John,

Following up on your question about environmental studies and flood plain issues for Rush River Commons.

First, regarding the flood plain. The Rush River Commons (RRC) property is roughly bisected by an unnamed tributary of the Rush River. This unnamed tributary is shown on the federal Flood Insurance Rate Map (FIRM) for Rappahannock County and RRC is shown to be in "Zone X", which is defined as areas outside of the 100-year flood plain. Even though the project site is not in a designated flood area, prior to the start of engineering design for the project, we contracted with Bowman Engineering (Bowman) to evaluate the existing flood plain as every stream will experience some degree of flooding during large rainfall events. Bowman computed the watershed area for RRC at just under 200 acres, and then used modeling software to determine the elevations of the unnamed tributary during a 100-year flood plain event.

For perspective, the existing grade of Warren Avenue where the unnamed tributary crosses under the road is about elevation 633.0. The unnamed tributary is about elevation 626.0 at the RRC property line. The tributary flows south and a bit east and when it exits the RRC property just before the culvert under Lee Highway, it is at about elevation 617.0. Bowman computed the 100-year flood event, and the elevation of the stream would rise to about 628.5. From the Site Plan for Phase 2 that we have shared with you, the finish floor elevation of the Library is shown at 642.0, this is 13.5 feet above the 100-year flood elevation. The parking lot that runs parallel to Lee Highway varies in elevation from about 640 to 634, so even at the low end of the parking lot, we are still 5.5 feet above the 100-year flood elevation.

For the stream restoration project which we completed late last year, we conducted all required environmental studies and secured our permit from the U.S. Army Corps of Engineers (Corps) for the restoration project. In the project scope, we removed "invasive" plant materials which are not native to Virginia, and replanted with native species. We adjusted the alignment of the stream where it had become incised, and we also installed stabilizing measures in the stream to minimize erosion, and to create habitat areas. As the work has been completed, this permit has been closed out with the Corps.

Prior to the start of engineering design for Phase One of RRC, we performed an environmental investigation to locate and map the jurisdictional wetland areas on the entire RRC property. In Phase One of the project, we had some minor impacts to jurisdictional area associated with the drainage outfall onto RRC from the pond on Avon Hall. We secured a permit from the Corps and State Department of Environmental Quality (DEQ) for these impacts. We installed the retaining wall in Phase One that ran along the edge of the stream corridor without any wetland impacts. The work in Phase One has been successfully completed and the permit has been closed out by these agencies. As part of the permitting process for Phase One, we have placed the area of the stream corridor in a permanent conservation easement dedicated to, and managed by the Land Trust of Virginia.

In the engineering of Phase 2, our goal is to avoid impacting any jurisdictional wetland areas. If we do impact any jurisdictional areas, a permit will be required from the DEQ and the Corps, and depending on the amount of impact, compensatory mitigation can be required by these agencies. We also plan to expand the permanent conservation easement to include additional areas adjacent to the stream corridor as part of the final engineering design of Phase 2. This will complete our plan to have a permanent, managed, easement and buffer along the stream corridor.

Please let me know if you have any questions regarding this information.

Sincerely,

Stephen T. Plescow, P.E.