

December 29, 2014

Mr. Dan Kelly

Development Services Manager,
Development Plan Review
Knox County Metropolitan Planning Commission

RE: 12-I-14-RZ Mourfield Road, Beals Creek

Mr. Kelly or To Whom It May Concern,

My name is Sam Mayes. My residence is located at 1405 Mourfield Rd, Knoxville, TN. I am writing in regard to the conceptual plan that was submitted for the subdivision that is currently proposed along Mourfield Rd. My concerns include the density of the proposed layout, safety concerns with access from the homeowners onto Mourfield Rd, adherence to local, state, and federal stormwater regulations, erosion concerns due to the steep topography for the existing and proposed layouts, and the aging infrastructure along Mourfield Rd.

As a longtime resident of Knoxville that is vested in my community, a professional engineer (Civil) registered in the State of Tennessee and as a member of the Knox County Industrial Development Board, I would like to see the aforementioned issues addressed by the MPC before the subdivision is approved by the MPC. The current layout proposes 10-foot easement between houses, which may be okay for flat topography but is not practical for property that is so steep. Knox County needs to ensure that forethought is input into the process and the land is not ravaged and the downstream homeowner's or adjacent community left holding the bag.

Following is a list of my concerns that should be addressed prior to approval of the property by the MPC. Assurances should be addressed by a conceptual plan being resubmitted that addresses each of the items listed below.

Proposed Lot Density

Currently a lot density of 3.5 residences per acre is proposed. Due to the steep slopes and the road layout I believe that 2.0 residences per acre is more practical. I base this off of the fact that the detention basins will be required to be larger than normal due to the larger volume of stormwater runoff due to steeper slopes, runoff increasing due to more roof area, driveways, and roads.

A second reason for the lower density is that the roadway, as laid out, is shown running across the slopes instead of perpendicular to the topographic contours. This is going to cause severe elevation changes on both side of the road to access the residences. This causes concerns with erosion and also is not ideal as residences will be located either 20 to 30 feet above or below the road elevation. This could be alleviated with lower lot densities.

Roadway Safety Concerns

Mourfield Rd is a very treacherous road, especially in the winter and especially at the southern end of the subdivision.

- There are safety issues with multiple driveways having direct access onto Mourfield Rd. For 30 mph speed, a minimum sight distance of 300-feet has to be available before access is approved. Private driveways should not be allowed to access Mourfield from the new development. Especially backing of a car onto the roadway from a private residence.
- It is doubtful that a sight distance of 300-feet is available for the main entrance. This should be proven in the field prior to MPC approval.
- The Knox County regulations (62-60, pg 35) state that the local street maximum grade is 12%. Road "B" on the drawings shows an existing grade of 15%. Road A shows a grade of 12.5%. They should not be approved for greater than 12% unless there is a valid reason for doing so. If the allowable grade has to be raised to 15% to make the subdivision developable, development should not be allowed. Raising from 12% to 15% should be the exception and not the norm. I know that the regulations say that for exceptions it can be raised to 15%. If 15% was the intent, they would not have listed 12% as the maximum grade in the regulations.

Erosion Control

- Guidelines were passed in 2012 for the "Hillside & Ridgetop Protection Area Development Standards. These are guidelines for developments in which the slopes are greater than 16%. The guidelines should be honored by the developer as slopes on the northern and southern sides of Road B are very steep. Measures should be enforced to minimize sloughing off of embankments and stormwater erosion velocities upstream and downstream of Road B. There are enough examples of slope failure in the report to understand that Knox County doesn't want to keep approving of developments without doing their due diligence first.
- Lots 35 – 39 are bisected by fairly long and steep slopes that would require very controlled erosion control structures to be put into place prior to construction as they are adjacent to the drainage channel for Mourfield Road. With high stormwater velocities being realized in the drainage channel on Mourfield Rd, any sediment that enters the drainage channel will be transported into the creek immediately. As a side note, these are not very good building sites for the houses that would eventually inhabit the lots.

Stormwater Concerns

There is a major concern with the layout of the subdivision as shown and the ability to accommodate the density of lots that was requested due to the fact that the drawings do not show stormwater control devices that are located in compliance with current county, state and federal regulations. I understand that the detailed stormwater design and calculations will be performed later during the design phase, **but the lot density has to be based off of a conceptual plan that is somewhat close to realistic.** The layout and location of the stormwater devices as shown is not good on the conceptual drawings. Additionally, current Knox County residents that are located downstream of the proposed subdivision have been flooded due to previous developments being constructed along Westland Drive in which stormwater requirements were not enforced.

- The concept drawing and the preliminary construction drawing are not realistic in that they depict a detention pond being located at the northern corner of the site within two streams that are converging. One has been classified as a wet weather stream. The Detention Pond cannot be located at that particular location as the stormwater regulations DO NOT allow the Detention Pond to be located within an existing stream, much less two streams. Waters flowing from the site have to be collected before they are discharged to waters off-site. Off-site streams cannot be directed through new stormwater detention structures, therefore the current locations of the detention basins are not realistic or optimal.
- Stormwater regulation require ALL stormwater from the development to be collected separately from off-site water before being discharged off-site. This is not the case in these plans as water is NOT shown as being collected at the southern part of the site before being discharged off-site. For some reason, detention ponds are located upstream of the lowest point on the site. The subdivision entrance is located close to where a detention pond would probably be required, therefore the subdivision entrance location is not realistic which also affects the sight distance that can be achieved.
- Water from the proposed subdivision would also have to be kept separate before it can be discharged off-site with the existing channel stormwater along Mourfield Rd. The existing channel overflows now when major storms occur. Lots 35, 36, and 58 through 61 are not realistic as residential sites.
- Lot #'s 1, 2, 6, 7, and 8 show the 50-foot buffer. They are not practical for building on if the buffer is honored. The plan is not realistic in this area.
- The size of the detention basins as shown are not realistic for the current stormwater regulations which require it to be sized for a 2-yr to a 100-year storm event. Property along Mourfield road is a very steep and has very fast times of concentration, therefore receive high volumes of water very fast. The size of detention basins that are shown are conceptual, but still not realistic.

Bottom line, we want to make sure that all stormwater regulations are adhered to and enforced for any future development. MPC should not include a plan that is a picture and not realistic in working effectively.

Existing Utilities along Mourfield Rd

The existing waterline along Mourfield Rd has had several breaks over the past 3 to 4 years because of aging infrastructure. Agreement should be made with First Utility District for a new line or upgrade prior to more services being added to an inadequate existing water main.

In closing, I would like to thank you for your time and ask that you forward my concerns with your letter to the MPC before the next meeting. The purpose of the MPC should be to make sure that conceptual plans are realistic and not just pictures that are not reasonable. I am sure that calculations and good design efforts have to occur before many of the items that I mentioned can be determined, but the plan that was submitted is so far off from meeting regulations that it cannot be

approved until it is redone in accordance with current NPDES stormwater regulations and other issues which I noted. Please contact me concerning any of my comments or for any questions.

Sincerely,

Sam Mayes, P.E.

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