

The background of the entire page is a photograph of several palm trees silhouetted against a bright, orange-hued sunset sky. The sun is visible near the horizon, creating a strong backlight effect. The palm trees are of varying heights and are scattered across the frame, with some in the foreground and others further back. The overall mood is tropical and serene.

# **Sustainability Report 2020**

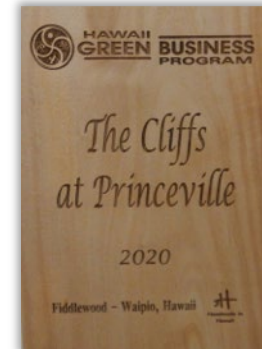
**The Cliffs at Princeville**

**3811 Edward Road  
Princeville, Kauai, Hawaii**

**April 2021**

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Several of The Cliffs' residential buildings with the Hanalei Mountains beyond

## Summary

This Sustainability Report 2020 is the third year The Cliffs at Princeville (hereafter The Cliffs) published a Sustainability Report. The Sustainability Plan was developed in 2018. The first report was issued in April 2019 for calendar year 2018, and established 2018 as the baseline year for subsequent reports. This Report compares performance against the baseline year (2018) and 2019 for the six key metric categories, highlights accomplishments and recognition, and defines the 2021 goals.

\* The State mandated Covid-19 travel restrictions implemented in late March 2020 had a significant impact on the occupancy levels on the property for much of the year, resulting in decreased demand for energy and water use, reduced solid waste and cardboard volumes, and a limited number of guest survey responses. Conversely, the volumes of recyclable materials (paper, plastic, glass and aluminum) increased due to the improved recycling facilities completed in 2019 and the ongoing recycling efforts.

This Sustainability Report addresses six categories:

1. Climate Change and Resiliency
2. Operations and Community Engagement
3. Energy Consumption and Renewable Energy Production
4. Land Use and Maintenance
5. Water Use and Conservation
6. Waste Management and Recycling

### **\*\*The 2020 sustainability report highlights:**

- Issued annual update to the Cliffs' Emergency/Resiliency Plan.
- Received 1,359 Guest Survey inputs to the Cliffs' Cloud Cherry system :
  - Reply rate : 43%
  - Delight Score : 85%
  - Net Promoter Score : 81%

Information is only available for 10 months (Sept-June) due to reduced occupancy - no surveys were carried out during July and August.



- The Cliffs maintained the highest ratings available from RCI and Interval International (II) organizations as well as earned the following notable honors:
  - *Pacific Edge* magazine co-winner Jim Braman for “Hospitality Manager of the Year” category
  - *RCI Green Award* - top 5 out of 1,800 resorts worldwide, 1<sup>st</sup> place winner TBD this year
  - *Hawaii Green Business Program Recognition*
- The Cliffs continued to participate in Community Engagement activities with Hawaii Lodging and Tourism Association of Kauai, Society of Human Resource Management of Kauai, Boys and Girls Club of Kauai, Kauai Community College Hospitality School (Jim Braman curriculum advisor & student mentor), Kauai Tourism Strategic Plan panel member, Anaina Hou Community Park (Jim Braman BOD president), and a supporter of the Kauai Rotary activities.
- Renewable Energy production decreased 9% in 2020 (the drop in renewable energy production can be attributed to increased precipitation for the year), but still produced 1,113,790 kWh of electricity which is equal to 685 barrels of imported oil. The renewable energy system produced 45% of total electricity demand at the Cliffs in 2020. The renewable energy system upgrades began in 2020 (estimated completion: early 2021) to increase system output and improve kilowatt-hr reporting accuracy.
- Because of the reduced occupancy levels, The Cliffs purchased 30% less electricity from KIUC (at retail rates) and exported 3% more electricity to KIUC (at wholesale rates).
- New tree & shrubbery planting occurred to optimize public health, appearance and storm water benefits; a total of 45 trees were planted.
- The Employee “Sunshine Fund” (established in 2018) continued to assist employees during times of difficulty; Sunshine Fund is a voluntary contribution program supported by donations from Cliffs management and Association Board members.
- Reduced water use by 2.67 million gallons over 2019, a 26.4% decrease (a reduction of 3.25 million gallons; 30.4% decrease over 2018 baseline).
- Continued to encourage Owners and Guests to use one of the two FloWater stations (installed September 2019) for filling re-usable containers rather than buying single-use plastic water bottles; these stations offset 27,549 plastic bottles in 2020 (almost 2,300 bottles per month) that otherwise would have been purchased and used at the resort by our Owners & Guests, and ultimately been recycled or land-filled.
- Cardboard recycling decreased by 28 cubic yards or 14.9% over 2019
  - Decrease is due in large part to reduced occupancy in 2020
  - Extra yardage volume (overfilling of collection bins) decreased by 64.5% over 2019
  - There is need for greater cardboard collection volume or more frequent servicing
- Solid waste volume was reduced by 46.9% over 2019:
  - Decrease is due in large part to reduced occupancy in 2020
  - Extra yardage volumes (overfilling of collection bins) decreased by 39.8% over 2019
  - There is a need for more solid waste reduction, consolidation actions, collection volume or increased servicing
- Total material recycled in 2020 was 41.8% of total waste generated, which is a noted improvement over 2019 (21%). Waste recycled in 2020 was 549.8 cubic yards, which was 30.29% more than 2019 (422.4 cubic yards). The Cliffs saw increases in the amount of plastic (39.4%), glass (122.6%), paper (63.8%), and aluminum (77.8%) recycled in 2020 due to 2019 improvements to the recycling stations and ongoing recycling efforts.



## Sustainability Focus at The Cliffs

### Sustainability Overview

Sustainability is defined as per the United Nations World Commission on the Environment and Development, as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The three pillars of sustainability are economic, environment and social elements which embrace the natural environment and human resources. With increasing urbanization sustainability concerns have increased in the last two decades. To this point the United Nations issued 17 Global Sustainable Development Goals (SDG) and 169 targets in 2015:



Trash & recycling station

The Cliffs at Princeville core metrics align with several Sustainable Development Goals as illustrated in table 1.

<b>Table 1. The Cliffs at Princeville Sustainability Metrics Alignment with Sustainable Development Goals 2021</b>							
<b>UN Sustainable Development Goals</b>	<b>Climate</b>	<b>Ops</b>	<b>Energy</b>	<b>Land Use</b>	<b>Water</b>	<b>Waste</b>	<b>Sustain. Comm.</b>
1. No Poverty							
2. Zero Hunger							
<b>3. Good health/well being</b>							
4. Quality education							
5. Gender equality							
<b>6. Clean water/sanitation</b>							
<b>7. Affordable Clean Energy</b>							
<b>8. Recent Work/Economic Growth</b>							
<b>9. Industry Innovation/Infrastructure</b>							
10. Reduced inequalities							
<b>11. Sustainable Cities</b>							
12. Responsible Consumption/Production							
<b>13. Climate Action</b>							
<b>14. Life Below Water</b>							
<b>15. Life on Land</b>							
16. Peace, justice, strong institutions							
17. Partnerships for the Goals							

## The Cliffs at Princeville

The Cliffs is a self-managed, boutique resort on the north shore of Kauai in Princeville. There are 202 residential units that are used for timeshare (129 units) and individually owned condominiums (73 units). Dramatically situated between shimmering sea and sculptured emerald mountains on a bluff overlooking the Pacific Ocean, The Cliffs Resort is situated on 22 acres of lush tropical greenery.

On-site recreation opportunities include a putting green, tennis courts, pickle ball courts, basketball half court, shuffleboard, a botanical walking path, a children's playground, two swimming pools and two Jacuzzis.

Adirondack chairs are situated on the ocean bluff as well as a hammock, and a gazebo with barbeque grills. Guests often walk through the Resort's grounds and gardens or enjoy the ocean view from the open space. The Cliffs at Princeville provides bicycles for riding around the Princeville area. There is also a walking path that extends from the Princeville entrance and shopping center to the Princeville Resort. Several wellness programs are offered at the resort.

To coordinate sustainability activities across the Cliffs Resort, a Joint Sustainability Committee was formed with participation from all three Associations with the following mission in mind:

#### **Mission Statement:**

***The Joint Sustainability Committee is responsible for the development of the Sustainability Plan for The Cliffs at Princeville. The committee also periodically updates the Sustainability Plan and contributes to the preparation and issuance of the annual Sustainability Report, which is released by the annual meeting for the previous calendar year of activity.***

***To this end, the committee reviews progress in achieving the sustainability goals across the dimensions of; energy consumption, water use, waste disposal including recycling of cardboard, glass, plastic, paper and hi 5 containers, land use, emergency preparedness and community engagement. The committee reviews both ongoing progress on the above key metrics and provides insight and guidance on future objectives and new initiatives to reduce the environmental footprint of The Cliffs.***

***Renewable energy production, by both the Administration Building system (which is a Cliffs-owned system) as well as energy purchased under the Valta Power Purchase Agreement, is an important aspect that falls within the scope of this committee and includes usage trends, billing and overall cost and system performance. Liaison and interface with Valta remain the responsibility of The Cliffs general manager.***

***Other aspects considered in the Sustainability Plan which may have annual achievement goals include: reducing the solid waste produced, increasing the quantity of waste recycled, reducing the amount of water consumed, development and updating emergency plans, and consideration of land use features (tree canopy, reduction of invasive species, etc.). The committee is also involved in the identification of opportunities to participate in sustainability initiatives on the north shore, for all of Kauai and the Hawaiian Islands. The committee considers sustainability recognition opportunities to highlight the performance of The Cliffs Sustainability Plan.***

#### **The 2020 Sustainability Report**

Sustainability at The Cliffs is a journey with continuous consideration of social, environmental and economic effects of development and ongoing operations. This Sustainability Report addresses the four interconnected domains of ecology, economics, politics and culture.

The objective of the 2020 Sustainability Report is to communicate progress made against goals established in the 2019 Sustainability Plan, gauging the results for 2020 against the results in the 2019 Report and the 2018 baseline values. This report focuses on 32 core metrics. Much of the quantitative data in this report is based on occupancy levels for 2020. As such, graphics have been added to show; energy demand vs production, energy consumption, water use, cardboard recycling and solid waste volumes as they relate to occupancy levels. Progress against these core metrics and qualitative goals set in 2019 are presented in the following pages.

## Climate Change and Resiliency



The frequency and intensity of tropical storms has increased over the last 30 years and the likelihood of an extreme weather event is high, therefore prompting the need to continuously review and update the Emergency Response Plan and an ongoing evaluation of resiliency improvement actions. Kauai has a county wide early warning system in place to warn residents of extreme weather events and potential flooding. There is also a tsunami warning system in the Princeville area with sirens that are tested monthly.

While there have been only two tropical storms and two hurricanes making landfall on the Hawaiian Islands since 1959, the resulting damages caused can be significant. Furthermore, fewer than 10% of people in Hawaii have flood insurance.

The 2020 tropical cyclone season in the Central Pacific was relatively quiet with only two storms of significant size. Tropical Depression Boris moved into the Pacific basin in June with maximum wind speeds of 35 mph but dissipated 880 miles southeast of the Hawaiian Islands. It was the first tropical cyclone in the basin since Tropical Storm Barbara in June 2001, and only the second on record (dating back to 1966). In July Hurricane Douglas tracked rapidly west-northwest across the Pacific, strengthening to a category 4 storm with sustained wind speeds of 130 mph. As it approached the Hawaiian Islands it lost strength and was downgraded to a category 1 storm. With sustained wind speeds of 90 mph, it passed just north of the Hawaiian islands (missing Kauai by approximately 40 miles). Rainfall totals from the storm were minimal and no significant wind related damage was reported. The month of August, which is typically the busiest month of the Central Pacific hurricane season, saw no other significant storm activity.

The annual rainfall totals for all reporting rain gages on Kauai in 2020 were near to above average. The Mount Waialeale rain gage had the highest 2020 rainfall total in the state with 421.68 inches (107% of average). This was only the second time in the last 10 years where the Mount Waialeale total exceeded 400 inches. In the 1980s, the annual total passed 400 inches seven times.

According to the National Oceanic and Atmospheric Administration, evidence of climate change continued to be noted in 2020. For the second year in a row, the Hawaii Islands saw above normal temperatures that were in some cases record-breaking. The average global land and ocean surface temperature for January - December 2020 was 0.98°C (1.76°F) above the 20<sup>th</sup> century average of 13.9°C (57.0°F) - the second highest global land and ocean temperature for January - December in the 1880 - 2020 record, behind 2016 (warmest). This elevation in temperature has resulted in continued requests for fans and/or air conditioning in the units at the Cliffs.

### Results:

Hurricane Douglas had been forecasted to make landfall on Kauai. In anticipation of a major wind and storm event, The Cliffs' staff was mobilized and able to fully implement the Emergency Preparedness Plan prior to the storm's anticipated arrival. Fortunately, the storm passed north of the island, producing only moderate wind and rain, with no significant damage to the property or our roof-mounted solar panels.

- ❖ Sustainability Metric: Issue annual update to an emergency/resiliency plan at the Annual meeting each year: **Achieved**
- ❖ Source rainfall data and extreme temperature data for the Princeville community and correlate with solar energy production: **Achieved**
- ❖ Given increased intensity and frequency of tropical storms, conduct assessment of infrastructure and public safety threats and define actions to reduce these threats: **Achieved**





Storm clouds illuminated by the setting sun

## Operations and Community Engagement

Daily operations emphasize sustainable considerations in the conduct of routine maintenance activities. Social cohesion and connectivity to the local community is important to resort operations and owner and guest enjoyment. As a long-standing member in the Princeville Community Association, The Cliffs puts a premium on community engagement locally, on the island of Kauai, and across the Hawaiian Islands. The Princeville Community has coverage with early warning sirens.

### Results:

There are several routine activities at The Cliffs which demonstrate sustainability considerations in daily operations and community engagement:

- ❖ Exclusive utilization of battery-operated utility service carts: **Achieved**
- ❖ Successful pilot tests using electrically powered landscape tools. Gas-powered equipment is to be replaced with battery-powered equipment as they reach the end of their lifespans: **On-going**
- ❖ Pursue RCI Green Award in 2020: **Currently recognized as one of the top 5 resorts (out of 1,800 world-wide) for RCI Green Award, winner TBA in 2021**
- ❖ Pursue Hawaii Green Business Program recognition: **Achieved**
- ❖ Conducted quarterly sustainability training and reporting to Cliffs staff, and expand safety committee to become Safety & Sustainability Committee: **Achieved**
- ❖ Participated in Princeville Community Association Sustainability activities: **Achieved**
- ❖ Received recognition for sustainability achievements:
  - Aloha + Challenge: **On-going**
  - State of Hawaii Green Business Certification: **Achieved**
- ❖ Promote Kauai Sunshine Market Activities (aka Farmers Market): **Achieved**



- ❖ Guest Satisfaction Survey conducted using the online Cloud Cherry instrument. Cloud Cherry results are reported from the September 2019 to August 2020 time period, to align with annual RCI and Interval International (II) Surveys. The Cloud Cherry results for this period were:
  - **Survey Size:** 1,359 responses out of 3,171 Guests for a 42.9% response rate: **Reduced number of guests and responses.**
    - 2019 Result: 2,604;
  - **Delight Score:** 85.2% rating on weighted average out of 100 points; **Improved 1.4%**
    - 2019 Result: 84%;
  - **Net Promoter Score:** Willingness to Promote Resort: **80.7%** out of 100 points; **Improved 6.7%**
    - 2019 Result: 75%;
- ❖ RCI and Interval International (II) conduct Guest Surveys to provide a rating of each resort. The results of their reporting cycle (September, 2019 to August 2020) was as follows:
  - For Interval International (II): The Cliffs has **retained its rating as “Premier”** for 2020. The “Premier” rating is Interval International highest Resort rating. **Achieved**
  - RCI rates resorts on the five categories (and benchmarks) listed below, to earn “Gold” status rating. The RCI data based upon 45 responses was the following:

	<u>Check In/Out</u>	<u>Resort Hospitality</u>	<u>Resort Maintenance</u>	<u>Unit Maint.</u>	<u>Housekeeping</u>
<b>RCI Gold Criteria:</b>	4.5	4.5	4.5	4.4	4.5
<b>Cliffs Scores:</b>	<b>4.7</b>	<b>4.7</b>	<b>4.7</b>	<b>4.6</b>	<b>4.6</b>
<b>Achieved Gold Rating which is highest resort rating</b>					

- ❖ Participated in several Community Engagement activities: **Achieved**  
**Hawaii Lodging and Tourism Association of Kauai:** General Manager Jim Braman is a member of the Executive Committee.  
**Society of Human Resource Management of Kauai:** Human Resources Manager Hasina Mitchell is a past President and active member of this Society.  
**Boys and Girls Club of Kauai:** GM Jim Braman is Board President  
**Kauai Community College Hospitality School:** GM Jim Braman is a curriculum advisor and student mentor and participates in the Host Sector Partnership (a state-wide panel consisting of hospitality and education communities)  
**Kauai Tourism Strategic Plan:** GM Jim Braman is a panel member  
**Anaina Hou Community Park:** GM Jim Braman is Board President  
**Kauai Rotary:** The Cliffs supports Rotary activities and hosts meetings
- ❖ The Cliffs at Princeville selected the **Hawaii Lodging Association’s Charity Walk** as our charity of choice (all monies raised stay on Kauai). **Achieved: Several employees participated in 2020, raising nearly \$1,000. For more information you can go to <http://www.charitywalkhawaii.org/kauai.html>**
- ❖ Continued to fund and support employee “Sunshine Fund” to assist employees in time of need. **Achieved**
- ❖ Offered several Guest and Employee wellness and activity programs. **On hold in 2020 due to State mandated Covid-19 restrictions**
- ❖ Activities routinely offered include Cliffs Botanical Walk, Scuba lessons, Yoga, Pickleball Clinic, Water-color Class, Coconut Basket Weaving, Hula Lessons, Lei Making, and Hawaii Language Class. **On hold in 2020 due to State mandated Covid-19 restrictions**
- ❖ Demonstrated community engagement as measured by labor hours and money raised,
  - Number of hours dedicated to community engagement in 2020; **Over 160**
  - Funds raised during year for charitable causes; **\$32**



Guests enjoying the 9-hole putting green



## Energy Use / Renewable Energy Production

Hawaii is a leader in renewable energy and has a statewide goal to produce 100% of energy from renewable sources by 2045. The island of Kauai is a leader nationally and locally in renewable energy production and has the aggressive goal to produce 70% of energy demand from renewable sources by 2030.

The Cliffs installed its first solar energy systems on the Administrative Building in 2009. The Administrative Building system operates on a net metering basis with KIUC; hence, some energy is exported during the day when production exceeds demand. The Administrative Building, with air conditioning, computers and laundry operations has the highest use of electricity on the property.

For its nine residential buildings, the Cliffs contracted for electricity under a 20-year power purchase agreement with Valta Energy. Valta Energy invested the capital and knowledge to install a large-scale solar energy system on the nine residential buildings. The Valta system is comprised of 3,000 LG310 watt solar panels, 198 inverters and 142 Tesla Powerwall batteries to store energy produced, but not consumed, during daylight hours.

A total of 27 battery closets were added to the property to house the Tesla battery systems; five of these closet structures are free standing. All closets have matching vinyl siding and composition shingle roofs to blend with existing structures.

The Valta renewable energy system became operational in quarter 4 of 2017. The electricity produced and consumed from solar panels during the day is charged to the Cliffs at \$0.20/kWh while electricity from battery sources is billed at \$0.04/kWh below KIUC rates. Surplus electricity is sold to KIUC at wholesale rate of \$0.15676/kWh. The weighted renewable energy rate is \$0.24/kWh.



Tesla Powerwall batteries provide for storage of excess renewable energy generated during daylight hours and used at night

**Results:**

A third-party evaluation of the solar energy system began in 2019 to determine why the reported energy consumption had increased over the previous three-year period (preceding the completion of the system). The evaluation was completed in 2020 and identified several system deficiencies that adversely affected the solar energy production capabilities and battery storage capacities of the system. Work to correct the identified system deficiencies and the installation of revenue grade meters began in late 2020 and is scheduled to be completed in early 2021.

The existing exterior lighting fixtures for the common areas continue to be replaced with new energy efficient LED fixtures.

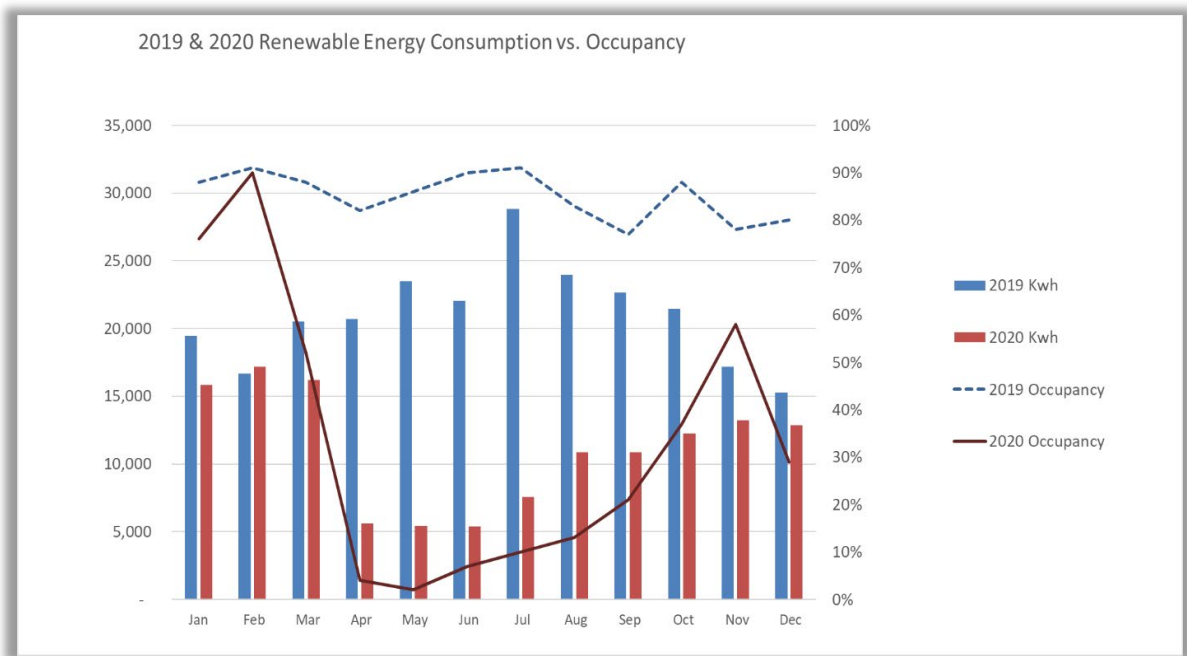
Performance in 2020 vs 2019 are summarized below:

- ❖ The Common area solar system provides 36% of the required electricity for the Recreation center, exterior lights, pool, and fitness center. The common areas required 269,769 kWh, of which 64% was purchased from KIUC:
  - 2020 Common area solar energy system production: 96,040 kWh
  - 2019 Common area solar energy system production: 100,678 kWh
- ❖ The Administrative solar system provides 41% of the required electricity for the offices and support facilities during daytime hours. The Laundry room, with air conditioning, uses 77% of electricity produced by the Administrative Building solar energy system. Administration offices and the laundry room required 137,457 kWh, of which 62% was purchased from KIUC:
  - 2018 Admin solar energy system production: 52,394 kWh
  - 2019 Admin solar energy system production: 54,996 kWh
  - 2020 Admin solar energy system production: 60,854 kWh (increase of 11% - due to the replacement of an inverter that failed in 2019)
  - The electricity produced by the Admin solar system avoided the purchase of 37 barrels of oil

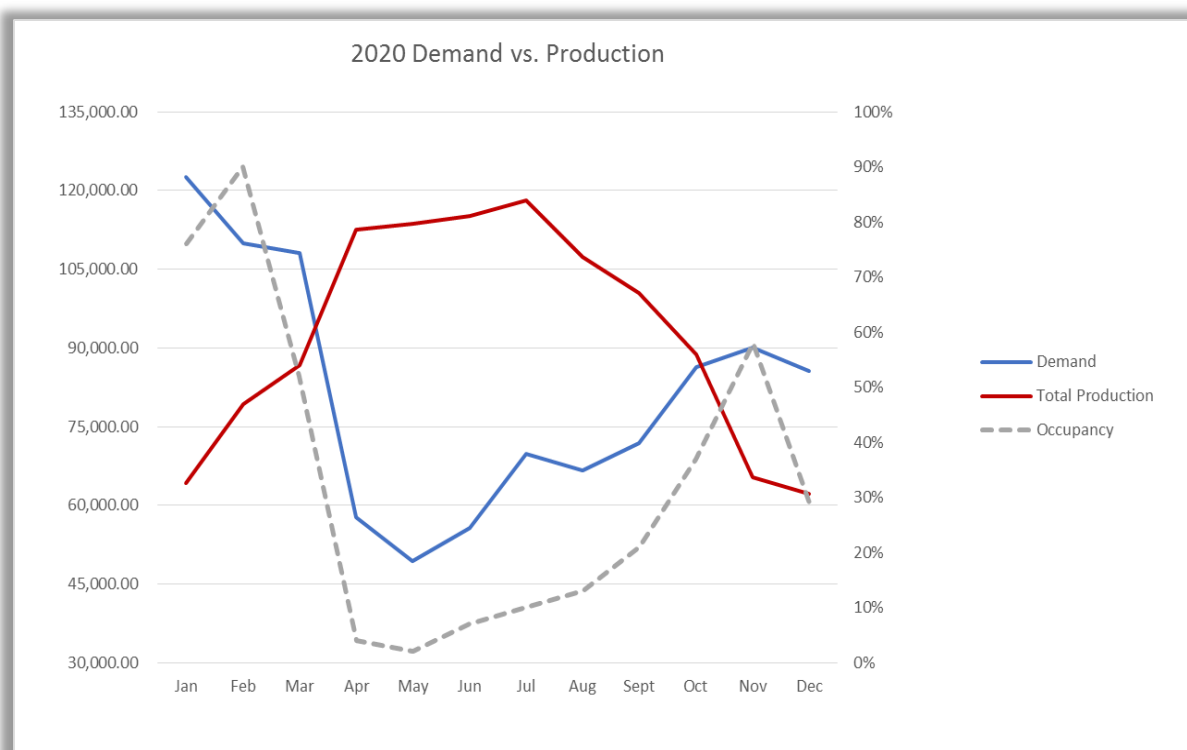
- ❖ The Valta system plus Admin system produced 114% of electricity demand for the year:

<u>Total Electricity Demand (kWh)</u>		<u>Renewable Energy Produced (kWh)</u>	
○ 2018:	1,456,496	1,095,635	75% of demand
○ 2019:	1,400,941	1,224,927	87% of demand
○ 2020:	973,699	1,113,790	114% of demand
○ Total electricity production decreased 9% in 2020 due to more precipitation:			
▪ The 2020 renewable energy production is equal to 685 barrels of oil			
▪ Electricity production during daylight hours exceeded demand: excess energy was used to charge the Tesla batteries with excess energy exported to KIUC			
▪ Due to the decrease in demand in 2020 The Cliffs purchased 30% less electricity from KIUC and exported 3% more to KIUC			
▪ The slight decrease in overall production in 2020 can be attributed to more rainfall for the year as compared to 2019			
○ Renewable energy production represented 114% of total electricity demand at the Resort in 2020 as opposed to 2019 production which was 87% of total electricity demand			
○ Estimated Resort electricity cost savings, given weighted energy price (for solar panels and batteries) of \$0.24/kWh from Valta, versus \$0.32/kWh from KIUC in 2020, was \$35,096			
○ 2020 electricity demand decreased by 427,242 kWh; equal to a savings of \$120,965			





- ❖ Whole Unit Owners received 56% of their energy from the renewable energy system, indicating a concerted effort to better align supply of renewable energy with demand activities.
- ❖ Timeshare and common area renewable energy was 46% of the total energy demand, with 54% purchased from KIUC.
- ❖ The need to better align energy demand across the facility with solar energy production is an ongoing educational activity to our Owners and Guests.



- ❖ The production of renewable energy exceeded the demand during the day. Even after fully charging all the batteries, 512,749 kWh were exported to the KIUC grid, further reducing Kauai's dependency on imported fuel by an additional 315 barrels of oil in 2020.
- ❖ Initiated education programs to inform Owners and Guests to use high energy consuming appliances during daylight hours to the extent possible.
  - Reviewed electricity consumption (demand) and production (supply) data from 2018-2019 to further define the next steps to utilize a higher percentage of the renewable energy produced and hence rely less on purchasing energy from KIUC.
- ❖ Parking lot light fixtures were upgraded with LED bulbs; Common area lighting fixtures are systematically being replaced with new energy efficient fixtures with LED bulbs.



Open spaces and unobstructed ocean vistas from the bluff by Building 6



## Land Use and Maintenance

The Cliffs is situated in a beautiful natural setting with an abundance of trees, shrubs and plants. It is a priority to conserve the natural topography, views, drainage patterns, and existing vegetation. There is a concerted effort to replace invasive trees and shrubs with naturally occurring vegetation. Landscaping enhancements in 2020 included the redevelopment of the landscaping along Kauai Road, adjacent to the Putting Green, with an assortment of naturally occurring vegetation including assorted palms, gingers and oyster plant ground cover. Also, semi-circular landscape enhancements have also been planted behind Buildings 4 and 5 as well as landscape strips at several building end units to help screen and provide more privacy at the ground floor lanais. Ongoing sustainability activities include the following:

- Vegetation that is cut down is recycled as compost on the property (green waste);
- Pesticide and herbicide use are strictly restricted and limited;
- Biodegradable fertilizers are used on the property;
- Glyphosate-containing products are not used on the property (i.e., Roundup);

- Educational nature walks are conducted on the facility as part of overall guest activity offering; (on hold due to State mandated Covid-19 pandemic restrictions);
- Weekly on-site farmer's market where local farmers bring their locally-grown garden products for sale to Cliffs' owners and guests; (on hold due to State mandated Covid-19 pandemic restrictions );
- Open space areas have been maintained to restrict development and preserve and protect the natural environment and enhance the view shed;
- Given natural rainfall and the importance to prevent erosion, special attention has been taken to maintain natural drainage patterns and avoid flooding;
- Ongoing action including taking steps to control and eliminate invasive plant species in natural areas across the property.
- Floral arrangements in common areas are created by staff using plants and flowers grown on the property.



Refurbished landscaping along Kauai Road



Floral arrangement in the Lobby

## Results:

- ❖ Landscape is designed and maintained to enhance and complement overall appearance of the property. The estimated number of hours per month dedicated to landscape maintenance is 800 hours. **Achieved**
- ❖ Implementation of tree trimming recommendations from the 2019 tree canopy assessment by Kaleo's Tree Service. **Achieved**
- ❖ Continue to encourage Owners and Guests to harvest local fruits grown on property. **Achieved**
- ❖ Continue to encourage Owners and Guests to participate in local Farmers Markets. **Achieved**
- ❖ New tree and shrubbery planting occurred during 2020 to optimize public health and storm water benefits while enhancing the overall appearance of the property. A total of 45 trees were planted in 2020 of the following types: Fox Tail Palms (22), Date Palms (15), Areca Palms (8). **Achieved**
- ❖ Inform Guest and Owners of nearby trails to hike. **Achieved**
- ❖ Maintain the open spaces accessible to Owners and Guests. **Achieved**

## Birds



Hawaii is known as a natural paradise. It's also known as the endangered species capital of the world. Kauai is the source of many types of birds that are unique to the Hawaiian Islands. Continued support of the ongoing efforts to preserve the natural environment and protect these unique animals is important. The following are four types of birds can be readily found at The Cliffs:

### Nenes (Nēnē):

Hawaii's State Bird, the [Nene Goose](#) is one of the rarest geese in the world. In fact, about 50 years ago they nearly became extinct. Thanks to conservation efforts the Nene population has grown to approximately 2,000 individuals and the replenishment of these birds have been particularly successful on Kauai.

The Nene Goose looks similar to the Canadian Goose and according to scientists may in fact be a descendant. It has a long neck with a black head with golden brown cheeks. Nenes can be viewed at the in Kokee, the Kilauea National Wildlife Refuge and anywhere with large grassy areas like the many golf courses on Kauai and our lawn areas on the grounds of The Cliffs.

Since Nene Geese are endemic to Hawaii, you will not encounter them anywhere else in the world in their native environment, so take advantage of the opportunity while you are visiting. Nenes are protected so it is unlawful to harass them. However, Nenes are likely to protect themselves by chasing after you or your children and they have been known to bite.



A pair of Nene exploring the bluff at The Cliffs at Princeville

### Shearwaters ('Ua'u kani):

One of the state's most threatened seabirds, the [Newell's shearwater](#) makes its home on the island of Kauai, where a small group of environmentalists is working to keep the iconic seabird from disappearing because of confusion from artificial lights and collisions with power lines. According to Hawaiian legend, the birds were once so plentiful that they darkened the skies. But in the past couple of decades, the bird's population has plummeted. It's now listed as "threatened" under the Endangered Species Act.



An adult Newell shearwater in flight

Shearwaters spend the majority of their life on the open ocean, only venturing back to land to breed in April. They make their nests in underground burrows along ocean bluffs where they lay a single egg in mid-June.





Adult shearwater with chick in their underground burrow

If the chicks survive the perils of their early months of life from feral cats and rats, the fledglings will lose their down feathers (which look very much like an oversized grey mohair hoodie) and are drawn by instinct to take flight to the sea in October. The birds navigate by the moon, unaware of the imposters in its path - artificial lights. Many young shearwaters end up circling the lights until they fall to the ground from exhaustion, where they are either run over by cars or eaten by cats and dogs. In addition to having problems with attraction to artificial light, power line collisions kill up to 1,600 adult seabirds a year. The Cliffs has taken considerable steps minimize light from its common areas. Exterior light fixtures are shielded and point downward towards the ground.

### Albatross (Moli):

The [Laysan Albatross](#) is another protected species and a common sight in certain areas of the north shore of Kauai from November through July. These magnificent sea birds mate for life, remaining at sea for much of the year, only returning to land in the fall to mate and raise their young.

Having no natural predators on Kauai, the Albatross' choose to nest on open ground. They make a shallow depression in the ground and build up the outer rim, creating the nest where the female lays a single egg. Both parents share in the incubation period which lasts little over two months. Once the chick hatches, the parents take turns carefully watching over it while the other flies to sea to get food.

The Laysan Albatross is a monogamous species and will only select a new partner if their mate dies. They are known to have a lifespan averaging 12-40 years. The oldest known registered Laysan Albatross, Wisdom, was banded in 1956 and is at least 69 years old!

While the Albatross' generally do not nest at The Cliffs, they can be seen riding on the sea breezes along the ocean bluffs and may occasionally stop to rest on the open lawn areas. For more information go to <https://www.alaboutbirds.org>.



A pair of adult Laysan Albatross and their chick

### Chickens (Moa):

Kauai is home to thousands of wild chickens, a particular variety that's vibrant in plumage but of mixed value to the ecosystem of the island. They eat the venomous centipedes native to Kauai, a trait that people

seem to like, but they have no natural predators besides cats and dogs, and the population is growing at an alarming rate. Some have even moved to other islands in the archipelago, like Oahu, where they're not so welcome. But a team of researchers from Michigan State University is interested in the birds for an unexpected reason. Is it possible that the Hawaiian chicken could lead to hardier varieties of birds? All domestic chickens are descendants of a bird called the red jungle fowl, native to various parts of, mostly, Southeast Asia. Domestic chickens these days are mostly so far removed from the red jungle fowl that they can hardly be compared with it, but the Hawaiian chickens are a little bit different. Polynesians brought red jungle fowl with them when they settled Hawaii, and only cross-bred them with domestic chickens following Captain Cook's landing on the archipelago in 1778. So, the Hawaiian chickens have only recently developed from their wild form.

The Hawaiian chickens really only came into their own as the "pigeon of Hawaii" in the past few decades, after Hurricane Iniki destroyed chicken enclosures in 1992, releasing many of the island's captive chickens into the jungle. Their descendants now roam freely all over Kauai, at times showing up in the most unexpected places.



Juvenile chickens investigating the amenities of the Lobby



## Water Use and Conservation

Water is an abundant resource in Hawaii; however, the pumping and distribution of irrigation water, drinking water, and wastewater consume a significant amount of energy. Water bills are determined based upon the amount of water consumed; hence our concern is the optimal use of water. While Kauai is regarded as the Garden Island and is considered to be the 'wettest place on earth', there are times during the year when irrigation is required.

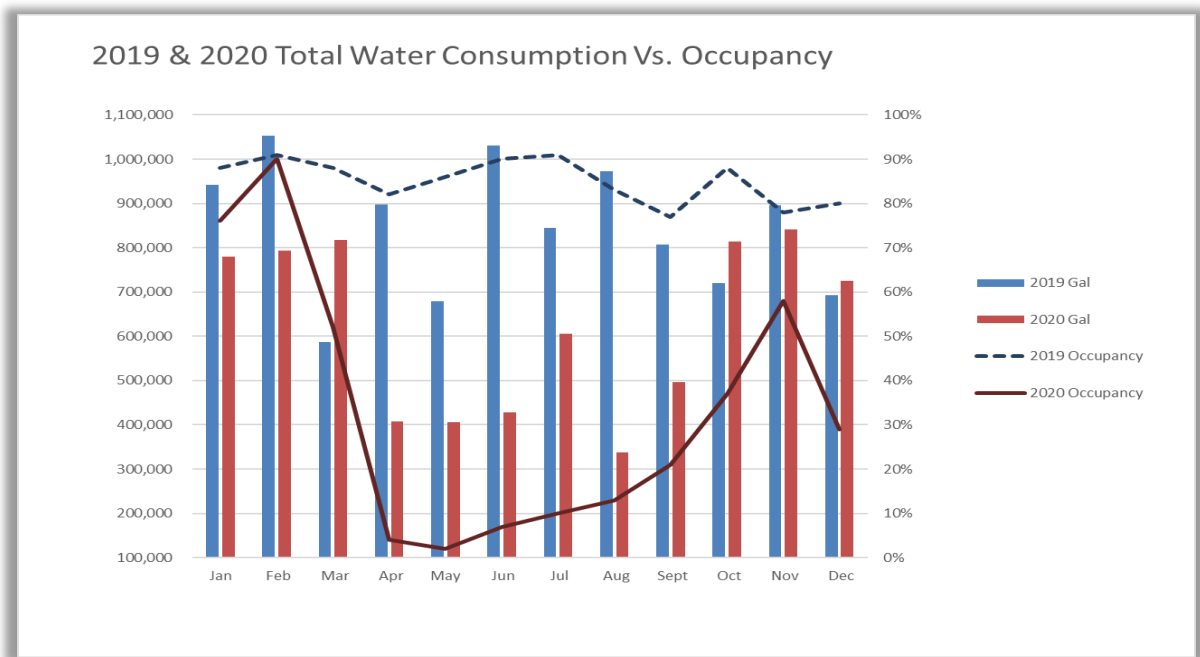
One step taken in this regard was the upgrading and restoration of the landscape sprinkler systems. Moisture sensor technology was installed in 2018 in place of timers, but most of the on-site irrigation systems are operated manually rather than on timers. Both actions limit the amount of water used for landscape irrigation only when necessary.

Other major activities to restrict water use is the installation of water flow restrictors, low-flow toilets and high-efficiency (low water use) washing machines and dishwashing machines. Since the drinking water quality in Princeville is good, owners and guests are encouraged to use tap water, or the FloWater dispensing stations on the property rather than purchasing bottled drinking water in single-use plastic bottles.

## Results:

- ❖ The Cliffs continued to support the community in preparing for and managing flooding events;
- ❖ Water usage is monitored monthly and reported annually. Performance metrics (gallons of water consumed) is listed below using 2018 as a baseline year:

2018 Water usage:	10,703,000 gal
2019 Water usage:	10,122,000 gal
2020 Water usage:	7,452,000 gal - a reduction of 2,670,000 gal; a 26.4% decrease over 2019



- ❖ Compared to 2018 baseline, The Cliffs has reduced its annual water consumption by 3.25 million gallons; a decrease of 30.4%.
- ❖ Encourage Owners and Guests to use the two FloWater dispensing stations (installed in September 2019) to fill reusable containers rather than buy single-use plastic water bottles; these stations offset 27,549 plastic bottles in 2020 (approximately 2,300 bottles per month) that otherwise would have been purchased and used at the resort by Owners and Guests. **Achieved**
- ❖ Labeled storm drains indicating ocean destination of discharge. **Achieved**
- ❖ Use only low-flow toilets in the common areas of the property. **Achieved**



FloWater dispenser & re-fillable Cliffs insulated water bottle (available for purchase in the Lobby)

## Waste Management and Recycling



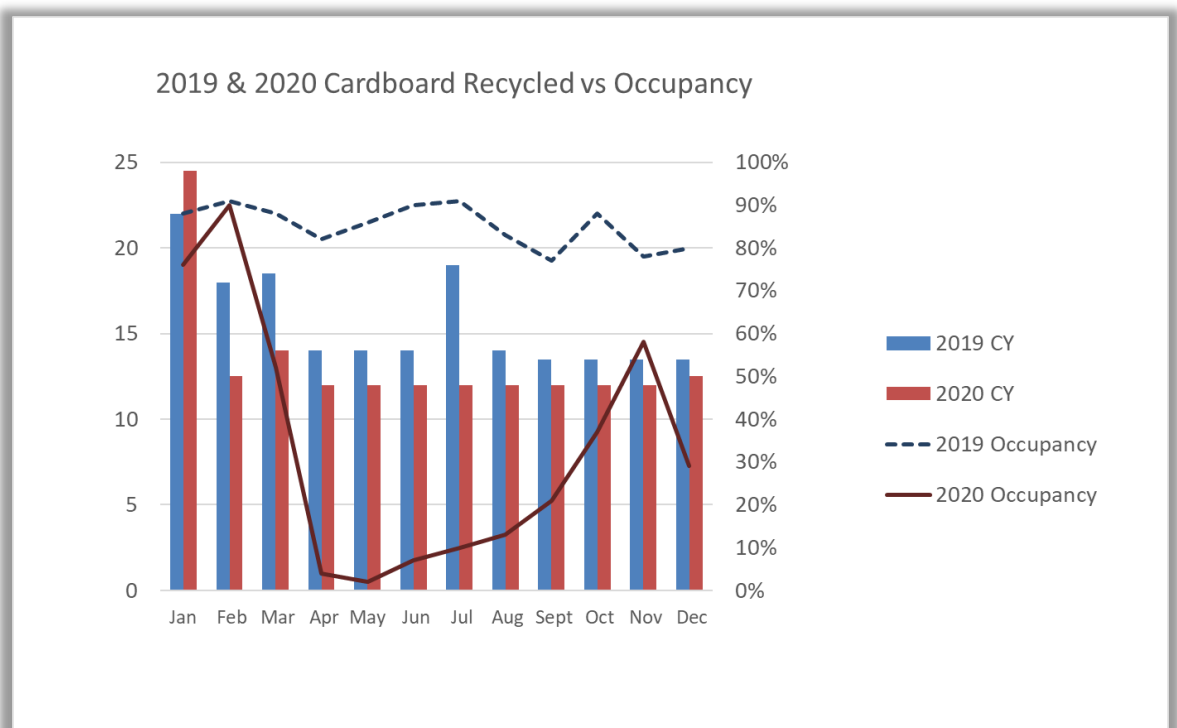
The Cliffs has practiced solid waste management and recycling for several years by encouraging residents and staff to reduce the amount of solid waste generated and increase their recycling of cardboard, plastic, paper, glass and aluminum. Several trash and recycling facilities located on the property have made recycling of these materials convenient for Owners and Guests. Efforts to reduce solid waste volumes and improve recycling continued in 2020. These included the following:

- ❖ The solid waste disposal and expanded recycling facility by Building 4 (across from the Rec Center) continues to provide excellent opportunities to recycle aluminum, glass, paper and plastic. **Achieved**

- ❖ Solid waste disposal and cardboard recycling and a satellite material recycling station is available at the Maintenance Building. **Achieved**
- ❖ Satellite material recycling station is located in proximity to Buildings 7, 8 and 9 to increase recycling. **Achieved**
- ❖ Every timeshare unit has waste baskets to separate recyclable plastic and cans from trash. **Achieved**
- ❖ Establish public events to be 'zero waste' with use of recyclable or reusable materials. **Public events are currently on hold due to State mandated Covid-19 restrictions**
- ❖ FloWater Stations are available for filling re-usable water bottles eliminating the need for purchasing single-use bottled water. Re-fillable insulated water bottles are offered for sale at the Cliffs store. **Achieved**

### Results:

- ❖ **Extra yardage charges (due to overfilled bins) on cardboard indicate more disposal space is needed:**
  - Extra yardage volume for 2020 was 15.5 cubic yards, a decrease of 64% over 2019 (43.5 cu yds)
  - Extra yardage charges in 2020 indicate additional recycled cardboard capacity, or more frequent servicing is needed. An area for further improvement in 2021.



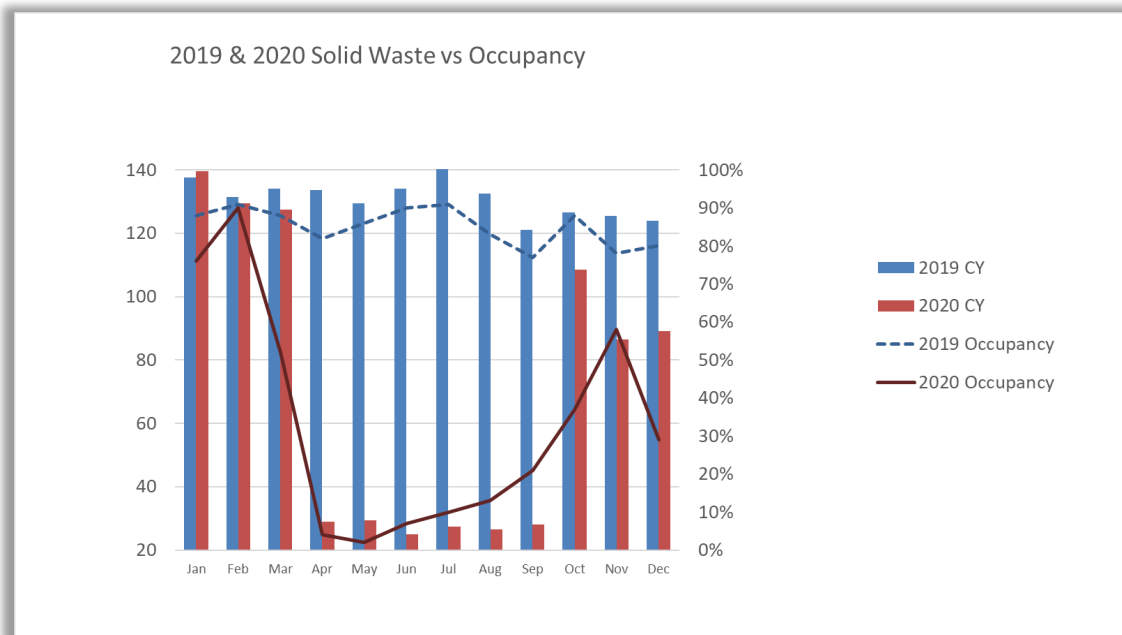
- ❖ **Extra yardage charges (due to overfilled bins) on solid waste indicate more disposal space is needed:**
  - Extra yardage volumes for 2020 were 81 cu yds, a 39.8% decrease over 2019 (134.5 cu yds).
  - Extra yardage charges for 2020 indicate increased solid waste capacity, or more frequent servicing is needed. An area for further improvement in 2021.
- ❖ **Significant reduction in the volume of solid waste produced:**



2018 Solid waste disposal at landfill: 1,601 cubic yards

2019 Solid waste disposal at landfill: 1,440 cubic yards

2020 Solid waste disposal at landfill: 765 cubic yards, a reduction of 46.9% over 2019



❖ Improvements were noted in the amount of many of the recycled materials:

	2019	2020	Increase / Decrease
Cardboard recycled in cubic yards:	188.0	160.0	14.9% decrease
Plastic recycled in cubic yards:	89.0	124.0	39.4% increase
Glass containers recycled in cubic yards:	39.8	88.6	122.6% increase
Paper recycled:	75.7	124.0	63.8% increase
Aluminum recycled:	29.9	53.2	77.8% increase
<b>Total material recycled (cubic yards):</b>	<b>422.4</b>	<b>549.8</b>	<b>30.2% increase</b>

The noted increases in the volume of recycled materials (plastic, glass, mixed paper and aluminum) in 2020 can be attributed to the expanded recycling center by Building 4 (completed in 2019), the convenience of additional recycling locations on the property, and ongoing education and recycling efforts.

**Recycled materials represented 41.8% of total waste produced at the Cliffs in 2020 - as compared to 21.2% in 2019 or 20.8% in 2018!**



Rear pool and keiki play area and sports court beyond

## 2021 Core Sustainable Metrics and Goals

### Climate Change/Resiliency:

- Issue annual update to emergency plan
- Reduce use of gas engines to reduce GHG emissions
- Conduct property assessment to improve resiliency as part of QC audits

### Operations/Community Engagement:

- Use battery-operated carts only
- Conduct employee survey (2021)
- Provide quarterly employee training program
- Process Cloud Cherry Data: Delight, Net Promoter - September to August cycle
- Process RCI/II Guest Surveys: Gold/Premier
- Establish cross functional team for sustainability
- Participate in Community Events: Charity Walk
- Offer wellness & activity programs to Guests and Employees
- Partner with local government on sustainability

### Energy Use/Conservation:

- Record kWh produced from renewable energy systems
- Review consumption vs demand cycles to determine where we can optimize use of renewables
- Record kWh consumed on property
- Implement energy conservation measures to reduce consumption
- Measure propane usage across the property

### Land Use/Maintenance:

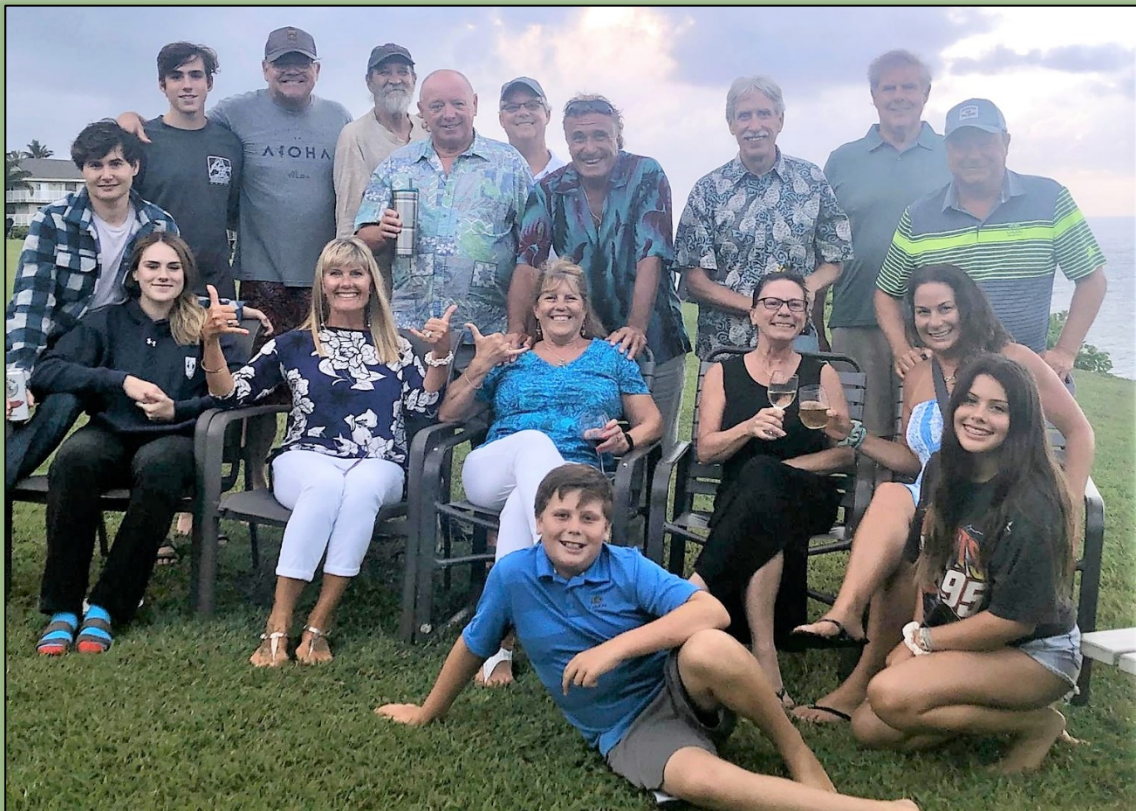
- Utilize green waste composting
- Restrict/eliminate pesticide/herbicide use
- Inform Guests of nearby walking trails
- Use biodegradable fertilizers
- Continue natural vegetation planting on Botanical Walk and Grounds
- Install additional native plants, trees
- Reduce/eliminate invasive species onsite

### Water Use/Conservation:

- Reduce quantity of water consumed onsite
- Restrict use of sprinkler system - no automatic timers
- Install water flow restrictors in timeshare units, common areas
- Procure low water use appliances, fixtures
- Encourage Owners to install low water use appliances and fixtures
- Encourage use of tap water and FloWater systems instead of purchasing single-use bottled water

### Waste Management/Recycling:

- Conduct solid waste audit to identify areas for improvement
- Reduce amount of solid waste produced
- Increase amount of cardboard recycled
- Increase amount of plastic, glass, metal, paper recycled
- Install collection bin for used household batteries in recycling station by Building 4
- Strive to make public events “zero solid waste” events with use of recyclable or reusable materials
- Support proper disposal of household hazardous waste, pharmaceutical, electronic, and personal care product waste by working with Kauai County to advertise options for proper disposal.



*Hana pū ana e kūle‘a mākou*