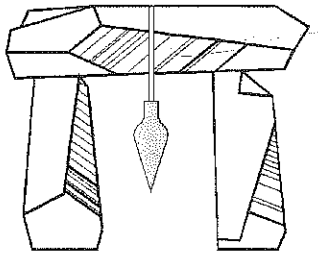
DeCelle-Burke-Sala



& Associates, Inc.

November 6, 2018

Lexington Planning Board
Lexington Town Office Building
1625 Massachusetts Avenue
Lexington, MA 02420

Re: Project Response Letter for
Balanced Housing Plan – Fairland Estates

Dear Board Members:

DeCelle-Burke-Sala & Associates, Inc. continues to work with the Lexington Planning Board and the neighborhood to revise, improve and provide information related to the residential development proposal for Fairland Estates, The following are answers regarding the potential concerns or suggestions raised by Board Members and the residents of the neighborhood.

Fairland Street - Fairland Street is an existing private way in poor conditions that provides access to several homes. The road varies in width between 22 to 26 feet wide and has no curbing or sidewalks. The applicant has proposed to reconstruct Fairland Street for approximately 600 feet from the end of the pavement in front of 11 &14 Fairland Street to a point near Eastern Avenue. The proposed width of the pavement is 22 feet with no proposed curbing or sidewalks. The reason to maintain the minimum existing width of 22 feet is that it reduces the amount of impervious area for the neighborhood and that it provides sufficient access for emergency vehicles. The latter statement was reaffirmed by the Lexington Fire Department.

Additionally, the neighborhood voiced concerns regarding proposed sidewalks and curbs. The inclusion of both of these features into a neighborhood that has not had them since its construction may alter small *micro-watershed* areas around Fairland Street potentially increasing runoff into locations that currently drain. It is our goal to maintain current flow paths and sub-watersheds and pick up street runoff where it can be safely intercepted by proposed infrastructure proposed by the applicant.

Trees, Wildlife and Public Access - The proposed development has a park area that is open to the surrounding neighborhood. A proposed sidewalk from Fairland Street provides access into the development. The existing ground slope leading into the property from Fairland Street averages about 11% and in some locations increases steepness to as much as 40%. A proposed sidewalk follows the proposed roadway which is constructed at a maximum allowable grade of 8%. The sidewalk goes around the development providing access to the center island area. The proposed 8% grade is the steepest grade for site access and it provides safe access for both vehicles and pedestrians. This grade was also chosen to assist in minimizing the amount of fill needed to construct the project.

This office calculated 6,722 cubic yards of fill is necessary to grade the site as proposed. If the access road was decreased in slope from 8% to 5% an additional 1,300 cubic yards of fill would be necessary to meet these grades. The truck trips needed to provide the 6,722 yards of fill would be done over a significant amount of time as it is related to the construction of the road, its infrastructure and the homes.

In addition to the sidewalk proposed for access to the greenspace located at the center of this development, a forested wildlife path is proposed through the property for passive recreation for the residents and neighborhood abutters.

A footpath from the development roadway to Lincoln Street has been added to the proposal. This path will follow the existing contours and terminate at the Lincoln Street layout.

Water Pressure Benefit - The proposed development includes an easement for the Town of Lexington to design a pump station to tie into the proposed water main and increase the pressure into the Fairland Street neighborhood.

Stormwater Management -

Existing Conditions

The project locus consists of four separate properties, 15 Fairland Street, 17 Fairland Street, 0 Lincoln Street and 185 Lincoln Street in Lexington, Massachusetts. Three of the four properties are currently developed with single family dwellings, bituminous concrete driveways, public water, sewer, and overhead power and communications. All together the properties total approximately 272,034 square feet of land and each lot is zoned Residential – Single (RS).

The property is predominantly wooded with exceptions around each existing home. The woods are young as there are very few significant trees on site but there are approximately 649 trees between 6" to 12" diameter. A total of 900 trees were located on the property. Site soils are mapped as a Charlton-Hollis Rock Complex which appears accurate based on visible ledge outcrops in some areas. Existing topography varies greatly, from a high elevation of 331 at Fairland Street to a low elevation of 233 at Lincoln Street. A plateau area exists on site at elevation 311 where several test pits were performed. The test pits that reached depth over three or four feet were found to have deep coarse to medium sand with some stones and gravel.

No jurisdictional wetlands were found on-site. No Stormwater controls were found on-site. Existing runoff from the properties flows to Lincoln Street to the east and to the south of the property. Eventually all of it making it to Lincoln Street.

Proposed Conditions

The proposed project includes the construction of fourteen (14) new single family homes accessed by an eighteen (18) foot wide access drive off of Fairland Street on 230,236 s.f. of the land. 185 Lincoln St and 17 Fairland St will be subdivided into 20,000 and 21,798 s.f. lots and remain individual single family dwellings .

The stormwater is proposed to be captured by deep sump catch basins that will improve water quality before its release to another water quality tank to provide additional water quality

treatment. The stormwater will conveyed to an underground recharge and detention field. The field is comprised of 220 Cultec R-330 chambers with surrounding crushed stone. This field provides for significant space for snow storage if an overflow snow storage needs to be utilized. An outlet control structure shall be constructed to maximize the detention potential and recharge capabilities of the soil. In addition to the outlet control structure, a broad-crested earth berm built into the development shall keep internal flood waters on the property.

The stormwater management system provides a significant reduction in offsite peak flow and volume for the various storm events as required by the Lexington Stormwater regulations and MADEP's stormwater Management Stormwater Standards. A 500-year storm has also been analyzed and the system reduces the peak flow and stormwater volumes leaving the site after construction.

The factors of safety involved in developing this stormwater management system is apparent when it can be shown that a 500-year storm event is also managed when comparing the current conditions with the proposed model. The system is designed to capture all of impervious land cover proposed on the property. Impervious area is what generates the majority of runoff for any property. The proposed earth berm is located down gradient of the proposed roadway and the majority of houses allowing it to act as the last line of defense if the underground recharge system is surcharged. This stormwater management system has been designed with redundant controls, an underground recharge and detention basin backed up by a surface detention basin that uses the proposed grade to detain surface flow.

The system also has long term maintenance tasks that are easily applied and observable. Inspection ports are proposed throughout the underground system and the outlet control structure is located within a manhole for easy access. The outlet control structure can be opened and the flow depth measure to determine if the system is operating as intended. The outlet control structure is an orifice that operates when the underground detention basin becomes full to a certain level. Once the system fills to the overflow elevation the orifice will flow. An orifice is controlled flow. At a certain flow depth the orifice allows a known rate flow out. An inspector, hired to inspect and maintain the system on behalf of the Homeowners Association, can record the flow depth through the orifice and a known flow can be determined from that depth. This can be compared to the rainfall event and a determination of how the system is operating can be assessed.

The long term health of this system is key component of having this system best serve the new development and the neighborhood interests. A Stormwater Operation and Maintenance Plan (SOMP) has been revised and attached to this response letter. This SOMP will be recorded at the Registry of Deeds and made part of the homeowners purchase and sales documentation. A maintenance fee shall be assessed for each homeowner and placed in an escrow account to allow for bi-annual inspections of the stormwater management system as well as the roadway, sidewalks, landscaping and other public related features. An estimated yearly budget for a third party engineering firm to perform the inspection and have a contractor provide the ongoing maintenance of the stormwater system is included in the SOMP. A long term infrastructure capital reserve account can be established for large items such as paving, drainage infrastructure

repairs or other large scale repairs if the new homeowners believe that is in the best interests of the association.

Construction Controls - A Construction Management Plan has also been prepared by this office. This plan provides "Best Management Practices" for the contractor to implement to minimize environmental impacts to the neighborhood including impacts from traffic, dust, noise, erosion, trash, and stormwater. Work schedules will be established, truck routes, contractor parking, dumpster control, delivery control, and blasting shall be discussed and the abutting neighborhood protected from any long term impacts and minimizing the short term impacts.

It is our intent that this project be constructed in a controlled and environmentally sensitive fashion. The attachments provide long and short term procedures that if implemented will provide neighborhood protection. Alternative measures to achieve additional or approved equal protections employed by the Contractor can be reviewed by this office but at all times it is our expectation and responsibility to design and construct this project in compliance with all local, state and federal regulations.

We look forward to discussing this project at the meeting.

Sincerely,

James S. DeCelle
Project Manager