PATUXENT GREENS

GREENVIEW DR AND CLUBHOUSE BLVD

FLOODPLAIN STUDY

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Introduction

Patuxent Greens Golf Course is located at 14415 Greenview Drive in Laurel, Maryland. The site is located near the intersection of Greenview Drive and Clubhouse Boulevard. The project proposed 420 dwelling units comprised of a mixture of single-family detached and attached houses of various sizes. The site is 191.75 acres and is recorded as Amenity Area Patuxent Greens Golf Course on Plat No. 126059 in the Prince George's County Records and is zoned PUD-E within the municipal limits of the City of Laurel. The property is bordered by single-family detached and multifamily dwelling units to the west, forest to the south, the Patuxent River to the east, and City property to the northeast. The property has an 18-hole golf course, a clubhouse, pro-shop, maintenance sheds, parking lot, pave golf cart trails, driving range, and irrigation ponds. The site is generally flat with rolling hills, berms, and sand bunkers within the golf area. Earthen berms are currently located along the Patuxent River and Bear Branch edges to keep flood waters from entering the site. Several interconnected water hazards exist through the middle of the site, which will remain, that drain south to a pond that regulated water level with a large pumping station. Neither the berm nor the pumping station are going to remain. The site contains emergent wetlands, non-tidal vegetated wetland buffers, and irrigation ponds. About 2,800 feet of Bear Branch runs through the northeastern part of the site. The property ultimately is part of the Upper Patuxent River watershed.

Hydrologic Methods, Assumptions, and Patterns

Floodplain hydraulic computations were performed using the US Army Corps of Engineers HEC-RAS version 4.1.0 run in subcritical flow mode. Cross sections from FEMA were utilized. We obtained FEMA's Hec-Ras data from FEMA to assist in supporting our design. For the length of our site the cross sections from FEMA's FIRM maps were updated for the proposed elevations and existing topography. The existing topography was aerial topography by Joyce Engineering Corporation, June 2017, and supplemented with PG Co. 2' GIS topography. This information, along with our sites proposed grading, were used to establish revised channel widths, left of banks, and right of banks elevations. Discharge values were found from FEMA's Hec-Ras and FIS Reports. The discharge for the Patuxent River was found in the FIS Report to be 26,267 CFS about 1,100 feet downstream of Ft. Meade Road in Laurel Maryland. FEMA used this discharge in Hec-Ras as well for their study for the extents of our whole site. Therefore, a peak discharge of 26,267 was utilized. Sections 120 and 133 were the farthest downstream and upstream cross sections for this study. These FEMA cross sections were utilized to set our water surface elevation boundary conditions in the Hec-Ras model. This ensured proper tie in to the existing floodplain just up and downstream of our site. After running the model with all of this information, new water surface elevations were assigned to each cross section based on the Hec-Ras output. The new 100-year floodplain was then delineated, and is demonstrated on the plan set.

Conclusion

The purpose of this floodplain study was to delineate the 100-year proposed floodplain impacting the Patuxent Greens site. FEMA's cross sections and data were utilized in providing supporting information to effectively delineate the new 100-year floodplain. Overall the proposed floodplain elevations are only slightly different than FEMA's existing study.