utilities necessary for the design and construction of all off-site water and wastewater improvements needed to mitigate the impact of the water and wastewater demand from the Data Center Use on the Property as determined by the Director of the Department of Public Utilities, and as identified in the County's 2020 Water Master Plan- and the technical memorandums submitted with the rezoning application (entitled Technical Memorandum: East Ashland Ironhorse Development Water Service Hydraulic Evaluation, dated July 27, 2026, and Technical Memorandum: East Ashland Ironhorse Development Water Service Hydraulic Evaluation – Sewer Model, dated July 28, 2026).

10. Data Center Cooling. Any building containing a Data Center Use will use air cooling systems, recirculating evaporative cooling systems, a recirculating sealed liquid based cooling system (closed loop), or other new technology intended to limit the use of water for cooling as evidenced by manufacturer printed material, and will

only use water provided by the County. Single pass cooling systems will not be used. No onsite groundwater or surface water will be used for cooling purposes for any building containing a Data Center Use. Any immersion or coolant fluid used for any cooling system for a building will be free of per- and polyfluoroalkyl substances (PFAS).

11. Generators. Only Tier IV (or better) generators will be used. All generators will be enclosed with manufacturer approved enclosures that are architecturally compatible with the color of the primary building façade, as approved by the Planning Director at the time of plans review. Generators may only be used for emergency purposes and will not be used as the main production of electrical power except as back-up, emergency purposes.

12. Utility Lines Underground. All utility lines, such as electric, telephone, CATV, or other similar lines will be installed underground, except (a) for major transmission lines with a voltage of 64 kV or more and (b) existing lines that now traverse the Property.

13. BMPs/Retention Ponds. Any retention pond or BMP facilities on the Property will be maintained in accordance with all applicable laws, rules, and regulations and will be aerated. All ponds will be lined with liners made of clay or synthetic material or any other material suitable as determined by a geotechnical engineer. Any wet ponds will be aerated.

14. Hours of Construction. The hours of any exterior construction, including operating of bulldozers and other earthmoving equipment, will be limited to between 7:00 a.m. and 7:00 p.m. Monday through Saturday, except as provided in Section 16-4 of the Hanover County Code, and except in emergencies or where unusual circumstances require extending the specific hours in order to complete work, such as concrete pours or utility connections. There will be no exterior construction on Sundays. Signs, in both English and Spanish, stating the above referenced provisions will be posted and maintained at all construction entrances to the Property prior to any land disturbances activities thereon.

15. Construction Traffic and Entrances. Any construction entrance for use by construction vehicles (not including maintenance and repair) working on the Property must have a mud wash for the washing of construction vehicle tires as necessary to prevent mud and debris from getting on public roads when leaving the Property. The mud wash may be located in the Town.

16. Screening Exterior Mechanical Equipment. Exterior mechanical equipment (including units used for heating, ventilation, cooling, air conditioning, permanent electrical generators, refrigeration equipment and ductwork, backflow prevention devices and similar feature) must be screened from view of all public roads and perimeter project boundary lines, as follows:

    a. Roof-mounted mechanical equipment. Mechanical equipment mounted on the roof of a building must be screened by a parapet wall, roof screen, or similar device that is integrated into the building's building form and of a height equal to or greater than the height of the mechanical equipment being screened.

    b. Ground-mounted and wall-mounted mechanical equipment. Mechanical equipment mounted on or near ground-level, or otherwise mounted on a building wall, must be screened by any combination of sight-obscuring dense evergreen vegetation or decorative walls or fences that incorporates at least one of the primary materials or colors of the nearest wall of the primary structure on the lot. The height of the vegetation, wall, or fence will equal or exceed that of the mechanical equipment being screened.

    c. Planning Director's Review. The method of screening will be submitted at the time of site plan review and line of sight profiles will be provided prior to site plan approvals. As determined by the Planning Director, screening for mechanical equipment for Data Center Uses may incorporate perforated surfaces on screening walls as necessary to permit ventilation of such mechanical equipment while still providing adequate screening.

17. Signs. With the exception of on-site directional signs, all free-standing signs will be monument type with a masonry base. Such signs may be either internally illuminated or lit with down lighting; directional signs will be internally illuminated only. Building or façade mounted advertising signs will not be illuminated. The materials and design of any signs will be compatible with the proposed materials and architectural theme of the proposed structures.

18. Lighting.

a. Shields. House-side shields, louvers, or similar devices must be used to shield the source of exterior lighting from residentially-zoned properties (which includes properties zoned A-1, Agricultural)..

b. Pole-Mounted Lights. Pole-mounted exterior lighting will not exceed eighteen feet (18') in height.

c. Wall Pack Lighting. No wall pack lighting will be permitted on exterior building walls facing and adjoining property currently used for residential purposes unless required by the applicable Building Code or County Code. Where building-mounted exterior lighting is installed, it may not be mounted more than thirty-five (35) feet above finished grade. The uplighting of buildings is prohibited.

d. Lighting Limits. Lighting will not exceed .50 foot-candles at the internal edge of the one hundred fifty foot (150') buffer generally shown on the Concept Plan as "Natural Buffer." Lighting that is exempt from these requirements includes temporary lighting and lighting provided for emergency or safety and security purposes as required by the Building Code, Electrical Code or otherwise within the County Code.

19. Trash Enclosures. Any proposed enclosure area for dumpsters, if provided, that can be seen from a public right-of-way or existing residential homes must be constructed of masonry, tilt, or other cementitious product on three (3) sides that is complementary to the buildings and the fourth side must be gated with an opaque material. Any such trash enclosures will be additionally screened from view with landscaping or other screening materials.
20. Elevations. Buildings used for Data Center Uses will (i) generally be in conformance with renderings entitled "WestDulles/Ironhorse Data Center Elevation Examples," dated September 19, 2024, and attached hereto as **Exhibit C** with respect to quality of design, massing, architecture, and variety of features and (ii) principal building facades will meet the following standards:

a. Applicability. For the purposes of this subsection, the term "principal building facades" will include all building facades substantially visible to abutting public roads or adjacent to planned or existing residential or agricultural districts as determined by the Planning Director.

b. Façade Features. Principal building facades will avoid the use of undifferentiated surfaces by including at least four (4) of the following design

elements (with such features occurring at least once every 150 horizontal linear feet):

i. change in building height
ii. building step-backs, projections or recesses
iii. fenestration
iv. changes in building material, pattern, texture, color
v. use of accent material
vi. overhangs
vii. canopies or porticos
viii. arcades
ix. variations in the roof line

c. Primary Building Colors. Principal building facades will use one or more neutral colors (such as taupe, tan, brown, beige, ivory, cream, black, grey) with accent colors to complement the dominant building color. High-gloss finishes and white tones must be avoided.

d. Consistency on Multiple Facades. When a building has more than one principal facade, such facades will be consistent in their design, materials, details, and treatments.

e. Windows on Eastern-Facing Facades. Unless required by the applicable Building Code, windows will not be permitted on eastern facing principal building facades, although emergency exit doors, faux windows and other architectural features may be used on such eastern elevations.

f. Main Entrance Feature. Each building containing a Data Center Use will include at least one main entrance feature. Main entrance features must either project or recess from the main building plane, and/or be differentiated from the remainder of the building façade by a change in building material. Architectural features used to meet this requirement can also be counted towards the requirement listed in subsection b listed above.

g. Windows/Transparency for Office Areas. Administrative or office portions of buildings visible from roads should include windows and transparent elements to break up massing.

h. Loading Areas. If loading docks or service entries located on the side or rear of buildings are visible from perimeter project boundary lines, then they must be screened using other buildings, and/or in accordance with standards set

forth in Sec. 26-263 (Screening and planting standards). Loading areas will not be located on the front side of a building.

i. Consistency on Multiple Facades. When a building has more than one principal facade, such facades will be consistent in their design, materials, details, and treatments.

j. Elevation Review. Building elevations must be submitted with the site plan application for each data center building. In the event a building's architectural style is not in accordance with the foregoing, deviations may be approved by the Planning Director, upon the Planning Director's finding that the deviations are generally in keeping with the spirit and concept of the illustrations.

21. Building Materials. Exposed exterior wall surfaces (above finished grade) of all individual buildings (excluding rooftop screening materials for mechanical equipment) must be constructed with one or more of the following siding materials: decorative concrete block (including, without limitation, split face block, smooth face block, fluted block, and ground face block), tilt-up or pre-cast concrete, brick, brick veneer, glass, metal (other than corrugated metal), stone, cast stone, stone veneer, stucco, synthetic stucco, glass block, cementitious siding, insulated panels, concrete tile, or ceramic tile, unless other material is approved at time of site plan review. In no case will unpainted concrete block, unfinished corrugated metal, or unfinished sheet metal be permitted. For purposes of these proffered conditions, "wall surfaces" will not be deemed to include columns, pilasters, trim, gutters, accent materials, architectural features, windows, doors, bay doors, piers, wall sections and headers near roll up doors and loading doors. For buildings containing Data Center Uses a minimum of 50% of the principal building façade(s) that can be seen from public rights-of-way or adjacent residential homes will consist of brick, brick veneer, stone, cultured stone, stone veneer, concrete (both precast and cast-in-place), decorative metal panels or anodized aluminum and/or glazing systems as finish materials.

22. Building Standards. In all instances, any building, including any energy storage standalone structures, on the Property will be constructed to NFPA code sections 75, 76 and 855, as applicable, as well as all other applicable codes, including the applicable provisions of the Virginia Uniform Statewide Building Code in effect at the time of building permit application.

23. Security and Fencing. Fencing, security gates, and guard buildings may be installed to surround the perimeter of the Data Center Area or any portion thereof, but may not be within the buffer area itself, but located up to the interior edge of the buffer such that it is screened from view of adjacent properties.. Fencing will appear generally as shown on the Iron Horse Data Center Fencing Exhibit dated February 23, 2024, attached hereto as **Exhibit D**. The design and final location of the perimeter fencing and security fencing must be approved at the time of site plan review and approval.

24. Noise Control.

    a. Permitted Sound Levels. The operation of any building for a Data Center Use may not exceed a maximum dBA level of 57 in the daytime and 52 at nighttime at the exterior boundary lines of the project. Additionally, the project may not exceed a maximum dBC level of 73 in the daytime and 68 at nighttime at the exterior boundary lines of the project. Daytime and nighttime hours must comply with the hours defined in Hanover County's Noise Ordinance.

    b. Baseline Study. A baseline sound study of ambient noise must be conducted prior to land disturbance for any portion of the Property subject to an approved site plan and the results of such study must be submitted to the County to establish a base line study of ambient noise surrounding the proposed development. This baseline sound study must demonstrate how the development will limit sound at the Property Line from any Data Center Use to ensure conformity with the County Noise Ordinance and proffered conditions.

    c. Noise Study. Thereafter, the applicant will engage a certified professional to conduct a noise study for any building in the Data Center Area within thirty (30) days of the date such building becomes operational. The noise study will include recommendations for any necessary mitigation measures required to ensure conformity with the County Noise Ordinance and proffered conditions. Such recommended mitigation measures will be implemented within sixty (60) days after the noise study, unless a particular mitigation measure will be implemented within a longer period of time as approved by the Planning Director. Any required mitigation measures may be noted on the approved plans as an administrative amendment. In addition to the foregoing, physical sound attenuation on any mechanical equipment (including but not limited to ground supported barriers, earthen berms, mechanical screening or other attenuation techniques as specifically called

out in subsequent sound studies) will be installed for any building used for Data Center Uses that is located within one thousand two hundred feet (1,200') of any adjoining residential home and that is either (i) installed on the rooftop of such building or (ii) installed on the exterior side of such building and directly facing such residential home, in each case unless a noise study demonstrates that there is no incremental noise from such mechanical equipment as a result of the foregoing installation locations.

d. Generator Testing. Testing of any back-up generators in the Property will be limited to between the hours of Monday – Friday, 8:00 a.m. – 4:00 p.m.,, unless otherwise required by applicable state or federal law or regulation.

e. Exterior Alarms and Speaker Systems. There will be no exterior alarms or speaker systems permitted on any building located on the Property except for emergency alarms and alarms or beepers located on vehicles.

f. Generators. Generators must be separated from adjacent residential homes to the east by a principal building or a screening wall.

25. Open Space. No less than 49.82 acres of the Property (64%) will be open space, buffers, undeveloped land and stormwater facilities, and not consisting of buildings, structures, parking areas, and drive aisles. Areas outside the Developable Area will generally remain undeveloped; however, crossings for utilities, infrastructure, and landscaping are permitted. Prior to approval of the first site plan, the applicant must record documents conveying open space easements applicable to the area noted as "Undisturbed Green Space" on the conceptual plan noted in Proffer #1, to the County, with content approved by the County, requiring preservation of features so designated on the plan, requiring maintenance in perpetuity of the open space, prohibiting further division of those areas, and prohibiting any use not permitted by the Zoning Ordinance and proffered conditions.

26. Decommissioning Plan. Applicants will commit to a Decommissioning Plan, to be approved by the Director of Planning, prior to issuance of any permit to build or install, for removal and proper disposal of any hazardous materials pursuant to any and all applicable laws and regulations from the Property within two (2) years of cessation of operations in or use of any building on the Property. Financial surety to the County will be provided in an amount sufficient to undertake decommissioning activities should the owner default in its decommissioning responsibilities. The surety shall continue in effect during the operation of the

facility and until the time when the County certifies that decommissioning activities have been satisfactorily completed.

27. Pedestrian Circulation.

a. Sidewalks. Sidewalks will be provided on at least one side of primary site vehicular circulation areas and internal site vehicular circulation areas, as such circulation areas are illustrated on the Concept Plan. Interior site vehicular circulation areas do not include drive-aisles.

b. Pedestrian Connections from Parking Areas to Building Entrances. Pedestrian walkways at least five feet in width will be provided through parking areas to provide connections from parking lots to the primary building entrance, with such walkways separated from parking spaces and drive aisles by curbing and/or landscaping.

c. Pedestrian Walkways to Secondary Entrance.: Any secondary entrance(s) will be connected by a pedestrian walkway to building parking.

[Signatures on following page.]

Andrew M. Condlin, by Power of Attorney
Date:

COMMONWEALTH OF VIRGINIA,
CITY OF RICHMOND, to-wit:

I, Tracy Gibrall Craddock, do hereby certify that Andrew M. Condlin has acknowledged the foregoing Proffers before me, this ____ day of _____, 2026.

_____(SEAL)
Notary Public

My commission expires: _____

Notary registration number: _____

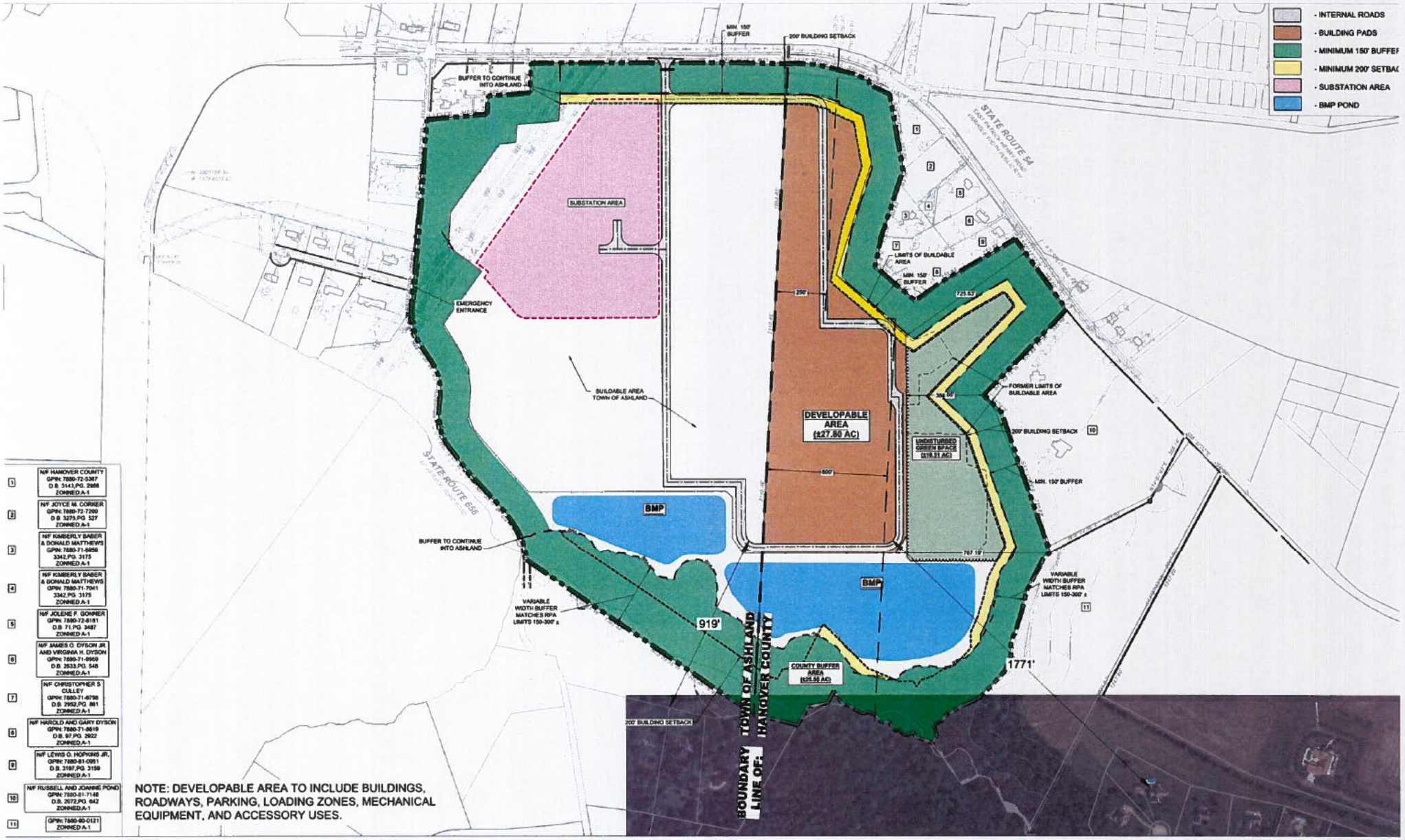
EXHIBIT A

EXHIBIT B

EXHIBIT C

EXHIBIT D

Conceptual Plan



NOTE: DEVELOPABLE AREA TO INCLUDE BUILDINGS, ROADWAYS, PARKING, LOADING ZONES, MECHANICAL EQUIPMENT, AND ACCESSORY USES.

Iron Horse Data Center

Buildable Area Plan - June 1, 2026

SCALE 1"=200'

0 200' 400'

TIMMONS GROU

ENGINEERING | DESIGN | TECHNOLO



BUFFER LEGEND:

PRESERVED TREE BUFFER See notes below.

BUFFER NOTES:

1. EXISTING TREES TO BE PRESERVED IN THIS AREA. CONDITION OF EXISTING CANOPY AND UNDERSTORY VEGETATION MUST BE EVALUATED IN FIELD TO DETERMINE SUITABILITY FOR PRESERVATION AND CONFIRM COMPLIANCE WITH BUFFER REQUIREMENTS.
2. SUPPLEMENTAL PLANTING IN AREAS OF PRESERVATION MAY BE CONSIDERED (AND/OR REQUIRED) PER HANOVER COUNTY ZONING ORDINANCE, SECTION 5 - LANDSCAPING REQUIREMENTS UPON COMPLETION OF A VEGETATIVE SURVEY AND/OR ANALYSIS.
3. THIS IS A PROTECTED AREA. EXISTING TREES TO BE PRESERVED; VEGETATION SHOULD NOT BE DISTURBED. SEE ADDITIONAL TREE PRESERVATION NOTES BELOW.
4. TREE PROTECTION MEASURES AND REPLACEMENT REQUIREMENTS TO BE PROVIDED AT THE TIME OF SITE PLAN REVIEW.
5. AERIAL SHOWN FOR REFERENCE ONLY TO ILLUSTRATE APPROXIMATE LIMITS OF EXISTING TREE CANOPY. AERIAL MAY NOT BE AN EXACT REPRESENTATION OF CURRENT CONDITIONS ON-SITE. A SURVEY MUST BE CONDUCTED TO EVALUATE EXISTING VEGETATION AND CANOPY COVERAGE.
6. NO GRADING INFORMATION WAS AVAILABLE AT THE TIME OF THESE EXHIBITS AND DESIGNS. GRADING MAY IMPACT SIDEWALK AND PLANTING DESIGN, AS WELL AS PRESERVATION AREAS.
7. THE MINIMUM 150' BUFFER WILL BE IN COMPLIANCE WITH SECTION 26-292.5(4) OF HANOVER COUNTY CODE (LANDSCAPING FOR SOLAR ENERGY FACILITIES).
8. BUFFER CONTINUES THROUGH THE TOWN OF ASHLAND.

LandDesign
200 S. PEYTON STREET
ALEXANDRIA, VA 22314
703.549.7784
WWW.LANDDESIGN.COM

PRELIMINARY
-FOR REVIEW ONLY.
THESE DOCUMENTS ARE FOR DESIGN REVIEW ONLY AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. THEY ARE PREPARED BY, OR UNDER THE SUPERVISION OF

XXXXX XXXXXXXXX, XXXXX 6/26/25
THOMAS KELLY DATE

NOT FOR CONSTRUCTION

IRON HORSE DATA CENTER

MOMA
131 GREAT FALLS STREET
FALLS CHURCH, VIRGINIA

2022177

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE
1	LANDSCAPE PLANS FOR REVIEW	06/29/24
2	REVISED LANDSCAPE PLANS FOR REVIEW	08/23/24
3	REVISED LANDSCAPE PLANS FOR REVIEW	09/19/24
4	REVISED LANDSCAPE PLANS FOR REVIEW	03/19/25
5	REVISED LANDSCAPE PLANS FOR REVIEW	05/06/25
6	REVISED LANDSCAPE PLANS FOR REVIEW	06/26/25

VERT N/A
HORZ 1"=200'
0 100' 200' 400'

BUFFER TYPOLOGIES - DATA CENTER

L-100



LandDesign

705 S. PEYTON STREET
ALEXANDRIA, VA 22314
703.549.7784
WWW.LANDDESIGN.COM

PRELIMINARY
-FOR REVIEW ONLY-

THESE DOCUMENTS ARE FOR DESIGN REVIEW ONLY AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSE. THEY ARE PREPARED BY, OR UNDER THE SUPERVISION OF:

XXXXX XXXXXXXXX, ##### 5/24/24
ENGINEER TITLE DATE

NOT FOR CONSTRUCTION

PROJECT

IRON HORSE DATA CENTER

MGMA

131 GREAT FALLS STREET

FALLS CHURCH, VIRGINIA

LANDDESIGN PROJ. 2022177

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE
1	LANDSCAPE PLANS FOR REVIEW	06/29/24
2	REVISED LANDSCAPE PLANS FOR REVIEW	08/23/24
3	REVISED LANDSCAPE PLANS FOR REVIEW	09/19/24
4	REVISED LANDSCAPE PLANS FOR REVIEW	03/10/25
5	REVISED LANDSCAPE PLANS FOR REVIEW	07/08/25
6	REVISED LANDSCAPE PLANS FOR REVIEW	09/29/25

SCALE

VERT N/A
HORZ 1"=200'

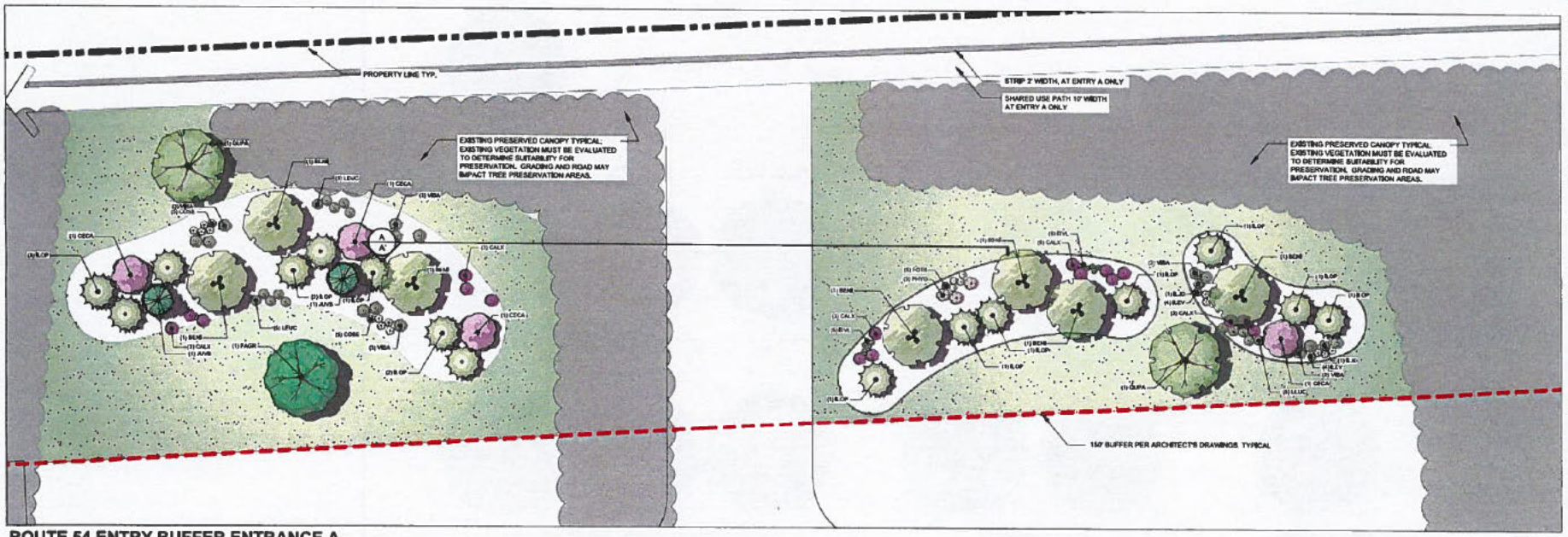
0 100' 200' 400'

SHEET TITLE

ENLARGEMENT KEY PLAN - DATA CENTER

SHEET NUMBER

L-101



ROUTE 54 ENTRY BUFFER ENTRANCE A

1"=20'

PLANT SCHEDULE 54 BUFFER

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME
DECIDUOUS TREES			
	BENI	BETULA NIGRA	RIVER BIRCH
	FAGR	FAGUS GRANDIFOLIA	AMERICAN BEECH
	QUPA	QUERCUS PALUSTRIS	PIN OAK
EVERGREEN TREES			
	ILOP	ILEX OPACA	AMERICAN HOLLY
	JUVB	JUNIPERUS VIRGINIANA 'SUPREB'	SUPREB EASTERN REDCEDAR
ORNAMENTAL TREES			
	CECA	CERCIS CANADENSIS	EASTERN REDBUD
DECIDUOUS SHRUB			
	CALA	CALLICARPA X 'ICHIMAPURP2'	PLUMP AND PLENTIFUL™ PURPLE GIANT BEAUTYBERRY
	CORS	CORNUS SERICEA 'KELSEYII'	KELSEY'S DWARF RED TWIG DOGWOOD
	FOTB	FOTHERGILLA GARDENII 'BLUE MIST'	BLUE MIST FOTHERGILLA
	ILJD	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY WINTERBERRY
	ILEV	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY
	ITVL	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY SWEETSPIRE
	PHYO	PHYSOCARPUS OPULIFOLIUS 'CENTER GLOW'	CENTER GLOW NINEBARK
	VIBA	VIBURNUM DENTATUM 'ARROWWOOD'	ARROWWOOD VIBURNUM
EVERGREEN SHRUB			
	LEUC	LEUCOTHOE AXILLARIS	COASTAL LEUCOTHOE



1"=20'

ROUTE 54 ENTRY BUFFER SECTION-ELEVATON A-A'

NOTES:
1. COMPARABLE PLANT SPECIES MAY BE SUBSTITUTED AT THE TIME OF SITE PLAN WITH APPROVAL BY THE PLANNING DEPARTMENT.

LandDesign
705 S. PITT STREET
ALEXANDRIA, VA 22314
703.549.7784
WWW.LANDDESIGN.COM

PRELIMINARY
-FOR REVIEW ONLY-
THESE DOCUMENTS ARE FOR DESIGN REVIEW ONLY AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. THEY ARE PREPARED BY, OR UNDER THE SUPERVISION OF:

NOT FOR CONSTRUCTION

IRON HORSE DATA CENTER

MGMA
131 GREAT FALLS STREET
FALLS CHURCH, VIRGINIA

2022177

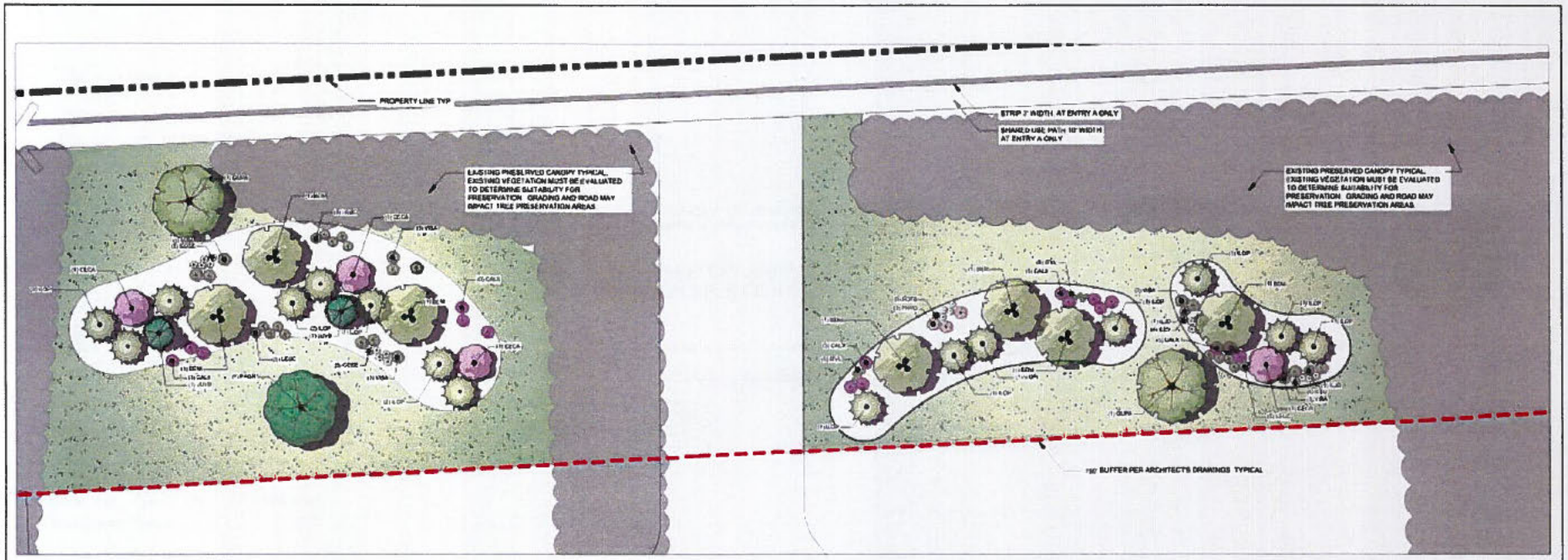
REVISION / ISSUANCE

NO.	DESCRIPTION	DATE
1	LANDSCAPE PLANS FOR REVIEW	09/29/24
2	REVISED LANDSCAPE PLANS FOR REVIEW	08/13/24
3	REVISED LANDSCAPE PLANS FOR REVIEW	09/19/24
4	REVISED LANDSCAPE PLANS FOR REVIEW	03/19/25
5	REVISED LANDSCAPE PLANS FOR REVIEW	07/09/25
6	REVISED LANDSCAPE PLANS FOR REVIEW	09/26/25

VERT N/A
HORZ

BUFFER ENLARGEMENT PLAN - DATA CENTER

L-102



ROUTE 54 ENTRY BUFFER

NOTES:
1. COMPARABLE PLANT SPECIES MAY BE SUBSTITUTED AT THE TIME OF SITE PLAN WITH APPROVAL BY THE PLANNING DEPARTMENT.



LandDesign

PRELIMINARY
FOR REVIEW ONLY

NOT FOR CONSTRUCTION

IRON HORSE DATA CENTER

MGMA
131 GREAT FALLS STREET
FALLS CHURCH VIRGINIA

2022111

REVISION / ISSUANCE

NO	DESCRIPTION	DATE
1	LANDSCAPE PLANS FOR REVIEW	05/02/2024
2	REVISED LANDSCAPE PLANS FOR REVIEW	06/25/2024
3	REVISED LANDSCAPE PLANS FOR REVIEW	08/14/2024
4	REVISED LANDSCAPE PLANS FOR REVIEW	09/11/2024
5	REVISED LANDSCAPE PLANS FOR REVIEW	11/08/2024
6	REVISED LANDSCAPE PLANS FOR REVIEW	12/20/2024

BUFFER ENLARGEMENT PLAN - DATA CENTER

L-102A

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME
DECIDUOUS TREES			
	BENI	BETULA NIGRA	RIVER BIRCH
	FAGR	FAGUS GRANDIFOLIA	AMERICAN BEECH
	QUPA	QUERCUS PALUSTRIS	PIN OAK
EVERGREEN TREES			
	ILOP	ILEX OPACA	AMERICAN HOLLY
	JUVB	JUNIPERUS VIRGINIANA 'Burkii'	BURK EASTERN REDCEDAR
ORNAMENTAL TREES			
	CECA	CERCIS CANADENSIS	EASTERN REDBUD
	CFCP	CORNUS FLORIDA 'CHEROKEE PRINCESS'	CHEROKEE PRINCESS DOGWOOD
DECIDUOUS SHRUB			
	CALX	CALLICARPA X 'KOLMBURG'	PLUMP AND PLENTIFUL ™ PURPLE GIANT BEAUTYBERRY
	COSE	CORNUS SERICEA 'KELSEY'	KELSEY'S DWARF RED TWIG DOGWOOD
	FOTB	FOTHERGILLA GARDENII 'BLUE MIST'	BLUE MIST FOTHERGILLA
	ILJD	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY WINTERBERRY
	ILEV	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY
	ITVL	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY SWEETSPIRE
	PHYO	PHYSOCARPUS OPULIFOLIUS 'CENTER GLOW'	CENTER GLOW NINEBARK
	VIBA	VIBURNUM DENTATUM 'ARROWWOOD'	ARROWWOOD VIBURNUM
EVERGREEN SHRUB			
	ILSC	ILEX VERTICILLATA 'SCHILLING'	SCHILLING'S WINTERBERRY HOLLY
	LEUC	LEUCOTHOE AXILLARIS	COASTAL LEUCOTHOE
GROUND COVERS			
	CAPE	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE
	ZOJA	ZOYSIA JAPONICA	ZOYSIA GRASS
ORNAMENTAL GRASSES			
	SPHE	SPOROBOLUS HETEROLEPIS 'TARA'	TARA PRAIRIE DROPSEED

DECIDUOUS TREES



BENI
Betula nigra
River Birch



FAGR
Fagus grandifolia
American Beech



QUPA
Quercus palustris
Pin Oak

EVERGREEN TREES



ILOP
Ilex opaca
American Holly



JUVB
Juniperus virginiana 'Burkii'
Burk Eastern Redcedar

ORNAMENTAL TREES



CECA
Cercis canadensis
Eastern Redbud



CFCP
Cornus florida 'Cherokee Princess'
Cherokee Princess Dogwood

DECIDUOUS SHRUBS



CALX
Callicarpa x 'Kolmburg'
Plump and Plentiful™ Purple Giant Beautyberry



COSE
Cornus sericea 'Kelsey'
Kelsey's Dwarf Red Twig Dogwood



FOTB
Fothergilla gardenii 'Blue Mist'
Blue Mist Fothergilla



ILJD
Ilex verticillata 'Jim Dandy'
Jim Dandy Winterberry



ILEV
Ilex verticillata 'Red Sprite'
Jim Dandy Winterberry



ITVL
Itea virginica 'Little Henry'
Little Henry Sweetspire



PHYO
Physocarpus opulifolius 'Center Glow'
Center Glow Ninebark



SPBI
Spiraea betulifolia
Birchleaf Spirea



VIBA
Viburnum dentatum 'Arrowwood'
Arrowwood Viburnum

EVERGREEN SHRUBS



ILSC
Ilex x attenuata 'Schillings'
Schillings Yaupon Holly



LEUC
Leucothoe axillaris
Coastal Leucothoe

LandDesign
200 S. PEYTON STREET
ALEXANDRIA, VA 22314
703 549 7784
WWW.LANDDESIGN.COM

PRELIMINARY
FOR REVIEW ONLY.
THESE DOCUMENTS ARE FOR DESIGN REVIEW ONLY AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES. THEY ARE PREPARED BY, OR UNDER THE SUPERVISION OF:

NOT FOR CONSTRUCTION

IRON HORSE DATA CENTER

MOMA
131 GREAT FALLS STREET
FALLS CHURCH VIRGINIA

2022117

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE
1	LANDSCAPE PLANS FOR REVIEW	04/07/23
2	REVISED LANDSCAPE PLANS FOR REVIEW	06/30/23
3	REVISED LANDSCAPE PLANS FOR REVIEW	08/18/23
4	REVISED LANDSCAPE PLANS FOR REVIEW	10/19/23
5	REVISED LANDSCAPE PLANS FOR REVIEW	01/03/23
6	REVISED LANDSCAPE PLANS FOR REVIEW	02/23/24

PLANT SCHEDULE - DATA CENTER

L-103

Exhibit C
WestDulles/Iron Horse Data Center Elevations
September 19, 2024



Building step-backs and projections
Changes in building material, pattern, texture, & color
Neutral colors

Exhibit C
WestDulles/Iron Horse Data Center Elevations
September 19, 2024



Changes in building height
Changes in building material, pattern, texture, & color
Neutral colors
Use of accent material
Variations in the roof line
Main entrance feature

Exhibit C
WestDulles/Iron Horse Data Center Elevations
September 19, 2024



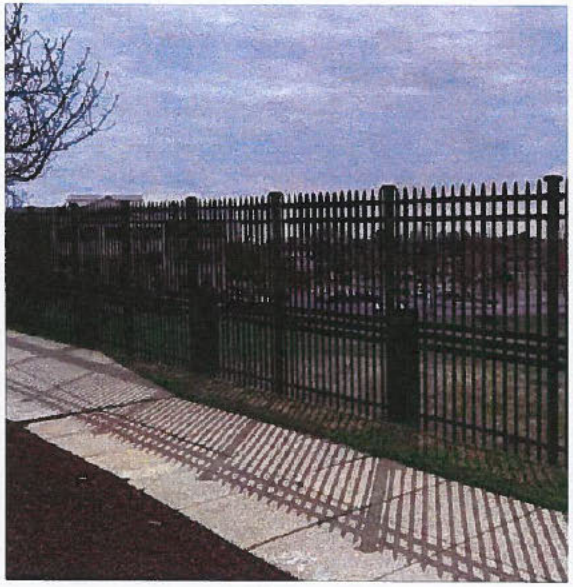
Changes in building material, pattern, texture, & color
Neutral colors
Fenestration
Variations in the roof line
Building step-backs, projections or recesses

EXHIBIT D

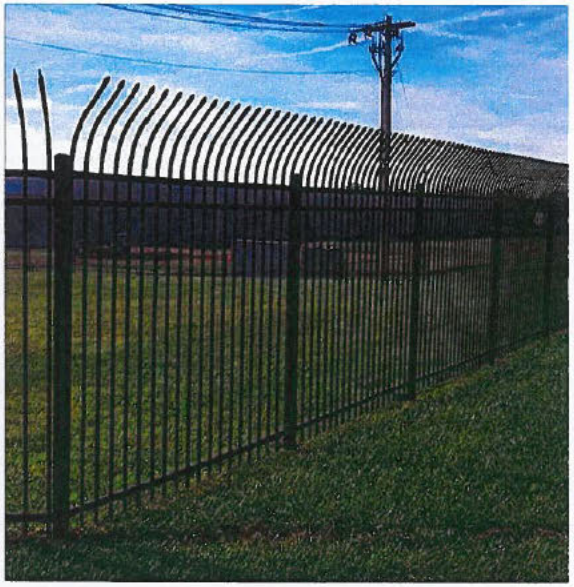
PERIMETER/SECURITY FENCING



EXAMPLE PERIMETER/SECURITY FENCING



EXAMPLE PERIMETER/SECURITY FENCING



EXAMPLE PERIMETER/SECURITY FENCING

NOTE:

1. PERIMETER FENCING MAY BE INSTALLED AROUND THE PERIMETER OF THE PROJECT OR AS OTHERWISE APPROVED BY THE PLANNING DIRECTOR AT THE TIME OF SITE PLAN REVIEW AND APPROVAL. THE DESIGN AND FINAL LOCATION FOR THE PERIMETER FENCING AND SECURITY FENCING SHALL BE APPROVED BY THE PLANNING DIRECTOR FOR CONSISTENCY IN THE CONCEPT PLAN AT THE TIME OF SITE PLAN REVIEW AND APPROVAL.
2. FENCING WILL BE A MINIMUM OF 6 FEET IN HEIGHT AND A MAXIMUM OF 7 FEET.
3. FENCING SHALL NOT BE CHAIN-LINK, WITH OR WITHOUT SLATED INSERTS, AND SHALL NOT INCLUDE BARBED WIRE OR OTHER SIMILARLY VISIBLY INTRUSIVE DETERRENCE DEVICE.
4. SECURITY FENCING SHALL BE USED AROUND THE PERIMETER OF ANY SUBSTATION (UNLESS PROHIBITED BY DOMINION POWER), UNLESS OTHERWISE APPROVED BY THE PLANNING DIRECTOR AT THE TIME OF SITE PLAN REVIEW AND APPROVAL.
5. THE IMAGES ARE REPRESENTATIVE FENCING STYLES THAT WILL BE USED AS PERIMETER AND SECURITY FENCING THROUGHOUT THE PROJECT SITE.