

Crofton community won against development, saved the green space (Enclave)

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The article below reflects the analysis and issues conducted gratis for the Crofton community pertaining to the development of 84 units of multi-family dwellings involving 4-story apartments and townhouses in October 2018. The Crofton residents opposed the development citing traffic issues, flood hazards and other issues identified here. In mid-2020 the County declined the permit for this development, and as of June 2021 the Crofton residents, under the Crofton Civic Association, bought this parcel of land as their natural, green front-yard.

Engineering Analysis and Opinion on the Enclave Development in Crofton, Maryland

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I am a resident of Crofton, Maryland for the past 22 years. I have gone through and studied the 100-yr. flood plain, wetlands, drainage, and soils mapping of the proposed Enclave project and the relevant watershed. As a registered professional engineer in Maryland, I have the following technical concerns.

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The FEMA 100-year flood hazard Map and the USGS topographic contour overlain on the proposed Enclave shows that there is about 2.0 acres of low-lying area on this development that would get completely flooded in a 100-yr 24 hr. storm event, and possibly have some flooding even with heavy downpours from a 10-yr 24 hr. storm.

According to the NRCS soil survey the site also has SME (hydric soil), which will need to be evaluated for wetland delineation. Please see the Map 1A.

The Route 3 will be the unfortunate recipient of these floodwaters. I have done some estimation of the flow volumes and 100-Yr. storm event based upon the NOAA data which shows an increase of at least 2' of water in the lower 2.5 acres of the development. This calculated flood water volume of 11.4 Million gallons will flood route 3 as well during heavy downpours and storm events. See Map 1B.

In addition to the above unfavorable conditions, the proposed development of 84 units calls for 178 parking spaces according to the requirements of MD AA COMAR article Anne Arundel County Code, article § 18-3-104 (Townhouses –

2.5 spaces for each dwelling; Multifamily dwellings – 2 spaces for 2 bedroom).

A standard area for 100 parking spaces will require about 2 acres of land. The current development plan for the Enclave without any modifications and variances with relevant approvals and public concurrence, the total parking space will take away roughly 3 acres or ~50% of the land planned for the Enclave development.

This additional impervious surface in the existing low-lying and/or tree-covered area will increase the runoff for a 4"- 24hr. rainfall by 0.85 acre-ft or 277,000 gallons just from the parking area of the development. This runoff would have only one way to go. That's downhill to the lowest elevation. This could easily result in a flash flood of the western boundary of the development and overflow into Route 3. Any higher rainfall events (25-yr., 24hr, or a 100-yr. 24-hr. is anticipated to have a much devastating consequences for the local residents and temporary closure of route 3. There is a possibility of even sink-hole development on the east side of North-bound route 3 since the location was a gravel pit in 1950s. Map 1C shows a comparative USGS topo map for the site from 1957 and 2018.

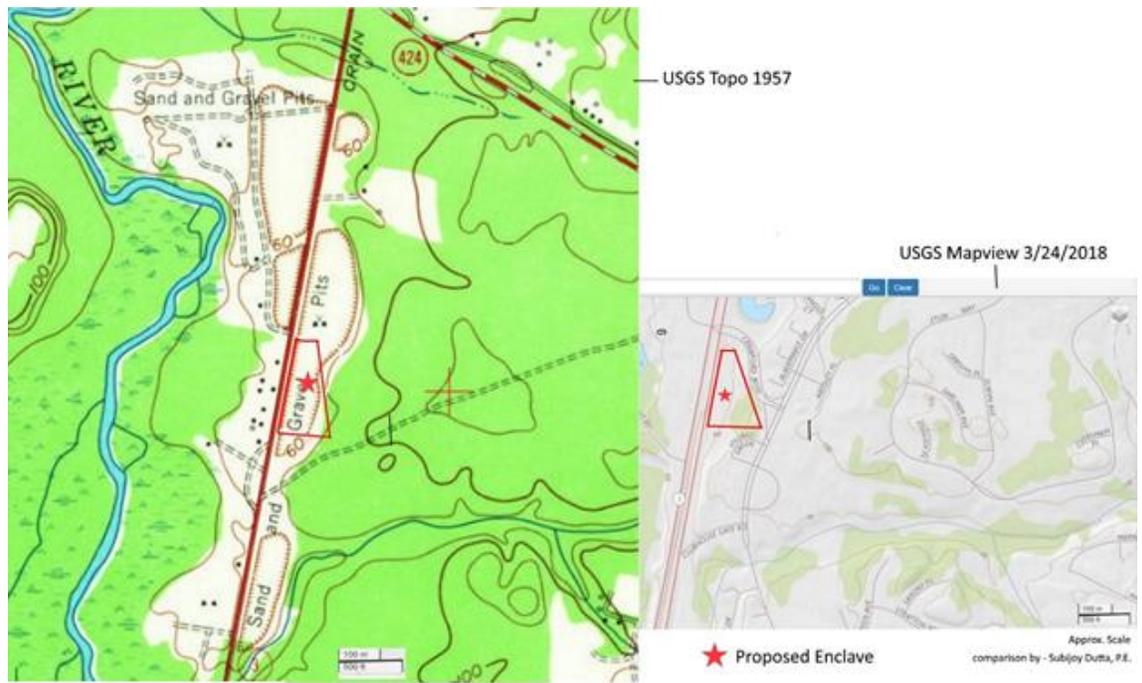


Map 1A. FEMA 100-Yr. Flood Hazard Map



Map 1B – 100-Year Flood Simulation

The 1957 USGS map clearly showed the gravel pit at the proposed location for the Enclave. A comparison of the USGS topo maps from 1957 and 2018 shows how the surface profile of the pit area changed to its current low-lying area of about 2.0 acres, congruent to the east side of the North-bound Route 3 with an elevation of 60' MSL (mean sea level). The gravel pit surely provided an easy pathway for the



Map 1C - Comparison of the USGS topo maps from 1957 and 2018

perched water table to accumulate and overflow into the nearby stream. It also validates the reason for the existence of the 100-year flood plain boundary at the site proposed for the Enclave.

Based upon the above data and analysis, I find that the proposed development at the above site will be unsafe and it will have a number of adverse impacts to the local residents, visitors, drivers, and tourists. One incompatible and dis-harmonic ledge will lay a serious blow to the safety and nicety of the area. While finishing up this letter/analysis in Interlaken, Switzerland, I could see the impact of this development with a crystal ball as a repulsive sight for the visitors.

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