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# Fair Hill Special Event Zone Concept Master Plan



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# Maryland Park Service Mission and Goals

## Maryland Park Service Mission & Goals

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The mission of the Maryland Park Service is to manage the natural, cultural, historical, and recreational resources to provide for wise stewardship and enjoyment by people.

The goals of the Maryland Park Service are as follows:

- ▶ To promote, cultivate, and expand public knowledge, understanding, appreciation and support for the resources and services managed by the Maryland Park Service.
- ▶ To operate the Maryland Park Service in a manner that generates the atmosphere of teamwork, shared information, cooperation and trust at all levels of employment.
- ▶ To manage the Maryland Park Service in a manner that ensures the maximum benefit from each dollar and hour of labor expended.
- ▶ To promote the management of natural and cultural resources to ensure the continuing benefits for present and future generations.
- ▶ To provide diverse recreational services with an emphasis upon public safety and the provision of neat, clean and well-maintained resources.

## Maryland Park Service Brand Promise

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The Maryland Park Service is dedicated to providing an outstanding experience to all park visitors and is committed to the following principles:

1. Providing a place where visitors can bring their children that nourishes their well-being in ways that only nature can provide.
2. Connecting visitors with each other and their surroundings, through the beauty and serenity of nature, in a safe and welcoming place that belongs to them.
3. Preserving and providing opportunities for visitors to discover important historical sites and relics that tell inspiring stories of people and events that give context and meaning to their lives today.
4. Creating an environment for relaxation with the reassuring presence of a friendly and dedicated park ranger who inspires and supports the desire to be a good steward of the Earth.
5. Imparting visitors with a sense of well-being and happy memories, so when they leave they are feeling stress-free and revitalized.

## Executive Summary

The Maryland Department of Natural Resources has entered into a partnership with Fair Hill International and the Fair Hill Foundation to construct, manage and maintain improvements to the Special Event Zone at Fair Hill Natural Resources Management Area for the purpose of supporting an inaugural USEF/FEI CCI Five Star event, considered the highest level of equestrian three-day eventing in the world. Comprehensive upgrades also will improve safety for existing equestrian uses, including steeplechase racing. The Department has enlisted the services of the Maryland Stadium Authority to manage the development of the planned improvements, which will provide needed re-investment in aging infrastructure and will benefit both the future of equestrian racing and eventing, as well as, the wide array of other public events that currently utilize the facilities.

The concept master plan focuses on those improvements that are essential to be completed by October 2020, which is the target date for the first CCI Five Star event. These improvements are determined to be critical to support the CCI Five Star competition as set forth in the original bid proposal submitted by Fair Hill International, in conjunction with the State, in 2016.

This concept master plan includes an overview description of planned capital improvements and critical maintenance projects, and associated natural and historical resource impacts and permitting. The projects are limited to the Fair Hill “Special Event Zone,” which includes the Steeplechase and County Fair Zones, totaling approximately 205 acres. Much of the infrastructure necessary to meet the facility requirements of a CCI Five Star event currently exists. The property is used year-round as a public park and recreation area, and the intent of improvements to this area is to maintain the availability of these facilities to trail riders, campers, and other Park users when the event is not being staged or held. The natural and pastoral nature of the property, environmental protections and the traditional architectural vernacular of the structures will be protected in the planning and design of all improvements.

Most of the planned major improvements involve redesigning the turf tracks to meet current racing standards for safety and visibility and to add competition arenas to the infield area of the turf track. Associated improvements involve adding irrigation to the turf track, adding and upgrading electric service and water, and making necessary site improvements to accommodate additional temporary stalls. Grandstand improvements will entail basic repairs, cosmetic improvements, code compliance and enhanced ADA access. Roadways will be improved to accommodate larger trailers and vehicles and to improve stormwater management. The existing stables in the Race Barn Area are in relatively good condition with only minor improvements being recommended.

This concept master plan summarizes planning work conducted by Populous and includes bid documents and a study entitled *Fair Hill Event Zone Master Plan* dated November 3, 2017, civil engineering and infrastructure support provided by RK&K engineering and included in a report entitled *Fair Hill Civil Master Plan Report* dated December 1, 2017, and conceptual design and general background information prepared by Crossroads Consulting Service and Populous and included in a planning study entitled *Market and Economic Analysis for the Proposed New Maryland Horse Park System, Final Report – August 2015*.

Future improvements to the Special Event Zone may be phased in over time and may include: upgrades and expansion of the grandstand, a tunnel under Route 273, an official's tower, renovation of the pari-mutuel building, and additional RV campsites.

## Background of Fair Hill

Fair Hill NRMA is approximately 5,656 acres and provides outdoor recreation opportunities for over 500,000 visitors annually. The property is valued for its rolling hills, mature woodlands and natural beauty. It is located in the northeast corner of Cecil County, bordering Pennsylvania to the north and Delaware to the east. Fair Hill has over 75 miles of hiking, biking and equestrian trails, as well as, a variety of recreation facility amenities.

The Park is currently improved and includes: a park office and maintenance building; a Nature Education Center; three race barns with 119 stalls; a bathhouse and restrooms; ten RV campsites with full hook-ups; five livestock barns; two auxiliary storage barns; a detention barn with 24 stalls, the Fair Hill stables with 20 stalls; an arena with seating; a turf and steeplechase track with seating; equestrian arenas; four cross-country courses; an activity hall; a Pari-Mutuel building; and a tea barn. The property also includes a leased area, the Fair Hill Training Center, a Thoroughbred training facility that includes two tracks, 18 barns with 490 stalls, multiple turn-out paddocks, and a variety of training amenities for thoroughbred racing. Facilities are connected by infrastructure, including roads, walkways, bridges, water and sewer, lighting, and electric.

The land that comprises Fair Hill was formerly owned by William DuPont, Jr., and operated as an equestrian farm. He acquired the farmland to enjoy horse riding and fox chasing. Fair Hill was purchased by the State of Maryland in 1975 from Mr. DuPont's estate. The Fair Hill NRMA is an historic district (CE-1434 in the Maryland Inventory of Historic Places) and is eligible for listing on the National Register of Historic Places.

Fair Hill NRMA hosts hundreds of equestrian events annually, which draw over 30,000 people in total attendance. Events include small organized trail rides and equestrian camp-outs; riding club events and summer camps; multiple three-day events; a variety of horse shows; several driving and endurance competitions; and a few steeplechase races. Major events include the *Fair Hill Memorial Weekend Races* and the *Fair Hill International CCI\*\*\* Three-Day Event*, each attracting approximately 10,000 attendees. Non-equestrian events attract more than 100,000 people annually, including the Cecil County Fair with approximately 72,000 attendees.

## Fair Hill Vision and Goals

The *Fair Hill Natural Resources Management Area – Land Unit Plan*, prepared and approved by the Department in 1997, serves as a basis for all management, restoration, development and redevelopment activities at Fair Hill. The land unit plan was prepared following a year-long collaboration between the Department and an eighteen member Citizens Advisory Committee. The planning process included public meetings, a workshop, and ideas and opinions from the

general public. The plan included a vision statement and goals for the future that have provided, and will continue to provide, strategies and an approach to improvements at Fair Hill. The vision for Fair Hill is that the long-term conservation of the natural, cultural and recreational resources of value found at Fair Hill shall be strongly supported. The Department is tasked with developing use and management policies to maintain these resources, including the extent and diversity of habitat at Fair Hill. In order to implement the vision identified in the plan, four major goals were identified:

- Protect the resources of value by developing a management plan for Fair Hill, which maintains biodiversity and ecosystem values.
- Promote recreational uses, which are compatible with the existing uses and the protection of Fair Hill’s unique resources.
- Promote public understanding and awareness through education.
- Enhance the financial or economic base of Fair Hill.

These goals will continue to serve as a basis for decision-making related to the implementation of the *Fair Hill Special Event Zone – Concept Master Plan*.

## Overview

Fair Hill Natural Resources Management Area (NRMA) is owned by the Maryland Department of Natural Resources and managed by the Maryland Park Service. According to Maryland COMAR 08.07.06, NRMAs are “generally State Parks that feature an undeveloped, agrarian landscape of woodlands, fields and agriculture. NRMAs are managed for the primary benefit of wildlife habitat, sustainable farming and passive, nature-based recreation, such as hunting, fishing, wildlife observation and boat access. Historic site preservation and non-motorized trail use, including hiking, equestrian uses and mountain biking are also common in some natural resources management areas.” Improvements to Fair Hill NRMA must be consistent with the purposes of an NRMA and the mission and brand of the Maryland Park Service.

### Goals for Special Event Zone Improvements

The Department of Natural Resources and the Maryland Stadium Authority, in partnership with Fair Hill International, the Maryland Steeplechase Association, and the Fair Hill Foundation, will engage the public and Fair Hill Stakeholders in achieving the following goals for the improvements identified in this concept master plan as follows:

1. Work collaboratively to design, build, manage and maintain improvements necessary to host an annual CCI Five Star Event, steeplechase racing events, timber racing events, and a variety of other events (both equestrian and general interest) that are taking place on the property and would benefit from improved facilities, utilities, and grounds.
2. Preserve the natural resources and pastoral setting of Fair Hill and confine improvements to the “Special Event Zone.”
3. Protect sensitive species and habitats.

4. Promote sensitive site design, low impact development and “green building” technologies to protect sensitive resources and natural settings and serve as a model of sustainable development.
5. Provide a year-round attraction for residents and visitors to the State of Maryland, while still providing traditional park amenities and activities to recreational user groups and the general public.
6. Develop and strengthen partnerships with equestrian groups and organizations to increase, enhance and diversify the use of the new facilities and potential site revenue.
7. Utilize the site improvements and the enhanced and new equestrian events to support local economic development.

## **PROPOSED SITE IMPROVEMENTS**

### **Turf Track**

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The existing one mile turf track will be irrigated and rebuilt to widen and bank the turns in order to improve the quality of racing and create safer racing conditions for horses and riders. Generally, turns will be banked toward the infield at 2 to 6% and along the stretches at 1 to 2%. The track configuration is being changed to provide room in the infield for the arenas necessary for the Five Star Event. The track surface will remain grass; however, new sod will be brought in and established. See the Planned Improvements Map and Figures 1 and 2 on pages 7 through 10.

### **Timber Course**

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The existing timber course will maintain its general configuration but will be rerouted to navigate around the new arenas, turf track, and ponds. The timber course will cross the turf track in one location in the southwest corner and run adjacent to the turf track before joining up with the turf track for a shared stretch in front of the grandstand. The timber track will extend approximately  $\frac{1}{4}$  mile beyond the turf track, running between the two retention ponds. Grades for the timber course are more flexible than those set for the turf course, and they are established by existing topography and the grading needed for the other improvements. The course will have a grass surface, composed of new sod, and will require irrigation. While the pond is sized to accommodate irrigation demands of the timber course, the course will not have a permanent irrigation system in place. See the Planned Improvements Map and Figures 1 and 2 on pages 7 through 10.

### **Cross Country Course**

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The cross country course will traverse the site at existing grades and those established by the other site improvements. A cross country course designer will develop the course alignment and design the course, but the general concept involves a course that will loosely wind around the Special Events Zone, taking advantage of the existing topography, cover conditions, stream crossings, and views. Portions of the course may be irrigated and may involve the use of temporary footing. See the Planned Improvements Map and Figures 3 and 4 on pages 7 through 10.

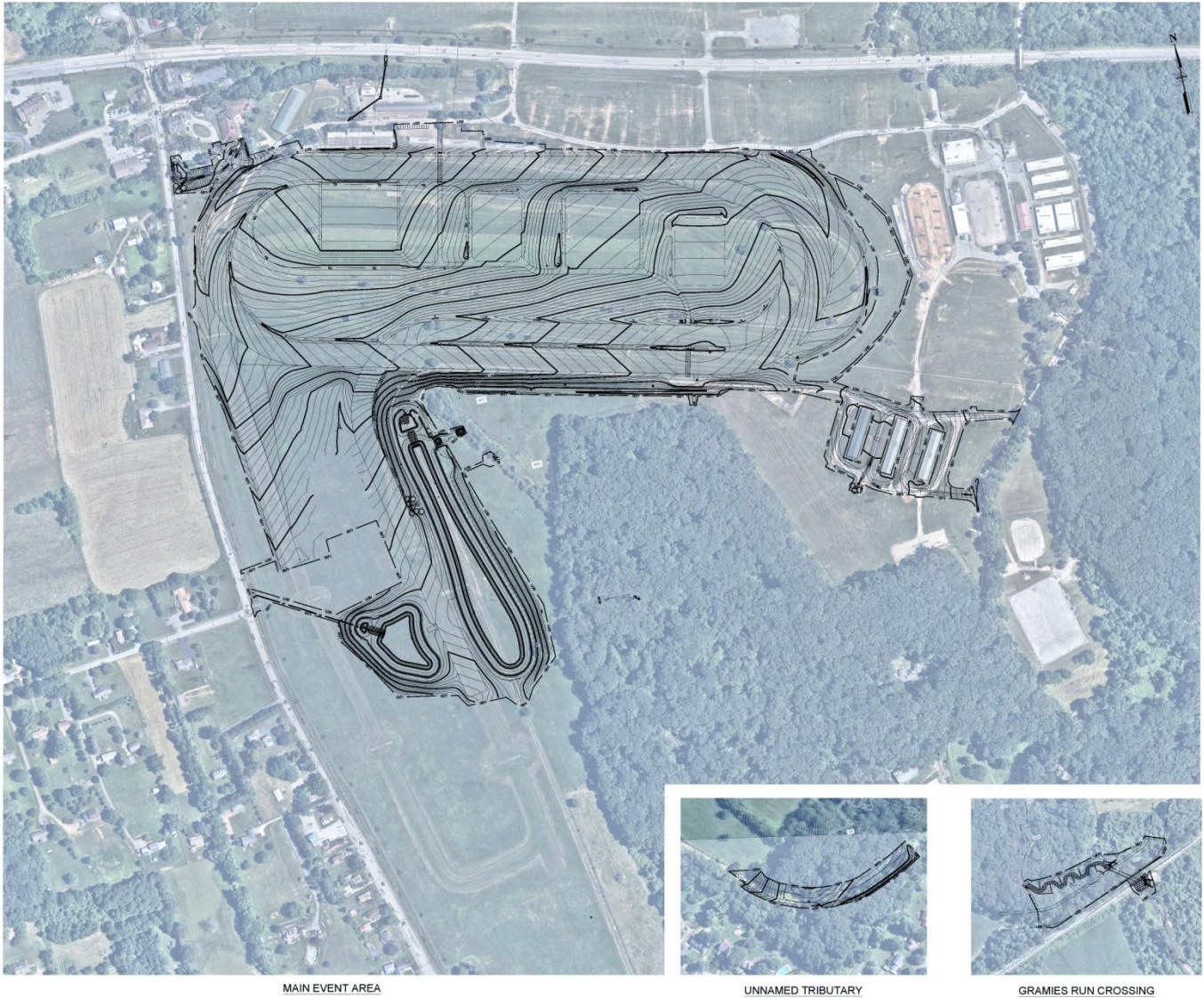


# PLANNED IMPROVEMENTS - FAIR HILL NRMA



- Legend:**
- Equestrian Event Zone Boundary
  - Highways and Roads
  - Buildings and Outbuildings
  - Park Boundaries

**Figure 1: Planned Improvements: “Special Event Zone Overlay Map and Aerial”**



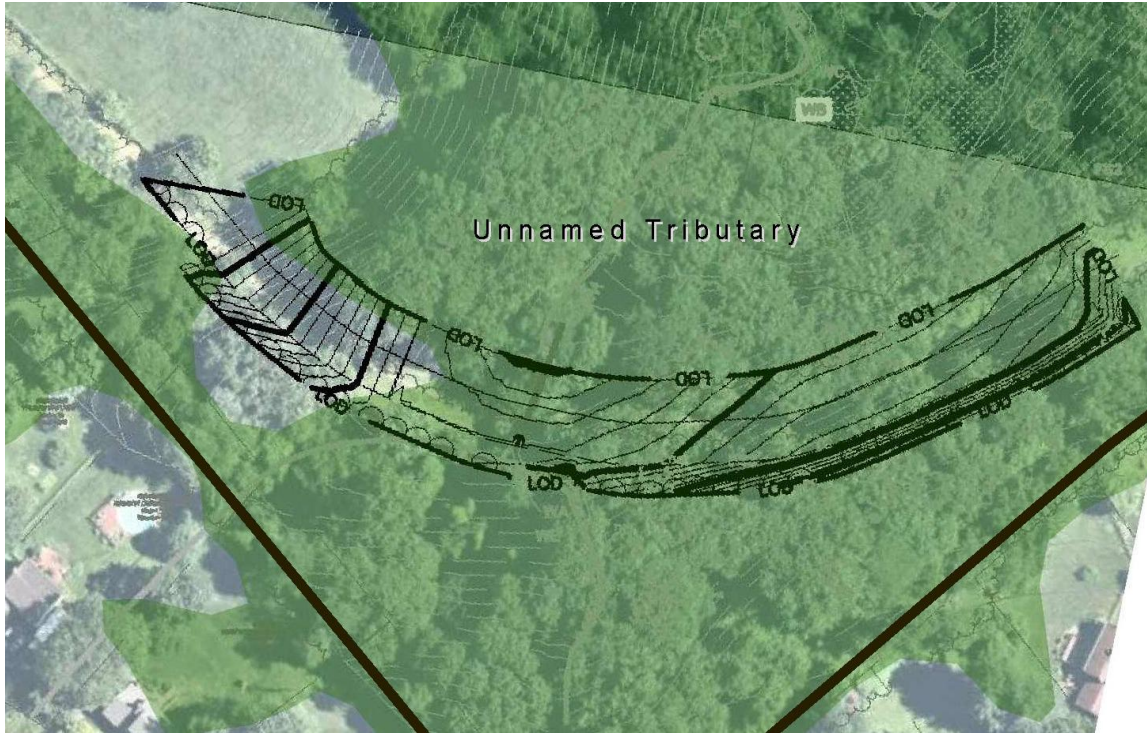


**Figure 2: Planned Improvements: “View of Concept Plan for Special Event Zone”**

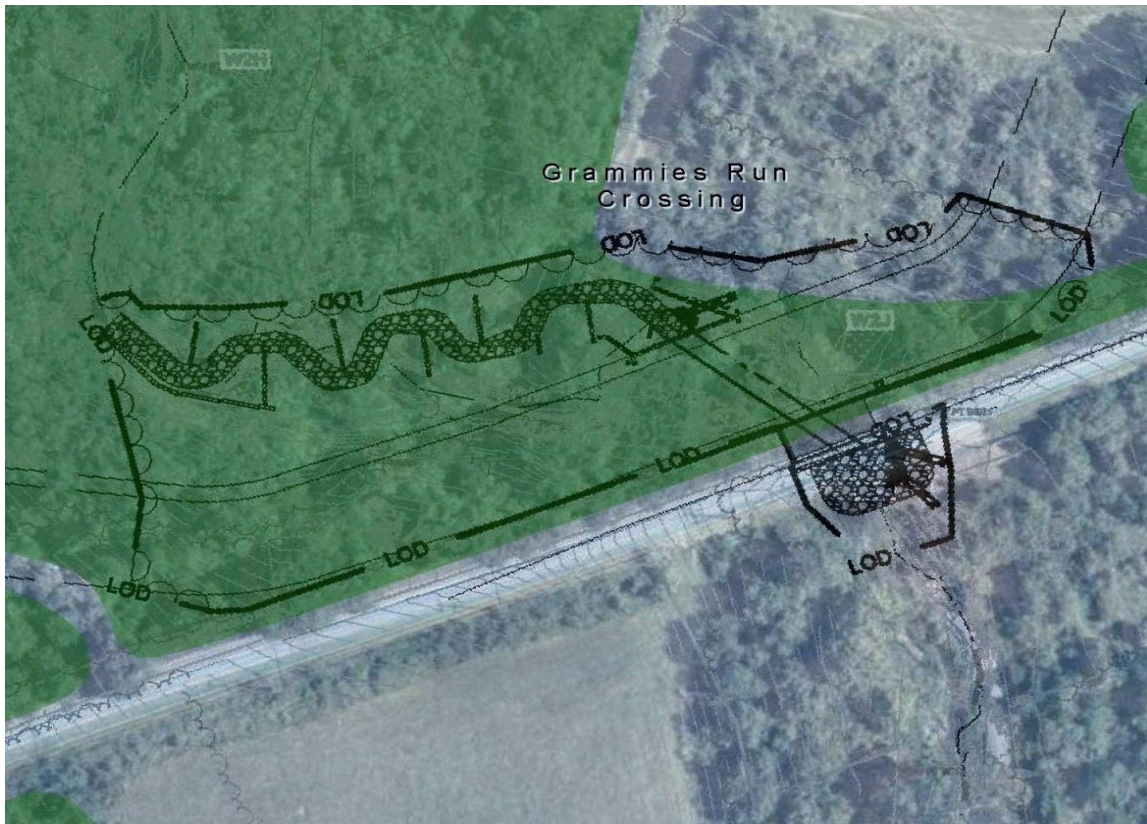


Conceptual site rendering showing track improvements, new arenas in the infield, and a new grandstand. The grandstand is not funded in the current project.

**Figure 3: Planned Improvements: “Improvements at Unnamed Tributary”**



**Figure 4: Planned Improvements: “Grammies Run Crossing”**



## Grandstand

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Planned improvements for the 2020 Five Star Event include the razing of the existing “farmers’ stands” seating and repairs and cosmetic improvements to the existing grandstand. There will be minor reconfiguration of and repairs to the existing grandstand to provide seating for approximately 6,000 visitors. Improvements include repairing existing concrete footers and structural elements, reinforcing railings and patching and painting masonry. Following the removal of the farmers’ stands seating, temporary and/or mobile grandstands will be used for events that require additional seating.

## Arenas

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Three arenas are proposed within the track infield with a pad site for a future arena for a total of four. The main arena located directly in front of the grandstand is 90 meters by 80 meters and is designed to accommodate two dressage rings, side by side, with the long sides oriented north to south. The area is sized to provide a spectator / pedestrian buffer around the rings as required by the FEI and USEF regulations for a Five Star Event. This arena will also be used for the stadium jumping portion of the Event. An 80 meter by 60 meter warm up arena is located east of the main arena. A 90 meter by 90 meter practice arena is located east of the warm up arena, and there is a level 80 meter by 60 meter pad site for a future practice arena located at the far western end of the infield. The infield will be graded to slope generally from the highest point in the northwest corner of the infield to the lowest point in the southeast corner.

## Vehicular Circulation

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In order to provide enhanced and safer access to the Special Event Zone, several internal drives will be widened and reconfigured to better support vehicular circulation. A loop road from the Fair Hill entrance past the fairgrounds buildings to the Race Barns will be widened to between 20 and 24 feet and reconstructed as needed to accommodate tractor trailers. Turning radii must be checked and modified to accommodate vehicle turns and ensure smooth traffic flow through the area, particularly during event set-up and take-down when multiple vehicles will be entering and leaving the site. It is anticipated that the improved roadways will be comprised of a combination of hot mix asphalt paving (over a CR-6 gravel base) and gravel paving

## Parking

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Parking needs will vary depending on the events held at the facility. It is anticipated that the facility’s current parking program will be maintained. Existing parking lots will provide staff parking on a day to day basis. Event parking will be provided in the open field areas to the north and south of MD Route 273. In order to accommodate the new configuration of the turf track, the existing Tea Barn parking lot located at the northwest corner of the track will need to be redesigned. It is noted that the number of permanent parking spaces in the Special Event Zone must be maintained and possibly increased if practicable. One or more retaining walls may be necessary to facilitate the design of the parking lot at the northwest corner of the track.

There will be limited parking at Fair Hill for the Five Star Event; however, most of the parking will be provided at one or more off-site locations, and shuttle service will be provided to Fair Hill. The following parking locations have been identified as suitable for Five Star Event parking:

- Paved lot at Newark, Delaware Amtrak Station and Supporting Chrysler lots (approximately 1,500 spaces)
- Paved lot at Cecil County Ritchie Brothers Site (approximately 1,000 spaces)
- Paved lot at Cecil College (approximately 300 spaces)

## **Pedestrian Walkways**

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Internal walkways within the Special Event Zone will be designed and constructed to provide full pedestrian access to the Special Event Zone. These walkways will be constructed of stone dust over a crushed stone base. Walkway alignments will be refined during the site design process and may be adjusted in the field to address site conditions.

## **Utility Improvements**

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An important element of the Special Event Zone improvements is the upgrades to utility systems including water (domestic and fire), wastewater, electric, and telecommunications. Parts of these systems are aging, inefficient, prone to frequent problems, and need significant upgrades to meet current codes and standards.

### **Water**

Prior to the submittal of a bid to host the Five Star Event, planned improvements to the water system at Fair Hill were already being evaluated, and design was underway. Original plans called for decommissioning two existing wells, constructing a 120,000 gallon elevated water storage tank, building a water treatment building, and installing a water main distribution system supplying all fixtured buildings and including fire hydrants throughout the site.

When the Five Star Event decision was made, further analysis was performed to identify the optimum strategy for providing a maximum daily water demand (during the event) of 103,000 gallons per day. Further water supply and well testing are planned; however, the water storage tank has been expanded to 160,000 gallons, and the treatment building has been modified to address higher volumes and longer water storage times. Current plans will require that additional water be trucked in during the Five Star Event to meet the water demand.

The required fire supply storage volume has been determined to be 120,000 gallons and can be fully accommodated by the planned water storage tank. Water mains throughout the site have been sized for fire supply and the design includes fire hydrants throughout the Special Event Zone.

### **Wastewater (Sanitary Sewer)**

Currently, the wastewater generated from existing buildings is treated with onsite sewage disposal systems consisting of multiple septic tanks and drainfields. The reconfiguration of the turf track and timber track will result in impacts to existing systems at the Tea Barn and National Steeplechase Association / Fair Hill International Building. These systems will be replaced with a 4,000-gallon holding tank.

Estimated wastewater flows associated with the Five Star Event are in excess of 33,000 gallons per day. Some of this can be handled by existing facilities, but approximately 18,000 gallons per day of additional treatment and disposal will be required. Current plans involve the use of mobile, temporary facilities that will be brought in for the event and pumped out. The consultants are currently working with the Maryland Environmental Service to explore an on-site package treatment facility that would potentially be part of a future phase.

### **Electric Service**

There are four separately metered electric utility services throughout the Fair Hill site. Electric distribution equipment shows varying degrees of deterioration and necessary repair or replacement. Some of the oldest equipment has no service life remaining, and newer equipment is in fair condition at best.

In the Racetrack Area, the condition of the existing equipment and the magnitude and type of loads associated with the Five Star Event dictate complete replacement. A new service entrance utility transformer and metering is recommended and will be centrally located to provide distribution to other panelboards throughout the site.

In the Fairgrounds Area, there are numerous sub-panels of varying capacity at most of the barns and pavilion structures, and they are primarily used for lighting and receptacle loads during events. The equipment appears to be in reasonably good shape, and no improvements are planned for the existing electric service in this area. There is adequate power for any activities associated with events on the site as long as they do not take place at the same time as the Cecil County Fair. If this area is to be used concurrently with the Five Star Event, additional study will be required.

The Race Barns and RV parking area is fed from a pad-mounted transformer at the end of the eastern-most Race Barn. The electric distribution equipment serving this area is in good condition; however, it is anticipated that the planned Special Event Zone improvements will require an upgrade in capacity with a larger transformer, new metering and additional RV power pedestals.

The Foxcatcher Arena is fed from a pad-mounted transformer located on the east side of the access road, south of the Race Barns and east of the RV parking area. The electric distribution equipment serving this area is in good condition, and the improvements associated with the Five Star Event will not necessitate any upgrades to the service. It is possible that the service could be used to feed some of the proposed additional RV power pedestals, reducing the load on the Race Barns service.

The majority of the noted electrical system upgrades may be performed under future phases. A new service feed and transformer will be provided to the irrigation pump house under the initial phase.

## **Retention Ponds and Irrigation System**

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A primary feature of the project is the construction of two irrigation ponds located south of the turf course. The ponds are located where the existing topography creates a natural drainageway and low point. This facilitates the collection of stormwater runoff from approximately 50 acres of the project area. Both ponds include a forebay area for enhanced stormwater treatment.

The western pond is approximately 0.5 acres, and the eastern pond is approximately 2.25 acres. The ponds are designed to provide approximately 6 million gallons of water storage that will support the estimated use of up to 2.3 million gallons of water per month for irrigation of the tracks, courses, and arenas. Irrigation is necessary to maintain the 25% moisture content that is recommended for the arenas and to provide the required foundation for optimum track performance and safety of horses and riders during equestrian events. Although the quantities of water needed for irrigation are dependent on monthly amounts of precipitation and average evapotranspiration rates, it is anticipated that one or more additional wells will be needed to supplement the stormwater runoff volume that will be held in the ponds.

# Resource Assessment

Most of the proposed improvements are located in existing developed areas and involve alterations to the existing landscape to provide track irrigation, improved track drainage, safer track configuration, and improved surfaces and spectator access to the dressage and show jumping arenas associated with the Five Star Event. The landscape and historic and natural resource impacts are outlined below.

## Historic and Cultural Resources

The Fair Hill NRMA has considerable history dating back to the 18th century, and more recently as the former William DuPont, Jr. estate. Steeped in equestrian and agricultural history, and culture, Fair Hill is a Maryland historic district listed in the Maryland Inventory of Historic Places and is eligible for listing on the National Register of Historic Places. The Fair Hill Estate Historic District encompasses 5,485 acres of the total Fair Hill NRMA acreage of 5,622 acres, minus the small discontinuous acreage to the south near Elk Mills.

The “historic district” designation is applied to a significant concentration, linkage, or continuity of sites, structures, or objects united historically, architecturally, archeologically, culturally, or aesthetically by plan or physical development. An historic district includes all property within its defined boundaries as designated by the State or local governments. Historic districts can be areas eligible for listing on the National Register of Historic Places (NRHP), or areas officially listed on the NRHP. The “Fair Hill Historic District” was evaluated and determined to be eligible for listing on the NRHP, but has not been officially listed.

The Historic District boundary follows the property boundary from the 1975 purchase from the DuPont estate, approximately 5,404 acres. Additional in-holdings purchased include 24 acres (Grammies Run), purchased in 1981, and 56.6 acres purchased in 1982. The Historic District includes the small rural crossroads village adjacent to Fair Hill NRMA, and surrounding private farms in the region. Typical construction is similar to structures found in surrounding Pennsylvania and Delaware for farm estates in the use of field stone, and the overall rural vernacular is unique for Maryland’s Eastern Shore.

As part of the project development process, the Maryland Historical Trust (MHT) will review all project submissions related to proposed improvements to the property. Exterior changes or disturbances that would affect the historic, archeological, or architectural significance of a designated site, structure, or district must be reviewed by the MHT to determine potential adverse impacts, and identify criteria for construction, including ground disturbance, reconstruction, restoration, rehabilitation, movement, or demolition (as required by the National Historic Preservation Act of 1966, as amended; the Maryland Historical Trust Act of 1985, as amended; and COMAR - State Finance and Procurement Article §§ 5A- 325 and 5A-326). MHT will determine the appropriate criteria for evaluating projects affecting the Fair Hill Historic District, and will facilitate the application of the United States Department of the Interior’s National Register of Historic Places criteria. The Historical and Cultural Features Map shows historical and cultural resources, including potential archeological areas. Improvements and

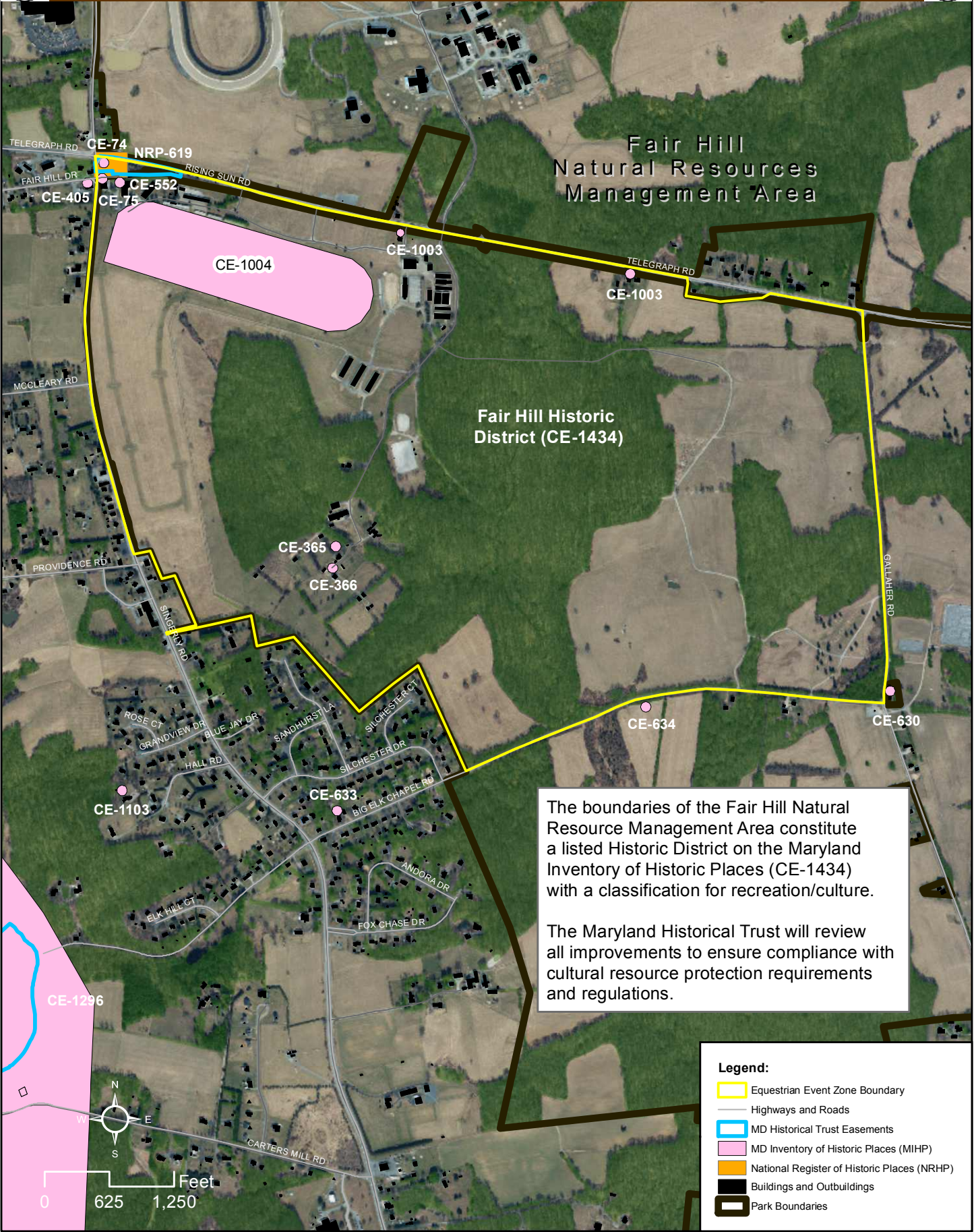
alterations to existing buildings and structures will need to adhere to the U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties for restoration, rehabilitation, or adaptive reuse. This includes, but is not limited to: the race track, the grandstand, and the pari-mutuel building.

See Historic and Cultural Features Map on page 17.





# HISTORIC AND CULTURAL FEATURES - FAIR HILL NRMA



The boundaries of the Fair Hill Natural Resource Management Area constitute a listed Historic District on the Maryland Inventory of Historic Places (CE-1434) with a classification for recreation/culture.

The Maryland Historical Trust will review all improvements to ensure compliance with cultural resource protection requirements and regulations.

**Legend:**

- Equestrian Event Zone Boundary
- Highways and Roads
- MD Historical Trust Easements
- MD Inventory of Historic Places (MIHP)
- National Register of Historic Places (NRHP)
- Buildings and Outbuildings
- Park Boundaries

## **Waterways, Wetlands, Buffers and the Floodplain**

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Projected impacts from improvements include temporary and permanent impacts to non-tidal wetlands and buffers, waterways (Gramies Run), and the 100-Year Floodplain. Specifically, the current construction documents include in-stream work in the Gramies Run stream system in order to accommodate the Five-Star cross country course. Gramies Run is a perennial stream and has been identified by the Maryland Department of the Environment (MDE) as a State Tier II high quality waterway.

Anticipated impacts include approximately 5,988 square feet of permanent impacts and 97 square feet of temporary impacts to nontidal wetlands; 46,836 square feet of permanent impacts and 1,200 square feet of temporary impacts to nontidal wetland buffers; and 12,174 square feet (621 linear feet) and 1,219 square feet (96 linear feet) of stream impacts. Most of these impacts are associated with the relocation and restoration of Gramies Run near Big Elk Chapel Road in order to accommodate a stream crossing for the new cross-country course. A Joint Federal / State permit application has been submitted and is currently being reviewed by the Maryland Department of the Environment, the Maryland Department of Natural Resources and the U.S. Army Corps of Engineers (USACE). Best Management Practices (BMPs) are required to maintain water quality, and mitigation will be required.

## **Forested Areas**

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The area adjacent to the Special Event Zone contains high quality forested areas with excellent species diversity and full canopy coverage. For any proposed disturbance to existing forested areas, the Maryland Forest Conservation Act (FCA) is applicable. The law requires that any project on areas 40,000 square feet or greater, applying for permits to disturb ground, shall have a Maryland Forest Service approved “Forest Stand Delineation” and “Forest Conservation Plan” (Natural Resources Article 5-1601-5-1613). Afforestation, Reforestation, and/or forest retention and management will be required as specified in the regulations. Any tree trimming and/or removal in a public road right of way is regulated under the Maryland Roadside Tree Care Law (Nat. Res. Art. 5-406 and COMAR 08.07.02) and requires a Roadside Tree Permit.

Every effort has been made to minimize the removal of forest, and planned clearing is approximately 2.4 acres. There are three areas that involve clearing. There is a narrow strip of forest located in the vicinity of the eastern bend of the timber track that will be cleared to accommodate the new pond. There are two other areas located near Big Elk Chapel Road that will be cleared to accommodate the cross-country course and associated stream realignment. Forest cleared will be mitigated on the Fair Hill NRMA property.

## Wildlife Habitat

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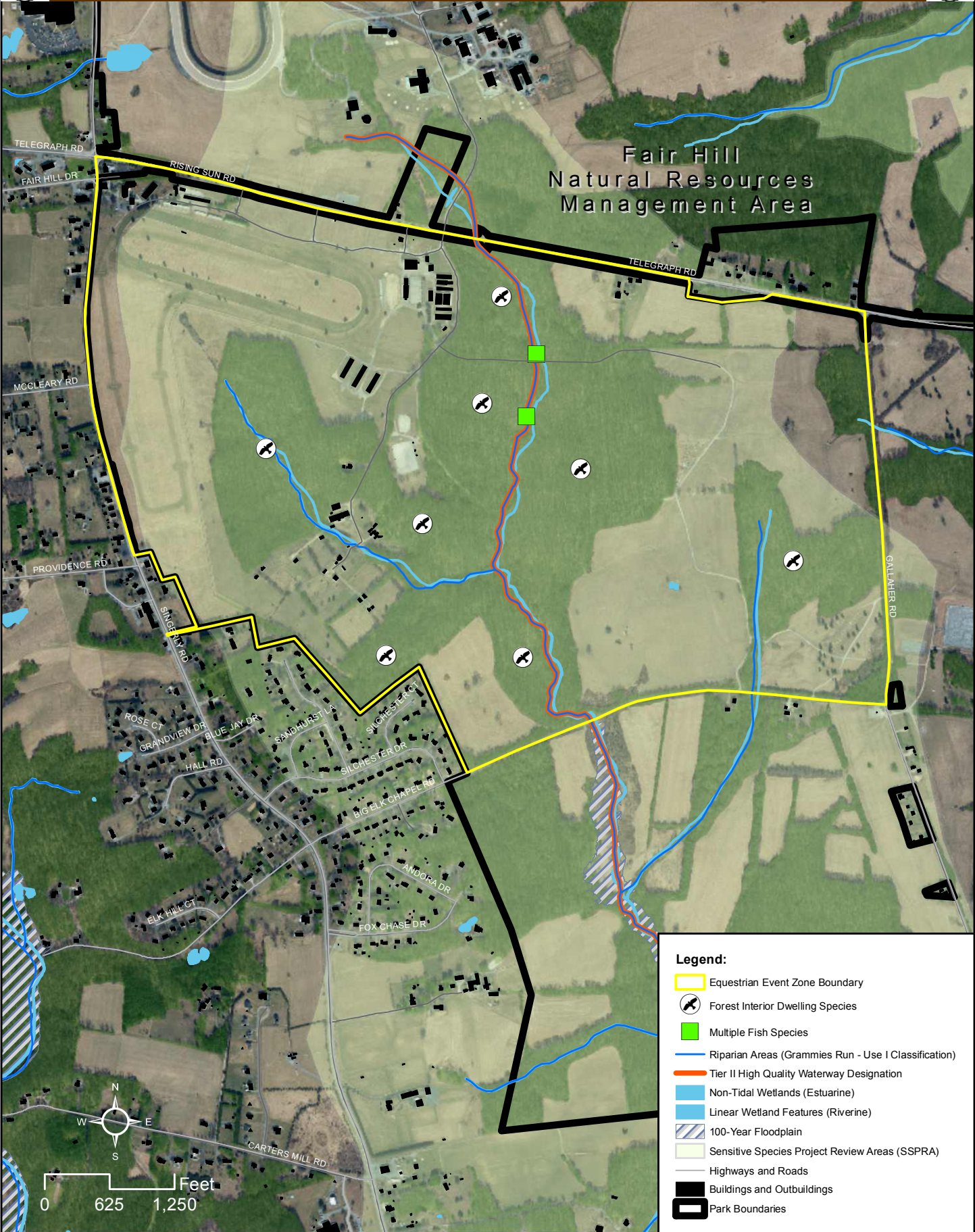
Planned improvements for the cross country course will involve some clearing in vegetated areas that provide important canopy for stream systems and are an important component of onsite wildlife habitat, including multiple fish species in the Gramies Run stream system and Forest Interior Dwelling Species (FIDS). An annual Use I Time of Year (TOY) work restriction applies for all in-stream work from March 1st to June 15th for any given year. No work shall be performed during this critical reproductive period.

There are records of the Federally “Threatened” Bog Turtle (*Glyptemys muhlenbergii*) adjacent to the Special Event Zone within the Gramies Run watershed, requiring any necessary coordination with the DNR Wildlife and Heritage Service and the U.S. Fish and Wildlife Service. Phase I surveys for potential habitat were conducted in all wetland areas located on the project site, and no suitable habitat found. Long-term invasive plant species management will be required in any cleared areas to ensure re-vegetation and future canopy closure.

See Environmental Features Map on page 20.



# ENVIRONMENTAL FEATURES - FAIR HILL NRMA



## Soils and Topography

Topography within the Special Events Zone is hilly and rolling to steeply sloped, including small scale ravines with ridges. Soil infiltration characteristics vary depending on the soil type. Eight soil types, with varying properties affecting development, are identified in the Event Zone. See the Soils Inventory and Topographic Features Maps on pages 22 and 23.

<b>SOIL TYPES, CLASSIFICATIONS AND RATINGS</b>				
<b>Symbol</b>	<b>Soil Type</b>	<b>Classification</b>	<b>Slope</b>	<b>Rating</b>
BaA	Baile Silt Loam	Hydric	0 to 3%	Wet
BbB	Baile-Glenville Complex	Hydric	3 to 8%	Wet (Erodible)
BeB	Beltsville Silt Loam	Hydric	0 to 2%	Wet (Seasonal)
GaD	Gaila Loam	Not Hydric	15 to 25%	Other Soil Type (Highly Erodible)
GeA	Glenelg Loam	Not Hydric	0 to 3%	Prime Farm Soil
GeB	Glenelg Loam	Not Hydric	3 to 8%	Prime Farm Soil
GeC	Glenelg Loam	Not Hydric	8 to 15%	Prime Farm Soil (Erodible)
GhB	Glenelg-Wheaton Complex	Not Hydric	0 to 8%	Altered Soil Matrix for Defined Use
GnB	Glenville Silt Loam	Hydric	3 to 8%	Wet (Seasonal - Erodible)
Ht	Hatboro Silt Loam	Hydric	0 to 3%	Wet (Consistently Flooded)
Hw	Hatboro-Cordorus Complex	Hydric	0 to 3%	Wet (Consistently Flooded)
MaB	Manor Loam	Not Hydric	3 to 8%	Prime Farm Soil
MaD	Manor Loam	Not Hydric	15 to 25%	Other Soil Type (Highly Erodible)
NtB	Neshaminy Silt Loam	Not Hydric	3 to 8%	Prime Farm Soil
UaB	Udorthents Bedrock Substratum	Not Hydric	0 to 8%	Altered Soil Matrix for Defined Use
VwB	Wheaton Urban Land Complex	Not Hydric	0 to 8%	Altered Soil Matrix for Defined Use

### Hydric Soils

There are three areas of hydric soils mostly found along the Gramies Run stream channel and corresponding drainage areas from surrounding fields. Baile Silt Loam, baile- Glenville Complex, Beltsville Silt Loam, Glenville Silt Loam, Hatboro Silt Loam, and Hatboro Codourus Complex soils are generally wet or seasonally wet, poorly drained soils. These soils are typical of floodplain areas and may include areas of wetlands. When these soils are present in areas where slopes exceed 3%, these soils can be unstable and prone to erode.

### Prime Farm Soils

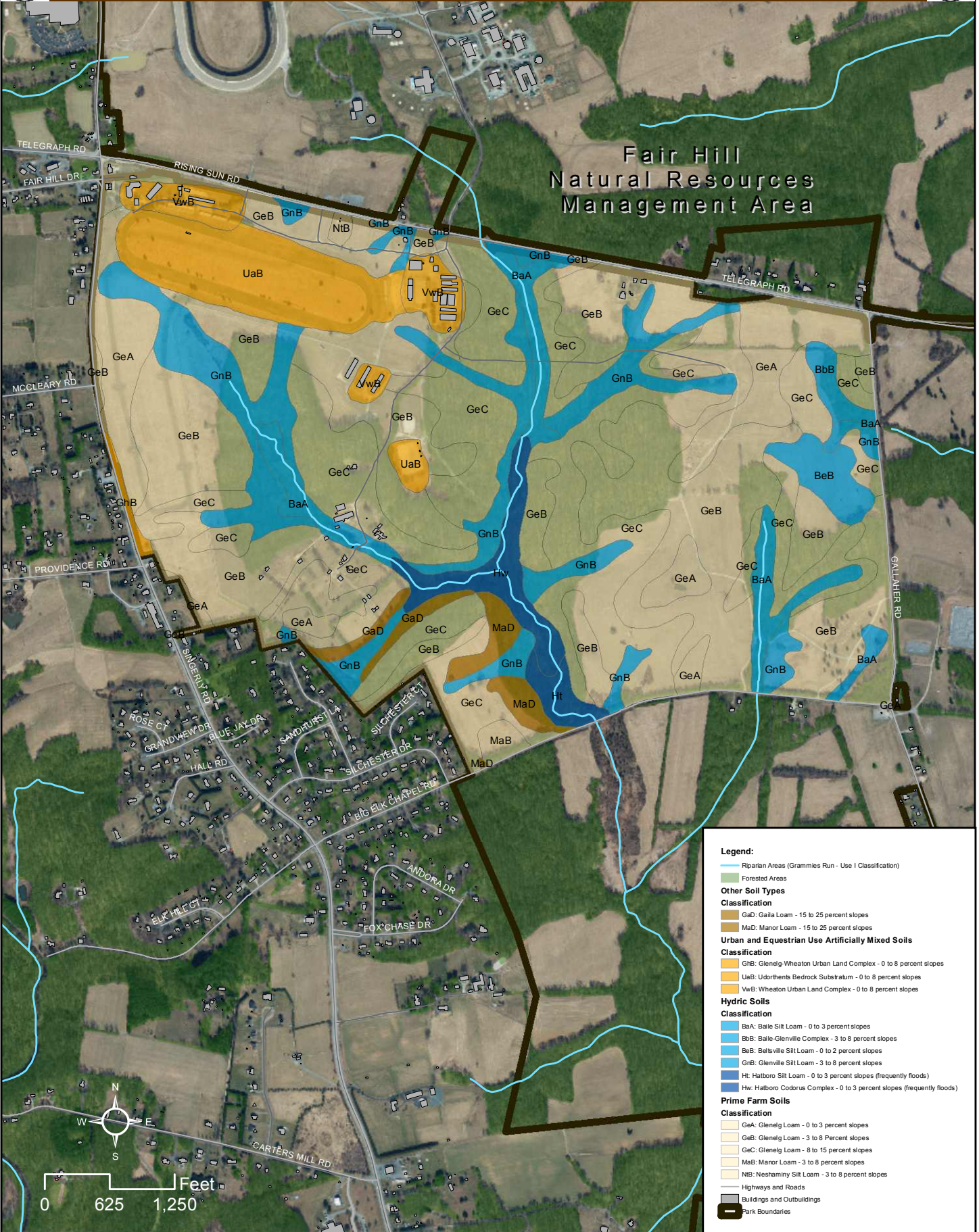
Most soils in the event zone area are Glenelg types with the exception of those man-made and altered soils near the existing race track and building / development areas. Glenelg soils are prime farm soils, deep and well-drained and generally suitable for agriculture and development. The main limitation of this soil type is slope (GeB and GeC). With greater slopes, areas are susceptible to erosion. Uses may be limited or require structural practices, such as retaining walls.

### Other Soils

Other soils found on the site are near the existing race track and building / development areas. These soils are located in developed areas and have been altered by humans for an intended use, which includes development and equestrian uses. These soils include Udorthents Bedrock Substratum (UaB) and Wheaton Urban (VwB). Generally, these soils are considered “Made-Land,” due to the modification by grading and filling and the loss of natural soils.

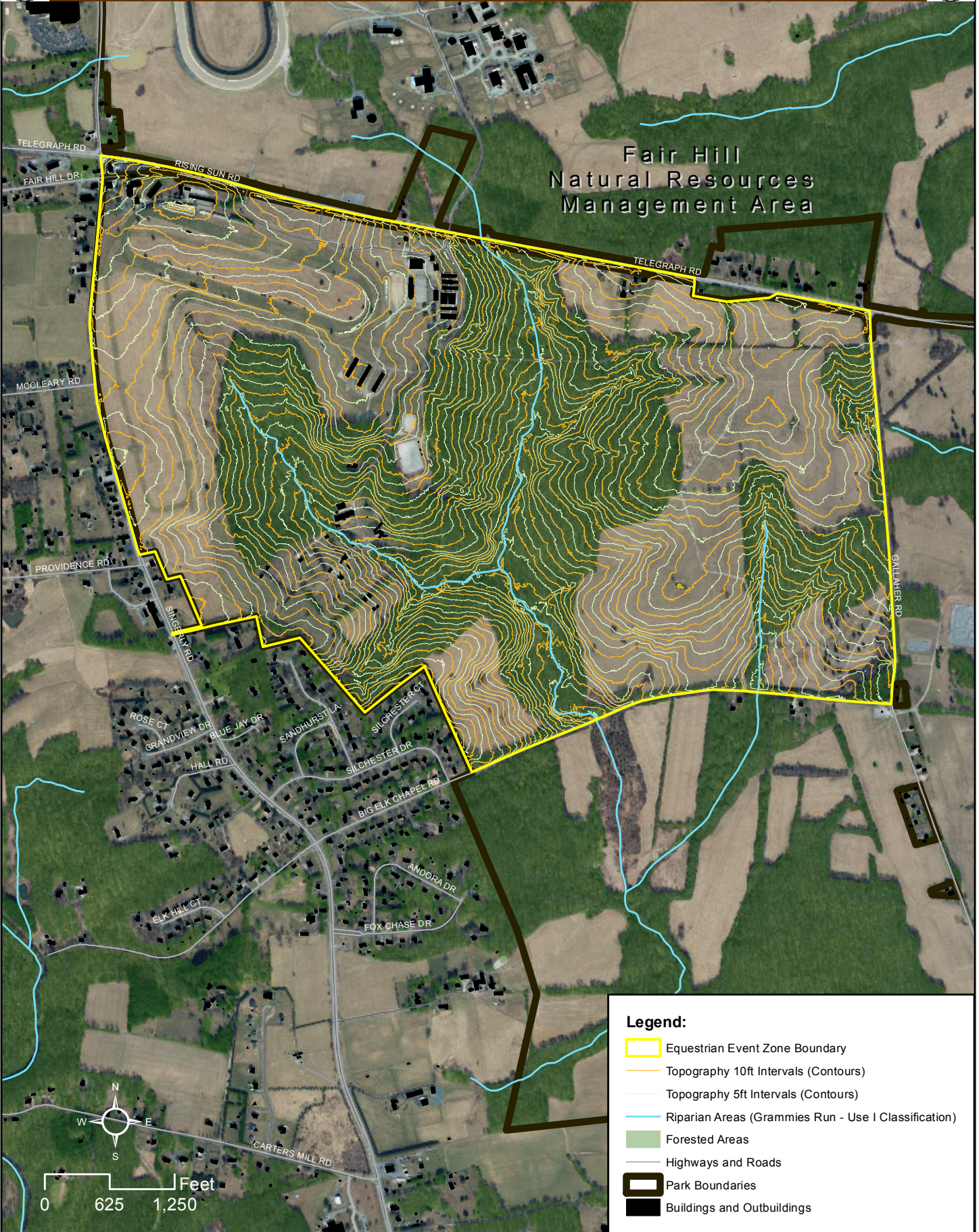


# SOILS INVENTORY MAP - FAIR HILL NRMA





# TOPOGRAPHIC MAP - FAIR HILL NRMA



### Legend:

- Equestrian Event Zone Boundary
- Topography 10ft Intervals (Contours)
- Topography 5ft Intervals (Contours)
- Riparian Areas (Grammie Run - Use I Classification)
- Forested Areas
- Highways and Roads
- Park Boundaries
- Buildings and Outbuildings