Bauxite Data Center

Narrative to Accompany Site Development Plan Application to Frederick County

Rowan Digital Infrastructure

160E State Street, Suite 120

Traverse City, MI 49684

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Project No.: 0682878

The business of sustainability

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1. PROJECT AND APPLICANT OVERVIEW

Table 1 Project Overview

Applicant	Rowan Frederick, LLC
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Property Owner	Quantum Maryland, LLC
Proposed Action	Site plan approval to construct a Critical Digital Infrastructure Facility of 766,362 gross square feet on a property of approximately 151.27 acres.
Project Site	The Project Site is Lot 400 as shown on the First Revision to the Quantum Frederick Section 2 Preliminary Plan, under review concurrently with this Site Plan. The Project Site was previously designated as Lots 400 and 401 on the Quantum Frederick Section 2 Preliminary Plan PP273777, approved on February 8, 2023.
Project Footprint	Buildings, private roads, support infrastructure, parking and stormwater management will occupy approximately 53.12 acres of the 151.27-acre site.
Green Space	Landscaped areas, forest planting areas, forest preservation areas, and areas to be maintained as lawn between and around buildings will occupy approximately 91.89 acres of the site.
Current Land Use	The Project Site is currently agricultural cropland, with treelines along the frontage of Ballenger Creek Pike and Mountville Road, and two forested areas interior to the site. The northern tip of the Site contains 100-year floodplain associated with a stream north and east of the Site. Two overhead transmission lines cross the site.

Rowan Frederick LLC (Rowan, Rowan Frederick, or the Applicant) is pleased to provide this narrative in support of its application to Frederick County for site development plan (Site Plan) approval for the Bauxite Data Center (the Project). The Site Plan and materials included with this application demonstrate compliance with applicable standards of the Frederick County Code, including 1-19-8.402, Critical Digital Infrastructure Facilities in the LI and GI District; other applicable sections of the Zoning Ordinance; the Adequate Public Facilities Ordinance; and the Forest Conservation Ordinance. Project design reflects the guidance provided by the Frederick County Building and Site Design Guidelines for Critical Digital Infrastructure (May 2022).

The Bauxite Data Center will consist of four data center buildings, a gatehouse, water storage facilities, 304 parking spaces, internal pedestrian and vehicle circulation, and three driveway entrances onto public roads.

A separate Site Plan for a proposed substation on the Project Site will be submitted. The substation will include a connection to an existing overhead transmission line owned and operated by Potomac Edison that crosses the Site near the northern property line.

2. PROJECT CONTEXT

2.1 Land Use and Zoning

The Bauxite Data Center is proposed for a site of 151.26 acres within Quantum Frederick, a tract of approximately 2,125 acres intended for data center development. The preliminary subdivision plan for Section 2 of Quantum Frederick, approved by the Planning Commission on February 8, 2023, included 4 lots and 3 open space parcels on 258.67 acres (PP273777). A revised preliminary plan is in review concurrently with this Site Plan and combines Lots 400 and 401 on the approved plan into a single Lot 400 to support the proposed use. The Project occupies the proposed Lot 400 as shown on the preliminary plan revision.

Surrounding zoning and land uses include (see Site Plan sheet 1):

- Proposed open space that parallels a stream valley within Quantum Frederick Section 1 to the east. Quantum Frederick Section 1, including the proposed open space lot, is in the GI (General Industrial) zoning district.
- Proposed Lot 402 of Quantum Frederick Section 2 to the southeast. Proposed Lot 402 is in the Agricultural zoning district.
- Mountville Road, the future right-of-way of MD Route 80 (Happy Landing Road), and rural residential and agricultural properties within the Agricultural zoning district to the southwest.
- Industrial land use within the LI (Light Industrial) zoning district across Ballenger Creek Pike to the west.
- Agricultural and rural residential land uses in the Agricultural zoning district across Ballenger Creek Pike to the northwest.

The Site Plan appropriately addresses the Project's land use context with protection of existing vegetation to the extent practicable and new landscape buffers where the Project site abuts or is across a road from rural residential and agricultural land uses.

The Project's site design avoids impacts to the forested areas and streams on the site, as well as minimizes negative impacts to neighboring properties through avoidance, minimization and mitigation strategies. For instance, the Applicant initially considered a concept plan for the Project Site with six data center buildings. Although this concept complied with required setbacks and avoided environmentally sensitive areas, Rowan Frederick voluntarily implemented deeper setbacks and substantial landscape buffers . Accordingly, this Site Plan proposes four data center buildings and provides heavily landscaped buffers wider than the required setbacks from adjoining roads and agriculturally zoned land. The Site Plan also maximizes the visual buffering of water storage tanks, utility yards, and the connection to the existing electric power line by placing these features in locations interior to the Project Site to the extent practicable.

2.2 Livable Frederick Master Plan

The Project site is suitably located for data center development based upon Frederick County planning policies and adopted plans. The property is part of the "Eastalco Growth Area" in the 2019 Livable Frederick Master Plan (LFMP) and is designated for industrial use on the County's Comprehensive Plan map. The Eastalco Growth Area includes the Eastalco site and the Mullinix Agro and Stanford Industrial Parks. The LFMP notes: "This [Eastalco Growth] area is currently the largest concentration of undeveloped land in the county zoned for general and/or light industrial development and presents a unique opportunity for future development."

The LFMP notes the need for more detailed planning for the Eastalco Growth Area, reflected in the County's Livable Frederick Work Program (LFWP), which calls for commencement of work on a small area plan for the Eastalco Growth Area during the 2023-2025 time period. Although the Frederick County Planning Department has not publicly commenced work on this small area plan, the Site Plan, studies, and outreach efforts conducted for the Project contribute to planning goals recommended by the LFMP as described below.

2.2.1 Community Outreach and Engagement

Rowan Frederick plans to establish and maintain ongoing avenues for community engagement.

Rowan Frederick is hosting a community open house on October 24, 2023, prior to the Planning Commission meeting on the site plan application. The open house will serve as an opportunity to introduce the Project to the community, provide information and receive feedback. Similar to a career fair or health fair, the open house will include informational stations highlighting components of the Project such as the role of data centers; community benefits; environmental stewardship and management; architectural and landscape design; and Project timeline. Project representatives will staff the stations and be available to discuss the Project and respond to questions. Rowan will advertise the open house through the local print newspaper and mail an invitation letter to property owners proximal to the Project site.

Rowan is committed to continuing engagement with residents, community leaders and other area stakeholders. Rowan is working to establish a Project-specific website, prepare informational materials and provide a dedicated courtesy phone line. Rowan will meet with a variety of stakeholders throughout the planning, permitting, construction and operational phases of the Project.

2.2.2 Infrastructure Component

The timing and funding of public facilities necessary to support development will be a key part of the Eastalco area plan. The Project site is part of the Quantum Frederick subdivision which was approved based upon extensive study of the necessary utilities and roads.

- The Adequate Public Facilities Ordinance Letter of Understanding (APFO LOU) for Quantum Section 1 was approved on December 15, 2021. An Amended and Restated APFO LOU was approved for Quantum Sections 1 and 2 on February 8, 2023, and includes the Project Site. See Attachment 1.
- The Amended and Restated APFO LOU establishes phased implementation of road, water, and sewer infrastructure based upon the results of detailed studies. The LOU provides for two phases of water and sewer infrastructure improvements and four phases of road improvements. The proposed Site Plan is tied to Phase 1 for both water and sewer infrastructure and roads.

2.2.3 Potential Land Use Mix

The Eastalco area plan will provide an assessment of potential land use mix, including physical design, neighborhood impacts, public facility adequacy, alternate land use scenarios, opportunities to address countywide planning challenges, and development feasibility. The LFWP notes that the Eastalco/QL Planning Area could "accommodate growth in Frederick County in a sustainable and efficient form that supports overall conservation of rural land and minimizes public infrastructure investment."

- The Project site is zoned GI (General Industrial) and LI (Limited Industrial). Data centers are permitted by right in the GI and LI districts under the provisions for "Critical digital infrastructure facility" in § 1-19-5.310 and § 1-19-8.402 of the Zoning Ordinance. Section 3 addresses specific zoning requirements.
- The Project Site is within a context of industrial and rural land uses and has been zoned for industrial use since 1967. The proposed Project generates activity, noise, and traffic at a level lower than typical business and industrial land uses allowable within the GI and LI zoning districts. The GI and LI zoning districts allow office, manufacturing, warehouse and distribution uses as well as certain commercial uses such as gas stations, vehicle repair and medical offices. The LI zoning allows a wider range of commercial uses than GI, including commercial schools, health clubs, movie theaters, taverns and restaurants. LI zoning allows limited manufacturing and assembly, while GI zoning allows general manufacturing and outdoor materials or contractor storage yards.
- Project operations will not be open to the public and will generate only employee and occasional visitor traffic. The Project during operations will require very little truck traffic as compared to most manufacturing and warehouse uses, resulting in minimal impacts on vicinal roads and properties from engine noise, exhaust fumes and truck movements. An analysis by Wells + Associates dated August 25, 2023, estimates Project operational traffic at 86 vehicle trips during the morning peak hour and 69 vehicle trips during evening peak hour (See Attachment 2).
- The Site Plan reflects the land use context in providing substantial setbacks and well-designed landscaped buffers along the Project boundaries close to rural land uses.
- Adequate and appropriate water and sewer utilities for the Site were planned as part of the Quantum Frederick preliminary subdivision plan, as explained in Section 5.2.
- The Project advances the goal of realizing the economic potential of the long-established industrial zoning within the Eastalco Growth Area.

2.2.4 Historic and Cultural Component

The LFMP calls for the Eastalco area plan to provide a preservation component, with a review of historic sites and archaeological resources, viewsheds and cultural characteristics (identification, documentation, and preservation when appropriate), including special consideration of structures and sites associated with Carrollton Manor. The Applicant contracted with ERM, Inc. (ERM) to conduct a Cultural Resources Desktop Assessment prior to Site Plan submittal. The survey, summarized in Section 7.1 and included as Attachment 3, identified architectural resources within a one-mile radius that include Carrollton Manor, listed on the National Register of Historic Places, and 8 historic resources that are eligible or have been recommended as eligible for listing. No archaeological sites or architectural resources were identified within the Project boundary. Architectural resources have limited views of the Site due to distance, topography, and existing vegetation. Existing and proposed forest and landscape plantings within and along Site borders will further minimize the Project's visual impact on architectural resources that currently have views of the Site.

2.2.5 Green Infrastructure Component

The green infrastructure component of the Eastalco Growth Area plan is to provide a detailed review of environmental systems and resources (hydrology, forests, habitat assessment), and integrate the built environment to the natural edges, through the placement and programming of open space and additional preservation areas.

- ERM, Inc., on behalf of the Applicant, conducted a Special Status Species and Habitat Assessment of the Project Site, summarized in Section 7.3 and included as Attachment 4. Streams and wetlands on the Project site were delineated in 2021 by Rodgers Consulting.
- The Project is designed to avoid impacts to wetlands, waterways, and forested areas. Streams are protected within proposed Forest Resource Ordinance easements.
- The final forest conservation plan for the Site conserves existing forest and provides 10.48 acres of new forest plantings (see Final Forest Conservation Plan Section 2 – Phase 2). The plan:
  - Retains forested areas along the two streams identified by the Wetland and Waters Delineation, totaling 10.39 acres of preserved forest.
  - Provides 10.48 acres of new forest planting areas on the southern portion of the Site along Ballenger Creek Pike, Mountville Road, the future Route 80/Happy Landing Road, and south of the existing forested area to be preserved.
  - Requires unavoidable impacts to only 0.05 acres of existing forest within the site interior and within a power line right-of-way.
- Mature trees and shrubs along Ballenger Creek Pike and Mountville Road are protected. Proposed landscaping inside the tree line will be installed to reinforce the visual buffer provided by the existing vegetation.
- Substantial setbacks and vegetated buffers are provided parallel to the southern Site boundary along Mountville Road and future Route 80/Happy Landing Road, providing an effective buffer from rural residential properties and Adamstown. The vegetated buffer has a depth of at least 125 feet and length of more than 1,300 feet. Proposed new plantings within this area include a landscape buffer consisting primarily of evergreen trees adjacent to new forest planting areas, 100 feet deep, that will be protected by a Forest Resource Ordinance easement. The closest building is 527 feet from the southern Site boundary at its western (closest) corner and over 1,100 feet from the southern Site boundary at its eastern corner.

3. ZONING REQUIREMENTS FOR CRITICAL DIGITAL INFRASTRUCTURE

The Site Plan complies with all zoning requirements for the LI and GI zoning districts and for critical digital infrastructure uses as described below.

3.1 Dimensional Requirements/Bulk Standards §1-19-6.100

The Project substantially exceeds required setbacks from property lines. The minimum required setback in the LI and GI zoning districts for a critical digital infrastructure facility is a distance equal to 50 feet or the height of structure, whichever is greater. The maximum structure height allowable by the Zoning Ordinance is 60 feet.

- The proposed campus consists of four data center buildings, each with a utility yard and driveway/utility corridor, surrounded by fencing (Site Plan sheets SP-1 through SP-9). The building height will not exceed 43 feet, including rooftop parapet walls, resulting in a 50-foot minimum

setback. The campus also includes 55-foot-tall water storage tanks adjacent to each building and 4 central, 38-foot high water tanks north of Building A, in the site interior.

- The proposed structures exceed the 50-foot setback as measured from lot lines or the proposed right-of-way of adjacent roads. The buildings and water tanks have the following minimum setbacks:
  - Building setback of at least 527 feet from the southern Site boundary, which abuts Mountville Road, future Happy Landing Road (MD Rt. 80) and proposed Lot 402 in Quantum Frederick Section 2.
  - Building setback of at least 269 feet from the western Site boundary abutting Ballenger Creek Pike.
  - Building setback of at least 225 feet from the proposed northern and eastern Site boundaries, which abut an open space parcel in Quantum Frederick Section 1.
  - Water tanks are in the interior of the site, at least 700 feet from the closest Site boundary.

3.2 Parking and Loading §1-19-6.200

- **Loading:** §1-19-6.210 requires 77 loading spaces for the use (one space for the first 5,000 square feet of floor area plus one space per additional 10,000 square feet or part thereof over 5,000 square feet) based on the proposed 766,362 square feet of gross floor area. This Site Plan application requests a modification to reduce the number of loading spaces to 8 loading spaces based on the nature of the use and anticipated need for truck loading.
- **Parking:** §1-19-6.220(A) allows up to 1 parking space for every 2 employees (on the largest shift for which the building is designed) plus 1 for each motor vehicle used in the business. Rowan Frederick anticipates approximately 190 employees per shift, to include 44 employees each in data center buildings A, C and D; 33 employees in Building B; and 25 employees in the gatehouse building and guard booth. The workforce would result in an allowance of 95 parking spaces. The Site Plan requests a modification to allow a total of 283 parking spaces, of which 16 are electric vehicle charging spaces and 15 are handicapped accessible spaces. Parking is distributed among parking areas adjacent to the buildings. The proposed parking plan allows sufficient parking to accommodate the workforce during employee shift changes as well as visitor spaces. Based on the Project's location, limited potential is anticipated for employee commuting to occur by bicycle, ride sharing or public transit.
- **Parking Setbacks:** Parking area setback from property lines will substantially exceed the required setback of one-half of the required building setback (§1-19-6.200(B). The parking area closest to a site boundary will be over 100 feet from the eastern lot line abutting the Quantum Frederick Section 1 open space lot. The closest parking area to site boundaries not adjacent to other Quantum Frederick lots will be over 200 feet from the right-of-way of Ballenger Creek Pike.
- **Pedestrian Access:** §1-19-6.220 (G) requires the following: *Clearly delineated pedestrian crosswalks, sidewalks, and walkways shall be provided to allow safe, convenient, and direct access within the parking area, and from the parking area to building entrances.*

  The Site Plan includes pedestrian circulation with sidewalks provided around each building, connecting parking areas with building entrances. Parking is distributed among multiple small parking areas near building entrances. Because the Project is a secure facility with controlled access points, pedestrian movement throughout the site from one building to another will be limited. See Site Plan sheets SP-2 through SP-9.
- **Bicycle Parking:** §1-19-6.220 (H) requires 10 bicycle racks for the site (one rack per 40,000 square feet of gross floor area, up to a maximum of 10 racks). The site plan complies with this requirement,

proposing ten bicycle racks, including two adjacent to the security check-in building and two for each data center building. Bicycle racks are located adjacent to sidewalks providing access to building entrances.

3.3 Signage §1-19-6.300

The proposed use will comply with the sign requirements for "Industrial Owner" (Sign Type 7):

- 1-19-6.310(B). Signage height: 25 feet.
- 1-19-6.320(7). Maximum signage area: 10 times the square root of the building frontage in linear feet.
- 1-19-6.320(7). Minimum setback for freestanding signs: ½ the BRL (50'/2 = 25').

3.4 Landscaping §1-19-6.400

- **Street Trees:** Public street tree requirements were addressed in the preliminary plans for Quantum Frederick Section 2.
- **Land Use Buffering and Screening:** §1-19-6.400(B)(2) requires the following:

  Where commercial or institutional uses are located adjacent to residential zoning districts: a mixture of plantings including predominantly evergreen shrubs or trees spaced at intervals which are expected to achieve a mixture of height at maturity between 6 feet and 15 feet and to provide effective buffering, as determined by the Planning Commission.

  The Project Site is adjacent to the A-1 zoning district to the northwest, southwest, and south. Landscape buffers are provided inside the existing line of trees and shrubs along Ballenger Creek Pike and Mountville Road. Proposed buffer landscape plantings are predominantly evergreen trees in order to provide enhanced screening. A variety of species is proposed for visual enhancement, and to avoid the risks associated with single species plantings. Only species native to the region have been proposed for use in the landscaping plan. Tree clusters and varied landscaped edges are located to substantially buffer views at key viewpoint locations. The proposed landscaping is designed to reinforce the existing vegetation and provide year-round buffering. See Site Plan sheets LA-1 through LA-9.

- **Parking Area Buffering and Screening:** §1-19-6.400(C) requires the following:

  Parking areas shall be screened from roadways in accordance with the following minimum standards:

  (1) Where parking areas are adjacent to residential uses or zoning districts, or roadways with at least a collector status as designated on the County Comprehensive Plan: plantings of predominantly evergreen shrubs or trees spaced at intervals which may be expected to form effective buffering and screening at least 30 inches high at the time of planting.

  (2) All other parking areas: plantings of predominantly evergreen shrubs or trees spaced at intervals which may be expected to form effective buffering at least 30 inches high at the time of planting.

  Shade trees, ornamental trees and shrubs will be installed along site driveways and parking areas interior to the Site. Parking areas will be internal to the site, small in size, and screened from roadways by buildings, new landscape buffers, and retained mature vegetation along Ballenger Creek Pike, Mountville Road, and future Happy Landing Road (MD Route 80). The largest proposed parking area is a 65-space facility outside the main gate, adjacent to the gatehouse. This parking area is at least 300 feet from the closest public road (Ballenger Creek Pike near the intersection with Mountville Road) and will be separated from Ballenger Creek Pike and Mountville Road by existing vegetation along the public roads and proposed forest planting areas that will have a minimum depth of about 150 feet. See sheet 3 of the Final Forest Conservation Plan and Site Plan sheets LA-1 through LA-9.

- **Parking Area Landscaping:** §1-19-6.400(D) requires the following:

  Within required parking areas landscaping shall be provided in accordance with the following minimum standards:

  (1) Parking areas shall be separated into bays with an average of no more than 10 parking spaces. Each parking bay shall contain no more than 15 continuous parking spaces. Between or at the end of each bay of parking spaces there shall be a planting area of at least 5 feet in width. Each planting area shall contain 1 tree at least 6 feet in height at the time of planting and groundcover containing at least two shrubs for every 100 square feet of landscape area.

  (2) Planting area trees shall be predominantly deciduous and provide at least 20% canopy cover at maturity.

  Proposed parking areas are divided into bays of 6 to 15 spaces, averaging 10 spaces, with deciduous trees on parking lot islands and along driveways providing access to parking spaces. See Site Plan sheets SP-2 through SP-9 and LA-2 through LA-9.

- **Landscaping, Screening, or Buffering:** In accordance with §1-19-6.400(E), proposed screening and buffering consists of existing vegetation and a predominantly evergreen buffer along road frontages. Only native landscape materials are selected, and no invasive/exotic species are proposed. Landscaping will not interfere with visibility at driveway entrances or intersections. See Site Plan sheet LA-9.

3.5 Lighting §1-19-6.500

§1-19-6.500 requires that lighting be fully shielded and directed downward to prevent glare and light trespass onto adjacent properties, roadways and the nighttime sky, and not exceed 0.50 foot-candles as measured from the property line. The maximum pole height of lighting fixtures for Critical Distribution Infrastructure Facilities is 18 feet per §1-19-8.402(B)(8).

A lighting plan is included as sheets LI-1 through LI-3 of the Site Plan. The lighting will be fully shielded and directed downward and pole fixtures will be 18 feet high. The photometric analysis indicates that the Project will comply with the performance standard of 0.50 foot-candles at all points along the property line. Along most of the property boundary, the Project will have lighting levels lower than the County standard.

3.6 Industrial District Standards §1-19-7.600

- **Access requirements**. §1-19-7.600(A) allows one combined entrance/exit for each 200 feet of frontage; access to corner lots must be at least 100 feet from intersecting street rights-of-way. Three proposed entrance exits are proposed, including one primary access to Ballenger Creek Pike and secondary access driveways to Ballenger Creek Pike and Mountville Road. The proposed driveway access points to Ballenger Creek Pike are opposite to the existing industrial development on the west side of Ballenger Creek Pike. The proposed access points are separated by over 1,000 feet and are at least 400 feet from the intersection of Ballenger Creek Pike and Mountville Road. The main driveway access is approximately 2,915 feet from Cap Stine Road and 485 feet from Mountville Road.

- **Acceleration and deceleration lanes:** An access review provided by Wells and Associates is provided in Attachment 2. A partial deceleration lane will be provided for the primary access driveway pursuant to State Highway Administration (SHA) requirements. No acceleration lanes or left turn lanes are required for the Project according to SHA standards, but the following improvements at the

primary access driveway are proposed as part of this Site Plan application based upon discussions with Frederick County staff: a 250-foot partial acceleration lane and a 250-foot partial deceleration left turn lane.

- **Sight distance:** Sight distance analysis and profiles are provided on sheets SD-1, SD-2 and SD-3 of the Site Plan.
- **Vehicle and pedestrian circulation.** §1-19-7.600(B) requires approval by the Department of Planning and Development Review of a plan for the internal circulation of vehicles and pedestrians. Pedestrian travel from one building to another is not generally part of the Project operations. However, the Site Plan provides a fully interconnected driveway network for the four proposed buildings and individual pedestrian sidewalks that completely circle each building, connecting parking areas to the corresponding building entrances.
- **Signs.** No increase in sign area is requested pursuant to §1-19-7.600(C).
- **Storage and operations.** As required by §1-19-7.600(D) and 1-19-7-610(A), all operations and storage will be conducted within buildings. Utility yards adjacent to the buildings will be screened by walls with materials and finish comparable in quality and materials to the building facades.
- **Refuse and recycling dumpsters**. As required by §1-19-7.600(E), dumpsters will be located away from public access areas and will be located adjacent to the utility yards, visually screened from roads or adjoining properties.

3.7 Industrial District Performance Standards §1-19-7.610

- **Noise:** §1-19-7.610(B) establishes noise limits from any industrial source as measured in an adjacent zoning district as listed in Table 1. The Project has completed a noise analysis demonstrating compliance with these noise standards as well as the noise standards specific to critical digital infrastructure pursuant to Section 1-19-8.402 (Section 3.8). See Attachment 5.

Table 2. Noise Standards, §1-19-7.610(B) of Frederick County Zoning Ordinance

Maximum permitted sound levels, dB(A)				
Sound Measured to:	**Decibels Continuous Slow Meter Responses**		**Impact Fast Meter Response**	
	LI	GI	LI	GI
Residential District	55	55	60	60
LI District lot, adjacent to noise source	70	75	80	-

- **Vibration:** Data center operations will comply with the requirements of §1-19-7.610(C); no equipment will produce vibration discernible without the aid of instruments at any point beyond the lot line or produce a particle velocity of 2 inches per second measured at or beyond the lot line. Mechanical and electrical equipment will be on rooftops or spring foundations and will not direct vibrations into the ground.

- **Air Emissions:** The Project will conform to all Frederick County, Maryland and federal air emissions standards and will complete required reviews, permits and approvals prior to operation, as required based on the equipment selected (§1-19-7.610(D), (E), (F), (G), and (H)). If utilized, an emergency backup power system will be appropriately permitted and meet air emission requirements. The site plan provides for all areas of the site to be covered with vegetation, gravel, pavement, or building footprint, with no bare soil areas that could result in windborne particulates.
- **Detonable Materials:** Pursuant to §1-19-7.610(I), Project operations will not require or result in storage, use, or manufacture of detonable materials.
- **Fire Hazards:** Pursuant to §1-19-7.610(J), the facility will meet standards of the Frederick County Fire Prevention Code requirements related to fire prevention and safety and will comply with required reviews, approvals, and permits. Fuel storage for emergency backup power systems, if utilized by the Project's tenant, will be less than 300,000 gallons. The internal circulation system has been designed with drive aisle width and turning radii suitable for fire and emergency response vehicles. Internal driveways are 30 to 40 feet wide. Fire lanes will be established as required by the Fire Marshall.

3.8 Requirements for Critical Digital Infrastructure Facilities in the LI and GI Districts §1-19-8.402

Pursuant to Section 1-19-8.402, the Project meets and exceeds the required design standards for Critical Digital Infrastructure Facilities.

3.8.1 Bulk Regulations - §1-19-8.402(A)

As noted in Section 3.1, the Project complies with all required setbacks.

3.8.2 Structure and Equipment Design Requirements - §1-19-8.402(B)

The Project building elevations, included as Site Plan sheets ARC-1 through ARC-5 , demonstrate compliance with the design requirements quoted below.

(1) Buildings must be predominantly designed and constructed to include finishes and materials of consistent quality and design on all sides. All building facades that are in public view must avoid the use of undifferentiated facades and long, plain wall sections by including a combination of the following design elements: change in building height, building step-backs or recesses, windows, doors, changes in building material, patterns, textures, colors, or use of accent materials.

The building facades will be composed of composite materials with variation in color and texture and use of consistent quality and design on all sides of the buildings. Several elements of the building facades will help to provide visual interest and avoid monotonous facades. Facades are divided into bays through the use of rhythmic variations in height and vertical ribs. The exterior finish colors are primarily earth tones and are varied to provide visual interest.

(2) Building entrances must be designed and oriented in terms of their relationship to the human scale and must reflect this relationship through the inclusion of human-scaled architectural elements.

The building entrance provides an accessible entrance path to a human scaled entry portal announced by a colorful protective canopy.

(3) Refuse and recycling dumpsters, service doors, and mechanical equipment must face away from roadways, pedestrian routes, and public areas.

Dumpsters, loading docks and service doors are interior to the site and will not be visible from public roads or neighboring properties due to their location in relation to buildings and walls. These service features are screened on two sides by the walls that surround utility yards, and the dumpsters will additionally be within a high-quality walled enclosure. The finish on the concrete walls around the utility yards will be consistent in texture and color with the building façade materials.

(4) In order to minimize visibility from adjacent roads and adjacent properties, ground level and roof top mechanical equipment, power generators, water cooling and storage facilities, utility substations, and other associated utility infrastructure to support sustained operations of the infrastructure must be screened. This screening may be provided by a principal building. Mechanical equipment not screened by a principal building must be screened by a visually opaque fence, screen wall or panel, parapet wall, or other visually opaque screen that must be constructed of materials compatible with those used in the exterior architectural finishes of the principal building.

All rooftop mechanical equipment is screened by a parapet wall complementary in quality and design to the building facades and set back at least 5 feet from the building facade. The primary central water storage tanks are located on the north side of Building A and will be screened from the view of adjacent roads and properties to the south, west and east by the buildings. The water storage tanks adjacent to each building will be screened from ground level view by buildings and the landscape buffers and forest conservation areas along the Site boundaries.

3.8.3 Landscape Design Requirements - §1-19-8.402(B)(6)

The Project landscape plan, included as Site Plan sheets LA-1 through LA-9, demonstrates compliance with the design requirements quoted below

(6) In addition to § 1-19.6.400 the following landscaping, screening, and buffering requirements must be met.

(a) Front yard(s) abutting a roadway must include a landscaped buffer.

(b) Except where adjoining a critical digital infrastructure use, side and rear yards must include a landscaped buffer.

A landscape buffer is provided along all roadway frontages as further described in Section 3.4.

Landscape buffers are proposed along all sides of the Project except to the north and east where the Site adjoins parcels within Quantum Frederick Section 1. A natural boundary between the Project Site and Quantum Frederick Section 1 is provided by the preserved, forested open space area adjacent to Tuscarora Creek. This boundary is reinforced in certain areas by the Forest Protection Area centrally located on the Project site.

A substation will be proposed on the northern portion of the Site. Landscape buffering along Ballenger Creek Pike for the substation use will be proposed as part of the future substation site plan submission.

(c) A landscaped buffer must include a four-season visual screen resulting in multi-layered, staggered rows of overstory and understory trees and shrubs that are a mix of evergreen and deciduous vegetation, with an emphasis on species that are native to Frederick County.

The landscaping plan provides a four-season visual screen with clustered and multi-layered rows of trees and shrubs, including native evergreen and deciduous vegetation, to buffer the use from

adjacent roads and rural residential properties. The proposed landscaping along Ballenger Creek Pike and Mountville Road protects and reinforces the existing mature tree lines along the roads.

(d) The minimum height of overstory trees within a landscape screen or buffer at planting must be a minimum of 6 feet with a minimum caliper of 2 inches. The minimum height of understory trees and shrubs at the time of planting must be 3 gallon or larger. Trees and shrubs larger than the minimum sizes listed above will be required where the minimum planting sizes will not provide adequate screening or buffering within 2 years. Vegetation used to establish a visual screen shall not be trimmed so as to stunt upward and outward growth or to otherwise limit the effectiveness of the visual screen.

(e) A berm, wall, or fence may be used in combination with vegetation to satisfy the screening requirement where deemed appropriate by County Staff and the Planning Commission.

Healthy trees of the required size will be installed as detailed on Site Plan sheet LA-9. The existing mature vegetation in combination with the new plantings will provide adequate buffering within 2 years.

(f) If security fencing is proposed, vegetative screening must be placed between the fence and the public view. Fencing must be made of high quality materials. Chain-link and similar woven metal or plastic fencing shall not be used.

Two layers of fencing are proposed around the data center building complex (see Site Plan sheet ND-1). The outer fence will be of high quality black metal. The inner fence is proposed to be chain link, topped by three rows of barbed wire, as shown on Site Plan Sheet ND-1. This Site Plan application requests a modification to allow chain link fencing for security, 10 feet inside the primary black metal fence. . Both the outer and inner fencing will be separated and visually buffered from roads and rural residential properties by the landscape buffers described above and shown on the Site Plan sheets LA-1 through LA-9. At the closest point, the outer fence will be set back approximately 80 feet from the right-of-way of Ballenger Creek Pike.

(g) If forest or hedgerows exist where screening or buffering is required, it must be preserved to the maximum extent practicable and supplemented with new plantings where necessary to provide the desired screening or buffering.

Existing vegetation along the property boundaries and adjacent road rights-of-way will be preserved, protected, and supplemented with new plantings.

(h) All landscaping, screening, and buffering must be maintained in living condition.

(i) Applicant must submit a landscape, buffering, and screening plan as part of the Site Plan application addressing the requirements and timing of plantings. Screening and buffering must be installed as early in the development process as possible. Occupancy shall not be granted if screening and buffering requirements are not installed in accordance with the approved Site Plan.

(j) The Planning Commission may approve a modification to the landscaping, buffering, and screening standards where an alternate landscaping, buffering, and screening plan is provided that meets the purpose and intent of these design requirements.

All landscaping, screening and buffering will be installed prior to Project operations and maintained in living condition. The landscape, buffering and screening plan is included as LA-1 through LA-9 of the Site Plan. No modification to standards is requested, as the Project will meet landscaping and buffering requirements.

3.8.4 Noise and Vibration - §1-19-8.402(D).

As noted in Section 3.7, the Project will not generate vibrations beyond the lot line, and a registered engineer's certification has been completed certifying that data center operations will comply with the following noise standards. See Attachment 5. Noise resulting from construction will be temporary and will occur only during the construction hours, which will not occur outside the limits provided for in the Zoning Ordinance (7 am – 7 pm).

Table 2. Noise Standards, §1-19-8.402(D) of Frederick County Zoning Ordinance

Sound Measured To	Decibels Continuous Slow Meter Responses
Industrial uses	70
Commercial uses	64
Residential uses in any zoning district	55
Institutional uses	55
All other uses	55

4. FOREST CONSERVATION ORDINANCE

The Preliminary Forest Resource Ordinance (FRO) Plan for Quantum Section 2 provides required forest conservation mitigation for the 259-acre Net Tract Area, including 211 acres of industrial zoned property, including the Project Site, and 48 acres of agriculturally zoned property. The total forest mitigation provided is 40.03 acres, comprised of 20.48 acres of forest retention and 19.55 acres of reforestation planting which includes 0.37 acres of surplus reforestation planting.

The Final Forest Conservation Plan for the Project Site is included in the Site Plan and implements the forest mitigation areas shown on the Preliminary FRO Plan, resulting in protection of 10.39 acres of existing forest and provision of 10.48 acres of new forest planting areas. Forest retention and plantings preserve existing wildlife habitat, provide environmental buffers along streams, and add to existing vegetated edges along public roads.

5. ADEQUATE PUBLIC FACILITIES ORDINANCE

The Project site complies with the Adequate Public Facilities Ordinance (APFO) pursuant to the Amended and Restated Letter of Understanding (LOU) for the approved Quantum Frederick Section 2 preliminary plan (Attachment 1). The Amended and Restated LOU combined the 257.68 acres in Quantum Frederick Section 2 with 1,053.78 acres from the original LOU for Quantum Frederick Section 1. The APFO approval is valid for 14 years from the date of Planning Commission approval of the original APFO LOU on December 15, 2021, expiring on December 15, 2035.

5.1 Roads

The Amended and Restated LOU establishes 4 phases of road improvements for Quantum Frederick Sections 1 and 2. Phase 1 accommodates up to 143 morning peak hour vehicle trips and 125 evening peak hour vehicle trips, is limited to data center or office uses, and requires no road improvements.

An analysis by Wells + Associates dated August 25, 2023, estimates Project operational traffic during peak hours at 86 vehicle trips during the morning peak hour and 69 vehicle trips during evening peak hour (Attachment 2). The analysis notes that previously approved development will generate 50 trips during the morning peak hour and 41 trips during the evening peak hour. The Project plus the previously

approved development would total 136 trips during the morning peak hour and 110 trips during the evening peak hour. Accordingly, the Project will be accommodated under Phase 1 of the Roads section of the Amended and Restated LOU and will not require road improvements.

As described in the access review (Attachment 2), road frontage improvements to be installed for the Project include a partial deceleration lane, a partial acceleration lane, and a partial deceleration left turn lane. See also Section 3.6.

5.2 Water and Sewer Infrastructure

The Amended and Restated LOU for Quantum Frederick Sections 1 and 2 provides four phases of water and sewer improvements pursuant to a water and wastewater study provided by Whitman, Requardt & Associates, LLP (WR&A) dated November 2021. The Quantum Frederick development will be served by a network of public and private water and sewer mains and service connections generally depicted on the approved preliminary plans and various phasing exhibits within the WR&A study mentioned above. Proposed improvements to Frederick County's water and sewer systems serving this region will be provided to the Project through developer-funded improvements as approved in the Preliminary Plan for Phase 2 (PP273777).

County water will be supplied to the Project site from the west through two, 8-inch County water supply lines. One 8" line will supply the project with potable water for domestic consumption and fire protection. The second line will be for cooling water. The Project's cooling water system consists of the following components:

- The cooling water system has been designed to efficiently use and re-use water. All water used for cooling will be recirculated through the site two to three times before being discharged.
- Water entering the Site from the County water supply line will be collected in four water tanks located north of Building A, on the north side of the site (see Site Plan sheet SP-1 or SP-8). From these central tanks, Project water lines will distribute the water to storage tanks for each of the four buildings, located within a recessed portion of the building façade to reduce the visual prominence of these features.
- The amount of cooling water needed will vary depending on weather and atmospheric conditions, with more cooling water needed for hotter weather. The use of storage tanks will enable the facility to balance its need for greater amounts of water during hotter periods while withdrawing water in accordance with its County water allocation.
- Discharged cooling water will be held in on-site, underground wastewater storage vaults. From these vaults, the water will be discharged to the County's wastewater system at the correct rate and volume to comply with County requirements.

The APFO LOU provides for a potential upgrade to the New Design Water Treatment Facility to provide reclaimed industrial water for use as data center cooling water. If this alternative is selected and implemented by Quantum Frederick and the Frederick County Division of Water and Sewer Utilities, one of the water lines entering the Site would be used to transport the reclaimed industrial water for the cooling system. This system would also require implementation of an on-site water treatment system, shown as "Future Water Treatment" adjacent to Building D on Site Plan sheets SP-1 and SP-3. This potential future treatment facility is in the interior of the Site, about 800 feet from Ballenger Creek Pike.

6. WATER AND SEWER PLAN

The Project site is planned for public water and sewer service. The Frederick County Water and Sewerage Plan (amended through December 28, 2022) classifies the site as S-5 (Sewer Service) and W-5 (Water Service). The connection to the public water and sewer system will be approved and implemented in coordination with a Water and Sewerage Plan amendment for the proper water and sewer classification, subject to completion of required infrastructure per the APFO LOU.

Recent related County actions include:

- On August 9, 2023, the Planning Commission made a finding of consistency with the County Comprehensive Plan for the request made by Quantum Maryland LLC (Case WS-23-10) to reclassify the Project Site to W-3, S-3.
- On May 16, 2023, the Frederick County Council approved an update to the County's Priority Funding Area (PFA) to include the Project site, as well as other land within Quantum Frederick Sections 1 and 2, within the PFA. The revision aligns the PFA boundaries with the land in the LI and GI zoning districts and within the Eastalco Community Growth Area per the Comprehensive Plan Land Use Map. The County establishes PFA designations pursuant to Maryland regulations to reflect County policies indicated through the designation of growth areas and the subsequent application of zoning and water/sewer service classifications.

7. STUDIES AND CONSULTATIONS

7.1 Cultural Resources Desktop Assessment

On August 5, 2022, and March 10, 2023, ERM, Inc. (ERM) conducted desktop reviews of cultural resources for the Project Site using MEDUSA, Maryland's Online Cultural Resource Information maintained by the Maryland Historical Trust (SHPO). The review encompassed the Project Site plus a one-mile buffer. ERM conducted the database search to determine the number, nature, and location of known archaeological and architectural sites within that area. ERM found no previously identified archaeological sites within the Project Boundary or the one-mile buffer and no recorded or unrecorded architectural resources within the Project Boundary. See Attachment 3.

ERM identified 27 architectural resources within the one-mile buffer. Carrollton Manor is listed on the National Register of Historic Places (NRHP) and is located approximately 0.5 miles east of the Project Boundary. Seven other resources have been identified as potentially eligible for NRHP listing.

- Carrollton Manor (MHT Resource F-1-19), the closest historic resource, is on Lot 300 of Quantum Frederick Section 1 and about 0.3 mile from the Project site's eastern boundary. Views of Project structures will be buffered by wooded areas along Tuscarora Creek and a tributary within Quantum Frederick Section 1 open space.
- St. Joseph's on Carrollton Manor (MHT Resource F-1-18), a historic church structure, is about 1.0 mile from the Project site and will be screened from views of Project structures by preserved forest on the church parcel, Open Space Parcel F of Quantum Frederick Section 1, and intervening distances.
- Historic architectural resources in and near Adamstown are about 0.5 to 1 miles from the Project site. The Project site will be totally or substantially screened by intervening distance, topography, structures, and tree lines. Implementation of Project screening along its southern boundary will limit/restrict most of the Project visibility.

- Architectural resources or potential resources on rural properties to the north and west are at least 0.4 or more miles from the Project site. Views of the Project structures will be substantially or fully screened by distance, topography, existing treelines and the proposed Project landscaping along the Ballenger Creek Pike frontage.

7.2 Wetland and Waters Report

Rodgers Consulting conducted a wetland delineation of the Project site in spring of 2021, followed by additional site visits in 2022. The Project will have no impacts on water features identified during the field delineation. The intermittent and ephemeral streams identified on the site are located within forested areas that will be preserved within Forest Resource Ordinance easements.

7.3 Assessment of Special Status Species and Habitat

ERM conducted habitat surveys of the site in August 2021, March 2023, and June 2023. See Attachment 4.

Lot 400 and Lot 401 have been highly altered by historic and ongoing agricultural activities, and wildlife habitat is marginal to absent across the Site. Wildlife habitat that is present is primarily within the existing forested areas, which will be retained and protected by forest preservation easements except for 0.05 acres located along the edge of an existing power line easement. New wildlife habitat will be created by the proposed establishment of 10.48 acres of new forest planting area.

One special status species (two individual bald eagles) was observed during the field survey and a bald eagle nest was identified east of the Project site. Potential impacts to nesting bald eagles will be avoided and mitigated by completing the voluntary U.S. Fish and Wildlife Service Northeast Bald Eagle Project Screening Form and adhering to development restrictions identified therein. The screening form recommends avoiding disruptive activities during breeding season (e.g., excavation, earth disturbance). Given that the Project does not trigger a state or federal nexus and tree clearing associated with the project is minimal, consultation with the United States Fish and Wildlife service is not required; however, a copy of the completed Bald Eagle Project Screening Form will be kept on file for future reference.

ATTACHMENT 1 AMENDED AND RESTATED LETTER OF UNDERSTANDING (LOU) FOR QUANTUM FREDERICK

EXHIBIT 4

AMENDED AND RESTATED

ADEQUATE PUBLIC FACILITIES LETTER OF UNDERSTANDING

Quantum Frederick

Preliminary Plan: PP266504 & PP273777 F266567, A273778

In General: The following Amended and Restated Letter of Understanding ("**Letter**") between the Frederick County Planning Commission ("**Commission**") and Quantum Maryland, LLC ("**Developer**"), together with its/their successors and assigns, sets forth the conditions and terms which the Commission deems to be the minimum necessary improvements dealing with school, water, sewer, and road improvements that must be in place for the property identified below to be developed, as proposed under the approved Quantum Frederick preliminary plan (the "**Project**"), in compliance with the Frederick County Adequate Public Facilities Ordinance ("**APFO**"). This Letter amends, restates, and replaces the original Letter of Understanding (A266569) dated December 15, 2021 (the "Original LOU").

The Developer, its successors and assigns, hereby agrees and understands that unless the required improvements (or contributions to road escrow accounts, as specified below) are timely provided in accordance with this Letter, APFO requirements will not be satisfied and development of the Project or a subsequent phase thereof will not be permitted to proceed.

1. This Letter concerns itself with the Developer's 1,053.78 +/- acre Project, which is zoned General Industrial (GI) and Agriculture/Rural (A) and located north of Adamstown, Maryland ("**Site**"). The Site is mainly bounded to the west by Ballenger Creek Pike, to the east by New Design Road, and bisected by Manor Woods Road. Future MD 80, a County Comprehensive Plan minor arterial roadway, is proposed to run east to west through the southern portion of the Site. Dedication of right-of-way and construction of this section of MD 80 will be required as part of the proposed development. This APFO approval will be effective for the development of up to 17,403,344 square feet of data center, 821,881 square feet of office, and 7,500 square feet of commercial use, as shown on the preliminary plan (PP266504) for the above-referenced Project, which was granted conditional approval by the Commission on December 15, 2021.
   The Traffic Impact Analysis prepared by Wells + Associates, Inc. for the Project, dated October 8, 2021, and revised November 11, 2021, ("TIA"), incorporates APFO traffic analysis assuming full phased buildout of the Project, background traffic, and pipeline projects. The timing of construction of the required road improvements for the Project are linked to the estimated overall morning (AM) and evening (PM) peak hour vehicle trips projected for the approved uses in the Project.

2. This Letter incorporates the Developer's 257.68 acres, which are zoned Limited Industrial (LI), GI, and A and located northwest of Adamstown, Maryland. This additional land is mainly bounded to the west by Ballenger Creek Pike and to the south by

Mountville Road, and will be combined with the 1,053.78 acres covered by the Original LOU for a total of 1,311.46 acres. This APFO approval does not propose any increase in the development square footage of data center, office or commercial uses from the original approval. The trip generation and phasing plan remain unchanged.

A Traffic Memorandum prepared by Wells + Associates, Inc, dated October 26, 2022, analyzed traffic forecasts, project phasing, and trip generation proposed in the original Traffic Impact Analysis. The original analysis was identified as a conservative development approach and the new acreage does not propose any increases in development density or intensity, and proposes the distribution of traffic on the roadway network in a manner consistent with the previous study. Therefore, no changes to the roadway mitigations or phasing plan are proposed.

The agricultural zoned portions of the Project, shown on the PP273777 and PP266504, cannot be developed until such a time that the appropriate zoning is applied to those areas.

I. PUBLIC WATER AND SEWER – SECTION 1

The Project Site is classified W-1/S-1 and W-5/S-5 as shown on the County Water and Sewerage Plan map. The Division of Water and Sewer Utilities (DWSU) has provided a recommendation of conditional approval regarding sewer and water facilities for service to the Project, based upon proposed improvements to be constructed by Developer, as described below and in a water and wastewater study provided by Whitman, Requardt & Associates, LLP (WR&A) dated November 2021.

The Project will be served by a network of public and private water and sewer mains and service connections generally depicted on the Preliminary Plans (PP273777 and PP266504) and various Phasing exhibits within the WR&A study mentioned above and attached (Exhibit 1 and 2). Proposed improvements to Frederick County's water and sewer systems serving this region will be provided to the Project through developer-funded improvements specified below and as shown on the Preliminary Plan.

While the public water/sewer facilities will be adequate upon completion of specified improvements to serve the Project, the Developer recognizes that capacity is not guaranteed until purchased. APFO approval for sewer and water does not guarantee that plats will be recorded and building permits will be issued. Plat recordation and building permit issuance are subject to compliance with the Annotated Code of Maryland, Environment Article Section 9-512, et. seq and all applicable County regulations, including but not limited to §1-16-106 of the Frederick County Subdivision Regulations.

The Project is proposed to be served by two separate water distribution systems; one for domestic and fire service (potable), and the other for cooling water only (cooling), sized in accordance with the WR&A APFO study and as approved by DWSU. Please note that Lots 112 A-D are electrical substation lots that are not intended to be served by public water or sewer.

Water and Sewer Phase 1 consists of those lots whose total (combined) domestic potable maximum day water demand does not exceed 0.2 million gallons per day (mgd) **and** whose total (combined) potable cooling water demand does not exceed a maximum day cooling demand of

1.3 mgd as determined and approved by DWSU. However, resultant sewage flows must not exceed the capacity of the IQFSPS as stipulated below. The attached *APFO/LOU PHASING* spreadsheet (Exhibit 3) will be used to establish and track maximum demands for platting purposes.

Phase 2 consists of the remaining Section 1 lots whose water demands exceed those maximums specified above.

I. Phase 1

A. Water:
The Developer shall construct or cause to be constructed the following water improvements listed below, which are necessary to provide water service to the first set of lots to be recorded within the Project, up to the maximum water demand restrictions described above. The diameter of the utility lines and other infrastructure is to be confirmed and approved during the design phase of the proposed infrastructure by DWSU and Developer's Engineer.

1. Design, permit, and construct 16-inch potable waterline from the existing 24-inch waterline west of the railroad tracks northward along proposed Happy Landing Road to the existing right of way of New Design Road.
2. Design, permit, and construct 16-inch potable waterline from the existing 24-inch waterline west of the railroad tracks westward to the proposed intersection of Quantum Place South and Manor Woods Road.
3. Design, permit, and construct 12-inch potable waterline from the existing 12-inch waterline located in Mountville Road (Frederick County Water & Sewer Contract # 035-W) to the existing 24-inch waterline starting point described above in Section A.1.
4. Design, permit, and construct 12" water line from the end of section A.2 described above at the proposed intersection of Quantum Place South and Manor Woods Road, southwesterly down the length of Quantum Place South to the end of the cul-de-sac.
5. Design, permit, and construct 12" water line from the end of section A.4 and continue along line A.5 as described in the APFO water phases exhibit to a point on section A.3 described above
6. Design, permit, and construct 8" water line from the south side of Manor Woods Road at the proposed intersection with Quantum Place South, to the north side of the cul-de-sac in proposed Quantum Place North.
7. Design, permit, and construct 16-inch potable waterline from the terminus at Quantum Place South northward and along Manor Woods Road to the intersection of Ballenger Creek Pike.
8. Design and construct 12-inch potable waterline from the intersection of Ballenger Creek Pike and Manor Woods Road southwest to a point opposite the intersection of Agro Drive and Ballenger Creek Pike.
9. Design, permit, and construct 8-inch potable waterline from the terminus of A.7 described above, continue along line A.9 as described in the APFO water phases exhibit to the terminus of the 12" line in at Quantum Loop South as described above as A.5,

10. Design, permit, and construct 16-inch cooling waterlines to run parallel to the lines described above in A.1-A.4, A.6, A.7 or as otherwise approved by DWSU required to provide cooling water to data center lots.

B. Sewer:
The Developer shall construct or cause to be constructed the following sewer improvements listed below, all of which are necessary to provide sewer service to Phase 1 of the Project.

1. Design, permit, and construct new interim 1 MGD (peak pumping rate) Interim Quantum Frederick Sewage Pump Station (IQFSPS) on Outlot 1 as shown on the approved preliminary plan. Construction must be completed on the replacement 5 MGD (peak pumping rate) Quantum Frederick Sewage Pump Station (QFSPS), as described in Phase 2 below (D.1.), within 3 years of the construction completion date of the 1 MGD IQFSPS, or prior to approval of total sewage flows to the IQFSPS exceeding the capacity limitations as determined by DWSU, whichever occurs first.
2. Design, permit, and construct a new 10-inch force main from the existing force main in New Design Road to the new IQFSPS or to new gravity sewer in Happy Landing Road that drains to the new IQFSPS, or as otherwise approved by DWSU. This force main will divert flows from the Adamstown Sewage Pumping Station to the new QFSPS.
3. Design, permit, and Construct upgrades to the existing Adamstown Sewage Pumping station, pumps and other existing station infrastructure as required due to the new hydraulic pumping parameters created by item B.2. above. The pumps will be replaced with new pumps designed for the new system head created by the new outfall to the QFSPS. The wastewater flows will then be pumped from the proposed IQFSPS, to the existing 10” force main in New Design Road.

   The proposed sewage flows (peak pump rate) from the QFSPS for this phase will not exceed 1.0 MGD, or as determined by a developer funded capacity analysis of the existing gravity outfall sewer system beginning in New Design Road, or as otherwise approved by DWSU.
4. Design, permit, and construct a gravity sewer collection system from the IQFSPS northward to support those lots that the applicant is seeking to record. See lines A-L~~H~~ as represented in the QF Sewer Phases Exhibit.

II. Phase 2

The Developer shall design, permit, and construct or cause to be constructed the following water improvements listed below, all of which are necessary to provide water service to Phase 2 of the Project. Note that waterlines installed for Phase 1 above will serve Phase 2 lots.

C. Water:
1. Prior to platting any lots upon which a ‘data center’ is to be constructed beyond those approved by DWSU under Phase 1 of the APFO/LOU Phasing table, the Developer will design, permit, and construct improvements required to obtain additional water capacity of remaining (Max Day) from the New Design Water Treatment Facility (NDWTF), or

study, design, permit, and construct the wastewater effluent supply system for use as cooling water to support remaining phases. The design shall ensure that the existing effluent outfall pipelines in New Design Road will remain functional to continue to convey effluent from the Ballenger-McKinney WWTP to the Potomac River.

2. If the additional NDWTF capacity option is selected, the Developer will prepare an engineering study to determine the need for additional public water storage as required and approved by DWSU. If required, design, permit, and construct an elevated public storage (potable or cooling) volume as approved by Developer's Engineer and DWSU.
3. If effluent water is being used for cooling Phase 2 lots, design, permit, and construct effluent lines (size as approved by Developer's Engineer and DWSU) parallel to the water lines described above in A.1-A.10 or other location as approved by DWSU.

The Developer shall design, permit, and construct or cause to be constructed the following sewer improvements listed below, all of which are necessary to provide sewer service to Phase 2 of the Project:

D. Sewer:

1. Design, permit, and construct new QFSPS and convert the IQFSPS to a manhole, and modify other existing station infrastructure, rerouting the wastewater flows to the existing Buckeystown Interceptor sewer, located near Michaels Mill Road near the Monocacy River. The pumps will require replacement for the change in system head from the existing connection to the gravity connection at New Design Road to the Buckeystown Sewage Interceptor. QFSPS upgrades and design flow rates shall be designed by developer's Engineer and approved by DWSU. QFSPS design shall include peak rate attenuation facilities, as otherwise approved by DWSU.

2. Design, permit and construct a force main system from QFSPS eastward to the Buckeystown Interceptor Sewer near Michaels Mill Road and the Monocacy River. Force main system shall be sized per the County Water and Sewer Design Manual for the full range of pumping rates and designed by Developer's Engineer and approved by DWSU.

II. ROADS

A. APFO ROAD IMPROVEMENTS

The road improvements program described in the following paragraphs are based on the TIA analysis, and these improvements are projected to provide capacity for 3,317 AM peak hour trips and 2,877 PM peak hour trips. The Developer will construct the road improvements in four (4) phases, with each phase of road improvements intended to allow an incremental increase in development in the Project based on the cumulative total trips shown on EXHIBIT 4.

The roadway impacts for each development phase of the Project will be mitigated through a combination of construction of improvements, or pro-rata contribution(s) to existing and/or future County-held escrow accounts (where applicable) in accordance with Frederick County APFO and Guidelines for Preparation of Traffic Impact Analyses for Development Applications, adopted September 6, 2011, by the BOCC by Resolution No. 11-24 ("TIA Guidelines").

The Developer agrees to construct or contribute to the following improvements and phasing schedule as identified in the TIA and LOU in order to mitigate the effects upon the transportation network serving the Project. An updated trip "scorecard" will be provided by the Developer with each development application within the Project, to track and document the approved capacity trips utilized by each development application.

PHASES I - 4

If a parcel of lot requires access to a proposed public road or street, the plat cannot be recorded until after an agreement(s) for road or street construction, along with financial guarantees have been provided and approved by the County. Further, the proposed roads or streets must be constructed and approved by the County to be open to traffic prior to the issuance of any certificates of occupancy for any site having direct access to said road.

The road improvements identified in the next phase must be constructed and open to traffic prior to site plan final approval for any use generating additional trips, (as tracked on the trip scorecard,) that would exceed the maximum cumulative trips permitted in the current phase and require use of trips associated with the next phase of development.

PHASE I
(up to 143 a.m. peak hour trips and 125 p.m. peak hour trips)

Phase I development will be limited to data center or office use. Commercial development will not be permitted during Phase I.

PHASE II
Up to 1,079 additional a.m. peak hour trips and 931 additional p.m. peak hour trips
Maximum Cumulative Trips - 1,222 a.m. peak hour and 1,056 p.m. peak hour

Prior to lot recordation or the issuance of any building permits for any uses utilizing Phase II trips, the Developer shall guarantee the following improvements:

a. Construct a roundabout at the intersection of Manor Woods Road and Quantum North/South Loop Roads. The roundabout is to be constructed with a single circulating lane.
b. Construct the Quantum South Loop Road prior to building permit issuance for any parcel requiring site access from this proposed roadway.
c. Construct the Quantum North Loop Road prior to building permit issuance for any parcel requiring Site access from this proposed roadway.
d. Install a roundabout at the intersection of Ballenger Creek Pike and Mountville Road. The roundabout will consist of two circulating lanes with the associated acceleration/deceleration lanes and tapers.
e. US 15/Mountville Road: Construct an exclusive right-turn lane and taper on the westbound approach, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
f. Construct required traffic signal improvements as identified in Section II.B, below.

PHASE III
Up to 1,045 a.m. additional peak hour trips and 855 additional p.m. peak hour trips
Maximum Cumulative Trips - 2,267 a.m. peak hour; 1,911 p.m. peak hour

Prior to the issuance of any building permits for any uses utilizing Phase III trips, the Developer shall guarantee the following improvements:

a. Construct future MD 80 and the proposed roundabout intersection, from New Design Road west to the proposed sewerage pump station. This construction will include a temporary cul-de-sac turnaround and be constructed and open to traffic prior to use of the Phase III trips or prior to the recordation of any lots that have direct access to this road (with the exception of the DWSU Outlot).
b. Construct and extend the westbound right-turn lane storage at Buckeystown Pike (MD 85)/Fingerboard Road/MD 80, or as otherwise determined and approved by MDOT SHA and the County, necessary to mitigate the traffic issue.
c. US 15/Mountville Road: Convert northbound right-turn lane into northbound shared through/right lane and carry through the intersection with an additional northbound receiving lane before tapering back to a two-lane section north of the intersection, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
d. Point of Rocks Rd/US 15: Construct an exclusive right-turn lane, an additional lane on the inbound westbound approach, and a second circulating lane on the northern portion of the roundabout, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issues.

PHASE IV
Up to 1,050 additional a.m. peak hour trips and 966 additional p.m. peak hour trips
Maximum Cumulative Trips - 3,317 a.m. peak hour and 2,877 p.m. peak hour

Prior to the issuance of any building permits for any uses utilizing Phase IV trips, the Developer shall guarantee the following improvements:

a. Construct future MD 80 from the temporary cul-de-sac turnaround to its proposed intersection with Mountville Road.
b. Ballenger Creek Pike/Mountville Road: Construct a southbound right-turn associated with the roundabout with dedicated decel/accel lanes and tapers.
c. Point of Rocks Road/Ballenger Creek Pike: Construct an exclusive right turn lane on the southbound approach and an exclusive left turn lane on the eastbound approach, along with the necessary tapers.
d. US 15/Mountville Road: Extend the southbound left turn lane and extend westbound right turn lane, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
e. Ballenger Creek Pike from Manor Woods Road to Mountville Road Widening from two to four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.
f. Mountville Road from US 15 to Ballenger Creek Pike Road Widening from two to

four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.

g. Construct Manor Woods Road, a Comprehensive Plan collector roadway, realigned to intersect with Ballenger Creek Pike/Agro Drive as shown on the currently adopted Comprehensive Plan map, unless otherwise amended in future comprehensive plan revisions.

B. Traffic Signals

The Developer shall signalize the following off-Site intersections when warranted:

1. Buckeystown Pike (MD 85)/Manor Woods Road
   a. Approval of any signal design at this intersection will occur when an updated signal warrant analysis demonstrates that warrants are satisfied by actual traffic. Due to the current geometry of the intersection, and physical limitations, other intersection improvements may be required in lieu of a signal, as determined and approved by MDOT SHA and the County.
2. New Design Road/Manor Woods Road
3. Ballenger Creek Pike/Manor Woods Road

The Developer shall perform up to two signal warrant analysis for each of the above intersections when deemed necessary by MDOT SHA/County, with the first to occur no later than the issuance of the last building permit associated with Phase II trips and, if necessary, the last being no later than the last site plan application submitted for the Project. The Developer shall install a traffic signal at any of the above intersections within 12 months of receipt of a warrant analysis indicating that a signal is warranted. In the case of signals 1. through 3. above, should the signal still not be warranted and justified by the time of issuance of the last building permit for the Project, then others shall thereafter be fully responsible for construction and implementation of any such traffic signal.

C. Escrow Accounts:

In accordance with Section 1-20-12(H) of the APFO, the Developer is required to pay its proportionate contribution toward the following existing road escrow accounts in the Project area. The pro-rata escrow contributions have been phased and are correlated with the number of trips associated with each phase of development.

1. No. 3761: MD 85/English Muffin Way – Construction of a second eastbound left turn lane and associated pavement markings. The estimated cost of this improvement is $104,888. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 6.45%. Therefore, the Developer agrees to pay $9,646 to the escrow account for this Road Improvement.
2. No. 3286: New Design Rd/English Muffin Way Signal – The estimated cost of the intersection improvement is $350,000. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 4.5%. Therefore, the Developer hereby agrees to pay $15,750 to the escrow account for this Road Improvement.
3. No. 4412: Ballenger Creek Pike widening from north of Ballenger Creek to Crestwood

Boulevard. The estimated cost of this improvement is $6,000,000. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 0.33%. Therefore, the Developer hereby agrees to pay $19,800 to the escrow account for this Road Improvement.

4. No. 4053: US 15/340 Interchange – Construction of the US15/340 interchange. The estimated cost of this improvement is $22,060,865. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 3.92%. Therefore, the Developer hereby agrees to pay $864,785 to the escrow account for this Road Improvement.

Escrow Contribution by Phase

Phase I Escrow Contribution (up to 143 a.m. and 125 p.m. peak hour trips)

Escrow	Cost
No. 3761:	$9,646
No. 3286:	$15,750
No. 4412:	$19,800
Total	**$45,196**

Therefore, prior to the recordation of the first lot associated with the Project, a total of $45,196 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

Phase II Escrow Contribution (up to 1,222 a.m. and 1,056 p.m. cumulative peak hour trips)

Escrow	Cost
No. 4053:	$319,883
Total	$319,883

Therefore, prior to the recordation of the 2nd lot associated with the Project, a total of $319,833 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

Phase III Escrow Contribution (up to 2,267 a.m. and 1,911 p.m. cumulative peak hour trips)

Escrow	Cost
No. 4053:	$269,142
Total	**$269,142**

Therefore, prior to the recordation of the 10th lot associated with the Project, a total of $269,142 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

Phase IV Escrow Contribution (up to cumulative 3,317 a.m. and 2,877 p.m. peak hour trips)

Escrow	Cost
No. 4053:	$275,760
Total	**$275,760**

Therefore, prior to the recordation of the 19th lot associated with the Project, a total of $275,760 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

D. Surplus Capacity Reimbursement Improvements:

The Developer has agreed to construct or cause to construct certain infrastructure improvements to serve the Project which could result in the creation of excess capacity in such improvements that could benefit other development projects. The parties agree that the following road improvements have been determined to be "Surplus Capacity Reimbursement Improvements" ("SCR Improvements") as that term is defined in Chapter 12 of the TIA guidelines:

1. Buckeystown Pike (MD 85)/Manor Woods Road Signal
    a. Approval of any signal design at this intersection will occur when an updated signal warrant analysis demonstrates that warrants are satisfied by actual traffic. Due to the current geometry of the intersection, and physical limitations, other intersection improvements may be required in lieu of a signal, as determined and approved by MDOT SHA and the County.

2. Install a roundabout at the intersection of Ballenger Creek Pike and Mountville Road. The roundabout will consist of two circulating lanes with the associated acceleration/deceleration lanes and tapers.
3. Buckeystown Pike (MD 85)/Fingerboard Road/MD 80 westbound turn lane.
4. US 15/Mountville Road: Construct an exclusive right-turn lane and taper on the westbound approach, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
5. US 15/Mountville Road intersection improvements to convert northbound right-turn lane into northbound shared through/right lane and carry through the intersection with an additional northbound receiving lane before tapering back to a two-lane section north of the intersection, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
6. US 15/Mountville Road: Extend the southbound left turn lane and extend westbound right turn lane, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
7. Point of Rocks Road/US 15 roundabout improvement: Construct an exclusive right-turn lane, an additional lane on the inbound westbound approach, and a second circulating lane on the northern portion of the roundabout.
8. Ballenger Creek Pike from Manor Woods Road to Mountville Road Widening from two to four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.

9. Mountville Road from US 15 to Ballenger Creek Pike Widening from two to four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.

In the event that other approved development projects add "trips" to any of the offsite road improvements listed above and therefore are required to pay a pro rata share of the construction cost of said roads into escrow, the Developer shall be eligible for reimbursement of a portion of the cost of the SCR Improvements from available non-exempt developer projects identified by the County Traffic Engineer, up to but not beyond Developer's own pro rata share of the improvement, whether or not the SCR Improvements are located inside or outside of the contributing project's study area. Reimbursement may be accomplished either through reimbursement of actual construction costs incurred by the Developer if the Developer constructs said, in accordance with the requirements of Chapter 12 of the TIA Guidelines.

If any of the off-Site road improvements listed above as a construction obligation of the Developer are constructed or funded by others, then the Developer shall pay its pro rata share of the construction costs for each such road improvement constructed or funded by others into an escrow account based on the impact of trips generated by the Project on such road improvement. Prior to approvals being issued by the County to other developer(s) to construct any or all of the above-described road improvements Developer agrees to construct or cause to construct certain infrastructure improvements to serve the Project which could result in the creation of excess capacity in such improvements D.1 through D.9., the Developer will be given reasonable advance notice by the County Traffic Engineer and will be given the opportunity to review and comment on the County Traffic Engineer's calculation of the "pro rata share" of the cost of such improvements attributable to the Project relative to other developer(s).

E. Right-of-Way Acquisition Necessary for Roadway Improvement(s).

1. Most if not all of the roadway improvements required by this LOU to be made by the Developer will require the acquisition of public right-of-way from third party property owners, The Developer shall exercise commercially reasonable efforts to secure such right-of-way without the assistance of MDOT SHA or the County..
2. In the event that the Developer has demonstrated to MDOT SHA and the County that it is unable to secure any or all of such public right-of-way despite commercially reasonable efforts to do so in a timely manner consistent with the construction of public infrastructure improvements, the Developer may request MDOT SHA or the County to assist in the acquisition of the needed right-of-way at the Developer's sole cost and expense.

F. Improvements Requiring MDOT SHA or FHWA Approvals

The Developer's obligation to construct those road improvements described above that either require state or federal approval is subject to the following terms and conditions:

The Developer and the County acknowledge that these improvements (the "MDOT SHA improvements") will be reviewed and approved by the Maryland Department of Transportation State Highway Administration and possibly by the Federal Highway Administration ("FHWA"), and that such review and approval processes can be lengthy and are not within the control of the County or the Developer. Accordingly, the Developer agrees that it will diligently pursue the

design and approval of the MDOT SHA improvements in an effort to expedite construction of the MDOT SHA improvements as soon as practicable. To that end, the Developer agrees that it shall promptly, upon execution of this Letter of Understanding or at such time as is agreed by the County Traffic Engineer and the Developer, retain a qualified engineering firm to undertake the planning and design of the MDOT SHA improvements, in accordance with MDOT SHA and any other applicable governmental specifications, and shall submit initial design plans for the improvements to MDOT SHA for its review and approval.

The Developer shall not be required to design and submit all of the MDOT SHA improvements at the same time, but rather in accordance with the phasing schedule above. However, the Developer shall prepare and process the plans for the improvements listed in Phase I and II as soon as is practicable. Thereafter, the Developer shall promptly address all MDOT SHA, FHWA, and other agency comments and resubmit responsive design plans and other requested information to MDOT SHA, FHWA, or such other approving agency. Following the approval of the design plans for these improvements, The Developer agrees to promptly apply for an access permit from MDOT SHA and enter into a construction contract with a qualified contractor for construction of these improvements.

The County agrees that so long as the Developer diligently pursues all approvals of MDOT SHA improvements, including those referenced in this section, that may be required by MDOT SHA, FHWA or any other governmental agency in the manner described above, upon request the Developer may be permitted to proceed with development of the Project notwithstanding the fact that any of the required MDOT SHA Improvements in a particular Road Improvements Phase, including those listed in this section, are not completed in accordance with the phasing schedule. The Developer agrees that in the event MDOT SHA has not issued any required permit at such time as the Developer desires to proceed into subsequent phases of the Project, the Developer shall post an acceptable financial guarantee with Frederick County for the estimated cost of the construction of the MDOT SHA Improvements, plus an acceptable contingency, as determined by the County. The County agrees that this financial guarantee shall be released and returned to the Developer at such time as the Developer secures an access permit from SHA for the construction of the applicable MDOT SHA Improvement.

G. Transportation Facilities Mitigation Program

Quantum Frederick shall prepare a Transportation Facilities Mitigation Program (“TFMP”) in accordance with the provisions of the TIA Guidelines. The TFMP shall be approved by the County Traffic Engineer and MDOT SHA, prior to the development of Improvement Plans.

III. SCHOOLS

The Project is non-residential and not subject to schools testing.

IV. VESTING

Roads

Upon full mitigation (construction of improvements or fair share contribution to escrow accounts of APFO road improvements as set forth in Section II above within the APFO approval period, the APFO road approval for the Project shall be vested for the capacity created by the improvements

and shall not be subject to further APFO roadway testing unless there is an increase in Site trips or a significant redistribution of Site traffic because of a change in land use or increase in Site density as defined in the TIA Guidelines (Section 1-20-31(H)).

Public Water and Sewer

Upon completion of the construction of the APFO public water and sewer improvements set forth in Section I above, the APFO water and sewer approvals for the Project shall be vested for the capacity created by the improvements constructed and shall not be subject to further APFO testing unless the density or intensity of water and sewer usage of the Project increases (Sections 1-20-41(E)) and 1-20-51(E)).

While the public water/sewer facilities are currently adequate, or will be adequate upon completion of specified improvements to serve the Project, the Developer recognizes that capacity is not guaranteed until purchased. APFO approval for sewer and water does not guarantee that plats will be recorded and building permits will be issued. Plat recordation and building permit issuance are subject to compliance with the Annotated Code of Maryland, Environment Article Section 9-512, et. seq and all applicable County regulations, including but not limited to §1-16-106 of the Frederick County Subdivision Regulations.

Nothing in this Section IV. shall override or modify the applicable provisions of the County Code.

V. PERIOD OF VALIDITY

The APFO approval is valid for fourteen (14) years from the date of Commission approval; therefore, the APFO approval expires on December 15, 2035.

VI. DISCLAIMER

This Letter pertains to APFO approval only, and shall not be construed to provide any express or implied rights to continue the development process. The Project remains subject to all applicable rules and regulations, including but not limited to those related to zoning, water and sewer, and subdivision. The Planning Commission's jurisdiction and authority is limited by State and County law, and approvals may be required from other local or state governmental agencies before the proposed development can proceed.

[Signatures Next Page]

DEVELOPER: Quantum Maryland, LLC

By: _____ Date: Jan 20, 2023

Developer

FREDERICK COUNTY PLANNING COMMISSION:

By: _____ Date: _____

Chair or Secretary

ATTEST:

By: _____ Date: _____

Gary Hessong, Deputy Director

Planner's Initials / Date _____
(Approved for technical content)

*County Attorney's Office Initials / Date*_____
(Approved as to legal form)

PARKER LOWELL A
LESLIE PARKER
P0058 150.92 ACRES

CAP STINE LLC
P0056 114.06 ACRES

ARNOLD DEVELOPER ASSOC INC
P0005 104.295 ACRES

NDR PROPERTIES LC
P0003 196.73 ACRES

NDR PROPERTIES LC
P0004 201.82 AC

Porter Dr.

Horton Richard P
& Jill L
P0030
19.11 acres

P0029 5.85 AC

Manor Woods Road

Agro Dr.

R/W 7 DEDICATION
±4,716 sf
±0.10 acres

R/W 3 RESERVATION
±151,182 sf
±3.47 acres

LINE A8
Prop. 12"W (Potable)
Prop. 8"W (Potable)

LINE A7
Prop. 16"W (Potable)

LINE A9

MANOR WOODS ROAD

LOT 114
±254,390 sf
±5.84 acres

LOT 115
±265,184 sf
±6.09 acres

LOT 108
±743,182 sf
±17.06 acres

LOT 109
±1,162,522 sf
±26.69 acres

LOT 110
±901,141 sf
±20.69 acres

LOT 111
±551,103 sf
±12.65 acres

OPEN SPACE PARCEL 'C'
±1,639,029 sf
±37.62 acres

BALLENGER CREEK PIKE

CAP STINE ROAD

LOT 112C
±575,331 sf
±13.20 acres

LOT 106
±654,331 sf
±15.02 acres

LOT 107
±702,409 sf
±16.13 acres

LOT 105
±747,959 sf
±17.17 acres

LOT 104
±1,030,829 sf
±23.66 acres

LOT 112A
±845,994 sf
±19.42 acres

LOT 112B
±334,521 sf
±7.67 acres

LOT 112D
±294,103 sf
±6.75 acres

LOT 103
±407,226 sf
±9.35 acres

LOT 101
±945,606 sf
±21.71 acres

LOT 102
±1,113,337 sf
±25.56 acres

LOT 100
±1,303,561 sf
±29.93 acres

LOT 113
±1,257,552 sf
±28.86 acres

OPEN SPACE PARCEL 'A'
±6,860,629 sf
±157.49 acres

LINE A9
Prop. 8"W (Potable)

LINE A4
Prop. 12"W (Potable)
Prop. 16"W (Cooling)

LINE A5
Prop. 12"W (Potable)
Prop. 16"W (Cooling)

LINE A2
Prop. 16"W (Potable)
Prop. 16"W (Cooling)

LINE A3
Prop. 16"W (Cooling)
Prop. 12"W (Potable)

Quantum Loop South

Quantum Loop North

LINE A6
Prop. 8"W (Potable)

LINE A1
Prop. 16"W (Potable)

LOT 204
±1,904,135 sf
±43.71 acres

LOT 203
±1,582,399 sf
±36.33 acres

LOT 202
±1,128,750 sf
±25.91 acres

OPEN SPACE PARCEL 'G'
±33,433 sf
±0.77 acres

R/W 5 DEDICATION
±15,630 sf
±0.36 acres

LOT 200
±233,382 sf
±5.36 acres

R/W 2 DEDICATION
±234,467 sf
±5.38 acres

LOT 201
±2,288,398 sf
±52.53 acres

A Zone

LI Zone

ALT. ACCESS FOR LOT 18

OPEN SPACE PARCEL 'F'
±300,997 sf
±6.90 acres

R/W 9 DEDICATION
±5,385 sf
±0.12 acres

R/W 8 DEDICATION
±17,452 sf
±0.40 acres

Lot 301
±3,781,997 sf
±86.82 acres

Lot 302
±2,408,417 sf
±55.29 acres

LOT 300
±2,285,393 sf
±52.47 acres
(Carroll Manor
MHT Resource F-1-47)

LOT 303
±2,351,622 sf
±53.99 acres

LOT 304
±1,546,226 sf
±35.49 acres

OUT LOT 1
PUMP STATION
±66,822 sf
±1.53 acres

OUT LOT 2
PUMP STATION
ACCESS LOT/
FUTURE R/W
DEDICATION
±561,618 sf
±12.89 acres

OUTLOT 3
±23,482 sf
±0.53 acres

OPEN SPACE PARCEL 'E'
±725,253 sf
±16.65 acres

OPEN SPACE PARCEL 'D'
±223,406 sf
±5.13 acres

R/W 6 RESERVATION
±34,567 sf
±0.79 acres

Happy Landing Rd
Fut. MD Route 80

Horsehead Run

NEW DESIGN RD

ISLAMIC WAQF OF
MARYLAND INC
P0101 100.025 ACRES

MANOR WOODS ROAD

MERCER KEITH EDWARD
& MERCER KIMBERLY
P0025 5 AC

BEATTY
CRYSTAL
DAWN &
PHILLIP
DOUGLAS
BEATTY
P0029 19.11
ACRES

MERCER KEITH EDWARD &
MERCER KIMBERLY SUE
P0095 178.86 AC

RENN WILLIAM & DORIS LIFE ESTATE
& DAWN J SHANKLE
0007 95.46 ACRES

CARROLL MANOR
RECREATION
COUNCIL
P0171 26.90 ACRES

Carroll
Manor
Elementary
School

B &O/ CSX RAILROAD

MOUNTVILLE RD

Russell Ave

ADAMSTOWN ROAD

Gi Zone
LI Zone
A Zone

Detail - Connection to Ex. 24"W
NTS

N
SCALE: 1" = 400'

LEGEND

- PROPERTY AREA
- SECTION 1 AREA
- LINE A1 WATER
- LINE A2 WATER
- LINE A3 WATER
- LINE A4 WATER
- LINE A5 WATER
- LINE A6 WATER
- LINE A7 WATER
- LINE A8 WATER
- LINE A9 WATER

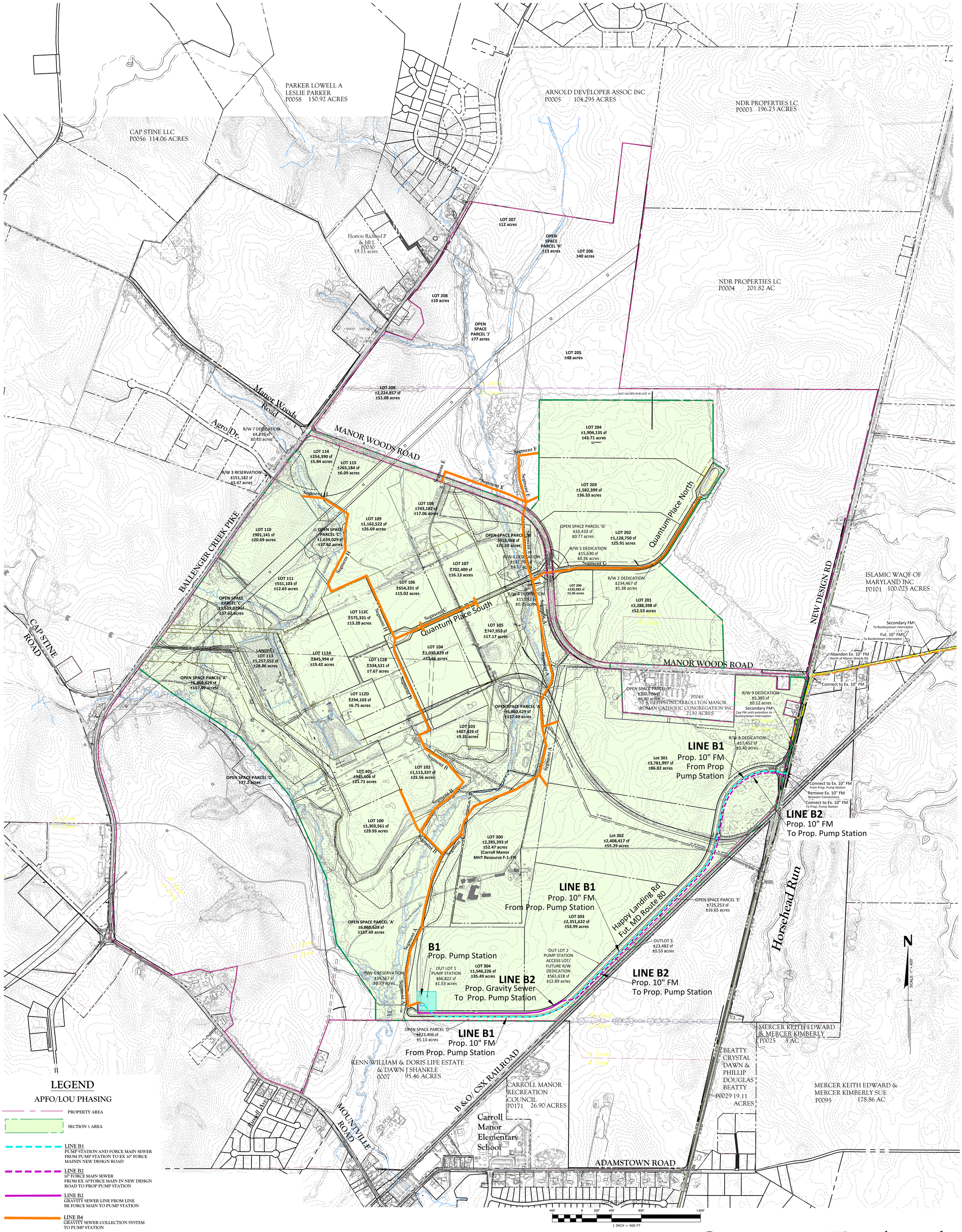
RODGERS
CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
Ph: 301.948.4700 www.rodgers.com

SCALE:
1"=400'

GRAPHIC SCALE
400' 0 200' 400' 800' 1,600'
1 INCH = 400 FT

Quantum Frederick
LOU Water Phases

12/03/2021



LEGEND

APFO/LOU PHASING

- PROPERTY AREA
- SECTION 1 AREA
- LINE B1 — PUMP STATION AND FORCE MAIN SEWER FROM PUMP STATION TO EX 10" FORCE MAININ NEW DESIGN ROAD
- LINE B2 — 10" FORCE MAIN SEWER FROM EX 10"FORCE MAIN IN NEW DESIGN ROAD TO PROP PUMP STATION
- LINE B2 — GRAVITY SEWER LINE FROM LINE BE FORCE MAIN TO PUMP STATION
- LINE B4 — GRAVITY SEWER COLLECTION SYSTEM TO PUMP STATION

RODGERS CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
Ph: 301.948.4700 www.rodgers.com

SCALE:
1"=400'

Quantum Frederick

LOU Sewer Phases

12/03/2021

Lot Information						Evaporative Cooling					Domestic					Total Max Daily Water Demand	Total Max Daily Wastewater Flow
Lot Number	Usage	Lot Area (Acres)	Building Area (SF)	MW (critical)	Total Occupants	Cooling Water Demand [1]		Cooling Water Blowdown (Wastewater) Flow [2-3]			Water Demand & Wastewater Flow [4-6]				Wastewater Only [7]		
						Max Daily		Max Daily		Peak Hourly	Average Daily		Max Daily		Peak Hourly		
						GPD	GPM	GPD	GPM	GPM	GPD	GPM	GPD	GPM	GPM	MGD	MGD
106 [8]	DC - COLO	15	200,000	30	40	30,863	21.43	12,345	8.57	25.72	1,200	0.83	1,920	1.33	3.33	0.033	0.014
107 [8]	DC - COLO	16	213,333	32	43	32,920	22.86	13,168	9.14	27.43	1,280	0.89	2,048	1.42	3.56	0.035	0.015
108 [8]	DC - ENT	17	226,667	34	45	34,978	24.29	13,991	9.72	29.15	1,360	0.94	2,176	1.51	3.78	0.037	0.016
109 [8]	DC - COLO	27	360,000	54	72	55,553	38.58	22,221	15.43	46.29	2,160	1.50	3,456	2.40	6.00	0.059	0.026
400	DC - ENT	56	746,667	112	149	460,880	320.06	184,352	128.02	384.07	4,480	3.11	7,168	4.98	12.44	0.468	0.192
401	DC - HS	95	1,346,667	190	269	498,738	346.35	199,495	138.54	415.62	8,080	5.61	12,928	8.98	22.44	0.512	0.212
						1,113,931	**774**	**445,572**	**309**	**928**	**18,560**	**13**	**29,696**	**21**	**52**	**1.14**	**0.48**
100	DC - ENT	29	386,667	58	77	238,670	165.74	95,468	66.30	198.89	2,320	1.61	3,712	2.58	6.44	0.24	0.10
101	DC - ENT	22	293,333	44	59	181,060	125.74	72,424	50.29	150.88	1,760	1.22	2,816	1.96	4.89	0.18	0.08
102	DC - ENT	26	360,000	54	72	222,210	154.31	88,884	61.73	185.18	2,160	1.50	3,456	2.40	6.00	0.23	0.09
103	DC - ENT	9	213,333	32	43	131,680	91.44	52,672	36.58	109.73	1,280	0.89	2,048	1.42	3.56	0.13	0.05
104	DC - COLO	24	200,000	30	40	123,450	85.73	49,380	34.29	102.88	1,200	0.83	1,920	1.33	3.33	0.13	0.05
105	DC - COLO	17	213,333	32	43	131,680	91.44	52,672	36.58	109.73	1,280	0.89	2,048	1.42	3.56	0.13	0.05
112 A-D	Substation	47	NA	NA	0	N/A	N/A	N/A	N/A	N/A	0	0.00	0	0.00	0.00	0.00	0.00
						1,028,750	**714**	**411,500**	**286**	**857**	**10,000**	**7**	**16,000**	**11**	**28**	**1.04**	**0.43**
301	DC - HS	87	1,173,333	176	235	724,240	502.94	289,696	201.18	603.53	7,040	4.89	11,264	7.82	19.56	0.74	0.30
302	DC - COLO	55	706,667	106	141	436,190	302.91	174,476	121.16	363.49	4,240	2.94	6,784	4.71	11.78	0.44	0.18
303	DC - COLO	54	680,000	102	136	419,730	291.48	167,892	116.59	349.78	4,080	2.83	6,528	4.53	11.33	0.43	0.17
304	DC - ENT	36	480,000	72	96	296,280	205.75	118,512	82.30	246.90	2,880	2.00	4,608	3.20	8.00	0.30	0.12
						1,876,440	**1,303**	**750,576**	**521**	**1,564**	**18,240**	**13**	**29,184**	**20**	**51**	**1.91**	**0.78**
200	NW Center	5	10,000	2	8	N/A	N/A	N/A	N/A	N/A	240	0.17	384	0.27	0.67	0.00	0.00
201	DC - HS	53	706,667	106	141	436,190	302.91	174,476	121.16	363.49	4,240	2.94	6,784	4.71	11.78	0.44	0.18
202	DC - COLO	26	346,667	52	69	213,980	148.60	85,592	59.44	178.32	2,080	1.44	3,328	2.31	5.78	0.22	0.09
203	DC - ENT	36	346,667	52	69	213,980	148.60	85,592	59.44	178.32	2,080	1.44	3,328	2.31	5.78	0.22	0.09
204	DC - HS	44	586,667	88	117	362,120	251.47	144,848	100.59	301.77	3,520	2.44	5,632	3.91	9.78	0.37	0.15
						1,226,270	**852**	**490,508**	**341**	**1,022**	**12,160**	**8**	**19,456**	**14**	**34**	**1.25**	**0.51**
110	Office	21	180,228	2	601	N/A	N/A	N/A	N/A	N/A	36,046	25.03	57,673	40.05	100.13	0.06	0.06
111	Office	13	110,221	1	367	N/A	N/A	N/A	N/A	N/A	22,044	15.31	35,271	24.49	61.23	0.04	0.04
114	CMkt/Gas	6	7,500	1	8	N/A	N/A	N/A	N/A	N/A	1,350	0.94	2,160	1.50	3.75	0.00	0.00
115	NW Center	6	10,000	2	8	N/A	N/A	N/A	N/A	N/A	240	0.17	384	0.27	0.67	0.00	0.00
						0	**0**	**0**	**0**	**0**	**59,680**	**41**	**95,488**	**66**	**166**	**0.10**	**0.10**
						5,245,391	**3,643**	**2,098,156**	**1,457**	**4,371**	**118,640**	**94**	**189,824**	**132**	**330**	**5.44**	**2.29**
									MGD:	6.29	0.119		189,824		0.47	3.81	
402/403	Ag Lots	0	0	0	0	N/A	N/A	N/A	N/A	N/A	0	0.00	0	0.00	0.00	0.00	0.00

Assumptions/Notes:

1. Cooling water demand estimates were provided by the planning team
2. Cooling water blowdown (wastewater) flow is 40% of cooling water demand
3. The peak factor (PF) for cooling water blowdown (wastewater) is 3
4. Domestic water demands and wastewater flows are equivalent
5. Domestic average daily demands (ADD) & wastewater flows were estimated based on the following flow factors
   Service Stations (Gas): 0.18 GPD / SF of Building Area per Frederick County Design Manual
   Office Spaces: 0.2 GPD / SF of Building Area or 30 GPD / occupant (whichever is greater) per Frederick County Design Manua
   Data Centers: 30 GPD / Occupant
6. Domestic maximum daily demands (MDD) & wastewater flows are 1.6 x ADD
7. The peak factor (PF) for domestic wastewater flow is 4.0 x ADD per MDE guidelines.
8. Lots 106-109 are being developeed as a single entity; cooling water demands for each lot assumed to equal 25% of full buildout for that individual lot

Table 6-1A

Quantum Frederick

Trip Generation (Vehicle Trips) [1] Phase I

Land Use	Size	Units	AM Peak Hour			PM Peak Hour			Weekday ADT	SAT Peak Hour [5]			Saturday ADT
			In	Out	Total	In	Out	Total		In	Out	Total	
Proposed Program Phase I													
Data Center [2]	3,966,667	S.F.	243	193	436	107	248	355	3,925	114	83	196	1,963
Commercial Use [3]	16	VFP	225	224	449	184	183	367	3,688	186	186	372	4,667
Office Use [4]	290,449	S.F.	290	47	337	53	281	334	2,829	83	71	154	642
Total Proposed	4,264,615	S.F.	758	464	1,222	344	712	1,056	10,442	383	340	722	7,272
Overall Total	4,264,615	S.F.	758	464	1,222	344	712	1,056	10,442	383	340	722	7,272

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition.
2. ITE Land Use, Data Center (160), was used to determine vehicle trips for data center.
3. ITE Land Use, Super Convenience Market/Gas Station (960), was used to determine vehicle trips for commercial use.
4. ITE Land Use, General Office Building (710), was used to determine vehicle trips for office use.
5. Since Saturday data center trip generation rates are not available from ITE, it was assumed that Saturday daily trips were 50% of the weekday trips. Saturday midday peak hour trips were calculated based on ITE midday diurnal rates for office (10%).

Table 6-1B

Quantum Frederick

Trip Generation (Vehicle Trips) [1] Phase II

Land Use	Size	Units	AM Peak Hour			PM Peak Hour			Weekday ADT	SAT Peak Hour [3]			Saturday ADT
			In	Out	Total	In	Out	Total		In	Out	Total	
Proposed Program Phase II													
Data Center [2]	9,490,000	S.F.	574	471	1,045	256	599	855	9,396	258	212	470	4,698
Total Proposed	9,490,000	S.F.	574	471	1,045	256	599	855	9,396	258	212	470	4,698
Overall Total	13,754,615	S.F.	1,332	935	2,267	600	1,311	1,911	19,838	641	553	1,192	11,970

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition.
2. ITE Land Use, Data Center (160), was used to determine vehicle trips for data center.
3. Since Saturday data center trip generation rates are not available from ITE, it was assumed that Saturday daily trips were 50% of the weekday trips. Saturday midday peak hour trips were calculated based on ITE midday diurnal rates for office (10%).

Table 6-1C

Quantum Frederick

Trip Generation (Vehicle Trips) [1] Phase III

Land Use	Size	Units	AM Peak Hour			PM Peak Hour			Weekday ADT	SAT Peak Hour [4]			Saturday ADT
			In	Out	Total	In	Out	Total		In	Out	Total	
Proposed Program Phase III													
Data Center [2]	3,946,667	S.F.	238	196	434	105	250	355	3,907	108	87	195	1,954
Office Use [3]	531,432	S.F.	530	86	616	98	513	611	5,176	152	129	281	1,175
Total Proposed	4,478,099	S.F.	768	282	1,050	203	763	966	9,083	260	216	476	3,129
Overall Total	18,232,714	S.F.	2,100	1,217	3,317	803	2,074	2,877	28,921	901	769	1,668	15,098

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition.
2. ITE Land Use, Data Center (160), was used to determine vehicle trips for data center.
3. ITE Land Use, General Office Building (710), was used to determine vehicle trips for office use.
4. Since Saturday data center trip generation rates are not available from ITE, it was assumed that Saturday daily trips were 50% of the weekday trips. Saturday midday peak hour trips were calculated based on ITE midday diurnal rates for office (10%).

ATTACHMENT 2 ACCESS REVIEW AND TRIP SCORECARD SUMMARY

WELLS + ASSOCIATES

MEMORANDUM

1420 Spring Hill Road,
Suite 610,
Tysons, VA 22102
703-917-6620
WellsandAssociates.com

TO: Dylan Gardner
Xiomara Gerlach
Rowan Digital Infrastructure

FROM: Jim Watson, AICP, PTP
Nathaniel Selden, EIT
Wells + Associates, Inc.

RE: Proposed Bauxite Data Center Project
Frederick County, Maryland

Subject: Trip Scorecard Summary – Lots 400 and 401

DATE: October 1, 2023

INTRODUCTION

This memorandum summarizes a trip scorecard summary for Rowan's proposed Bauxite Data Center at Frederick. The purpose of the analysis is to determine if there is sufficient trip availability under Phase I of its current Adequate Public Facilities approvals to permit the new development of Lots 400 and 401 property with a total 772,362 S.F. of data center space. Previous Quantum Frederick trip generation analyses accounted for Phase I of Lots 106-109 with 450,000 S.F. of data center space.

Pursuant to regulatory approvals and Adequate Public Facilities Ordinance (APFO) Letter of Understanding (LOU) with Frederick County, as approved in December 2021 and amended February 2023, the Quantum Frederick development is considered one project for the purposes of determining the adequacy of roads and other facilities. The overall Quantum Frederick development is located on the east side of Ballenger Creek Pike and north of Mountville Road in Frederick County, Maryland, as shown on Exhibit 1. Specifically, Lots 400 and 401 occupy the southwestern most portion of the site, bordering the north side of Mountville Road and the east side of Ballenger Creek Pike.

For the purposes of determining availability of trips for ongoing development activities, the LOU establishes the trip capacity available at any given time through a "trip scorecard", which sets forth the number of AM and PM peak hour trips created by infrastructure improvements made by the developer, less the number of trips used by the developer for existing and planned development activities.

The purpose of this document is to identify the current trip capacity of the combined Quantum Frederick development for comparison against the thresholds established in the LOU to determine if an adequate number of trips are available under Phase I of the development of

772,362 S.F. of data center uses on Lots 400 and 401. This is the second development considered within the overall project. As approved in May 2023, Phase I of Quantum Lot 106 also contributed to the scorecard, generating 50 AM peak hour trips and 41 PM peak hour trips.

PHASE I TRIP THRESHOLD

The December 2021 LOU, amended in February 2023, established a vehicle trip threshold for Phase I of the combined properties as outlined in Table 1 (and referenced in Exhibit 4 of the LOU) and the associated road network improvements based on the anticipated development program. The LOU allows vehicle trips to be transferred among the various properties in order to respond to market conditions.

The LOU sets forth a phasing scheme that allocates new roadway capacity to the overall Quantum Frederick development as the infrastructure requirements listed in each phase are completed. As summarized in Table 1, Phase I permits up to **143 AM peak hour trips and 125 PM peak hour trips** (combined inbound and outbound) to be generated by development that occurs within the combined Quantum Frederick development.

TRIP SCORECARD ANALYSIS

The number of vehicle trips expected to be generated by planned development within the Quantum Frederick property was calculated using standard rates and equations in the Trip Generation Manual published by the Institute of Transportation Engineers (ITE) and consistent with the methodology required by Frederick County. Note that since trip thresholds were established through previous studies, the applicable edition of the trip generation data was applied where appropriate.

The number of peak hour trips expected to be generated by Lots 400 and 401 was estimated based on the development program outlined previously. The analysis is consistent with those utilized in previously approved studies. Based on ITE 10th Edition rates, 772,362 S.F. of data center uses would generate 86 AM peak hour trips and 69 PM peak hour trips. Previously approved development generates 50 AM peak hour trips and 41 PM peak hour trips.

As summarized on Table 1, the development program for the proposed uses, including the previously approved project plus the proposed Bauxite project, is estimated to generate a total of 136 AM peak hour trips and 110 PM peak hour trips. Thus, there is a surplus of 7 AM peak hour trips and 15 PM peak hour trips when compared to the Phase I trip threshold, subsequent to the development of Quantum Lots 400 and 401.

Therefore, the proposed uses can be adequately accommodated within the currently approved trip threshold without any additional road improvements being necessary.

Questions regarding this document should be directed to Wells + Associates.

O:\Projects\8501-9000\8530D Quantum Lots 400-401\Documents\Quantum Frederick Trip Scorecard Summary 10.01.2023.docx

Table 1
Lots 400 and 401
Trip Generation (Vehicle Trips) [1] Scorecard Phase I

Land Use		ITE Land Use Code	Size	Units	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Lots 106-109 Phase I										
Data Center	Data Center	160	450,000	S.F.	28	22	50	12	29	41
Lots 400 and 401										
Building A	Data Center	160	215,724	S.F.	13	11	24	6	13	19
Building B	Data Center	160	119,190	S.F.	7	6	13	3	8	11
Building C	Data Center	160	215,724	S.F.	13	11	24	6	13	19
Building D	Data Center	160	215,724	S.F.	13	11	24	6	13	19
Ancillary Uses	Data Center	160	6,000	S.F.	1	-	1	-	1	1
	Total New Development		772,362	S.F.	47	39	86	21	48	69
				Total All Developments	**75**	**61**	**136**	**33**	**77**	**110**
				Phase I Threshold[2]			**143**			**125**
				Remaining Phase I Trips			**7**			**15**

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition for consistency with approved LOU.
2. Phase I Threshold based on Approved Quantum Frederick APFO LOU.

WELLS + ASSOCIATES

MEMORANDUM

1420 Spring Hill Road,
Suite 610,
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703-917-6620
WellsandAssociates.com

TO: Dylan Gardner
Xiomara Gerlach
Rowan Digital Infrastructure

FROM: Jim Watson, AICP, PTP
Nathaniel Selden, EIT
Wells + Associates, Inc.

RE: Proposed Bauxite Data Center Project
Frederick County, Maryland

Subject: Access Review – Lots 400 and 401

DATE: October 1, 2023

INTRODUCTION

This memorandum presents a technical analysis of access to Rowan's proposed Bauxite Data Center, located in Frederick County, Maryland. Specifically, this memorandum examines the access requirements for the site to determine the need for deceleration, acceleration, left turn, and/or bypass lanes at the primary Lots 400 and 401 access points. The development is proposed as approximately 772,362 S.F. of data center in four buildings. As shown on Figure 1, the site is located on the southwestern portion of the overall Quantum Frederick site, bordering the north side of Mountville Road and the east side of Ballenger Creek Pike.

One primary access point is proposed to be constructed to serve the traffic to/from the site on Ballenger Creek Pike. Maryland State Highway Administration (SHA) guidelines for site access management were consulted to ensure the access points meet SHA requirements. Figure 2 shows the location and spacing of the access point in relation to nearby intersections. It should be noted that two (2) additional access points (one from Ballenger Creek Pike and one from Mountville Road) are expected to be gated and in use for emergency purposes only and are thus not included in this assessment since day-to-day traffic is not expected to use the additional access points.

TRAFFIC FORECASTS

Trips were generated for the proposed development plan using Institute of Transportation Engineers (ITE) Trip Generation 11th Edition rates. As shown on Table 1, the Lots 400 and 401 development is anticipated to generate 86 AM peak hour trips (47 inbound and 39 outbound) and 69 PM peak hour trips (21 inbound and 48 outbound). Base traffic forecasts pulled from the approved 2021 Transportation Impact Analysis.

SHA STANDARDS

SHA provides standards guiding access management in its Access Manual. Specifically, Sections 4.3, 4.4, and 4.5 of the Access Manual examine the requirements and standards for deceleration lanes, acceleration lanes, and left turn and bypass lanes, respectively. Generally, SHA's requirements for deceleration, acceleration, left turn, and bypass lanes are dictated by the following:

- Type of access (Controlled or Uncontrolled)
- Type of highway (Primary or Secondary)
- Type of property (Commercial or Residential)
- Type of Area (Rural or Developed)
- Speed limit
- Peak hour turning volume
- Traffic volume on highway (for left turn and bypass lanes only)

Further, Section 1.4 of SHA's Access Manual requires commercial entrances to maintain a minimum corner distance of 100 feet from adjacent intersections and interchanges.

LOTS 400 AND 401 ACCESS REQUIREMENTS

Ballenger Creek Pike is a Frederick County roadway classified as a Minor Arterial adjacent to the site. The proposed primary access point is anticipated to be a stop-controlled commercial entrance and the surrounding area is generally rural. The requirements are summarized on Figure 2 and the Attachments and show the following as necessary per SHA Access Manual standards:

- 250-foot Partial Deceleration Lane
  - 150-foot approach lane
  - 100-foot taper
- Approximate distance from nearby roadways:
  - 2,915 feet from Cap Stine Road
  - 485 feet from Mountville Road

While SHA standards for acceleration lanes and left turn or bypass lanes are not met with this access location, the following additional improvements at the primary access point are planned to be implemented per discussions with Frederick County staff:

- 250-foot Partial Acceleration Lane
  - 100-foot departure lane
  - 150-foot taper
- 250-foot Partial Deceleration Left Turn Lane
  - 150-foot approach lane
  - 100-foot taper

Improvement are not required for the secondary access points since they are expected to be gated and not used on a day-to-day basis.

CONCLUSIONS

The planned primary access point provides enough clearance from other intersections to accommodate the partial deceleration lane as outlined in SHA's Access Management requirements.

Questions regarding this document should be directed to Wells + Associates.

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MEMORANDUM

Table 1
Lots 400 and 401
Trip Generation (Vehicle Trips) [1]

Land Use		ITE Land Use Code	Size	Units	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Lots 400 and 401										
Building A	Data Center	160	215,724	S.F.	13	11	24	6	13	19
Building B	Data Center	160	119,190	S.F.	7	6	13	3	8	11
Building C	Data Center	160	215,724	S.F.	13	11	24	6	13	19
Building D	Data Center	160	215,724	S.F.	13	11	24	6	13	19
Ancillary Uses	Data Center	160	6,000	S.F.	1	-	1	-	1	1
	Total New Development		**772,362**	**S.F.**	**47**	**39**	**86**	**21**	**48**	**69**

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition for consistency with approved LOU.

O:\PROJECTS\8501-9000\8530D QUANTUM LOTS 400-401\GRAPHICS\LOTS 400 AND 401 SITE PLAN.DWG

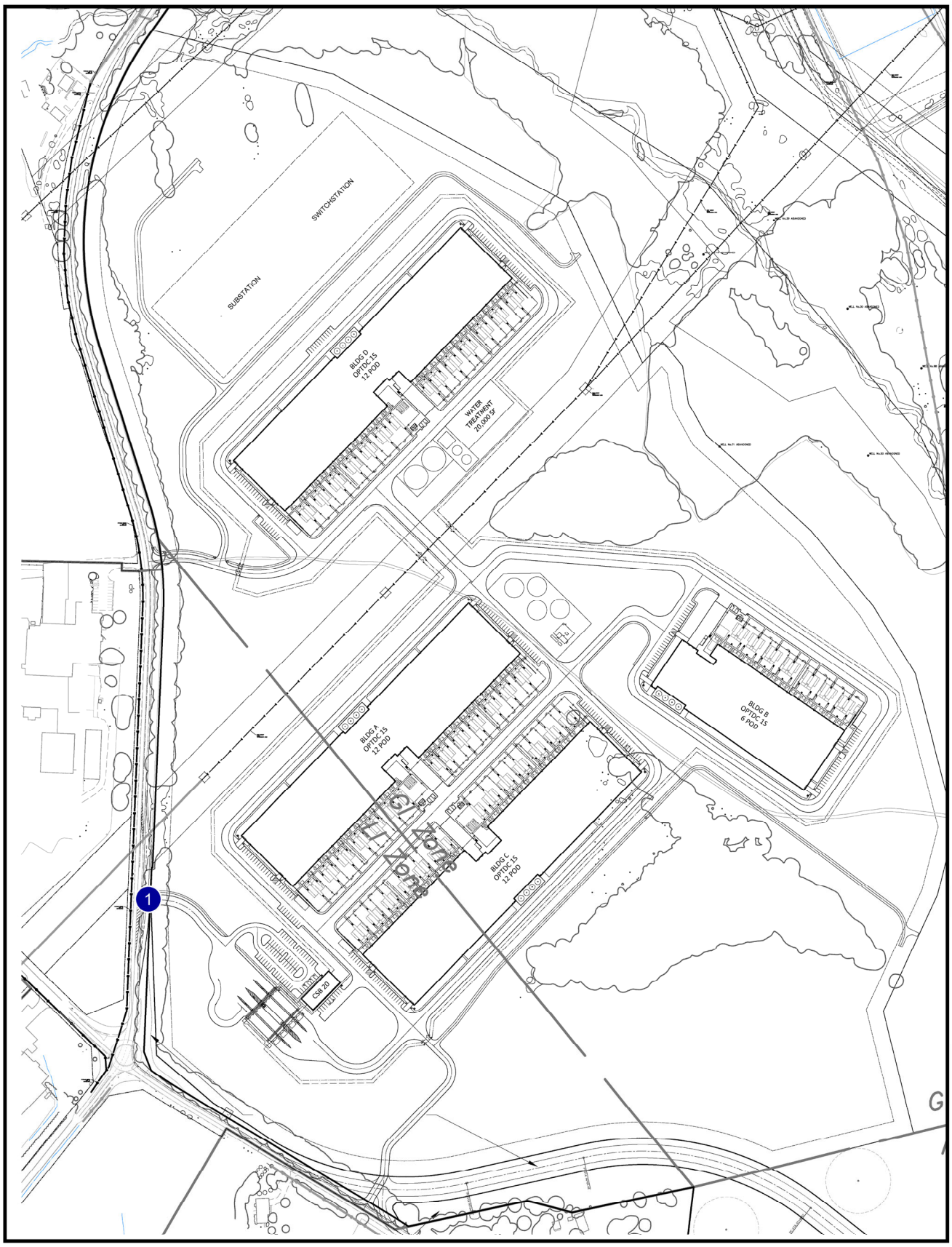


Figure 1
Site Location
Site plan provided by Rogers Consulting

X Study Intersection

NORTH

Lots 400 and 401
Frederick County, Maryland

O:\PROJECTS\8501-9000\8530D QUANTUM LOTS 400-401\GRAPHICS\LOTS 400 AND 401 SITE PLAN.2.DWG

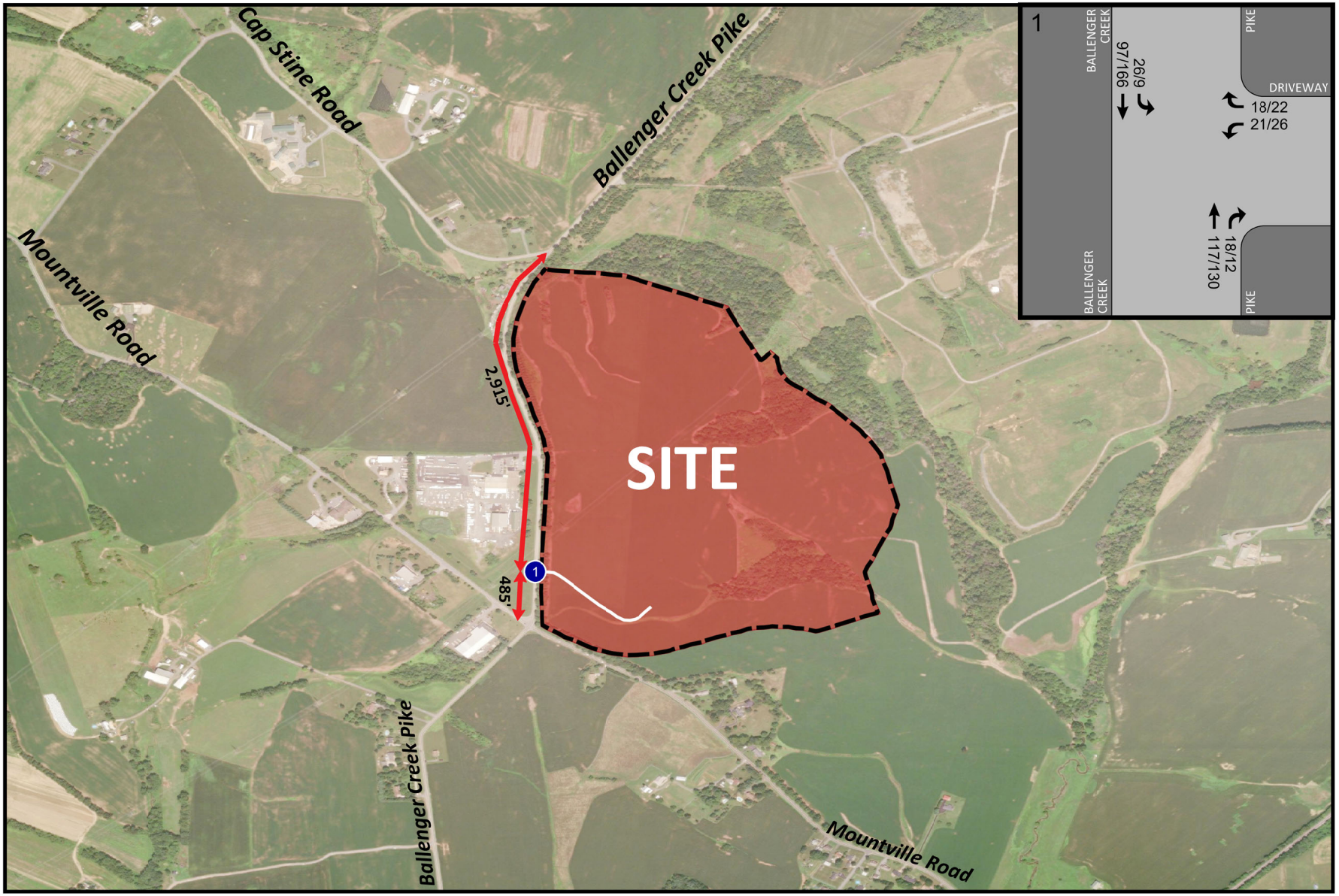
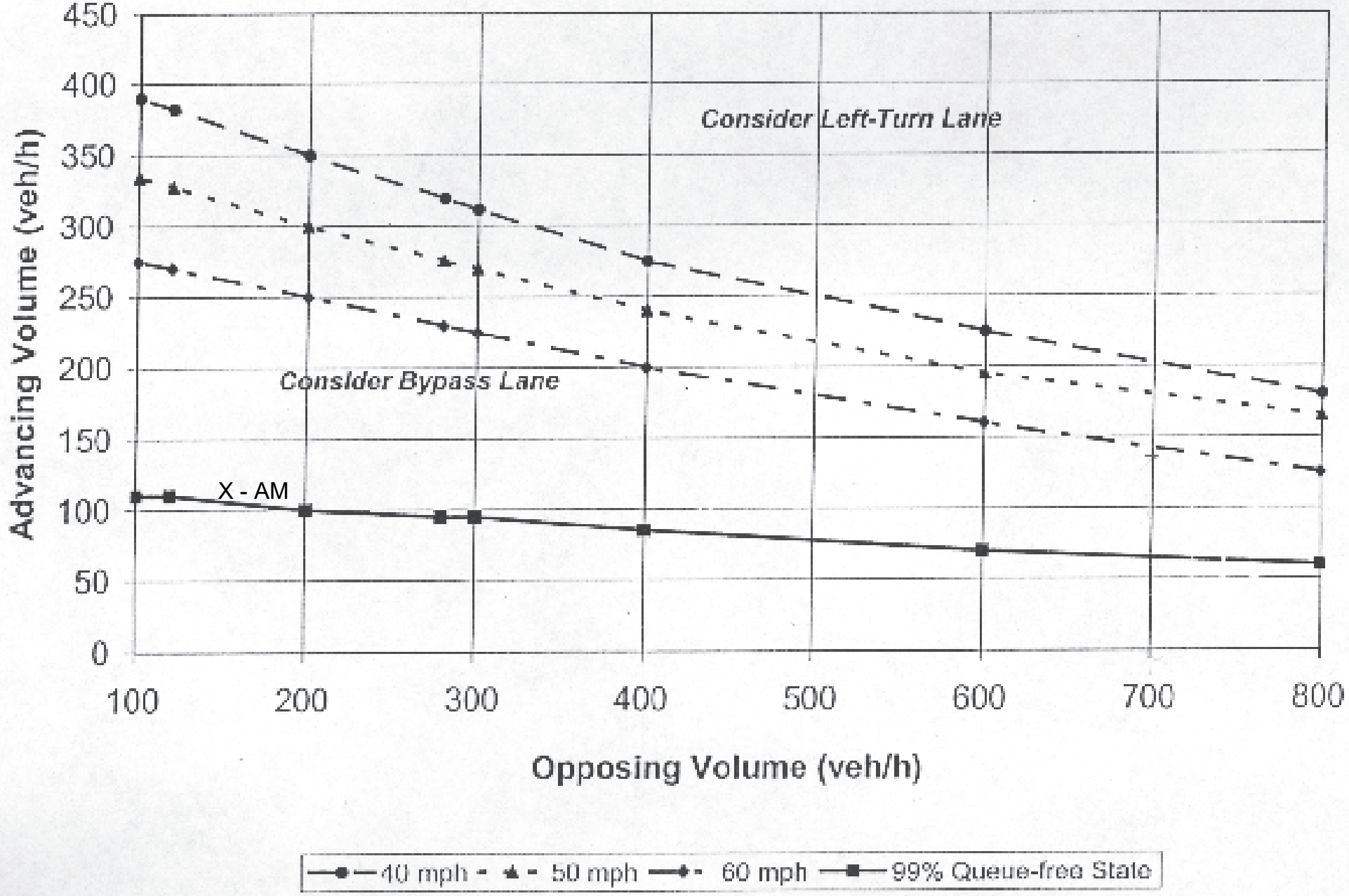


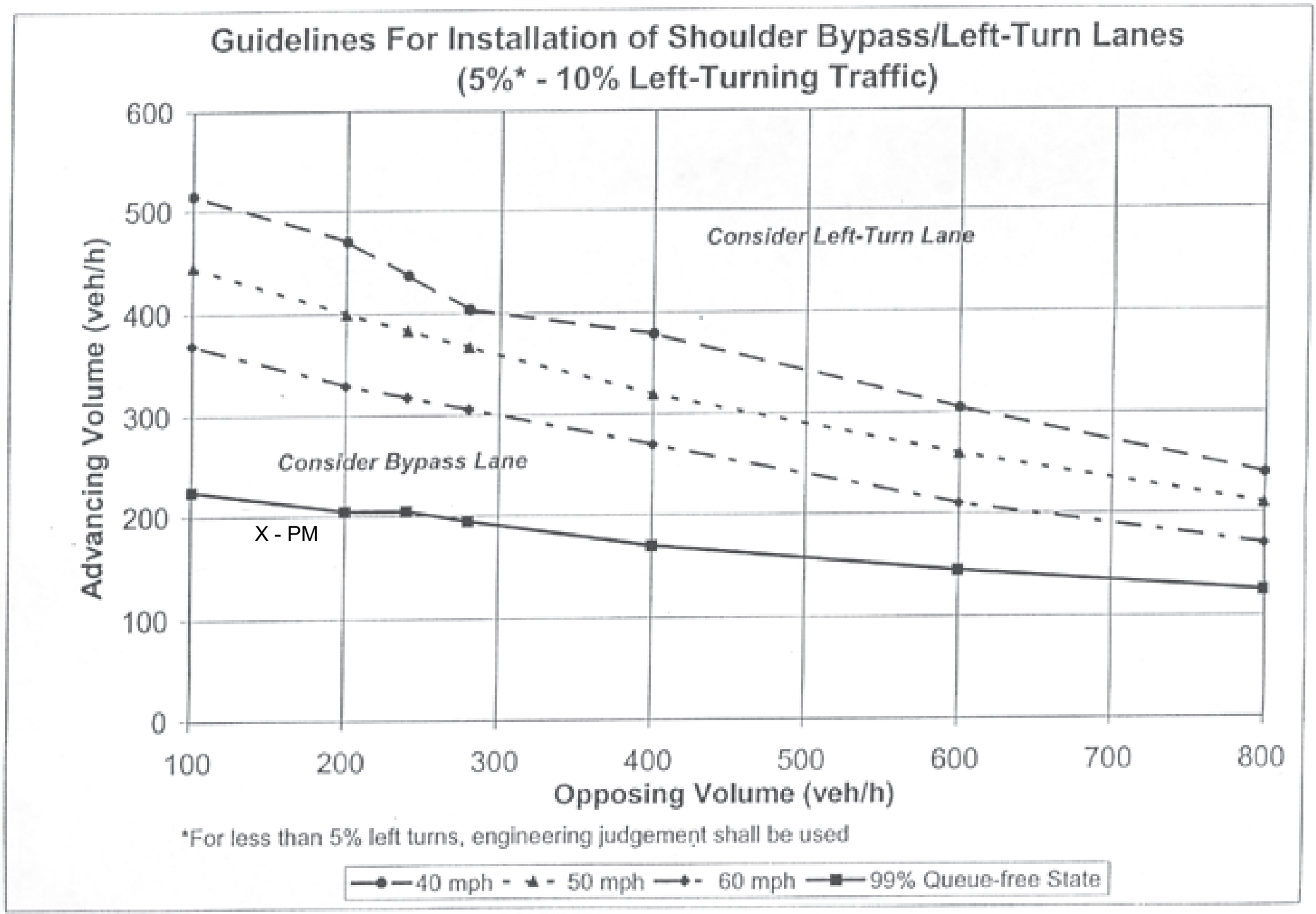
Figure 2
Roadway Conditions

Study Intersection
Distance to Adjacent Intersection
AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH
Lots 400 and 401
Frederick County, Maryland

Guidelines For Installation of Shoulder Bypass/Left-Turn Lanes
(10% - 20% Left-Turning Traffic)




Guidelines For Installation of Shoulder Bypass/Left-Turn Lanes
(5%* - 10% Left-Turning Traffic)
Advancing Volume (veh/h)
600
500
400
300
200
100
0
Consider Left-Turn Lane
Consider Bypass Lane
X - PM
100
200
300
400
500
600
700
800
Opposing Volume (veh/h)
*For less than 5% left turns, engineering judgement shall be used
40 mph
50 mph
60 mph
99% Queue-free State

ATTACHMENT 3 CULTURAL RESOURCES DESKTOP ASSESSMENT

ERM

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Memorandum

To	Tara M. Taflambas, Senior Manager, Development – Rowan Digital Infrastructure, LLC
From	Danna Allen, Principal Consultant Christopher Wu, Partner
Date	4 April 2023
Reference	Bauxite Lot 401
Subject	Cultural Resources Desktop Assessment

INTRODUCTION

On March 10, 2023, ERM conducted a desktop review of cultural resources using MEDUSA, Maryland's Online Cultural Resource Information maintained by the Maryland Historical Trust (SHPO). The review encompassed the approximate Project Site Boundary plus a one-mile buffer (Project Boundary; Figure 1). ERM conducted the database search to determine the number, nature, and location of known archaeological and architectural sites within that area.

ARCHAEOLOGICAL RESOURCES

According to MEDUSA[1], no cultural resource surveys have been conducted within the Project Boundary and two cultural resource surveys have been conducted within the one-mile buffer (Table 1). There are no previously identified archaeological sites within the Project Boundary or the one-mile buffer. MEDUSA provides the number and location of archaeological surveys but not the actual reports; however, given that there are no previously identified sites within the one-mile buffer, it is expected that the surveys listed in Table 1 did not identify archaeological sites. Due to the lack of surveys conducted within the Project Boundary, it is possible that unrecorded archaeological sites could be present. Therefore, agency consultations and field surveys could be required to satisfy review in accordance with the provisions of Section 106 of the National Historic Preservation Act (NHPA), as amended, if the project requires one or more federal permits (such as a Section 404 permit under the Clean Water Act, requiring U.S. Army Corps of Engineers [USACE] involvement), or is subject to another federal nexus.

Table 1: Previous Cultural Resources Surveys within the One-Mile Buffer

Survey #	Report Title	Date
FR 28D	Phase I Archaeological Resources of the Monocacy River Region, Frederick and Carroll Counties, Maryland	1982
FR 218	Phase I Archaeological Survey for a Proposed Water Supply and Process Waste Water Discharge Line Point of Rocks Frederick County, Maryland	2006

[1] Maryland Historical Trust. 2023. MEDUSA (Maryland's Cultural Resource Information System). https://mht.maryland.gov/secure/medusa/#.

CEMETERIES

There are no known cemeteries recorded within the Project Boundary or the one-mile buffer.[2] Although there are no cemeteries recorded within the Project Site Boundary, unmarked rural cemeteries and graves do occur in Maryland. Maryland State Law §10-400[3], "provides protection against disturbance of burial sites and human remains and provides a basis for access. Should human remains be discovered accidentally, the law requires notification of your county States Attorney."

ARCHITECTURAL RESOURCES

According to 36 CFR 60.4[4]cultural resources eligible for listing on the NRHP are defined as buildings, structures, objects, sites, and districts that have "integrity," and that meet one or more of the criteria outlined below. Criterion D is typically relevant to archaeological sites. Criteria A and B pertain to historic resources but may be relevant in the case of historic-period archaeological sites. Criterion C is typically applicable to architectural and engineering resources, but also may be relevant in the case of archaeological resources that are associated with landscape architecture (like cemeteries) or that have engineering elements (like railroads or mines).

- Criterion A (Event)
- Criterion B (Person)
- Criterion C (Design/Construction)
- Criterion D (Information Potential)

"Integrity" is perhaps the paramount qualification of NRHP eligibility, and can be related to any or all of the following (Andrus and Shrimpton 2002):

- Location: the place where the historic property (or properties) was/were constructed or where the historic event(s) occurred;
- Design: the combination of elements that create the form, plan, space, structure, and style of a property (or properties);
- Setting: the physical environment of the historic property (or properties);
- Materials: the physical elements that were combined to create the property (or properties) during the associated period of significance;
- Workmanship: the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
- Feeling: the property's (or properties') expression of the aesthetic or historic sense of the period of significance; and
- Association: the direct link between the important historic event(s) or person(s) and the historic property (or properties).

There are no recorded architectural resources within the Project Boundary; however, there are 27 recorded architectural resources within the one-mile buffer (Table 2; Figure 1). Of these resources, nine are farmsteads, three are historic districts, ten are single dwellings, two are churches, one is a bank, one is a school, and one is a bridge[5]. In regards to National Register eligibility, one is listed (Carrollton Manor, F-1-

[2] Find a Grave. 2023. Find a Grave. https://www.findagrave.com/

[3] Annotated Code of Maryland. 2018. Criminal Law Title 10. Crimes Against Public Health, Conduct, and Sensibilities Subtitle 4. Crimes Relating to Human Remains. https://mht.maryland.gov/documents/PDF/research/Burial_Law.pdf.

[4] Andrus, Patrick W. (and edited by Rebecca H. Shrimpton). 2002. How to Apply the National Register Criteria for Evaluation. National Register Bulletin 15, U.S. Department of the Interior, National Park Service, Washington D.C. Located online at: http://www.cr.nps.gov/nr/publications/bulletins/nrb15/.

19), three are eligible (Carrollton Manor Rural Historic District, F-1-134; Dutrow-Thomas Farmstead, F-1-175; and Noffsinger Farm, F-1-221), five have been recommended eligible, eight are ineligible, nine have not been evaluated, and one has been demolished. Carrollton Manor (F-1-19) is an early 19th century farmstead that was listed on the National Register in 1997 (NRHP Listing #97001294) and is located approximately 0.5-miles east of the Project Boundary. Due to the presence of NRHP and eligible resources within the one-mile buffer of the Project Boundary, ERM suggests conducting a desktop visual assessment to alleviate possible concerns regarding visual impacts.

Based on ERM's review of historic aerials and USGS topographic maps, there are no unrecorded architectural resources within the Project Boundary that are 50 years or older.[6]

Table 2: Architectural Resources within the One-Mile Buffer

Inventory #	Name	Date	Type	NRHP Eligibility Status
F-1-02	Ballenger Creek Pike Bridge	1954	Bridge	Not Eligible
F-1-13	Adamstown Public School	19th century	School	Unevaluated
F-1-14	Green Manor	1864	Single Dwelling	Unevaluated
F-1-15	George T. Kohlenberg House	1871	Single Dwelling	Unevaluated
F-1-16	J.S. Page House	19th century	Single Dwelling	Unevaluated
F-1-18	St. Joseph's Church on Carrollton Manor	19th century	Church	Recommended Eligible by Surveyor
F-1-19	Carrollton Manor	1820	Farmstead	Listed
F-1-36	St. Luke's Protestant Episcopal Church	1882	Church	Unevaluated
F-1-97	Adamstown Bank	20th century	Bank	Unevaluated
F-1-104	Raymond Davis House	19th century	Single Dwelling	Unevaluated
F-1-125	Adamstown Log House	19th century	Single Dwelling	Demolished

[6] NETR Online. 2023. Historic Aerials https://www.historicaerials.com/

Inventory #	Name	Date	Type	NRHP Eligibility Status
F-1-134	Carrollton Manor Rural Historic District	19th-20th century	Historic District	Eligible
F-1-175	Dutrow-Thomas Farmstead	c.1835	Farmstead	Eligible
F-1-182	Doubs Survey District	19th century	Historic District	Recommended Eligible by Surveyor
F-1-184	William H. Renn Farmstead	c.1897	Farmstead	Recommended Eligible by Surveyor
F-1-185	Adamstown Survey District	19th century	Historic District	Recommended Eligible by Surveyor
F-1-190	J. Franklin Thomas Farmstead	19th century	Farmstead	Not Eligible
F-1-202	Hebb-Kline Farmstead	c.1855	Farmstead	Recommended Eligible by Surveyor
F-1-218	Geisinger Farm	20th century	Farmstead	Not Eligible
F-1-219	Howard Stup Farm	19th century	Farmstead	Not Eligible
F-1-220	Marrietta Stup House	19th century	Single Dwelling	Not Eligible
F-1-221	Noffsinger Farm	19th century	Farmstead	Eligible
F-1-222	S. Dutrow Farm	c.1950	Farmstead	Not Eligible
F-1-223	Ris House	20th century	Single Dwelling	Not Eligible
F-1-224	Protos House	20th century	Single Dwelling	Not Eligible
F-1-226	Remines House	Unknown	Single Dwelling	Unevaluated
F-1-228	Shankle House	Unknown	Single Dwelling	Unevaluated

CONCLUSIONS

In summary, the Project Boundary has not been surveyed for cultural resources. There are no recorded archaeological sites or cemeteries within the Project Boundary or the one-mile buffer. There are no previously recorded architectural resources located within the Project Boundary; however, there are 27 architectural resources within the one-mile buffer. Carrollton Manor is listed on the National Register and is

located approximately 0.5-miles east of the Project Boundary. Due to the presence of NRHP and eligible resources within the one-mile buffer of the Project Boundary, ERM suggests conducting a desktop visual assessment to alleviate possible concerns regarding visual impacts.

Because the project has not been subject to archaeological survey, and there is currently no federal nexus that requires survey, ERM suggests that an unanticipated discovery plan (UDP) be put in place prior to any ground disturbing activities associated with construction. The UDP would inform personnel on site how to proceed should they encounter archaeological materials or human remains. Furthermore, a component of the UDP would be to train personnel on identifying cultural material while on site.

This review is for planning purposes, and no cultural resources field investigations were conducted. Such investigations may be warranted to satisfy Section 106 of the National Historic Preservation Act if federal permits are required.

ERM

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Figure 1

DRAWN BY: GIS Team

CONFIDENTIAL

F-1-221
F-1-190
F-1-219
FR 28D
F-1-220
F-1-218
F01-02
F-1-18
F-1-228
FR 218
F-1-19
F-1-175
FR 218
F-1-134
FR 218
FR 218
F-1-222
F-1-184
F-1-202
F-1-15
F-1-125
F-1-16
F-1-97
F-1-36
F-1-185
F-1-14
F-1-13
F-1-226
F-1-182
F-1-223
F-1-224
F-1-104

Project Boundary
1 Mile Buffer
Previous Survey
National Register Architectural Resource
Architectural Resource

Source: Medusa 2023

N

1:18,000

0 1,000 2,000
Feet

Source: Esri - World Topographic Map; NAD 1983 StatePlane Maryland FIPS 1900 Feet

Figure 1
Cultural Map
Bauxite Lot 401
Rowan Digital Infrastructure, LLC
Frederick County, Maryland

ERM

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Memorandum

To	Tara M. Taflambas, Senior Manager, Development – Rowan Digital Infrastructure, LLC, Rowan Green Data, LLC
From	Christopher Wu, Partner Emily Laird, RPA
Date	13 September 2022
Reference	Bauxite Data Center
Subject	Cultural Resources Desktop Assessment

INTRODUCTION

On August 5, 2022, ERM conducted a desktop review of cultural resources using MEDUSA, Maryland's Online Cultural Resource Information maintained by the Maryland Historical Trust (SHPO). The review encompassed the approximate Project Site Boundary plus a one-mile buffer (Project Boundary; Figure 1). ERM conducted the database search to determine the number, nature, and location of known archaeological and architectural sites within that area.

ARCHAEOLOGICAL RESOURCES

According to MEDUSA[1], one cultural resource survey has been conducted with the Project Boundary and one cultural resource survey has been conducted within the one-mile buffer. The survey within the Project Boundary (FR 218) did not identify any cultural resources. There are no previously identified archaeological sites within the Project Boundary or the one-mile buffer. Due to the lack of surveys conducted within the Project Boundary, it is possible that unrecorded archaeological sites could be present. Therefore, agency consultations and field surveys could be required to satisfy Section 106 of the NHPA if federal permits are required.

Table 1: Previous Cultural Resources Surveys within the Project Boundary and One-Mile Buffer

Survey #	Report Title	Date	Within Project Boundary?
FR 28D	Phase I Archaeological Resources of the Monocacy River Region, Frederick and Carroll Counties, Maryland	1982	No
FR 218	Phase I Archaeological Survey for a Proposed Water Supply and Process Waste Water Discharge Line Point of Rocks Frederick County, Maryland	2006	Yes

[1] Maryland Historical Trust. 2022. MEDUSA (Maryland's Cultural Resource Information System). https://mht.maryland.gov/secure/medusa/#.

CEMETERIES

There are no known cemeteries recorded within the Project Boundary or the one-mile buffer.[2] Although there are no cemeteries recorded within the Project Boundary, unmarked rural cemeteries and graves do occur in Maryland. Maryland State Law §10-400[3], "provides protection against disturbance of burial sites and human remains and provides a basis for access. Should human remains be discovered accidentally, the law requires notification of your county States Attorney."

ARCHITECTURAL RESOURCES

There are no recorded architectural resources within the Project Boundary; however, there are fourteen recorded architectural resources within the one-mile buffer (Table 2; Figure 1). Of these resources, nine are farmsteads, two are historic districts, two are single dwellings, and one is a church.[4] In regards to National Register eligibility, one is listed (F-1-19), three are eligible (F-1-134, F-1-175, and F-1-221), four have been recommended eligible, five are ineligible, and one has not been evaluated. Carrollton Manor (F-1-19) is an early 19th century farmstead that was listed on the National Register in 1997 and is located approximately 0.7-miles east of the Project Boundary.

Based on ERM's review of historic aerials and USGS topographic maps, there are no unrecorded architectural resources within the Project Boundary that are 50 years or older.[5]

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[2] Find a Grave. 2022. Find a Grave. https://www.findagrave.com/

[3] Annotated Code of Maryland. 2018. Criminal Law Title 10. Crimes Against Public Health, Conduct, and Sensibilities Subtitle 4. Crimes Relating to Human Remains. https://mht.maryland.gov/documents/PDF/research/Burial_Law.pdf.

[4] Maryland Historical Trust. 2022. MEDUSA (Maryland's Cultural Resource Information System). https://mht.maryland.gov/secure/medusa/#.

[5] NETR Online. 2022. Historic Aerials https://www.historicaerials.com/

Table 2: Architectural Resources within the One-Mile Buffer

Inventory #	Name	Date	Type	NR Status
F-1-18	St. Joseph's Church on Carrollton Manor	19th century	Church	Recommended Eligible by Surveyor
F-1-19	Carrollton Manor	c.1820	Farmstead	Listed
F-1-134	Carrollton Manor Rural Historic District	19th-20th century	Historic District	Eligible
F-1-175	Dutrow-Thomas Farmstead	c.1835	Farmstead	Eligible
F-1-184	William H. Renn Farmstead	c.1897	Farmstead	Recommended Eligible by Surveyor
F-1-185	Adamstown Survey District	19th century	Historic District	Recommended Eligible by Surveyor
F-1-190	J. Franklin Thomas Farmstead	19th century	Farmstead	Not Eligible
F-1-202	Hebb-Kline Farmstead	c.1855	Farmstead	Recommended Eligible by Surveyor
F-1-218	Geisinger Farm	20th century	Farmstead	Not Eligible
F-1-219	Howard Stup Farm	19th century	Farmstead	Not Eligible
F-1-220	Marrietta Stup House	19th century	Single Dwelling	Not Eligible
F-1-221	Noffsinger Farm	19th century	Farmstead	Eligible
F-1-222	S. Dutrow Farm	c.1950	Farmstead	Not Eligible
F-1-228	Shankle House	Unknown	Single Dwelling	Unevaluated

CONCLUSIONS

In summary, the Project Boundary has been partially surveyed for cultural resources. There are no recorded archaeological sites or cemeteries within the Project Boundary or the one-mile buffer. There are no previously recorded architectural resources located within the Project Boundary; however, there are fourteen architectural resources within the one-mile buffer. Carrollton Manor is listed on the National Register and is located approximately 0.7-miles east of the Project Boundary.

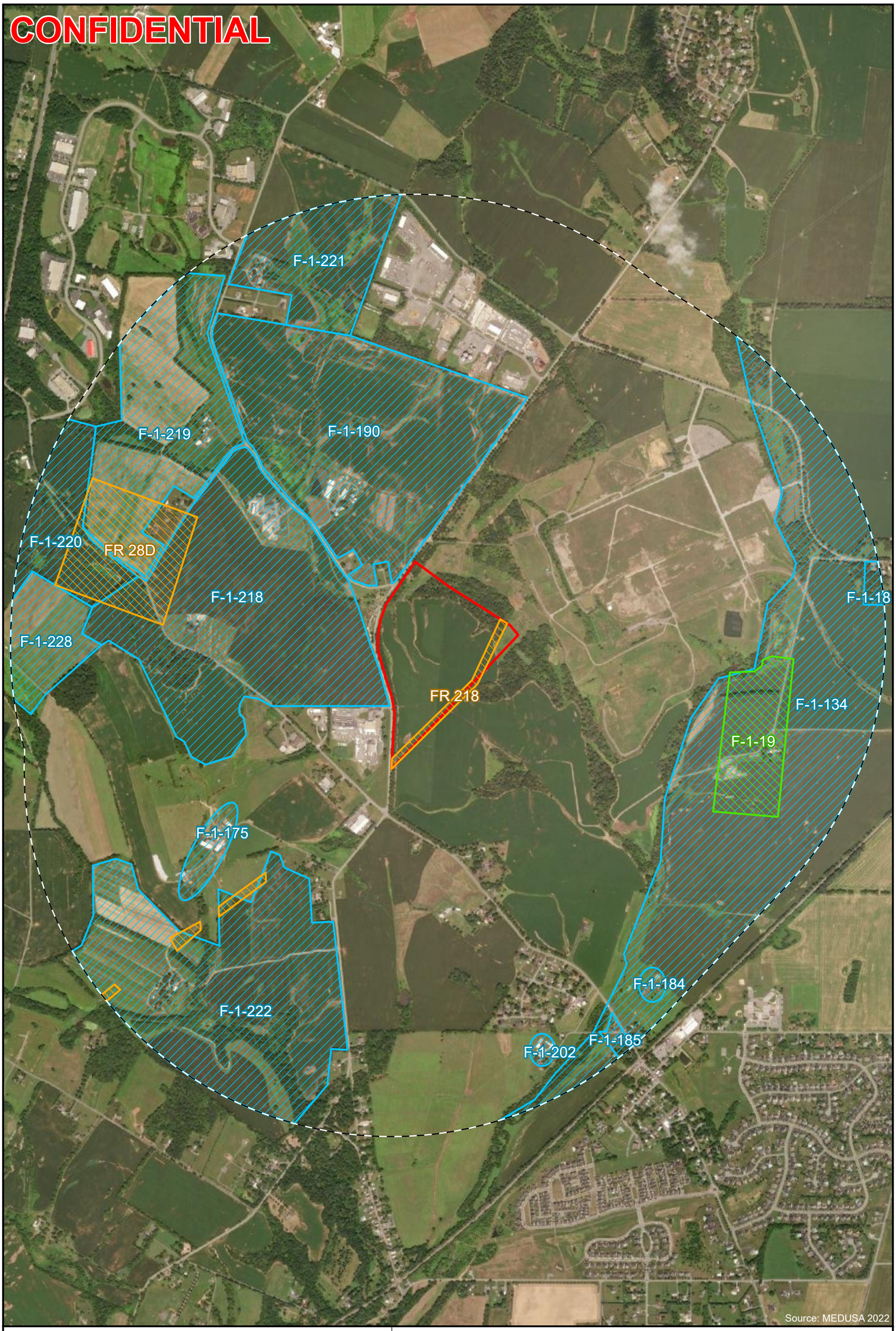
Since only a portion of the Project Boundary has been subject to archaeological survey, and there is currently no federal nexus that requires survey, ERM suggests that an unanticipated discovery plan (UDP) be put in place prior to any ground disturbing activities associated with construction. The UDP would inform personnel on site how to proceed should they encounter archaeological materials or human remains. Furthermore, a component of the UDP would be to train personnel on identifying cultural material while on site.

Due to the presence of NRHP and eligible resources within the one-mile buffer of the Project Boundary, ERM suggests conducting a desktop visual assessment to alleviate possible concerns regarding visual impacts.

This review is for planning purposes, and no cultural resources field investigations were conducted. Such investigations may be warranted to satisfy Section 106 of the National Historic Preservation Act if federal permits are required.

FIGURE

CONFIDENTIAL



Project Boundary
1 Mile Buffer
National Register Architectural Resource
Architectural Resource
Previous Survey

N

1:15,500

0 1,000 2,000 Feet

Figure 1
Cultural Resources
Bauxite Data Center
Rowan Green Data
Frederick County, MD

ERM

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ATTACHMENT 4 SPECIAL STATUS SPECIES AND HABITAT ASSESSMENTS

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Memorandum

To	Xio Gerlach, Director of Development – Rowan Digital Infrastructure, LLC
From	Christopher Wu, Partner Chris Mason, Principal Consultant
Date	7 July 2023
Reference	Bauxite Lot 401 Data Center
Subject	Biological Field Survey Results

INTRODUCTION

This memo summarizes the results of the assessment of special status species and habitat conducted by ERM for the Bauxite Lot 401 Data Center site (Site or Project). The United States Fish and Wildlife Service (USFWS) and Maryland Department of Natural Resources (MDNR) have responsibility for the protection of special status species in the state of Maryland. The objective of this effort was to confirm whether special status species or their habitat are present on the Site.

The approximately 100-acre Site is located directly to the northeast of the intersection of Ballenger Creek Pike and Mountville Road, located approximately seven miles south of the City of Frederick, in Frederick County, Maryland (Figure 1). Prior to surveying, the National Resources Conservation Service (NRCS) Web Soil Survey and the United States Army Corps of Engineers (USACE) National Wetland Inventory (NWI) were consulted (Figure 2). It should be noted that this Site is immediately adjacent to the 56-acre Lot 400 that was previously evaluated by ERM. The Site is identified by state tax record 1101005405, owned by Quantum Maryland, LLC. The Site is currently in use as agricultural land for soybean production, and electrical transmission lines are present along the northwestern boundary of the Site. While the current use is agricultural, the Frederick County Zoning map identifies the Site as within the general industrial and light industrial zoning districts. A more detailed description and sketch of “Future Lot 401” is provided in the description prepared by Rodgers Consulting (February 27, 2023) provided in Attachment A.

The Site is located within the Potomac River Watershed and situated in the Tuscarora Creek-Potomac River Sub-Basin (Hydrologic Unit Code 021403010211). General Site topography is relatively rolling, with elevations ranging between 321 to 392 feet, as shown on the U.S. Geological Survey (USGS) topographic quadrangle (Figure 3). The Site has topographic highs near the central and western portion of the property and topographic lows near the central, northern, and eastern boundary of the Site, with the lowest elevations located along the unnamed tributaries which bisect the Site and run perpendicular to the eastern boundary of the Site.

A field visit was conducted on March 1-2, 2023, and a follow-up visit was conducted on June 20, 2023 to re-evaluate portions of the Site during growing season conditions. During these site visits, ERM identified five unnamed tributaries to Tuscarora Creek, including three intermittent and two ephemeral streams. One intermittent stream bisects the Site and is located in the central portion of the Site continuing to the southeastern boundary of the Site. This unnamed intermittent tributary

contains one intermittent branch and two ephemeral branches. The other unnamed intermittent tributary is located in the northern portion of the Site continuing to the northeastern most boundary of the Site. The former system of tributaries drains into Tuscarora Creek approximately 0.35-miles to the southeast, while the latter tributary drains into Tuscarora Creek approximately 0.75-miles to the southeast. Additionally, one palustrine emergent (PEM) wetland was identified along the unnamed tributary. No other waterbodies or wetlands are located on Site. A photograph log of field observations is included in Attachment B. The enclosed Environmental Inventory (Figure 2) map depicts the predominant soil types as shown by the U.S. Department of Agriculture‘s (USDA) Web Soil Survey, predominant wetland and stream systems as shown by the NWI, and predominant flow regimes as shown by the National Hydrography Dataset (NHD). Predominant soil type onsite was Klinesville very channery loam 8 to 15 percent slopes, with Croton-Abbottsown silt loams 3 to 8 percent slopes, Morven loam 3 to 8 percent slopes, Lindside silt loam 0 to 3 percent slopes, and Penn-Reaville silt loams 3 to 8 percent slopes scattered throughout. NWI features were predominantly depicted in the forested areas east of the eastern Site boundary. The enclosed Delineation Map (Figure 3) depicts the limits of aquatic resources as flagged in the field.

METHODS

For this assessment, special status species were defined as species with any of the following federal or state designations: 1) species listed by USFWS Endangered Species Act (ESA) as threatened, endangered and candidate species; 2) bald eagles protected by USFWS under the Bald and Golden Eagle Protection Act (BGEPA); and 3) species listed by MDNR as threatened, endangered, or in need of conservation under the Nongame and Endangered Species Conservation Act.

Existing federal species information and Site habitat observations were reviewed via the USFWS Information and Planning Conservation System (IPaC) to determine the likely occurrence of, or potential habitat for, federally protected species per the ESA (threatened, endangered and candidate species) on the Site.

State status species information was reviewed in the MDNR’s database to identify potential habitat and documented occurrences of state threatened endangered, or conservation species on the Site.

According to Natural Resources Article § 5-1602(10), the Forest Conservation Act (FCA) is applicable to subdivisions, grading permits, or sediment control plans that affect greater than 40,000 square feet or more must submit a Forest Stand Delineation and Forest Conservation Plan. An application must be submitted to MDNR along with a map and a narrative describing the limits of disturbance. Frederick County has an ordinance specific to this requirement, and additional details can be found in the Local Land Use Memo submitted under separate cover. The MDNR is required to review and approve this application, and the MDNR approval letter is required to be submitted with required Frederick County permit applications such as subdivisions, grading permits, or sediment control plans.

On March 1-2, 2023, two ERM biologists conducted a visual pedestrian survey at the Site to document the presence of suitable habitat for target species and evidence of species presence. During the investigation, temperatures ranged from 32 to 61 degrees Fahrenheit, with partly cloudy to mostly sunny skies. Approximately 0.06 inches of precipitation fell during the early morning on the second day of surveys, prior to arrival, and the area received approximately 1.69 inches of precipitation in the week prior.

RESULTS

Habitat Types

As discussed above, habitat at the Site is primarily agricultural fields currently in soybean production. An unnamed tributary to Tuscarora Creek is bisecting the southeast-central portion of the Site, and its adjacent emergent wetland further bisects the southwest-central portion of the Site. A total of 47 linear feet of ephemeral stream and 2,191 linear feet of intermittent stream were delineated, and 0.005 acres of emergent wetland were mapped along the intermittent tributary. An approximate total of 13.6 acres of forested area were delineated onsite, and generally comprised the unnamed tributary channels. Forested areas surrounding the wetland area generally consist of various hardwoods, including black cherry (*Prunus serotina*), American sycamore (*Platanus occidentalis*), northern red oak (*Quercus rubra*), American elm (*Ulmus americana*), and black walnut (*Fagus grandifolia*).

According to aerial photographs obtained from EDR dating back to 1943, most of the Site has been under continuous agricultural use for at least the past 80 years. As such, hydrology, vegetation, and soils have been significantly altered from their natural state. Irrigation ditches have been excavated throughout the Site to convey water and reduce periodic flooding of the agricultural fields. The original forest cover is not well-known but was likely oak forests with some wetlands prior to its conversion agricultural land.

The remaining sections describe the listed species with potential to occur on Site as well as the potential for their habitat to exist identified on Site.

Species of Concern

The IPaC report (Attachment C) identifies species managed by the USFWS Endangered Species Program that should be considered in the effects analysis. One federally threatened species, the northern long-eared bat (NLEB, *Myotis septentrionalis*), was identified by the report. The IPaC report also indicated one candidate species for ESA listing, the monarch butterfly (*Danus plexippus*), As a Federal Candidate, monarch butterfly is not protected by federal statute.

The MDNR state rare, threatened, and endangered (RTE) species list for Frederick County (Attachment D) identifies 61 state threatened and endangered species (see Table 1), and one federally threatened species: the yellow lance (*Elliptio lanceolata*). All species observations have been summarized to Frederick County, meaning that the species and habitats identified in the MDNR species list do not necessarily occur on the Site.

Table 1 presents the special status species to be considered in the effects analysis and presence of habitat at the Site based on the field survey effort.

No special status species were observed during the field survey. Based on all readily available information and an on-site evaluation, we have determined that wildlife habitat at the Site is marginal to absent for all special status species. As indicated in Table 1, marginal habitat is present at the Site for one federally listed species, one federal candidate species, and 25 state listed species. This habitat is limited to the identified wetlands, stream, and surrounding forested area. If no impacts are proposed to these features, then this Project is unlikely to affect listed species. However,

consultation with MDNR Natural Heritage Program is recommended to confirm the lack of suitable habitat for listed species within the Site. This consultation is required should state or federal permits be required for the Project.

The USFWS IPaC identified the federally threatened NLEB and candidate monarch butterfly. Potential habitat was identified for both species during the habitat assessment. The IPaC specifies that the NLEB only need to be considered for "projects with a federal nexus that have tree clearing ≥15 acres. If project activities do not trigger a federal nexus and tree clearing is less than 15 acres further coordination may not be necessary." If the Project meets these requirements, then further consultation for this species is not required. Additionally, MDNR did not include the NLEB as potentially occurring within Frederick County; therefore, if the Project can adhere to the requirements from the IPaC, further coordination for this species may not be necessary. It should be noted that the NLEB will be uplisted to a federally-endangered species by March 31, 2023. Once this has become official and USFWS have updated their IPaC system, ERM recommends updating the IPaC to determine if there are changes to the NLEB consultation requirements. The monarch butterfly is listed as a candidate species. No further coordination is necessary, as there are no statutory protections under the ESA.

Based on available data from the Maryland Bald Eagle Nest Monitoring Program (Program), there are no known bald eagle (*Haliaeetus leucocephalus*) nests within the Site boundary. However, an active bald eagle nest was observed during the site visit adjacent to an unnamed tributary to Tuscarora Creek and immediately east of the Site. Approximate coordinates of nest location are 39.9.322883ºN, -77.477776ºW. Two American bald eagles were observed interacting with the nest on both March 1 and March 2, 2023. The active nest was located in an American sycamore (*Platanus occidentalis*) tree, immediately adjacent to an unnamed tributary to Tuscarora Creek. Additionally, the Program identified a singular nest (ID: FR-020) approximately 1.25 miles north of the Site that is not currently monitored. Bald eagles are protected by the USFWS Bald and Golden Eagle Protection Act. If the nest is within 660 feet of the Project-related construction activities, completion of a Bald Eagle Project Screening Form and coordination with USFWS is recommended due to the known nest. Typically, a 660-foot buffer is applied around eagle nests that prohibits construction activities. Depending on the type of construction activities and when construction will occur, the buffer may be able to be reduced to 330 feet. Avoidance measures and options for reduced buffers are detailed in the Northeast Bald Eagle Project Screening Form provided in Attachment E. Briefly, buildings cannot be constructed within the 660-foot buffer and construction activities should be conducted outside the breeding season. As specified in the form, the bald eagle breeding season in Maryland is December 15th through June 30th.

Incidental Wildlife Observations

Throughout the survey, several species of wildlife were observed on the Site. These incidental observations included: Bald eagle, eastern gray squirrel (*Sciurus carolinensis*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), wild turkey (*Meleagris gallopavo*), song sparrow (*Melospiza melodia*), white-throated sparrow (*Xonotrichia albicollis*), killdeer (*Charadrius vociferus),* and turkey vulture (*Cathartes aura*).

CONCLUSIONS

Due to the highly altered state of the Site, wildlife habitat is considered marginal to absent across the Site. Habitat is mainly restricted to the central and northern portions, where wetlands, streams, and surrounding forested areas were identified. One special status species (two individual bald eagles) was observed during the field survey. ERM recommends completing a Bald Eagle Project Screening Form to determine if the project will adversely affect bald eagles. If adverse impacts can be avoided and the Project does not trigger a state or federal nexus, consultation with USFWS is not required; however, a copy of the completed screening form should be kept on file for future reference.

If the Project does not propose impacts to the identified water resources or have other federal or state nexuses (e.g., roadway permits, federal funding, et cetera), consultation with MDNR is not required. However, ERM recommends consultation with MDNR to confirm the results of the habitat assessment and ensure the project complies with all recommendations for minimization and avoidance of impacts to special status species. While not required, ERM also recommends disclosing the identified active bald eagle nest observed near the eastern boundary of the Site. Consultation with MDNR's Natural Heritage Program typically includes an evaluation of project impacts to fish and wildlife, and their habitats (including rare, threatened, and endangered species), sensitive habitats, and significant resources presently known or potentially occurring within the vicinity of the project. Environmental Project Reviews Fee vary depending on project complexity, and typically take at minimum of 30 days to complete project review. Species specific surveys may be required.

As noted above, there is also no designated critical habitat for federal-listed species present at the Site. ERM recommends that the project be designed to avoid tree clearing activities to the extent practicable to comply with the recommendation from USFWS IPaC. If tree clearing for this Project is less than 15 acres, then no further coordination with USFWS will be necessary If the Project requires 15 acres or greater of tree clearing, then ERM recommends that the Project comply with tree clearing guidelines from USFWS regarding the NLEB which state that tree clearing should be conducted between October 31 to April 1 to avoid impacts to this species. Should clearing involve greater than 15 acres and need to occur between April 1 and October 31, consultation with USFWS and MDNR is recommended and a habitat survey will likely be required.

TABLE

Table 1: Special Status Species

Type	Species	Federal Protection Status	State Protection Status	Potential Suitable Habitat
Bird	Bald Eagle (*Haliaeetus leucocephalus*)	MBTA, BGEPA	-	High: forages along large rivers and lakes, nests in large trees adjacent to water. Active nest observed onsite.
	Loggerhead shrike (*Lanius ludovicianus)*	-	SE	Low: forages along forested edges of farmland adjacent to pine forests.
	Upland sandpiper (*Bartramia longicauda*)	-	SE	Low: found in grasslands, may forage in farm fields.
Insect	Monarch butterfly (*Danus plexippus*)	ESA Candidate		Moderate: may occur in the agricultural drainages or transmission line but no federal protections.
	Edwards' hairstreak (*Satyrium edwardsii*)	-	SE	Low: found in open areas adjacent to forested areas that are undisturbed.
	Elfin skimmer (*Nannothemis bella)*	-	SE	Low: occurs in wetlands along perennial streams.
	Northern barrens tiger beetle (*Cicindela patruela)*	-	SE	None: found in sandy openings in pine forests.
	Vandel's cave isopod (*Caecidotea vandeli)*	-	SE	None: found in caves, seepages, or springs.
Mammal	Northern long-eared bat (*Myotis septentrionalis*)	FT	ST	Low: however, according to the IPaC, the species only need to be considered if the project has a federal nexus that has tree clearing ≥ 15 acres.
	Allegheny woodrat (*Neotoma magister)*	-	SE	None: found in outcrops, cliffs, ledges, boulders near unfragmented forests.
Mussel	Yellow lance (*Elliptio lanceolata)*	FT	ST	Low: found in perennial streams with clean coarse to medium sand substrate.
	Brook floater *(Alasmidonta varicosa)*	-	SE	Low: found in perennial streams with swift current in clean gravel, sand, cobble substrates.
	Green floater *(Lasmigona subviridis)*	-	SE	Low: found in perennial streams in pools with clean gravel and sand substrates.

Type	Species	Federal Protection Status	State Protection Status	Potential Suitable Habitat
Mussel	Triangle floater *(Alasmidonta undulata)*	-	ST	Low: found in perennial streams with silt, sand, and gravel substrates in varying habitats.
Plant	Blunt-lobe grapefern (*Sceptridium oneidense)*	-	SE	Low: found in moist, acidic, damp open forests.
	Broadleaf bunchflower (*Veratrum hybridum)*	-	SE	Low: found in mesic deciduous hardwood forests.
	Canada burnet *(Sanguisorba canadensis)*	-	ST	None: wet to moist prairies and fens.
	Canadian milkvetch (*Astragalus canadensis)*	-	SE	None: moist prairies, sandy savannas, thickets and moist meadows.
	Climbing fumitory *(Adlumia fungosa)*	-	ST	None: moist, rocky woods, thickets and slopes.
	Climbing milkweed *(Matelea obliqua)*	-	SE	None: limestone glades in open woodlands.
	Davis' sedge (*Carex davisii*)	-	SE	Low: upland and floodplain deciduous woodlands.
	Earleaf false foxglove (*Agalinis auriculata)*	-	SE	Low: prairies or open woodlands.
	Eastern featherbells (*Stenanthium gramineum)*	-	ST	Low: bottomland forests, rich wooded slopes, streambanks, wet prairies, and roadsides.
	Eastern leatherwood (*Dirca palustris)*	-	ST	None: ravines, wooded slopes, and wooded bluffs.
	Field sedge (*Carex conoidea)*	-	SE	None: prairies, sedge meadows, fens, and shorelines.
	Fringe-top bottle gentian (*Gentiana andrewsii)*	-	ST	None: calcareous soil in floodplains, thickets, fens, and swampy areas.
	Glade mallow (*Napaea dioica)*	-	SE	Low: openings in floodplain forests, low areas along streams, and depressions along railroads.
	Glade spurge (*Euphorbia purpurea)*	-	SE	None: wet seepages over bedrock.
	Golden-seal (*Hydrastis canadensis)*	-	ST	Low: found in rich, mesic hardwood forests.
	Goldthread (*Coptis trifolia)*	-	SE	None: moist mossy woods, conifer swamps, and bogs.

Type	Species	Federal Protection Status	State Protection Status	Potential Suitable Habitat
Plant	Large purple fringed orchid (*Platanthera grandiflora)*	-	ST	Low: found in wetlands in forested and field areas, marshes, bogs, and swamps.
	Little floatingheart (*Nymphoides cordata)*	-	SE	None: upland depression ponds, sluggish streams, and beaver ponds.
	Lobed spleenwort (*Asplenium pinnatifidum)*	-	SE	None: vertical rock formations in large ravines, cliffs, or canyons.
	Long-bract green orchis (*Dactylorhiza viridis)*	-	SE	None: coniferous and hardwood forests near prairies, meadows, coastal heaths, and bogs.
	Marsh speedwell (*Veronica scutellata)*	-	SE	None: bogs, marshes, wet meadows, and seeps.
	Northern oak fern (*Gymnocarpium dryopteris)*	-	SE	None: coniferous and mixed forests on talus slopes.
	Northern pitcherplant (*Sarracenia purpurea)*	-	ST	None: peat bogs.
	Purple fringeless orchid (*Platanthera peramoena)*	-	ST	None: moist meadows and prairies, prairie swales, swamps, and seeps.
	Purple giant-hyssop (*Agastache scrophulariifolia)*	-	ST	Low: rich woods and thickets.
	Purple meadow parsnip (*Thaspium trifoliatum)*	-	SE	None: rocky uplands woods, bluffs, upland oak savannas, and prairies.
	Queen-of-the-prairie (*Filipendula rubra)*	-	SE	None: moist sand prairies, moist meadows, shrubby fens, and seeps/springs.
	Red milkweed (*Asclepias rubra)*	-	SE	None: bogs and wet savannas.
	Red turtlehead (*Chelone obliqua)*	-	ST	None: swamps, soggy meadows, shaded seeps, and springs.
	Rock skullcap (*Scutellaria saxatilis)*	-	SE	None: rocky mesophytic woods, talus slopes, and bluffs with sandstone substrate.
	Rough wood aster (*Eurybia radula)*	-	SE	Low: forest edges, wetland margins, and shores of rivers.
	Sharp-scaled mannagrass (*Glyceria acutiflora)*	-	SE	None: open wetlands with standing water.
	Shumard oak (*Quercus shumardii)*	-	ST	Low: moist soils with good drainage.

Type	Species	Federal Protection Status	State Protection Status	Potential Suitable Habitat
Plant	Smooth cliffbrake (*Pellaea glabella)*	-	SE	None: limestone or dolomite outcrops, cliffs, and bluffs.
	Snowy campion (*Silene nivea)*	-	SE	Low: moist woods, streambanks, floodplain forest.
	Starflower Solomon's-plume (*Maianthemum stellatum)*	-	SE	None: moist meadows and shorelines.
	Sweet-scented indian-plantain (*Senecio suaveolens)*	-	SE	Low: riverbanks, moist low grounds, bottomland woods.
	Torrey's mountain mint (*Pycnanthemum torreyi)*	-	SE	Low: dry, open woods, along forest margins.
	Valerian (*Valeriana pauciflora)*	-	SE	Low: floodplain woodlands, shaded ravines, and rocky canons.
	Veined skullcap (*Scutellaria nervosa)*	-	ST	Low: moist forests near streams.
	Water bulrush (*Schoenoplectus subterminalis)*	-	SE	None: lakes, ponds, bogs, pools, and rivers.
	White trout lily (*Erythronium albidum)*	-	ST	Low: shaded moist, woods along streams.
	Whorled mountain mint (*Pycnanthemum verticillatum)*	-	ST	None: rocky slopes and outcrops.
	Winged loosestrife *(Lythrum alatum)*	-	SE	None: wet meadows, wet prairies, and shorelines.
	Woodland horsetail (*Equisetum sylvaticum)*	-	SE	Low: shady woods and woodland edges.
	Yellow fringed orchid (*Platanthera ciliaris)*	-	ST	None: bogs, marshes, wet meadows, wet prairies, and wet savannas.
	Yellow nodding ladies'-tresses *(Spiranthes ochroleuca)*	-	SE	Low: meadows, shrubs or thickets, and woodlands.
	Yellow water crowfoot (*Ranunculus flabellaris)*	-	SE	None: shores of ponds, shallow creeks or streams with slow-moving water, swamps, and seep bottoms.
	Yellowleaf tinker's-weed (*Triosteum angustifolium)*	-	SE	None: forest ridges/ledges, talus woodlands and rocky slopes.

FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered; ST = State Threatened;
ESA = Endangered Species Act; MBTA = Migratory Bird Protection Act; BGEPA = Bald and Golden Eagle Protection Act

FIGURES

DRAWN BY: GIS Team

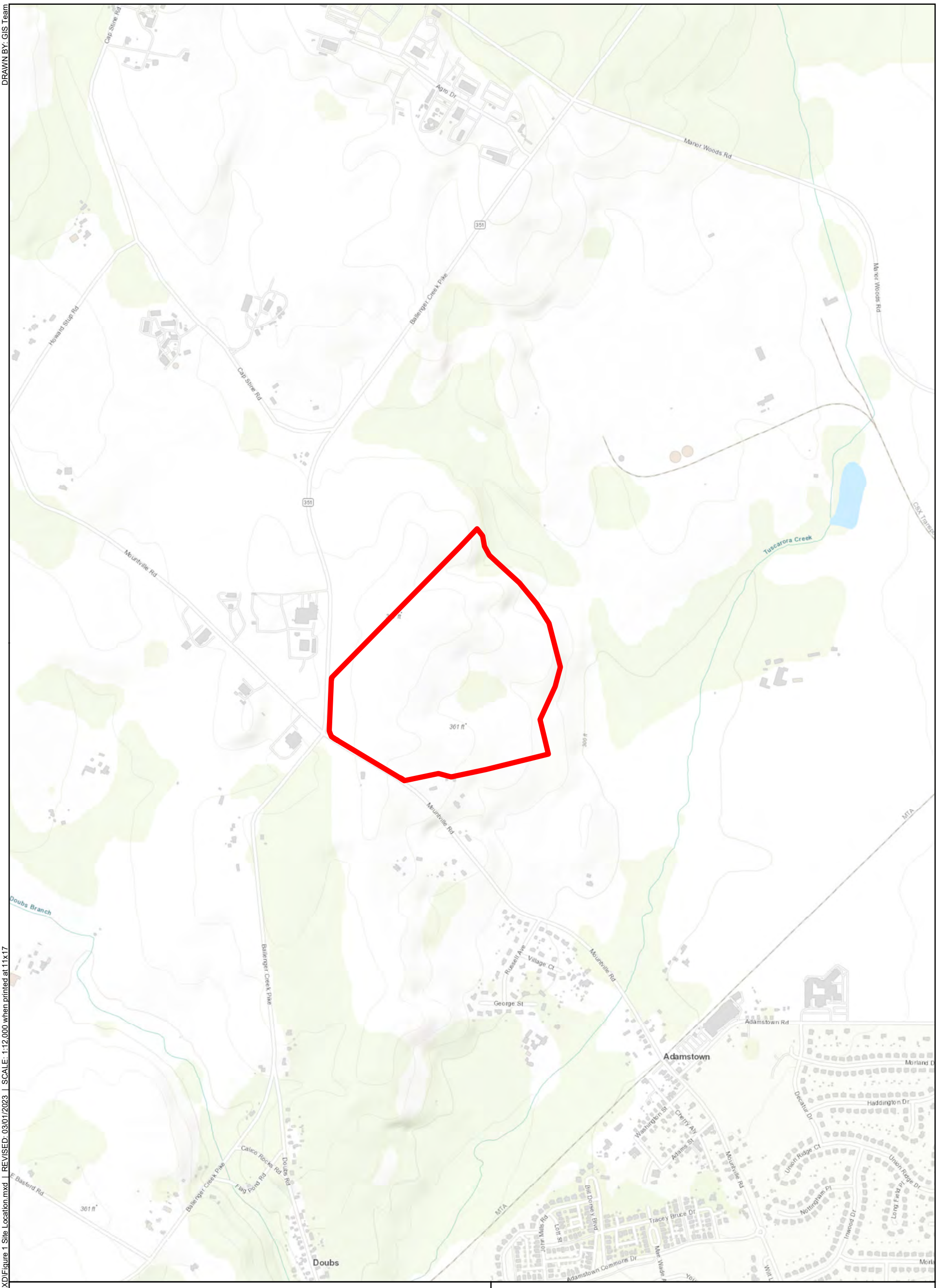

Figure 1
Project Location Map
Bauxite Lot 401 Data Center
Rowan Digital Infrastructure, LLC
Frederick County, Maryland

ERM

FILE: C:\Users\casey.brotman\Desktop\Bauxite\MXD\Figure 1 Site Location.mxd | REVISED: 03/01/2023 | SCALE: 1:12,000 when printed at 11x17

Source: Esri - World Topographic Map; NAD 1983 StatePlane Maryland FIPS 1900 Feet

DRAWN BY: GIS Team

Penn loam, 3 to 8 percent slopes

Rowland silt loam, 0 to 3 percent slopes

Urban land, 3 to 15 percent slopes

Udorthents, smooth, 0 to 8 percent slopes

Klinesville very channery loam, 8 to 15 percent slopes

Klinesville very channery loam, 15 to 25 percent slopes

Penn-Reaville silt loams, 3 to 8 percent slopes

Croton-Abbottstown silt loams, 3 to 8 percent slopes

Readington silt loam, 3 to 8 percent slopes

Klinesville very channery loam, 8 to 15 percent slopes

Klinesville very channery loam, 15 to 25 percent slopes

Morven loam, 3 to 8 percent slopes

Lindside silt loam, 0 to 3 percent slopes

Croton-Abbottstown silt loams, 3 to 8 percent slopes

Klinesville very channery loam, 8 to 15 percent slopes

Klinesville very channery loam, 8 to 15 percent slopes

Springwood gravelly loam, 3 to 8 percent slopes

Croton-Abbottstown silt loams, 3 to 8 percent slopes

Croton-Abbottstown silt loams, 3 to 8 percent slopes

Readington silt loam, 3 to 8 percent slopes

Springwood gravelly loam, 3 to 8 percent slopes

Springwood gravelly loam, 8 to 15 percent slopes

Project Boundary

NHD Flowline

NRCS Web Soil Survey

PEM

PFO

PUB

Riverine

N

1:4,800

0 250 500

Feet

Figure 2
Environmental Inventory Map
Bauxite Lot 401 Data Center
Rowan Digital Infrastructure, LLC
Frederick County, Maryland

ERM

FILE: C:\Users\casey.brotman\Desktop\Bauxite\MXD\Figure 2 Environmental Inventory Map.mxd | REVISED: 03/01/2023 | SCALE: 1:4,800 when printed at 11x17

Source: Esri - World Topographic Map; NAD 1983 StatePlane Maryland FIPS 1900 Feet

DRAWN BY: GIS Team

DP007_U
Stream 5
380
360
DP009_U
340
Stream 3
Stream 4
DP008_U
Stream 2
DP003_U
DP002_U
DP005_U
Stream 1
Wetland B
DP006_W
380
380

Ephemeral Stream (47 lf.)
Intermittent Stream (2,191 lf.)
Project Boundary
Forested Area (13.6 Ac.)
Wetland Data Point
Elevation Contour (20 ft. Interval)
Bald Eagle Nest
330 ft. Buffer
660 ft. Buffer

N

1:5,000

0 320 640
Feet

Figure 3
WOTUS Delineation Map
Bauxite Lot 401
Rowan Digital Infrastrucutre, LLC
Frederick County, Maryland

ERM

Source: Esri - World Topographic Map; NAD 1983 StatePlane Maryland FIPS 1900 Feet

FILE: C:\Users\autumn.dunn\Documents\OneDrive - ERM\Work\Bauxite\Rowan Green\AGIS Bauxite Folder\MXD\Figure 3 WOTUS Delineation Map2.mxd | REVISED: 07/06/2023 | SCALE: 1:5,000 when printed at 11x17

ATTACHMENT A FUTURE LOT 401 DESCRIPTION

Parcel ID #01-005405

Exhibit 'A'

Description of Part of the Property Acquired by Quantum Maryland, LLC Buckeystown (1st) Election District Frederick County, Maryland

Being a part of the property acquired by Quantum Maryland, LLC, a Delaware limited liability company, from Eastalco Aluminum Company, a Delaware corporation, by a deed dated June, 16, 2021, and recorded in the Land Records of Frederick County, Maryland, in Liber 15038 at folio 393; also being part of New Parcel 9 South as shown on a plat entitled "Addition Plat, Part of the Lands of Quantum Maryland, LLC to Quantum Maryland, LLC" and recorded among said Land Records in Plat Book 106 at pages 187 through 192, and being more particularly described as follows:

Future Lot 401

Beginning for the same at a point of curvature at the easterly end of the 58.31 foot arc length of New Parcel 9 South as shown on said plat recorded in Plat Book 106 at Pages 187 through 192 and labeled as curve number 17; the same point being on the northerly right of way line Mountville Road (ultimate 60 foot wide right of way) as shown on said plat recorded in Plat Book 106 at Pages 187 through 192; thence running with and binding on said northerly right of way line of Mountville Road and the outline of said New Parcel 9 South the following 3 courses and distances:

1. 58.31 feet along the arc of a curve deflecting to the left, having a radius of 1330.00 feet (chord: North 57° 52' 47" West, 58.30 feet) to a point; thence

2. North 59° 08' 08" West, 780.09 feet to a point, passing over a rebar and cap found at 610.26 feet, to a point of tangent curvature; thence

3. 86.75 feet along the arc of a curve deflecting to the right, having a radius of 1070.00 feet (chord: North 56° 48' 47" West, 86.73 feet) to a point on the easterly right of way line of Ballenger Creek Pike (ultimate 80 foot wide right of way) as shown on said plat recorded in Plat Book 106 at Pages 187 through 192; thence continuing with the outline of said New Parcel 9 South and running with and binding on said right of way of Ballenger Creek Pike the following 3 courses and distances:

4. North 21° 17' 09" West, 61.96 feet to a point; thence

5. North 02° 24' 36" East, 566.15 feet to a point; thence

6. South 87° 34' 15" East, 2.58 feet to a point; thence

7. North 02° 25' 45" East, 11.18 feet to a rebar set point on the 2nd or North 44° 22’ 15” East, 2040.41 foot Potomac Edison right of way line as described in an agreement from Eastalco Aluminum Company, formerly Realty Associates to The Potomac Edison Company, dated May 26, 1969, and recorded among the aforesaid Land Records in Liber 804 at folio 401; thence departing said Ballenger Creek Pike right of way and the outline of said New Parcel 9 South and running with and binding on the 2nd and part of the 3rd Potomac Edison right of way lines as described in aforesaid Liber 804 at folio 401 the following 2 courses and distances:

8. North 44° 26' 41" East, 1980.94 feet to a rebar and cap set; thence

9. North 43° 20' 33" East, 264.25 feet to a point, passing over a rebar and cap set at 175.09 feet; thence leaving said Potomac Edison right of way and running across said New Parcel 9 South the following 12 courses and distances:

10. South 39° 59' 08" East, 96.69 feet to a point; thence

11. South 08° 50' 52" East, 115.73 feet to a point; thence

12. South 29° 23' 10" East, 111.29 feet to a point; thence

13. South 48° 09' 37" East, 117.55 feet to a point; thence

14. South 47° 16' 02" East, 320.62 feet to a point; thence

15. South 39° 31' 46" East, 300.96 feet to a point; thence

16. South 32° 01' 27" East, 243.62 feet to a point; thence

17. South 14° 28' 00" East, 487.57 feet to a point; thence

18. South 14° 30' 43" West, 216.13 feet to a point; thence

19. South 24° 59' 38" West, 393.30 feet to a point; thence

20. South 13° 52' 22" East, 386.52 feet to a point; thence

21. South 76° 13' 36" West, 696.17 feet to an open iron pipe found at the easterly end of the South 78° 08’ 04” West, 382.45 foot plat line of New Parcel 9 South as shown on said plat recorded in Plat Book 106 at Pages 187 through 192 and labeled as L23; thence running with the outline of said New Parcel 9 South and binding on part of the 5th or South 77° 38’ 20” West, 872.37 foot line of the 4.0881 acre parcel described in a deed from Hope L. Green, Trustee of the Harry Newton Kanode Revocable Trust to Hope L. Green, Trustee of the Harry Newton Knode Family Trust, dated June 28, 2010, and recorded among the aforesaid Land Records in Liber 7904 at folio 352 the following course and distance:

22. South 78° 08' 04" West, 382.45 feet to a point; thence continuing with the outline of said New Parcel 9 South as shown on said plat recorded in Plat Book 106 at Pages 187 through 192 and binding reversely on the 2nd, 1st, and part of the 5th lines of the 0.66 acre parcel as described in the aforesaid Green deed recorded in Liber 7904 at folio 352 the following 2 courses and distances:

23. North 75° 20' 27" West, 141.73 feet to a rebar found; thence

24. South 77° 59' 35" West, 374.41 feet to the Point of Beginning; containing 4362297 square feet or 100.14457 acres of land more or less.

This description was prepared by Rodgers Consulting, Inc., Job No.1339A2, and is in the Maryland Coordinate System (NAD 83/2011).

The undersigned, being a licensed surveyor, personally prepared or was in responsible charge of the preparation and the survey work reflected in this metes and bounds description, in compliance with the requirements set forth in “COMAR” Title 09, Subtitle 13, Chapter 06, Regulation .12.

(License Expiration Date: 9-17-2023)

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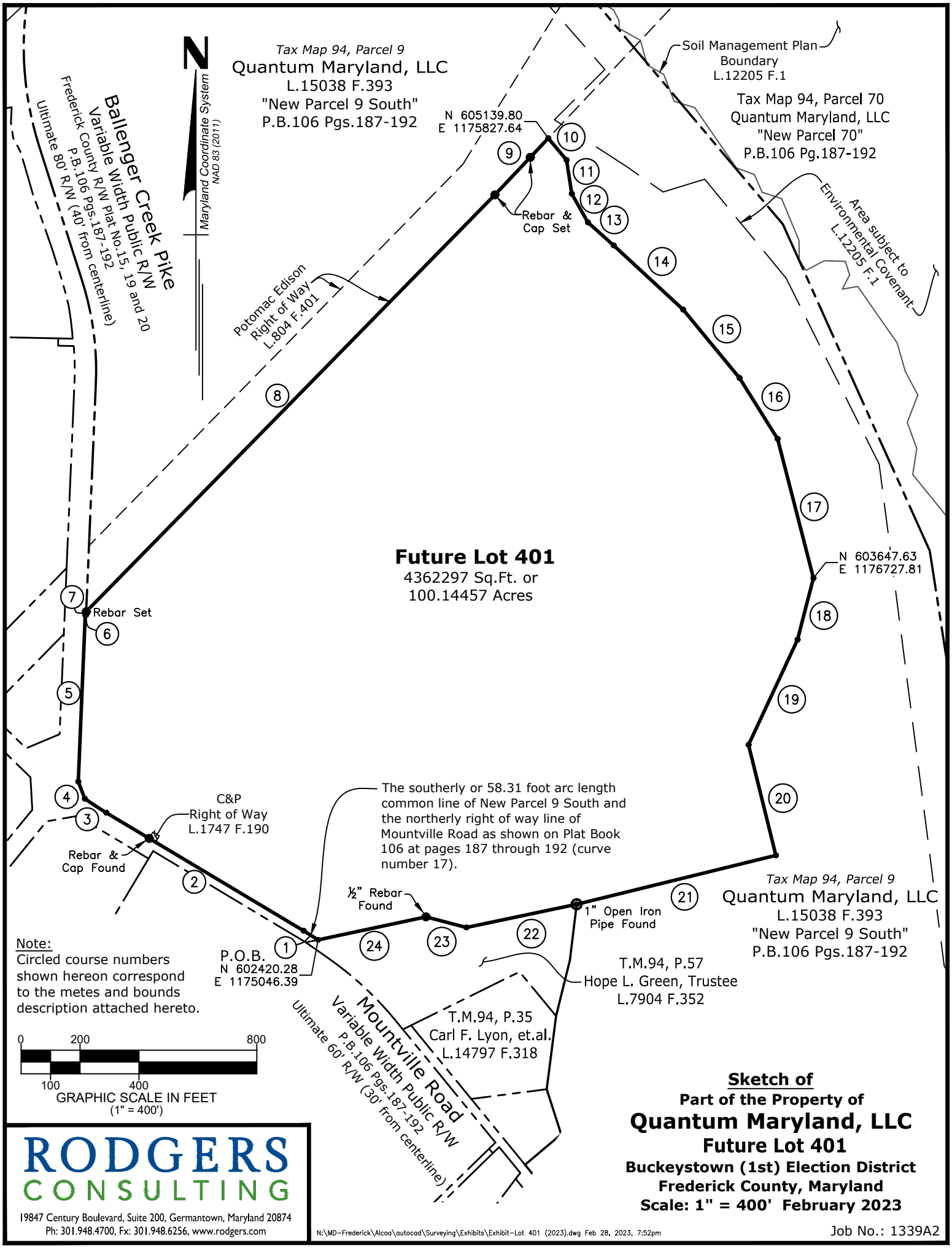
N
Maryland Coordinate System
NAD 83 (2011)
Tax Map 94, Parcel 9
Quantum Maryland, LLC
L.15038 F.393
"New Parcel 9 South"
P.B.106 Pgs.187-192
Ballenger Creek Pike
Variable Width Public R/W
Frederick County R/W Plat No.15, 19 and 20
P.B.106 Pgs.187-192
Ultimate 80' R/W (40' from centerline)
Potomac Edison
Right of Way
L.804 F.401
Soil Management Plan
Boundary
L.12205 F.1
Tax Map 94, Parcel 70
Quantum Maryland, LLC
"New Parcel 70"
P.B.106 Pg.187-192
Area subject to
Environmental Covenant
L.12205 F.1
N 605139.80
E 1175827.64
Rebar &
Cap Set
Future Lot 401
4362297 Sq.Ft. or
100.14457 Acres
N 603647.63
E 1176727.81
Rebar Set
C&P
Right of Way
L.1747 F.190
Rebar &
Cap Found
The southerly or 58.31 foot arc length common line of New Parcel 9 South and the northerly right of way line of Mountville Road as shown on Plat Book 106 at pages 187 through 192 (curve number 17).
½" Rebar
Found
1" Open Iron
Pipe Found
Tax Map 94, Parcel 9
Quantum Maryland, LLC
L.15038 F.393
"New Parcel 9 South"
P.B.106 Pgs.187-192
P.O.B.
N 602420.28
E 1175046.39
T.M.94, P.57
Hope L. Green, Trustee
L.7904 F.352
T.M.94, P.35
Carl F. Lyon, et.al.
L.14797 F.318
Mountville Road
Variable Width Public R/W
P.B.106 Pgs.187-192
Ultimate 60' R/W (30' from centerline)
Note:
Circled course numbers shown hereon correspond to the metes and bounds description attached hereto.
0 200 800
100 400
GRAPHIC SCALE IN FEET
(1" = 400')
Sketch of
Part of the Property of
Quantum Maryland, LLC
Future Lot 401
Buckeystown (1st) Election District
Frederick County, Maryland
Scale: 1" = 400' February 2023
RODGERS CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
Ph: 301.948.4700, Fx: 301.948.6256, www.rodgers.com
N:\MD-Frederick\Alcoa\autocad\Surveying\Exhibits\Exhibit-Lot 401 (2023).dwg Feb 28, 2023, 7:52pm
Job No.: 1339A2

ATTACHMENT B PHOTOGRAPH LOG

ERM

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Seattle, WA 98101

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Fax: +1 425 455 3573

www.erm.com

Memorandum

To	Tara M. Taflambas, Senior Manager, Development – Rowan Digital Infrastructure, LLC Rowan Green Data, LLC
From	Christopher Wu, Partner Chris Mason, Principal Consultant
Date	22 September 2022
Reference	Bauxite Data Center
Subject	Biological Field Survey Results

INTRODUCTION

This memo summarizes the results of the assessment of special status species and habitat conducted by ERM for the Bauxite Data Center site (Site). The U.S. Fish and Wildlife Service (USFWS) and Maryland Department of Natural Resources (MD-DNR) have responsibility for the protection of special status species in the state of Maryland. The objective of this effort was to confirm whether any special status species or their habitat are present on the Site.

The approximately 65-acre Site is located to the southeast of the intersection of Ballenger Creek Pike and Cap Stine Road, located approximately five miles to the south of the City of Frederick, in Frederick County, Maryland (Figure 1). It should be noted that only approximately 56 acres are planned for development and this 65-acre property includes approximately 9 additional acres not currently planned for development. The Site is identified by state tax record 1101005405, is owned by Quantum Maryland, LLC, and is currently in use as agricultural land for soybean production. Electrical transmission lines are present along the south-eastern and north-western boundaries of the Site.

The Site is located within the Potomac River Watershed and is situated in the Tuscarora Creek-Potomac River Sub-Basin (Watershed Unit 020700080401). A field visit was conducted on August 5, 2022 and identified an unnamed tributary to Tuscarora Creek, which is located along the northern boundary of the Site. This tributary drains into Tuscarora Creek approximately 0.75-mile to the southeast. Additionally, four wetlands were identified along the unnamed tributary, two forested wetlands and two emergent wetlands. No other waterbodies are located on Site; however, multiple agricultural drainage channels have been established within the Site, which drain to the unnamed tributary to the north. A photograph log of field observations is included in Attachment A.

With the exception of the steep hillslope near the northern portion of the Site, general Site topography is relatively flat, with elevations ranging between 390 to 320 feet, as shown on the U.S. Geological Survey (USGS) topographic quadrangle (Figure 3). The Site has topographic highs near the center and southern portion of the property and topographic lows near the northern boundary of the Site, with the lowest elevations located along the unnamed tributary which forms the northern boundary of the Site.

METHODS

For this assessment, special status species were defined as species with any of the following federal or state designations: 1) species listed by USFWS Endangered Species Act (ESA) as threatened, endangered and candidate species; 2) bald eagles protected by USFWS under the Bald and Golden Eagle Protection Act (BGEPA); and 3) species listed by MD-DNR as threatened, endangered, or in need of conservation under the Nongame and Endangered Species Conservation Act.

Existing federal species information and Site habitat observations were reviewed via the USFWS Information and Planning Conservation System (IPaC) to determine the likely occurrence of, or potential habitat for, federally protected species per the ESA (threatened, endangered and candidate species) on the Site.

State status species information was reviewed in the MD-DNR's database to identify potential habitat and documented occurrences of state threatened endangered, or conservation species on the Site.

According to Natural Resources Article § 5-1602(10), the Forest Conservation Act (FCA) is applicable to subdivisions, grading permits, or sediment control plans that affect greater than 40,000 square feet or more must submit a Forest Stand Delineation and Forest Conservation Plan. An application must be submitted to MD-DNR along with a map and a narrative describing the limits of disturbance. Frederick County has an ordinance specific to this requirement, and additional details can be found in the Local Land Use Memo submitted under separate cover.

On August 5, 2022, two ERM biologists conducted a visual pedestrian survey at the Site to document the presence of suitable habitat for target species and evidence of species presence. During the investigation, temperatures ranged from 75 to 92 degrees Fahrenheit, with cloudy to mostly cloudy skies. Approximately 0.12 inch of precipitation fell during the early morning, prior to arrival, and the area received approximately 1.07 inches of precipitation in the week prior.

RESULTS

Habitat Types

As discussed above, habitat at the Site is primarily agricultural fields currently in soybean production. An unnamed tributary to Tuscarora Creek is located along the northern boundary of the Site, and approximately 0.18 acre of wetlands were mapped along this perennial stream channel. No other waterbodies are located on Site; however, multiple agricultural drainage channels have been established within the Site, which drain to the unnamed tributary to the north. Forested areas surround these wetland areas generally consist of various oaks and other hardwood species.

According to aerial photographs dating back to 1985, most of the Site has been under continuous agricultural use for at least the past 37 years. As such, hydrology, vegetation, and soils have been significantly altered from their natural state. Irrigation ditches have been excavated throughout the Site to convey water and reduce periodic flooding of the agricultural fields. The original forest

cover is not well-known but was likely oak forests with some wetlands prior to its conversion agricultural land.

The remaining sections describe the listed species with potential to occur on Site as well as the potential for their habitat to exist identified on Site.

Species of Concern

The IPaC report (Attachment B) identifies species managed by the USFWS Endangered Species Program that should be considered in the effects analysis. One federally threatened species, the northern long-eared bat (NLEB, *Myotis septentrionalis*), was identified by the report. The IPaC report also indicated one candidate species for ESA listing, the monarch butterfly (*Danus plexippus*) as a Federal Candidate is not protected by federal statute.

The MD-DNR state rare, threatened, and endangered (RTE) species list (Attachment C) lists sixty-one state threatened and endangered species (see Table 1), and one federally threatened species: the yellow lance (*Elliptio lanceolata*). All species observations have been summarized to Frederick County, meaning that the species and habitats identified in the MD-DNR species list do not necessarily occur on the Site.

Table 1 presents the special status species to be considered in the effects analysis and presence of habitat at the Site based on the field survey effort.

No special status species were observed during the field survey. Based on all readily available information and an on-site evaluation, we have determined that wildlife habitat at the Site is marginal to absent for all special status species. As indicated in Table 1, marginal habitat is present at the Site for one federally listed species, one federal candidate species, and 25 state listed species. This habitat is limited to the identified wetlands, stream, and surrounding forested area. If no impacts are proposed to these features, then this Project is unlikely to affect listed species. However, consultation with MD-DNR Natural Heritage Program is recommended to confirm the lack of suitable habitat for listed species within the Site.

The USFWS IPaC identified the federally threatened NLEB and the candidate monarch butterfly. Potential habitat was identified for both species during the habitat assessment. The monarch butterfly is listed as a candidate species and thus no further coordination is necessary as there are no statutory protections under the ESA. Additionally, the IPaC specifies that the NLEB only need to be considered for “projects with a federal nexus that have tree clearing ≥15 acres. If project activities do not trigger a federal nexus and tree clearing is less than 15 acres further coordination may not be necessary.” If the Project meets these requirements, then further consultation for this species is not required. Additionally, MD-DNR did not include the NLEB as potentially occurring within Frederick County; therefore, if the Project can adhere to the requirements from the IPaC further coordination for this species may not be necessary.

Based on available data from the Maryland Bald Eagle Nest Monitoring Program, there are no bald eagle nests within the Site boundary, however, there is an identified nest approximately one mile north of the Site that is not currently monitored.

Incidental Wildlife Observations

Throughout the survey several other species of wildlife were observed on the Site. These incidental observations included: white-tailed deer (*Odocoileus virginianus*), eastern box turtle (*Terrapene carolina carolina*), eastern gray squirrel (*Sciurus carolinensis*), northern mockingbird (*Mimus polyglottos*), eastern phoebe (*Sayornis phoebe*), and red-shouldered hawk (*Buteo lineatus*).

CONCLUSIONS

Due to the highly altered state of the Site, wildlife habitat is considered marginal to absent across the Site as it is mainly restricted to the northern boundary where the wetlands, stream, and surrounding forested areas were identified. No special status species were observed during the field survey, and any future occurrences of special status species would likely be incidental and transitory in nature. Therefore, it is ERM's judgement that the proposed project is not likely to adversely affect special status species.

As the Project does not currently propose any impacts to the identified water resources consultation with MD-DNR is not required. However, ERM recommends consultation with MD-DNR to confirm the results of the habitat assessment and ensure the project complies with all recommendations for minimization and avoidance of impacts to special status species. Consultation with MD-DNR's Natural Heritage Program typically includes an evaluation of project impacts to fish and wildlife, and their habitats (including rare, threatened, and endangered species), sensitive habitats, and significant resources presently known or potentially occurring within the vicinity of the project. Environmental Project Reviews Fee vary depending on project complexity, and typically take at minimum of 30 days to complete project review. Species specific surveys may be required.

As noted above, there is also no designated critical habitat present at the Site. ERM recommends that the project be designed to avoid tree clearing activities to the extent practicable to comply with the recommendation from USFWS IPaC. If tree clearing for this Project is less than 15 acres, then no further coordination with USFWS will be necessary If the Project requires 15 acres or greater of tree clearing, then ERM recommends that the Project comply with tree clearing guidelines from USFWS regarding the NLEB which state that tree clearing should be conducted between October 31 to April 1 to avoid impacts to this species. Should clearing involve greater than 15 acres and need to occur between April 1 and October 31, consultation with USFWS and MD-DNR is recommended and a habitat survey will likely be required.

TABLE

Table 1: Special Status Species

Type	Species	Federal Protection Status	State Protection Status	Potential Suitable Habitat
Bird	Bald Eagle (*Haliaeetus leucocephalus*)	MBTA, BGEPA	-	Low: forages along large rivers and lakes, nests in large trees adjacent to water.
	Loggerhead shrike (*Lanius ludovicianus)*	-	SE	Low: forages along forested edges of farmland adjacent to pine forests.
	Upland sandpiper (*Bartramia longicauda*)	-	SE	Low: found in grasslands, may forage in farm fields.
Insect	Monarch butterfly (*Danus plexippus*)	ESA Candidate		Moderate: may occur in the agricultural drainages or transmission line but no federal protections.
	Edwards' hairstreak (*Satyrium edwardsii*)	-	SE	Low: found in open areas adjacent to forested areas that are undisturbed.
	Elfin skimmer (*Nannothemis bella)*	-	SE	Low: occurs in wetlands along perennial streams.
	Northern barrens tiger beetle (*Cicindela patruela)*	-	SE	None: found in sandy openings in pine forests.
	Vandel's cave isopod (*Caecidotea vandeli)*	-	SE	None: found in caves, seepages, or springs.
Mammal	Northern long-eared bat (*Myotis septentrionalis*)	FT	ST	Low: however, according to the IPaC, the species only need to be considered if the project has a federal nexus that has tree clearing ≥ 15 acres.
	Allegheny woodrat (*Neotoma magister)*	-	SE	None: found in outcrops, cliffs, ledges, boulders near unfragmented forests.
Mussel	Yellow lance (*Elliptio lanceolata)*	FT	ST	Low: found in perennial streams with clean coarse to medium sand substrate.
	Brook floater *(Alasmidonta varicosa)*	-	SE	Low: found in perennial streams with swift current in clean gravel, sand, cobble substrates.
	Green floater *(Lasmigona subviridis)*	-	SE	Low: found in perennial streams in pools with clean gravel and sand substrates.
Type	**Species**	**Federal Protection Status**	**State Protection Status**	**Potential Suitable Habitat**

Mussel	Triangle floater *(Alasmidonta undulata)*	-	ST	Low: found in perennial streams with silt, sand, and gravel substrates in varying habitats.
Plant	Blunt-lobe grapefern (*Sceptridium oneidense)*	-	SE	Low: found in moist, acidic, damp open forests.
	Broadleaf bunchflower (*Veratrum hybridum)*	-	SE	Low: found in mesic deciduous hardwood forests.
	Canada burnet *(Sanguisorba canadensis)*	-	ST	None: wet to moist prairies and fens.
	Canadian milkvetch (*Astragalus canadensis)*	-	SE	None: moist prairies, sandy savannas, thickets and moist meadows.
	Climbing fumitory *(Adlumia fungosa)*	-	ST	None: moist, rocky woods, thickets and slopes.
	Climbing milkweed *(Matelea obliqua)*	-	SE	None: limestone glades in open woodlands.
	Davis' sedge (*Carex davisii*)	-	SE	Low: upland and floodplain deciduous woodlands.
	Earleaf false foxglove (*Agalinis auriculata)*	-	SE	Low: prairies or open woodlands.
	Eastern featherbells (*Stenanthium gramineum)*	-	ST	Low: bottomland forests, rich wooded slopes, streambanks, wet prairies, and roadsides.
	Eastern leatherwood (*Dirca palustris)*	-	ST	None: ravines, wooded slopes, and wooded bluffs.
	Field sedge (*Carex conoidea)*	-	SE	None: prairies, sedge meadows, fens, and shorelines.
	Fringe-top bottle gentian (*Gentiana andrewsii)*	-	ST	None: calcareous soil in floodplains, thickets, fens, and swampy areas.
	Glade mallow (*Napaea dioica)*	-	SE	Low: openings in floodplain forests, low areas along streams, and depressions along railroads.
	Glade spurge (*Euphorbia purpurea)*	-	SE	None: wet seepages over bedrock.
	Golden-seal (*Hydrastis canadensis)*	-	ST	Low: found in rich, mesic hardwood forests.
	Goldthread (*Coptis trifolia)*	-	SE	None: moist mossy woods, conifer swamps, and bogs.
Type	**Species**	**Federal Protection Status**	**State Protection Status**	**Potential Suitable Habitat**

Plant	Large purple fringed orchid (*Platanthera grandiflora)*	-	ST	Low: found in wetlands in forested and field areas, marshes, bogs, and swamps.
	Little floatingheart (*Nymphoides cordata)*	-	SE	None: upland depression ponds, sluggish streams, and beaver ponds.
	Lobed spleenwort (*Asplenium pinnatifidum)*	-	SE	None: vertical rock formations in large ravines, cliffs, or canyons.
	Long-bract green orchis (*Dactylorhiza viridis)*	-	SE	None: coniferous and hardwood forests near prairies, meadows, coastal heaths, and bogs.
	Marsh speedwell (*Veronica scutellata)*	-	SE	None: bogs, marshes, wet meadows, and seeps.
	Northern oak fern (*Gymnocarpium dryopteris)*	-	SE	None: coniferous and mixed forests on talus slopes.
	Northern pitcherplant (*Sarracenia purpurea)*	-	ST	None: peat bogs.
	Purple fringeless orchid (*Platanthera peramoena)*	-	ST	None: moist meadows and prairies, prairie swales, swamps, and seeps.
	Purple giant-hyssop (*Agastache scrophulariifolia)*	-	ST	Low: rich woods and thickets.
	Purple meadow parsnip (*Thaspium trifoliatum)*	-	SE	None: rocky uplands woods, bluffs, upland oak savannas, and prairies.
	Queen-of-the-prairie (*Filipendula rubra)*	-	SE	None: moist sand prairies, moist meadows, shrubby fens, and seeps/springs.
	Red milkweed (*Asclepias rubra)*	-	SE	None: bogs and wet savannas.
	Red turtlehead (*Chelone obliqua)*	-	ST	None: swamps, soggy meadows, shaded seeps, and springs.
	Rock skullcap (*Scutellaria saxatilis)*	-	SE	None: rocky mesophytic woods, talus slopes, and bluffs with sandstone substrate.
	Rough wood aster (*Eurybia radula)*	-	SE	Low: forest edges, wetland margins, and shores of rivers.
	Sharp-scaled mannagrass (*Glyceria acutiflora)*	-	SE	None: open wetlands with standing water.
	Shumard oak (*Quercus shumardii)*	-	ST	Low: moist soils with good drainage.
Type	**Species**	**Federal Protection Status**	**State Protection Status**	**Potential Suitable Habitat**

Plant	Smooth cliffbrake (*Pellaea glabella)*	-	SE	None: limestone or dolomite outcrops, cliffs, and bluffs.
	Snowy campion (*Silene nivea)*	-	SE	Low: moist woods, streambanks, floodplain forest.
	Starflower Solomon's-plume (*Maianthemum stellatum)*	-	SE	None: moist meadows and shorelines.
	Sweet-scented indian-plantain (*Senecio suaveolens)*	-	SE	Low: riverbanks, moist low grounds, bottomland woods.
	Torrey's mountain mint (*Pycnanthemum torreyi)*	-	SE	Low: dry, open woods, along forest margins.
	Valerian (*Valeriana pauciflora)*	-	SE	Low: floodplain woodlands, shaded ravines, and rocky canons.
	Veined skullcap (*Scutellaria nervosa)*	-	ST	Low: moist forests near streams.
	Water bulrush (*Schoenoplectus subterminalis)*	-	SE	None: lakes, ponds, bogs, pools, and rivers.
	White trout lily (*Erythronium albidum)*	-	ST	Low: shaded moist, woods along streams.
	Whorled mountain mint (*Pycnanthemum verticillatum)*	-	ST	None: rocky slopes and outcrops.
	Winged loosestrife *(Lythrum alatum)*	-	SE	None: wet meadows, wet prairies, and shorelines.
	Woodland horsetail (*Equisetum sylvaticum)*	-	SE	Low: shady woods and woodland edges.
	Yellow fringed orchid (*Platanthera ciliaris)*	-	ST	None: bogs, marshes, wet meadows, wet prairies, and wet savannas.
	Yellow nodding ladies'-tresses *(Spiranthes ochroleuca)*	-	SE	Low: meadows, shrubs or thickets, and woodlands.
	Yellow water crowfoot (*Ranunculus flabellaris)*	-	SE	None: shores of ponds, shallow creeks or streams with slow-moving water, swamps, and seep bottoms.
	Yellowleaf tinker's-weed (*Triosteum angustifolium)*	-	SE	None: forest ridges/ledges, talus woodlands and rocky slopes.

FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered; ST = State Threatened;
ESA = Endangered Species Act; MBTA = Migratory Bird Protection Act; BGEPA = Bald and Golden Eagle Protection Act

FIGURES

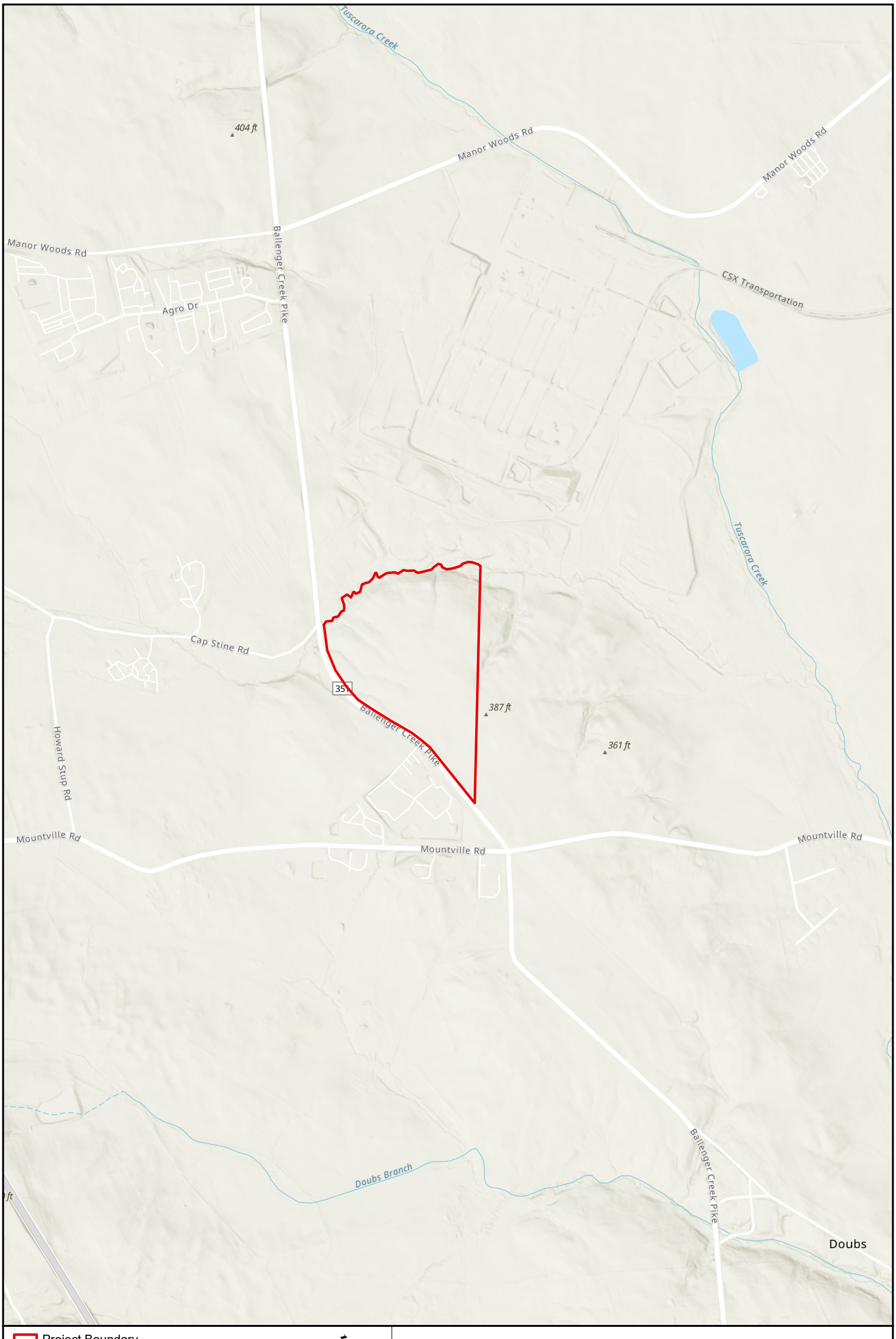
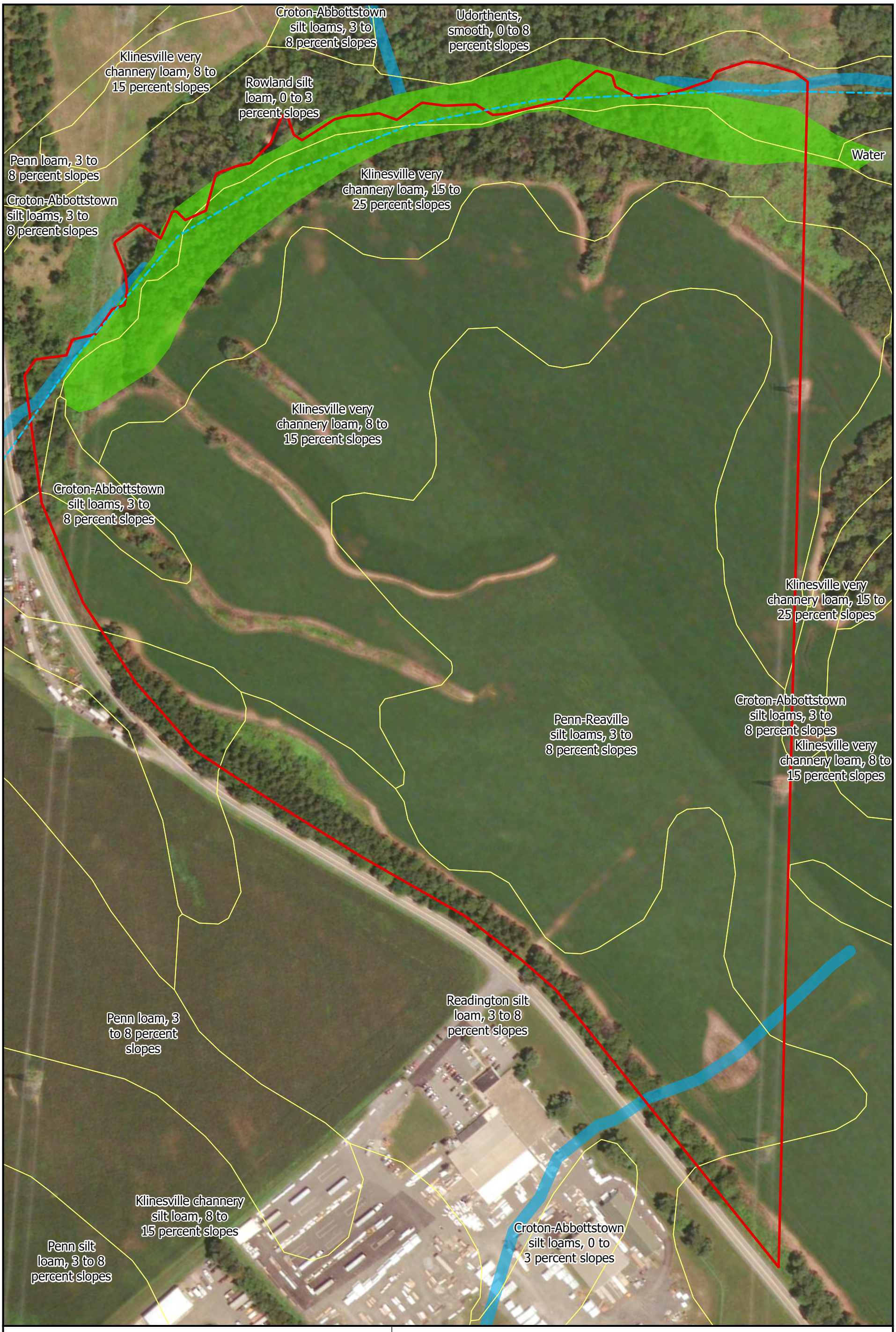


Figure 1
Project Location Map
Bauxite Data Center
Rowan Green Data
Frederick County, MD

ERM

MPLS C:\Users\rob.laposa\Documents\ArcGIS\Projects\Bauxite\Bauxite.aprx\Project Location | REVISED: 08/11/2022 | SCALE: 1:12,000 when printed at 11x17 DRAWN BY: RL



Project Boundary
PFO
Perennial Stream (R5)
NRCS Web Soil Survey
NHD Flowlines

1:2,400
0 100 200 Feet

Figure 2
Environmental Inventory Map
Bauxite Data Center
Rowan Green Data
Frederick County, MD

ERM

MPLS C:\Users\rob.laposa\Documents\ArcGIS\Projects\Bauxite\Bauxite.aprx\EIM | REVISED: 08/11/2022 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: RL

PEM (0.15 Ac.)
PFO (0.02 Ac.)
Perennial Stream (2,456 lf.)
Bauxite Project Boundary
Elevation Contour (5 ft. Interval)
Wetland Data Point
Forested Area (9.03 Ac.)
Fence Line

1:2,400

0 100 200 Feet

Figure 3
WOTUS Delineation Map
Bauxite Data Center
Rowan Green Data
Frederick County, MD

ERM

MPLS C:\Users\rob.laposa\Documents\ArcGIS\Projects\Bauxite\Bauxite.aprx\WOTUS Delineation Map | REVISED: 08/11/2022 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: RL

ATTACHMENT A PHOTOGRAPH LOG

Photograph 1. View of Upland Data Point U-1 (facing north)

Photograph 2. View of Upland Data Point U-1 (facing south)

Photograph 3. View of Upland Data Point U-2 (facing north)

Photograph 4. View of Upland Data Point U-2 (facing south)

Photograph 5. View of Wetland Data Point AA1_W (facing north)

Photograph 6. View of Wetland Data Point AA1_W (facing south)

Photograph 7. View of Upland Data Point AA1_U (facing north)

Photograph 8. View of Upland Data Point AA1_U (facing south)

Photograph 9. View of Wetland Data Point AA2_W (facing east)

Photograph 10. View of Wetland Data Point AA2_W (facing west)

Photograph 11. View of Upland Data Point AA2_U (facing north)

Photograph 12. View of Upland Data Point AA2_U (facing south)

Photograph 11. View of Upland Data Point U-3 (facing north)

Photograph 12. View of Upland Data Point U-3 (facing south)

Photograph 13. View of agricultural drainage area located within soybean field.

Photograph 14. View of soybean field which comprises the majority of the Site.

Photograph 15. View of overhead utility line easement located on the eastern portion of the Site

Photograph 16. View of fence line located along the forested area on the northern portion of the Site.

ATTACHMENT B USFWS IPAC REPORT

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Frederick County, Maryland

Local office

Chesapeake Bay Ecological Services Field Office

(410) 573-4599
(410) 266-9127

177 Admiral Cochrane Drive
Annapolis, MD 21401-7307

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found This species only needs to be considered if the following condition applies: • Projects with a federal nexus that have tree clearing = to or > 15 acres: 1. REQUEST A SPECIES LIST 2. NEXT STEP: EVALUATE DETERMINATION KEYS 3. SELECT EVALUATE under the Northern Long-Eared Bat (NLEB) Consultation and 4(d) Rule Consistency key No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found This species only needs to be considered if the following condition applies: • The monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (FAQ found here: https://www.fws.gov/savethemonarch/FAQ-Section7.html). No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY

BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus — Breeds Sep 1 to Jul 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Cerulean Warbler Dendroica cerulea — Breeds Apr 28 to Jul 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974

Golden Eagle Aquila chrysaetos — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Kentucky Warbler Oporornis formosus — Breeds Apr 20 to Aug 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prairie Warbler Dendroica discolor — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prothonotary Warbler Protonotaria citrea — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the

probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

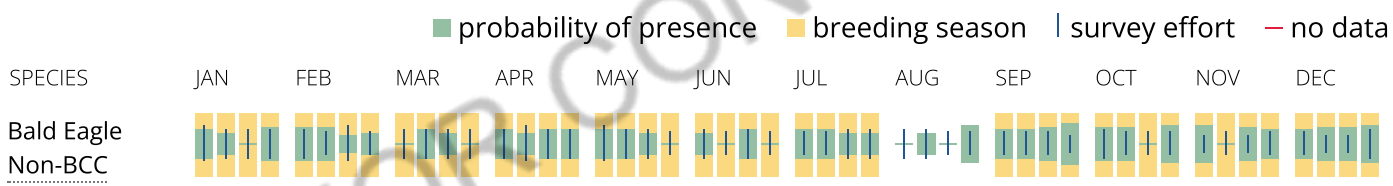
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

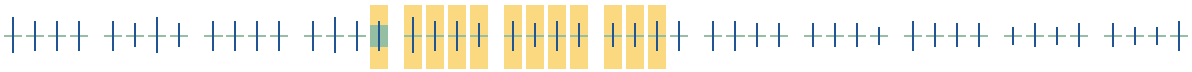
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

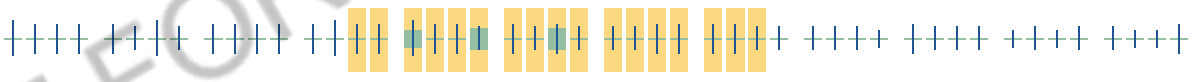


Cerulean Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

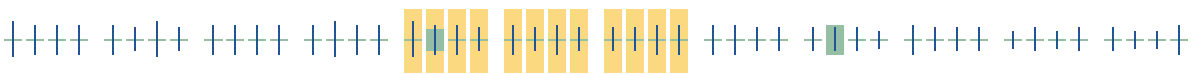


Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

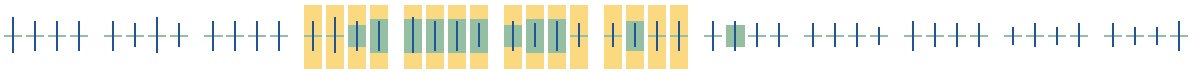
Kentucky Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



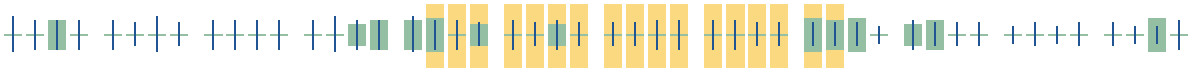
Prairie Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Prothonotary Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

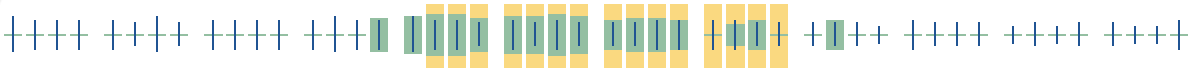


Red-headed Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rusty Blackbird BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Wood Thrush BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin

Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn

more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

THERE ARE NO KNOWN COASTAL BARRIERS AT THIS LOCATION.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

Palustrine

RIVERINE

Riverine

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

ATTACHMENT C MD-DNR LIST OF RARE, THREATENED AND ENDANGERED SPECIES OF FREDERICK COUNTY

List of Rare, Threatened, and Endangered Species of Frederick County

November 2021

Maryland

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Jeannie Haddaway-Riccio, Secretary

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Wildlife & Heritage Service
Natural Heritage Program
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, MD 21401
410-260-8540
Fax 410-260-8596
dnr.maryland.gov/wildlife

Additional Telephone Contact Information:
Toll free in Maryland: 877-620-8DNR ext. 8540 OR
Individual unit/program toll-free number
Out of state call: 410-260-8540
Text Telephone (TTY) users call via the Maryland Relay

ACKNOWLEDGMENTS

The Maryland Department of Natural Resources would like to express sincere appreciation to the many scientists and naturalists who willingly share information and provide their expertise to further our mission of conserving Maryland's natural heritage.

Publication of this list is made possible by taxpayer donations to Maryland's Chesapeake Bay and Endangered Species Fund.

IMPORTANT NOTES

This list is a subset of the main reports:
Maryland Natural Heritage Program. 2021. List of Rare, Threatened, and Endangered Plants of Maryland DNR 03-030321-271 and
Maryland Natural Heritage Program. 2021. Rare, Threatened, and Endangered Plants of Maryland DNR 03-030321-270 and
Maryland Natural Heritage Program. 2021. List of Rare, Threatened, and Endangered Animals of Maryland DNR 03- 111921-291

Please refer to these for important information including grank, history, purpose, governing laws and regulations, understanding state and federal conservation status ranks and legal statuses, and for additional resources.

This list is derived from an extensive data collection effort and numerous field surveys to determine distribution and abundance of plants and animals native to Maryland. Although based on a large volume of information, this list should not be viewed as complete or definitive. While much is known about some species, very little is known about others. The Maryland Natural Heritage Program welcomes additional information or recommendations regarding any of the taxa listed herein.

HOW YOU CAN HELP

You can take an active part in conserving Maryland's rare species by contacting the Wildlife and Heritage Service with the following types of information:

1. Location details should be included (exact mapped location using GPS is preferred, but not required). Online applications such as Google Earth are invaluable but precise, written directions including driving and walking are acceptable.

2. Documentation that includes a photograph, description of the species, identification source, and habitat description should accompany the report.

3. Information on the ecology and or biology of the species including observed and/or identified pollinators should accompany the report.

**Additional information, including a downloadable PDF of our rare plant reporting form can be found at: dnr.maryland.gov/wildlife/Pages/plants_wildlife/rte_reportinginst.aspx

Definitions of qualifiers used in the county distribution of species.

Distributional Qualifier	Definition
{species}$^{?}$	Record for the county is reported but unverified or may indicate that the record occurs outside of the known range or in atypical habitat.
{species}^{h}	Record for the county is based upon a historical collection but no extant population is known.
{species}^{I}	Record for the county is the result of an introduction.

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Animals				
Aeshna tuberculifera	Black-tipped Darner	S2		
Alasmidonta undulata	Triangle Floater	S1S2	T	
Alasmidonta varicosa	Brook Floater	S1	E	
Bartramia longicauda	Upland Sandpiper	S1B	E	
Caecidotea vandeli	Vandel's Cave Isopod	S1	E	
Cicindela patruela	Northern Barrens Tiger Beetle	S1	E	
Cordulegaster bilineata	Brown Spiketail	S3		
Cordulegaster erronea	Tiger Spiketail	S3		
Cottus sp. 7	Checkered Sculpin	S2		
Elliptio lanceolata	Yellow Lance	S1	T	LT
Elliptio producta	Atlantic Spike	S2S3	I	
Erythrodiplax minuscula	Little Blue Dragonlet	S1		
Euphydryas phaeton	Baltimore Checkerspot	S2		
Gallinula galeata	Common Gallinule	S2S3B	I	
Haliaeetus leucocephalus	Bald Eagle	S3S4		
Hylogomphus abbreviatus	Spine-crowned Clubtail	S1		
Hylogomphus viridifrons	Green-faced Clubtail	S1		
Ixobrychus exilis	Least Bittern	S2S3B	I	
Ladona julia	Chalk-fronted Skimmer	S3		
Lampsilis cariosa	Yellow Lampmussel	SU		
Lanius ludovicianus	Loggerhead Shrike	S1B	E	
Lanthus vernalis	Southern Pygmy Clubtail	S2		
Lasmigona subviridis	Green Floater	S1	E	
Libellula flavida	Yellow-sided Skimmer	S2S3		
Mustela nivalis	Least Weasel	S2S3	I	
Nannothemis bella	Elfin Skimmer	S1	E	
Neotoma magister	Allegheny Woodrat	S1	E	
Ophiogomphus sp. 1	Chesapeake Snaketail	S1		
Phanogomphus quadricolor	Rapids Clubtail	S2	I	
Podilymbus podiceps	Pied-billed Grebe	S2S3B		
Porzana carolina	Sora	S2B		
Satyrium edwardsii	Edwards' Hairstreak	S1	E	
Setophaga fusca	Blackburnian Warbler	S3B		
Sorex fumeus	Smoky Shrew	S2S3	I	
Sorex hoyi winnemana	Southern Pygmy Shrew	S2		
Spiza americana	Dickcissel	S3B		
Strophitus undulatus	Creeper	S2S3	I	
Stygobromus pizzinii	Pizzini's Cave Amphipod	S1		
Stygobromus sp. 14	Roundtop Amphipod	S1		
Stygobromus tenuis potomacus	Potomac Amphipod	S3		
Thryomanes bewickii bewickii	Bewick's Wren	SXB	X	

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Plants				
Adlumia fungosa	Climbing Fumitory	S2	T	
Agalinis auriculata	Earleaf False Foxglove	S1	E	
Agastache scrophulariifolia	Purple Giant-hyssop	S1S2	T	
Agrimonia microcarpa [?]	Small-fruited Agrimony	S1?		
Amelanchier spicata	Running Serviceberry	S2		
Amianthium muscitoxicum	Fly-poison	S2		
Anaphalis margaritacea	Pearly Everlasting	S3		
Arabis patens	Spreading Rockcress	S3		
Aralia racemosa	American Spikenard	S2S4		
Asclepias purpurascens	Purple Milkweed	S2		
Asclepias rubra [h?]	Red Milkweed	S1	E	
Asclepias verticillata	Whorled Milkweed	S3		
Asplenium pinnatifidum	Lobed Spleenwort	S1	E	
Astragalus canadensis	Canadian Milkvetch	S1	E	
Aureolaria flava [h]	Smooth Yellow False Foxglove	S3		
Aureolaria levigata [h]	Downy Yellow False Foxglove	S3		
Bartonia paniculata [h]	Twining Screwstem	S3		
Blephilia ciliate	Downy Woodmint	S3S4		
Borodinia dentata	Short's Rockcress	S3		
Botrychium simplex [?]	Least Grapefern	SH	X	
Calopogon tuberosus [h]	Tuberous Grass-pink	S1	E	
Calystegia spithamaea ssp. spithamaea	Low Bindweed	S2		
Capnoides sempervirens	Pale Corydalis	S3		
Cardamine douglassii	Purple Cress	S3		
Carex albursina	White Bear Sedge	S3		
Carex argyrantha [h]	Hay Sedge	S3		
Carex conoidea	Field Sedge	S1	E	
Carex davisii	Davis' Sedge	S1	E	
Carex emoryi	Emory's Sedge	S3		
Carex pellita	Wooly Sedge	S2?		
Carex shortiana	Short's Sedge	S3S4		
Carex sparganioides	Bur-reed Sedge	S3		
Castilleja coccinea [h]	Scarlet Indian-paintbrush	S1	E	
Cirsium muticum	Swamp Thistle	S3		
Chelone obliqua [h?]	Red Turtlehead	S2	T	
Chimaphila umbellata	Common Wintergreen	S3		
Clematis viorna	Vase-vine Leatherflower	S3		
Commelina erecta	Erect Dayflower	S3		
Coptis trifolia	Goldthread	S1	E	
Corallorhiza wisteriana [h]	Spring Coralroot	S1	E	
Cornus rugosa [h]	Roundleaf Dogwood	S1	E	
Corylus cornuta	Beaked Hazelnut	S3		
Cyperus lancastriensis	Many-flowered Umbrella-sedge	S2S3		

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Cyperus refractus	Reflexed Flatsedge	S2?		
Cypripedium parviflorum var. pubescens	Large Yellow Lady's-slipper	S3		
Cystopteris tennesseensis [h]	Tennessee Bladderfern	S1		
Dactylorhiza viridis	Long-bract Green Orchis	S1	E	
Delphinium tricorne	Dwarf Larkspur	S3		
Dichanthelium bicknellii [h]	Bicknell's Witchgrass	SU	X	
Diphasiastrum tristachyum [?]	Deep-root Clubmoss	S3		
Dirca palustris	Eastern Leatherwood	S2	T	
Doellingeria infirma	Cornel-leaf Aster	S3		
Drosera rotundifolia	Roundleaf Sundew	S3		
Dryopteris celsa	Log Fern	S3		
Epilobium leptophyllum	Linear-leaf Willowherb	S2S3		
Equisetum sylvaticum	Woodland Horsetail	S1	E	
Erigenia bulbosa	Harbinger-of-spring	S3		
Erythronium albidum	White Trout Lily	S2	T	
Euphorbia purpurea	Glade Spurge	S1	E	
Eurybia radula	Rough Wood Aster	S1	E	
Eutrochium maculatum [?]	Spotted Joe-pye Weed	SU	X	
Filipendula rubra	Queen-of-the-prairie	S1	E	
Fraxinus nigra	Black Ash	S3		
Galium latifolium	Purple Bedstraw	S3		
Gentiana andrewsii	Fringe-top Bottle Gentian	S2	T	
Geranium robertianum	Herb-Robert	S1		
Geum laciniatum	Rough Avens	S3		
Glyceria acutiflora	Sharp-scaled Mannagrass	S1	E	
Gymnocarpium dryopteris	Northern Oak Fern	S1	E	
Helianthus hirsutus [h]	Stiff-hair Sunflower	S1		
Heracleum maximum	Cow-parsnip	S3		
Hibiscus laevis	Halberd-leaf Rosemallow	S3		
Hybanthus concolor	Green Violet	S3		
Hydrastis canadensis	Golden-seal	S2	T	
Iris virginica	Virginia Blueflag	S3		
Isoëtes engelmannii	Engelmann's Quillwort	S3		
Juglans cinerea	Butternut	S2S3		
Krigia dandelion [h]	Potato Dwarf-dandelion	S2S3		
Lespedeza frutescens	Violet Lespedeza	S3		
Ligusticum canadense [h]	American Lovage	SH	X	
Liparis liliifolia	Large Twayblade	S3		
Liparis loeselii	Loesel's Twayblade	S1S2		
Lycopodiella inundata	Bog Clubmoss	S2		
Lythrum alatum	Winged Loosestrife	S1	E	
Maianthemum stellatum	Starflower Solomon's-plume	S2	E	
Malaxis unifolia	Green Adder's-mouth Orchid	S2		

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Malus angustifolia	Southern Crabapple	S3		
Matelea obliqua	Climbing Milkweed	S1S2	E	
Micranthes micranthidifolia [h]	Lettuceleaf Saxifrage	S3		
Monarda clinopodia	Basil Beebalm	S3S4		
Mononeuria glabra	Appalachian Sandwort	S1		
Myosotis macrosperma	Large-seed Forget-me-not	S3S4		
Myosotis verna	Spring Forget-me-not	S3		
Napaea dioica	Glade Mallow	S1	E	
Nymphoides cordata	Little Floatingheart	S1	E	
Orthilia secunda [h]	One-side Wintergreen	SH	X	
Packera paupercula	Balsam Ragwort	S3		
Panax quinquefolius	American Ginseng	S2S3		
Patis racemosa	Black-fruit Mountain-ricegrass	S2S3		
Pellaea glabella	Smooth Cliffbrake	S1	E	
Penstemon laevigatus [h]	Smooth Beardtongue	SU		
Phacelia purshii	Miami-mist	S3		
Phyllanthus caroliniensis	Carolina Leaf-flower	S3		
Platanthera ciliaris	Yellow Fringed Orchid	S2	T	
Platanthera cristata	Crested Yellow Orchid	S3		
Platanthera flava	Pale Green Orchid	S2S3		
Platanthera grandiflora	Large Purple Fringed Orchid	S2	T	
Platanthera peramoena	Purple Fringeless Orchid	S1S2	T	
Platanthera psycodes	Small Purple Fringed Orchid	S1	PE	
Platanthera shriveri	Shriver's Frilly Orchid	S1		
Pycnanthemum pycnanthemoides [h?]	Southern Mountainmint	SH	X	
Pycnanthemum torreyi	Torrey's Mountainmint	S1	E	
Pycnanthemum verticillatum	Whorled Mountainmint	S2	T	
Quercus macrocarpa [h]	Bur Oak	S1S2		
Quercus shumardii	Shumard Oak	S2	T	
Ranunculus septentrionalis	Carolina Buttercup	S1?		
Ranunculus flabellaris	Yellow Water Crowfoot	S1	E	
Ribes cynosbati	Prickly Gooseberry	S3		
Ribes americanum	Wild Black Currant	S1	X	
Ribes glandulosum	Skunk Currant	S3		
Ripariosida hermaphrodita [h]	Virginia Mallow	S1	E	
Rubus pubescens	Dwarf Raspberry	S1?		
Rudbeckia fulgida	Orange Coneflower	S3		
Rudbeckia triloba	Brown-eyed Susan	S3		
Ruellia strepens	Limestone Wild Petunia	S2S3		
Rumex altissimus [h]	Tall Dock	S1	E	
Sagittaria rigida [h]	Sessile-fruit Arrowhead	S1	E	
Salix exigua [h]	Narrowleaf Willow	S1	E	
Sanguisorba canadensis	Canada Burnet	S2	T	

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Sanicula trifoliata	Large-fruited Sanicle	S3		
Sarracenia purpurea	Northern Pitcherplant	S2	T	
Sceptridium oneidense [?]	Blunt-lobe Grapefern	S1	E	
Schoenoplectus subterminalis	Water Bulrush	S1	E	
Scrophularia lanceolata	Hare Figwort	S3		
Scutellaria incana	Hoary Skullcap	S3		
Scutellaria leonardii [h]	Shale Barren Skullcap	S2	T	
Scutellaria nervosa	Veined Skullcap	S1S2	T	
Scutellaria ovata	Heartleaf Skullcap	S3		
Scutellaria saxatilis	Rock Skullcap	S1	E	
Scutellaria serrata	Showy Skullcap	S3		
Senecio suaveolens	Sweet-scented Indian-plantain	S1	E	
Senna marilandica	Maryland Wild Senna	S3		
Silene nivea	Snowy Campion	S1	E	
Silphium asteriscus var. *trifoliatum*	Threeleaf Rosinweed	S3		
Smilax ecirrata [h]	Upright Greenbrier	S1S3		
Solidago arguta var. arguta [?]	Late Goldenrod	S1?		
Solidago hispida	Hairy Goldenrod	S3		
Solidago patula	Sharp-leaved Goldenrod	S3		
Solidago rigida [h]	Prairie Goldenrod	S1	E	
Sparganium eurycarpum	Giant Bur-reed	S3		
Spiranthes ochroleuca	Yellow Nodding Ladies'-tresses	S1	E	
Stachys hyssopifolia [h]	Hyssopleaf Hedge-nettle	S1		
Stenanthium gramineum	Eastern Featherbells	S1	T	
Symphyotrichum shortii	Short's Aster	S3S4		
Thaspium trifoliatum	Purple Meadow Parsnip	S1	E	
Trichophorum planifolium [h]	Bashful Bulrush	S2S3		
Trichostema brachiatum	Glade Bluecurls	S3		
Trillium cernuum	Northern Nodding Trillium	S3		
Triosteum angustifolium	Yellowleaf Tinker's-weed	S1	E	
Valeriana pauciflora	Valerian	S1	E	
Valerianella umbilicata [?]	Navel-shaped Corn-salad	SH	X	
Veratrum hybridum	Broadleaf Bunchflower	S1	E	
Veratrum virginicum	Virginia Bunchflower	S3		
Vernonia gigantea [h]	Giant Ironweed	SU		
Veronica scutellata	Marsh Speedwell	S1	E	
Zanthoxylum americanum [h]	Northern Prickly-ash	S1S2	E	
Zizia aurea	Golden Alexanders	S3		

EXHIBIT 4

AMENDED AND RESTATED

ADEQUATE PUBLIC FACILITIES LETTER OF UNDERSTANDING

Quantum Frederick

Preliminary Plan: PP266504 & PP273777 F266567, A273778

In General: The following Amended and Restated Letter of Understanding ("**Letter**") between the Frederick County Planning Commission ("**Commission**") and Quantum Maryland, LLC ("**Developer**"), together with its/their successors and assigns, sets forth the conditions and terms which the Commission deems to be the minimum necessary improvements dealing with school, water, sewer, and road improvements that must be in place for the property identified below to be developed, as proposed under the approved Quantum Frederick preliminary plan (the "**Project**"), in compliance with the Frederick County Adequate Public Facilities Ordinance ("**APFO**"). This Letter amends, restates, and replaces the original Letter of Understanding (A266569) dated December 15, 2021 (the "Original LOU").

The Developer, its successors and assigns, hereby agrees and understands that unless the required improvements (or contributions to road escrow accounts, as specified below) are timely provided in accordance with this Letter, APFO requirements will not be satisfied and development of the Project or a subsequent phase thereof will not be permitted to proceed.

1. This Letter concerns itself with the Developer's 1,053.78 +/- acre Project, which is zoned General Industrial (GI) and Agriculture/Rural (A) and located north of Adamstown, Maryland ("**Site**"). The Site is mainly bounded to the west by Ballenger Creek Pike, to the east by New Design Road, and bisected by Manor Woods Road. Future MD 80, a County Comprehensive Plan minor arterial roadway, is proposed to run east to west through the southern portion of the Site. Dedication of right-of-way and construction of this section of MD 80 will be required as part of the proposed development. This APFO approval will be effective for the development of up to 17,403,344 square feet of data center, 821,881 square feet of office, and 7,500 square feet of commercial use, as shown on the preliminary plan (PP266504) for the above-referenced Project, which was granted conditional approval by the Commission on December 15, 2021.
   The Traffic Impact Analysis prepared by Wells + Associates, Inc. for the Project, dated October 8, 2021, and revised November 11, 2021, ("TIA"), incorporates APFO traffic analysis assuming full phased buildout of the Project, background traffic, and pipeline projects. The timing of construction of the required road improvements for the Project are linked to the estimated overall morning (AM) and evening (PM) peak hour vehicle trips projected for the approved uses in the Project.

2. This Letter incorporates the Developer's 257.68 acres, which are zoned Limited Industrial (LI), GI, and A and located northwest of Adamstown, Maryland. This additional land is mainly bounded to the west by Ballenger Creek Pike and to the south by

Mountville Road, and will be combined with the 1,053.78 acres covered by the Original LOU for a total of 1,311.46 acres. This APFO approval does not propose any increase in the development square footage of data center, office or commercial uses from the original approval. The trip generation and phasing plan remain unchanged.

A Traffic Memorandum prepared by Wells + Associates, Inc, dated October 26, 2022, analyzed traffic forecasts, project phasing, and trip generation proposed in the original Traffic Impact Analysis. The original analysis was identified as a conservative development approach and the new acreage does not propose any increases in development density or intensity, and proposes the distribution of traffic on the roadway network in a manner consistent with the previous study. Therefore, no changes to the roadway mitigations or phasing plan are proposed.

The agricultural zoned portions of the Project, shown on the PP273777 and PP266504, cannot be developed until such a time that the appropriate zoning is applied to those areas.

I. PUBLIC WATER AND SEWER – SECTION 1

The Project Site is classified W-1/S-1 and W-5/S-5 as shown on the County Water and Sewerage Plan map. The Division of Water and Sewer Utilities (DWSU) has provided a recommendation of conditional approval regarding sewer and water facilities for service to the Project, based upon proposed improvements to be constructed by Developer, as described below and in a water and wastewater study provided by Whitman, Requardt & Associates, LLP (WR&A) dated November 2021.

The Project will be served by a network of public and private water and sewer mains and service connections generally depicted on the Preliminary Plans (PP273777 and PP266504) and various Phasing exhibits within the WR&A study mentioned above and attached (Exhibit 1 and 2). Proposed improvements to Frederick County's water and sewer systems serving this region will be provided to the Project through developer-funded improvements specified below and as shown on the Preliminary Plan.

While the public water/sewer facilities will be adequate upon completion of specified improvements to serve the Project, the Developer recognizes that capacity is not guaranteed until purchased. APFO approval for sewer and water does not guarantee that plats will be recorded and building permits will be issued. Plat recordation and building permit issuance are subject to compliance with the Annotated Code of Maryland, Environment Article Section 9-512, et. seq and all applicable County regulations, including but not limited to §1-16-106 of the Frederick County Subdivision Regulations.

The Project is proposed to be served by two separate water distribution systems; one for domestic and fire service (potable), and the other for cooling water only (cooling), sized in accordance with the WR&A APFO study and as approved by DWSU. Please note that Lots 112 A-D are electrical substation lots that are not intended to be served by public water or sewer.

Water and Sewer Phase 1 consists of those lots whose total (combined) domestic potable maximum day water demand does not exceed 0.2 million gallons per day (mgd) **and** whose total (combined) potable cooling water demand does not exceed a maximum day cooling demand of

1.3 mgd as determined and approved by DWSU. However, resultant sewage flows must not exceed the capacity of the IQFSPS as stipulated below. The attached *APFO/LOU PHASING* spreadsheet (Exhibit 3) will be used to establish and track maximum demands for platting purposes.

Phase 2 consists of the remaining Section 1 lots whose water demands exceed those maximums specified above.

I. Phase 1

A. Water:
The Developer shall construct or cause to be constructed the following water improvements listed below, which are necessary to provide water service to the first set of lots to be recorded within the Project, up to the maximum water demand restrictions described above. The diameter of the utility lines and other infrastructure is to be confirmed and approved during the design phase of the proposed infrastructure by DWSU and Developer's Engineer.

1. Design, permit, and construct 16-inch potable waterline from the existing 24-inch waterline west of the railroad tracks northward along proposed Happy Landing Road to the existing right of way of New Design Road.
2. Design, permit, and construct 16-inch potable waterline from the existing 24-inch waterline west of the railroad tracks westward to the proposed intersection of Quantum Place South and Manor Woods Road.
3. Design, permit, and construct 12-inch potable waterline from the existing 12-inch waterline located in Mountville Road (Frederick County Water & Sewer Contract # 035-W) to the existing 24-inch waterline starting point described above in Section A.1.
4. Design, permit, and construct 12" water line from the end of section A.2 described above at the proposed intersection of Quantum Place South and Manor Woods Road, southwesterly down the length of Quantum Place South to the end of the cul-de-sac.
5. Design, permit, and construct 12" water line from the end of section A.4 and continue along line A.5 as described in the APFO water phases exhibit to a point on section A.3 described above
6. Design, permit, and construct 8" water line from the south side of Manor Woods Road at the proposed intersection with Quantum Place South, to the north side of the cul-de-sac in proposed Quantum Place North.
7. Design, permit, and construct 16-inch potable waterline from the terminus at Quantum Place South northward and along Manor Woods Road to the intersection of Ballenger Creek Pike.
8. Design and construct 12-inch potable waterline from the intersection of Ballenger Creek Pike and Manor Woods Road southwest to a point opposite the intersection of Agro Drive and Ballenger Creek Pike.
9. Design, permit, and construct 8-inch potable waterline from the terminus of A.7 described above, continue along line A.9 as described in the APFO water phases exhibit to the terminus of the 12" line in at Quantum Loop South as described above as A.5,

10. Design, permit, and construct 16-inch cooling waterlines to run parallel to the lines described above in A.1-A.4, A.6, A.7 or as otherwise approved by DWSU required to provide cooling water to data center lots.

B. Sewer:
The Developer shall construct or cause to be constructed the following sewer improvements listed below, all of which are necessary to provide sewer service to Phase 1 of the Project.

1. Design, permit, and construct new interim 1 MGD (peak pumping rate) Interim Quantum Frederick Sewage Pump Station (IQFSPS) on Outlot 1 as shown on the approved preliminary plan. Construction must be completed on the replacement 5 MGD (peak pumping rate) Quantum Frederick Sewage Pump Station (QFSPS), as described in Phase 2 below (D.1.), within 3 years of the construction completion date of the 1 MGD IQFSPS, or prior to approval of total sewage flows to the IQFSPS exceeding the capacity limitations as determined by DWSU, whichever occurs first.
2. Design, permit, and construct a new 10-inch force main from the existing force main in New Design Road to the new IQFSPS or to new gravity sewer in Happy Landing Road that drains to the new IQFSPS, or as otherwise approved by DWSU. This force main will divert flows from the Adamstown Sewage Pumping Station to the new QFSPS.
3. Design, permit, and Construct upgrades to the existing Adamstown Sewage Pumping station, pumps and other existing station infrastructure as required due to the new hydraulic pumping parameters created by item B.2. above. The pumps will be replaced with new pumps designed for the new system head created by the new outfall to the QFSPS. The wastewater flows will then be pumped from the proposed IQFSPS, to the existing 10” force main in New Design Road.

   The proposed sewage flows (peak pump rate) from the QFSPS for this phase will not exceed 1.0 MGD, or as determined by a developer funded capacity analysis of the existing gravity outfall sewer system beginning in New Design Road, or as otherwise approved by DWSU.
4. Design, permit, and construct a gravity sewer collection system from the IQFSPS northward to support those lots that the applicant is seeking to record. See lines A-L~~H~~ as represented in the QF Sewer Phases Exhibit.

II. Phase 2

The Developer shall design, permit, and construct or cause to be constructed the following water improvements listed below, all of which are necessary to provide water service to Phase 2 of the Project. Note that waterlines installed for Phase 1 above will serve Phase 2 lots.

C. Water:
1. Prior to platting any lots upon which a ‘data center’ is to be constructed beyond those approved by DWSU under Phase 1 of the APFO/LOU Phasing table, the Developer will design, permit, and construct improvements required to obtain additional water capacity of remaining (Max Day) from the New Design Water Treatment Facility (NDWTF), or

study, design, permit, and construct the wastewater effluent supply system for use as cooling water to support remaining phases. The design shall ensure that the existing effluent outfall pipelines in New Design Road will remain functional to continue to convey effluent from the Ballenger-McKinney WWTP to the Potomac River.

2. If the additional NDWTF capacity option is selected, the Developer will prepare an engineering study to determine the need for additional public water storage as required and approved by DWSU. If required, design, permit, and construct an elevated public storage (potable or cooling) volume as approved by Developer's Engineer and DWSU.
3. If effluent water is being used for cooling Phase 2 lots, design, permit, and construct effluent lines (size as approved by Developer's Engineer and DWSU) parallel to the water lines described above in A.1-A.10 or other location as approved by DWSU.

The Developer shall design, permit, and construct or cause to be constructed the following sewer improvements listed below, all of which are necessary to provide sewer service to Phase 2 of the Project:

D. Sewer:

1. Design, permit, and construct new QFSPS and convert the IQFSPS to a manhole, and modify other existing station infrastructure, rerouting the wastewater flows to the existing Buckeystown Interceptor sewer, located near Michaels Mill Road near the Monocacy River. The pumps will require replacement for the change in system head from the existing connection to the gravity connection at New Design Road to the Buckeystown Sewage Interceptor. QFSPS upgrades and design flow rates shall be designed by developer's Engineer and approved by DWSU. QFSPS design shall include peak rate attenuation facilities, as otherwise approved by DWSU.

2. Design, permit and construct a force main system from QFSPS eastward to the Buckeystown Interceptor Sewer near Michaels Mill Road and the Monocacy River. Force main system shall be sized per the County Water and Sewer Design Manual for the full range of pumping rates and designed by Developer's Engineer and approved by DWSU.

II. ROADS

A. APFO ROAD IMPROVEMENTS

The road improvements program described in the following paragraphs are based on the TIA analysis, and these improvements are projected to provide capacity for 3,317 AM peak hour trips and 2,877 PM peak hour trips. The Developer will construct the road improvements in four (4) phases, with each phase of road improvements intended to allow an incremental increase in development in the Project based on the cumulative total trips shown on EXHIBIT 4.

The roadway impacts for each development phase of the Project will be mitigated through a combination of construction of improvements, or pro-rata contribution(s) to existing and/or future County-held escrow accounts (where applicable) in accordance with Frederick County APFO and Guidelines for Preparation of Traffic Impact Analyses for Development Applications, adopted September 6, 2011, by the BOCC by Resolution No. 11-24 ("TIA Guidelines").

The Developer agrees to construct or contribute to the following improvements and phasing schedule as identified in the TIA and LOU in order to mitigate the effects upon the transportation network serving the Project. An updated trip "scorecard" will be provided by the Developer with each development application within the Project, to track and document the approved capacity trips utilized by each development application.

PHASES I - 4

If a parcel of lot requires access to a proposed public road or street, the plat cannot be recorded until after an agreement(s) for road or street construction, along with financial guarantees have been provided and approved by the County. Further, the proposed roads or streets must be constructed and approved by the County to be open to traffic prior to the issuance of any certificates of occupancy for any site having direct access to said road.

The road improvements identified in the next phase must be constructed and open to traffic prior to site plan final approval for any use generating additional trips, (as tracked on the trip scorecard,) that would exceed the maximum cumulative trips permitted in the current phase and require use of trips associated with the next phase of development.

PHASE I
(up to 143 a.m. peak hour trips and 125 p.m. peak hour trips)

Phase I development will be limited to data center or office use. Commercial development will not be permitted during Phase I.

PHASE II
Up to 1,079 additional a.m. peak hour trips and 931 additional p.m. peak hour trips
Maximum Cumulative Trips - 1,222 a.m. peak hour and 1,056 p.m. peak hour

Prior to lot recordation or the issuance of any building permits for any uses utilizing Phase II trips, the Developer shall guarantee the following improvements:

a. Construct a roundabout at the intersection of Manor Woods Road and Quantum North/South Loop Roads. The roundabout is to be constructed with a single circulating lane.
b. Construct the Quantum South Loop Road prior to building permit issuance for any parcel requiring site access from this proposed roadway.
c. Construct the Quantum North Loop Road prior to building permit issuance for any parcel requiring Site access from this proposed roadway.
d. Install a roundabout at the intersection of Ballenger Creek Pike and Mountville Road. The roundabout will consist of two circulating lanes with the associated acceleration/deceleration lanes and tapers.
e. US 15/Mountville Road: Construct an exclusive right-turn lane and taper on the westbound approach, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
f. Construct required traffic signal improvements as identified in Section II.B, below.

PHASE III
Up to 1,045 a.m. additional peak hour trips and 855 additional p.m. peak hour trips
Maximum Cumulative Trips - 2,267 a.m. peak hour; 1,911 p.m. peak hour

Prior to the issuance of any building permits for any uses utilizing Phase III trips, the Developer shall guarantee the following improvements:

a. Construct future MD 80 and the proposed roundabout intersection, from New Design Road west to the proposed sewerage pump station. This construction will include a temporary cul-de-sac turnaround and be constructed and open to traffic prior to use of the Phase III trips or prior to the recordation of any lots that have direct access to this road (with the exception of the DWSU Outlot).
b. Construct and extend the westbound right-turn lane storage at Buckeystown Pike (MD 85)/Fingerboard Road/MD 80, or as otherwise determined and approved by MDOT SHA and the County, necessary to mitigate the traffic issue.
c. US 15/Mountville Road: Convert northbound right-turn lane into northbound shared through/right lane and carry through the intersection with an additional northbound receiving lane before tapering back to a two-lane section north of the intersection, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
d. Point of Rocks Rd/US 15: Construct an exclusive right-turn lane, an additional lane on the inbound westbound approach, and a second circulating lane on the northern portion of the roundabout, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issues.

PHASE IV
Up to 1,050 additional a.m. peak hour trips and 966 additional p.m. peak hour trips
Maximum Cumulative Trips - 3,317 a.m. peak hour and 2,877 p.m. peak hour

Prior to the issuance of any building permits for any uses utilizing Phase IV trips, the Developer shall guarantee the following improvements:

a. Construct future MD 80 from the temporary cul-de-sac turnaround to its proposed intersection with Mountville Road.
b. Ballenger Creek Pike/Mountville Road: Construct a southbound right-turn associated with the roundabout with dedicated decel/accel lanes and tapers.
c. Point of Rocks Road/Ballenger Creek Pike: Construct an exclusive right turn lane on the southbound approach and an exclusive left turn lane on the eastbound approach, along with the necessary tapers.
d. US 15/Mountville Road: Extend the southbound left turn lane and extend westbound right turn lane, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
e. Ballenger Creek Pike from Manor Woods Road to Mountville Road Widening from two to four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.
f. Mountville Road from US 15 to Ballenger Creek Pike Road Widening from two to

four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.

g. Construct Manor Woods Road, a Comprehensive Plan collector roadway, realigned to intersect with Ballenger Creek Pike/Agro Drive as shown on the currently adopted Comprehensive Plan map, unless otherwise amended in future comprehensive plan revisions.

B. Traffic Signals

The Developer shall signalize the following off-Site intersections when warranted:

1. Buckeystown Pike (MD 85)/Manor Woods Road
   a. Approval of any signal design at this intersection will occur when an updated signal warrant analysis demonstrates that warrants are satisfied by actual traffic. Due to the current geometry of the intersection, and physical limitations, other intersection improvements may be required in lieu of a signal, as determined and approved by MDOT SHA and the County.
2. New Design Road/Manor Woods Road
3. Ballenger Creek Pike/Manor Woods Road

The Developer shall perform up to two signal warrant analysis for each of the above intersections when deemed necessary by MDOT SHA/County, with the first to occur no later than the issuance of the last building permit associated with Phase II trips and, if necessary, the last being no later than the last site plan application submitted for the Project. The Developer shall install a traffic signal at any of the above intersections within 12 months of receipt of a warrant analysis indicating that a signal is warranted. In the case of signals 1. through 3. above, should the signal still not be warranted and justified by the time of issuance of the last building permit for the Project, then others shall thereafter be fully responsible for construction and implementation of any such traffic signal.

C. Escrow Accounts:

In accordance with Section 1-20-12(H) of the APFO, the Developer is required to pay its proportionate contribution toward the following existing road escrow accounts in the Project area. The pro-rata escrow contributions have been phased and are correlated with the number of trips associated with each phase of development.

1. No. 3761: MD 85/English Muffin Way – Construction of a second eastbound left turn lane and associated pavement markings. The estimated cost of this improvement is $104,888. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 6.45%. Therefore, the Developer agrees to pay $9,646 to the escrow account for this Road Improvement.
2. No. 3286: New Design Rd/English Muffin Way Signal – The estimated cost of the intersection improvement is $350,000. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 4.5%. Therefore, the Developer hereby agrees to pay $15,750 to the escrow account for this Road Improvement.
3. No. 4412: Ballenger Creek Pike widening from north of Ballenger Creek to Crestwood

Boulevard. The estimated cost of this improvement is $6,000,000. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 0.33%. Therefore, the Developer hereby agrees to pay $19,800 to the escrow account for this Road Improvement.

4. No. 4053: US 15/340 Interchange – Construction of the US15/340 interchange. The estimated cost of this improvement is $22,060,865. As determined by Traffic Engineering Staff, the Developer's proportionate share of this Road Improvement is 3.92%. Therefore, the Developer hereby agrees to pay $864,785 to the escrow account for this Road Improvement.

Escrow Contribution by Phase

Phase I Escrow Contribution (up to 143 a.m. and 125 p.m. peak hour trips)

Escrow	Cost
No. 3761:	$9,646
No. 3286:	$15,750
No. 4412:	$19,800
Total	**$45,196**

Therefore, prior to the recordation of the first lot associated with the Project, a total of $45,196 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

Phase II Escrow Contribution (up to 1,222 a.m. and 1,056 p.m. cumulative peak hour trips)

Escrow	Cost
No. 4053:	$319,883
Total	$319,883

Therefore, prior to the recordation of the 2nd lot associated with the Project, a total of $319,833 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

Phase III Escrow Contribution (up to 2,267 a.m. and 1,911 p.m. cumulative peak hour trips)

Escrow	Cost
No. 4053:	$269,142
Total	**$269,142**

Therefore, prior to the recordation of the 10th lot associated with the Project, a total of $269,142 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

Phase IV Escrow Contribution (up to cumulative 3,317 a.m. and 2,877 p.m. peak hour trips)

Escrow	Cost
No. 4053:	$275,760
Total	**$275,760**

Therefore, prior to the recordation of the 19th lot associated with the Project, a total of $275,760 for the escrow payments described above must be paid to the County by the Developer, its successors or assigns. Should this payment not be made within one year of the execution of this Letter, the County reserves the right to adjust this amount, based on an engineering cost index.

D. Surplus Capacity Reimbursement Improvements:

The Developer has agreed to construct or cause to construct certain infrastructure improvements to serve the Project which could result in the creation of excess capacity in such improvements that could benefit other development projects. The parties agree that the following road improvements have been determined to be "Surplus Capacity Reimbursement Improvements" ("SCR Improvements") as that term is defined in Chapter 12 of the TIA guidelines:

1. Buckeystown Pike (MD 85)/Manor Woods Road Signal
    a. Approval of any signal design at this intersection will occur when an updated signal warrant analysis demonstrates that warrants are satisfied by actual traffic. Due to the current geometry of the intersection, and physical limitations, other intersection improvements may be required in lieu of a signal, as determined and approved by MDOT SHA and the County.

2. Install a roundabout at the intersection of Ballenger Creek Pike and Mountville Road. The roundabout will consist of two circulating lanes with the associated acceleration/deceleration lanes and tapers.
3. Buckeystown Pike (MD 85)/Fingerboard Road/MD 80 westbound turn lane.
4. US 15/Mountville Road: Construct an exclusive right-turn lane and taper on the westbound approach, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
5. US 15/Mountville Road intersection improvements to convert northbound right-turn lane into northbound shared through/right lane and carry through the intersection with an additional northbound receiving lane before tapering back to a two-lane section north of the intersection, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
6. US 15/Mountville Road: Extend the southbound left turn lane and extend westbound right turn lane, or as otherwise determined and approved, by MDOT SHA and the County, necessary to mitigate the traffic issue.
7. Point of Rocks Road/US 15 roundabout improvement: Construct an exclusive right-turn lane, an additional lane on the inbound westbound approach, and a second circulating lane on the northern portion of the roundabout.
8. Ballenger Creek Pike from Manor Woods Road to Mountville Road Widening from two to four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.

9. Mountville Road from US 15 to Ballenger Creek Pike Widening from two to four lanes, or as otherwise determined necessary, by the County, to mitigate road segment issues. The widening will include all identified median, turn lane, acceleration/deceleration lane, and bike/pedestrian improvements.

In the event that other approved development projects add "trips" to any of the offsite road improvements listed above and therefore are required to pay a pro rata share of the construction cost of said roads into escrow, the Developer shall be eligible for reimbursement of a portion of the cost of the SCR Improvements from available non-exempt developer projects identified by the County Traffic Engineer, up to but not beyond Developer's own pro rata share of the improvement, whether or not the SCR Improvements are located inside or outside of the contributing project's study area. Reimbursement may be accomplished either through reimbursement of actual construction costs incurred by the Developer if the Developer constructs said, in accordance with the requirements of Chapter 12 of the TIA Guidelines.

If any of the off-Site road improvements listed above as a construction obligation of the Developer are constructed or funded by others, then the Developer shall pay its pro rata share of the construction costs for each such road improvement constructed or funded by others into an escrow account based on the impact of trips generated by the Project on such road improvement. Prior to approvals being issued by the County to other developer(s) to construct any or all of the above-described road improvements Developer agrees to construct or cause to construct certain infrastructure improvements to serve the Project which could result in the creation of excess capacity in such improvements D.1 through D.9., the Developer will be given reasonable advance notice by the County Traffic Engineer and will be given the opportunity to review and comment on the County Traffic Engineer's calculation of the "pro rata share" of the cost of such improvements attributable to the Project relative to other developer(s).

E. Right-of-Way Acquisition Necessary for Roadway Improvement(s).

1. Most if not all of the roadway improvements required by this LOU to be made by the Developer will require the acquisition of public right-of-way from third party property owners, The Developer shall exercise commercially reasonable efforts to secure such right-of-way without the assistance of MDOT SHA or the County..
2. In the event that the Developer has demonstrated to MDOT SHA and the County that it is unable to secure any or all of such public right-of-way despite commercially reasonable efforts to do so in a timely manner consistent with the construction of public infrastructure improvements, the Developer may request MDOT SHA or the County to assist in the acquisition of the needed right-of-way at the Developer's sole cost and expense.

F. Improvements Requiring MDOT SHA or FHWA Approvals

The Developer's obligation to construct those road improvements described above that either require state or federal approval is subject to the following terms and conditions:

The Developer and the County acknowledge that these improvements (the "MDOT SHA improvements") will be reviewed and approved by the Maryland Department of Transportation State Highway Administration and possibly by the Federal Highway Administration ("FHWA"), and that such review and approval processes can be lengthy and are not within the control of the County or the Developer. Accordingly, the Developer agrees that it will diligently pursue the

design and approval of the MDOT SHA improvements in an effort to expedite construction of the MDOT SHA improvements as soon as practicable. To that end, the Developer agrees that it shall promptly, upon execution of this Letter of Understanding or at such time as is agreed by the County Traffic Engineer and the Developer, retain a qualified engineering firm to undertake the planning and design of the MDOT SHA improvements, in accordance with MDOT SHA and any other applicable governmental specifications, and shall submit initial design plans for the improvements to MDOT SHA for its review and approval.

The Developer shall not be required to design and submit all of the MDOT SHA improvements at the same time, but rather in accordance with the phasing schedule above. However, the Developer shall prepare and process the plans for the improvements listed in Phase I and II as soon as is practicable. Thereafter, the Developer shall promptly address all MDOT SHA, FHWA, and other agency comments and resubmit responsive design plans and other requested information to MDOT SHA, FHWA, or such other approving agency. Following the approval of the design plans for these improvements, The Developer agrees to promptly apply for an access permit from MDOT SHA and enter into a construction contract with a qualified contractor for construction of these improvements.

The County agrees that so long as the Developer diligently pursues all approvals of MDOT SHA improvements, including those referenced in this section, that may be required by MDOT SHA, FHWA or any other governmental agency in the manner described above, upon request the Developer may be permitted to proceed with development of the Project notwithstanding the fact that any of the required MDOT SHA Improvements in a particular Road Improvements Phase, including those listed in this section, are not completed in accordance with the phasing schedule. The Developer agrees that in the event MDOT SHA has not issued any required permit at such time as the Developer desires to proceed into subsequent phases of the Project, the Developer shall post an acceptable financial guarantee with Frederick County for the estimated cost of the construction of the MDOT SHA Improvements, plus an acceptable contingency, as determined by the County. The County agrees that this financial guarantee shall be released and returned to the Developer at such time as the Developer secures an access permit from SHA for the construction of the applicable MDOT SHA Improvement.

G. Transportation Facilities Mitigation Program

Quantum Frederick shall prepare a Transportation Facilities Mitigation Program (“TFMP”) in accordance with the provisions of the TIA Guidelines. The TFMP shall be approved by the County Traffic Engineer and MDOT SHA, prior to the development of Improvement Plans.

III. SCHOOLS

The Project is non-residential and not subject to schools testing.

IV. VESTING

Roads

Upon full mitigation (construction of improvements or fair share contribution to escrow accounts of APFO road improvements as set forth in Section II above within the APFO approval period, the APFO road approval for the Project shall be vested for the capacity created by the improvements

and shall not be subject to further APFO roadway testing unless there is an increase in Site trips or a significant redistribution of Site traffic because of a change in land use or increase in Site density as defined in the TIA Guidelines (Section 1-20-31(H)).

Public Water and Sewer

Upon completion of the construction of the APFO public water and sewer improvements set forth in Section I above, the APFO water and sewer approvals for the Project shall be vested for the capacity created by the improvements constructed and shall not be subject to further APFO testing unless the density or intensity of water and sewer usage of the Project increases (Sections 1-20-41(E)) and 1-20-51(E)).

While the public water/sewer facilities are currently adequate, or will be adequate upon completion of specified improvements to serve the Project, the Developer recognizes that capacity is not guaranteed until purchased. APFO approval for sewer and water does not guarantee that plats will be recorded and building permits will be issued. Plat recordation and building permit issuance are subject to compliance with the Annotated Code of Maryland, Environment Article Section 9-512, et. seq and all applicable County regulations, including but not limited to §1-16-106 of the Frederick County Subdivision Regulations.

Nothing in this Section IV. shall override or modify the applicable provisions of the County Code.

V. PERIOD OF VALIDITY

The APFO approval is valid for fourteen (14) years from the date of Commission approval; therefore, the APFO approval expires on December 15, 2035.

VI. DISCLAIMER

This Letter pertains to APFO approval only, and shall not be construed to provide any express or implied rights to continue the development process. The Project remains subject to all applicable rules and regulations, including but not limited to those related to zoning, water and sewer, and subdivision. The Planning Commission's jurisdiction and authority is limited by State and County law, and approvals may be required from other local or state governmental agencies before the proposed development can proceed.

[Signatures Next Page]

DEVELOPER: Quantum Maryland, LLC

By: _____ Date: Jan 20, 2023

Developer

FREDERICK COUNTY PLANNING COMMISSION:

By: _____ Date: _____

Chair or Secretary

ATTEST:

By: _____ Date: _____

Gary Hessong, Deputy Director

Planner's Initials / Date _____
(Approved for technical content)

*County Attorney's Office Initials / Date*_____
(Approved as to legal form)

PARKER LOWELL A
LESLIE PARKER
P0058 150.92 ACRES

CAP STINE LLC
P0056 114.06 ACRES

ARNOLD DEVELOPER ASSOC INC
P0005 104.295 ACRES

NDR PROPERTIES LC
P0003 196.73 ACRES

NDR PROPERTIES LC
P0004 201.82 AC

Porter Dr.

Horton Richard P
& Jill L
P0030
19.11 acres

P0029 5.85 AC

Manor Woods Road

Agro Dr.

R/W 7 DEDICATION
±4,716 sf
±0.10 acres

R/W 3 RESERVATION
±151,182 sf
±3.47 acres

LINE A8
Prop. 12"W (Potable)
Prop. 8"W (Potable)

LINE A7
Prop. 16"W (Potable)

LINE A9

MANOR WOODS ROAD

LOT 114
±254,390 sf
±5.84 acres

LOT 115
±265,184 sf
±6.09 acres

LOT 108
±743,182 sf
±17.06 acres

LOT 109
±1,162,522 sf
±26.69 acres

LOT 110
±901,141 sf
±20.69 acres

LOT 111
±551,103 sf
±12.65 acres

OPEN SPACE PARCEL 'C'
±1,639,029 sf
±37.62 acres

BALLENGER CREEK PIKE

CAP STINE ROAD

LOT 112C
±575,331 sf
±13.20 acres

LOT 106
±654,331 sf
±15.02 acres

LOT 107
±702,409 sf
±16.13 acres

LOT 105
±747,959 sf
±17.17 acres

LOT 104
±1,030,829 sf
±23.66 acres

LOT 112A
±845,994 sf
±19.42 acres

LOT 112B
±334,521 sf
±7.67 acres

LOT 112D
±294,103 sf
±6.75 acres

LOT 103
±407,226 sf
±9.35 acres

LOT 101
±945,606 sf
±21.71 acres

LOT 102
±1,113,337 sf
±25.56 acres

LOT 100
±1,303,561 sf
±29.93 acres

LOT 113
±1,257,552 sf
±28.86 acres

OPEN SPACE PARCEL 'A'
±6,860,629 sf
±157.49 acres

LINE A9
Prop. 8"W (Potable)

LINE A4
Prop. 12"W (Potable)
Prop. 16"W (Cooling)

LINE A5
Prop. 12"W (Potable)
Prop. 16"W (Cooling)

LINE A2
Prop. 16"W (Potable)
Prop. 16"W (Cooling)

LINE A3
Prop. 16"W (Cooling)
Prop. 12"W (Potable)

Quantum Loop South

Quantum Loop North

LINE A6
Prop. 8"W (Potable)

LINE A1
Prop. 16"W (Potable)

LOT 204
±1,904,135 sf
±43.71 acres

LOT 203
±1,582,399 sf
±36.33 acres

LOT 202
±1,128,750 sf
±25.91 acres

OPEN SPACE PARCEL 'G'
±33,433 sf
±0.77 acres

R/W 5 DEDICATION
±15,630 sf
±0.36 acres

LOT 200
±233,382 sf
±5.36 acres

R/W 2 DEDICATION
±234,467 sf
±5.38 acres

LOT 201
±2,288,398 sf
±52.53 acres

A Zone

LI Zone

ALT. ACCESS FOR LOT 18

OPEN SPACE PARCEL 'F'
±300,997 sf
±6.90 acres

R/W 9 DEDICATION
±5,385 sf
±0.12 acres

R/W 8 DEDICATION
±17,452 sf
±0.40 acres

Lot 301
±3,781,997 sf
±86.82 acres

Lot 302
±2,408,417 sf
±55.29 acres

LOT 300
±2,285,393 sf
±52.47 acres
(Carroll Manor
MHT Resource F-1-47)

LOT 303
±2,351,622 sf
±53.99 acres

LOT 304
±1,546,226 sf
±35.49 acres

OUT LOT 1
PUMP STATION
±66,822 sf
±1.53 acres

OUT LOT 2
PUMP STATION
ACCESS LOT/
FUTURE R/W
DEDICATION
±561,618 sf
±12.89 acres

OUTLOT 3
±23,482 sf
±0.53 acres

OPEN SPACE PARCEL 'E'
±725,253 sf
±16.65 acres

OPEN SPACE PARCEL 'D'
±223,406 sf
±5.13 acres

R/W 6 RESERVATION
±34,567 sf
±0.79 acres

Happy Landing Rd
Fut. MD Route 80

Horsehead Run

NEW DESIGN RD

ISLAMIC WAQF OF
MARYLAND INC
P0101 100.025 ACRES

MANOR WOODS ROAD

MERCER KEITH EDWARD
& MERCER KIMBERLY
P0025 5 AC

BEATTY
CRYSTAL
DAWN &
PHILLIP
DOUGLAS
BEATTY
P0029 19.11
ACRES

MERCER KEITH EDWARD &
MERCER KIMBERLY SUE
P0095 178.86 AC

RENN WILLIAM & DORIS LIFE ESTATE
& DAWN J SHANKLE
0007 95.46 ACRES

CARROLL MANOR
RECREATION
COUNCIL
P0171 26.90 ACRES

Carroll
Manor
Elementary
School

B &O/ CSX RAILROAD

MOUNTVILLE RD

Russell Ave

ADAMSTOWN ROAD

Gi Zone
LI Zone
A Zone

Detail - Connection to Ex. 24"W
NTS

N
SCALE: 1" = 400'

LEGEND

- PROPERTY AREA
- SECTION 1 AREA
- LINE A1 WATER
- LINE A2 WATER
- LINE A3 WATER
- LINE A4 WATER
- LINE A5 WATER
- LINE A6 WATER
- LINE A7 WATER
- LINE A8 WATER
- LINE A9 WATER

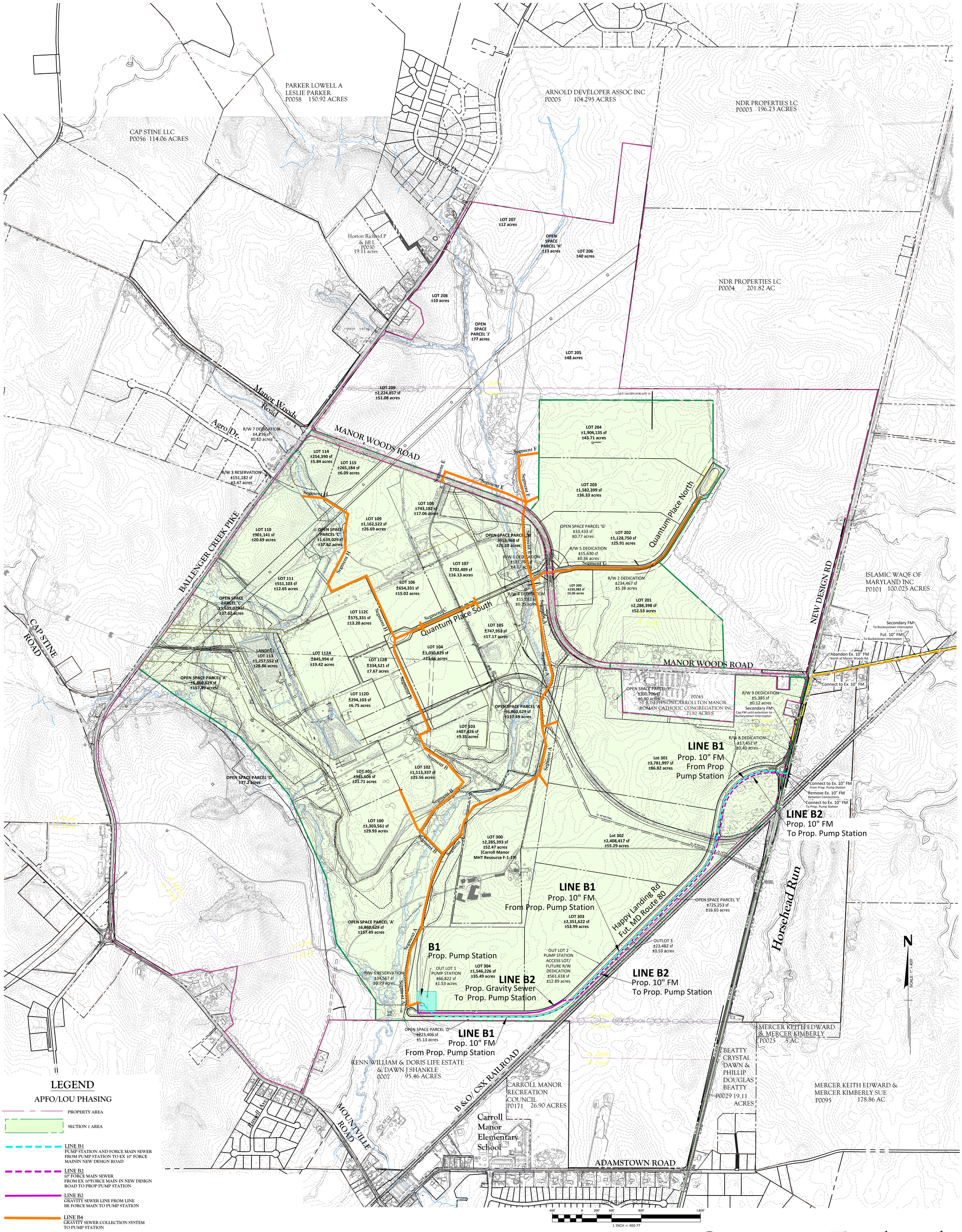
RODGERS
CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
Ph: 301.948.4700 www.rodgers.com

SCALE:
1"=400'

GRAPHIC SCALE
400' 0 200' 400' 800' 1,600'
1 INCH = 400 FT

Quantum Frederick
LOU Water Phases

12/03/2021



LEGEND

APFO/LOU PHASING

- PROPERTY AREA
- SECTION 1 AREA
- LINE B1 — PUMP STATION AND FORCE MAIN SEWER FROM PUMP STATION TO EX 10" FORCE MAININ NEW DESIGN ROAD
- LINE B2 — 10" FORCE MAIN SEWER FROM EX 10"FORCE MAIN IN NEW DESIGN ROAD TO PROP PUMP STATION
- LINE B2 — GRAVITY SEWER LINE FROM LINE BE FORCE MAIN TO PUMP STATION
- LINE B4 — GRAVITY SEWER COLLECTION SYSTEM TO PUMP STATION

RODGERS CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
Ph: 301.948.4700 www.rodgers.com

SCALE:
1"=400'

Quantum Frederick

LOU Sewer Phases

12/03/2021

Lot Information						Evaporative Cooling					Domestic					Total Max Daily Water Demand	Total Max Daily Wastewater Flow
Lot Number	Usage	Lot Area (Acres)	Building Area (SF)	MW (critical)	Total Occupants	Cooling Water Demand [1]		Cooling Water Blowdown (Wastewater) Flow [2-3]			Water Demand & Wastewater Flow [4-6]				Wastewater Only [7]		
						Max Daily		Max Daily		Peak Hourly	Average Daily		Max Daily		Peak Hourly		
						GPD	GPM	GPD	GPM	GPM	GPD	GPM	GPD	GPM	GPM	MGD	MGD
106 [8]	DC - COLO	15	200,000	30	40	30,863	21.43	12,345	8.57	25.72	1,200	0.83	1,920	1.33	3.33	0.033	0.014
107 [8]	DC - COLO	16	213,333	32	43	32,920	22.86	13,168	9.14	27.43	1,280	0.89	2,048	1.42	3.56	0.035	0.015
108 [8]	DC - ENT	17	226,667	34	45	34,978	24.29	13,991	9.72	29.15	1,360	0.94	2,176	1.51	3.78	0.037	0.016
109 [8]	DC - COLO	27	360,000	54	72	55,553	38.58	22,221	15.43	46.29	2,160	1.50	3,456	2.40	6.00	0.059	0.026
400	DC - ENT	56	746,667	112	149	460,880	320.06	184,352	128.02	384.07	4,480	3.11	7,168	4.98	12.44	0.468	0.192
401	DC - HS	95	1,346,667	190	269	498,738	346.35	199,495	138.54	415.62	8,080	5.61	12,928	8.98	22.44	0.512	0.212
						1,113,931	**774**	**445,572**	**309**	**928**	**18,560**	**13**	**29,696**	**21**	**52**	**1.14**	**0.48**
100	DC - ENT	29	386,667	58	77	238,670	165.74	95,468	66.30	198.89	2,320	1.61	3,712	2.58	6.44	0.24	0.10
101	DC - ENT	22	293,333	44	59	181,060	125.74	72,424	50.29	150.88	1,760	1.22	2,816	1.96	4.89	0.18	0.08
102	DC - ENT	26	360,000	54	72	222,210	154.31	88,884	61.73	185.18	2,160	1.50	3,456	2.40	6.00	0.23	0.09
103	DC - ENT	9	213,333	32	43	131,680	91.44	52,672	36.58	109.73	1,280	0.89	2,048	1.42	3.56	0.13	0.05
104	DC - COLO	24	200,000	30	40	123,450	85.73	49,380	34.29	102.88	1,200	0.83	1,920	1.33	3.33	0.13	0.05
105	DC - COLO	17	213,333	32	43	131,680	91.44	52,672	36.58	109.73	1,280	0.89	2,048	1.42	3.56	0.13	0.05
112 A-D	Substation	47	NA	NA	0	N/A	N/A	N/A	N/A	N/A	0	0.00	0	0.00	0.00	0.00	0.00
						1,028,750	**714**	**411,500**	**286**	**857**	**10,000**	**7**	**16,000**	**11**	**28**	**1.04**	**0.43**
301	DC - HS	87	1,173,333	176	235	724,240	502.94	289,696	201.18	603.53	7,040	4.89	11,264	7.82	19.56	0.74	0.30
302	DC - COLO	55	706,667	106	141	436,190	302.91	174,476	121.16	363.49	4,240	2.94	6,784	4.71	11.78	0.44	0.18
303	DC - COLO	54	680,000	102	136	419,730	291.48	167,892	116.59	349.78	4,080	2.83	6,528	4.53	11.33	0.43	0.17
304	DC - ENT	36	480,000	72	96	296,280	205.75	118,512	82.30	246.90	2,880	2.00	4,608	3.20	8.00	0.30	0.12
						1,876,440	**1,303**	**750,576**	**521**	**1,564**	**18,240**	**13**	**29,184**	**20**	**51**	**1.91**	**0.78**
200	NW Center	5	10,000	2	8	N/A	N/A	N/A	N/A	N/A	240	0.17	384	0.27	0.67	0.00	0.00
201	DC - HS	53	706,667	106	141	436,190	302.91	174,476	121.16	363.49	4,240	2.94	6,784	4.71	11.78	0.44	0.18
202	DC - COLO	26	346,667	52	69	213,980	148.60	85,592	59.44	178.32	2,080	1.44	3,328	2.31	5.78	0.22	0.09
203	DC - ENT	36	346,667	52	69	213,980	148.60	85,592	59.44	178.32	2,080	1.44	3,328	2.31	5.78	0.22	0.09
204	DC - HS	44	586,667	88	117	362,120	251.47	144,848	100.59	301.77	3,520	2.44	5,632	3.91	9.78	0.37	0.15
						1,226,270	**852**	**490,508**	**341**	**1,022**	**12,160**	**8**	**19,456**	**14**	**34**	**1.25**	**0.51**
110	Office	21	180,228	2	601	N/A	N/A	N/A	N/A	N/A	36,046	25.03	57,673	40.05	100.13	0.06	0.06
111	Office	13	110,221	1	367	N/A	N/A	N/A	N/A	N/A	22,044	15.31	35,271	24.49	61.23	0.04	0.04
114	CMkt/Gas	6	7,500	1	8	N/A	N/A	N/A	N/A	N/A	1,350	0.94	2,160	1.50	3.75	0.00	0.00
115	NW Center	6	10,000	2	8	N/A	N/A	N/A	N/A	N/A	240	0.17	384	0.27	0.67	0.00	0.00
						0	**0**	**0**	**0**	**0**	**59,680**	**41**	**95,488**	**66**	**166**	**0.10**	**0.10**
						5,245,391	**3,643**	**2,098,156**	**1,457**	**4,371**	**118,640**	**94**	**189,824**	**132**	**330**	**5.44**	**2.29**
									MGD:	6.29	0.119		189,824		0.47	3.81	
402/403	Ag Lots	0	0	0	0	N/A	N/A	N/A	N/A	N/A	0	0.00	0	0.00	0.00	0.00	0.00

Assumptions/Notes:

1. Cooling water demand estimates were provided by the planning team
2. Cooling water blowdown (wastewater) flow is 40% of cooling water demand
3. The peak factor (PF) for cooling water blowdown (wastewater) is 3
4. Domestic water demands and wastewater flows are equivalent
5. Domestic average daily demands (ADD) & wastewater flows were estimated based on the following flow factors
   Service Stations (Gas): 0.18 GPD / SF of Building Area per Frederick County Design Manual
   Office Spaces: 0.2 GPD / SF of Building Area or 30 GPD / occupant (whichever is greater) per Frederick County Design Manua
   Data Centers: 30 GPD / Occupant
6. Domestic maximum daily demands (MDD) & wastewater flows are 1.6 x ADD
7. The peak factor (PF) for domestic wastewater flow is 4.0 x ADD per MDE guidelines.
8. Lots 106-109 are being developeed as a single entity; cooling water demands for each lot assumed to equal 25% of full buildout for that individual lot

Table 6-1A

Quantum Frederick

Trip Generation (Vehicle Trips) [1] Phase I

Land Use	Size	Units	AM Peak Hour			PM Peak Hour			Weekday ADT	SAT Peak Hour [5]			Saturday ADT
			In	Out	Total	In	Out	Total		In	Out	Total	
Proposed Program Phase I													
Data Center [2]	3,966,667	S.F.	243	193	436	107	248	355	3,925	114	83	196	1,963
Commercial Use [3]	16	VFP	225	224	449	184	183	367	3,688	186	186	372	4,667
Office Use [4]	290,449	S.F.	290	47	337	53	281	334	2,829	83	71	154	642
Total Proposed	4,264,615	S.F.	758	464	1,222	344	712	1,056	10,442	383	340	722	7,272
Overall Total	4,264,615	S.F.	758	464	1,222	344	712	1,056	10,442	383	340	722	7,272

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition.
2. ITE Land Use, Data Center (160), was used to determine vehicle trips for data center.
3. ITE Land Use, Super Convenience Market/Gas Station (960), was used to determine vehicle trips for commercial use.
4. ITE Land Use, General Office Building (710), was used to determine vehicle trips for office use.
5. Since Saturday data center trip generation rates are not available from ITE, it was assumed that Saturday daily trips were 50% of the weekday trips. Saturday midday peak hour trips were calculated based on ITE midday diurnal rates for office (10%).

Table 6-1B

Quantum Frederick

Trip Generation (Vehicle Trips) [1] Phase II

Land Use	Size	Units	AM Peak Hour			PM Peak Hour			Weekday ADT	SAT Peak Hour [3]			Saturday ADT
			In	Out	Total	In	Out	Total		In	Out	Total	
Proposed Program Phase II													
Data Center [2]	9,490,000	S.F.	574	471	1,045	256	599	855	9,396	258	212	470	4,698
Total Proposed	9,490,000	S.F.	574	471	1,045	256	599	855	9,396	258	212	470	4,698
Overall Total	13,754,615	S.F.	1,332	935	2,267	600	1,311	1,911	19,838	641	553	1,192	11,970

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition.
2. ITE Land Use, Data Center (160), was used to determine vehicle trips for data center.
3. Since Saturday data center trip generation rates are not available from ITE, it was assumed that Saturday daily trips were 50% of the weekday trips. Saturday midday peak hour trips were calculated based on ITE midday diurnal rates for office (10%).

Table 6-1C

Quantum Frederick

Trip Generation (Vehicle Trips) [1] Phase III

Land Use	Size	Units	AM Peak Hour			PM Peak Hour			Weekday ADT	SAT Peak Hour [4]			Saturday ADT
			In	Out	Total	In	Out	Total		In	Out	Total	
Proposed Program Phase III													
Data Center [2]	3,946,667	S.F.	238	196	434	105	250	355	3,907	108	87	195	1,954
Office Use [3]	531,432	S.F.	530	86	616	98	513	611	5,176	152	129	281	1,175
Total Proposed	4,478,099	S.F.	768	282	1,050	203	763	966	9,083	260	216	476	3,129
Overall Total	18,232,714	S.F.	2,100	1,217	3,317	803	2,074	2,877	28,921	901	769	1,668	15,098

Notes:

1. Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition.
2. ITE Land Use, Data Center (160), was used to determine vehicle trips for data center.
3. ITE Land Use, General Office Building (710), was used to determine vehicle trips for office use.
4. Since Saturday data center trip generation rates are not available from ITE, it was assumed that Saturday daily trips were 50% of the weekday trips. Saturday midday peak hour trips were calculated based on ITE midday diurnal rates for office (10%).

Photograph 1. View of Upland Data Point DP002_U, facing north.

Photograph 2. View of Upland Data Point DP002_U, facing south.

Photograph 3. View of Upland Data Point DP003_U, facing north.

Photograph 4. View of Upland Data Point DP003_U, facing south.

Photograph 5. View of Upland Data Point DP005_U, facing north.

Photograph 6. View of Upland Data Point DP005_U, facing south.

Photograph 7. View of Wetland B's Data Point DP006_W, facing north.

Photograph 8. View of Wetland B's Data Point DP006_W, facing south.

Photograph 9. View of Upland Data Point DP007_U, facing north.

Photograph 10. View of Upland Data Point DP007_U, facing south.

Photograph 11. View of Upland Data Point DP008_U, facing north.

Photograph 12. View of Upland Data Point DP008_U, facing south.

Photograph 13. View of Upland Data Point DP009_U, facing east.

Photograph 14. Upland Data Point DP009_U, facing west.

Photograph 15. View of active bald eagle nest located offsite, along an unnamed tributary to Tuscarora Creek, facing north. See also: Photographs 42 & 43.

Photograph 16. View of overhead utility line easement located along the northwestern boundary of the Site, facing northeast.

Photograph 17. View of overhead utility line easement located along the northwestern boundary of the Site, facing southwest.

Photograph 18. View of Forest Stand FS-1, taken from the south of FS, facing north.

Photograph 19. View of Forest Stand FS-1, facing west.

Photograph 20. View of access road bisecting Forest Stand FS-2, facing north.

Photograph 21. View of Forest Stand FS-2, facing south.

Photograph 22. View of Forest Stand FS-2, facing west.

Photograph 23. View of potential roost tree habitat conditions onsite, located along Stream 1.

Photograph 24. View of potential roost tree habitat conditions onsite, located along Stream 2.

Photograph 25. View of Stream 1 (S1), facing upstream.

Photograph 26. View of Stream 1 (S1), facing downstream.

Photograph 27. View of Stream 2 (S2), facing upstream.

Photograph 28. View of Stream 2 (S2), facing downstream.

Photograph 29. View of Streams 3 and 4 (S3 and S4), taken at the confluence, facing upstream.

Photograph 30. View of Streams 3 and 4 (S3 and S4), taken at the confluence, facing downstream.

Photograph 31. View of Stream 5 (S5), facing upstream.

Photograph 32. View of Stream 5 (S5), facing downstream.

Photograph 33. View of representative upland conditions within agricultural fields, facing east.

Photograph 34. View of representative upland conditions within agricultural fields, facing west.

Photograph 35. View of upland swale, facing east.

Photograph 36. View of upland swale, facing west.

Photograph 37. View of upland conditions upslope of Stream 2 (S2), facing north.

Photograph 38. View of upland conditions upslope of Stream 2 (S2), facing south, facing Stream 2.

Photograph 39. View of upland conditions upslope of Stream 3 (S3), facing north.

Photograph 40. View of upland conditions upslope of Stream 3 (S3), facing south, facing Stream 3.

Photograph 41. View taken from upland conditions upslope of Stream 3 (S3), facing Wetland B (WB), facing east.

Photograph 42. View of active bald eagle's nest, located offsite in an American sycamore tree along an unnamed tributary to Tuscarora Creek (photo taken from easternmost boundary, nest located in center of frame, facing east).

Photograph 43. Alternate view of active bald eagle nest located in an American sycamore tree along an unnamed tributary to Tuscarora Creek, located offsite, near the eastern boundary, facing east.

Photograph 44. View of buried, subsurface Verizon cables along Mountville Road.

Photograph 45. View of refrigerator located along Stream 1 near Wetland B.

ATTACHMENT C USFWS IPAC REPORT

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To:
Project code: 2023-0052354
Project Name: Bauxite Lot 401 Data Center

April 04, 2023

Federal Action Agency (if applicable):

Subject: Record of project representative's no effect determination for 'Bauxite Lot 401 Data Center'

Dear Elyse Johnston:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 04, 2023, for 'Bauxite Lot 401 Data Center' (here forward, Project). This project has been assigned Project Code 2023-0052354 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter.

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may

include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of “No Effect” on the northern long-eared bat. If there are no updates on listed species, no further consultation/ coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the Chesapeake Bay Ecological Services Field Office and reference Project Code 2023-0052354 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

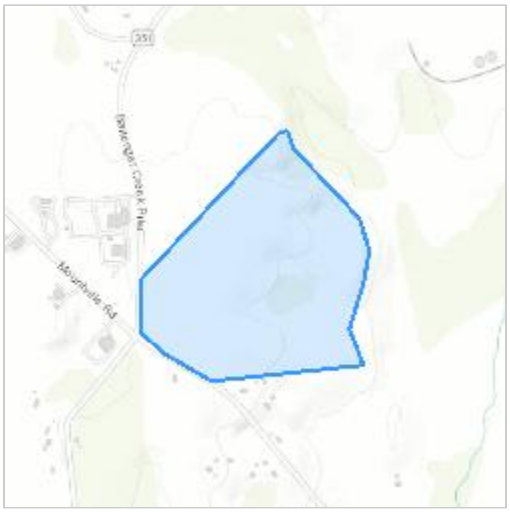
Bauxite Lot 401 Data Center

2. Description

The following description was provided for the project 'Bauxite Lot 401 Data Center':

> Frederick County, MD
> 101-acres
> *Total forest conversion (acreage) is not yet known.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.3233317,-77.48350068272188,14z



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (Myotis septentrionalis). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The proposed action does not intersect an area where the northern long-eared bat is likely to occur, based on the information available to U.S. Fish and Wildlife Service as of the most recent update of this key. If you have data that indicates that northern long-eared bats are likely to be present in the action area, answer "NO" and continue through the key.

   Do you want to make a no effect determination?

   Yes

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: ERM
Name: Elyse Johnston
Address: 919 E Main St
City: Richmond
State: VA
Zip: 23219
Email elyse.johnston@erm.com
Phone: 8049721532

ATTACHMENT D MDNR LIST OF RARE, THREATENED AND ENDANGERED SPECIES OF FREDERICK COUNTY

List of Rare, Threatened, and Endangered Species of Frederick County

November 2021

Maryland

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Jeannie Haddaway-Riccio, Secretary

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Wildlife & Heritage Service
Natural Heritage Program
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, MD 21401
410-260-8540
Fax 410-260-8596
dnr.maryland.gov/wildlife

Additional Telephone Contact Information:
Toll free in Maryland: 877-620-8DNR ext. 8540 OR
Individual unit/program toll-free number
Out of state call: 410-260-8540
Text Telephone (TTY) users call via the Maryland Relay

ACKNOWLEDGMENTS

The Maryland Department of Natural Resources would like to express sincere appreciation to the many scientists and naturalists who willingly share information and provide their expertise to further our mission of conserving Maryland's natural heritage.

Publication of this list is made possible by taxpayer donations to Maryland's Chesapeake Bay and Endangered Species Fund.

IMPORTANT NOTES

This list is a subset of the main reports:
Maryland Natural Heritage Program. 2021. List of Rare, Threatened, and Endangered Plants of Maryland DNR 03-030321-271 and
Maryland Natural Heritage Program. 2021. Rare, Threatened, and Endangered Plants of Maryland DNR 03-030321-270 and
Maryland Natural Heritage Program. 2021. List of Rare, Threatened, and Endangered Animals of Maryland DNR 03- 111921-291

Please refer to these for important information including grank, history, purpose, governing laws and regulations, understanding state and federal conservation status ranks and legal statuses, and for additional resources.

This list is derived from an extensive data collection effort and numerous field surveys to determine distribution and abundance of plants and animals native to Maryland. Although based on a large volume of information, this list should not be viewed as complete or definitive. While much is known about some species, very little is known about others. The Maryland Natural Heritage Program welcomes additional information or recommendations regarding any of the taxa listed herein.

HOW YOU CAN HELP

You can take an active part in conserving Maryland's rare species by contacting the Wildlife and Heritage Service with the following types of information:

1. Location details should be included (exact mapped location using GPS is preferred, but not required). Online applications such as Google Earth are invaluable but precise, written directions including driving and walking are acceptable.

2. Documentation that includes a photograph, description of the species, identification source, and habitat description should accompany the report.

3. Information on the ecology and or biology of the species including observed and/or identified pollinators should accompany the report.

**Additional information, including a downloadable PDF of our rare plant reporting form can be found at: dnr.maryland.gov/wildlife/Pages/plants_wildlife/rte_reportinginst.aspx

Definitions of qualifiers used in the county distribution of species.

Distributional Qualifier	Definition
{species}$^{?}$	Record for the county is reported but unverified or may indicate that the record occurs outside of the known range or in atypical habitat.
{species}^{h}	Record for the county is based upon a historical collection but no extant population is known.
{species}^{I}	Record for the county is the result of an introduction.

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Animals				
Aeshna tuberculifera	Black-tipped Darner	S2		
Alasmidonta undulata	Triangle Floater	S1S2	T	
Alasmidonta varicosa	Brook Floater	S1	E	
Bartramia longicauda	Upland Sandpiper	S1B	E	
Caecidotea vandeli	Vandel's Cave Isopod	S1	E	
Cicindela patruela	Northern Barrens Tiger Beetle	S1	E	
Cordulegaster bilineata	Brown Spiketail	S3		
Cordulegaster erronea	Tiger Spiketail	S3		
Cottus sp. 7	Checkered Sculpin	S2		
Elliptio lanceolata	Yellow Lance	S1	T	LT
Elliptio producta	Atlantic Spike	S2S3	I	
Erythrodiplax minuscula	Little Blue Dragonlet	S1		
Euphydryas phaeton	Baltimore Checkerspot	S2		
Gallinula galeata	Common Gallinule	S2S3B	I	
Haliaeetus leucocephalus	Bald Eagle	S3S4		
Hylogomphus abbreviatus	Spine-crowned Clubtail	S1		
Hylogomphus viridifrons	Green-faced Clubtail	S1		
Ixobrychus exilis	Least Bittern	S2S3B	I	
Ladona julia	Chalk-fronted Skimmer	S3		
Lampsilis cariosa	Yellow Lampmussel	SU		
Lanius ludovicianus	Loggerhead Shrike	S1B	E	
Lanthus vernalis	Southern Pygmy Clubtail	S2		
Lasmigona subviridis	Green Floater	S1	E	
Libellula flavida	Yellow-sided Skimmer	S2S3		
Mustela nivalis	Least Weasel	S2S3	I	
Nannothemis bella	Elfin Skimmer	S1	E	
Neotoma magister	Allegheny Woodrat	S1	E	
Ophiogomphus sp. 1	Chesapeake Snaketail	S1		
Phanogomphus quadricolor	Rapids Clubtail	S2	I	
Podilymbus podiceps	Pied-billed Grebe	S2S3B		
Porzana carolina	Sora	S2B		
Satyrium edwardsii	Edwards' Hairstreak	S1	E	
Setophaga fusca	Blackburnian Warbler	S3B		
Sorex fumeus	Smoky Shrew	S2S3	I	
Sorex hoyi winnemana	Southern Pygmy Shrew	S2		
Spiza americana	Dickcissel	S3B		
Strophitus undulatus	Creeper	S2S3	I	
Stygobromus pizzinii	Pizzini's Cave Amphipod	S1		
Stygobromus sp. 14	Roundtop Amphipod	S1		
Stygobromus tenuis potomacus	Potomac Amphipod	S3		
Thryomanes bewickii bewickii	Bewick's Wren	SXB	X	

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Plants				
Adlumia fungosa	Climbing Fumitory	S2	T	
Agalinis auriculata	Earleaf False Foxglove	S1	E	
Agastache scrophulariifolia	Purple Giant-hyssop	S1S2	T	
Agrimonia microcarpa [?]	Small-fruited Agrimony	S1?		
Amelanchier spicata	Running Serviceberry	S2		
Amianthium muscitoxicum	Fly-poison	S2		
Anaphalis margaritacea	Pearly Everlasting	S3		
Arabis patens	Spreading Rockcress	S3		
Aralia racemosa	American Spikenard	S2S4		
Asclepias purpurascens	Purple Milkweed	S2		
Asclepias rubra [h?]	Red Milkweed	S1	E	
Asclepias verticillata	Whorled Milkweed	S3		
Asplenium pinnatifidum	Lobed Spleenwort	S1	E	
Astragalus canadensis	Canadian Milkvetch	S1	E	
Aureolaria flava [h]	Smooth Yellow False Foxglove	S3		
Aureolaria levigata [h]	Downy Yellow False Foxglove	S3		
Bartonia paniculata [h]	Twining Screwstem	S3		
Blephilia ciliate	Downy Woodmint	S3S4		
Borodinia dentata	Short's Rockcress	S3		
Botrychium simplex [?]	Least Grapefern	SH	X	
Calopogon tuberosus [h]	Tuberous Grass-pink	S1	E	
Calystegia spithamaea ssp. spithamaea	Low Bindweed	S2		
Capnoides sempervirens	Pale Corydalis	S3		
Cardamine douglassii	Purple Cress	S3		
Carex albursina	White Bear Sedge	S3		
Carex argyrantha [h]	Hay Sedge	S3		
Carex conoidea	Field Sedge	S1	E	
Carex davisii	Davis' Sedge	S1	E	
Carex emoryi	Emory's Sedge	S3		
Carex pellita	Wooly Sedge	S2?		
Carex shortiana	Short's Sedge	S3S4		
Carex sparganioides	Bur-reed Sedge	S3		
Castilleja coccinea [h]	Scarlet Indian-paintbrush	S1	E	
Cirsium muticum	Swamp Thistle	S3		
Chelone obliqua [h?]	Red Turtlehead	S2	T	
Chimaphila umbellata	Common Wintergreen	S3		
Clematis viorna	Vase-vine Leatherflower	S3		
Commelina erecta	Erect Dayflower	S3		
Coptis trifolia	Goldthread	S1	E	
Corallorhiza wisteriana [h]	Spring Coralroot	S1	E	
Cornus rugosa [h]	Roundleaf Dogwood	S1	E	
Corylus cornuta	Beaked Hazelnut	S3		
Cyperus lancastriensis	Many-flowered Umbrella-sedge	S2S3		

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Cyperus refractus	Reflexed Flatsedge	S2?		
Cypripedium parviflorum var. pubescens	Large Yellow Lady's-slipper	S3		
Cystopteris tennesseensis [h]	Tennessee Bladderfern	S1		
Dactylorhiza viridis	Long-bract Green Orchis	S1	E	
Delphinium tricorne	Dwarf Larkspur	S3		
Dichanthelium bicknellii [h]	Bicknell's Witchgrass	SU	X	
Diphasiastrum tristachyum [?]	Deep-root Clubmoss	S3		
Dirca palustris	Eastern Leatherwood	S2	T	
Doellingeria infirma	Cornel-leaf Aster	S3		
Drosera rotundifolia	Roundleaf Sundew	S3		
Dryopteris celsa	Log Fern	S3		
Epilobium leptophyllum	Linear-leaf Willowherb	S2S3		
Equisetum sylvaticum	Woodland Horsetail	S1	E	
Erigenia bulbosa	Harbinger-of-spring	S3		
Erythronium albidum	White Trout Lily	S2	T	
Euphorbia purpurea	Glade Spurge	S1	E	
Eurybia radula	Rough Wood Aster	S1	E	
Eutrochium maculatum [?]	Spotted Joe-pye Weed	SU	X	
Filipendula rubra	Queen-of-the-prairie	S1	E	
Fraxinus nigra	Black Ash	S3		
Galium latifolium	Purple Bedstraw	S3		
Gentiana andrewsii	Fringe-top Bottle Gentian	S2	T	
Geranium robertianum	Herb-Robert	S1		
Geum laciniatum	Rough Avens	S3		
Glyceria acutiflora	Sharp-scaled Mannagrass	S1	E	
Gymnocarpium dryopteris	Northern Oak Fern	S1	E	
Helianthus hirsutus [h]	Stiff-hair Sunflower	S1		
Heracleum maximum	Cow-parsnip	S3		
Hibiscus laevis	Halberd-leaf Rosemallow	S3		
Hybanthus concolor	Green Violet	S3		
Hydrastis canadensis	Golden-seal	S2	T	
Iris virginica	Virginia Blueflag	S3		
Isoëtes engelmannii	Engelmann's Quillwort	S3		
Juglans cinerea	Butternut	S2S3		
Krigia dandelion [h]	Potato Dwarf-dandelion	S2S3		
Lespedeza frutescens	Violet Lespedeza	S3		
Ligusticum canadense [h]	American Lovage	SH	X	
Liparis liliifolia	Large Twayblade	S3		
Liparis loeselii	Loesel's Twayblade	S1S2		
Lycopodiella inundata	Bog Clubmoss	S2		
Lythrum alatum	Winged Loosestrife	S1	E	
Maianthemum stellatum	Starflower Solomon's-plume	S2	E	
Malaxis unifolia	Green Adder's-mouth Orchid	S2		

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Malus angustifolia	Southern Crabapple	S3		
Matelea obliqua	Climbing Milkweed	S1S2	E	
Micranthes micranthidifolia [h]	Lettuceleaf Saxifrage	S3		
Monarda clinopodia	Basil Beebalm	S3S4		
Mononeuria glabra	Appalachian Sandwort	S1		
Myosotis macrosperma	Large-seed Forget-me-not	S3S4		
Myosotis verna	Spring Forget-me-not	S3		
Napaea dioica	Glade Mallow	S1	E	
Nymphoides cordata	Little Floatingheart	S1	E	
Orthilia secunda [h]	One-side Wintergreen	SH	X	
Packera paupercula	Balsam Ragwort	S3		
Panax quinquefolius	American Ginseng	S2S3		
Patis racemosa	Black-fruit Mountain-ricegrass	S2S3		
Pellaea glabella	Smooth Cliffbrake	S1	E	
Penstemon laevigatus [h]	Smooth Beardtongue	SU		
Phacelia purshii	Miami-mist	S3		
Phyllanthus caroliniensis	Carolina Leaf-flower	S3		
Platanthera ciliaris	Yellow Fringed Orchid	S2	T	
Platanthera cristata	Crested Yellow Orchid	S3		
Platanthera flava	Pale Green Orchid	S2S3		
Platanthera grandiflora	Large Purple Fringed Orchid	S2	T	
Platanthera peramoena	Purple Fringeless Orchid	S1S2	T	
Platanthera psycodes	Small Purple Fringed Orchid	S1	PE	
Platanthera shriveri	Shriver's Frilly Orchid	S1		
Pycnanthemum pycnanthemoides [h?]	Southern Mountainmint	SH	X	
Pycnanthemum torreyi	Torrey's Mountainmint	S1	E	
Pycnanthemum verticillatum	Whorled Mountainmint	S2	T	
Quercus macrocarpa [h]	Bur Oak	S1S2		
Quercus shumardii	Shumard Oak	S2	T	
Ranunculus septentrionalis	Carolina Buttercup	S1?		
Ranunculus flabellaris	Yellow Water Crowfoot	S1	E	
Ribes cynosbati	Prickly Gooseberry	S3		
Ribes americanum	Wild Black Currant	S1	X	
Ribes glandulosum	Skunk Currant	S3		
Ripariosida hermaphrodita [h]	Virginia Mallow	S1	E	
Rubus pubescens	Dwarf Raspberry	S1?		
Rudbeckia fulgida	Orange Coneflower	S3		
Rudbeckia triloba	Brown-eyed Susan	S3		
Ruellia strepens	Limestone Wild Petunia	S2S3		
Rumex altissimus [h]	Tall Dock	S1	E	
Sagittaria rigida [h]	Sessile-fruit Arrowhead	S1	E	
Salix exigua [h]	Narrowleaf Willow	S1	E	
Sanguisorba canadensis	Canada Burnet	S2	T	

SCIENTIFIC NAME	COMMON NAME	STATE RANK	STATE STATUS	FEDERAL STATUS
Sanicula trifoliata	Large-fruited Sanicle	S3		
Sarracenia purpurea	Northern Pitcherplant	S2	T	
Sceptridium oneidense [?]	Blunt-lobe Grapefern	S1	E	
Schoenoplectus subterminalis	Water Bulrush	S1	E	
Scrophularia lanceolata	Hare Figwort	S3		
Scutellaria incana	Hoary Skullcap	S3		
Scutellaria leonardii [h]	Shale Barren Skullcap	S2	T	
Scutellaria nervosa	Veined Skullcap	S1S2	T	
Scutellaria ovata	Heartleaf Skullcap	S3		
Scutellaria saxatilis	Rock Skullcap	S1	E	
Scutellaria serrata	Showy Skullcap	S3		
Senecio suaveolens	Sweet-scented Indian-plantain	S1	E	
Senna marilandica	Maryland Wild Senna	S3		
Silene nivea	Snowy Campion	S1	E	
Silphium asteriscus var. *trifoliatum*	Threeleaf Rosinweed	S3		
Smilax ecirrata [h]	Upright Greenbrier	S1S3		
Solidago arguta var. arguta [?]	Late Goldenrod	S1?		
Solidago hispida	Hairy Goldenrod	S3		
Solidago patula	Sharp-leaved Goldenrod	S3		
Solidago rigida [h]	Prairie Goldenrod	S1	E	
Sparganium eurycarpum	Giant Bur-reed	S3		
Spiranthes ochroleuca	Yellow Nodding Ladies'-tresses	S1	E	
Stachys hyssopifolia [h]	Hyssopleaf Hedge-nettle	S1		
Stenanthium gramineum	Eastern Featherbells	S1	T	
Symphyotrichum shortii	Short's Aster	S3S4		
Thaspium trifoliatum	Purple Meadow Parsnip	S1	E	
Trichophorum planifolium [h]	Bashful Bulrush	S2S3		
Trichostema brachiatum	Glade Bluecurls	S3		
Trillium cernuum	Northern Nodding Trillium	S3		
Triosteum angustifolium	Yellowleaf Tinker's-weed	S1	E	
Valeriana pauciflora	Valerian	S1	E	
Valerianella umbilicata [?]	Navel-shaped Corn-salad	SH	X	
Veratrum hybridum	Broadleaf Bunchflower	S1	E	
Veratrum virginicum	Virginia Bunchflower	S3		
Vernonia gigantea [h]	Giant Ironweed	SU		
Veronica scutellata	Marsh Speedwell	S1	E	
Zanthoxylum americanum [h]	Northern Prickly-ash	S1S2	E	
Zizia aurea	Golden Alexanders	S3		

ATTACHMENT E NORTHEAST BALD EAGLE PROJECT SCREENING FORM

NORTHEAST BALD EAGLE PROJECT SCREENING FORM

Welcome!

What is the purpose of this form? The U.S. Fish and Wildlife Service (Service) designed this form as a voluntary tool to help people comply with the Bald and Golden Eagle Protection Act (BGEPA) by planning activities in a manner that avoids disturbing nesting bald eagles. To disturb a bald eagle nest means to agitate or bother a bald eagle to a degree that causes, or is likely to cause, that eagle to abandon its nest, suffer injury, or be unable to perform activities necessary to its survival. While all guidance included in this form is voluntary, individuals and organizations that disturb eagles may be subject to fine and prosecution under BGEPA.

How is this form different from the National Bald Eagle Management Guidelines? The National Bald Eagle Management Guidelines (Guidelines) is a document published by the Service in 2007 that provides background information on the biology of bald eagles, explains the Federal laws and regulations protecting them, and lays out guidance for several categories of human activities that can affect their nesting. This form takes the Guideline's recommendations, fits them to the regional conditions of the Northeast, and offers them to you in an interactive and intuitive format. Because the form fits its assessments and recommendations to the needs and behaviors of nesting bald eagles in the Northeast, you may find that it differs from the Guidelines on certain details. Nonetheless, the ultimate goal remains the same: to keep project proponents in compliance with BGEPA, while also protecting nesting bald eagles from disturbance.

How this form works. To complete this form, first, find the category of activities that includes your proposed activity. Then, go to the page listed for that category to assess whether your project may risk disturbing nesting bald eagles. If the form identifies that your activities may disturb nesting bald eagles, follow the recommended avoidance measures. These measures will identify factors that could influence nesting eagles' sensitivity to your activities: distance, visibility, timing, and exposure to other human activities. Sign the self-certification that you have committed to implementing the appropriate measures. If your proposed activities fall into multiple categories, repeat this process for each category. Additionally, if your project has the potential to affect multiple nests, complete a separate form for each nest site.

What to do with your completed form. Once you have signed your self-certification, keep the form for your personal records. You do not need to submit your completed form to the Service. Keep the form and additional pages that may be helpful to your future planning and compliance. If a local, state, or federal authority asks for documentation that you are complying with the Service's regional guidance, you can present them with your completed and signed form.

INTRODUCTION

What to know before you start. You will need a few pieces of information to help you complete this form.

Breeding Season

For temporary activities that might be loud or very visible, one of the simplest and most effective ways to avoid disturbing a bald eagle nest is to time the activity when eagles are not nesting, that is, outside the bald eagle breeding season. Wildlife agencies often refer to this type of measure as a time-of-year restriction. The bald eagle breeding season lasts approximately seven to eight months and has many stages. Start and end dates to this season can vary by location, year, and breeding pair. For simplicity, general dates are often set at a statewide level. Consult Appendix A to find the breeding season in your area.

Visibility

For some categories of activities, this form will ask whether your project activities will be visible to the nest. There are two general approaches to answering this question, a desktop assessment and a site visit. A desktop assessment involves consulting online mapping resources, such as Google Maps or state nest maps (see Appendix B), which can display your project location and the nest location on satellite or aerial imagery. When viewing this imagery, look to see whether there are landscape features or structures that might screen the nest's view of your activities. Your assessment is only as good as your imagery. Make sure the imagery is current and accurately reflects visibility conditions on the ground.

The second option is to visit your project location. Assess from various points in your project footprint whether you can see the nest. Use binoculars (4X power or greater) or spotting scope to assist your viewing. If you plan to visit the project site during the breeding season, be aware that your presence could also disturb the nest. Maintain 330' feet between you and the nest, or at least as much distance as the nearest ongoing foot traffic at the nest site. You should only perform your site visit from property legally accessible to you.

Using both the field and desktop approach will give you your best answer. If there is need to select between the two options, a site visit will generally provide a better sense of visibility. In either approach, consider that your activities may become more visible during portions of the year when leaves are off trees and other vegetation.

Nest Location

To figure out how close or how visible your activities will be, you will need precise knowledge of the nest's location. If you do not already have this information, check Appendix B to see if any online or state resources are available. If you are unable to get this information from any of these sources, survey the site. As when assessing visibility, you should only perform your visit on property legally accessible to you. You should also avoid coming within 330 feet of a nest during the breeding season, unless you know that the eagles have previously tolerated people at whatever shorter distance you are planning to use. For descriptions and examples of bald eagle nests, and explanation of how they differ from other large bird nests, see "Appendix C – Guide to Nest Identification."

If you feel unable to perform this search, consider employing the services of a wildlife biologist experienced in this type of surveying. Alternatively, consider contacting your state or local wildlife agency to see if they would be able to perform a site visit (please be aware that many state and local wildlife agencies are constrained in their resources and time and may not be able to offer this service). Be sensitive to sharing information about nest locations. Attracting public interest to a nest site can threaten the safety of that nest. Some states also continue to prohibit the release of nest locations.

It is possible that you will be unable to find a reported nest. While bald eagles commonly use nests across breeding seasons, nests do not always survive from one season to the next. Nests may fall apart of their own accord or be blown down by high winds. Bald eagles may also stop using a nest for one season or more, even if the nest as a structure still exists. In these scenarios, bald eagles may still reuse a former nest site in the following breeding seasons. The temporary absence of a nest or nesting eagles does not absolve you of your responsibilities to avoid disturbing future nesting at that site. The Service recommends implementing the measures included in this form for five years after the last breeding season eagles used a nest or, where the nest no longer exists, three years after the last breeding season in which the nest existed.

Similar Activities

One of the best indicators of what a nesting bald eagle pair will tolerate is what they have already tolerated. In certain places, this form will ask whether the nesting pair has experienced and tolerated similar activities at the nest location. To answer this question, you will need to know about previous human activity at that location. Was that activity similar in nature to what you propose? As close as or closer than what you propose to do? Did it occur at the same time of day? Time of year? Did it last as long? Was it as frequent? Was it as loud? Was it as visible? You will also need to know basic history about the nest. Did the nest exist before that previous activity? Was it ever used after that activity? If your answer to any of these questions is 'no,' you cannot answer 'yes' to the broader question of whether there is similar activity at that site. See "Appendix D – Similar Activity Example Exercise" for a demonstration of how to apply this principle.

Limitations

Know when and how you should be using this form. See "Appendix E – Limitations of this form."

Where to go for help. The Service understands that project proponents may occasionally need clarification on which assessments are relevant to them and how to implement certain avoidance and minimization measures. If you find you are unable to complete this form, you can contact your regional eagle coordinator (Tom Wittig) for assistance at

thomas_wittig@fws.gov - or - 413-253-8577

When emailing, please include in your subject line "BALD EAGLE SCREENING FORM QUESTION." If you are unable to connect with your regional eagle coordinator when calling, please leave a voice message that you are calling about this form and how best to reach you.

For explanation of technical terms used in this form, see "Appendix F – Glossary of Terms."

PROJECT INFORMATION

Project Name: _____

City: _____ **County:** _____ **State:** _____

Lat/Long (decimal degrees; ex. *38.418310, -76.001096*)**:** _____ _____

Find Lat/Long via map

Size: _____ acres\miles

PROJECT CONTACT INFORMATION

Name: _____ **Phone:** _____

Address: _____

_____

Email: _____

If your project has a Federal (ex. U.S. Army Corps), state (ex. PNDI), or other ID number, please list here: _____

PROJECT ACTIVITY CATEGORY(S)

Place a check next to all activities you plan to perform.

- ☐ Construction and Development Activities → go to pages 5 - 7
- ☐ Maintenance and Restoration Activities → go to pages 8 - 9
- ☐ Timber Operation and Forestry Practices → go to page 10
- ☐ Use of Helicopters and Fixed-wing Aircraft → go to page 11
- ☐ Blasting and Other Loud, Intermittent Noises (including Fireworks) → go to page 12
- ☐ Recreational Activities → go to pages 13 – 14

Feedback? The Service is continuously looking to improve this form. If you have suggested changes, please feel free to email them to us at thomas_wittig@fws.gov. Include "Bald Eagle Project Screening Form – Feedback" in your subject line.

Construction and Development Activities

Which specific construction activities do you plan to perform? (check all that apply)

- ☐ Building construction
- ☐ Tree and land clearing
- ☐ Construction of roads, trails, canals, power lines, pipelines and other linear utilities
- ☐ Agriculture or aquaculture – new or expanded operations
- ☐ Alteration of shorelines or wetlands
- ☐ Installation of docks, piers, or moorings (pile driving may qualify as loud noise, page 12)
- ☐ Water impoundment or withdrawal
- ☐ Mining
- ☐ Oil and natural gas drilling and refining
- ☐ Wind farm construction
- ☐ Installation or expansion of marinas with a capacity of 6 or more boats
- ☐ Communications tower construction (excluding maintenance and repairs)

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated? Consider both construction and use/operation of your project.

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

- ☐ Yes → No avoidance measures recommended. Go to self-certification (page 7).
- ☐ No → Go to next question.

Will your activities be visible to the bald eagle nest(s)?

- ☐ Yes → Stop. Implement Avoidance Measures (AM) 2, 4, and 5 (see page 7)
- ☐ No → Go to the next question

Which of these categories most closely matches your proposed project or activity?
(check all that apply)

☐ Building construction, 1 or 2 story, with a project footprint of ½ acre or less ☐ Construction of roads, trails, canals, power lines, or other linear utilities ☐ Agriculture or aquaculture – new or expanded operations ☐ Alteration of shorelines or wetlands ☐ Installation of docks or moorings ☐ Water impoundment or withdrawal ☐ Construction of communication towers **→ Implement AM 3, 4 and 5 (page 7)**	☐ Building construction or expansion, 3 or more stories ☐ Building construction or expansion, 1 or 2 story, with project footprint more than ½ acre ☐ Mining ☐ Oil and natural gas drilling and refining ☐ Installation or expansion of marinas with a capacity of 6 or more boats **→ Go to the next question**

Is there a similar activity within 1 mile of the nest?

☐ Yes → Implement AM 3, 4 and 5 (see page 7)

☐ No → Implement AM 1 and 5 (see page 7)

AVOIDANCE MEASURES - Place a check mark next to each avoidance measure (AM) that this form instructed you to implement and that you can commit to following. The Service recommends you follow the applicable AMs to prevent your activities from disturbing nesting bald eagles.

☐ AM 1 – Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the nest.

☐ AM 2 – Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the nest. If there is an existing human-made feature (e.g., house, road, dock) similar to your project that is closer than 660 feet and tolerated by the nesting eagles, maintain a distance buffer equal to or greater than the distance separating that tolerated feature and the nest.

☐ AM 3 – Maintain a distance buffer of at least 330 feet (100 meters) year-round between all project activities and the nest. If a similar activity (i.e., similar in kind and size) is closer than 330 feet and has been tolerated by eagles, the distance buffer will be the same or greater than that of the existing tolerated activity.

☐ AM 4 – Do not perform disruptive project activities within 660 feet (200 meters) of the nest during the breeding season. This time-of-year restriction is in addition to your recommended distance buffer. Disruptive activities include, but are not limited to, external construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, and landscaping.

☐ AM 5 – Maintain existing landscape buffers that visually screen the activity from the nest.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Maintenance and Restoration Activities

This category includes outdoor maintenance of existing structures or infrastructure, where the maintenance activity is temporary and obtrusive (e.g., requires use of heavy equipment or loud machinery), and within the previously disturbed footprint of the structure or infrastructure. If maintenance is proposed outside the previously disturbed footprint, see **Construction and Development Activities** (pages 5-7). This category also applies to the maintenance and restoration of natural habitats (e.g., wetlands, streams, rivers, non-forested uplands). This category does not include routine, ongoing activities to which bald eagles have already exhibited a tolerance (e.g., lawn mowing; plowing, planting or harvesting of agricultural fields; etc.).

Which maintenance or restoration activities do you plan to perform? (check all that apply)

- ☐ Maintenance of linear utilities (e.g., power lines, pipelines, water and sewer lines)
- ☐ Road, bridge, or culvert maintenance
- ☐ Trail, campground, or recreational area maintenance
- ☐ Maintenance of oil and gas wells, well pads, and storage tanks
- ☐ Maintenance of dams, levees, berms, canals and other water-control structures
- ☐ Pond, lake, or reservoir maintenance (draw downs, dredging)
- ☐ Stream or stream bank maintenance /restoration (e.g., stream bank fencing, stream bank stabilization, livestock crossings, in-stream habitat improvements, channel maintenance, dredging)
- ☐ Wetland maintenance / restoration (e.g., invasive plant control, restoration of hydrology)
- ☐ Prescribed burning for invasive control
- ☐ Upland habitat maintenance / restoration (e.g., planting or cutting of vegetation, invasive plant control, trash cleanup, abandoned mine lands restoration). This does not include activities in forests/woodlands (see **Timber Operation and Forestry Practices**) or in agricultural fields.

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated? Consider both construction and use/operation of your project.

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

- ☐ Yes → No avoidance measures recommended. Go to self-certification.
- ☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow these AMs to prevent your activities from disturbing nesting bald eagles.

☐ AM 6 - Within 660 feet (200 meters) of the nest, perform all loud and intrusive maintenance and restoration work outside the breeding season. These activities include, but are not limited to, the following: construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, landscaping, and habitat restoration activities.

☐ AM 7 - Maintain existing landscape buffers that visually screen the activity from the nest.

☐ AM 8 - Do not perform prescribed burning within 660 feet (200 meters) of the nest during the breeding season. If there is no practicable alternative to scheduling prescribed burning during the breeding season, only conduct burns when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is in use or after the young have fledged from that nest).

☐ AM 9 - When performing prescribed burning within the drip line of the nest tree, rake leaves, vines, and woody debris from around the base of the tree to prevent fire from climbing the tree. When burning within a patch of forest containing the nest tree, take precautions to prevent crown fire.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Timber Operation and Forestry Practices

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow these AMs to prevent your activities from disturbing nesting bald eagles.

☐ AM 10 – Do not perform clear-cutting or overstory tree removal within 330 feet (100 meters) of the nest at any time of the year.

☐ AM 11 - During the breeding season, do not perform timber harvesting, road construction, chain saw use, or yarding operations within 660 feet (200 meters) of the nest. Around alternate nests (including nests that were attended during the current breeding season but not used to raise young), you may reduce this distance to 330 feet (100 meters), provided the eggs laid in another nest within the nesting territory have hatched.

☐ AM 12 – Do not construct or operate log transfer facilities and in-water log storage areas within 330 feet (100 meters) of nests at any time of the year.

☐ AM 13 – Do not perform selective thinning, prescribed burning, or other similar silviculture practices for the enhancement or conservation of habitat within 660 feet (200 meters) of the nest during the breeding season. If there is no practicable alternative to scheduling prescribed burning during the breeding season, only conduct burns when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest).

☐ AM 14 – When performing prescribed burning within the drip line of the nest tree, rake leaves, vines, and woody debris from around the base of the tree to prevent fire from climbing the tree. When burning within a patch of forest containing the nest tree, take precautions to prevent crown fire.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Use of a Helicopter and Fixed-wing Aircraft

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

☐ Yes → No avoidance measures recommended. Go to self-certification.

☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow this AM to prevent your activities from disturbing nesting bald eagles.

☐ AM 15 - During the breeding season, do not fly within 1000 feet (305 meters) of bald eagle nests.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Blasting and Other Loud, Intermittent Noises (including Fireworks)

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of day	-distance
-frequency	-time of season	-volume

☐ Yes → No avoidance measures recommended. Go to self-certification.

☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow this AM to prevent your activities from disturbing nesting bald eagles.

☐ AM 16 - During the breeding season, do not perform blasting and other activities that produce extremely loud noises within 1/2 mile (800 meters) of in-use nests. This measure also applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks intended for licensed public display.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Recreational Activities

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

☐ Yes → No avoidance measures recommended. Go to self-certification.

☐ No → Go to next question

Will your recreation occur during the breeding season?

☐ Yes → Go to Avoidance Measures.

☐ No → No avoidance measures recommended. Go to self-certification.

AVOIDANCE MEASURES – For each applicable recreational subcategory, place a check mark next to the AMs you can commit to following. The Service recommends you follow the applicable AMs to prevent your activities from disturbing nesting bald eagles.

Non-motorized recreation and human entry (including hiking, camping, fishing, hunting, canoeing)

☐ AM 17 - Stay at least 330 feet (100 meters) from the nest if you walk, bike, canoe, camp, fish, or hunt near an eagle nest during the breeding season and your activity will be visible or can be heard from the nest.

Off-road vehicle use (including snowmobiles)

☐ AM 18 - Stay at least 330 feet (100 meters) from the nest. In open areas, where there is increased visibility and exposure to noise, stay at least 660 feet (200 meters) from the nest.

Motorized watercraft use (including jet skis/personal watercraft)

☐ AM 19 - Do not operate jet skis (personal watercraft) or airboats within 330 feet (100 meters) of the nest.

☐ AM 20 - Avoid concentrations of noisy vessels (e.g. commercial fishing boats and tour boats) within 330 feet (100 meters) of the nest, except where eagles have demonstrated tolerance for such activity.

☐ AM 21 - For all motorized boat traffic within 330 feet (100 meters) of the nest, minimize trips and avoid stopping in the area, particularly where eagles are unaccustomed to boat traffic.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

-- SEEK FURTHER GUIDANCE --

You have indicated that you are unable to implement all the recommended avoidance measures. Without all avoidance measures, your activities may risk disturbing nesting bald eagles.

Consult with your regional eagle coordinator to determine the appropriate next steps. The Service will work with you to help develop alternate measures to avoid disturbance of nesting bald eagles. If there are no feasible alternate measures, the Service may advise that you obtain an eagle incidental take permit to relieve you of legal liability in the event that your activities unintentionally disturb nesting bald eagles.

Contact your regional eagle coordinator (Tom Wittig) for assistance at thomas_wittig@fws.gov

When emailing, please include in your subject line "[Your project name] – SCREENING FORM FURTHER GUIDANCE." In the body of your message, include

-a brief description of your project, including its location and when you plan to start;

-the activity category(s);

-the ID number(s) (e.g., AM 5) of the Avoidance Measure(s) you are unable to implement; and

-the nest location(s), if available.

To see the Service's eagle incidental take permit application form, go to

https://www.fws.gov/forms/3-200-71.pdf

For answers to Frequently Asked Questions on this form, go to

https://www.fws.gov/migratorybirds/pdf/policies-and-regulations/3-200-71FAQ.pdf

The Service advises you talk with your regional eagle coordinator before deciding to apply.

APPENDIX A

Bald Eagle Breeding Season by State

State	Breeding Season
VA	December 15 – July 15
DC	December 15 – July 15
WV	January 1 – June 30
MD	December 15 – June 30
DE	December 15 – June 30
PA	January 1 – July 31
NY	January 1 – September 30
NJ	January 1 – July 31
RI	January 1 – July 31
CT	January 1 – July 31
MA	January 1 – August 15
VT	February 1 – August 15
NH	February 1 – August 15
ME (coastal)	February 1 – August 15
ME (northern)	March 1 – August 30

APPENDIX B

State Mapping Resources

Connecticut

Contact state
Brian Hess, CT DEEP
Brian.Hess@ct.gov

Delaware

Contact state
Katie Kadlubar, Delaware Division of Fish & Wildlife
Kathryn.Kadlubar@delaware.gov

DC

Contact National Park Service
Mikaila Milton, NPS
mikaila_milton@nps.gov

Maine

https://www.arcgis.com/apps/webappviewer/index.html?id=796b7baa18de43b49f911fe82dc4a0f1

Maryland

https://marylandbirds.org/report-bald-eagle-nest/

Massachusetts

Contact state
Andrew Vitz, MassWildlife
Andrew.vitz@state.ma.us

New Hampshire

Contact state
https://www2.des.state.nh.us/nhb_datacheck/signin.aspx

New Jersey

Contact state
https://www.nj.gov/dep/parksandforests/natural/heritage/datareq.html

New York

Contact state
https://www.dec.ny.gov/animals/31181.html

Pennsylvania

https://fws.maps.arcgis.com/apps/webappviewer/index.html?id=87ac96536654495b9f4041d81f75d7a0

Rhode Island

Contact state
DEM.DFW@dem.ri.gov

Vermont

Contact state
https://vtfishandwildlife.com/conserve/development-review

Virginia

https://www.ccbbirds.org/maps/#eagles

West Virginia

Contact state
Rich Bailey, WVDNR
Richard.S.Bailey@wv.gov

Please note that maps are not exhaustive records of all nests within that state.

APPENDIX C

Guide to Nest Identification

Is it a bald eagle nest? Because bald eagle populations have grown so rapidly in recent years, not every bald eagle nest is registered to an online map or known to wildlife management agencies. As a result, project screening form users may occasionally have to make their own assessment of whether the nest near their project or activity is a bald eagle nest. Users should be cautious in making these determinations. Bald eagle nests can easily be confused with nests of other large birds such as osprey.

This guide will help landowners and project proponents assess whether a nest belongs to bald eagles or another species. It describes for readers the most commonly encountered large nests in the Northeast, with several reference figures for bald eagle nests, and provides tips for telling nest types apart. Any user who reads this guide and still feels uncertain about what type of nest they have encountered should contact their regional eagle coordinator for further guidance.

Common types of large nests.

Bald Eagle

The most notable aspect to a bald eagle nest is generally its size. Bald eagles build some of the largest nests in the world, with most nests around 5 feet in diameter and 3 feet in height (Fig. 1). Nests can grow well beyond these dimensions (Fig. 2), as bald eagles tend to repair and expand their nests each year and can use individual nests for decades. Bald eagle nests are mainly composed of large interwoven sticks. Nests will also have a soft interior bowl made up of materials such as hay, cornhusks, and grass clippings. However, this portion of the nest is rarely visible to human observers. The shape of bald eagle nests varies; they can take the general form of flat discs, inverted cones, cylinders (Fig. 2), or spheres (Fig. 3).

Bald eagles typically place their nests in prominent trees that sit above the surrounding forest canopy. These nest trees will often be on hillsides, lake and ocean shorelines, riverbanks, and forest edges. Nests are generally in the top third of a tree, below the crown, secured in a prominent fork off the main trunk (Fig 4.). Bald eagle nests can be in living deciduous (Fig. 3-4) and coniferous trees (Fig. 1), or dead trees (snags; Fig. 5). Within the Northeastern U.S., bald eagles use a wide range of tree types, including white pines, loblolly pines, tulip poplars, sycamores, oaks, and cottonwoods. Despite their common perception as an emblem of wilderness, bald eagles are also increasingly nesting on human-made structures such as electric transmission towers (Fig. 6) and communication towers.

Osprey

Osprey build large stick nests that can look quite similar to bald eagle nests. In general, osprey nests are smaller, flatter, more disorganized, and more often composed of unnatural materials, such as bailing twine and plastic bags. Osprey also show a stronger preference than bald eagles for human made structures, regularly nesting on light polls, channel markers, and cell towers. When osprey do select a natural support for their nest, it tends to be the topmost part of dead trees, in contrast to bald eagles, which seek out slightly lower portions of trees.

The best clue to which species occupies a nest, osprey or bald eagles, is who shows up. Bald eagles arrive back at their nests earlier in the year than osprey, but by late spring, both species are usually attending their nests. At this time of year, watching a nest over a period of hours will generally reveal which species is using it. However, through fall and early winter, both species are usually away from their nests. During these seasons, the only immediate sources of information on nest will be the physical details described above and online mapping resources.

In addition to the state maps for bald eagles listed in Appendix C, Osprey Watch (http://www.osprey-watch.org/) provides a mapping database of osprey nest locations. As with the bald eagle mapping resources, this map is thorough, but does not represent all existing nests.

Red-Tailed Hawk/Red-Shouldered Hawk

Generally around 1.5 feet wide and 2 feet tall, nests of red-tailed hawks and red-shouldered hawks are less than one-half the size of bald eagle nests. The individual sticks in these hawk nests also tend to be smaller, with diameters of about 1-2 inches. Overall appearance of these nests can be slightly more frayed and chaotic than that of bald eagle nests. Like bald eagles, both hawk species show a tendency towards nesting in upper portions of prominent trees. Red-tailed hawks also share bald eagle's occasional preference for human made structures such as cell towers and transmission towers.

Common Raven

Common ravens construct stick nests that vary substantially in size, from 1.5 to 5 feet across and from little over 0.5 to 2 feet high. The sticks making up the main structure of these nests can be around 3 feet in length and 1 inch in diameter. Ravens place their nests in a variety of natural and developed settings. Raven nests are easily confused with bald eagle nests when located on cell towers, transmission towers, or in trees. When situated in trees, these nests are usually in the upper portion of the tree in a crotch of the main tree stem. The best means of telling raven and bald eagle nests apart are likely size and shape; raven nests are noted for occasionally being asymmetric, and even at their larger sizes, they still tend to be smaller than bald eagle nests.

Great Horned Owl

In addition to nesting in tree cavities, great horned owls also frequently use the former nests of other animals, including squirrels, ravens, crows, and herons. The size and nature of a great horned owl nest therefore depends on the nest's original creator. Red-tailed hawk may be the most common source of nests for great horned owls in the Northeast. However, great horned owls will also occasionally take over bald eagle nests.

Heron

Herons nest in colonies known as "rookeries" where many nests are present; individual heron nests are rare. Multiple nests can be present in one tree and some nests may be located relatively high up or far out on branches. Nest sites are usually near water. Heron nests are mainly composed of sticks, and are flat and broad, often resembling a thin platform. Nests used for several years may grow taller and wider. Heron nests can give off a general impression of messiness or flimsiness.

Squirrel

Squirrel nests can reach basketball size or larger. They are distinguished from bird nests mainly by their materials, which include leaves and other soft vegetation material (e.g., grasses), and very few sticks. They are usually round shaped, and often look messy.

Legal definitions and protections for eagle and migratory bird nests.

Eagle Nests

BGEPA protects eagle nests in same manner it protects eagles; they cannot be destroyed, possessed, or relocated without a permit from the Service, which the Service only provides under a limited set of circumstances. Regulation defines an eagle nest as "any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction" (50 CFR 22.3). A nest is an eagle nest if it was built by or ever used by eagles, even if other species of birds played a role in the nest's history. For example, if osprey build a nest and eagles take that nest over, legally, the nest is an eagle nest. Alternatively, if great horned owls begin to use a nest originally built by eagles, that nest remains an eagle nest for as long as it exists. An eagle nest also retains protection regardless of where it was built, whether it was ever finished or successful, or when it was last used. Additionally, BGEPA's protections apply regardless of the nest's size and condition.

Migratory Bird Nests

The Migratory Bird Treaty Act (MBTA) protects migratory bird nests in the many of the same ways that BGEPA protects eagle nests. Unless a permit is in place, migratory bird nests cannot be possessed or relocated at any time or intentionally destroyed while active. One notable difference between MBTA and BGEPA is MBTA's standard on inactive nests. If a migratory bird nest is inactive, meaning it does not contain viable eggs or chicks, it can be destroyed without a permit. (Note: the

terms ‘active’ and ‘inactive’ here are different from the ‘in-use’ and ‘alternate’ standards used for eagle nests [see Appendix E for definitions].) For more information, please read the Service’s 2018 Nest Destruction Memo. Bird species protected under MBTA are listed under regulation at 50 CFR 10.13. Additional protections not described here apply to any migratory bird species listed under the Endangered Species Act. Tribal, state, and local laws may also place greater restrictions on the destruction of migratory bird nests.

Figure 1.

Figure 2.

Figure 3.

Figure 4.

Figure 5.

Figure 6.

APPENDIX D

Similar Activity Example Exercise

What is the purpose of this appendix? This appendix provides project screening form users with an example of how to assess the similarity between two activities. By reading through this example, landowners and project proponents can develop a better sense of what factors they should consider when answering the question of whether their activity is similar to an ongoing or previous activity tolerated by eagles.

In the example scenario, a proposed residential construction project is compared to previous farming activity. The example starts with an overview of the historic farming activity, nest, and proposed project; then goes through a full assessment, set up in table format; and finally closes with a summary of the determination and explanation of how that determination would influence completion of the form.

What is the scenario?

Previous/Existing Activities

The project site is a large agricultural field that was farmed nearly every year for the past two decades. Human activity at the site was limited to occasional operation of heavy farm equipment. The broader area out to one mile includes other agricultural fields and medium density residential and commercial development.

Nest Location & History

Five years ago, a pair of bald eagles constructed a nest in a cottonwood located in the hedgerow bordering the agricultural field. The pair were unsuccessful in their first year, but fledged young from the nest each of the following four years up to present. Workers observed that the pair did not respond to operation of farming equipment, but became vigilant whenever an equipment operator stepped outside their vehicle.

Project Narrative

The proposed project will convert portions of the existing agricultural field to a residential development with 30 single-family homes, which places it under the screening form's Construction and Development category. Construction will require extending water, sewage, and electrical utilities and adding a small network of residential streets. Preparing each lot will involve grading, home and driveway construction, and landscaping. Ten acres of property near the nest will be signed over as a conservation easement.

Factor	Previous/Existing Activity: Farming	Proposed Activity: Construction	Similar?
NATURE	Heavy equipment preparing field, planting, and harvesting crop. Two-three workers, generally confined to closed cab tractors.	Twenty workers either in heavy equipment or on foot. Ground disturbance. Placement/extension of utilities. Landscaping. Construction of 20 homes.	No
HISTORY	Farming activity predated nesting and continued while eagles successfully fledged young from the nest. This success demonstrates the eagles tolerated the farming.	N/A	Yes
DISTANCE	Distance between farming activity and the nest tree was essentially 0 feet; the hedgerow in which the nest is located bounds the agricultural field.	Nearest lot boundary will be 400 feet from nest. Area between home and nest will be converted conservation easement and left in passive, natural state.	Yes
TIMING	Farming activity began in March and continued through October each year.	Proposed schedule is April through October.	Yes
DURATION	The field was generally worked for one to two days at time, from sunrise to sundown.	On days of construction activity, work will occur during standard business hours.	Yes
FREQUENCY	Intermittent. Farming occurred in stages (e.g., fertilizing, plowing, harvesting) and events were often separated by weeks or months.	Continuous. Work will occur most weekdays and occasionally on weekends.	No
NOISE	Farming equipment (e.g., tractor) generated loud noises within the range of 80 – 100 decibels.	Construction will not require blasting or pile driving. Construction equipment (e.g., backhoes) will generate loud noise within the range of 80 – 95 decibels.	Yes
VISBILITY	High. Because the field was flat and there was no vegetation other than the hedgerow, practically all farming activity was visible to the nest.	High. There will be no topography or vegetation screening view of construction. Visibility will only begin to lower once exterior walls are put up.	Yes

Final Assessment & Conclusion

The proposed construction activity is different from the historic farming activity in general nature and frequency. Construction will require more workers and more equipment, operating at greater intensity and higher frequency. Because of these differences, the construction cannot be considered similar to the historic farming activity, and it cannot be assumed that the breeding pair will tolerate the activity. Avoidance measures will be necessary to reduce the likelihood of disturbing the nest.

Having made these conclusions, the form user would mark 'No' to the question on page 5 of whether the activity was similar to an ongoing or previous activity. Then, at the next question the user would mark 'Yes' because the project would be visible to nest over the open intervening space. At that point, the form would direct them to implement AMs 2, 4, and 5. The project design, as proposed, would not meet AM 2, the 660-foot buffer. The user's options then would be to revise the project to eliminate the portions within 660 feet of the nest and sign the self-certification, or check no on the commitment to follow all recommended AMs and seek further guidance.

APPENDIX E

Limitations of This Form

This project screening form is not a permit or authorization to disturb bald eagles. It does not free you from legal liability under BGEPA. Rather, this form provides instruction on how to minimize the legal risk of disturbing nesting bald eagles.

The effectiveness of this form depends on the accuracy and completeness of your answers and your compliance with the avoidance measures. Using this form inappropriately may put you at risk of disturbing nesting bald eagles and violating BGEPA.

This form's recommendations are specific to the Northeast and may not be effective outside this region. If your project is in another area of the U.S., do not use this form. Instead, consult with your regional eagle biologist or migratory bird permit office for guidance matched to your locality.

This form only relates to managing activities near bald eagle nests. It does not provide direction on how to avoid disturbing bald eagle communal roosts and concentration areas, which, compared to nest sites, have different biological significance to eagles and present different sets of concerns. If you believe your activities have any potential to affect a communal roost or concentration area, consult the Guidelines document for guidance.

Conditions such as the location and existence of nests and surrounding habitat are subject to change between years. For this reason, the Service recommends revisiting your determinations every breeding season after completing this form until your project is complete. The more time that passes between when you complete this form and when you end your activities, the more likely it is that conditions will change enough that your original determinations no longer apply.

This form only addresses nesting bald eagles. To identify other USFWS-managed resources and suggested conservation measures for your project, go to https://ecos.fws.gov/ipac/.

Wind energy developers seeking to address potential take of eagles should use this form in conjunction with the Service's Eagle Conservation Plan Guidance. Use of this form alone will not assure wind projects' compliance with BGEPA's protections on disturbance or other take.

Certain states and localities have their own laws, regulations, and guidelines for protecting bald eagles and their nests. Completing this form does not guarantee that you are also in compliance with these other standards and/or regulations. If you are unfamiliar with your state and local standards, consult with the appropriate agencies and authorities.

You are responsible for ensuring that your activities comply with all applicable Federal, tribal, State, and local laws and regulations. This form will only help you in your compliance with BGEPA and its protections on the nesting activity of bald eagles.

APPENDIX F

Glossary of Terms

Alternate nest – one of potentially several nests within a nesting territory that is not an in-use nest at the current time. When there is no in-use nest, all nests in the territory are alternate nests. Also sometimes referred to as an inactive nest (e.g., in the Service's 2009 Eagle Rule).

Communal roost – an area where eagles gather repeatedly in the course of a season and shelter overnight and sometimes during the day in the event of inclement weather.

Disturb – to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

Eagle nest – any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction.

Fledge – to leave the nest and begin flying. For bald eagles, this normally occurs at 10-12 weeks of age.

In-use nest – a bald or golden eagle nest characterized by the presence of one or more eggs, dependent young, or adult eagles on the nest in the past 10 days during the breeding season. Also sometimes referred to as an active nest.

Landscape buffer – a natural or human-made landscape feature that screens eagles from human activity (e.g., strip of trees, hill, cliff, berm, sound wall).

Nest abandonment – nest abandonment occurs when adult eagles desert or stop attending a nest and do not subsequently return and successfully raise young in that nest for the duration of a breeding season. Nest abandonment can be caused by altering habitat near a nest, even if the

alteration occurs prior to the breeding season. Whether the eagles migrate during the non-breeding season, or remain in the area throughout the non-breeding season, nest abandonment can occur at any point between the time the eagles return to the nesting site for the breeding season and the time when all progeny from the breeding season have dispersed.

Nesting territory – the area that contains one or more eagle nests within the home range of a mated pair of eagles, regardless of whether such nests were built by the current resident pair.

Northeast – Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, and the District of Columbia.

Project footprint – the area of land (and water) temporarily or permanently altered by a project.

Tolerate – the acceptance of specific human activities by eagles at the nest site. Demonstrated in the eagles' continued ability to successfully feed, breed, and shelter, and the general absence of stress or agitation in their behavior.

ATTACHMENT 5 NOISE STUDY

Noise Study to be submitted separately.