Marguerite W. Purnell

Washington Zoning Commission Bryan Memorial Town Hall Washington Depot, CT 06794

May 18, 2023

RE: 101 Wykeham Road, LLC
Special Permit Compliance Review – Still noncompliant
Water Supply issues
New application for modification of SP & SA required

Dear Washington Zoning Commission (WZC) members,

Given that you've agreed to share my prior letters with Cardinal Engineering, and per Chairman Solley's request, I am providing additional written comment in support of and to supplement the statements I made during April's *Privilege of the Floor*.

COMPLIANCE STATUS

The overall picture remains the same as it's been for over three years now: the applicant, 101 Wykeham Road, LLC ('Wykeham"), has yet to demonstrate full compliance with the covenants and conditions previously imposed via 2013's Settlement Agreement (SA) and 2018's Special Permit (SP) modification approval as well as complying with the Zoning regulations in effect since 2013's SA. Please review my prior letters to the WZC during this compliance review for specific details.

WATER SUPPLY ISSUES – ERRORS & UNDERESTIMATION

Cardinal Engineering ("Cardinal") has submitted five letters¹ to the WZC regarding the limited review they were asked to conduct, but to date Cardinal still has not addressed the fundamental question of whether the claimed (now recently revised) water use numbers provided by the applicant are realistic.

Initially (2018 – 2022) the average daily demand requested by Wykeham for domestic use was 4,000 GPD. Years later (mid-February 2023) that quantity was increased to 7,000 GPD, a number that remains inexplicably low. Cardinal's 4/13/23 letter included brief acknowledgement of receipt of a revised water usage chart that "...appears to be complete." Following a few additional remarks², Cardinal then concluded "No further response regarding the water usage is required at this time."

I strenuously disagree; additional scrutiny and response <u>are absolutely required</u>. The recently revised numbers provided to Cardinal by the consultant Wykeham retained (Long Consulting ("Long")) are a) incorrect and b) seriously underestimated. Let's examine the water calculations more closely. As noted by Cardinal, the updated (4/3/23) *Average Daily Demand Calculations* ("ADDC") chart provided by Long uses volume estimates based upon the *ASPE Plumbing Engineering Design Handbook*.³

¹ (Cardinal's review letters dated 2/20/23, 2/22/23, 3/2/23, 3/29/23 and 4/13/23.

² Specifying the need for the applicant to submit revised calculations to Aquarion and revised septic calculations to the Department of Energy and Environmental Protection (DEEP) for review and approval.

³ While this is a different data source and a somewhat different methodology than that used to estimate the septic volumes, it *should* yield estimated volumes that are similar to those generated through the years by the many different SSDS Design Flow Worksheets submitted to DEEP (incomplete and flawed as those were).

A. ADDC Chart Errors (Numbers & Arithmetic)

At the most basic level, the *Number[s]* provided in Long's 4/3/23 chart for bedrooms in the main building are incorrect and require revision. Long used a value of "60" with a *Unit* of "Person" to calculate the estimated water usage for the main building's guest rooms; that translates to 30 double occupancy guest rooms. But, the current "Inn" proposal features 40 double occupancy rooms in the main building, 20 of which also include a queen size sleeper sofa. Thus, the correct *Number* for the main building is "120". Then, if retaining the *Source* as "Motel No Kitchen" (though I think we all agree that this project is not a motel - more on that below), then the correct GPD for the main building's bedrooms is 3,804 GPD (not 1,902 GPD as represented in Long's 4/3/23 chart).

Similarly, the Number[s] used for the cottages (aka Building 1, 2 and 3) are also incorrect. Long used a value of "6" with a Unit of "Person" for each of the cottages, when the correct number is "12" [4 double occupancy bedrooms (4 X 2 = 8) and 2 queen size sleepers (2 x 2 = 4)] for each cottage. Thus the correct GPD for all three cottages (once again retaining the "Motel No Kitchen" Source) totals 1,141.2 GPD (twice the number reflected in Long's 4/3/23 chart).

In addition, the calculations provided in the chart for the restaurant meals require correction, since the arithmetic is flawed. 240 x 2.6 = 624 GPD (not 530.4 GPD per Long's chart) for the restaurant, even assuming whatever rationale was used to come up with "240" meals. Please consider the simple fact that if all 52 bedrooms were occupied (double occupancy), then 104 "Person[s]" would be on site and could consume a maximum of 312 meals per day, and if all 52 bedrooms were <u>fully</u> occupied (with all sofa beds occupied by 2 "persons"), then 156 "persons" would be on site consuming a maximum of 468 meals a day. These numbers do not even begin to incorporate restaurant patrons (aka "Person[s]" <u>not</u> residing at the "Inn").

Thus, the basic corrected total for the Average Daily Demand number is 9,545.2 GPD (Attachment A). This quantity exceeds both the 6,979 GPD as tabulated erroneously in Long's revised chart (dated 4/3/23) and the 7,000 GPD that DEEP had permitted in the fall of 2022 (and that Aquarion had indicated *could* be met for domestic use alone in the 2/17/23 email to Erika Klauer, but which had not been formally requested yet by the applicant).

B. ADDC Chart Sources Incorrect or Not Provided

Of additional concern is the fact that the 9,545.2 GPD number still remains underestimated because it only addressed the basic errors in Long's chart, and does not yet include the correct *Source* per the *ASPE Plumbing Engineering Design Handbook*. The use of "Motel No Kitchen" (31.7 GPD/person) should be corrected to the more appropriate "Hotel" (50.1 GPD/guest) per Table 8-7 or "Hotels with private baths (2 persons per room)" (60 GPD/person) per Table 8-10.

Wykeham's proposed "Inn" project is not now, nor has it ever been a "motel". Instead, through the years, the applicant's team has referred to the project an "Inn", a "Hotel & Resort Facility", a "Hotel project" or a "Country Inn & Spa". Earlier promotional materials referred to the project as a "Hotel", a "Resort" and a "Resort Destination". Long Consulting should be asked to provide the reasoning behind their choice of using the "Motel" *Source* with a typical value of 37.1 GPD per "Person" versus using the more appropriate "Hotel" with a typical value of 50.1 GPD per "Guest". Cardinal Engineering should also provide further review and comment.

When a more suitable *Source* from Table 8-7 (i.e., "Hotel") is used together with the correct *Number* (i.e., 156), the maximum daily water use for the bedroom component alone totals 7,815.6 GPD [not the 2,472.6 GPD (aka 1,902 + 190.2 + 190.2 + 190.2) as shown in Long's 4/3/23 ADDC chart]. And, if the most appropriate *Source* is used (from Table 8-10), the estimated water need for the "Inn's" 52 bedrooms alone grows to 9,360 GPD. When this latter revised value is substituted into Long's 4/3/23 chart (without adjusting or adding the other *Sources* that must be added) **the total reaches 13,960 GPD** (Attachment B).

Washington's Zoning Regulations (WZR) require the use of maximum values to determine water supply needs for a particular site. Many years ago WZR §13.9 Tourist Home or Inn specifically adopted §19-13-b26 (Sanitation of Motels and Overnight Cabins), and § 19-13-b29 (Motels and Overnight Cabins) of CT's Public Health Code as amended, the latter which states "A water supply of sanitary quality shall be provided in ample quantity to meet *all requirements* of the *maximum number of persons using such tract at any time.*" (Emphasis added).

Please note also that the 13,960 GPD estimate <u>still remains underestimated</u> since further corrections and adjustments must be made to the chart, including:

- a more realistic estimate of the number of restaurant meals.
- a more realistic number of employees (in 2008 when the "Inn" project was 52,256 SF in size and 44 rooms were proposed, Matt Klauer stated "We assume total employees will be approximately 60...). It is counterintuitive that a facility now twice the size of what was proposed (and denied in 2008) will utilize fewer than half the employees anticipated in 2008.
- the addition of various spa related features (i.e. treatment rooms and steam rooms) that use water beyond that of showers and toilets (aka *Source* = "Bathhouse") and
- the addition of the bar and meals that will be served at the pool house⁵.

C. Water Use Comparison of Similar Facilities

The numbers provided above are not pie-in-the-sky numbers. They are bolstered by two other known (and directly comparable) data sources:

The Swiss Hospitality Institute (SHI)

The SHI operated on the 101 Wykeham Road property for 11 years from 1992 – 2003. One requirement of the individual septic permit granted to the school was that water use would be metered and reported quarterly to DEEP. This data is readily available for review in the Health Department files in Washington Town Hall, and I provided relevant excerpts in my 11/1/21 letter to the WZC. During the last two years⁶ of SHI's operation (when ~70 students and no more than 30 employees were on site each day (~ 10 overnight) during the school year) the school used an average quantity of water just below 6,000 GPD.

It bears mention that this 6,000 GPD figure included one abnormally low quarterly reading (Q2 2001) of 2,298 GPD when the water meter failed but was not noticed (and repaired) until after the Q3 2001 reading which was identical to that at the end of Q2. If the suspect "2,298 GPD" is removed from the calculations

⁴ 10/17/08 letter from Matt Klauer to David Owen, WZC Chairman.

⁵ An argument could be made that since only overnight guests of the "Inn" may patronize the pool house, they've already been counted. But for every guest who eats and/or drinks at the pool house, a seat opens for a member of the public to patronize the restaurant and/or the main bar. Thus, the capacity of the pool house must be added to the ADDC chart. If al fresco dining is to be offered (as touted in prior PR materials), then those seats must be added as well.

⁶ From the third quarter of 2000 through the third quarter of 2002.

(as well as the 0 value for Q3 of 2001), then the recalculated average of actual metered use per quarter exceeds 6,500 GPD. Either way, no more than 100 people (~80 overnight (70 students & ~10 in faculty apartments) were using an average between 6,000 and 6,500 GPD during the last two school years⁷. Thus each "Person" on campus used between 60-65 GPD (if using 100 "Persons") or between 75-81 GPD (if using 80 "Persons").

The water usage from the actual metered use at the school fits well within the parameters provided by the ASPE Plumbing Engineering Design Handbook that in Table 8-8 (Typical Wastewater Flows from Institutional Sources) lists a range of 52.8–106 GPD per student (and a typical (aka, average) value of 74 GPD per student for boarding schools). A second table (Table 8-10) provides data for Quantities of Sewage Flows, and it specifies that a boarding school generates 100 GPD per "Person".

Troutbeck

Located in Amenia, NY, Troutbeck is a historic and long running (since 1765) hospitality venue currently featuring 38 guest rooms, 3 staff apartments (with a total of 6 bedrooms), a dining room (open to the public) that seats 92 (~72 inside & 20 outside), an outdoor pool, a wellness center and well over 4,000 SF of flexible interior event space (including a 3,500 SF Ballroom that seats 225). At present Troutbeck operates with a staff of 54 and occupies 59,582 SF of total floor area within 10 buildings (though one building with 2,012 SF is not currently in use). In February of this year, as part of an adaptive reuse plan for a multiphased expansion on Troutbeck's 43.5-acre property, a hydrogeologic assessment ('The Report") was conducted by WSP USA.8 The Report stated "The estimated average water demand for the existing facility is estimated to be about 10,972 GPD."

According to The Report, each guest bedroom (double occupancy) at Troutbeck used 110⁹ GPD (with water saving fixtures). Troutbeck's restaurant (92 seats x 28 GPD per seat) used 2,576 GPD. Ballroom events (capacity 225 x 8 GPD per person) used 1,800 GPD and their Wellness Center & outdoor Pool (capacity 58) used a combined total of 1,932 GPD. Staff apartments (at 220 and 440 GPD) and water softener backwash (264 GPD) rounds out the total of 10,972 GPD for Troutbeck's existing daily usage.¹⁰

If we were to use Troutbeck's basic numbers of 110 GPD per guest bedroom for Wykeham's current 52-bedroom proposal, the total daily estimated GPD water demand for Wykeham's bedrooms alone would be 12,512 GPD. When the estimated usage of 4,600 GPD (for other amenities per Long's chart) is added, Wykeham's average daily demand numbers grow to 17,112 GPD. Thus it is clear that a value of 7,000 GPD is a gross underestimation of anticipated water use for Wykeham's "Inn" proposal; the actual quantity needed daily by Wykeham will more likely be in the range of 15,000 – 20,000 GPD. Further detailed analysis is required to arrive at a realistic estimate for Wykeham's water use (and septic throughput); all related applications must be submitted to the appropriate agencies/entities with updated and realistic numbers.

WATER SUPPLY ISSUES – FIRE SUPPRESSION

Cardinal Engineering's February 22, 2023 letter stated that "The fire suppression system will require a well system to supply the required demand for that system." (Emphasis added.) In response, the applicant's

⁷ Students and faculty are on campus a maximum of 9 months each year, not the 24/7/365 that Wykeham is proposing.

⁸ This information can be found on Amenia's website: https://ameniany.gov/planning-board-agendas-and-resolutions/

⁹ This value is right between the 50.1 GPD per person for a Hotel and the 60 GPD per person for a Hotel with private bath in the *ASPE Plumbing Engineering Design Handbook*.

¹⁰ WSP's 2/15/23 chart that calculated Troutbeck's *Water System Existing Daily Usage Calculations* appears to have accounted for only 34 of Troutbeck's 38 guest rooms. Thus Troutbeck's actual existing daily usage total is 11,412 GPD.

team has instead proposed a *static* (i.e., finite) solution¹¹ that would provide a maximum of 60,000 gallons for all fire suppression needs (sprinklers and on site hydrants) for the proposed >104,000 SF complex. This is not what was required and does not satisfy the condition.

Additional information from Long (3/22/23) was provided that detailed the rationale behind the water quantity calculations (and tank sizing), identifying "[t]he most hydraulically demanding area..." to be the "restaurant portion of the building" but then Long utilized an area of only 1,500 SF to estimate the sprinkler demand. If the sizing calculations require the actual area of the "restaurant", then the tank sizing will require recalculation because Wykeham's restaurant occupies well in excess of 5,000 SF. 12

Once a static fire suppression system has been designed and constructed, any increased need for water for fire suppression cannot be accommodated quickly enough to be utilized during a fire. When the 60,000 gallons are depleted (whether by sprinklers and/or hoses attached to on-site pressurized hydrants and/or leaks and/or human error) that's it. Per the draft contract provided recently by the applicant's team, refilling of depleted water storage tanks will be provided within 8 hours. That is not at all reassuring to a neighborhood that watched the old main building burn to the ground in 2017, with embers floating off into the distance. Will 60,000 gallons of water be able to ensure protection of the surrounding neighborhood's structures? What about other fire scenarios that could originate outside of Wykeham's building(s) such as lightning strikes or brush fires? Are the sizing calculations adequate to ensure protection of the mechanical plant? This issue is far too important to the safety of the entire neighborhood as well as to Washington's firefighters and other mutual aid responders and must be sent out to a specialist in fire safety who can thoroughly examine all components and proposed workings of Wykeham's proposed fire suppression system, including the newly proposed water supply quantity and source(s).

NEW APPLICATION REQUIRED

Once again I question whether the WZC wishes to move forward with the compliance review at this time since it has become quite clear that a new application to modify Wykeham's special permit for an "Inn" must be submitted. It would be a waste of time, effort and money to further evaluate plans that are not yet compliant (and in fact <u>cannot</u> achieve compliance with at least one of 2018's conditions – discussed on the next page) and will require redesign, resubmission and reevaluation of the various design changes and the potential impacts associated with those changes.

During Wykeham's ongoing effort to attain and demonstrate compliance with the modifications that were sought and approved in 2018, the "Inn's" site plan was further modified numerous times, with changes in 2019, 2020, 2021, 2022 and even more in 2023. As some of you will recall, the "minor" modifications¹³ that were proposed (and conditionally approved) in 2018 involved <u>far less</u> disturbance to the site plan than the suite of modifications that have been proposed since. If the WZC wants to move this process along, then please provide guidance to the applicant by a) voting on the compliance review at your next meeting (which can only be a "No" vote *at this time* because compliance is far from being attained),

¹¹ Separating the two proposed 30,000-gallon water storage tanks from the potable supply so as to provide water for fire suppression.

¹² In 2008 "The Washington Health Department...responding to a question regarding the proposed restaurant /bar at [101 Wykeham Road]...counts every seat in a space designated in a food service establishment." See Attachment G of my 11/24/23 letter to the WZC. Thus, in 2023, the "restaurant" component includes the great majority of Level 2's 21,889 SF, with only the porte cochere and three bedrooms <u>not</u> being part of the "restaurant". Please refer to sheet Skz-102. ¹³ 2018's so-called "minor" modifications to the site plan (re-grading around the rear and northeast portion of the main building, addition of a retaining wall (necessitated by the regrading and critical to the building height calculations), 7 concrete emergency egress pads, and addition of a drop off area outside the spa fitness building) allowed the massive expansion of the total floor area inside the main building.

and b) requesting a new application for the many site plan modifications that have been made since 2018. A request to revise the 2013 Settlement Agreement will also be necessary.

The second reason why a new application is required centers upon 2018's Condition #22, which specifically required that *Aquarion* provide written confirmation that there is adequate water supply "...to serve the inn and sprinkler systems." (Emphasis added.) Three months ago Aquarion replied (2/16/23) to Chairman Solley stating "...domestic use does not include irrigation or fire suppression..." adding that "The Judea Green System does not have the capacity to provide irrigation or fire suppression service." Also, the 2/17/23 email from Ingrid Jacobs of Aquarion to Erika Klauer stated that while Aquarion would be able "to provide domestic service to your proposed development" given the recently identified increased demand quantity of 7,000 gallons per day (GPD), Ms. Jacobs added "As a reminder domestic service does not include irrigation or fire suppression service." Given these statements, we now know there is no possibility that Condition #22 can ever be satisfied as written.

CONCLUSION

As can be seen from the above discussion (and my prior letters to the WZC), much remains to be finalized before Wykeham's Special Permit can be issued. This includes, but is not limited to, proper estimation of Wykeham's anticipated water use (and related septic throughput); multiple fire safety issues, not the least of which is adequate water supply for fire suppression and ongoing emergency vehicle access issues; proper notification to (and sign off by) abutting property owners, especially those who are parties to 2013's Settlement Agreement and those who hold a Restrictive Covenant over part of Wykeham's property; resubmission of a fully updated, cohesive and internally consistent Site Plan set (including Architectural sheets) with all setbacks (school and Inn) and current abutting property owners names shown; updates of various site statistics (such as lot coverage and area of disturbance); resubmission of all septic applications to DEEP with corrected application forms that provide a) sign off from the actual holders of the Restrictive Covenant, b) all updated changes to the site plan, and c) an updated design flow worksheet per the best estimates that can be made (i.e., not necessarily just the changes required by Cardinal in their 4/13/23 letter); and further revisions to the Illumination plan that show the correct accessways to the main building and the pool house (not the old paths) and that also shows where and how the tented events will be located and lit.

Thank you once again for your consideration.

Sincerely,

Marguerite W. Purnell

Attachments:

- A. Average Day Demand Chart Corrected (Numbers & Arithmetic)
- B. Average Day Demand Chart Corrected (Numbers, Arithmetic & Sources)

Attachment A

Wykeham Rise Country Inn Spa (Basic Corrections to Long's 4/3/23 ADDC Chart)

AVERAGE DAILY DEMAND CALCULATIONS										
LOCATION	SOURCE	UNIT	NUMBER	DAILY DEMAND	GPD	NOTES				
Main Building										
ASPE Table 8-7	Motel No Kitchen	Person	120	31.7	3,804.0	Main bldg. has 40 BRs (double occupancy) + 20 queen sleeper sofas = 120 guests				
ASPE Table 8-7	Restaurant	Meal	240	2.6	624.0	Arithmetic corrected.				
ASPE Table 8-7	Bar	Customer	50	2.1	105.0	Number underestimated.				
ASPE Table 8-7	Meeting Rooms/Tented Event	Meal	170	14.5	2,465.0	Impossible to enforce.				
ASPE Table 8-7	Office Employees	Person	28	14.5	406.0	Employee number seriously underestimated!				
Fitness Building										
ASPE Table 8-10	Bathhouse	Person	50	10	500.0	Only showers & toilets - treatment rooms & steam room not yet included.				
Building 1										
ASPE Table 8-7	Motel No Kitchen	Person	12	31.7	380.4	Each cottage has 4 BRs (double occupancy) + 2 queen sleeper sofas = 12 guests				
Building 2										
ASPE Table 8-7	Motel No Kitchen	Person	12	31.7	380.4					
Building 3										
ASPE Table 8-7	Motel No Kitchen	Person	12	31.7	380.4					
Pool House										
ASPE Table 8-10	Bathhouse	Person	50	10	500.0	Only showers & toilets - bar and meal service not yet included.				
		Total GPD (basic corrections)			9,545.2	Exceeds the 7,000 GPD permitted by DEEP (& agreed to by Aquarion)				

Attachment B

Wykeham Rise Country Inn Spa (Basic and Further Corrections to Long's 4/3/23 Chart)

AVERAGE DAILY DEMAND CALCULATIONS									
LOCATION	SOURCE	UNIT	NUMBER	DAILY DEMAND	GPD	NOTES			
Main Building									
ASPE Table 8-10	Hotel	Person	120	60	7,200.0	Should have used # (120) & DD (60) for Hotel w/ private bath (not Motel)			
ASPE Table 8-7	Restaurant	Meal	240	2.6	624.0	Arithmetic corrected.			
ASPE Table 8-7	Bar	Customer	50	2.1	105.0	Number underestimated.			
ASPE Table 8-7	Meeting Rooms/Tented Event	Meal	170	14.5	2,465.0	Impossible to enforce.			
ASPE Table 8-7	Office Employees	Person	28	14.5	406.0	Seriously underestimated number!			
Fitness Building									
ASPE Table 8-10	Bathhouse	Person	50	10	500.0	Only showers & toilets - treatment rooms and steam room not yet included.			
Building 1									
ASPE Table 8-10	Hotel	Person	12	60	720.0	Should have used # (12) & DD (60) for Hotel w/ private bath (not Motel)			
Building 2									
ASPE Table 8-10	Hotel	Person	12	60	720.0				
Building 3									
ASPE Table 8-10	Hotel	Person	12	60	720.0				
Pool House									
ASPE Table 8-10	Bathhouse	Person	50	10	500.0	Only showers & toilets - bar and meal service not yet included.			
		GPD (basic & further corrections)			13,960.0	Already nearly twice the DEEP permitted ADD & Aquarion's agreed service			