

to: Lisa Davis Lewis, Chair, Carlisle Zoning Board of Appeals
from: David Freedman, Chair, Town Advisory Group for 100 Long Ridge Rd 40B
date: 5 June 2015
re: Recommendations for Conditions

The TAG asked that I communicate the following suggestions to you and your board for Conditions should the ZBA grant a Comprehensive Permit for 100 Long Ridge Road (LRR). The Land Use Boards represented on the TAG will provide input to the ZBA from their particular areas of expertise regarding waiver requests and conditions; due to meeting schedules these may not reach you until your scheduled June 15th session.

It is our understanding that the ZBA and Town Counsel are referencing the 2007 ZBA decision on Coventry Woods. There are important similarities between issues with that project and its hearing and this one, so the TAG has chosen to use the Coventry decision as the basis for its input; a copy of that decision accompanies this memo. Sections of the Coventry decision that the TAG deems relevant have been highlighted in yellow (first highlight on p. 5, second on p. 13 and then frequently thereafter); areas of particular importance are also underlined. Clearly, the narrative and some details of the conditions will change between the two decisions, but the TAG believes it is important for the ZBA to capture the key principles of the Coventry decision in its decision on LRR.

Also attached is the shorter 2003 Rocky Point decision granted to MKCKMK, LLC, similarly with key conditions highlighted for their applicability to LRR.

What follows in this memo are some specific areas of concern not captured in the attached reference decisions, followed by some brief comments on selected sections highlighted in the attached two decisions (with comments on Rocky Point preceding those on Coventry so they are not lost in the much more lengthy discussion of the latter).

RECOMMENDED CONDITIONS

1. Public Water Supply

Based on presumed hydraulic connectivity of the bedrock wells proposed for the site (as no evidence was presented by the applicant to challenge this presumption), the high nitrate levels predicted by the analyses of three hydrogeologists both at property bounds and at proposed onsite well locations, and the sandy overburden and observed vertical fractures in the bedrock that indicate a direct connection between nitrates in the overburden and bedrock wells, it is essential that the DEP not waive the provisions of 310 CMR 22.02 that call for a DEP determination that the project as proposed—exceeding the limits established in 310 CMR 22.02 by a factor of more than 4x—presents a PWS. Given the density of the project and the proximity of abutter wells presumed to be in the same bedrock fractures, DEP regulation and monitoring of the water supply, including the protections of Zones 1 and 2 are absolutely necessary to protect public health and safety. *The TAG therefore recommends that the ZBA make project approval conditional on a DEP ruling that the project is a PWS.*

A PWS designation would address other issues that are difficult, if not impossible, to address in conditions. For example, the Board of Health has raised serious concerns about expected breakdowns among the individual components (including grinder pumps) of the proposed septic system design. To further complicate matters, the various components are proposed to be shared by overlapping subsets of the future residents with no indication how inevitable problems and conflicts arising from the resultant overlapping

ownership and maintenance responsibilities will be resolved. The applicant has provided no information within the hearing as to how this project will be managed to ensure safety for both future residents of LRR and for abutters.

Only a PWS can provide the necessary Zone 1 protection to isolate the project's drinking water supply from inevitable failure of the septic system (for which the Applicant is seeking waivers from safe setback distances from onsite and abutter private drinking water wells, and from which, as noted, modeling of the proposed system predict dangerously high levels of contaminants at property bounds and onsite wells, exceeding state design parameters and double or even triple local parameters established for Carlisle conditions).

In addition, a PWS would have a single treatment system fully within the protective Zone 1 and would thus preclude the necessary conditions in recommended condition #2 immediately below. The setback necessary from as many as 20 drywells to protect as many as a dozen onsite drinking water wells from contamination (independent of other setback issues between wells and septic fields) may not be achievable given the tight site design. Only a PWS can protect public health and safety.

Note: The TAG is not suggesting that the ZBA exceed its authority by requiring DEP to rule a PWS. Instead, your approval should be conditioned on such a decision by the DEP. Should they rule otherwise, then the TAG believes the record clearly supports a conclusion, and thus a condition, that the project cannot be built as proposed without compromising public health and safety.

2. Water treatment systems (“water softeners”)

It should be anticipated that every unit in LRR will install a treatment system (an informal survey performed this week established that all but one of 31 homes in the vicinity of LRR either have or are in the process of installing one). Due to the expected amount of backwash from all these systems, the TAG recommends a condition requiring that the Building Inspector confirm that such systems are installed with water for exterior use isolated from the treatment. Also, since the Applicant has stated that these systems will backwash into the drywells, the drywells should be separated from drinking water wells to protect from contamination, ideally by at least 100 feet.

3. Systems management firm

Managing and maintaining the complex and technologically sophisticated wastewater treatment system and the necessary testing of multiple monitoring wells that will be required by the BOH is beyond the capabilities of a homeowners association. The TAG therefore recommends a condition requiring a contract with a qualified firm to manage the system, conduct the testing, and provide the required regular reports. This should be funded by a permanent escrow fund (with the amount and terms to be specified by the BOH in later permitting) that is sufficient to fund this contract as well as to cover in perpetuity any repair or remedial work required.

RECOMMENDED ROCKY POINT CONDITIONS

Condition A.6 requires inspections of the Project during construction (including roads and associated stormwater management structures) by a qualified peer review engineering firm at the Applicant's expense following the requirements in the Planning Board's Subdivision Rules and Regulations. (Note that these have been amended since the 2003 Rocky Point decision so the correct reference is now Section 2.d(1)(a-h).) It is irrelevant that LRR is not technically a

subdivision nor that it will not become a public way, as the access was has been designed generally to subdivision standards and essentially serves as a subdivision roadway providing access to separate homes arranged along its length. Precise inspection protocols are essential to ensure a roadway and drainage that will hold up and ensure safe passage for residents and emergency vehicles over time.

Condition A.7 requires testing of the project's wells and pump testing to ensure that they do not draw down abutters' wells. The conditions in Coventry decision are more detailed and should be followed. The key part of the condition here is that any abutters' (or on-site wells) affected by the pump test must be returned to their original condition. [Note: All or most of the recommended Conditions with references to protections for abutters' wells in both the Rocky Point and Coventry decisions should be expanded to include similar protections for onsite drinking water wells, as they are in many cases closer to the septic systems and significantly closer one to another. Future residents, especially low-income residents, are as deserving of protections for their health as current residents.]

Condition A.11 requires a completion bond or surety held by the Town. Such a condition is essential for LRR to ensure that financial difficulties of the Applicant do not result in a half-finished project. The condition should include a requirement that any bond reductions shall require an estimate of work remaining by the applicant, peer review of same (at the Applicant's expense) and then a retention of 1.2 times the amount established by the Peer Reviewer.

Condition B.9 is essential if the ZBA considers waiving any fees of other reviewing boards such as those requested by the applicant from ConsCom. Should this condition be included for LRR, it should specify the listed fees "as they may be amended."

Condition C.2 should be memorialized in a required deed restriction on each unit that no bedrooms may be added to the number specified in the approved plans for each unit. This is particularly important for units with walkout basements. To ensure compliance, the deed restriction should specify that the Homeowners' Association shall confirm to the ZBA in writing the number of bedrooms in each unit upon sale or resale.

Condition C.4 is essential to preclude any future effort by residents in the development to petition Town Meeting for acceptance of the way. The way does not have the required Right of Way for a Town Road; this condition will eliminate any potential confusion in the future.

Condition C.12 requires compliance with the section of local BOH regulations for large systems and condominium associations (due to the documented increased likelihood of system failures with multiple users on one system). It is critical that this be part of the Comprehensive Permit to ensure that the Applicant does not seek to bypass these during the permitting process under Title V. These regulations are essential protections for public health and safety and apply to projects that comply fully with all other local regulations (e.g. Garrison Place SROSC, with a public water supply and approximately half the parcel in protected open space).

RECOMMENDATIONS BASED ON COVENTRY FINDINGS

Make the findings robust and thoroughly supportive of the conditions

The Findings in the Coventry decision are quite robust; many are explicitly connected to Conditions that follow. *They also include some frank observations about the limitations of state regulations under DEP (see Finding 26 on p.13.)* The TAG recommends that the ZBA consider similarly robust Findings for LRR and that you include in the decision some of the frank

observations various ZBA members have similarly made about illogical aspects of what has been suggested are some possible interpretations by DEP of their own guidelines.

Finding #30 establishes that the presumed hydraulic connectivity of the on site wells and those of abutters “poses a distinct threat to the quantity and quality of water in the wells of abutters” and then connects this concern to Conditions to follow regarding well tests and surety to remediate wells that may be compromised by the project. This is equally true at LRR.

Finding # 35 documents the inadequacy of the testing to make a determination that abutters wells will not be compromised, Mr. Vernon’s recommendations for testing that should be required, and his conclusion that the proposed project poses a substantial risk of contamination of private wells given the bedrock characteristics. This is equally true at LRR (including observed vertical fractures in the bedrock).

Finding # 36 documents the applicant’s refusal to carry out a testing protocol that was established by hydrogeology experts who provided testimony to the ZBA. This is equally true at LRR. *The finding then supports the ZBA’s decision to “require full compliance with the Board of Health’s local wastewater management regulations.”* The TAG trusts that the ZBA will come to the same decision on LRR.

Finding # 43 provides an excellent answer to the questions current members of the ZBA were grappling with at the last session on LRR about whether conditions might require project changes and concerns about “redesigning” the project. *The TAG suggests that the current ZBA take this Coventry finding to heart during its deliberations and include a similar finding for LRR.*

Finding # 44 is an excellent summary of the basic rationale behind our local bylaws. This applies equally to LRR.

Finding # 45 provides a good model for introducing a recommended reduction in units should the ZBA come to that conclusion for LRR.

RECOMMENDED COVENTRY CONDITIONS

Conditions A.1-A.13 are excellent models of boilerplate conditions.

Note that within a parenthetical in **Condition A.11** is the TAG’s recommendation that reimbursement by the applicant to the Town for the testing and analysis by Jim Vernon financed by the Selectmen, essentially doing the testing and analysis the Applicant refused to do in late 2014, should be a condition on LRR.

Condition B.1 provides excellent models of boilerplate conditions regarding Pre-Construction Submission Requirements.

Note that **Condition B.1.a.** requires a written technical review from the ZBA’s Consulting Engineer of the Applicant’s fully engineered stormwater, landscaping and architectural plans, and the Approved Plans’ conformity with the conditions of the decision. Despite the applicant’s submission of relatively detailed plans for LRR, the tightness of the site and the pending permitting process before ConsCom and the subsequent applications to the Board of Health are likely to require changes in the plans, some of which may impact stormwater and other aspects of the project. The ZBA should include a similar condition to ensure that any changes or substantive additional details required for actual construction of the project receive thorough peer review at the Applicant’s expense.

Condition B.1.h. requiring ZBA approval of a thorough Construction Management Plan is a critical component of a decision on LRR.

Conditions C.1-C.22 and C.24-C.27 provide excellent models of boilerplate conditions regarding Site Development Construction Conditions

Condition C.20 requiring As-Built Plans for final Peer Review (at the Applicant's expense) is a critical condition. Given the very tight compliance (or lack thereof) with DEP's Nitrogen Equivalency Standard, any deviation from the approved plans that may affect the calculations (for example, more impervious pavement than on the approved plans) should trigger remediation until the standard is met.

Conditions C.21 and C.22 raise important considerations that the ZBA appears to have not yet adequately addressed regarding protection of areas to remain undisturbed. The current plans show general areas of foliage to remain, but may not adequately define them as areas to be protected. Given the extreme amount of clearing already anticipated on the site, the minimal setbacks (compared to the comparable SROSC Bylaw's 100' requirement), and the planned incursion into Wetland Buffer areas, protection of areas that should remain undisturbed is critical. The Plans and the Conditions must ensure such protection. Also, based on past experience, there is a likelihood that when the borders of areas to be cleared are not carefully and specifically marked in the field—and sometimes even when they are—mature trees providing important buffers can be irredeemably lost. The detailed requirement in **Condition C.22** concerning the planting of replacement trees is thus a critical component of a decision on LRR.

Condition C.27 addresses night-sky exterior fixtures. Note the parenthetical recommendation from the TAG confirming the recommendation of the TAG Chair during the hearing that a condition be written to require a deed restriction for each unit mandating such fixtures (and no more) in perpetuity.

Conditions D.1-D.7 provide excellent models of conditions regarding Legal Requirements.

The equivalent of **Condition D.2** will need to be much more detailed for LRR due to the complexity of the overlapping sub-units of the Condo Association for different parts of the infrastructure and as noted elsewhere in this memo, the complexity of the systems themselves, concerns about the technologies proposed, and the lack of any "give" on the site should any part of the systems fail to perform to specifications. See also the recommendation above requiring a management company to be engaged by the condominium association.

Condition D.7 raises another issue not yet addressed by the current ZBA that you may wish to consider, namely provisions for households with individuals having mobility limitations.

Condition F.1 is an important condition regarding requirements for timing of landscape elements, especially those that may provide a modicum of screening to abutting properties.

Condition F.2 is highlighted to show the dramatic reduction the current ZBA seems to be considering relative to the setback protections that were provided in the Coventry decision and consistent with required setbacks in local zoning for similar projects (SROSC).

Conditions I.1.a-d provide excellent models of conditions regarding Surety and Covenants to ensure critical components of the project infrastructure are completed before occupancy permits are granted.

Condition J.3 is critical to ensure that the stormwater management system is maintained by the Applicant until same is transferred to the condominium homeowners association. Similar conditions should be required for maintenance of other infrastructure including roads (and snow clearing, etc.), septic systems, etc. until ownership of each is transferred.

Conditions K.1-K.12 are good models for the necessary pre- and post-construction water testing that should be required for LRR.

Conditions K.2 requires several rounds of testing of abutters' wells according to detailed protocols. Expert testimony has established the need for equivalent testing to be required for LRR. Absent any direct evidence that their drinking water wells will not be compromised by the project, all abutters to LRR should be included in the testing protocol. **Since the LRR hearing did not include a direct negotiation with the applicant that resulted in written consent from each abutter to the testing protocol as at Coventry, the TAG recommends a condition be drafted that requires that such an agreement be drafted to the satisfaction of Town Counsel and then presented to each abutter to LRR to provide their written consent.**

Conditions K.3.b regarding Water Quantity references standard protocols for testing required by DEP for a PWS. The TAG recommends that a condition be drafted along the lines of this Coventry condition for the same level of testing (for both water quality and quantity) whether or not the project is classified as a PWS.

Due to the complex nature of bedrock fracture systems and the generally difficult task of determining the recharge area to a well constructed in bedrock, the TAG recommends that the ZBA impose a condition on its approval of the project that the applicant be required to comply with the essential provisions of the MassDEP Guidelines for Public Water Systems (April 2014), specifically the Groundwater Supply Development and Source Approval Process. At a minimum, this would include: maps showing nearby well locations, land uses, potential sources of contamination, surface water features, the planned pumping rate and duration of the pumping test, location of pumping test discharge, frequency of water level measurements and water quality sampling, exploratory well logs, a plan showing the location of observation wells, chemical analytical results, and a discussion/evaluation of potential contamination threats, all subject to review and approval by the Board of Health (and by the Conservation Commission for any wells in the buffer zone or any water discharge into wetland areas). Once the plan is approved, the water level in the onsite wells should be monitored at least twice daily (minimum 8 hour increments) for a 10-day period ending no more than 5 days prior to the start of the prolonged pumping test. Step tests may not be conducted during this 10-day period. The applicant should then be required to perform a 48-hr pumping test, to monitor abutter wells as identified, to ensure that stabilization is achieved post test and that any onsite wells and identified abutter wells are returned to their pre-test status for water quantity and quality. The testing protocol should include Field Tests with on-site determinations for pH, odor, specific conductance, and temperature at the beginning and at the end of the pumping test and Lab Tests of water samples for the volatile organic chemicals listed in Appendix A (Water Quality Testing Requirements for Source Approval) of the DEP Guidelines, nitrate, nitrite, and secondary contaminants.

Any reduction in water quality or quantity of abutter wells and any measurements exceeding guidelines shall require modifications in the plan until water quality and quantity can be

assured and safe levels can be achieved.

The applicant shall be required to pay all fees and peer review expenses as required by the local BOH commensurate with what would be required by MassDEP under PWS testing and approval protocols.

Condition K.9 requires a specified amount for an escrow account for expected eventual replacement of the septic systems. Because the applicant has yet to apply for permitting from the BOH, the specifics of such escrow cannot yet be determined. Rather than specify the amount or other terms of escrow, the TAG (and the BOH) recommend that the condition for LRR require the applicant to comply with ALL escrow requirements of the BOH to be established during the subsequent permitting process, including number of accounts, the amount to be deposited in each, the timing and amount of any required increases in same, the holder of the account, procedures for disbursements from same, etc.

Conditions L.1 and L.2 under Open Space and Wetlands Resources are written to support the Conservation Commission in their pending permitting process. It is critical that the ZBA include similar conditions to ensure that the approved plans under the Comprehensive Permit don't limit the Commission's ability to protect important environmental resources. In the Coventry decision the ZBA does not permit incursion into the Wetland Buffer area. Note the 100-foot setback requirement from wetlands resources and the statement in L.2: "No construction activities shall occur within the 100-foot setback, except as may otherwise be permitted by the Carlisle Conservation Commission or DEP pursuant to an Order of Conditions issued under the Wetlands Protection Act."

Condition L.4 speaks to the Applicant's request for a waiver from ConsCom fees. It requires not only payment by the Applicant of all fees, but also reimbursement for necessary peer review expenses. The principles behind this condition apply equally to LRR.

Conditions in M.1-M.6 and M.8-M.10 on Wastewater Management illustrate the consistency of the issues faced in Carlisle when projects exceed local zoning requirements and require waivers from other local regulations. The TAG recommends that the ZBA include equally detailed and robust conditions for LRR, in consultation with the BOH.

Condition M.8 requires monitoring wells or "soldier wells" in conjunction with each septic field. As with the comment on Condition K. above, the TAG (and the BOH) recommend that the condition for LRR require the applicant to comply with ALL monitoring well requirements of the BOH to be established during the subsequent permitting process, including number and location of wells; details and frequency of testing, sampling and reporting; and penalties and mitigation as may be required by the BOH for any breach of such requirements.

Note that concerns at Coventry similar to those at LRR regarding potential contamination of drinking water wells led to **Condition M.8** with an increase to 200 feet for the setback between large systems and wells rather than the waiver to 100 feet being sought by the Applicant at LRR.

ADDENDUMS TO COVENTRY DECISION

The details in the appended Vernon Memorandum regarding recommended testing for Hydrogeological Assessment include both a Basic and an Advanced Bedrock Study. Absent a PWS designation for LRR, similar testing should be required for LRR.