



**ANALYSIS OF LAKE HOUSE UTILIZATION: 2017-2022
SIPOA BOARD FACILITIES SUBCOMMITTEE (PART 2)**

April 27, 2023

Introduction

Part 1 of the Lake House Utilization Analysis (dated 02/9/2023) presented basic factual information regarding how the Lake House fitness class and meeting rooms are being used currently, and how important growth trends are influencing the Renew 50 facilities planning study now underway.

After the initial round of presentations of property owners in February 2023, the subcommittee received a substantial number of comments regarding the initial concept and background analysis. A number of these requested clarification regarding usage trends and estimates of future utilization of capacity.

This content addresses those requests and discusses how the subcommittee has completed the analysis used in its initial presentations. It is meant to accompany and supplement Part 1, which is also available on the Renew 50 part of the SIPOA web site.

Data used in this analysis was obtained from the Lake House management. It consists of logs of every event that took place in each room of the Lake House that requires scheduling with staff, 12 months per year, 7 days per week, over the analysis period of four years. Forty-eight months of data were parsed into fitness and non-fitness uses by month, totaled to produce annual counts. The process and conclusions employed by the subcommittee have been presented multiple times to Lake House staff for their review so as to ensure data integrity and proper interpretation.

Framework

The framework for this utilization analysis has three components: 1) determining the **trends and base points** of demand and usage for various spaces in the Lake House; 2) determining the **effective capacity** of those spaces; and 3) making reasonable **projections of demand** for usage of these spaces and comparing the results to their effective capacity.

Trends and Base Points

The subcommittee has focused on growth in demand for fitness classes, overwhelmingly in Live Oak Hall, as an important driver of the need to consider how continuing build-out of the island will challenge Lake House capacity in the Renew 50 planning horizon of 5 to 10 years. Data suggests that meeting expected demand for these classes could be compromised by the unavailability of adequate and appropriately furnished workout spaces. The growth in demand for these classes is described in Part 1 of this report, available on this web site.

The 193% growth in demand for fitness classes between 2017 and the end of 2022 is striking. There are three likely causes for this phenomenon: an increasing number of permanent residents on the island (47% of housing units according to 2020 Census data; 52% in latest SIPOA owners' survey); continued buildout of the island (now approximately 94% and advancing); and what appears to be an organically developing trend in demand for more and varied fitness classes, including ones that are targeted toward specific types of exercise and participants.

Of the three, the last appears to have the most explanatory power. At the end of 2016, there were 2,189 developed properties on the island. At the end of 2022, there were an additional 73 housing units completed with certificates of occupancy. That increase represents an additional 3.3% of developed properties. Even with multiple owners per new housing units, it seems unlikely that this phenomenon has been, in and of itself, capable of driving the tripling of fitness class demand and utilization of Live Oak Hall. Thus, the subcommittee does not expect the island's shrinking number of open building sites to cause any significant reduction in the continued growth in demand for greater numbers and types of fitness classes.

Effective Capacity

The subcommittee believes the proper way to address ability of Lake House spaces to absorb growing demand is to determine the **effective capacity** of various spaces. This will differ from simple arithmetic capacity calculations in that it necessarily incorporates the following pragmatic considerations:

- the daily distribution of demand based on factors determined from property owner feedback and experience;
- frictional factors such as breakdown and cleanup times that influence how many events are able to use the same space consecutively;
- the typical length of time for different events and uses; and
- the assessment of Lake House management, informed by their expertise and experience, regarding the ability of support staff and trainers to accommodate both consecutive and non-consecutive events at various times throughout the day,

Live Oak Hall accommodates group fitness classes, smaller semi-private fitness classes, and a limited number of larger non-fitness events that require extra space or specialized meeting technology (e.g., large special interest group gatherings, blood drives, elections, etc.). Non-fitness uses typically last longer than one-hour fitness classes and generally occur in the evening, although some special events are held during daytime hours as well.

A reasonable and accurate estimate of effective capacity must be based on current and anticipated daily usage, the number of days per week in which demand can be expected, and the number of weeks in a year that the Lake House can accommodate that demand. The Lake House can be closed for certain holidays and storm events, and Live Oak Hall is unavailable on a number of days for blood drives, elections, and other similar special events. Lake House management and subcommittee staff estimate that this can be the equivalent of as little as one week or as much as two (i.e., 5 to 10 days).

Demand for fitness and/or meeting space falls off dramatically on the weekend—a consistently strong lifestyle preference for property owners, the greatest number of which are retirees. There are limited fitness classes held on Saturday mornings; there are typically 2 to 4, rarely more. Thus, the subcommittee regards the

number of days per week of available effective capacity to be 5.0 to 5.5, considering Saturdays as half-day equivalents.

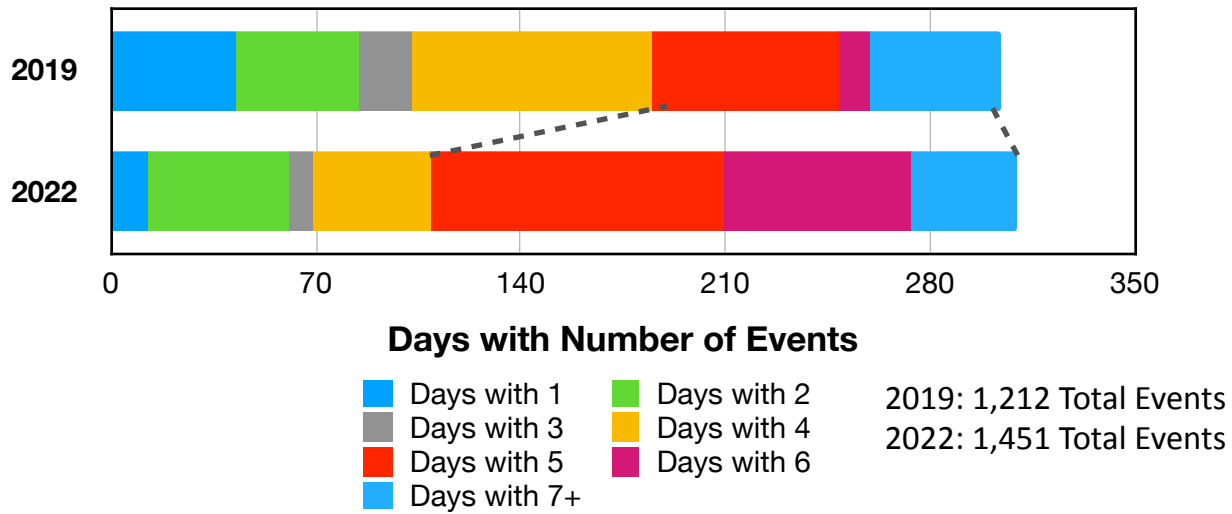
Given these constraints, the remaining variable is how many usage slots during the day can be reasonably expected to accommodate demand *at the times it occurs*. Extensive collaboration with Lake House management and the referenced analysis of daily usage for 2019 and 2022 has led the subcommittee to conclude that 7 events per day, maintained consistently over 5 to 5.5 days per week, 50 to 51 weeks per year constitutes the best estimate of typical effective capacity for Live Oak Hall. A typical day under this scenario would include four fitness classes in the morning, two in the afternoon (or one fitness class and one non-fitness use), and a single fitness or non-fitness use in the evening.

Maximum effective capacity can be derived at the high end of the daily and weekly parameters (5.5 days per week, 51 weeks per year), while adding an additional event for a total of 8 per day. Lake House management and the subcommittee concur that this is an intensive scenario that will be challenging to maintain consistently. We consider it to be less realistic than the typical effective capacity scenario described above.

Using data provided by Lake House management, the subcommittee has studied the distribution of daily Live Oak Hall uses in 2019 and 2022. (2020 and 2021 were wholly or partially marked by pandemic closures and were not used in the analysis.). Data used to generate this graphic includes semi-private fitness classes which do not appear on the daily log of classes posted in the Lake House lobby. Usage of those logs alone will result in an undercount of Lake House usage.

The results are depicted in the graphic that follows. It shows a pronounced intensification of daily use of Live Oak Hall that has occurred in the last two full years of use. The number of days with 5 or more events grew from 119 to 201, an increase of 70%. There was a slight increase in the number of days one or more events took place in Live Oak Hall. This demonstrates how much current usage is poised to meet the threshold of typical effective capacity with even a modest increase in the number of events per day.

LIVE OAK HALL DAYS WITH NUMBER OF EVENTS 2019 vs. 2022



Demand Projection

With the usage trends and the 2022 base point at one end and effective capacity established at the other, a projection of usage demand can approximate the point in time at which demand can be expected to approach or even exceed capacity.

The subcommittee used 2017, 2018, 2019, and 2022 usage data to develop three increments of growth for both fitness classes and non-fitness usage: 2017 to 2018, 2018 to 2019, and 2019 to 2022. These increments were used to develop four different fitness class growth scenarios extrapolated five years to 2027 based on the following:

- an average increment of year-to-year growth over the study period (297);
- the lowest increment of year-to-year growth over the study period (149);
- the most recent increment of year-to-year growth; i.e., 2019 to 2022 (211); and
- one-half the most recent increment of year-to-year growth (106).

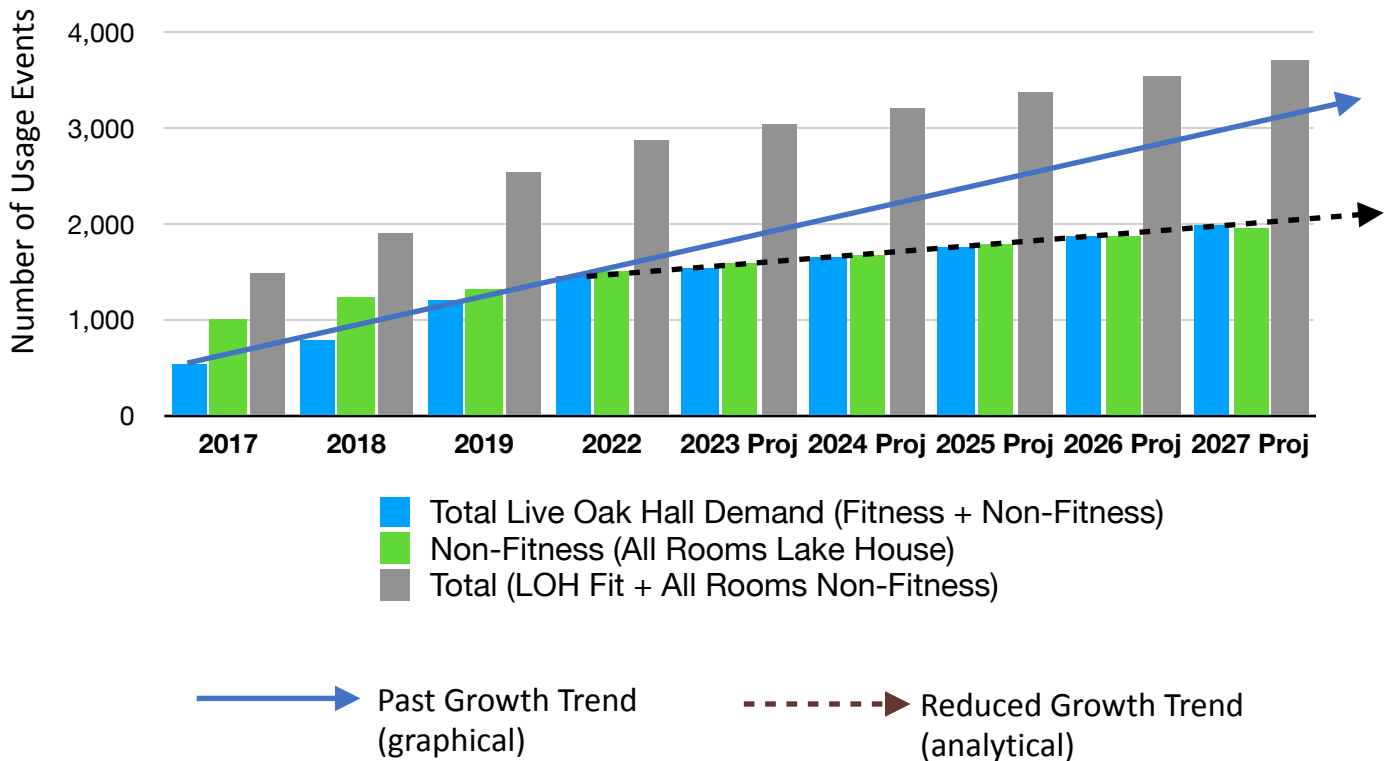
Growth in fitness class demand has been so robust that the subcommittee is aware that using an average annual increment of growth over the 2017-2022 time period could risk overestimating demand going forward. Realizing the need to be conservative (with some attendant risk of *underestimating* expected demand), the subcommittee has used one-half the most recent annual growth increment (i.e.,

2019-2022) in its projections of fitness and non-fitness usage. These estimates are lower than the smallest incremental year-over-year growth exhibited in the four years of analysis.

For fitness classes, this annual incremental growth amounts to adding one additional large group fitness and one additional semi-private fitness class session each week per year, for each of the next five years. Given that historic demand trends that have been substantially higher, this estimate represents a very modest increase that is cautiously conservative.

Even with arbitrary reduction from past trends, when projected forward to limits of typical effective capacity, the data suggest significant demand constraints could plausibly occur in the 2027 time frame. The graphic shown below depicts this scenario and demonstrates how the growth trend from 2017 to 2022 has been reduced so as to generate a reasonably conservative projection.

**LAKE HOUSE and LIKE OAK HALL USAGE PROJECTION:
Past Growth Trend (2017-22) vs. Reduced Growth Scenario
(2022-2027)**



The table below shows a sensitivity analysis that uses different combinations of values used to compute effective capacity in Live Oak Hall, and what those combinations suggest for current and expected five-year capacity utilization. They corroborate the conclusion that, even under assumptions of modest growth rates and intensifying use of Live Oak Hall, demand constraints can reasonably be expected to occur in this time frame.

SENSITIVITY ANALYSIS: LIVE OAK HALL EFFECTIVE CAPACITY

Key: A/B/C

- A - Number of Possible Events per Day
- B - Number of Available Days per Week (5.5 ≡ Half Day Saturdays)
- C - Number of Available Weeks per Year

Capacity Parameters	Current Live Oak Hall Usage as % of Capacity	Projected 2027 Live Oak Hall Usage as % of Capacity
7/5/50	83%	113%
8/5/50	73%	98%
7/5/51	81%	110%
8/5/51	71%	97%
7/5.5/50	75%	102%
8/5.5/50	66%	90%
7/5.5/51	74%	100%
8/5.5/51	65%	88%

Non-Fitness Usage

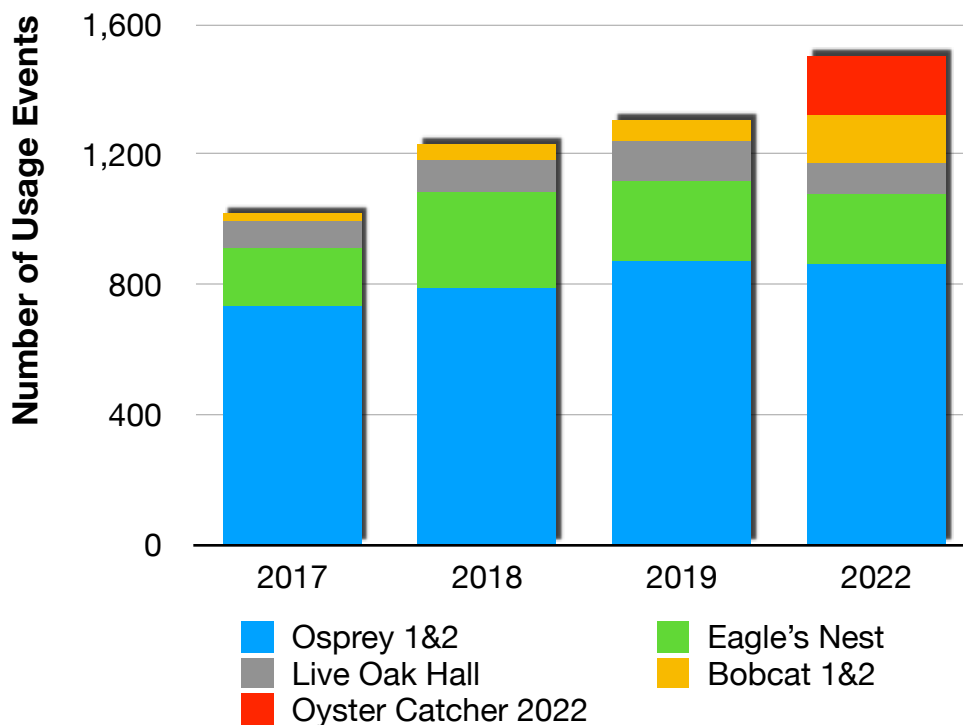
Currently, pressures on non-fitness usage of Lake House spaces (meetings, etc.) are not as pronounced as those relating to fitness class usage. Space requirements

for these rooms are not as demanding as those for fitness classes, especially with regard to floor area and ventilation requirements.

The subcommittee performed a similar type of analysis for non-fitness usage, using **typical effective capacity** parameters of **three** suitable rooms available for four uses each day (two morning and two afternoon), five days per week, 51 weeks per year—while holding current non-fitness usage of Live Oak Hall constant.

Projected availability of suitable spaces for non-fitness events is somewhat indeterminate because of recently increased usage of the Oyster Catcher Community Center (negligible before 2022), combined with uncertainty regarding the remaining length of its useful life. This implies that available space for non-fitness events could be limited to the two Osprey rooms, plus one of either the Eagle’s Nest studio or Bobcat 2 (which currently houses a billiards table). Bobcat 1 was recently converted to a therapeutic massage studio, an improvement which had been under consideration in at least two prior budget cycles before completion.

LAKE HOUSE NON-FITNESS ANNUAL USAGE 2017-2022



The 45% growth in non-fitness events over the analysis period is likely more sustainable than the rapid tripling of fitness class growth rates over the same analysis period. For this analysis, the most recent incremental increase (10% lower than the average annual increase) was considered most appropriate.

This analysis for non-fitness events results in expected usage rates in 2027 of approximately 70% of typical effective capacity. This represents an additional 50% increase in non-fitness usage over the next five years. Under these assumptions, a situation could evolve in which scheduling an open meeting space during desirable times in the Monday to Friday daytime period may become progressively more difficult.

Observations and Conclusions

The salient points derived from this analysis are: 1) there is a well-defined and substantial growth trend in place for fitness classes that, at this juncture, shows no evidence of reversal (see Appendix following); 2) spaces to accommodate this growing demand in the Lake House are currently limited to Live Oak Hall; and 3) logic dictates that eventually, even if demand growth continues at a pace substantially reduced from its recent historic trend, Live Oak Hall will be challenged to accommodate usage demand for both fitness and non-fitness uses at some time within the Renew 50 planning horizon (5-10 years). The subcommittee estimates that, under stated assumptions, this could occur in the approximate 2027 time frame.

While appearing somewhat less pressing at this juncture, reasonably expected growth in meeting space demand over the next five years (up to 50% by 2027) could foreshadow looming challenges not far from that planning horizon, especially if the Oyster Catcher facility becomes unavailable.

The subcommittee wishes to stress that Renew 50 is a facilities planning exercise. It is not only an assessment of current conditions based on reliable data, but also a reasoned analysis of **trends**—and how those trends are likely to become the current conditions at some point in the future.

Assessing how those trends are likely to evolve involves making assumptions using today's best judgment. To be sure, best judgment involves more than making

simple mathematical calculations. It also involves substantially more than using anecdotes as the basis for prediction. What someone observed on a certain day in the recent past is not a reliable substitute for multiple hard data points spanning months and years, nor is it a substitute for collaboration with Lake House staff to ensure integrity of data, methodology and results.

A set of reasonably expected outcomes of these trends is indifferent to emotions. They do not compel one type of action versus another. The extent and manner in which the expected outcomes are addressed is ultimately determined by policy decisions. In the case of Renew 50, the efficacy of proposed policy decisions involving a significant expenditure of resources—monetary or otherwise—will appropriately be judged by property owners through the vehicle of an island-wide referendum.

The evolving dynamics of growth in Lake House usage befits continued investigation and active planning (see Appendix following). This is essential for SIPOA to maintain a level of service in the Lake House that meets the needs and expectations of property owners into the reasonably foreseeable future.

The Renew 50 team will continue to refine and modify this analysis as it encounters relevant data and information that has the potential to substantially change the methodology and conclusions described herein.

**APPENDIX
ANNUAL LAKE HOUSE UTILIZATION**

YEAR	FITNESS CLASS EVENTS	NON-FITNESS EVENTS	TOTAL
2017	466	1,019	1,485
2018	673	1,233	1,906
2019	1,221	1,309	2,530
2022	1,366	1,323	2,689
Increase 2017-22	193%	30%	81%

Note: The Oyster Catcher Center logged 184 non-fitness events in 2022, a substantial increase over negligible numbers for the remaining analysis period. This substantially raises the increase in non-fitness events between the two facilities to 48% versus the 30% solely attributable to the Lake House.

(Due to minor error corrections and recategorizations, there may be slight discrepancies between these figures and corresponding ones reported in Part 1 of this analysis. None of them have a material effect on the conclusions presented in either document.)