



July 5, 2022

Michael J. Murphy, AICP
SCCOG
Town of Lisbon
1 Newent Road
Lisbon, CT 06351

RE: Sunfox Campground Expansion Special Permit Application, Response to Comments

Michael,

The following is an itemized response to comments in your Staff Report, received from the Town of Lisbon on July 5, 2022. For clarity, original comments are in normal text, and CHA responses are in bold:

CLA Engineers Review

1. The Traffic reports needs to be updated and clarified. It was written for the previous application submission. Also it appears to identify the proposed one-way emergency access road as a possible new campground entrance.

The provided Traffic Assessment was completed prior to the project design phase. It assumed an expansion of up to 80 new sites and includes an analysis of two options that were being considered at the time, a New Driveway out to Kendall Road or a New Driveway out to Strnad/Kenyon Road, to meet the requirements of Lisbon Zoning Regulations Section 10.8.8.b which requires two points of egress for facilities with greater than 50 sites.

Based on the completed design phase, it was determined that the proposed emergency, exit only, driveway out to Strnad/Kenyon Road satisfied the egress requirement for Zoning, allowed the facility to maintain their current internal traffic pattern, and addressed the site distance concern for left turns from this location raised in the Traffic Assessment.

The driveway out to Kendall Road ultimately was not pursued after a review of the site, and discussions with the Town's Wetland Agent regarding the likely required wetland impacts to extend a driveway to this location.

Also, during the design phase, the proposed Campground Expansion was divided into phases. The Phase One Expansion, which is currently before the Planning & Zoning Commission, includes 29 new Sites (51 Sites less than what was included in the Traffic Assessment).

Based on an anticipated 80 Site Expansion, the Traffic Assessment states that with the recommendations provided (maintaining clear sight triangles and right turn only from the proposed exit onto Strnad/Kenyon Road) "the proposed development will not negatively impact the operations of the surrounding roadway network". Based on this statement the Applicant does not believe it is necessary to provide an updated Traffic Assessment for the currently proposed 29 New Sites since the previous Assessment determined capacity for a larger expansion.

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2. The Jewett City Water Company letter is unclear. It states that water is available but also states that it is unable to determine the supply needed to support the development. This needs to be clarified.

The Applicant has entered into the required Engineer Study Agreement with the Jewett City Water Company (JCWC), and recently received the attached Memo from Bill Sorti of Weston & Sampson to Robert Sherwood of JCWC. This Memo indicates that there is adequate capacity in the existing water system to supply a total 53 New Campsites (total of Proposed Phase 1 & Phase 2 Expansion).

3. Site plans and drainage calculations need to be stamped by a licensed engineer. Survey plans need to be stamped by a licensed surveyor.

Certified Plans and Calculations will be provided.

4. The drainage narrative indicates that there is a minor increase in peak flows while the storm flow table indicates an approximate 30% increase in storm flows. This needs to be clarified.

On a percentage basis, the peak flows from the developed site do increase by $\pm 30\%$; however, these peak flow rates are only 10-15% of the overall peak flow rates within Blissville Brook, which the entire developed area of the site drains into. Therefore, the increase in peak flow rates from the developed portion of the site to Blissville Brook is minor in respect to the overall peak flow rate of the Brook, and will not impact the overall peak flow rate discharging from the site or downstream properties.

5. The sizing calculations of the emergency access road wetland crossing needs to be provided in the drainage calculations.

Sizing calculations for the proposed wetland crossing are provided following the Time of Concentration Calculations in the Calculations Section of the Report. These calculations indicate that the proposed twin 12-inch RCP culverts have capacity to convey the 10-Year Design Storm and will maintain a minimum of 1-foot of freeboard to the roadway surface (\pm Elev. 170) through the 100-Year Design Storm.

6. The proposed width of the gravel access roads needs to be called out on the site plans.

Pursuant to Zoning Regulations Section 10.8.8, the proposed, one-way, emergency access driveway to the Strnad/Kenyon Road is proposed to be 15-foot wide, and the proposed, two-way, internal roadways are proposed to be 18-foot wide. Additional dimensions will be provided on the revised plans.

Planning Staff Analysis

1. Administrative: Notification of abutters has been an issue raised by a member of the public. Staff will provide more information at the meeting. Public notice signs were installed in front of the property as required.

Pursuant to Connecticut General Statute, Chapter 124, Section 8-7d, Abutter Notifications were mailed via Certificate of Mail to all Property Owners identified and confirmed by the Town Assessor. In addition to the 40 Property Owners identified to be within 500-feet of the Applicant's Property, the Applicant also provided notice to 13 additional Property Owners, including all Property Owners on Strnad Road, and Property Owners on Kendall Road and Preston Allen Road whose neighbors would



have been notified, but based on the shape of their property would otherwise not have received a notice.

2. Flooding and Storm-water Issues: This new application calls less campground sites to be added. The flood data provided had been forwarded with plans to our Town Engineer. Comments from our engineer are attached that will need to be addressed by the applicant. The applicant's engineer indicates that no sites are located in the floodplain but this will need to be certified by the engineer and the flood plain boundaries shown more specifically on the site plan to confirm campsite location safety.

As indicated in the previous Permitting Application, CHA reviewed available guidance from FEMA regarding determining an approximate Base Flood Elevation in Flood Zone A. The following is a summary of the results:

Contour Interpolation Method – this method requires that the delineated A Zone be within ½ of the contour interval of the available mapping on either side of the flood zone. CHA utilized the CT ECO 2016 Topographic Data at a contour interval of 2-feet and found the elevation difference from one side of the flood zone to the other to be 8-feet or more in the area of the proposed development. Therefore, this method could not be used.

Data Extrapolation Method – this method requires the site to be within 500-feet of the limits of the existing detailed study, have a consistent slope, and not be subject to tailwater effects. The detailed Flood Insurance Study ends approximately 500-feet upstream of Ames Road. The proposed development is over 4,000-feet upstream of Ames Road, and there are two state road crossings (I-395 and RT 169) in between. Therefore, this method could not be used.

Since neither of the simplified methods could be used, CHA developed an estimated Base Flood Elevation using the Normal Depth Method. The 2016 Lidar Data from CT ECO was used to develop cross sections at 100-foot intervals along Blissville Brook in the area of the proposed development. These cross sections were modeled with HydroCAD, and the 100-year Peak Flow was entered from the StreamStats regression equation data. Based on this model, the calculated Water Surface Elevation in the area of the proposed development was determined to be Elevation ±143 under both existing and proposed conditions. Based on the calculated Water Surface Elevation, CHA would assume a Base Flood Elevation downstream of the on-site Pond of 144. The lowest of the proposed Phase 1 sites (Sites 15 thru 18) are at least 10-feet above this elevation; however, based on discussions at previous hearings, notes have been added to the plans indicating that sites within the Flood Zone shall not be occupied for more than 180 consecutive days.

3. Water Supply and Sewage disposal: Final DPH and Uncas Health District approvals will need to accompany the application per Lisbon's regulations. This may require an update of information beyond what has been provided to date from those agencies. The applicant's engineer should elaborate on this at the hearing. In addition, the report from the JCWC re public water has not been provided yet.

See response to Peer Review Comment 2 and Attached Memo regarding Water Supply

The approvals received from CT DPH were for the construction of a Central Subsurface Sewage Disposal System (SSDS) with a design flow of 7,467.9 GPD based on 32 New Campsites with an average daily design flow of 62.3 GPD/Site, which includes a 1.5 Safety Factor. The current plan is for 29 New Sites and based on the Water Demand Memo from Weston and Sampson, current water usage data indicates a per site average daily demand of 47.5 GPD. Therefore, the proposed SSDS will have



adequate capacity to treat the sanitary flows from the 29 Sites.

4. Traffic and Emergency Access: This planner has advised the applicant's engineer of the need for a revised traffic impact assessment to better assess the neighborhood conditions and project impact. The analysis needs to be more focused on this actual proposal. With respect to emergency access culvert sizing, see the Town Engineer's comments for additional information. Input regarding the treatment of the emergency access and its suitability should be provided by the Fire Marshal.

See response to Peer Review Comment 1. No correspondence has been received from the Fire Marshal.

5. Design Issues: The engineer should provide some detail or clarify information regarding the following:

- a. lighting of the sanitary facilities,

Sanitary Facilities are only intended to be externally illuminated as required by the Building Code (egress lights), and are intended to be building mounted fixtures. The proposed bathroom building is over 650-feet from the nearest property line.

- b. details for how each site will accommodate two (2) parking spaces,

Each campsite has a minimum of 40-feet of "frontage" on the campground roadway. Perpendicular sites have the designated RV Parking area at least 19-feet from the campground roadway allowing for at least two vehicles to park on the site, perpendicular to the campground roadway. Parallel sites have 60-feet of "frontage" and the RV Parking area is set 10-feet back from the campground roadway and is enlarged to allow for the required turning maneuvers. This allows one vehicle to park in the RV Parking Area and one to park parallel with the roadway.

- c. materials and elevations for the future pavilion, how visitor parking will be provided,

Approval is not being sought for the future pavilion area at this time. The intent is to continue use of the existing seasonal activity tent pending future discussions with the Commission regarding the dimensional restrictions placed on Activity Centers in Zoning Regulation Sections 10.8.18.b & 10.8.18.c. Existing Visitor Parking is provided at the Main Office.

- d. how garbage disposal containment facilities meet section 10.8.10,

Garbage Collection areas are provided within 250-feet of all proposed campsites. The existing central collection area is intended to remain.

- e. analysis of the need or no need for screening from camp activities should be provided to the public at the hearing.

There is over 130-feet from any proposed campsite to an adjacent property line, and the abutting properties are zone R-60, which requires 30-foot minimum side and rear yards. Therefore, no dwelling could be constructed less than 160-feet from a proposed campsite. The nearest dwelling existing dwelling is over 200-feet from any proposed campsite, and over 130-feet to an adjacent property line. Zoning Regulation Section 10.8.12 requires a minimum separation of 150-feet.

- f. ability for vehicles and trailers to negotiate turning radii

The minimum centerline radii of the proposed roadway is 50-feet (at proposed Site 1), which is equal to the Town's requirement for the radius of a cul-de-sac and the maximum anticipated required turning radii for a camper. Roadway "intersections" have radii similar to that



required for local subdivision roadways. The Applicant has also reviewed the design based on their experience with the existing campground sites and access.

6. Activity Center: This proposal should be explained in detail by the applicant to discuss the nature of the existing center and the future pavilion.

Approval is not being sought for the future pavilion area at this time. The intent is to continue use of the existing seasonal activity tent pending future discussions with the Commission regarding the dimensional restrictions placed on Activity Centers in Zoning Regulation Sections 10.8.18.b & 10.8.18.c.

Thank You,



Pete Parent, PE
Project Manager

MEMORANDUM

TO: Robert Sherwood
 FROM: Bill Storti
 DATE: June 22, 2022
 SUBJECT: Sunfox Campground Impacts Evaluation

Sunfox Campgrounds intends to significantly expand their facility which is currently serviced by the Jewett City Water Company's (JCWC) Hill-n-Dale system. The owners of Sunfox have asked for JCWC's commitment to provide the drinking water necessary to support this expansion. This memorandum provides Weston & Sampson's review of the information submitted by Sunfox, and observations regarding the ability of the Hill-n-Dale system to support the requested water needs.

Weston & Sampson has reviewed the production data from 2019 – 2021 provided by JCWC. This included both the total gallons pumped per day from Wells 1 and 2 at Hill-n-Dale, as well as the monthly demands from Sunfox Campgrounds. This information was used to determine the average day demand (ADD), maximum month demand (MMD), and peak day demand (PDD) for the existing distribution system. The ADD and MMD were also determined for Sunfox Campgrounds, however, since daily usage data wasn't available, the PDD was calculated by multiplying the campground's ADD by the ratio of PDD/ADD for the existing system. These values can be found in Table 1 below.

Table 1 – Demands for Existing System (Year-Round)

Location	ADD (GPD)	MMD (GPD)	PDD (GPD)	ADD (GPM)	MMD (GPM)	PDD (GPM)
Hill-n-Dale System	5,353	8,019	13,787	3.72	5.57	9.57
Sunfox Campground	2,748	5,506	7,077	1.91	3.82	4.91

The campground has only a few year-round users, so the average demand based on yearly consumption is severely swayed by the lack of users. To account for this, the ADD, MMD, and PDD for

both the existing system and the campground were found for the camping season which is reported to be between April and October. These adjusted values can be found in Table 2 below.

Table 2 – Demands for Existing System (Camping Season)

Location	ADD (GPD)	MMD (GPD)	PDD (GPD)	ADD (GPM)	MMD (GPM)	PDD (GPM)
Hill-n-Dale System	6,735	8,019	13,787	4.68	5.57	9.57
Sunfox Campground	4,179	5,506	8,555	2.90	3.82	5.94

The campground currently has 88 existing sites. The ADD, MMD, and PDD of the campground observed during the camping season allows the computation of "per-site" demands of 47.49 GPD ADD, 62.56 GPD MMD, and 97.22 GPD PDD. The documents provided by Sunfox, assumed a safety factor of 1.5 for determining future campsite demands. Keeping consistent with this, a safety factor of 1.5 was applied to the per-site demands presented above, resulting in a per-site ADD of 71.23 GPD, MMD of 93.85 GPD, and PDD of 145.82 GPD.

Sunfox Campgrounds has proposed the addition of 32 sites in Phase 1 and 21 sites in Phase 2, resulting in a total of 53 additional sites. Using the calculated per-site demands and the number of proposed sites, the total demands for the expansion and the overall finished facility were computed and are presented in Table 3 below. The total Hill-n-Dale system demands were computed by adding the proposed total (expanded) campground demands to the existing residential (non-campground) system demands.

Table 3 – Demands for Proposed Conditions (Camping Season)

Location	ADD (GPD)	MMD (GPD)	PDD (GPD)	ADD (GPM)	MMD (GPM)	PDD (GPM)
New Campsites	3,775	4,974	7,729	2.62	3.45	5.37
Sunfox Campground	10,044	13,252	20,561	6.97	9.19	14.28
Hill-n-Dale System	12,600	15,746	25,793	8.75	10.93	17.91

To determine if the existing system has a sufficient capacity and margin of safety to accommodate the additional demands, these proposed demands were compared to the safe yield supply available from the Hill-n-Dale wellfield. According to the 2010 Jewett City Water Company Water Supply Plan, Wells No. 1 and 2 have safe yields of 17 GPM and 12 GPM, respectively. This provides a total combined safe yield of 29 GPM (41,760 GPD). The resulting margins of safety (MOS) are summarized in Table 4 below.

Table 4 – Margin of Safety (MOS) for System (Camping Season)

System-Wide Condition	Available Safe Yield	ADD (GPD)	ADD MOS	MMD (GPD)	MMD MOS	PDD (GPD)	PDD MOS
Existing Demands	41,760	6,735	6.20	8,019	5.21	13,787	3.03
Proposed Demands	41,760	12,600	3.31	15,746	2.65	25,793	1.62

Water supply guidelines recommend that systems provide a minimum MOS of 1.15 under any scenario. The lowest calculated margin of safety for the well field operating under the proposed campground expansion is 1.62 under peak day demand conditions, providing roughly 62% more water than would be demanded. Therefore, the existing Hill-n-Dale wells are deemed capable of safely supplying the water needed for the Hill-n-Dale system under the proposed Sunfox development scenario.

The existing Hill-n-Dale booster station is currently equipped with 10,000 gallons of atmospheric storage. This volume is only sufficient to provide adequate service up to, but not beyond, ADD conditions under the demands proposed for the expansion of the Sunfox campground. For the Hill-n-Dale booster station to safely service the range of demands imposed by the Sunfox development, an additional storage volume of 5,000 gallons must be installed at the station.

The increased demand of the Sunfox system will directly require an increase the time that the well pumps will need to run to supply the required water. Current ADD conditions require the wells to run roughly 4 hours per day. The increased demand imposed on the well system by the Sunfox expansion will require the pumps to operate an additional 2 hours per day. Over the course of one month, pump run times would increase by roughly 60 to 65 hours. Well Pumps No. 1 and 2 are equipped with 1 HP and 3 HP motors, respectively, and the increased operation of the units would result in a combined monthly power increase of roughly 200 kWh (\$25 based on \$0.12/kWh). In addition, increased costs for chemical usage and booster pump operation will be incurred at similar additional cost.

RE: [--EXTERNAL--]: Staff Report

Parent, Pete <PParent@chacompanies.com>

Tue 7/5/2022 2:40 PM

Inbox

To: Elaine Joseph <ejoseph@lisbonct.com>; MMURPHY@SECCOG.ORG <MMURPHY@SECCOG.ORG>;

Cc: Dave @ Sunfox Campground <dave@sunfoxcampground.com>;

📎 1 attachments (446 KB)

2022-07-05 Response to Comments.pdf;

Hi Elaine & Michael,

Attached is our response to the comments provided for discussion tonight.

Thank You,
Pete

Pete Parent, PE*

Project Manager III

CHA

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*CT, MA, NY



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From: Elaine Joseph <ejoseph@lisbonct.com>

Sent: Tuesday, July 5, 2022 8:54 AM

To: Parent, Pete <PParent@chacompanies.com>

Cc: Dave @ Sunfox Campground <dave@sunfoxcampground.com>

Subject: [--EXTERNAL--]: Staff Report

Hello Pete and Dave - Mr. Murphy's Staff Report is available for review

here: https://www.lisbonct.com/sites/g/files/vyhlf791f/uploads/pzc_staffreport_sunfox_1.pdf

Elaine Joseph
Administrative Assistant / Clerk to the Boards

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