

TOWN OF CARLISLE, MASSACHUSETTS
ZONING BOARD OF APPEALS
DECISION UPON APPLICATION OF LIFETIME GREEN HOMES, LLC
FOR A COMPREHENSIVE PERMIT UNDER
MASSACHUSETTS GENERAL LAWS CHAPTER 40B

I. BACKGROUND

APPLICANT: Lifetime Green Homes, LLC (the “Applicant”)

PROPERTY: 100 Long Ridge Road, Carlisle, MA

ZONING: Residence District B

PROPOSAL: Twenty (20) for-sale, single-family detached residential condominium units, of which nineteen (19) are new construction and one (1) is an existing house, to be served by eleven (11) private drinking water wells and an on-site septic system made up of four separate component systems (three new systems plus the existing system that serves the existing house), to be located on a 9.84 acre parcel.

PUBLIC HEARING: July 28, 2014, August 11, 2014, August 27, 2014, September 15, 2014, October 6, 2014, October 27, 2014, November 3, 2014, November 17, 2014, December 15, 2014 (continuance only), January 5, 2015, January 28, 2015 (continuance only), February 4, 2015, February 23, 2015 (continuance only), March 2, 2015 (continuance only), March 26, 2015, April 6, 2015, April 22, 2015, May 4, 2015, May 20, 2015, June 1, 2015, June 8, 2015, June 15, 2015, June 22, 2015 and June 29, 2015.

DECISION DATE: [to be added].

II. PROCEDURAL HISTORY

In the fall of 2013, the Applicant submitted an application for project eligibility to MassHousing. In a letter to MassHousing dated January 31, 2014, the Town of Carlisle presented extensive comments on the proposed development. See 760 CMR 56.04(3) (“Upon receipt of the application, the Subsidizing Agency shall provide written notice to the Chief Executive of the municipality where the Project is located, initiating a 30-day review period of the Project.”) This letter sent on behalf of the Town, acting through the Board of Selectmen and Town Administrator, but reflected the comments and concerns of the Fire Department, the Planning Board, the Board of Health, and the Conservation Commission. The Town expressed concerns relating to density, design, public safety, water quality, wastewater management, stormwater management, open space and wetlands preservation.

The Town expressed particular concern with regard to the Applicant’s failure to provide a public water system. The Town stated: “To provide the best protection for residents and neighboring properties from potential failures and to enable ongoing monitoring of the water quality for the residents, the Town encourages the Applicant to install a single, public water supply to serve the Project. A Public Water Supply would require DEP approval, a 48-hour pump test, a protective radius and regular monitoring.” In addition, the Town noted “the Applicant should perform all necessary hydrogeological testing to establish definitively that the planned [soil absorption system]/treatment plants and wells will not impact the water quality and capacity of other wells in the vicinity.”

MassHousing issued a Project Eligibility Letter on June 3, 2014. This Project Eligibility Letter stated, in part, that based on MassHousing’s site design review and its consideration of comments received from the Town, that certain issues “should be addressed in [the] application to the Zoning Board of Appeals (“ZBA”) for a Comprehensive Permit and fully explored in the public hearing process prior to submission of [the Applicant’s] application for Final Approval.” *Letter from MassHousing to Lifetime Green Homes, LLC dated June 3, 2014* at p. 3. These issues included the Town’s concern with “potential impacts to groundwater quality in the vicinity of the Site, including impacts to neighboring wells due to the number of wells proposed for the Site” and the need to provide an adequate stormwater management plan for the Site, including erosion control measures during and after construction. *Id.* at 4.

The Applicant filed a comprehensive permit application pursuant to M.G.L. c.40B, §§20-23 (the “Act”) with the ZBA on July 3, 2014.

Pursuant to notice duly mailed, published and posted pursuant to M.G.L. c.40A, §11, the ZBA opened its public hearing on the Application on July 28, 2014, and the ZBA held continued sessions of the public hearing on August 11, 2014, August 27, 2014, September 15, 2014, October 6, 2014, October 27, 2014, November 3, 2014, November 17, 2014, December 15, 2014 (continuance only), January 5, 2015, January 28, 2015 (continuance only due to snow), February 4, 2015, February 23, 2015 (continuance only at Applicant’s request), March 2, 2015 (continuance only at Applicant’s request),

March 26, 2015, April 6, 2015, April 22, 2015, May 4, 2015, May 20, 2015, June 1, 2015, June 8, 2015, June 15, 2015, June 22, 2015, and June 29, 2015. In accordance with 760 CMR 56.05(3), the Applicant and the ZBA agreed to several extensions of time to conduct the public hearing, with the last such extension running through June 29, 2015.

The ZBA also conducted site visits at the premises on August 11, 2014 and April 16, 2015.

Each session of the public hearing was recorded by detailed minutes, which are available for public review in the ZBA's office.

Sitting for the ZBA and present throughout the hearing were: Lisa Davis Lewis (Chair), Emmanuel Crespo, Martin Galligan, Steven Hinton (Associate) and Travis Snell (Associate).

Over the course of the public hearing, the ZBA heard testimony and received written comments from the Applicant, abutters, Daniel C. Hill, counsel for a group of abutters, Scott W. Horsley, hydrogeological consultant for a group of abutters, and members of the public.

All Town boards, commissions and departments were notified of the application and the public hearing. The ZBA received extensive written comments from the Town Advisory Group ("TAG") created by the Board of Selectmen in accordance with the ZBA's Comprehensive Permit Rules, the Board of Health, the Planning Board, the Conservation Commission, and the Fire Department. In addition, representatives of the TAG, the Board of Health, the Planning Board and the Conservation Commission were in attendance throughout the public hearing and participated extensively. The ZBA considered all of the comments and recommendations of the Town boards, commissions and departments in rendering this Decision, and expresses its thanks for their valuable assistance throughout this process.

The ZBA received guidance throughout the hearing from Michael Jacobs of MHJ Associates, a real estate development and Chapter 40B consultant engaged through the Massachusetts Housing Partnership's Chapter 40B Technical Assistance Program. In addition, the ZBA retained Nitsch Engineering, Inc. for civil engineering peer review, and Stephen W. Smith, P.E., P.HGW., L.S.P., of GeoHydroCycle, Inc. for hydrogeological peer review. As discussed in more detail below, the ZBA also received extensive hydrogeological information from James H. Vernon, Ph.D, P.G., Senior Hydrogeologist at Nobis Engineering, Inc.

At the beginning of the public hearing, the Applicant committed to conduct a comprehensive hydrogeological study of the development parcel and the surrounding area. This study was to include groundwater modeling studies, nitrogen loading and pathogen analyses, groundwater mounding analysis, background testing of abutters' wells, and an agreement to post a security bond to ensure that the abutters would not have to pay to repair or replace an existing water supply well if impacted by the Project. See Letter from Lifetime Green Homes to ZBA dated September 12, 2014 (Brem 060). The proper scope and methodology for the Applicant's hydrogeological

study was the subject of lengthy discussion with the ZBA over several sessions of the public hearing, with input from Stephen W. Smith and Scott Horsley, a hydrogeologist engaged by a group of abutters to the Project.

By December 2014, however, the Applicant had not commenced the hydrogeological study that had been under discussion for the previous several sessions of hearing, and in a letter dated December 31, 2014 the Applicant announced that it would not perform the study at all. See Letter from Douglas C. Deschenes, Esq. dated December 31, 2015 (Brem 141). In response, the Town of Carlisle, acting through its Board of Selectmen, engaged James H. Vernon, Ph.D, P.G., Senior Hydrogeologist at Nobis Engineering, Inc., to conduct an independent analysis of the hydrogeology of the site and surrounding area. The Applicant then indicated that it would arrange for a limited hydrogeological study, independent of Dr. Vernon's study, and without regard to many of the recommendations previously submitted by Mr. Smith during the hearing and/or previously agreed to by the Applicant.

The Applicant presented comprehensive revised plan sets on or about December 8, 2014 and on or about March 27, 2015. Each set of plans submitted by the Applicant was the subject of comprehensive peer review by Nitsch Engineering, Inc. Nitsch Engineering submitted comprehensive peer review reports on the Applicant's plans on October 24, 2014, December 22, 2014, and April 17, 2015, and submitted additional reports addressing specific issues on November 3, 2014 (traffic), February 18, 2015 (adequacy of stormwater design), March 13, 2015 (adequacy of stormwater design), April 2, 2015 (traffic), May 15, 2015 (nitrogen loading), June 9, 2015 (nitrogen loading), and June 15, 2015 (memorandum regarding the requested waiver of the Town's septic system design flow regulation).

At several points during the public hearing, the Applicant amended its request for waivers of local bylaws, rules and regulations, but it did not submit a final comprehensive waiver list prior to the close of the hearing. In emails dated May 29, 2015 and June 1, 2015, counsel for the ZBA and the Applicant confirmed the final set of waivers that the Applicant was seeking from the ZBA. The following three documents collectively comprise the Applicant's final waiver requests: The letter from Doug Deschenes, Esq. dated September 26, 2014 (Brem 069), the letter dated December 30, 2014 withdrawing several of those waiver requests (Brem 140), and the letter dated March 26, 2014 reinstating several of the original waiver requests (Brem 195).

As of the date of this Decision, the Applicant has filed a Notice of Intent ("NOI") with the Carlisle Conservation Commission, and the hearing on this NOI remains open. The Applicant has not applied to the Board of Health for local approval of its proposed septic system or private drinking water system yet.

A list of all written evidence received during the public hearing is attached as "Exhibit ____."

The ZBA voted to close the public hearing on June 29, 2015. The ZBA deliberated on the application on _____ and voted on the application on _____.

III. NATURE OF THE APPLICATION & GOVERNING LAW

This application has been filed under M.G.L. c.40B, §§20-23 (the “Act”) and the regulations promulgated by the Department of Housing and Community Development (“DHCD”), 760 CMR 56.00 (the regulations”). Carlisle does not presently meet the Statutory Minima as defined by 760 CMR 56.03(3). As a result, the Town’s Zoning Bylaw and other bylaws and regulations may be waived upon a showing that they are not “consistent with local needs” within the meaning of the Act.

The question of whether a particular bylaw or regulation is “consistent with local needs” involves a balancing of (1) the Commonwealth’s presumed need for Low and Moderate Income Housing in the Carlisle area and (2) “Local Concerns,” which is defined as “the need to protect the health or safety of the occupants of a proposed Project or of the residents of the municipality, to protect the natural environment, to promote better site and building design in relation to the surroundings and municipal and regional planning, or to preserve Open Spaces.” 760 CMR 56.02.

IV. JURISDICTIONAL ELEMENTS

Pursuant to the Act and the Regulations, 760 CMR 56.04(1), an applicant for a comprehensive permit must fulfill, at a minimum, three jurisdictional requirements to be eligible to submit an application to the ZBA. These are:

- a. The Applicant shall be a public agency, a non-profit organization, or a Limited Dividend Organization;
- b. The Project shall be fundable by a Subsidizing Agency under a Low or Moderate Income Housing subsidy program; and
- c. The Applicant shall control the Property.

Pursuant to 760 CMR 56.04(1), compliance with these project eligibility requirements “shall be established by issuance of a written determination of Project Eligibility by the Subsidizing Agency that contains all the findings required under 760 CMR 56.04(4), based upon its initial review of the Project and the Applicant’s qualifications in accordance with 760 CMR 56.04.”

The Applicant has submitted into the record a Project Eligibility Letter from MassHousing, dated June 3, 2014, that contains findings pursuant to 760 CMR 56.04(4). The threshold jurisdictional requirements of 760 CMR 56.04(1) are therefore deemed satisfied.

V. FINDINGS OF FACT

1. Lifetime Green Homes, LLC—hereinafter “the Applicant”—is a Massachusetts limited liability corporation with a business address of 142 Littleton Road, Westford, MA 01886. Jeffrey A. Brem is Manager of Lifetime Green Homes, LLC.
2. The parcel that is the subject of this application is located at 100 Long Ridge Road, Carlisle, MA (the “Property”). The Property contains approximately 9.84 acres, and is improved with an existing four-bedroom residential home built in or about 1974, a horse barn, drinking water well, septic system, and other structures accessory to the existing residential use.
3. Mr. Brem and his wife, Lisa Brem, are the record owners of the Property.
4. The Applicant and Mr. and Mrs. Brem have entered into a purchase and sale agreement for the Property dated November 11, 2013.
5. The Property is located in the Residence B Zoning District. The Property is located within an existing residential neighborhood, with preexisting single-family residential houses on all sides.

6. The proposed development (the “Project”) consists of twenty (20) single-family, detached residences containing a total of 58 bedrooms. This includes the existing four-bedroom house and nineteen (19) new residential units. The Property is to remain a single lot subject to the provisions of the Massachusetts Condominium Law, M.G.L. c.183A. The twenty residential units will be owned as condominium units.

7. As designed by the Applicant, several of the units present significant setback and screening concerns relative to the neighboring properties. On the west side of the Property, Unit 7 is located 24 feet from the abutting property (not counting the deck), Unit 8 is located 37 feet from the abutting property line (not counting an intervening deck that effectively brings the unit several feet closer), and Unit 9 is located 31 feet from the abutting property.¹ The Applicant’s original landscape plan showed no landscaping buffer on its side of the property line. See *Landscape Plan* dated October 30, 2014 (Brem 086). Late in the hearing, the Applicant proposed a 6’ high solid wood or composite fence, with two black spruce trees on either end, to screen the neighbor with respect to Unit 8 only. See *Landscape Plan* dated October 30, 2014, last revised May 27, 2015 (Brem 230). The ZBA finds the proposed setbacks and screening of Units 7, 8, and 9 to be inadequate, but will allow the setbacks to remain as shown on the Approved Plans provided that increased landscaping and fencing are provided to mitigate these impacts, as discussed more fully in the Conditions of Approval, below.

Comment [CH1]: Subject to confirmation.

On the north side of the Property, Unit 10 is located 18 feet from the property line and Unit 13 is located 22 feet from the property line. The Applicant’s original landscape plan showed no landscaping buffer along this property line. See *Landscaping Plan* dated October 30, 2014 (Brem 086). Late in the hearing, the Applicant proposed to install eight 8-foot tall *Pinus Strobus* trees between Units 12 and 13 and the property line. See *Landscaping Plan* dated October 30, 2014, last revised May 27, 2015 (Brem 230). The ZBA finds that the setbacks and screening proposed for Units [] are inadequate, but will allow the setbacks to remain as shown on the Approved Plans provided that increased landscaping and fencing are provided to mitigate these impacts, as discussed more fully in the Conditions of Approval, below.

Comment [CH2]: Subject to confirmation.

8. The units have substantial footprints, and the size of these units drive many of the problems with the geometry of the Project (such as _____, discussed in more detail below). Despite repeated requests from the ZBA, the Applicant did not adjust the footprints of the units during the public hearing.

Comment [H3]: This finding should be revised at the ZBA meeting to ensure that it captures what the members intended.

9. The Applicant’s plans have consistently shown a large area of the northeast portion of the Property as undisturbed vegetated space. *[add more detailed findings about how this is shown on the Plans].*

¹ During the hearing, the Applicant revised its plans to increase the setbacks for certain of the proposed units. For example, the Applicant originally sited Unit 8 within 18 feet of the property line.

10. The Project is to be served by a 24-foot wide cul-de-sac roadway that extends approximately _____ feet from the intersection with Long Ridge Road and approximately _____ feet from the nearest intersecting through street. The proposed roadway design was revised during the course of the public hearing, and its final configuration was found to be acceptable by Carlisle Fire Chief David R. Flannery and Nitsch Engineering. The final roadway layout is accessible by the largest Town fire apparatus.

11. Each unit will have two (2) dedicated off-street parking spaces.

12. The Project has a total of four (4) guest parking spaces, located in two dedicated locations (containing one guest space and three guest spaces, respectively). As conditioned below, overnight parking on the road is prohibited.

13. Nitsch Engineering reviewed several iterations of the Applicant's proposed stormwater management system. In consultation with Nitsch, several design improvements were made during the course of the public hearing. The final stormwater management system, as shown on the Approved Plans, was approved by Nitsch, subject to the caveat that strict attention to maintenance and repair was crucial to ensure the property functioning of the system as a whole.

14. The Town does not have an in-ground fire hydrant system, or any available public water source available for to be used for fire suppression at the Property.

15. There is only one point of access into the Project. The proposed roadway extends from Long Ridge Road, which is an existing dead-end road. Chief Flannery expressed concern regarding the single-access off a lengthy dead-end road, and supported having the Applicant provide an additional secondary access from the Nowell Farme Road development. It appeared, however, that this secondary means of access was not feasible. As a result, the need to provide adequate means of fire fighting at the Property is particularly acute given the concerns associated with a single point of access on a lengthy dead-end road.

16. The Applicant originally proposed a roadway width of 20 feet. Chief Flannery commented that two way traffic width for a fire lane in this development calls for 12 feet of width per lane, or 24 feet in width total (NFPA Standard 1141, section 5.4.2); the Applicant widened the road to 24' in response to this comment.

17. The Applicant proposed to provide a 30,000-gallon fire cistern, without a dedicated well, to serve the Project. Chief Flannery stated that the 30,000-gallon fire cistern proposed by the Applicant is not acceptable for the Project, and that in accordance with the National Fire Protection Association's Standards 1141 and 1142, the fire protection cistern must have a minimum of 45,000 gallons available for draft. Chief Flannery further stated that Fire Department specifications require a dedicated cistern well, and that the cistern's "pull off" must be 10' wide by 50' long with an access easement provided to the Town.

The requirement of a 45,000 gallon cistern, a dedicated well, and a 10'x50' "pull off" with an associated easement are consistent with conditions imposed on comparable

developments within the Town of Carlisle. Recent examples include Garrison Place (16 residential units permitted in 2014 served by 40,000 gallon capacity in two cisterns); Benfield Farms (26 units permitted in 2010 and served by 46,000 gallon capacity in two cisterns); Hanover Hill (35 lots permitted in 2008 and served by 100,000 gallon capacity in three cisterns); Chestnut Estates (seven lots permitted in 2007 with a 30,000 gallon cistern); Greystone Crossing (15 lots permitted in 2006 with 70,000 capacity in three cisterns); Hart Farm Estates (12 lots permitted in 2000 with 40,000 gallon capacity in two cisterns); Great Brook Estates (10 lots permitted in 2000 with 40,000 gallon capacity in two cisterns); and Carriage Way (10 lots permitted in 2000 with 40,000 gallon capacity in two tanks). For each project, a dedicated well was provided for the cistern.

18. Chief Flannery noted that the NFPA distance for single-family dwellings to one another is 30 feet, and recommended that this setback be maintained between all dwellings within the Project. Chief Flannery also noted that the NFPA setback from a dwelling to a wooded area is 30 feet, and recommended that at least 30 feet of “green space” be provided around each dwelling. Chief Flannery noted that several of the unit porches encroached on this 30’ setback, and recommended that this be allowed only upon provision of the 45,000 cistern.

19. Chief Flannery also recommended that each unit within the Project be equipped with fire alarm systems with smoke and heat detectors that would be connected to a central station monitoring service, allowing for immediate Fire Department notification in the case of a fire. The ZBA will not require such an alarm system based on the requirement of the 45,000-gallon cistern and the revision of the plans to provide the 30-foot setbacks between buildings.

20. Chief Flannery commented that the addresses need to be assigned in a logical, consistent manner based on the Town’s local addressing system, and that street name must be subject to local approval.

21. The Applicant has filed a Notice of Intent with the Conservation Commission under the Massachusetts *Wetlands Protection Act* and the Town’s Wetlands Bylaw. This application is pending as of this date.

22. The Applicant proposes to serve the Project with three new septic systems plus the existing septic system that serves Mr. And Mrs. Brem’s existing four-bedroom house. Two of the proposed new septic systems are located in the northwest corner of the Property, immediately next to one another, and within several feet of the northern property line. The third proposed new septic system is located in the southwesterly corner of the lot near the Project’s frontage on Long Ridge Road.

The Applicant proposes to use so-called innovative/alternative technology systems that will provide for enhanced nitrogen removal to 19 mg/L in the wastewater discharge.

The Applicant proposes that the three new systems will have a 110 gallon per day per bedroom design flow, notwithstanding Section 15.221 (General Construction

Requirements) of the Board of Health's Supplementary Regulations for Sewage Disposal Systems, which requires a design flow of 165 gpd per bedroom.

Several of the proposed drinking water wells are located 100' from the proposed septic systems, notwithstanding Section 15.211 (Distances) of the Board of Health's Supplementary Regulations for Sewage Disposal Systems, which require a setback of 150' to a system of 2,000 gpd or larger.

[note: need to check plans and list the wells that are within 150' of a septic system. If anyone has this information readily available, please advise].

Title V defines "system" as "[a] system or series of systems for the treatment and disposal of sanitary sewage below the ground surface on a facility." Pursuant to this definition, the four individual septic systems proposed to be located on the Property constitute one "system" as a matter of law.

23. Pursuant to Title 5, "[n]o system serving new construction in areas where the use of both on-site systems and drinking water supply wells is proposed to serve the facility shall be designed to receive or shall received more than 440 gallons of design flow per day per acre from residential uses." 310 CMR 15.214. This allowable nutrient loading limitation may be increased for systems "approved for enhanced nitrogen removal using a technology approved by the Department." 310 CMR 15.217.

24. The Applicant has claimed that it will use a so-called innovative/alternative system that will allow nitrogen loading of 660 gallons per day per acre .

25. As proposed by the Applicant, the Project will discharge more than the permissible amount of nitrogen for this Site under Title 5. In a memorandum to the ZBA dated June 8, 2015 (Brem 248), Nitsch Engineering reviewed the Aggregation of Flows and Nitrogen Loading for the Project, using Title 5 and the DEP's *Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading*, revised February 11, 2015. Nitsch concluded that for the Applicant's current proposal (three units with 2 bedrooms, sixteen units with 3 bedrooms and one existing four-bedroom dwelling served by a conventional septic system) 9.10 acres of are required to meet the equivalency standard for nitrogen removal. The Property contains 9.84 acres, but the DEP guidance documents states that road area cannot be used for the nitrogen credit and must be removed from the required land area calculation. Removing the roadway leaves 8.92 acres, less than the 9.10 acres necessary to support the proposed nitrogen discharge.

26. The DEP defines "public water system" as follows:

a system for the provision to the public of water for human consumption, through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year...The Department may presume that a system is a public water system as defined herein based on the average number of persons using a facility served by the system or on the number of bedrooms in a

residential home or facility. The Department reserves the right to evaluate and determine whether two or more wells located on commonly owned property, that individually may serve less than 25 people, but collectively serve more than 25 people for more than 60 days of the year should not be regulated as a public water system, taking into account the risk to public health.

310 CMR 22.02.

27. The designation of the water supply as a public water supply would require the Applicant to undertake the following in order to obtain source approval and to protect the groundwater supply and the quality of the drinking water:

- i. Satisfactorily comply with the DEP Drinking Water Program's "Guidelines and Policies for Public Water Systems," as amended;
- ii. Demonstrate that the source of water supply will achieve all applicable water quality standards set forth in the Massachusetts Drinking Water Regulations, 310 CMR 22.00;
- iii. Own or control the Zone I² of the wellhead;
- iv. Demonstrate that the current and/or future land uses within the Zone 1 are limited to those directly related to the provision of public drinking water or will have no significant adverse impact on water quality;
- v. Annually survey the land uses within the Zone I for each well and wellfield under its control;
- vi. Comply with reporting requirements if a use is identified in the Zone I that would adversely impact water quality;
- vii. Follow the Ground Water Rule contained in 310 CMR 22.26 and comply with its treatment, monitoring and reporting requirements; and

² Zone I means "the protective radius required around a public water supply well or wellfield. For public water system wells with approved yields of 100,000 gpd or greater, the protective radius is 400 feet. Tubular wellfields require a 250-foot protective radius. Protective radii for all other public water system wells are determined by the following equation: Zone I radius in feet = (150 x log of pumping rate in gpd) - 350. This equation is equivalent to the chart in the Guidelines and Policies for Public Water Systems. A default Zone I radius or a Zone I radius otherwise computed and determined by the Department shall be applied to transient non-community (TNC) and non-transient non-community (NTNC) wells when there is no metered rate of withdrawal or no approved pumping rate. In no case shall the Zone I radius be less than 100 feet." 310 CMR 22.02.

- viii. Observe the groundwater monitoring and treatment requirements for water quality contained in 310 CMR 22.00.

310 CMR 22.21(1)(b), (3)(a), (3)(b), and 22.26. In addition, unless a variance is granted, no septic system may be sited within a Zone I of a public water supply well. 310 CMR 15.211C (2).

28. Based on the DEP's regulatory definition and the number of individuals expected to reside at the Project, it is presumptively a "public water system." Despite repeated requests from the ZBA and the Board of Health, the Applicant did not obtain any waiver of this classification from the DEP prior to filing its application or during the public hearing.

29. Instead, the Applicant has designed the Project with eleven (11) shared private drinking water wells intended to serve the twenty (20) condominium units. The Applicant assumes that the DEP, after issuance of this comprehensive permit, will waive the presumptive "public water system" classification.

30. Based on the number and layout of the proposed dwellings, and the size of the Property, the Applicant has left itself no room to provide the "Zone I" required of public water systems. As a result, the Applicant has been pursuing this particular Project at risk; it cannot be built as designed if the Applicant cannot subsequently convince the DEP that its drinking water system "should not be regulated as a public water system, taking into account the risk to public health." 310 CMR 22.02.

31. This was not the case immediately prior to the filing of this Application. The Property was part of a larger parcel of land owned by Jeffrey and Lisa Brem until March of 2014. On March 10, 2014, the Carlisle Planning Board endorsed the plan entitled "Approval Not Required Plan—Brem Property Long Ridge Road Carlisle Massachusetts" prepared for Jeffrey and Lisa Brem of 100 Long Ridge Road, Carlisle MA 01741, by the Meisner Brem Corporation, 141 Littleton Road, Westford, MA (the "2014 ANR Plan"). The 2014 ANR plan is recorded with the Middlesex North District Registry of Deeds as Plan No. 76 in Plan Book 237. This ANR Plan divided Mr. and Mrs. Brem's property on Long Ridge Road into two new lots: (1) The Property that is the subject of this Application and (2) a separate two-acre (87,124 square foot) lot, with 250.09' feet of frontage.

Mr. and Mrs. Brem then conveyed the two-acre parcel (now known as 90 Long Ridge Road) to G. Gardner Contracting LLC by deed dated April 16, 2014 for consideration of \$312,500.00.

The Applicant, of which Mr. Brem is principal, then filed this application on July 3, 2014.

The ZBA finds that the additional two acres that the owners subdivided and sold in March—April 2014 would have served as an important addition to this Project. This additional area likely could have allowed the Applicant to provide a public water system, and could have served to address many of the other problems presented by

the Applicant's proposal (discussed elsewhere in this Decision). In particular, this additional two acres likely could have allowed the Applicant to provide greater area for septic disposal and treatment, greater separation between septic systems and drinking water supply, and area for increased landscaping and buffering between the Property and the abutting residences.

32. The Carlisle Board of Health initially contacted DEP to discuss the status of the Project's water system in July 2014. In an email dated July 29, 2014, James Persky of the DEP's Drinking Water Program stated, in pertinent part, as follows:

For wells that are on commonly owned property to be considered individual private wells rather than parts of a single public water system, the owner(s) of an individual well need to be able to do any needed maintenance, upgrade, or replacement of the well without ant veto control by a larger entity such as a condo association, realty holding company, etc. This control of the well needs to be stated in both the unit deed and on the master deed. The ownership documents have to give the well owners (which may be an entity such as a well trust) total control of the well.

* * * * *

If the well ownership is set up so that there is no public water system, then the wells are legally considered to be private wells. Private wells are under the jurisdiction of the local Board of Health and are subject to the private well requirements for that Town. In that case, there is no requirement for a Zone I protective radius, and each well just has to meet the setback requirements that the Town requires for private wells.

(emphasis added).

33. The Board of Health next submitted a letter to DEP dated November 14, 2014. In this letter, the Board of Health requested that DEP classify the Project as a public water system, and stated that to do otherwise "will put future residents, neighbors and the town disproportionately at risk and jeopardizes the health and safety of the individuals and the environment." A copy of this letter (Brem 109) is on file with the ZBA and is available for review.

34. After receipt of this letter, a meeting was held with the DEP, the Board of Health, and the Applicant. The DEP confirmed that this Project was classified as a public water supply absent a determination to the contrary, and that it would not review the Applicant's request for a waiver until the Project had received local permits and condominium documents had been fully executed and recorded.

35. The Carlisle Board of Health submitted a second letter to DEP dated April 24, 2015. In this second letter, the Board of Health drew attention to the DEP's "2014 Annual Notice to Local Boards of Health," dated June 16, 2014, which stated, in pertinent part, as follows:

Condominium Developments and Public Water Systems

Please be aware that some types of construction, such as residential or business condominium developments, which propose to use two or more wells to serve the one-site facilities so that each well serves less than 25 persons per day, may still be considered PWSs. With an increase in development throughout the state, these cases may come before the BOHs as private well proposals. In these cases, the applicant should be referred to MassDEP for a written determination of public or private water system during the design phase, and/or prior to the issuance of local permits. This information should be communicated to your local planning office, planning board, building inspector's office, and to the applicant as it could substantially change the outcome of the project.

Accordingly, the Board of Health reiterated its prior request that the DEP confirm that this Project would be regulated as a Public Water System. The Board stated:

Given the drinking water demands of the twenty proposed (condominium) single-family houses, the close proximity to both on-lot septic systems and the abutter's nearby drinking water wells, this project presents a clear and present risk to public health, and the applicant should not be allowed to avoid proper classification as a public water system.

A copy of this letter (Brem 211) is on file with the ZBA and is available for review.

36. The ZBA finds that this Project is, by definition, a public water system, that the Applicant should have designed the Project as a public water system from the outset, and that having failed to do so, the Applicant should redesign the Project as a public water system prior to construction and occupancy. The ZBA additionally finds that the DEP should insist that this Project remain a public water supply, and require all of the protections associated therewith.

37. Given that the Applicant proposes to serve twenty units with seven wells, the ZBA does not find it to be credible that any given group of units will have the ability to do needed maintenance, upgrade, or replacement of the well "without any veto control by a larger entity." Rather, and it can be expected that two units owners served by a given well may disagree on issues of maintenance, upgrading, and/or replacement of the wells. See Email from James Persky to Linda Fantasia dated July 29, 2014.

38. In addition, given that the Applicant is proposing to build out the Project to the greatest extent feasible, it is not obvious that there is any space within the Project to relocate a failed well, much less eleven failed wells. There is absolutely no feasible way to relocate multiple wells within the condominium open space (which includes all of the Project other than the individual units) without severely impacting some of the other unit owners and the Project's infrastructure. It is not realistic to assume that any subset of unit owners could relocate their well within *this* Project

without any veto control by a larger entity such as a condo association. See Email from James Persky to Linda Fantasia dated July 29, 2014.

39. Notwithstanding the preceding findings, the ZBA is required to act on this application as it has been presented, even if, as a practical matter, its feasibility hinges entirely on whether the DEP authorizes the drinking water system to proceed as designed by the Applicant. Accordingly, the ZBA will assume for the sake of the conditions imposed in Section VII, below, that the DEP has authorized this Project to go forward as a set of private wells.

40. The ZBA received guidance from Stephen W. Smith, P.E., P.HGW., L.S.P., of GeoHydroCycle, Inc. throughout the public hearing. Mr. Smith provided input on the scope of the hydrogeological study necessary to assess the Project's impacts on existing abutting drinking water wells and the Project's own proposed wells, and peer review of a study filed by the Applicant.

41. In a series of letters dated October 19, 2014 (Brem 082), November 14, 2014 (Brem 107) and December 30, 2014 (Brem 139), Mr. Smith outlined the hydrogeological analysis necessary to investigate the impacts of the Project. Mr. Smith recommended field testing to determine site specific properties of groundwater supplies and sewage discharge area that will be used by the Project. This includes (1) overburden sands, which will be used for wastewater discharge, and (2) bedrock, which will be used to supply drinking water. Mr. Smith stated that a detailed understanding of both overburden and bedrock is required to predict future groundwater supply conditions and design groundwater protection strategies.

42. Mr. Smith recommended that the hydrogeologic investigation associated with this Project should:

- (i) determine groundwater flow directions in the surficial and bedrock aquifers;
- (ii) determine the hydraulic connectivity, saturated thickness and storage properties for the surficial aquifer and determine a transmissivity and storage property of the bedrock aquifer;
- (iii) estimate seasonal high groundwater for the surficial aquifer;
- (iv) evaluate soils according to Title V requirements;
- (v) conduct a 48-hour pump test of the proposed wells;
- (vi) based on all of the foregoing, develop a groundwater impact model to assess how the Project's wells will impact each other and the abutters' wells, including drawdowns of the Project and abutter wells; groundwater mounding from the proposed leach fields; and a groundwater plume analysis to show how nitrate plumes may affect downgradient wells;

- (vii) implement a 5-year groundwater monitoring plan.

43. Mr. Smith specifically noted that impacts from a 24-hour pump test often do not extend out far enough beyond the pumped wells to be able to determine whether an impact has occurred. For the testing of the Project's water supply wells, a minimum 48-hour test should be required while monitoring abutting wells during the test. The goals of the 48-hour pump test are to determine whether the aquifer can yield sufficient water to meet the Project's demand; to estimate impact to abutting wells; and to determine aquifer characteristics.

44. Mr. Smith recommended that the nitrate plumes for each of the wastewater discharge areas should be calculated and that the plume results should be compared with state drinking water standards at any wells within the plume. The plume analysis/modeling is necessary to determine which down gradient wells (both within the Property and on abutters' properties) are at risk based on their location for nitrate levels exceeding safe drinking water criteria.

45. Mr. Smith recommended water quality sampling of abutters' wells within 500 feet of the wastewater discharge areas quarterly for two years, followed by annual sampling for another three years. Each analysis should include the chemical constituents sampled in the initial baseline well sampling, and should be compared to state drinking water standards and the baseline well tests to assess whether the project poses a public health risk.

46. Mr. Smith recommended that an escrow fund be established to provide for well repairs, upgrades, or replacements where impacts attributable to the Project have occurred. Mr. Smith recommended that this escrow fund be established and that the amount of \$15,000 per well be set aside to cover the cost of a well replacement, including well drilling, pump replacement, hydro-fracking, water quality sampling and analysis, well disinfection, and costs related to connecting a new well to the home. Mr. Smith recommended that this fund be maintained for 5 years and replenished after any use. Brem 104.³

47. The Applicant's hydrogeologist, Joel Frisch, P.G., of Northeast Geosciences, Inc. ("NGI"), submitted a report to the ZBA dated March 25, 2015. Mr. Frisch did not present his report to the ZBA in person at any session of the public hearing.

48. Mr. Smith reviewed the NGI report. In a report dated April 17, 2015, Mr. Smith provided two separate lines of discussion: He (1) detailed the important elements that NGI had not included in its analysis and (2) provided peer review

³ In September 2014, the Applicant proposed to deposit up to \$12,000 as security for the purposes of mitigating any documented negative impact cause by the Project to any neighboring well(s) within 500 feet that were subject to a testing protocol to establish baseline conditions. The use of these funds, as proposed by the Applicant, would include re-drilling, hydro-fracturing and/or replacement. *See Letter from Lifetime Green Homes, LLC to ZBA dated September 12, 2014 (Brem 060).*

comments on the analysis that NGI had actually performed. *Letter from Stephen W. Smith to Steven Ventresca* dated April 17, 2015 (Brem 207).

49. With respect to scope of NGI's March 25, 2015 report, Mr. Smith stated "[b]ased on our review of the NGI report, the work does not provide a complete analysis of the potential impacts of the proposed development, and it did not meet many of the recommendations noted in [Mr. Smith's] prior letter." (see Finding ___, above). Specifically, Mr. Smith found that the NGI report did not include a hydrogeologic investigation of the bedrock aquifer or testing of abutters' wells. In addition, the NGI report did not:

- (i) determine groundwater flow rates and directions in the bedrock aquifer;
- (ii) determine bedrock aquifer transmissivity or storage coefficients;
- (iii) conduct pump tests for on-site wells;
- (iv) develop a calibrated groundwater model that included both the surficial and bedrock aquifers;
- (v) evaluate pumping impacts of the Project's wells on each other and the abutters' wells;
- (vi) evaluate the impacts of the on-site leach fields on the on-Site and abutters' wells; or
- (vii) develop a groundwater monitoring plan.

Id.

50. The Applicant was provided ample opportunity to provide additional information in response to Mr. Smith's comments regarding the scope of the NGI study, and elected not to provide anything further. As a result, by the conclusion of the hearing, the Applicant provided no additional information to address Mr. Smith's general comment that NGI's work "does not provide a complete analysis of the potential impacts of the proposed development," or the specific comments as to what necessary elements had been omitted. *Letter from Stephen W. Smith to Steven Ventresca* dated April 17, 2015 (Brem 207).

51. As noted, Mr. Smith also provided detailed peer review comments addressing the analysis contained in NGI's March 25, 2015 letter. In his letter dated April 17, 2015, Mr. Smith noted that this set of comments was "based only on what was presented in the NGI report." *Letter from Stephen W. Smith to Steven Ventresca* dated April 17, 2015 (Brem 207). Many of Mr. Smith's peer review comments were addressed through further communication with NGI. Many other comments, however, never satisfactorily addressed. In a letter dated May 14, 2015, Mr. Smith detailed the issues that remained outstanding:

- i. For each of the paired wells used in NGI's study, it provided only one log. GHC recommended submitting separate logs for each of the paired wells.
- ii. Mottling depths are related to ground surface, which is subject to erosion over time, making the depth measurements subjective. GHC recommends determining seasonal high groundwater by plotting the January water table, noting the differences at test pit locations, and applying those differences to the groundwater levels.
- iii. NGI had provided no description of "stratified drift" or "alternative layering of coarse and fine materials" in its well logs. The logs describe the soil as "till", which is an unsorted material showing no stratification. GHC recommended that the Hvorslev hydraulic conductivity tests be redone as a result.
- iv. NGI has calculated the hydraulic conductivity at the site to be 9 feet per day, with a geometric mean of 7.4 feet per day, and concluded that this difference in values was "de minimis." *Letter from Joel Frisch, P.G. to Jeffrey Brem* dated May 4 at p. 2, ¶7 (Brem 213). Mr. Smith noted that the differences in the hydraulic connectivity between 7.4 and 9.0 feet per day may appear small, but that mounding calculations show that the use of a value of 7.4 feet per day could result in a mound of 0.40 feet higher at septic fields #2 and #3. GHC recommended calculating the septic field mounds using a hydraulic conductivity of 7.4 feet per day.
- v. Mr. Smith noted that NGI's mounding calculations had used a simulation time of 30 days, and recommended that 90 days should be used instead. This comment was not addressed, and Mr. Smith ultimately noted that the 90-day mounding time represents a condition where the mound has reached steady-state mound height, and does not relate to the length of time seasonal high groundwater occurs. Using site data, a groundwater mound calculated at 90 days is 0.5 foot higher than a mound calculated using 30 days. GHC recommends that the groundwater mounding calculations be run using the MassDEP Guidelines specified 90 days.
- vi. Mr. Smith noted that NGI's solute transport modeling included decay and reaction terms which reduce the total nitrate-nitrogen mass and resulting concentrations. Mr. Smith recommended that the solute transport be conducted using an advection-dispersion only transport without the use of any terms that decrease nitrate mass. This comment was not addressed, and Mr. Smith ultimately noted that the use of a retardation factor in the transport analysis causes loss of

nitrate along the flow field. GHC recommends a conservative advection dispersion transport analysis with no retardation of nitrate.

Letter from Stephen W. Smith to Steven Ventresca, P.E. dated May 14, 2015 (Brem 220). The Applicant did not respond to this last round of peer review comments from Mr. Smith.

52. Scott Horsely, a hydrogeologist retained by a group of abutters, submitted a response to the NGI report, and many of his comments echoed those of Mr. Smith. Mr. Horsley's stated as follows:

- i. The test pit and monitoring well data confirm that the Property has shallow depth to bedrock (refusal) of 9-15 feet, very limited saturated thickness (groundwater in the overburden) of 3-9 feet, shallow depth to the water table (as low as 2 feet beneath the land's surface), and a low permeability of 2-24 feet/day. These characteristics create significant constraints in siting subsurface wastewater disposal systems.
- ii. The test pit and monitoring well data indicate that groundwater mounding will be pronounced and raise serious questions regarding the minimum 4 foot vertical separation beneath the leaching/disposal fields and seasonal high groundwater (water table), which is required by Title V and good design practice.
- iii. While NGI's mounding analysis suggests a minimal increase in the water table, it failed to take into account cumulative mounding from stormwater and wastewater discharges.
- iv. NGI used a 30-day mounding analysis, "far too short a time for this analysis"; the steady state mound height will likely be far greater than that calculated after 30 days, and the mounding analysis should be redone.
- v. NGI's nitrogen loading analysis understated probable impacts of the proposed wastewater discharges, in part because it incorrectly assumed dilution of the proposed wastewater with all recharge on the site. MassDEP's recommended method to determine nitrogen concentrations requires that the proposed wastewater discharge is diluted with only the groundwater that is directly above and down gradient of the discharge area.
- vi. NGI used a solute transport model to estimate downgradient nitrogen concentrations that relied upon two additional factors to reduce downgradient concentrations of nitrogen—dispersion and decay. Neither factor is allowed in the recommended MassDEP nitrogen loading model. Both factors are recognized

to be minimal/insignificant and can overestimate nitrogen reductions in groundwater.

Letter from Scot Horsley to Daniel C. Hill dated April 10, 2015 (Brem 202).

53. James H. Vernon, Ph.D, P.G., Senior Hydrogeologist at Nobis Engineering, Inc., was retained by the Board of Selectmen to conduct an independent analysis of the hydrogeology of the Property and the surrounding area on behalf of the Town and the ZBA.

54. In his Phase 2 Report dated May 1, 2015 (Brem 212), Dr. Vernon conducted a mechanistic analysis of predicted nitrogen concentrations at the Project under four different scenarios: Scenario 1 was for a design discharge rate of 110 gpd for the entire 9.84 acre Property, Scenario 2 was for a design discharge rate of 165 gpd per the Town's local regulations for the entire 9.84 acre Property, Scenario 3 was for the design discharge rate of 110 gpd and excluding the land area east of the brook, which is not believed to be available for dilution of nitrate, and Scenario 4 was for the design discharge rate of 165 gpd and similarly excluding the area east of the brook.

Scenario 1 resulted in a predicted nitrogen load of 11.9 mg/, Scenario 2 resulted in a predicted nitrogen load of 14.0 mg/L, scenario 3 resulted in a predicted nitrogen load of 13.6 mg/L, and scenario 4 resulted in a predicted nitrogen load of 15.5 mg/L.

55. Dr. Vernon was then asked by the ZBA—based in large part by comments received from the Applicant—to calculate nitrate loading and mass balance according to the specific method presented in “Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading, 310 CMR 15.216,” revised February 11, 2015, including the determination of the Areas of Impact (AOIs).

56. The AOI for Septic Disposal Area 1 results in a predicted nitrate concentration of 16.6 mg/L in the nearest sensitive receptor, proposed Well A10. Dr. Vernon noted that if an AOI were delineated to proposed Well A11, the results would be expected to be similar. In addition, Dr. Vernon did not have time as of the date of his report to delineate an AOI extending further to the existing well at 90 Long Ridge Road, and noted that there was not enough information to conclude that a result at 90 Long Ridge Road would be less than 10 mg/L or 5 mg/L for nitrate. Dr. Vernon also recommended delineating AOIs for the existing wells serving 200 Long Ridge Road and 68 Garnet Rock Lane if it is determined there is groundwater flow to the south and southwest of proposed Septic Disposal Area 1, as his preliminary calculations, analysis and findings suggest.

57. The AOI for Septic Disposal Areas 2 and 3 results in a predicted nitrate concentration of 11.8 mg/L in the nearest sensitive receptor, proposed Well A4. Dr. Vernon predicted a similar result for proposed Well A8. Dr. Vernon did not delineate AOIs or perform mass balance calculations at the property line relative to Septic Disposal Areas 2 and 3, but predicted that the result would be greater than the 11.8 mg/L result for proposed Well A4, discussed above, since the distance to the property line is substantially less than that to Well A4.

58. Dr. Vernon concluded that the bedrock at the Property features near-vertical fractures. Once groundwater reaches the network of bedrock fractures, it can travel quickly, and the presence of vertical fractures increases the likelihood that wastewater will reach the nearby downgradient drinking water wells, including the proposed drinking water wells within the Project.

59. The DEP's Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading lists "18 inches per of recharge over one acre of land" among several assumed values to be used in the calculation. The Guidance document further provides, however, that these assumptions will apply in most cases and that the applicant may use other assumptions to better address site specific conditions. Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading, at p. 12.

60. When conducting the nitrate calculations discussed above, Dr. Vernon used 18 inches per acre per year as the input for groundwater recharge from precipitation. This was done as an accommodation to the Applicant, and in an attempt to determine what results would obtain when adhering as closely as possible to the DEP Guidance document. In prior reports submitted to the ZBA, both Dr. Vernon and NGI had used the site-specific figure of 8.2 inches per year of recharge per acre. In his Phase 2 reports, Dr. Vernon stated as follows:

Water budget inputs from precipitation have been estimated by NGI at 20% of the average annual precipitation; for the Site, this amounts to 8.2 inches per year distributed over the 9.84 acres of the Site, for a total of about 7.8 million liters per year (NGI Report, Table 2), or about 2 million gallons per year. Nobis agrees that 20% is a reasonable assumption for the sandy glacial till deposits at the Site.

Phase 2 Report—Independent Hydrogeologic Study—100 Long Ridge Road, Carlisle, MA at pp. 8-9 (Brem 212).

If the more site-specific figure of 8.2 inches per year were to be used in the nitrate calculation, a more realistic prediction would result for this Property, and the predicted nitrate concentrations discussed above would increase significantly based on the reduced amount of recharge that would realistically be anticipated for this Property.

61. Dr. Vernon specifically noted that his calculations were for the overburden and are not predictive of nitrate concentrations in any particular well drilled in bedrock. Dr. Vernon is of the opinion that without subsurface investigations of the potential hydraulic connectivity between the proposed septic disposal areas (in the overburden soils) and specific existing and proposed wells (in bedrock), it is not possible to determine that nearby wells are reasonably safe from potential impacts. Mr. Vernon highly recommended that further testing should occur to ensure that public health is safeguarded.

62. The concerns relating to the nitrogen concentration in the groundwater is exacerbated by the fact that the Applicant is currently proposing to use an "alternative system" that provides the highest degree of nitrogen removal currently

available. Stated differently, there septic system cannot be upgraded or improved to provide greater nitrogen removal at the Property.

63. The depth to bedrock at the Property is substantially less than is prevalent elsewhere in the Town of Carlisle, and the depth to bedrock in the Town of Carlisle, generally, is substantially less than is found in the immediately surrounding communities. (Brem 280, 281, 282). Dr. Vernon and Scott Horsley each also cited the shallow depth to bedrock at the Property. Based on this characteristic of the Property, the space available in the overburden soils for dilution and attenuation of wastewater discharge from septic systems at the Property is less than typical Carlisle sites and substantially less than the conditions found in surrounding towns.

64. In Carlisle, the subsurface is used for both wastewater disposal and water supply to the bedrock aquifer. Wastewater disposed in overburden soils readily migrates as a plume. Where depth to fractured bedrock is close to the surface, it may intercept a wastewater plume and, once in a bedrock fracture system, wastewater may migrate to nearby wells quickly. Based on the foregoing, Nitsch Engineering indicated that the use of 165 gpd design flow for septic systems provides a factor of safety and should be adhered to for this Project.

65. In the letter dated April 17, 2015 (Brem 206), Nitsch Engineering recommended that the Applicant provide an offset of 150 feet as required by the Board of Health's regulations, unless it can provide evidence that the proposed septic systems will not impact any of the existing or proposed drinking water wells with a lesser 100-foot offset. Nitsch also recommended that the Applicant adhere to the 165 gpd per bedroom design flow required by the Board of Health's regulations. Nitsch also recommended that the Applicant comply with the limit of 5 mg/L of nitrogen at the perimeter boundary as required by the Board of Health's regulations.

66. The ZBA finds that the Applicant cannot be allowed to avoid both the regulatory protections that DEP imposes on a public water system and the local environmental protections that the Town imposes on private wells. Indeed, strict adherence to the Town's local protections is particularly crucial where the Applicant seeks to take a water supply serving a population of this size outside of DEP's purview.

Based on the testimony received during the public hearing, the ZBA finds that the Applicant's proposed private water supply system and wastewater disposal system together pose a threat to the quantity and quality of the water in the existing wells of abutting property owners and the proposed on-Property wells.

Given the likelihood that the Project's wells and septic systems are hydraulically connected to at least some of the abutter's wells, and the fact that Carlisle does not have a public water system to serve as backup should a problem occur, the ZBA finds that the interests of public health and safety mandate compliance with the 150' setback between large systems and any drinking water wells, well tests for certain of the closest abutter's wells, and for the Applicant to provide some means of security in the event of any well failure attributable to the Project once occupied.

67. Throughout the public hearing, the ZBA carefully avoided any effort to redesign the Project, and focused primarily on the public health and safety issues related to the Applicant's proposed density and design in an area that is entirely reliant on private drinking water wells and on-site subsurface sewage disposal. When the ZBA and its consultants identified serious public health and safety issues, however, the Applicant was unwilling to make any meaningful revision to its preferred development.

As a result, the ZBA finds that the Project may only be approved subject to certain local septic and drinking water regulations for which the Applicant had sought waivers, and subject to certain conditions of approval, that are essential to adequately safeguard the public health and safety. In particular, the ZBA must require compliance with the Board of Health's requirement that the Applicant demonstrate that there will be no more than 5 mg/L of nitrogen at the perimeter boundary; compliance with the setback of 150 feet from a large septic system to a drinking water well; and compliance with the Board of Health's design flow regulation, mandating that each bedroom shall be presumed to generate 165 gallons of wastewater per day.

Chapter 40B requires the ZBA to balance the Town's legitimate land use, planning, environmental, and public safety interests against the need for affordable housing. It must find a balance that preserves the integrity of the Town's local bylaws and regulations to the greatest extent possible while also addressing the demand for housing for the area's low and moderate income families.

Under conventional zoning, the Property could likely accommodate 4 single family homes (the minimum lot size is 2 acres, and the Property contains 9.84 acres total). While the Property cannot safely accommodate the development of 20 housing units as currently designed, it can accommodate more than four single-family homes if the development is planned and constructed appropriately. The ZBA does not make any specific findings as to what alternative density and/or project design the Applicant should pursue in accordance with this Decision. Rather, by denying certain waivers and imposing the conditions of approval set forth below, the ZBA intends to require the Applicant to demonstrate that the public health and safety of the existing area residents and the new residents of the Project will be adequately protected.

VI. WAIVERS FROM LOCAL BYLAWS AND REGULATIONS

The ZBA voted to GRANT the following specific waivers:

Zoning Bylaws:

1. Section 3—District Use Regulations. Pursuant to Section 3 of the Zoning Bylaw, this Project is not a permissible use of property within the Residence B District. This waiver is granted so as to allow for the development of a twenty (20) unit housing development on a single lot in the Residence B District.
2. Section 4.3.2—Side and Rear Setbacks in a Residence B District. Pursuant to this section, no building may be erected in a Residence B district closer than forty (40) feet to any side or rear lot line. The ZBA believes that every effort should be made to adhere to the 40-foot setback requirement, but is willing to grant relief provided that the Applicant (1) maintain the setbacks for each unit that is shown on the Approved Plans and (2) shall be required to supplement the landscaping and fencing buffers as discussed in the Conditions of Approval, below. Accordingly, this waiver is conditionally granted.
3. Section 5.4.4—Common Driveways. Pursuant to this section, a maximum of six (6) lots may be accessed by a private driveway. This Project involves twenty (20) units on a single lot, but to the extent that this waiver may be deemed to be necessary, it is granted to allow the road to be constructed as shown on the Approved Plans (as defined in Condition of Approval 1, below).

Subdivision Rules and Regulations

4. Article III, Section 2.A(1). This regulation states: “A Subdivision, or continuation of a Subdivision, shall not have fewer than two (2) noncontiguous accesses with existing Town Roads except in a Subdivision of ten (10) or fewer building Lots having legal frontage on a single Dead-end Street.” This waiver is granted to allow the road to be constructed as shown on the Approved Plans.
5. Article III, Section 2.A(2). This regulation states: “Roads within a Subdivision shall be laid out such that the closure of any single Road will deny access to no more than ten (10) building Lots. Included in this count are any existing Lots with denied access, plus those of the Subdivision.” This waiver is granted to allow the road, and the Project generally, to be constructed as shown on the Approved Plans.
6. Article III, Section 2.B(1). This regulation states, in pertinent part: “Intersections along an existing and/or a proposed Local Street shall have minimum centerline offsets of not less than one hundred and twenty-five (125) feet.” This waiver is granted to allow the road to be constructed as shown on the Approved Plans.

7. Article III, Section 2.B(4). This regulation states: “The minimum centerline radius shall be as shown on Exhibit E. Warning signs shall be provided where appropriate.” Exhibit E shows a centerline radius of 125’. This waiver is granted to allow the road to be constructed with a centerline radius of 80’ as shown on the Approved Plans.

8. Article III, Section 2.D(1). This regulation states: “No part of the Street Right-of-way shall be more than one thousand (1000) feet measured by the centerline from the point of closure referred to in the definition of a Dead-end Street in Article II, Section 1 of these Regulations and no Dead-end Street shall provide legal frontage for more than ten (10) building Lots.” This waiver is granted to allow the road, and the Project generally, to be constructed as shown on the Approved Plans.

9. Article III, Section 2.D(2). This regulations states: “Dead-end Streets shall be provided at the closed end with a Cul-de-Sac turnaround having an outside Street line diameter of one hundred and sixty (160) feet, with an outside diameter of the paved surface of one hundred and forty (140) feet. A landscaped island having a diameter of one hundred (100) feet shall be provided in the center of the turn-around and the natural vegetation shall be retained where possible; in areas that cannot retain the natural vegetation, a landscaping plan shall be provided for the Cul-de-Sac island.” This waiver is granted to allow the diameter of the Cul-de-Sac turnaround to be constructed as shown on the Approved Plans; landscaping within the landscaped island shall be consistent with the Approved Plans.

10. Article III, Section 2.D(4). This regulation states: “No more than three Lots can be accessed on the Cul-de-Sac.” This waiver is granted to allow four residential units to be accessed on the Cul-de-Sac, as shown on the Approved Plans.

11. Article III, Section 5.G(3)(i). This regulation states: “Infiltration of runoff from impervious surfaces (other than roof runoff) shall only be allowed where pretreatment of runoff for sediment removal of eighty percent tss (total suspended solids) is provided.” This waiver is granted to allow the stormwater management system—which was the subject of extensive review by Nitsch Engineering and revision in response to Nitsch’s comments—to be constructed as shown on the Approved Plans.

Carlisle Supplemental Septic Regulations

12. 15.100—General Provisions. This regulation states, in pertinent part, that for septic systems with a design wastewater flow of 2000 gallons per day or greater “[m]odels shall predict no rise in ground water elevation and no greater than 5 mg/L of total nitrogen at the perimeter boundary.” To the extent that this regulation requires that “[m]odels shall predict no rise in ground water elevation...at the perimeter boundary,” it is waived in part. The ZBA recognized that some change in ground water elevation is inevitable due to the asymptotic nature of ground water mounding flow. In recognition of this fact and the intent of the Board of Health’s regulation to limit nitrate impacts of large disposal filed discharges across property lines, the Applicant must provide an analysis prepared by a qualified engineering professional that demonstrates that the proposed SAS configuration will limit

effluent flows across property lines to no more than 2% of the design waste water flow entering the disposal field.

Zoning Board of Appeals' Comprehensive Permit Rules
Attachment A—Performance Standards

13. Section II.A.2—Setbacks. This performance standard states: “No building shall be erected or altered so as to extend nearer to the line of any street or nearer to its front lot line, where different, than forty (40) feet and no building shall be erected or altered so as to extend nearer to any side or rear lot line of its lot than forty (40) feet. In addition, in nontraditional developments (developments other than single-family homes on individual building lots conforming to the Zoning Bylaws and local boards’ rules and regulations), such as a development with attached homes or density not following Section 4.1.1 of the Zoning Bylaws, all residential buildings are to be located at least 100 feet from the boundary of the property subject to development, at least 50 feet from any Open Space, and at least 30 feet from other residential buildings, as set forth in Section 5.7.4.16 of the Zoning Bylaws.” The ZBA believes that every effort should be made to adhere to the 100-foot setback requirement. The increase in setbacks to 100 feet from the property boundary for projects denser than one-unit per lot is reasonable in the context of Carlisle, the ZBA understands that the Project cannot be built with the 100-foot setback applied strictly. Accordingly, the ZBA is willing to grant relief provided that the Applicant (1) maintain the setbacks for each unit that is shown on the Approved Plans and (2) shall be required to supplement the landscaping and fencing buffers as discussed in the Conditions of Approval, below. Accordingly, this waiver is conditionally granted.

14. Section II.A.5—Units on Common Drives. This performance standard states: “Drives and roads that are not built to the standards for a roadway that may be accepted by the Town as a public way should limit the number of homes or units within the development to no more than six.” This waiver is granted to allow the road, and the Project generally, to be constructed as shown on the Approved Plans.

15. Section II.B.2.c. This performance standard states: “Where a common driveway exceeds 300 feet in length, turnouts shall be installed and maintained...at reasonable intervals, but at least every 300 feet, in order to allow vehicles to pass.” This waiver is granted to allow the road to be constructed without turnouts, as shown on the Approved Plans.

16. Section II.B.2.e.i. This regulation states: “Dead-end streets shall be provided at the closed end with a Cul-de-Sac turnaround...with an outside diameter of the paved surface of one hundred and forty (140) feet [and a] landscaped island having a diameter of one hundred (100) feet shall be provided in the center of the turnaround.” This waiver is granted to allow the road to be constructed as shown on the Approved Plans.

17. Section II.B.2.e.iii. This regulation states: “No more than three dwelling units shall be accessed directly from a Cul-de-Sac.” This waiver is granted to allow four dwelling units to be accessed directly from the Cul-de-Sac, as shown on the Approved Plans.

18. Section II.B.2.f. This regulation states: “A development shall have not fewer than two (2) noncontiguous accesses with existing Town roads except in a development of ten (10) or fewer homes or units having legal frontage on a single dead end street. Roads within a development shall be laid out such that the closure of any single road will deny access to no more than 10 homes or units.” This waiver is granted to allow the road to be constructed as shown on the Approved Plans.

* * * * *

The ZBA carefully considered each waiver requested by the Applicant, evaluating all of the evidence and argument that the Applicant presented in support of its request, and seeking expert input from its peer review consultants where appropriate. It is the intention of the ZBA to grant only those specific waivers discussed above. If, in reviewing the Applicant’s Proposed Final Approved Plans or building permit application(s), the Building Commissioner determines that any additional waiver is needed, all matters shall be reported back to the ZBA for disposition of the Applicant’s waiver request.

The ZBA voted to DENY the following specific waivers:

Carlisle Supplemental Septic Regulations

1. 15.100—General Provisions. This regulation states, in pertinent part, that for septic systems with a design wastewater flow of 2000 gallons per day or greater “[m]odels shall predict no rise in ground water elevation and no greater than 5 mg/L of total nitrogen at the perimeter boundary.” To the extent that this regulation requires that “[m]odels shall predict...no greater than 5 mg/L of total nitrogen at the perimeter boundary” the waiver is denied.
2. 15.211—Distances. This regulation states, in pertinent part: “The minimum setback distance between a system 2000 GPD or larger to a well is 150’.” The applicant requested a waiver to allow for a setback of 100 feet.
3. 15.221—General Construction Requirements for All System Components. Pursuant to this regulation, septic systems serving three (3) bedroom houses must have a design flow of 165 GPD per bedroom. The applicant requested a waiver to allow for a design flow of 110 GPD.
4. 15.290-293(5). This section states as follows:

Condominium systems “with design flows of 2000 gpd or greater shall meet a minimum design flow requirement of 165 gpd per bedroom. Monitoring wells used for the hydrogeological study shall remain in place, unless their removal or capping is authorized by the Board of Health. The Board of Health reserves the right to maintain the wells and continue monitoring as it deems appropriate. System owners are required to test available monitoring wells for fecal coliform, TSS, BOD and Total Nitrogen and submit the results to the Board of Health at least once every three years in conjunction with the required Title 5 inspections.

The applicant requested a waiver to allow design flow of 110 GPD.

Water Supply Regulations

5. Section VI. The applicant requested a waiver of Section VI’s requirement that wells “shall be located a minimum of...one hundred and fifty (150) feet from systems 2000 GPD or greater.” The Applicant requested a setback of 100 feet.

Zoning Board of Appeals’ Comprehensive Permit Rules

6. Section 3.02—Filing Fee. This rule states: “The application shall be accompanied by a filing fee to cover the costs associated with statutorily required notice and mailings plus an additional cost based upon the number of proposed housing units: a) for Limited Dividend Organizations pursuant to a project eligibility

letter issued by a federal or state agency-\$1,000 per unit plus \$5000 filing fee.” The applicant requested that this fee be partially waived, so as to reduce the fee to \$4000.

Carlisle Nonzoning Wetland Bylaw

7. The Applicant sought a waiver of the filing fees established by the Carlisle Nonzoning Wetland Bylaw.

General Waiver

8. The Applicant requested “that the Carlisle Zoning Board of Appeals grant relief from any other zoning requirement or other applicable local rule, regulation, bylaw or policy which the Carlisle Zoning Board of Appeals determines to be applicable to the Project and which is not met by the current site plan or any subsequent site plans reflecting changes resulting from the Zoning Board of Appeals’ review of the Project.” Letter from Douglas C. Deschenes dated September 26, 2014.

DRAFT

VII. CONDITIONS OF APPROVAL

For the foregoing reasons, the ZBA grants the Application of Lifetime Green Homes, LLC for a comprehensive permit consisting of no more than twenty (20) for-sale, single-family detached condominium units on the Property under M.G.L. c.40B, §§20-23, subject to the following conditions.

The Project:

1. The Project shall be constructed in substantial accordance with the following plans, subject to all revisions specifically provided for in these Conditions of Approval:

[insert full list of all up-to-date plans]

(the “Approved Plans”).

2. This Decision permits the construction, use and occupancy of twenty (20) housing units on the Property. No additional housing units may be added to the Property.

3. The unit models to be constructed within the Project are (1) “Calinda”, (2) “Brandywine Classic,” (3) “Brandywine Gold,” and (4) “Goldenrod”, all as designed by Art Form Architecture, and shown on the documents presented in Exhibit. Only these particular housing units may be constructed within the Project, and these housing units shall be distributed as follows:

Calinda—Units 1, 3, 4, 5, 7, 9, 10, 13, 14, 15, 16
Brandywine Classic—Unit 8
Brandywine Gold—Units 11, 12, 17
Goldenrod—Units 2, 6, 18, 19

Unit 20 is the preexisting four-bedroom house that exists on the Property. Unit 20 shall remain in place in its existing form and shall become a part of the Project subject to all of the conditions of approval contained in this decision.

4. The twenty (20) units allowed at the Property shall contain a maximum of 58 bedrooms, distributed as follows:

Calinda—3 bedrooms per unit (x 11 units)
Brandywine Classic—3 bedrooms per unit (x 1 unit)
Brandywine Gold—2 bedrooms per unit (x 3 units)
Goldenrod—3 bedrooms (x 4 units)
Preexisting four-bedroom house (Unit 20)—4 bedrooms (x 1 unit)

No additional bedrooms are allowed within the Project. No space within any individual unit that is not shown as a bedroom on the plans attached as Exhibit _ may be converted to a bedroom, or used as a sleeping area. No space within the

preexisting four-bedroom house may be converted to provide an additional bedroom or sleeping area.

5. Units 1-19 shall be constructed within the footprints shown on the Approved Plans and Unit 20 shall be limited to its existing footprint. Units 1-20 shall be set back from (1) all other structures within the Project and (2) the Property's lot lines at least by those distances shown on the Approved Plans, except as follows:

[insert any increased setbacks that will not be shown on the Approved Plans].

6. Units 1-20 may not be changed or revised, including dormers, so as to create additional interior space.

7. No additional accessory structures, sheds, outdoor enclosures, impervious surfaces or infrastructure not shown on the Approved Plans shall be allowed in connection with the use of any residential units.

8. Units 1-20 shall each have exactly two (2) dedicated off-street driveway parking spaces as shown on the Approved Plans.

Pre-Construction Submissions:

9. Prior to commencement of any site clearing or construction (whether pursuant to a building permit or otherwise), the Applicant shall submit to the ZBA and the Building Commissioner the following construction-level plans and calculations (the "Proposed Final Plans") for the Project. Said Proposed Final Plans shall include plans for the roadways and related infrastructure, stormwater management facilities, the approved septic systems, the approved water supply wells, and architectural plans, including the final architectural drawings for the units to be constructed that are materially consistent with Exhibit A and the conditions of this Decision, providing a scaled depiction of the front, rear and side elevations with accompanying specification sheets for all exterior lighting fixtures, stamped and signed by a Registered Architect or Professional Engineer, as appropriate, licensed in the Commonwealth of Massachusetts.

Said Proposed Final Plans shall be substantially in accordance with the Approved Plans except that they shall be updated in accordance with the requirements of this Decision. Along with this set of Proposed Final Plans, the Applicant shall submit a list, prepared and stamped by the Applicant's Design engineer, of the specific changes made to the Approved Plans to conform to the requirements of this Decision.

The Building Commissioner shall review the Proposed Final Plans and the list of changes to ensure that they are consistent with and in conformity with this Decision. Upon the Building Commissioner's positive finding, the ZBA shall endorse the Proposed Final Approved Plans, which shall thereupon constitute the Final Plans for the Project.

In the event that the Building Commissioner determines that the Applicant's Proposed Final Approved Plans, or its construction drawings submitted with its

building permit application(s) materially deviate from the Approved Plans and/or do not conform to the requirements of this Decision, the Building Commissioner shall notify the Applicant of the specific deviation(s) or the manner in which they do not conform, and the Applicant shall thereafter bring the plans into compliance or seek a modification of this Decision in accordance with 760 CMR 56.05(11). In the event of a disagreement between the Building Commissioner and the Applicant with respect thereto, they shall notify the ZBA which shall thereupon determine whether the Proposed Final Plans and/or building permit construction drawings do conform with this Decision. Upon finding that the plans conform, the ZBA shall endorse them; otherwise, the Applicant shall follow the procedures set forth in 760 CMR 56.05(11).

10. This Decision shall be noted on the Final Plans and both this Decision and the Final Plans shall be recorded at the Middlesex Registry of Deeds. The Applicant shall provide the ZBA with proof of recording prior to issuance of a building permit.

11. The Applicant shall maintain a copy of the Final Plans and this Decision at the Property during construction.

12. The Building Department shall not issue a building permit until it has been determined that the Final Plans are in compliance with this Decision as provided in Condition 9, above.

13. No construction activity shall occur on the Project until the Applicant shall have:

- a. Obtained Final Approval from its Subsidizing Agency and provided a copy of such approval to the ZBA and to the Building Commissioner. The Applicant shall submit the Final Approval Application to the ZBA for review at the time of submission to the Subsidizing Agency.
- b. Executed and recorded the standard Regulatory Agreement for [insert title of applicable regulatory agreement], and provided evidence of same to the ZBA and the Building Commissioner. The Regulatory Agreement shall be subject to review and approval, as to form and consistency with this Decision, by Town Counsel prior to execution, such approval not to be unreasonably withheld.
- c. Obtained DEP final authorization to operate its drinking water system as eleven (11) private drinking water wells, notwithstanding the presumptive regulatory status of this Project's drinking water supply as a "Public Water System." 310 CMR 22.02 (defining "public water system" as "a system for the provision to the public of water for human consumption, through pipes or other conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year" unless and until DEP determines that such as system "should not be regulated as a public water system, taking into account the risk to public health")(emphasis added).

- d. Assuming the Applicant has obtained final authorization from DEP to operate its drinking water system as eleven (11) private drinking water wells as noted above, the Applicant shall further have obtained final authorization from the Board of Health to construct the proposed wells in accordance with the conditions stated in this Decision and the Board of Health's Water Supply Regulations.
- e. Obtained final approvals from the Carlisle Conservation Commission or DEP that may be required under any statute, code or regulation not otherwise preempted by 40B, including a final Order of Conditions under the *Wetlands Protection Act* as to any portion of the Property subject to the *Wetlands Protection Act*.
- f. Obtained any approvals from the Carlisle Board of Health and DEP that may be required under any statute, code or regulation affecting public health that is not specifically addressed or waived by this Decision.
- g. Obtained National Pollutant Discharge Elimination System ("NPDES") storm water permit for the Project, if applicable.
- h. Submitted to the ZBA and the Building Commissioner a Construction Management Plan (CMP), as well as a Construction Management Schedule (CMS), that generally conforms to industry standard practice and addresses all construction-related conditions specifically set forth in this Decision. Additional copies of the proposed CMP shall be provided to the Planning Board, Board of Health, Conservation Commission, DPW, Fire Chief and Police Chief. The CMP shall include:
 - i. Construction phasing plan, which shall include a construction schedule in order to provide guidance and facilitate inspections. Such construction schedule shall, at a minimum, be revised quarterly to reflect work completed and changes in construction timing.
 - ii. Trucking Plan, which shall specify (i) planned truck routes (ii) estimated volumes of any imported and exported materials (iii) estimated truck trips and (iv) construction period mitigation measures consistent with the conditions stated herein, including without limitation details and locations of crushed stone entrance pads, street sweeping protocols and dust control measures to be implemented on the Property.
 - iii. Construction administration (hours of construction, hours of deliveries, trash and debris removal.
 - iv. Communication (designated contacts on site).

- v. Noise and Dust Control (tree removal, public street cleaning and repair, dust, noise, rock crushing).
- vi. Blasting.
- vii. Erosion Control (silt sacks, hay bales, silt fences, etc., tree protection plan, drainage infrastructure).
- viii. Identification of existing underground utilities.
- ix. Construction staging (staging areas, trailer locations, open storage areas, truck holding locations, re-fueling areas).
- x. Traffic and parking during construction (on-site locations, snow removal, warning signs, police details).
- xi. Fire and Emergency (timing and testing of cistern installation).

The CMP shall be subject to review and approval by the ZBA for consistency with this Decision and generally accepted construction practices.

- i. Properly marked the limits of the area that is to remain undeveloped, as shown on the Approved Plans. No construction or site development activity, including clearing, shall occur within such area. Before initiating site development activities, the Applicant shall obtain the Building Commissioner's confirmation that the flags are properly located.

Site Development Construction Conditions:

14. Construction activities on-site shall only occur between 7:00 AM and 5:00 PM Monday through Friday and between 9:00 AM and 3:00 PM on Saturday. For the purposes of this condition, "construction activities" shall be defined to include start-up or operation of equipment or machinery, delivery of building materials and supplies, removal of trees, grubbing, clearing, grading, filing, excavating, import or export of such materials, installation of utilities both on and off the Property, demolition of existing structures, removal of stumps and debris, the erection of new structures, and the installation of new infrastructure including roads.

15. The Applicant shall ensure safe and convenient vehicular access to the Property during construction at the Project.

16. The Applicant shall ensure that nuisance conditions do not exist at the Property during construction. The Applicant shall at all times use all reasonable means to minimize inconvenience to residents in the general area of the Property.

17. The Applicant shall be responsible for mitigating all construction-related impacts, including erosion, siltation and dust control.

18. The Applicant shall implement dust control operations as necessary to comply at all times with applicable law, including without limitation DEP's Dust regulations at 310 CMR 7.09, as amended, and all applicable air pollution standards as set forth by Federal and State regulatory agencies. The Applicant shall further implement such dust control measures as directed by the Building Commissioner.

19. The Applicant shall regularly remove construction trash and debris from the Property in accordance with good construction practice, and dumpsters shall be emptied when full. No tree stumps, demolition material, trash or debris shall be burned or buried on the Property. Localized burial of stones and/or boulders is prohibited to prevent the creation of voids from soil settlement over time.

20. All potential safety hazards that may exist on the Property during the period of construction shall be adequately secured prior to the end of each workday.

21. Only earth products that are intended for use on the Property shall be delivered to the Property. No earth shall be stripped or excavated and removed from the Property except in connection with road, infrastructure or permitted construction activities. No earth processing operations shall occur on the Property, unless the earth products are to be combined and/or mixed for use on the Property. All piles of stockpiled earth shall be stabilized with adequate dust and erosion controls. All piles of stockpiled earth shall be removed from the Property upon completion of construction of roads and infrastructure. Stockpiling areas shall be located in a safe place as far from Long Ridge Road and neighboring properties as practicable, and visually screened to the extent practicable. Stockpiling of materials within 400' of Long Ride Road shall be minimized and stockpiling of materials greater than 100 cubic yards within 400' of Long Ridge Road for more than 60 days shall be prohibited.

22. A licensed blasting professional shall perform any necessary blasting on the Property after proper pre-blast inspections have been conducted and all required permits have been obtained from the Carlisle Fire Department. Pursuant to M.G.L. c.148, §19, before issuance of a permit to use an explosive in the blasting of rock or any other substance as prescribed by the State Fire Marshall at the Property, the applicant for the permit shall file with the Carlisle Town Clerk a bond running to the Town, with sureties approved by the Treasurer of the Town, in the penal sum as the officer granting the permit shall determine in accordance with M.G.L. c.148, §19 to be necessary in order to cover the risk of damage that might ensue from the blasting or its keeping therefor.

23. The Applicant shall implement measures to ensure that noise from project construction activities does not exceed acceptable levels, as set forth by Federal and State regulatory agencies, including without limitation DEP's noise regulations at 310 CMR 7.10, as amended, and DEP's DAQC Noise Policy No. 90-001 (2/1/90), as amended, and shall further implement noise and vibration control measures as directed by the Building Commissioner. The Applicant shall implement necessary controls to ensure that vibration does not create a nuisance or hazard beyond the subject Property. The Applicant shall cease any noise which does not comply with

applicable regulations when directed by the Building Commissioner to comply therewith.

24. The Applicant is responsible for the sweeping, removal of snow and sanding of the internal roadways and driveways permitting access to residents, emergency vehicles, and others during construction and until the Condominium Association has been legally established and has assumed responsibility for same.

25. The Applicant shall maintain all portions of any public road used for construction access free of soil, mud or debris deposited due to use by construction vehicles associated with the Project.

26. The Applicant shall repair in a timely manner any damage to public roads adjacent to the Project that results from the construction and/or maintenance of the Project.

27. Soil material to be used as backfill for pipes, roads, and/or structures (*i.e.* detention basins) shall be certified by the Design Engineer to the Building Commissioner as meeting design specifications.

28. The Applicant shall notify the relevant Town department of installation of utilities and infrastructure for inspections prior to backfilling.

29. The Applicant shall comply with any Order of Conditions issued with respect to the Project.

30. No disturbed areas shall be left in an open, unstabilized condition longer than 30 days. Temporary stabilization shall be accomplished by loaming and seeding exposed areas in accordance with the landscaping plans.

31. All construction vehicles and all vehicles associated with those working on the Property shall be parked entirely within the Property. There shall be no parking of vehicles on Long Ridge Road, and the Applicant shall not cause congestion on the abutting public ways due to construction activities.

32. Upon issuance of this Decision, the Applicant may install and maintain signage at the Project during site preparation and construction. Such signage may include one (1) single-sided, non illuminated construction sign, the dimensions of which shall be not more than four (4) feet by eight (8) feet each, providing customary notice of Project lenders, sponsors and team. The signs shall be located on the Project, not in the Town's right of way for Long Ridge Road.

33. Construction, once commenced, shall progress through to completion as continuously and expeditiously as possible and substantially in accordance with the construction sequence and timetable approved by the ZBA during review of the CMP.

34. The Applicant shall submit to the ZBA an updated construction and permitting schedule semi-annually to assist in project status update and review.

35. The Building Department, its appointed agents and the Town's permitting boards may conduct periodic inspections during the construction of the Project to ensure compliance with this Decision, the Final Plans, and the State Building Code, and for consistency with generally-accepted construction and engineering practices for the installation of roadways, stormwater management facilities, utilities, and other common development infrastructure.

Traffic, Fire, and Public Safety:

36. All utilities, including but not limited to electric, cable and telephone shall be located underground.

37. Traffic signage shall be consistent with the requirements of the current edition of the Manual for Uniform Traffic Control Devices (MUTCD). In addition, the Applicant shall install traffic signs wherever they are deemed necessary and appropriate by the Department of Public Works and MassHighway, and shall bear the cost of all such signage and installation.

38. There shall be one (1) permanent sign identifying the Project, which shall be substantially as shown on the Landscape Sign Feature dated April 21, 2015 and attached hereto as Exhibit __. All other signs located at the Project shall conform to applicable Town regulations.

39. All roadway design standards and requirements of the Planning Board's Subdivision Rules and Regulations shall be fully complied with, except for those specific waivers granted in this Decision. The Final Plans shall indicate that roadway construction materials and thicknesses conform to the standards set forth in the Subdivision Rules and Regulations.

40. There shall be no overnight parking within the twenty-four (24) foot private roadway at any time. Pursuant to M.G.L. c.90, §18, this Comprehensive Permit authorizes the Town of Carlisle, through its Police Chief, to enforce this condition. This condition shall be incorporated into the Condominium Documents.

41. No vehicles may be parked in any unit driveway so as to encroach on the road. Pursuant to M.G.L. c.90, §18, this Comprehensive Permit authorizes the Town of Carlisle, through its Police Chief, to enforce this condition. This condition shall be incorporated into the condominium documents.

42. Guest parking shall be limited to the four (4) parking spaces, in two separate locations (containing one guest space and three guest spaces, respectively), designated on the Approved Plans. Parking by residents in the guest spaces for extended and continuous periods is prohibited.

43. A fire cistern sized to provide 45,000 gallons available for draft and an appropriate paved "bump out" shall be provided at the location shown on the Approved Plans; provided that the paved "bump out" shall be subject to any necessary authorization from the Town, which the Applicant shall pursue in good faith. The Fire Chief shall review and approve the final design and size of the cistern

prior to installation. A dedicated well to be used exclusively for the purpose of refilling the cistern shall be provided by the Applicant adjacent to the fire cistern, subject to approval by the Board of Health. A pre-construction meeting with the Fire Department, the Applicant, and the general contractor shall be held before the work begins on installing the cistern. No above-grade construction of residential structures may be initiated or framing lumber brought to the Property until the cistern is installed and operational, as certified by the Carlisle Fire Department. In accordance with the foregoing, the Applicant may obtain foundations permits prior to completion of the fire cistern.

44. The applicant shall convey to the Town of Carlisle an easement providing for access to the fire cistern. Such easement shall be satisfactory in content and in form to Town Counsel and the Fire Chief, and shall be conveyed to the Town prior to above-grade construction is initiated or framing lumber is brought to the Property.

45. The numbering system and the identification of the dwelling units shall be subject to the approval of the Building Commissioner. This system shall include a logical and easily identifiable numbering system that is uniform throughout the Project.

46. The Applicant shall obtain approval from the United States Post Office as to the placement of mailboxes for the units.

47. No exterior lighting shall be designed or installed so as to spill over onto or into any adjacent property. In addition, all exterior light fixtures specified for the Project shall cast light downward, and no light should be emitted above a horizontal plane running through the lowest part of the fixture to minimize sky glow.

48. The use of garbage grinders at the Project is prohibited. The restriction shall be included in the condominium documents, and may be enforced by the Condominium Association.

49. Outside grills shall not be permitted above [REDACTED]. There shall be no open burning permitted on the Property. These restrictions shall be incorporated into the condominium documents.

50. The Applicant (and subsequently the Condominium Association) shall maintain all landscaped areas of the Property as shown on the Landscape Plan. Dead or diseased planting shall be replaced as soon as possible in accordance with growing and weather conditions.

51. Irrigation of common area landscaping elements shall be provided exclusively by the irrigation well shown on the Approved Plans. The irrigation well shall be subject to approval by the Board of Health and shall be operated in accordance with the applicable Board of Health regulations and policies; provided, however, that:

- a. No more than 25% of the annual rainfall shall be used for irrigation, except during the construction phase when new plantings are being established.

- b. The Condominium Association shall collect and maintain pumping data from the irrigation well through a flow meter and from an hour meter and submit such data, and a statement as to the effectiveness of the irrigation well, to the Board of Health on a quarterly basis. Such records shall disclose the amount of water pumped from the irrigation well by month, and the pumping rate (*e.g.*, average 15 gallons per minute); and
- c. The Board of Health shall have the authority to declare a local water emergency and may order the irrigation well shut off for such time as it determines to be necessary to protect the potable water supply of the Project and its abutters. The irrigation well shall also be shut off upon a declaration of a drought level of “Watch” or higher by the Mass. Drought Management Task Force and shall remain shut off until the drought level is returned to “Advisory” or “Normal.” After commencement of operation of the irrigation well, the Board of Health may order the irrigation well shut off if a Project well or a private well of an abutter to the Project fails to provide water at generally acceptable rates or flow and pressure, and the Board determines that such failure probably would not have occurred but for the operation of the irrigation well. The Board of Health may further order that the irrigation well not be turned back on until the failure has been cured to its satisfaction.

52. All snow shall be removed from the road to ensure access by fire trucks and other public safety vehicles.

53. Snow shall be stored within the areas of the site shown on the Approved Plans. In the event that snow storage areas designated on the Approved Plans are inadequate for a particular storm or events, the Applicant shall remove the excess snow off-site. Snow shall not be stored in guest parking spaces or in the center of the cul-de-sac.

54. In addition to the foregoing, no plowed snow shall be allowed to encroach on any stormwater management facility located within the Project. In the event that such encroachment occurs, the Applicant shall report the incident in writing to the ZBA and to the Building Commissioner within seven (7) days. The Applicant shall initiate such remedial measures as are necessary to ensure proper functionality of the system as soon as seasonal weather conditions allow, and shall certify to the ZBA and the Building Commissioner that such measures have been completed.

55. The Project’s stormwater management infrastructure shall be constructed in accordance with the Approved Plans.

56. The Applicant shall cause the inspection, maintenance and repair the stormwater management infrastructure to be performed in strict accordance with the Operation and Maintenance plan set forth in Section 9.0 of the Final Stormwater Management Report for “The Birches” A 40B Residential Project Off Long Ridge

Road, Carlisle, Massachusetts dated July 1, 2014 and last revised February 25, 2015 (the "O&M Manual"), a copy of which is on file with the Board, and the terms and conditions of which are incorporated herein by reference. Without limiting the foregoing, the recordkeeping requirements set forth in subsection 9.3.2 (Record Keeping) and the best management practices discussed in subsection 9.3.7 (Permanent Best Management Practices) shall be deemed mandatory.

57. The Applicant shall further revise the O&M Manual to highlight the as-built locations of the roof recharge systems in the diagram of the surface and subsurface BMPs. (The O&M Manual shall not be otherwise revised without the approval of the ZBA and its peer review consultant). The revised O&M Manual shall be submitted by the Applicant along with the Proposed Final Approved Plans.

Condominium Association—General:

58. The Applicant and all of its successors and assigns shall be bound by all conditions and requirements set forth in this Decision. Any sale or transfer of rights or interest in all or any part of the Property shall include a condition that the grantee and its successors and assigns shall be bound by the terms and conditions of this Decision.

59. The Applicant shall establish a condominium owners' association (the "Condominium Association") for the Project.

60. The Condominium Association shall either self-manage the Project or shall contract with a qualified management entity that shall be subject to the provisions of this Decision.

61. The following common facilities and services of the Project shall be maintained in perpetuity by the Applicant and/or the Condominium Association, as applicable, and further shall remain forever private, and the Town shall not have, now or ever, any legal responsibility for operation or maintenance of same:

- a. Stormwater management system, including the maintenance of catch basins and the like;
- b. Drinking water system;
- c. Wastewater System;
- d. All roadways, walkways, driveways and parking areas;
- e. Snow plowing and removal;
- f. Landscaping and landscape maintenance.

The road within the Project shall never be dedicated to or accepted by the Town as a public way.

62. In accordance with the foregoing, regardless of whether the Condominium Association self manages or contracts with a management entity, it shall at all times have a qualified contractor under agreement to conduct regular inspections and all necessary maintenance and repair of the Project's storm water management system, wastewater system and drinking water system, to maintain all common area landscaping, and to perform all street maintenance and snow removal. The

Condominium Association shall, on or before January 15 of each year, submit current list of all such contractors, with contact information for each, to the Building Commissioner to demonstrate ongoing compliance with this condition.

63. The Condominium Association shall, on or before January 15 of each year, submit a current list of its Trustees, and shall designate a lead contact responsible for communicating with the Town, its officials and representatives, and a backup contact. Contact information for those designated as lead and backup shall be provided.

64. The condominium documents shall include a realistic condominium fee budget based upon comparable developments that have been occupied for at least two (2) years, and shall include adequate provision for all inspection, maintenance, repair and replacement of the Project's significant infrastructure components, as discussed more specifically below.

65. The Affordable Units shall be distributed proportionally among any Condominium sub-associations (discussed below) established for purposes of managing, maintaining, and/or financing the drinking water wells and/or septic systems.

66. The condominium documents shall provide for the maintenance and repair of the roadway in a safe and passable condition, including sufficient access for fire, police, and emergency vehicles during all seasons and weather conditions, including the removal of snow and ice and the clearing of brush and foliage.

67. The following covenants shall be included in the Master Deed and in the individual unit deeds:

- a. For each individual unit, all structures and impervious surfaces shall be contained within the footprint shown on the Approved Plans. Sheds and other accessory structures associated with the individual units are prohibited.
- b. There shall be no conversion of interior space into additional bedrooms (as compared to the floor plans attached hereto as Exhibit A).
- c. All yard and landscaping waste shall be disposed of off-site. Under no circumstances shall yard or landscaping waste be disposed of within the wooded portion of the Project.
- d. Resident parking in the guest spaces within the Project for extended and continuous periods shall be prohibited.
- e. Spillage of light onto neighboring properties is prohibited.
- f. The use of garbage grinders is prohibited.
- g. Storage of flammable, combustible or explosive materials, other than lighting and cleaning fluids customary for residential use, within any unit is prohibited.
- h. Irrigation using the potable water supply is prohibited.

68. The condominium documents for the Project shall provide that:

- a. There shall be no amendments to provisions regarding or relating to the Affordable Units or conditions set forth in this Decision without ZBA approval.
- b. The affordable units shall remain affordable in perpetuity.
- c. The Master Deed shall reference the Deed Rider and the Regulatory Agreement.
- d. All votes shall be one unit one vote except where the condominium statute requires percentage interest votes.
- e. To the extent permitted by law, at least 25% of the trustees of the Condominium Association shall be owners of the Affordable Units unless a sufficient percentage of such Unit Owners are unwilling to be trustees.
- f. The Master Deed shall provide that in the event of condemnation or casualty of any Affordable Unit(s), any insurance proceeds above the resale price of said Affordable Unit(s) as set forth in the Deed Rider shall be given to the Town to be used for affordable housing.

69. The condominium documents shall provide that each unit is to be used for residential purposes.

70. The condominium documents shall establish procedures for design review by the Condominium Trust or its designee of all alterations, and improvements of individual units. This procedure shall ensure that the architectural integrity of each unit shall not be modified without the approval of the Board of Trustees and that no unit may be altered in any manner that is not consistent with the terms and restrictions set forth in this Decision.

71. The condominium documents shall provide that no space within any unit shall be modified or improved so as to serve as an additional bedroom (relative to the floor plans attached as Exhibit ___), and the Condominium Association shall require certification of the same as part of its design review process for any proposed modifications and improvements.

72. Prior to the issuance of any building permit for the Project, the Applicant shall submit to the ZBA the condominium documents (Master Deed, Declaration of Trust, Bylaws, Rules and Regulations) for review and approval by Town Counsel and for verification that such documents are consistent with this Decision. At the time that the documents are provided to Town Counsel, the Applicant shall certify that such documents are in compliance with M.G.L. c.183A.

73. The Project will be constructed in two phases, with the scope of each phase being substantially as shown on the Approved Plans. The Applicant shall ensure that construction of Phase 2 does not unreasonably affect the use and enjoyment of the residents of Phase 1.

Condominium Association—Stormwater Infrastructure

74. The Condominium Association shall cause the inspection, maintenance and repair of the stormwater management infrastructure to be performed in strict

accordance with the Operation and Maintenance plan set forth in Section 9.0 of the Final Stormwater Management Report for “The Birches” A 40B Residential Project Off Long Ridge Road, Carlisle, Massachusetts dated July 1, 2014 and last revised February 25, 2015 (the “O&M Manual”), a copy of which is on file with the Board, and the terms and conditions of which are incorporated herein by reference. Without limiting the foregoing, the recordkeeping requirements set forth in subsection 9.3.2 (Record Keeping) and the best management practices discussed in subsection 9.3.7 (Permanent Best Management Practices) shall be deemed mandatory.

75. The Master Deed shall specifically reference the O&M Manual, and shall bind the Condominium Association to arrange for regular inspection, maintenance and repair of the stormwater management system by a qualified contractor to ensure its effectiveness for as long as the Project is in existence.

76. The Condominium Association shall include in its annual budget adequate funds to conduct all routine repair and maintenance of the stormwater management system in accordance with the O&M Manual, and shall provide for adequate annual funding to create a savings reserve so as to provide for the timely replacement of failed system components.

77. The Applicant and the Condominium Association, as may be applicable, shall submit an annual report to the Building Commissioner in which a qualified contractor certifies that it has timely performed all inspection, maintenance and repair called for by the O&M manual. Such report shall be filed no later than January 15 of each year.

Condominium Association—Septic Systems

78. The Condominium Association shall cause the inspection, maintenance and repair of the septic systems to be performed in strict accordance with the manufacturer’s operation and maintenance manual. The Condominium Association shall submit an annual report to the Building Commissioner in which a qualified contractor certifies that it has timely performed all inspection, maintenance and repair called for by such manual. Such report shall be filed no later than January 15 of each year.

79. Pursuant to Section 15.290.3 of the Town of Carlisle’s Supplementary Regulations for Sewage Disposal Systems, the Applicant shall contemporaneous with the permitting of its septic systems be required to provide an insurance policy, bond, or other financial instrument to guarantee long term operation and maintenance of the system, which shall have a face value not less than the current replacement cost of the system as determined by a professional engineer, registered sanitarian or licensed installer, and which shall be submitted annually to the Board of Health along with the sewage disposal system report.

In accordance with the foregoing, unless an alternative form of security satisfactory to the Board of Health is provided, the Condominium Association shall establish and maintain (1) an Operations and Maintenance Fund, to be held by the system owner(s) for normal and regularly occurring maintenance, (2) a Working Capital Fund to be

held by the system owner(s) for the current and future replacement and repair expenses of the system, and (3) a Reserve Fund, to be held by the Town, to provide for the replacement of Septic Systems at the end of their useful lives. Such funds held by the Association shall be separate and apart from other funds in its custody.

The schedule of deposits to the Working Capital Fund and Reserve Fund shall be such that each contains 25% and 75%, respectively, of the replacement value of the septic systems at the end of the anticipated life span.

The number and types of such funds, and the schedule of sums to be deposited therein, shall be subject to the review and approval of the Board of Health as part of its review of the applications under Title 5 and the Town's Supplementary Regulations for Sewage Disposal Systems.

Prior to the commencement of operation of the septic systems, and annually thereafter, the Condominium Association shall determine the amount necessary to provide the sums needed to be paid over the next twelve month period to support the maintenance of the septic systems to be deposited in the Operations and Maintenance Fund and these assessments shall be made proportionately to the owner of each unit.

Condominium Association—Water Supply

80. In the event that the DEP allows this Project to proceed without provision of a public water system (see Finding of Fact ____, above), the condominium documents shall provide that each set of unit owners served by a particular drinking water well (hereinafter, a "sub-association") shall have (1) exclusive ownership and control of said well and all associated infrastructure, (2) the legal right to operate, maintain and/or upgrade the well, and (3) permanent easements for all well equipment located outside a given unit's exclusive use area.

81. In the event that the DEP allows this Project to proceed without provision of a public water system (see Finding of Fact ____, above), the condominium documents shall provide that each sub-association served by a particular well shall, upon the failure of such well, possess the legal right to site a new drinking water well, associated infrastructure and appurtenances in such alternative locations within the Property as may be necessary or required by the Board of Health to provide adequate drinking water to such individual units, and that upon the creation of a new well the relevant units owners will thereafter have (1) exclusive ownership and control of said well and all associated infrastructure, (2) the legal right to operate, maintain and/or upgrade the well, and (3) permanent easements for all well equipment that is located outside a given unit's exclusive use area. Notwithstanding the foregoing, any new well shall be subject to all applicable State and local regulations and permit requirements.

82. The condominium documents shall provide that for each sub-association served by a particular drinking water well, there shall be established a (1) an Operations and Maintenance Fund, to be held by the system owner(s) for normal and

regularly occurring maintenance, (2) a Working Capital Fund to be held by the sub-association system owner(s) for the current and future treatment, repair and/or replacement expenses of the well, and (3) a Reserve Fund, to be held by the Town, to provide for the replacement of the well at the end of its useful life. Such funds that are held by the Association or sub-association shall be separate and apart from other funds in its custody.

Prior to the commencement of operation of the well, and annually thereafter, the Condominium Association shall determine the amount necessary to provide the sums needed to be paid over the next twelve month period to support the maintenance of the well to be deposited in the Operations and Maintenance Fund and these assessments shall be made proportionately to the owner of each unit. The schedule of deposits to the Working Capital Fund and Reserve Fund shall be such that each contains 25% and 75%, respectively, of the replacement value of the well at the end of the anticipated life span. The number and types of such funds, and the schedule of sums to be deposited therein shall be subject to the review and approval of the Board of Health as part of its review of the applications under the Town's Well Regulations.

83. The condominium documents shall provide for the maintenance and repair of the irrigation well by the Condominium Association.

Water Quality and Water Quantity Conditions:

84. The Applicant shall comply with the Board of Health's Supplementary Regulations for Sewage Disposal Systems except as specifically waived in Section ____, above. In accordance with the foregoing, the Applicant shall revise the Project to provide the minimum setback of 150' from the septic systems to all proposed and existing wells and to provide septic systems with a design flow of 165 gpd per bedroom. The Applicant shall also demonstrate to the Board of Health, through analyses prepared by qualified engineering professionals, at such time as it seeks permit authorizing the proposed septic systems, that there shall be no greater than 5 mg/L concentration of total nitrogen at the perimeter boundary, and that the proposed SAS configuration will limit effluent flow across the property lines to no more than 2% of the design wastewater flow entering the disposal field.

85. The Applicant shall comply with the Board of Health's Water Supply Regulations, except as may be more specifically provided for in the testing protocol discussed below.

86. Each Phase of the Project shall be subject to a 48-hour pump test in which each proposed drinking water well within the phase and the irrigation well (if applicable) are tested collectively.

87. The Applicant shall fully comply with the Board of Health private water supply regulations with respect to the drinking water, irrigation and fire cistern wells. Site clearing for the well pump tests shall only be to the extent necessary to conduct the pump tests.

88. Contemporaneous with its private water supply pump tests for Phase 1 and Phase 2, the Applicant shall monitor the impact of the pump tests on all existing private wells within 500 feet of any proposed well within that phase in accordance with the Well Monitoring Plan and Protocol (“WMPP”) set forth under Condition __, below:

The purpose of the WMPP is to determine whether the Project, under simulated conditions, will have a detrimental effect on the quantity and/or quality of private drinking water wells on abutting properties. The WMPP shall be implemented before the issuance of building permits for the Project or any Post-Well Test Site Activities. The costs of implementing the WMPP shall be borne by the Applicant. The Applicant shall retain a civil engineer to perform the services under the WMPP and oversight of the pump testing shall be provided by an independent qualified engineer retained by the ZBA at the Applicant’s expense. The Applicant shall indemnify any abutter for damage to private property caused by its own negligence, recklessness, or intentional conduct, or that of its contractors and subcontractors, in carrying out the WMPP.

If the results of the water well testing protocol indicate that the Water Well Performance Standard (“WWPS”) forth in Condition __ below will be exceeded, the Applicant may not apply for a building permit or commence additional site clearing work until such time as the WWPS can be met.

89. Well monitoring plan and protocol. The testing of the above private wells shall be governed by the following Well Testing Protocol:

i. Water Quality.

A baseline water quality sample shall be collected from each residence and shall be submitted for laboratory analysis in a data table entitled “Long Ridge Road Water Quality testing for Abutter Existing Wells” shown below.

Long Ridge Road
Water Quality Testing for Abutters’ Existing Wells

Parameter
Alkalinity
Chloride
Color
Nitrate Nitrogen
Nitrite Nitrogen
Odor
pH
Sediment
Sulfate
Turbidity
Total Dissolved Solids
Hardness
Arsenic
Calcium

Copper
Iron
Magnesium
Manganese
Radon
Sodium
Lead
Total Coliforms

This same water quality analysis shall be completed at the end of the 48-hour pump test for Phase 1 and Phase 2 and again approximately 2-4 days after the transducers have been removed from the wells and the wells have been chlorinated. Another water quality analysis shall be completed once the project's blasting activities (if any) are complete. Additional water quality analyses shall be completed eighteen (18) months after full occupancy of Phase 1 and eighteen (18) months after full occupancy of Phase 2, provided that the Phase 1 analysis may be waived if it appears, at the time of the required test, that Phase 2 is being built out in a timely fashion in accordance with the CMP. The costs for the water quality testing shall be borne by the Applicant. If the post-blasting test results for any abutter's well exceeds the previous test results by a statistically significant (95% confidence interval) margin for any of the constituents, the Applicant shall restore the abutter's previous water quality at its own expense. The data collected from the water quality testing shall be reported to the Board of Health with the pump test results within 15 days of collection.

No perchlorate shall be used by the Applicant in blasting activities. The Applicant shall test each consenting abutter's well for perchlorate at least once before any blasting is performed on the Property, and once no later than two weeks after blasting has been concluded, and report the results to the Board of Health within 15 days of collection.

ii. Water Quantity.

The Applicant shall conduct a simultaneous 48-hour pumping test of all proposed private water supply wells within a given phase, plus the proposed irrigation well. The proposed flow rates to be implemented during the pumping test will be consistent with Carlisle Board of Health pump test requirements for wells. In accordance with Board of Health regulations, the pumping test shall include all existing wells within 500 feet of any new well on the Property. In addition, the pumping test for the Phase 2 wells shall include all wells within Phase 1.

Transducers shall be installed and will be set to record on an automatic monitoring device, baseline water levels every 2 minutes for a minimum of 10 days before commencement of the pumping test, continuing during the required pumping tests, and for 7 days following the pumping test or until 90 percent recovery of all wells, whichever is longer; After this time they will be removed from the wells. The pumping tests shall be run continuously for a minimum of 48 hours at the maximum design flow rate specified by the Board of Health.

Utilizing the data from the transducers, the maximum self-induced drawdown (“Baseline Self-induced Drawdown Range”) in each private well shall be calculated. This is the range between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in each well. Next, the 180-day projected test-induced drawdown (“Test-Induced Drawdown”) on each private well (if observed) shall be calculated by creating a drawdown versus log of time graph of the decline in the normal static water levels (if observed) due to pumping the Project’ wells. Lastly, after determining the pump depth in each well (either by pump installers records, Board of Health records, or by probing the well), the total available water column above the well pump as the difference between the depth to the non-pumping average static water level and the depth to the well pump (“Total Available Water Column”) shall be calculated. For clarification on the definition and meaning of the terms used above, reference is made to Exhibit _____.

All data from the pumping tests shall be conveyed to the Board of Health for permanent preservation within 30 days of test completion. Additionally, data from each abutter’s well tests shall be conveyed to each abutter within 30 days of test completion.

Based on the above data, if the sum of the Baseline Self-Induced Drawdown Range and the Test-Induced Drawdown (1) exceeds 50% of the Total Available Water Column, and at least 10% of this total is the Test-induced Drawdown, or (2) exceeds 75% of the Total Available Water Column, and at least 2% of this total is the Test-induced Drawdown, then the well shall be deemed to be impacted.

90. The well pump tests shall be conducted during August or September.

91. Before the issuance of the ____ occupancy permit granted for the Project, the Applicant shall deposit into escrow \$ _____ which shall be held by the Board of Health in escrow for 18 months after issuance of the final certificate of occupancy for the Project to cover expenses incurred by the Applicant or by the abutting well owners listed above to treat or correct deficiencies or to address impacts on the private wells caused by the Project’s wells. Escrowed monies shall be released by the Board of Health to aggrieved well owners only upon request of the aggrieved well owner and only if the WWPS has been breached and the requested disbursement constitutes a reasonable reimbursement, in the Board of Health’s discretion, of the well owner’s expenses to restore the well to its pre-pump test Total Available Water Column.

This provision shall not be interpreted as precluding any private cause of action any aggrieved well owners may have against the Applicant or its successors or assigns. Any escrowed funds remaining 18 months after full occupancy shall be released to the Applicant, with any accrued interest.

92. Annual yield data from the Project’s wells, including the irrigation well, shall be submitted to the Board of Health. The wells shall be instrumented as needed to gather this yield data.

93. Before the issuance of any building permits for the Project, the Applicant shall submit to the ZBA and the Board of Health for their technical review for consistency with standard industry practices a water supply plan (the “Water Supply Plan”), which shall include a comprehensive set of design drawings for the water supply infrastructure (including pumping facilities), and pumping test results obtained in accordance with Board of Health requirements and Condition ___ above.

94. The Applicant shall provide the Carlisle Board of Health with at least one week’s notice of all drilling, sealing, pump testing of the wells and the testing of the permanent pumping facilities, and shall allow the Board of Health full access to witness said activities.

Wastewater Management

95. Consistent with United States Environmental Protection Agency’s Final Ground Water Rule promulgated November 8, 2006, the Applicant shall demonstrate to the satisfaction of the Board of Health that any septic system that is upgradient or cross-gradient of any property boundary that abuts lots containing existing domestic water supply well will achieve at least 99.99% inactivation or removal of viruses from the groundwater at the Site’s downgradient and cross-gradient property boundaries. If the Applicant believes the groundwater already contains viruses, it may achieve this performance standard by demonstrating that the septic system will generate no additional viruses, or higher concentrations of viruses, at those locations.

Comment [H4]: Need to check that this is current.

96. Consistent with the Board of Health’s regulations, the Applicant shall demonstrate to the satisfaction of the Board of Health that the standards of 5 mg/L total nitrogen and zero (0) colonies of coliform bacteria will be met at the downgradient and cross-gradient property boundaries.

97. The Applicant shall install three shallow overburden monitoring wells (a/k/a “soldier wells”) downgradient and cross-gradient from each soil absorption area in locations specified by the Board of Health before issuance of the final certificate of occupancy for the Project, and shall perform readings quarterly upon initial occupancy on any unit served by the respective septic system, then quarterly for two years following full occupancy of all units served by the respective septic system, and then annually thereafter unless the Board of Health requires more frequent monitoring, submitting data to the Board of Health at the Applicant’s and successor condominium association’s own expense. The wells shall be sampled for E. coli coliform bacteria, total phosphorus, nitrate nitrogen, and ammonia nitrogen.

98. The septic systems shall be designed so as to limit effluent flows across property lines to no more than 2% of the design waste water flow entering the disposal field. To monitor groundwater, permanent monitoring wells shall be installed at locations acceptable to the Board of Health along property boundaries downgradient from any soil absorption area. Samples shall be collected from these wells monthly from January through June during the first year of occupancy, Copies of the monitoring reports shall be provided to the Board of Health.

Affordability Requirements:

99. No less than five (5) of the single family residences within the Project shall be made available for purchase by Households earning 80% or less of the area median income, adjusted for Household size, as published by the United States Department of Housing and Urban Development for the Boston-Cambridge-Quincy, MA-NH Metro FMR Area, (the "Affordable Units").

100. The Affordable Units shall be Units __, __, __, __, and __.

101. The exterior of all of the Affordable Units shall be indistinguishable in terms of construction and finishes from the Market Rate Units in the Project.

102. Phasing-in of affordable units: Affordable Units shall be sold contemporaneous with the market-rate units in the Project. No more than three Certificates of Occupancy may be issued by the Building Commissioner for market-rate units until at least one Certificate of Occupancy has been issued for an affordable unit. With respect to the final four units in the Project, the Certificate of Occupancy for the final affordable unit shall be issued prior to that of the last three remaining market rate units.

103. The Applicant shall prepare an Affirmative Fair Housing Marketing Plan to be approved by the Subsidizing Agency or its designee.

104. Sale Prices: The Affordable Units shall be sold to qualified Households at prices deemed affordable to Households earning 70% of the area median income, adjusted for Household size, in accordance with the applicable regulations and guidelines of the Subsidizing Agency.

The maximum sale prices for the Affordable Units shall be subject to review and approval by a monitoring agent (the "Affordability Monitoring Agent"), which shall be selected by MassHousing. The sale prices shall be reviewed for consistency with the Act's guidelines and the Regulations, and determined at the time of the lottery for the selection of buyers of the Affordable Units (the "Lottery"). In the event that the designated Affordability Monitoring Agent fails or refuses to administer the Affordable Units, or in the event that such agent ceases to exist, the Applicant shall notify MassHousing and the ZBA, and MassHousing shall designate another entity to administer those units. In the event that MassHousing fails to designate an Affordability Monitoring Agent, the ZBA or its designee may elect to serve that role, subject to approval by MassHousing within sixty (60) days after being notified by the ZBA of such designation, and MassHousing's failure to respond within said timeframe shall result in the designation being deemed approved.

105. Selection of Buyers for Affordable Units: The Applicant shall obtain the approval of the Subsidizing Agency or its designee of a Lottery Plan for the sale of the Affordable Units prior to putting the Affordable Units on the market. The Lottery to select such buyers shall be conducted as a fair lottery process.

To the maximum extent permitted by applicable law and by the requirements of the Subsidizing Agency, a provision that preference for the purchase of 70% of the

Affordable Units shall be given to households that meet one or more of the following preference criteria:

- (i) at least one member of the household is currently a legal resident of the Town of Carlisle. For purposes of the Lottery, a person shall be deemed a resident if that person has been registered as a Carlisle resident with the Carlisle Town Clerk pursuant to M.G.L. c.51, §4 and would be considered a resident under the United States Census Bureau's residency guidelines;
- (ii) at least one member of the household is an employee of the Town of Carlisle, the Carlisle public schools; or
- (iii) at least one member of the household is currently privately or publicly employed within the Town of Carlisle.

The selection of purchasers for the Affordable Units, including the administration of the Lottery, shall be administered by a consultant retained by the Applicant, subject to the approval of the Subsidizing Agency. The Lottery shall be implemented pursuant to a Lottery Plan developed by the Lottery consultant and approved by the Monitoring Agent. The Monitoring Agent shall oversee the Lottery.

The Monitoring Agent shall develop such rules and guidelines as may be necessary and appropriate to carry out the provisions of this section. Income and other applicable eligibility requirements shall be governed by the Subsidizing Agency.

The provisions of this section are intended to complement and not to override or supersede any applicable Massachusetts, local, or Federal law, including without limitation, fair marketing regulations of the DHCD, the Massachusetts Commission Against Discrimination, MassHousing, or any authority with jurisdiction and like purpose, to provide low and/or moderate income housing.

106. As this Decision grants permission to build the Project on the Property under the Act, and as the Applicant has gained the benefits of a comprehensive permit, the Affordable Units shall remain affordable so long as the Project is not in compliance with the Town of Carlisle's bylaws and regulations which otherwise would be applicable to the Project but for the comprehensive permit's override of local regulations to promote affordable housing. Accordingly, the affordability requirements of this Decision shall restrict the Project so long as the Project is not in compliance with the Town of Carlisle's bylaws and regulations, so that the Affordable Units continue to serve the public interest for which the Project was authorized in perpetuity.

107. To ensure the survival of the affordability restriction applicable to this Property, this Comprehensive Permit Decision shall be recorded ahead of any mortgage or other instrument capable of being foreclosed upon, such that its provisions shall survive any foreclosure on all or any portion of the Property. In the alternative, the Applicant may provide for recording of a duly executed

Subordination, Nondisturbance and Attornment Agreement which provides equivalent protection and which is satisfactory in content and in form to Town Counsel.

108. In addition to the foregoing, prior to the issuance of any building permits, a Regulatory Agreement, in the form approved by MassHousing and acknowledged by the Board, shall be executed and recorded. The Regulatory Agreement shall provide, among other things, that (a) five (5) units in the Project will be sold and resold subject to a Deed Rider approved as to form by MassHousing and the Board, and (b) the Project Owner's profit shall be limited as defined by G.L. c. 40B, §§ 20 — 23, the Regulatory Agreement and the Regulations, as well as subsidy program and cost certification guidance, specifically, DHCD's "Comprehensive Permit Guidelines" (Sections IV.B, C, E and F), updated December 2014 , and MassHousing's guidance document entitled "Preparation of Cost Certification Upon Completion of Homeownership 40B Project for Which MassHousing Serves as Project Administrator," dated July 30, 2007, as each has been or may be amended from time to time.

A Deed Rider, known as the Universal Deed Rider, shall be attached to and recorded with the Deed for each and every Affordable Unit in the Project at the time of each sale and resale, and the Deed Rider shall restrict each such affordable unit pursuant to this Decision in perpetuity (subject to the standard exceptions set forth in the standard MassHousing Housing Starts or NEF Program form of Deed Rider to be incorporated into the Deed Rider) in accordance with the requirements of G.L. c. 184, §§ 31-33. The Deed Rider shall give the Town of Carlisle a right of first refusal to purchase the Affordable Unit upon any notice of an impending mortgage foreclosure.

109. Profit Cap: To conform to the intent of the Act that profits from the Project be reasonable and limited, the Applicant's profits from the Project shall be limited to 20% of total development costs as governed by the applicable Act guidelines and the Regulations, and the applicable guidelines and regulations of MassHousing. Moreover, the Applicant shall follow the cost examination and certification requirements described and as required in 760 CMR 56.04(8) and in MassHousing and DHCD' s guidance and policies, as amended. The ZBA shall have the right to review the cost examination for accuracy using the same standards as the Subsidizing Agency.

MassHousing in accordance with 760 CMR 56.05(6)(c) has the sole responsibility to establish and enforce reasonable profit limitations on the Applicant as set forth in 760 CMR 56.04(8).

110. Monitoring Services Agreement: Any Limited Dividend Monitoring Agreement and/or Affordability Monitoring Agreement that MassHousing requires to be executed by the Applicant under its program guidelines and regulations shall be executed and delivered prior to the issuance of any building permits for the Project. Such Agreement(s) shall be in a form substantially the same as that

used by MassHousing under the Housing Starts program or the NEF Program, and shall be subject to the approval of Carlisle Town Counsel for consistency with this Decision only, such approval not to be unreasonably withheld or delayed. The Applicant shall pay a monitoring services fee to the Monitoring Agent(s).

111. Any assumptions used to determine the initial sales price of the Affordable Units must include reasonable condominium fee budget projections of all costs, including operation and maintenance of the drinking water supply, wastewater system, and stormwater management system.

112. If, at any time after the date of this Decision, the Applicant's subsidizing agency rescinds or revokes its _____ project eligibility determination for the Project, this Decision shall be deemed null and void and have no further effect.

Occupancy and Surety Requirements:

113. As security for the completion of the infrastructure related to the Project as shown on the Approved Plans, no certificate of occupancy shall be issued for any unit in the Project until:

- a. All sewage treatment and disposal facilities serving the Project are the subject of a final approval from the Board of Health, and may begin operation.
- b. The unit has a fully functioning drinking water system that has been lawfully permitted and for which all permits have become final.
- c. The base and binder course for the road, driveways and guest parking areas serving such unit have been installed.
- d. All storm water management and drainage facilities serving such building or unit as shown on the Approved Plans have been installed.
- e. All utilities serving such unit have been installed.
- f. All required landscaping within the applicable phase of the Project has been installed.
- g. In addition to the foregoing, prior to issuance of an occupancy permit for any unit in the Project, the Applicant shall have provided to the ZBA a performance guaranty to secure the complete construction of the remaining road, stormwater management infrastructure and/or utilities, as shown on the Approved Plans, for the Project. Said performance guaranty shall be secured by one, or in part by one and in part by another, of the methods set forth in clauses (1), (2) and (4) of M.G.L. c.41, §81U, which method or combination of methods may be selected and from time to time varied by the Applicant. The security provided as aforesaid shall be administered in accordance with the provisions of G.L. c.41, §81U, relative to such security; provided;

however, that wherever the Planning Board is referred to in M.G.L. c.41, §81U, the ZBA is substituted.

114. Notwithstanding the foregoing, in the event that the Building Commissioner determines that seasonal weather have reasonably delayed the installation of plantings to complete the landscaping, the Building Commissioner may, in his discretion, nonetheless issue certificates of occupancy; provided that the Applicant shall complete the final landscaping improvements not later than the conclusion of the next planting season, which for the spring shall be April 30 and for the fall shall be October 15, and the Applicant shall, prior to issuance of any certificate of occupancy pursuant to this condition post sufficient cash surety with the Town Treasurer for completion of said improvements should the Applicant fail to timely do so.

115. The final coat of pavement shall not be installed until after the base and binder coat has endured a full winter season.

116. Before occupancy or use of the final housing unit within the Project, the Applicant shall submit to the ZBA an “As-Built Plan” in both paper and CAD format, showing all pavement, buildings, stormwater management structures and other infrastructure as they exist on the Property, above and below grade, including appropriate grades and elevations. The plans shall be stamped and signed by a registered land surveyor or civil engineer, certifying that the Project as built conforms and complies with the conditions of this Decision. A purpose of this condition is to facilitate the Consulting Engineer’s review of the Project for compliance with this Decision before the final certificate of occupancy is issued.

General Requirements:

117. As this Comprehensive Permit Decision grants permission to build the Project on the Property under the Act, and as the Applicant has gained the benefits of a comprehensive permit including the right to construct and use the Project in a manner that is not in compliance with the Town of Carlisle’s regulatory requirements which otherwise would be applicable to the Property and the Project, but for the Comprehensive Permit’s override of local regulations to promote affordable housing, no use shall be made of the Property or of any building or unit on the Property except as permitted by this Decision. Without limiting the foregoing, no business or commercial use shall be conducted on the Property or in any building or use on the Property; provided that nothing contained herein shall be construed as prohibiting a resident of any unit carrying on their profession in a manner that does not involve visitors to, or parking at, the Project, or any other externally visible manifestation of such practice.

118. If, between the date of the Decision is filed in the office of the Carlisle Town Clerk and the completion of the Project, the Applicant desires to change in a material way and/or to a significant degree the Project as reflected and approved by the Decision, such changes shall be governed by 760 CMR 56.05(11). Without limitation, in the event that any subsequent permitting or regulatory process (such as state wetlands review of the Project by the Conservation Commission or DEP, review of the

proposed drinking water system by DEP, or other state or federal approvals) results in a change to the Approved Plans which trigger the need for further waivers from local bylaws, rules or regulations, any such matter shall be treated as a project change and the procedures in 760 CMR 56.05(11) shall be followed.

119. Prior to substantial completion of the Project, this comprehensive permit may not be transferred or assigned to any party without the approval of the subsidizing agency and written notice to the ZBA, as required by 760 CMR 56.05(12)(b).

120. Pursuant to 760 CMR 56.05(12)(c), if construction authorized by this Decision has not begun within three years of the date on which the permit becomes final except for good cause, the permit shall become void. This time shall be tolled for the time required to pursue or await the determination on any appeal on any other state or federal permit or approval required for the Project. The applicant may seek an extension as allowed in 760 CMR 56.05(12)(c).

121. The Applicant shall comply with all local bylaws, rules and regulations of the Town of Carlisle and its boards and commissions in effect as of July 3, 2014 unless expressly waived herein.

122. The Applicant shall pay all fees of the Town of Carlisle imposed generally for construction projects, including but not limited to building permit fees, and for the purposes of monitoring compliance of the construction and occupancy of the Project in accordance with this Comprehensive Permit unless otherwise expressly waived in this Decision.

123. The Applicant shall copy the ZBA on all correspondence between the Applicant and any federal, state or Town official, board or commission that concerns the design and/or conditions set forth in this Decision, including but not limited to all testing results, official filings and other permit applications that concern this Project. In addition, the Applicant shall provide the Building Commissioner, the ZBA and the Board of Health copies of all communications, reports, submissions, or other documents concerning the drinking water system sent by or on behalf of the Applicant or DEP.

124. The terms, provisions and conditions of this Decision shall run with the land and shall be binding on the Applicant and all of its successors and assigns, with the same effect as if specifically mentioned in each instance where the Applicant is named or referred to. Any and all references to the "Applicant" herein shall include any authorized successors or assigns of the Applicant including, but not limited to, any Condominium Association created relative to the Project and individual unit owners, as applicable. Any sale or transfer of rights or interest in all or any part of the Property shall include a condition that the grantee and its successors and assigns shall bound by the terms and conditions of this Decision. This Decision shall be so referenced in the condominium Master Deed for the Project and in each condominium unit deed.

125. All outstanding invoices for peer review and consultant costs incurred prior to the issuance of this Decision shall be paid by the Applicant within thirty (30) days after this Decision is filed with the Town Clerk.

126. Upon submission of the Proposed Final Plans, the Applicant shall replenish the project review fee account in an amount of \$_____ to fund the ZBA Consulting Engineer's assistance in reviewing the Proposed Final Plans. Any amounts not expended from this account shall be returned to the Applicant.

127. Inspection of the roadway construction and stormwater infrastructure shall be performed by a qualified engineer retained by the ZBA at the Applicant's expense, and shall be in accordance with Article IV, Section 2 (Inspections and Controls) of the Planning Board's Subdivision Rules and Regulations.

128. The Applicant shall promptly pay the reasonable fee of any consulting engineers or outside inspectors as the ZBA or relevant Town staff determine to be necessary to conduct construction and post-construction inspections of the Project's infrastructure.

129. The Applicant shall reimburse the ZBA for its legal expenses in reviewing the Regulatory Agreement, Monitoring Services Agreement, Affordable Housing Restrictions (Deed Rider), Lottery Plan and Condominium Documents, not to exceed \$5,000.

130. For all matters relating to enforcement of this Decision by the Town of Carlisle responsibility for the cost and maintenance of the common facilities and infrastructure of the Project shall be joint and several between the Condominium Association and the entity(ies) developing the applicable phase of the Project; and the entity(ies) developing the applicable phase shall be relieved of such responsibility upon issuance of the occupancy permit for all of the units within that phase.