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**TOWN OF NEEDHAM, MASSACHUSETTS
PUBLIC WORKS DEPARTMENT
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May 16, 2013

Needham Board of Appeals
Needham Public Safety Administration Building
Needham, MA 02492

RE: Application for Comprehensive Permit
Greendale Mews Development
692 - 744 Greendale Avenue
Needham, MA

Dear Members of the Board,

The Department of Public Works has completed its review of the above referenced plans for a Chapter 40B Comprehensive Permit. The applicant is proposing to develop a 300-unit rental apartment development on approximately 6-acres on Greendale Avenue adjacent to Route 128.

The review was conducted in accordance with Needham's non-zoning regulations and standard engineering practice. During the course of the review, the Department of Public Works has determined that the above referenced property is not capable of supporting the level of development proposed for it. The documents submitted for review are as follows:

- Application Notebook for Site Plan Review completed by the applicant dated April 12, 2013.
- 692 & 744 Greendale Avenue application for Comprehensive Permit Site Approval Submitted by Mill Creek Residential Trust, LLC, in a black binder;
- Stormwater Management Report and Environmental Impact Analysis, prepared by Tetra Tech dated 4/12/13;
- Lot Consolidation Plan of Land, compiled by Tetra Tech for Greendale Avenue Venture LLC, signed and stamped by Robert F. Daylor, PLS, dated 4/12/13, 1 page;
- Comprehensive Permit Plans, Needham Mews Residential Development, 692 + 744 Greendale Avenue, prepared by Tetra Tech for Greendale Avenue LLC, consisting of 12 sheets dated 4/12/13;
- Architectural Plans, Needham Mews, 692 + 744 Greendale Avenue, Needham, MA, Application for Comprehensive Permit Site Approval, prepared by TAT The Architectural Team for Greendale Avenue Venture, LLC, consisting of 31 sheets: dated 4/8/2013;
- Landscape Plans and Materials Plans, prepared by TAT The Architectural Team, Consultant: Stantec Consulting Services, consisting of 3 sheets: dated 4/8/2013;

Our comments and recommendations are as follows:

- Fourteen zoning related waivers have been requested.
- A “waiver” has been requested from the need to obtain approval from the Board of Selectmen to relocate the existing sewer line and sewer easement. The authority to relocate the sewer easement rests with Town Meeting. The requested “waiver” cannot be granted.
- Eight “waivers” have been requested from the General Bylaws. We do not recommend that the “waivers” regarding fire lane width, signs, monument signs, and storage of flammable materials be granted. We also recommend that the Boards and Town Officials most familiar with and knowledgeable of each area of the General Bylaws dealing with each request review and comment on each “waiver”
- We recommend that the applicant be required to comply with the town’s Street Permit requirements and Trench Permit bylaws and regulations.
- We recommend that the applicant list any other waivers that they may be seeking.
- The MassHousing Project Eligibility (Site Approval) Application letter requires that the applicant comply with the Commonwealth’s Sustainable Development Principles embraced by the DHCD as part of their Final Approval application submittal. The Greendale Mews Sustainable Development Principles Narrative claims that the proposed development will advance the sustainable development principles adopted by the Commonwealth of Massachusetts. The proposed development will not advance the principles for the following reasons:
 1. The proposed development is inconsistent with the surrounding development. The development proposes a 300 unit apartment complex in a mostly wooded area with 10,000 sf house lots across the street. The development requires that the town’s existing sewer infrastructure be re-located to accommodate the proposed development. The development will substantially reduce open space and will not link to adjacent conservation areas due to the proposed construction of a retaining wall surrounding two-thirds of the property and severing access.
 2. The proposed development will not protect land and ecosystems. The proposal calls for removing almost every single tree on site. It will not increase the quality of the existing conservation land adjacent to the site, nor will it increase accessibility to it.
 3. The proposed development will not use Natural Resources wisely by encouraging recycling by constructing and maintaining recycling stations at the trash area in each building. No trash and/or recycling areas are proposed for Buildings A, B, or C, and the entire basement is being proposed for parking spaces. There is one trash/recycling area in Building D that is 10 feet by 28 feet and one the trash area in Building E that is 18 feet by 18 feet. The areas provided in Buildings D and E may be sufficient for trash, recycling paper/cardboard, and recycling co-mingled glass, plastic and cans in those buildings.
 4. The proposed development will not use Natural Resources wisely by encouraging use of public transportation and carpooling. The developer proposes to construct a total of 471 underground parking spaces and 40 surface parking spaces to serve 300 units (454 bedrooms). The developer proposes to charge a \$50 fee per month for 225 of the underground parking spaces – leaving 246 underground and 40 surface parking spaces available to serve the 300 units (454 bedrooms). While the fee may encourage carpooling or the use of public transportation (the closest public transportation – the Commuter Rail – is about a mile away), it is more likely that it will simply make some of the units more expensive to own since there will be no visitor spaces available for the development. If the developer assigns the parking fee to any of the 25% of the units that are affordable (75 units), it will likely simply make those units less

affordable for the same reason. The developer also claims to provide bike storage in the buildings to encourage bicycling. There are storage areas proposed in Buildings D and E, but the developer is proposing to charge \$50 per month for 50 units to use them. There are no storage areas provided in Buildings A, B or C. We recommend that the number of fee parking spaces be reduced in order to provide at least one (non fee) parking space per unit and to allow for at least 60 (non fee) visitor parking spaces.

5. The developer claims that linkages have been provided to conservation land by constructing one or more pathways from the site to the conservation land. No pathways are shown on the plans and a retaining wall is proposed on the property severing access to the abutting conservation/recreation land.
6. The developer claims that the site is designed to minimize the disturbed area of the site. The plans indicate that almost the entire site is proposed to be disturbed (92.3%). The area around the existing house at 692 Greendale accounts for 5.9% which was previously disturbed; leaving only 1.8% of the site undisturbed. This amount of disturbance does not meet the Sustainable Development Principles cited above. The amount of disturbance will also require a National Pollutant Discharge Elimination (NPDES) Permit from the EPA.
7. The developer claims that stormwater is proposed to be infiltrated entirely on site. The drainage calculations indicate that stormwater is expected to drain onto Route 128 at a maximum rate of 11 cfs.
8. The developer claims that the residents, building manager and management team will be educated and trained about the green features of the apartment homes. No office space or work area has been provided for the building manager and the management team.
9. The MassHousing General Development Information form has several inconsistencies and missing and/or conflicting information as to the number of buildings on site, the number of existing buildings to be torn down, the number of units proposed, explanation as to how the increased density (above 8 units per acre) is compatible with or enhances the surrounding area, utility allowances, etc.

Property Lot Consolidation Plan

- Lot consolidation Plan of Land Sheet 1 is not in a Registry of Deeds recordable format. The plan appears to be proposed as a subdivision, "Approval Not Required" plan under MGL Chapter 41 Section 81P, but does not bear the appropriate required inscription language.
- The portion of Hardy Street along the Northwesterly property boundary has not been abandoned as shown on the submitted plans. This portion of Hardy Street is a Public Way. Some portions of the way may not be passable by some motor vehicles, but may be passable by others. It is also passable by pedestrians.
- The Flood Plain referenced information is outdated. The FEMA FIRM maps were updated on July 17, 2012.
- The total property area shown as 6.02 Acres does not match the existing record information.
- The plan appears to "claim" a portion of the abandoned section of Hardy Street along the southeasterly corner of the property. No recorded deed or plan information exists to support the claim. The bearings and or distances in the south easterly corner of the property do not conform to any plan of record.
- The property within the boundaries of Hardy Street may be owned, "in fee" by the Town of Needham. We recommend that Town Counsel be consulted regarding the disposition of Hardy Street.
- The referenced Land Court Plan 31133A does not abut the subject property and the Consolidation Plan provides no mathematical relationship to the Land Court reference.

- The reference information regarding the "Drain Easement to be Acquired" plan does not about the subject property and the consolidation plan provides no mathematical relationship to the drain easement shown on the plan.
- The referenced Plan of Land in Needham, Mass dated February 18, 1964 by Cheney Engineering Co., recorded as Plan 335 of 1964 does not about the subject property and the consolidation plan provides no mathematical relationship to the property shown on the plan.
- The referenced Plan of Land in Needham Mass dated May 4, 1936 by Frank L Cheney recorded in Plan Book 2109 Page 372 does not about the subject property and the consolidation plan provides no mathematical relationship to the property shown on the plan.
- The two referenced plans by Needham Survey Associates, Inc., do not appear to be recorded at the Registry of Deeds.

Based on the above, the property boundaries and the area have not been established for the property to support the proposed development.

The applicant appears to be requesting that the Board of Appeals approve the consolidation Plan without complying with the Planning Board's (non-zoning) regulations. We recommend that the Board of Appeals require the applicant to comply with the Planning Board's regulations

Stormwater Report and Plans:

The applicant has prepared a stormwater report and calculations that are not consistent with standard engineering practice. The applicant has not documented compliance with stormwater and drainage requirements for both predevelopment and postdevelopment. The proposed development will result in flooding on the adjacent State Highway property and may increase flooding on land N/F Town of Needham and land N/F Greendale Avenue Worship Center.

- The existing sub-catchment area shown by the applicant as the pre development collection of stormwater is arbitrarily designated. As a result the applicant's report skews the existing flow off the property. Also, the report provides a catchment area that collects stormwater almost completely off the property and credits the pre-development and post development calculations for the resulting mitigated flow conditions.
- The applicant must show the existing catchment areas on the property using standard engineering practice to properly report the existing conditions. There are at least 5 catchment areas that exist on the property using standard engineering practice; the applicant only reports two. There are 2 low lying areas that currently mitigate existing flow conditions on the property. These larger of the two areas may exceed a ¼ acre foot in storage and may be jurisdictional to the Conservation Commission as an isolated land subject to flooding. Both "pond" areas were absent from the calculations; the report must be revised to reflect actual conditions.
- One of the 2 existing sub-catchment design points is located well beyond the property thereby skewing the report to reflect post-development mitigated flow conditions that the applicant has no control over. The other design point is located on the property but appears to have been selected to reflect a greater pre-development flow off the property when the actual flow is released onto the property.
- The report indicates that the existing "Soil Hydrologic Group" categories on the site are Groups A, B and D. The Soil Conservation Service has listed the soil as Groups A and D. The addition of a Group B skews the report to reflect existing pre-development stormwater runoff conditions greater than actual. Furthermore, actual field tests that the applicant has conducted confirm that the soils within the Group D category consist of sand and gravel. The whole site by virtue of the Soil Conservation Services maps and the actual field conditions conducted by the applicant should all be classified as Group A soils.

- The report provides no, "sheet flow" for existing conditions. The time of concentration path used in the report and plans also follow a line that leads off the property then back onto the property. The time of concentration has been incorrectly calculated
- Time of concentration used for post development conditions were direct entry values. The report should provide some justification for the time of concentration used or show the direct entry values were calculated.
- For post-development stormwater mitigation, the report indicates that a greater storage capacity was used in the infiltration chamber calculations than that provided for on the plans and details. Furthermore, it appears that the design is relying on storage above the actual discharge points, indicating that the system is designed to surcharge. The stormwater report, calculations and mitigation plans and details must be revised so they do not conflict with each other. The stormwater storage system should not be designed to surcharge.
- Post construction catchment areas do not conform to standard engineering practice and must be designed to determine whether the post development condition will result in flooding offsite for all storm events analyzed.
- As part of the NPDES requirements, the applicant must comply with the Public Outreach & Education and Public Participation & Involvement control measures. The applicant shall submit a letter to the town identifying the measures selected and dates by which the measures will be completed in order to incorporate it into the Zoning Board's decision.
- The applicant is required to comply with the Memorandum of Understanding signed by the Town with the EPA. The Massachusetts Stormwater Management Policy applies.

Layout Plan Sheet C-2:

- The Layout Plan does not show the Town's existing 20' wide sewer easement crossing the properties. No permission has been granted to relocate the sewer main and/or its easement.
- The boundary lines and area of the properties have not been established.
- It appears that Buildings B, D, and E are proposed within a portion of the existing sewer easement.
- A 14-foot wide one-way drive access is proposed around the sides and rear of Buildings D and E. A minimum 18 foot wide drive (Fire Lane) is required.
- The design does provide ability for fire truck based on a 30' wheel base at various hinge points on site. At the North West entrance, a right turn to the drive between Building E, and A, B, and C and between Buildings D and E.
- Overall dimensions of the proposed buildings have not been provided.
- The existing Good Fellowship Greendale Worship Center at 754 Greendale Avenue Site Plan indicates a 100 buffer Zone extending 35 feet onto the subject property. We recommend that the Conservation Commission review the property to determine whether wetland areas and/or buffer zones exist or are adjacent to the subject property
- The driveway curb roundings are too sharp to accommodate the allowed speed of traffic on Greendale Avenue.

Grading and Drainage Plan Sheet C-3:

- The approach grade of the westerly driveway access is 7.5%. The maximum grade is 4% in unusual topographical circumstances.
- There is a proposed 1:2 (Vertical : Horizontal) slope proposed immediately adjacent to the access road along the northerly corner of the property with a retaining wall down slope and a 10% sloped access drive between Buildings D and E intersecting the rear access drive. The design creates a safety problem for pedestrians and vehicles.
- The handicap accessible surface parking spaces and accessible routes exceed 2% slopes.

- No details have been provided for the retaining walls. The walls are structurally significant in several locations and will require a building permit to construct.
- There are missing proposed contours along Greendale Avenue. The design indicates that grading and public shade tree removal will be required within the Greendale Avenue public right of way to support the proposed design.
- There is a proposed point source stormwater discharge from the property onto Route 128. No easement has been provided to accommodate the discharge.
- The elevation of the lower level parking garage slab in Building E is EL. 121.5'. The adjacent driveway elevation is EL. 123. Stormwater will be directed into the garage. The entrance height to the lower garage appears to be 6.5 feet maximum. The Building Code requires a minimum 7-foot clearance; handicap accessibility standards require an 8'-2" clearance and sufficient clearance must be provided to accommodate rubbish and recycling trucks.
- Both upper and lower garage entrances to Building E require an internal sloping ramp to transition from the outside adjacent grade to the garage slab elevations.
- It appears that the pool will protrude into the upper level garage space. Depending on the depth of the pool, 28 parking spaces in the upper garage may be inaccessible.
- It is unclear how trash pick up will occur in Building E considering turning movement radii throughout the site and garage entrance heights proposed.
- A detail for the area drains has not been provided.
- It appears that the roof drains, drain pipe, and area drains will protrude into the upper level parking garage in both the front and rear court yard areas of Building E. The area drain and outlet pipe in the Bocce Ball Court and Putting Green area protrude into the upper garage about 2-1/2 feet effectively interfering with the parking spaces and aisle height clearance below. The manhole protrudes into the upper and lower parking garage within the mechanical/storage areas to a point approximately 3 feet above the lower garage slab. The Bocce Ball Court and Putting Green surfaces protrude below the ceiling slab of the upper garage by 2 feet.
- It appears that the bottom of the proposed retaining wall (EL. 127') adjacent to the pool will be exposed at the southeasterly end (EL. 126').
- There will be an increased peak rate and volume of stormwater runoff discharging to the northwesterly portion of Hardy Street and the property owned by Needham.
- The existing grade behind the Worship Center along the southeasterly property line appears to be at least 3-feet higher than the proposed retaining wall.
- Guard rails, fences, and or protective railings are required for safety purposes at several locations within the proposed development. In several instances there is insufficient room or width to provide the guard rail or railings.
- The snow disposal area as proposed is too small and cannot accommodate storage of snow giving the amount of impervious area onsite and typical New England weather conditions.
- The snow disposal area will contribute drainage discharge onto Hardy Street and/or drainage on to the drive access area behind the buildings and cause unsafe icy conditions.

Utility Plan Sheet C-4:

- The gas services for Buildings D and E appear to be entering the buildings near the ceiling of the lower parking garages below the entrances to the upper garages. The mechanical rooms for the buildings are located at the opposite corners of those buildings. The gas services must be relocated. There is insufficient room provided in the mechanical/storage areas of Building D to accommodate 99 gas meters, 99 water meters and 99 electric meters. There is insufficient room provided in the mechanical/storage areas of Building E to accommodate 126 gas meters, 126 water meters and 126 electric meters.

- There are no mechanical rooms provided for Buildings A, B, and C. It appears that no provision has been made to accommodate the water, gas and/or electric meters.
- Adequate space for Fire Suppression systems must be provided for each building.
- It is unclear where the heating and cooling mechanical systems will be accommodated. It is also unclear where the telephone cable and fire alarm services will be located.
- Plans do not call for emergency generators or transformers. If emergency generators and transformers are proposed, they should be indicated on the plans

Landscape Plans Sheet L-1:

- Landscape plans show proposed trees, lighting, and monuments within the Right of Way of Greendale Avenue. All landscape items and materials shall be removed from the Greendale Avenue right of way.
- Landscape plans show proposed trees to be planted directly over the utilities and on top of the walls. The design must be revised to show the trees planted a minimum of 10 feet from the utilities and walls.
- Landscape Plans show trees and other plantings within the area that is designated for snow disposal.

Other Comments:

- The design shows a Semi-Public Pool for the site that is subject to Department of Health Regulations requiring showers and sanitary facilities for the pool. These areas have not been shown on the plans. The backwash for the pool is required to employ separators if diatomaceous earth is used, de-chlorination facilities if the discharge is directed to the stormwater system and/or a connection to the sanitary system if approved by the Board of Health and Plumbing Inspector. We recommend that the Board of Health and Plumbing Inspector review the plans to determine compliance requirements.
- No office space, tool/parts storage, or equipment storage has been provided for the proposed development.
- The design indicates that more than 50,000 GPD will be generated and discharged into the town's sewer system considering the above requirements. A DEP Sewer Connection Permit will be required.
- The MassHousing Project Eligibility (Site Approval) Application letter recommended that the following issues be addressed in the application to the Board of Appeals for a Comprehensive Permit and prior to the applicant's submission to MassHousing for Final Approval:
 1. A detailed traffic study assessing potential impacts to the town's roadways and appropriate mitigation. No traffic study has been submitted to the Board of Appeals.
 2. The traffic study should also include an analysis of parking for the site, circulation, driveway widths and turning radii, driveway slopes, safety criteria regarding access especially in winter months, pedestrian access around the site, etc. No analysis of the above has been submitted for review.
 3. A detailed Stormwater Management plan including erosion measures during and after construction. Only partial information has been submitted for review and substantial errors exist in the drainage calculations submitted.
 4. Confirmation of the geotechnical findings of the site since the initial application to MassHousing have not been submitted to the Board of Appeals for review as recommended.
 5. Building and site design measures to address noise exposure and noise attenuation measures have not been submitted for review.
 6. Details regarding the site amenities, playgrounds, community rooms, outdoor seating areas and specific information regarding pedestrian links to nearby

conservation areas have not been submitted to the Board of Appeals as recommended by MassHousing.

The review indicates that the site as currently designed is not capable of supporting the level of development proposed for it.

Additional review will be required should the plans be revised.

If you have any questions regarding the above, please contact our office at 781-455-7550.

Truly yours,

Anthony L Del Gaizo
Town Engineer

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