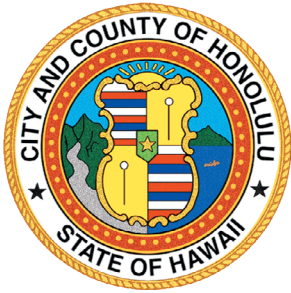




Office of the City Auditor



**City and County of
Honolulu
State of Hawai`i**

**Report to the Mayor
and the
City Council of Honolulu**

Audit of the Hanauma Bay Online Reservation System

**Report No. 23-01
June 2023**

Audit of the Hanauma Bay Online Reservation System

A Report to the
Mayor
and the
City Council
of Honolulu

Submitted by

THE CITY AUDITOR
CITY AND COUNTY
OF HONOLULU
STATE OF HAWAII

Report No. 23-01
June 2023



ARUSHI KUMAR
CITY AUDITOR

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June 28, 2023

The Honorable Tommy Waters, Chair
and Members
Honolulu City Council
530 South King Street, Room 202
Honolulu, Hawai'i 96813

Dear Chair Waters and Councilmembers:

Attached is a copy of our audit report, *Audit of the Hanauma Bay Online Reservation System*. This audit was self-initiated pursuant to the authority of the Office of the City Auditor as provided by Section 3-502.1(c) of the Revised Charter of Honolulu.

The objectives of this audit were to:

1. Determine whether the Department of Parks and Recreation is maximizing the Hanauma Bay online reservation system to effectively facilitate the reservation process; and
2. Provide recommendations as appropriate.

Background

Hanauma Bay Nature Preserve was closed to the public in March 2020 in the midst of the COVID-19 pandemic. Additionally, in accordance with City Council Resolution 20-207, the Department of Parks and Recreation (DPR) sought to establish a reservation system to accurately count and control visitors to the bay for the preservation of the bay's natural resources and to commit to social distancing mandates. In December 2020, Hanauma Bay reopened, and DPR implemented a new in-person ticketing system to facilitate entry into the bay, while also working with the Department of Information Technology to complete an online reservation system. Following the reopening, concerns from the public arose regarding nearby community disturbances, including traffic and parking congestion, adjusting to a new reservation process, and both locals and tourists adjusting to the new cap on daily visitors reduced to less than half of the pre-pandemic average.

The mission of DPR is to enhance the leisure lifestyle and quality of life for the people of O'ahu through active and passive recreational opportunities. To that end, DPR maintains and operates parks and recreational facilities under city jurisdiction; develops and implements programs for cultural, recreational and other leisure-time activities; and maintains and operates the city's botanical and community gardens. DPR also provides a wide range of recreational facilities and services for all ages and promotes the history and the multi-ethnic culture of Hawai'i. For Hanauma Bay specifically, DPR is tasked with adopting rules to control the usage of and the level of visitors to the bay to ensure preservation of the cultural asset, as it was found that the unrestrained use of the bay has contributed to the deterioration of the finite resource. The

department is responsible for the operation and management of all of the resources, facilities, and activities of the nature preserve, including the regulation of commercial activities to preserve the bay's natural environment.

Audit Results

The Hanauma Bay online reservation system successfully facilitates the bay's new entry procedures, placing daily limits on the number of visitors allowed while increasing admission revenues past previous levels. However, there are risk areas where DPR could improve the reservation process and experience for visitors.

The reservation process currently has procedural issues that may disadvantage certain populations, particularly those who are not as adept at technology, leading to potential discrimination and equity issues. Additionally, the process infrastructure creates room for mistakes in reservation ticketing choices, leading to a potential loss of admission revenue. Compared to other State and National parks in Hawai'i, the reservation policies and informational practices for Hanauma Bay could improve to match standard practices. We also found that DPR does not have an official feedback mechanism to track, respond to, or resolve complaints and issues in an efficient manner.

Finally, we found that DPR does not have formal goals or measures to define conservation success or to evaluate its policies and activities in accordance with its mission. Specifically, a study led by the University of Hawai'i has stated that managing visitors may be the most important and effective tool for conservation. Despite this recommendation, DPR has no method to evaluate the specific impacts that increasing visitor numbers has on the bay's ecosystem. We found that budgetary concerns and easing pandemic restrictions may have been the primary driver of recent visitor capacity increases, not conservation planning.

The audit report makes eight recommendations to help the Department of Parks and Recreation improve the efficiency of the reservation process and support the preservation of the natural resources at Hanauma Bay.

The Department of Parks and Recreation and Managing Director generally agreed with the audit findings and recommendations, and the department has indicated that it has begun to implement some of the recommendations.

We would like to express our appreciation for the cooperation and assistance provided us by the staff and administrators from the Department of Parks and Recreation, as well as other departmental staff we contacted during the course of this audit. We are available to meet with you and your staff to discuss this report and to provide more information. If you have any questions, please call me at (808) 768-3134.

Sincerely,



Arushi Kumar
City Auditor

c: Rick Blangiardi, Mayor
Michael D. Formby, Managing Director
Krishna Jayaram, Deputy Managing Director
Laura Thielen, Director, Department of Parks and Recreation
Andrew Kawano, Director, Department of Budget and Fiscal Services

Table of Contents

Chapter 1 Introduction

Background of the Hanauma Bay Nature Preserve.....	1
Audit Objectives, Scope, and Methodology.....	8
Audit Results	9

Chapter 2 The Hanauma Bay Online Reservation System Successfully Facilitates Limited Visitor Entry While Preserving Revenue Levels, but Still Faces Some Technical Challenges

The Current Reservation Process Has Technical Issues That Disadvantage Certain Populations and Increase the Risk of <i>No-Shows</i> and Potential Lost Revenue	11
DPR Does Not Have an Official Feedback, Evaluation, or Improvement System for the Hanauma Bay Online Reservation Process	15
Hanauma Bay’s Reservation Policies Differ From Other State and National Parks in Hawai’i in Many Categories	22
Recommendations	30

Chapter 3 DPR Does Not Have Formal Goals or Benchmarks to Define and Measure the Outcomes of Conservation Efforts at Hanauma Bay

Since 2020, Visitor Capacity Has Been Determined Primarily by Covid-19 Mandates and Budgetary Concerns, While Conservation Considerations Seem Secondary	32
Recommendations	38

Chapter 4 Conclusion and Recommendations

Conclusion	39
Recommendations	40
Management Response	41

List of Appendices

Appendix A How Quickly Do Hanauma Bay Reservation Tickets Sellout?.....	47
Appendix B Hanauma Bay Online Reservation Error Occurrences	51
Appendix C Hanauma Bay Reservation Survey	55
Appendix D Website Design Best Practices	57

List of Exhibits

Exhibit 1.1	Timeline of Operational Changes at the Hanauma Bay Nature Preserve	2
Exhibit 1.2	Organization Chart – Department of Parks and Recreation	3
Exhibit 1.3	Hanauma Bay Budget and Revenue FY 2018 – FY 2022	6
Exhibit 1.4	Hanauma Bay Visitors & Revenue FY2018 – FY2022.....	7
Exhibit 2.1	Potential Lost Revenue Due To Mistakes Made In the <i>Race</i> To Reserve Hanauma Bay Tickets	13
Exhibit 2.2	Complaints About the <i>Race</i> for Reservations	14
Exhibit 2.3	Complaints Received by Category	16
Exhibit 2.4	OCA Survey Responses	19
Exhibit 2.5	Issues Listed in OCA Surveys	20
Exhibit 2.6	Survey and Complaints About Current Reservation Policies.....	20
Exhibit 2.7	Suggestions for improvements listed in OCA Surveys	22
Exhibit 2.8	Hanauma Bay in Comparison to State and National Parks in Hawai’i	23
Exhibit 2.9	Hanauma Bay Homepage Before and After the March 2023 Update.....	25
Exhibit 2.10	Inconsistent Use of Headings on the Hanauma Bay <i>Information and Fees</i> Webpage	27
Exhibit 2.11	Diamond Head State Monument Webpage	28
Exhibit 2.12	Wai’anapanapa State Park FAQ Page	29
Exhibit 3.1	Years 1-3 Biological Carrying Capacity Study (2018-2021) – Evidence of Human Disturbance	35
Exhibit 3.2	Year 4 Social Carrying Capacity Study (2022) – Highlights.....	36

Chapter 1

Introduction

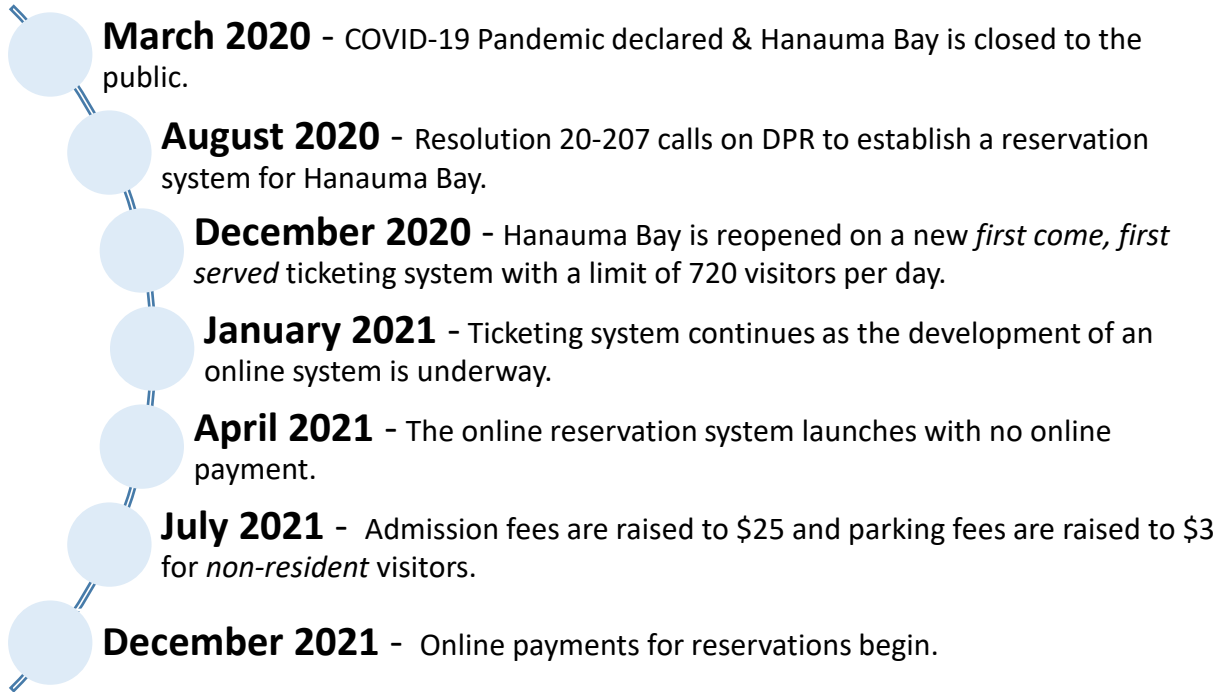
The audit was self-initiated pursuant to the authority of the Office of the City Auditor (OCA) as provided by Section 3-502.1(c) in the Revised Charter of Honolulu. The city auditor determined that this audit was warranted in the wake of public concerns following the shutdown of Hanauma Bay (HB) for eight months due to the COVID-19 pandemic and subsequent change in operations following its reopening. When HB reopened, it opened with new procedures and restrictions to account for COVID-19 social distancing guidelines. Public concerns arose regarding traffic around the residential and highway areas and fair access to the bay, especially as operations were shifting to a new reservation process following the reopening during the pandemic.

Background of the Hanauma Bay Nature Preserve

In the midst of the COVID-19 pandemic, HB was closed to the public in March 2020. Additionally, in accordance with City Council Resolution 20-207, the Department of Parks and Recreation (DPR) sought to establish a reservation system to accurately count and control visitors to HB for the preservation of the bay's natural resources and to commit to social distancing mandates. In December 2020, HB reopened and DPR implemented a new in-person ticketing system to facilitate entry into the bay while working with the Department of Information Technology (DIT) to complete an online reservation system. The limited reopening began with a limit of 720 visitors allowed per day; this number was selected due to COVID-19 social-distancing restrictions. Along with the new ticketing system, the entry fee was raised to \$25 per day for non-resident adults. In April 2021, the ticketing system was replaced by the online reservation system that is still being utilized as of May 2023. As COVID-19 mandates eased, DPR also eased the limits on total visitors allowed per day. As of May 2023, 1,400 visitors are allowed per day, with 1,050 tickets available for reservation and 350 tickets designated for walk-in tickets distributed on a first-come, first-served basis. Exhibit 1.1 shows the timeline for the changes in HB policies and operations.

Exhibit 1.1

Timeline of Operational Changes at the Hanauma Bay Nature Preserve



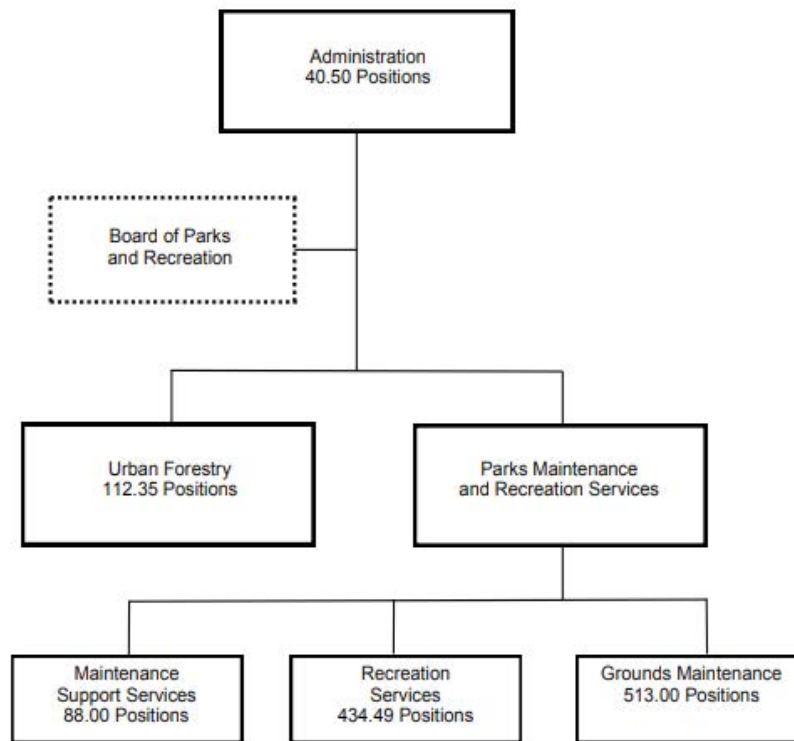
Source: Department of Parks and Recreation

Department of Parks and Recreation

DPR maintains and operates parks and recreational facilities under city jurisdiction; develops and implements programs for cultural, recreational and other leisure-time activities; and maintains and operates the city's botanical and community gardens. DPR also provides a wide range of recreational facilities and services for all ages and promotes the history and the multi-ethnic culture of Hawai'i. It looks to protect cultural and archaeological resources on its properties. Its mission is to enhance the leisure lifestyle and quality of life for the people of O'ahu through active and passive recreational opportunities.

Exhibit 1.2 Organization Chart – Department of Parks and Recreation¹

This chart reflects the number of full-time equivalent positions appropriated in Fiscal Year 2022.



Source: Department of Budget and Fiscal Services

Administration — directs the overall management, maintenance, and operations of the city’s park system respective division programs and services. It provides services for professional development, safety, planning, budgetary and organizational management, conducts research to resolve management issues, administers park permits, and maintains park rules and regulations.

Urban Forestry — manages the botanical garden and horticulture programs for the Honolulu Botanical Gardens which encompasses 650 acres including the Foster, Lili’uokalani, Koko Crater,

¹ Positions are full-time equivalent (FTE) positions.

Ho'omaluhia, and Wahiawa Botanical Gardens. The Community Gardening Program and other gardening-related recreational, environmental, conservation, and cultural public programs are also part of this unit.

Park Maintenance and Recreation Services — coordinates a comprehensive and diversified community recreation and park maintenance program while also organizing special cultural events and facilitating volunteer efforts.

Maintenance Support Services — provides repair and maintenance support for the entire department. Staff include, but are not limited to: masons, carpenters, plumbers, painters, welders, heavy equipment operators, beach cleaning personnel, and chemical support.

Recreation Services — plans, organizes, conducts, provides, and promotes recreational and community services for all segments of the population on O'ahu. This unit provides direct recreational services to the public through citywide, district and community programs involving cultural, recreational and other leisure time activities and special events.

Grounds Maintenance — provides grounds keeping, custodial and maintenance services to all parks and recreation facilities on the island of O'ahu.

DPR responsibilities for Hanauma Bay

DPR is tasked with adopting rules to control the usage of and the level of visitors to HB to ensure preservation of the cultural asset, as it was found that the unrestrained use of the bay has contributed to the deterioration of the finite resource. The department is responsible for the operation and management of all of the resources, facilities, and activities of the nature preserve, including the regulation of commercial activities to preserve the bay's natural environment. After the reopening of the bay to the public, commercial activities were temporarily ceased; however permits for commercial scuba diving and snorkeling resumed in February 2023. DPR is responsible for the stewardship of the nature preserve up until the high water mark on the beach. The Hawai'i State Department of Land and Natural Resources has jurisdiction from the high water mark to the open ocean.

DPR's strategic plan lists the following ambitions for HB:

- *Vision Statement:* Hanauma Bay is a fiscally responsible nature preserve which supports a thriving ecosystem and living laboratory, while providing a quality experience for everyone.
- *Mission Statement:* To provide an exceptional first-hand, interactive marine life conservation experience that perpetuates the protection of Hanauma Bay Nature Preserve's historical, cultural, and natural resources for this and future generations.

History of Hanauma Bay

In 1967, Hanauma Bay was designated the State of Hawai'i's first Marine Life Conservation District (MLCD). The Hanauma Bay MLCD is also one of Hawai'i's twelve U.S. Clean Water Act Class AA marine embayments, and is located within the Hawaiian Islands Humpback Whale National Marine Sanctuary. The bay provides a critical marine habitat for Hawaiian monk seals and green sea turtles protected under the Endangered Species Act, as well as over 450 species of fish and other marine organisms, including 25 coral species, some of which are endemic to Hawai'i.

HB is a self-sufficient nature preserve. Fees are meant to be established to be sufficient enough to support the operations and maintenance of HB. In 1996, in recognition of the need to protect the marine resources at Hanauma Bay, the City Council enacted Ordinance 96-19, now Revised Ordinances of Honolulu (ROH), sections 6-51.1 to 6-51.4, to establish the Hanauma Bay Nature Preserve Fund. Section 6-51.2, ROH stipulates that fund monies are to be expended in support of the needs of the preserve in the following order of priority:

1. For the operation, maintenance, and improvement of the preserve;
2. For education and orientation programs for visitors to the preserve; and
3. A carrying capacity study and other studies relating to the environment condition of the preserve.

Prior to the pandemic, HB was a self-sustaining operation with a stable revenue stream of about \$5 million with about 850,000 visitors per year. Entry, parking, and concession fees all contributed to sustaining the entity. The COVID-19 pandemic demonstrated how a closure and lack of visitors fundamentally

hindered financial sustainability. In an effort to balance sustaining operations with fewer visitors, fees for entry and parking were raised. Current fees are as follows:

- Entry is \$25 for all non-residents ages 13 and up
 - Entry is free for all residents, minors, and active duty military personnel
- Parking:
 - \$1 for residents
 - \$3 for non-residents
 - \$10 - \$40 for commercial vehicles depending on the number of passengers (commercial activities are currently suspended)

The budget for HB has been increasing as costs to maintain and operate the bay also increase. At the same time, revenues had been decreasing due to pandemic restrictions limiting the number of visitors allowed in the bay. However, fee increases have raised the total revenue in FY 2022.

Exhibit 1.3 Hanauma Bay Budget and Revenue FY 2018 – FY 2022

	<i>Budget</i>	<i>Total Revenue²</i>	<i>Admission Revenue</i>	<i>Parking Revenue</i>	<i>Visitors</i>
FY 2018	\$2,534,624	\$5,206,672	\$5,011,658	\$195,014	859,796
FY 2019	\$2,948,202	\$5,113,794	\$4,912,928	\$200,866	845,945
FY 2020	\$2,869,581	\$3,516,539	\$3,379,448	\$137,091	582,424
FY 2021	\$2,453,094	\$1,182,280	\$1,086,468	\$95,812	124,799
FY 2022	\$4,278,303³	\$6,893,685	\$6,608,111	\$285,574	335,972

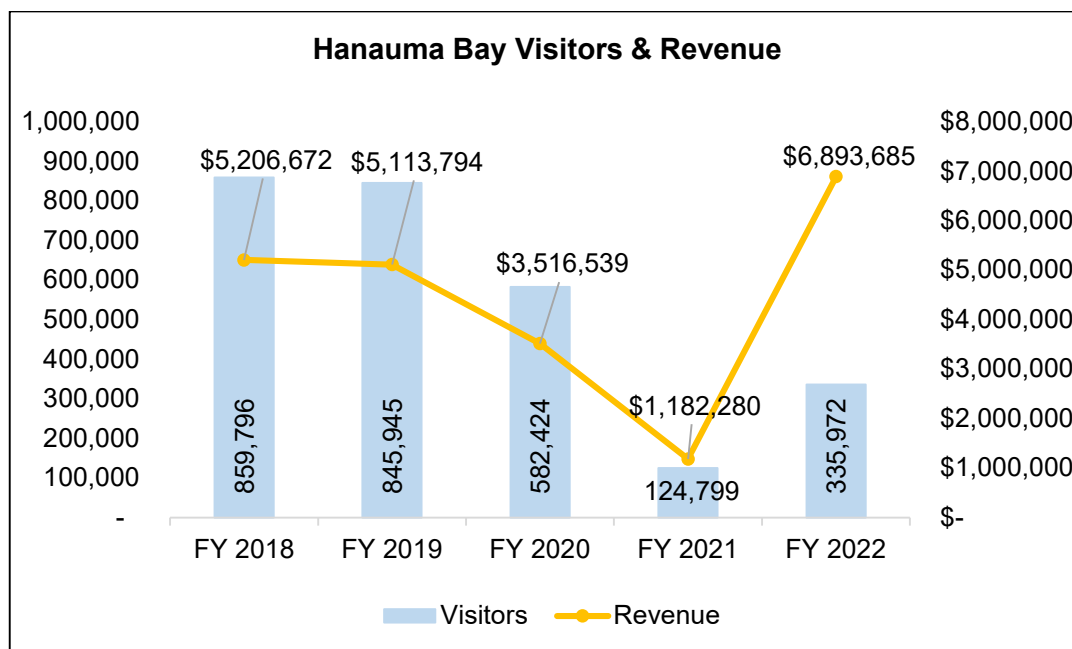
Source: Department of Budget and Fiscal Services and Department of Parks and Recreation

² Total revenue excludes concession revenues.

³ Budget listed for FY 2022 is the appropriated amount, while previous years were actual expenditures.

Despite recent fluctuations due to disruptions in operations during the pandemic, revenue is beginning to surge upwards with even fewer visitors. FY 2020 HB operations were shortened by three months due to the pandemic, while FY 2021 revenues were hampered by five months of closure and a limited reopening of 720 daily visitors. Current procedures allow for 1,400 daily visitors per day, not including early entry residents. FY 2022 was the first full year under the online reservation system and the increased fees for admission and parking. Exhibit 1.4 illustrates the changes in visitor and revenue totals prior to, during, and after the pandemic.

Exhibit 1.4
Hanauma Bay Visitors & Revenue FY2018 – FY2022



Source: Department of Parks and Recreation

Complaints from the public about Hanauma Bay

Following the reopening of HB after the closure due to the pandemic, concerns from the public arose regarding nearby community disturbances, adjusting to a new reservation process, and adjusting to a new cap on daily visitors which reduced daily

visitors by at least half of the pre-pandemic average. Some of the complaints were related to:

- Traffic congestion on the highway;
- Parking congestion in the residential streets near HB;
- Local residents being unable to resume their usual daily activities at HB;
- The inability to secure limited reservations; and
- The *race* to secure a reservation being unfair to certain demographics, such as the elderly or disabled.

Audit Objectives, Scope, and Methodology

The audit objectives were to:

1. Determine whether the Department of Parks and Recreation is maximizing the online reservation system to effectively facilitate the reservation process; and
2. Provide recommendations as appropriate.

For this audit, we reviewed and analyzed departmental policies, procedures, goals, and strategic planning; select controls related to the reservation process; interviewed and held discussions with pertinent DPR and DIT managers and staff; reviewed a judgmental sample of 76 visitor complaints to identify issues and potential areas for improvement surrounding the launch of the reservation system to the end of our audit period in June 2022; conducted our own survey of 30 visitors to gather feedback about their experiences using the reservation system; and reviewed carrying capacity studies conducted by the University of Hawai'i's Institute of Marine Biology to analyze changes to Hanauma Bay's natural environment before and after its pandemic closure and reopening. We also received feedback through questionnaires from the Friends of Hanauma Bay (FOHB) advocacy group—a non-profit organization dedicated to the conservation of and stewardship of HB—and identified standard park reservation processes from other popular State and National Parks in the State of Hawai'i and compared them to Hanauma Bay's reservation process. The audit was initiated in November 2021; due to resource constraints, it was temporarily put on hold and completed in June 2023.

This performance audit was performed in accordance with generally accepted government auditing standards (GAGAS). GAGAS standards require that auditors plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for findings and conclusions based on audit objectives. We believe that the evidence obtained in this audit provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Results

The Hanauma Bay reservation system has successfully facilitated the new entry procedures for HB, placing daily limits on the number of visitors allowed, and, with new admission fees, has facilitated an increase in admission revenues surpassing previous levels. While the reservation system technically fulfills its purpose, there are improvements that DPR could implement to improve the reservation process and experience for visitors.

We found that DPR does not have an official feedback mechanism to track, respond to, or resolve complaints and issues in an efficient manner. We also found that the reservation process has procedural issues that may disadvantage certain populations, particularly those who are not as adept at technology, leading to potential discrimination and equity issues. The process creates room for mistakes in reservation ticketing choices, leading to a potential loss of admission revenue. In comparison to other State and National parks in the State of Hawai'i, the reservation policies and informational practices for Hanauma Bay could improve to match standard practices.

We also found that DPR does not have formal goals or measures to not only define conservation success, but also evaluate it in accordance with its mission and the purposes of the reservation system. Currently, the University of Hawai'i is conducting a carrying capacity study to determine the acceptable limits to marine life disturbances at the bay. The study has found that there are correlations between the number of visitors and the degraded state of coral coverage, density and diversity of fish, and water clarity. There are other environmental factors that create a complex and nuanced environment that is difficult to quantify for the purposes of conservation, and the study has stated that managing visitors may be the most important & effective tool DPR has for conservation. Despite this recommendation, DPR has no method to evaluate specific impacts that increasing visitor numbers has on the ecosystem of HB. We also found that budgetary concerns and easing pandemic restrictions may

have been the primary driver of visitor capacity increases, not conservation planning. A previous study stated that coral could not survive when annual visitor numbers exceed 200,000 annual visitors. Hanauma Bay is currently on pace to exceed this number annually with current policies allowing more than 300,000 annual visitors.

Chapter 2

The Hanauma Bay Online Reservation System Successfully Facilitates Limited Visitor Entry While Preserving Revenue Levels, but Still Faces Some Technical Challenges

Since its implementation, the Hanauma Bay online reservation system has been functional as a tool to facilitate timed visitor entry throughout the day and limited total daily park visitors. Paired with increased admission fees, this has led to Hanauma Bay revenues surpassing pre-pandemic levels while limiting total visitors to less than half that of prior levels. Despite this success, we found that the system has technical issues that may disadvantage certain populations, particularly those who are not as adept at technology, leading to potential discrimination and equity issues. The process also creates room for mistakes in reservation ticketing choices, leading to a potential loss of \$234,575 in admission revenue. Additionally, the Department of Parks and Recreation (DPR) does not have an official feedback mechanism to track, respond to, or resolve complaints and issues in an efficient manner. Complaints are the only type of feedback that is gathered, leading to an inefficient and informal improvement process for the bay and its visitors. Finally, in comparison to other State and National parks in the State of Hawai'i, the reservation policies and informational practices for Hanauma Bay need some improvements.

The Current Reservation Process Has Technical Issues That Disadvantage Certain Populations and Increase the Risk of *No-Shows* and Potential Lost Revenue

In our review of the online reservation process, we found a few central areas where improvements could be made. The current reservation process is as follows:

- Reservations are opened to the public in two day increments¹;
- Visitors select a time slot to reserve (from 7:00 am – 1:20 pm);

¹Customers can purchase tickets 2 days in advance. For example, beginning Monday at 7:00 am, tickets are made available for Wednesday. On Tuesday at 7:00 am, tickets are made available for Thursday, and any remaining slots for Wednesday would also be available.

- Input their personal information (such as name, email, and phone number);
- Select the number and type of tickets that they would like to reserve; and
- Finally, input their payment information to secure the reservation. **They will be given a 10-minute reservation holding period at this stage.**

The way this process is currently structured creates a race for customers to secure reservations right when they are released at 7:00 am. They must rush to select the type and amount of tickets for their desired time slot, and also rush when inputting their personal information, before their tickets are temporarily secured prior to payment. Our sample of complaints support the need for improvements to the general reservation process, policies, and presentation of information on the Hanauma Bay website.

The reservation process allows non-resident visitors to reserve tickets without payment if they select resident, either on purpose or by accident, leading to increased no shows and potential losses in revenue

We reviewed a sample of 76 complaints received by the department surrounding the launch of the reservation system in April 2021 to the end of our audit period in FY 2022. In our sample of complaints, we found that there were 23 instances where visitors were able to secure a reservation, but had made a mistake when selecting the type of ticket, selecting the amount of tickets, or inputting their personal information. When this occurs, visitors are generally directed by DPR to arrive at the time of their secured reservation and any misinformation can be checked at the admission window. However this can be problematic when non-residents who must pay a \$25 admission fee mistakenly reserve tickets as residents, who do not need to pay an admission fee.

We found that since payments have been accepted online in December 2021, there have been a number of no shows (NS)—reserved tickets that do not show up for their reservation. DPR keeps track of the total number of NS reservations as well as the number of NS reservations that paid upfront to secure their reservation. The difference in these two data points is the amount of NS that did not pay to secure their reservation. In FY 2022, we found that out of the total visitors for the fiscal year, on average 69% were non-resident adults who would need to pay the \$25 fee. Therefore, if we assume that 69% of NS that did not pay to secure their reservations are also non-resident adults, this would lead to a potential \$234,575 in lost revenue due to the mistakes made while rushing to secure a reservation. Current policy does not allow for refunds after reservation confirmation. Exhibit 2.1

depicts the amount of NS reservations without upfront payment and the resulting potential loss in revenue.

**Exhibit 2.1
Potential Lost Revenue Due To Mistakes Made In the Race To Reserve Hanauma Bay Tickets**

<i>Date</i>	<i>Total No Show Reservations</i>	<i>Total No Show Reservations that Paid Upfront</i>	<i>Total No Show Reservations that <u>Did Not</u> Pay Upfront</i>
December 2021	3,454	874	2,580
January 2022	2,793	806	1,987
February 2022	2,355	704	1,651
March 2022	1,878	743	1,135
April 2022	2,714	757	1,957
May 2022	2,745	907	1,838
June 2022	3,181	730	2,451
Total			13,599
13,599 x 69% (Non-Resident Adult Average) = 9,383 NS Without Upfront Payment			
9,383 x \$25 (Admission Fee) = \$234,575 in Potential Lost Revenue			

Source: Office of the City Auditor and Department of Parks and Recreation

In these cases, non-resident adults are not liable to pay for their reservations upfront whether they actually show up for their reservations or not. This has led to the risk of visitors not showing up for their reservation while also not having to pay to secure it upfront, resulting in a potential loss of \$234,575 in admission revenues. DPR did note that if they see that there are a high number of no shows, then they will try to allow more walk-in tickets to increase the total amount of visitors up to the daily limit. This however, does not address the systemic issues that enable the risk of lost revenue in the first place.

The process of requiring reservation information before temporarily holding tickets creates inequities for specific populations

According to Generally Accepted Government Auditing Standards created by the federal Government Accountability Office, government programs or activities are equitable when they consistently serve members of the public, distribute public services, and implement public policy in a manner that promotes fairness, justice, and equality. This includes equality of access to and provision of services and procedural fairness in program policies.

In our sample of complaints about the Hanauma Bay reservation process, we reviewed 10 different complaints that were related to the unfairness of having to race to type in all of the pertinent information to be able to secure a reservation. These complaints stated that visitors felt that the process was unfair because they were not technologically inclined, elderly, and/or otherwise had disabilities that disadvantaged them in racing to type in their reserving information fast enough to get a reservation. Exhibit 2.2 shows a few of these complaints.

Exhibit 2.2
Complaints About the Race for Reservations

Complaint Example #1:	“(The) Hanauma Bay reservation system is discriminatory (to) senior citizens.”
Complaint Example #2:	“As someone that has a disability, it is virtually impossible for someone like me to reserve any tickets without them being sold almost immediately. Please update your booking system so that's easier for someone with a disability to book tickets and enjoy the preserve. It's not fair that abled people can get access because they can fill out a form faster than I can.”
Complaint Example #3:	“(Customer) has tried every day to use the reservation website for Hanauma Bay...logging (in) right at 7am to hold spots for our family of 4. Every day we are able to select tickets, but by the time we get to the payment method the website says that no tickets are available. When we refresh the page, more tickets appear available, but every single time after selecting the tickets, we are unable to book. The experience is very frustrating. The customer understands that this is a high traffic period, but it would be great, like CA Park Services does, if your site held the tickets once we select a date and time for a few minutes until we have a chance to pay for them.”

Source: Department of Parks and Recreation

DPR has stated that in efforts to address equitable visitation to Hanauma Bay, they have walk-in tickets available for those without internet access or who are unable to secure reservations. However, these are distributed on a first come, first served basis and do not adequately address the procedural inequities.

See Appendix A for our review on ticket sell times.

DPR Does Not Have an Official Feedback, Evaluation, or Improvement System for the Hanauma Bay Online Reservation Process

Complaints are currently the only type of feedback that DPR receives from visitors, and are received by both phone and email. However, DPR does not compile or otherwise track complaints to ensure that any issues are addressed with potential solutions. Instead, they address each complaint individually and at times repeatedly address similar complaints. Staff have mentioned that they will occasionally come up with ideas for changing or improving the program, but it is not consistently discussed. DPR does compile visitor counts for budgeting and administrative purposes, but it is unclear if or how this information is used to improve the overall reservation process. Without a feedback or improvement mechanism, the Hanauma Bay reservation process is not proactively monitored for efficiency nor improved upon in an intentional manner.

The Commission for Accreditation of Park and Recreation Agencies (CAPRA) is a national accreditation body for park and recreation organizations. Their goal is to provide standards which measure an organization's overall quality of operation, management, and service to the community. These standards serve as the foundation for a comprehensive management system of operational best practices. According to CAPRA's National Accreditation Standards, evaluation of an organization's plans and strategic initiatives is important not only to demonstrate the value of services provided but also to learn how to make improvements to those services. Utilizing quantitative as well as qualitative information is essential to implementing programs and supporting development of future programming decisions. Agencies should have systematic processes for evaluating its programs for operational effectiveness and efficiency.

As previously stated, we reviewed a sample of 76 complaints DPR received surrounding the launch of the reservation system in April 2021 to the end of our audit period in FY 2022. Exhibit 2.3 depicts the types of complaints we reviewed.

Exhibit 2.3
Complaints Received by Category²

Complaints Related To:	Resolved	Unresolved	Total
Being unable to secure a reservation	36	7	43
Visitor mistakes on reservation information	18	5	23
System errors	11	4	15
Reservation policies	9	4	13
Complaints that could be easily solved by a <i>Frequently Asked Questions (FAQ) page</i>	12	0	12
Visitor requests to cancel reservation	3	3	6
Totals	89	23	112

Source: Office of the City Auditor and Department of Parks and Recreation

Category 1—Being unable to secure a reservation:

- The most common type of complaint was not being able to secure a reservation. Only 1,400 visitors are allowed in the park per day, which is a dramatic reduction from the average of 3,000 visitors per day prior to the pandemic and reservation system.

Category 2—Visitor mistakes on reservation information:

- The second most common complaint was visitors making mistakes on their reservations. Mistakes included inputting the wrong email, selecting the wrong type of ticket³, selecting the wrong number of tickets, or reserving the wrong date.

² There were a total of 76 complaints in our sample. Complaints were categorized by type, and some complaints relate to one or more category types, so those complaints were counted more than once in different categories, leading to a total greater than 76.

³ There are four types of ticket selections to choose from: Resident adult, non-resident adult, child, and U.S. Military.

Category 3—System Errors:

- Visitors receiving error messages was the third most received complaint. We were not able to verify all of the errors that had occurred due to limited information in the complaint files. However, error messages may occur due to tickets selling out prior to completing the entire reservation process or if a violation of policy occurs, such as selecting more than the maximum permitted tickets per reservation. See Appendix B for a list of situational error message occurrences.

Category 4—Reservation Policies:

- Complaints about reservation policies were the next highest received complaint. This category included complaints about these policies:
 - o Limiting reservation allotments to five adults and five minors;
 - o Limiting reservation openings to two days in advance;
 - o Having an earlier holding period to input reservation information; and
 - o The reservation process disadvantaging the elderly and otherwise non-technologically inclined visitor demographic.

Category 5—Complaints that could easily be solved by Frequently Asked Questions:

- Complaints that were related to informational inquiries that could be easily answered by FAQ information came next. This included inquiries related to:
 - o Booking tours (commercial tours are currently not allowed);
 - o Tips about travel to the bay, parking, and amenities;
 - o The walk-in ticket process;
 - o How quickly reservation tickets sell out; and
 - o Looking for reservations that are not yet available.

Category 6—Visitor requests to cancel reservation:

- The final complaint category regarded visitors requesting to cancel their reservations.

We concluded that DPR does not collect any other data to evaluate its reservation process for operational efficiency or user experience improvement.

In addition to reviewing complaints that DPR received, we also conducted surveys at Hanauma Bay to gather feedback about visitor's experience of the reservation process and what issues or suggestions they would have. We conducted a survey of 30 visitors to understand how the public felt about the reservation process as well as to identify any issues or areas needing improvement. Survey results showed that visitors are generally pleased with the online reservation system:

- 73% of respondents rated the system as a 4 or 5 on a 1-5 scale (1 meaning poor and 5 meaning excellent) with an average score of 3.8;
- 78% of respondents felt that the admission fees were fair;
- 77% of respondents thought that the information provided explained the reservation process clearly; and
- 57% of respondents stated not having issues while using the system
 - o Of the 43% that reported having issues, half of those issues were related to reservations being hard to obtain due to the high demand for reservation slots.

**Exhibit 2.4
OCA Survey Responses**

Residency	
Hawai'i	3%
Out of State	97%
Rate your experience	
1	7%
2	7%
3	13%
4	43%
5	30%
Do you feel the fees are fair?	
Yes	78%
No	22%
Did the guide explain the reservation process clearly?	
Yes	77%
No	23%
Did you experience any issues?	
Yes	43%
No	57%

Source: Office of the City Auditor

The survey results also showed that improvements could be made in certain areas, the top three issues that were mentioned included:

- Reservations are difficult to obtain – 58%;
- Language barrier and translation issues – 16%; and
- Visitors not knowing about reservations in advance – 11%.

**Exhibit 2.5
Issues Listed in OCA Surveys**

<i>Issues Experienced</i>	
58%	Reservations are difficult to secure
16%	Language barrier / Information translation issues
11%	Didn't know about reservations in advance
5%	Difficulty finding the link to the reservations
5%	Difficulty caused by the 5-adult & 5-child limit per reservation
5%	False confirmed reservation

Source: Office of the City Auditor

Some of the issues we received in the surveys regarding reservation policies were similar to complaints that we reviewed regarding such policies. In our review of complaints about Hanauma Bay, we found 19 instances where complaints were made about current reservation policies. Exhibit 2.6 shows the policies that were called into question and the combined number of instances they were mentioned either in our surveys or in complaints.

**Exhibit 2.6
Survey and Complaints About Current Reservation Policies**

<i>Policy</i>	<i>Combined Survey & Complaint Mentions</i>
Limiting reservations to 2-days in advance	11
Not allowing cancellations or rescheduling	8
Creating a log-in feature (to enter information only once)	5
Starting an earlier holding time to input information	3
Limiting reservations to 10 total tickets consisting of 5 adults & 5 children	2

Source: Office of the City Auditor & Department of Parks and Recreation

According to department staff, not allowing cancellations, refunds, or rescheduling was implemented for a reason. It was to ensure that those who made reservations stayed committed to them and wouldn't try to hold a reservation if they were

unsure. This would also prevent third parties from being able to secure reservations with the intention of distributing them secondarily. However, staff were not clear on the purposes of the other policies. In interviews, they stated they were unsure why some of these policies were implemented and wondered if they could be potentially changed. If there is no clear purpose to some of the policies mentioned, then having a deliberate feedback and evaluation process could help to identify those areas where visitors have submitted complaints, then related policies could be reviewed and ultimately changed to improve the reservation process and visitor experience.

Furthermore, limiting reservation openings to only two days in advance creates less flexibility and planning capabilities for non-resident visitors who are planning to visit O’ahu and Hanauma Bay, and it contributes to the urgency of visitors competing for reservation slots when they aren’t able to plan their trips ahead of time. Limiting reservations to five adults and five children also creates less flexibility and creates difficulties for groups who may have six adults or six children in their parties, since they would then need to secure two separate reservations when one is already hard to get. Starting an earlier reservation holding time is a tool that could help to ease some of the stress of vying for limited reservation slots. It would virtually eliminate the typing race that causes so many issues and allow for increased fairness in the reservation process.

The survey also asked visitors for suggestions on changes that they would recommend, the top three suggestions included:

- Increasing the reservation window further than two days in advance – 42%;
- Having a helpful tips or FAQ page to let visitors know what to expect regarding the experience at HB and reservations – 33%; and
- Having more real-time information on the available number of reservations while trying to secure a reservation – 25%.

Exhibit 2.7
Suggestions for improvements listed in OCA Surveys⁴

<i>Suggestions Mentioned</i>	
42%	Increase reservation window to longer than only 2 days in advance
33%	Create helpful tips for visitors expectations
25%	List more information on the # of reservation slots available in real-time
17%	Release reservations at a later time in the day
17%	Allow the option to cancel or reschedule reservations to open up more reservation slots
17%	Utilize a log-in or auto-fill information feature

Source: Office of the City Auditor

As shown in our comparison to other park reservation processes in exhibit 2.8, Hanauma Bay’s reservation process is the only process that doesn’t allow an early holding period for visitors to leisurely and accurately input their information. Seeing these repeated themes should prompt new discussion into potential changes to the reservation process for ongoing improvement, but this can only be done if DPR actively seeks and then utilizes such information from the public. Currently, they are not actively seeking such feedback.

**Hanauma Bay’s
Reservation
Policies Differ From
Other State and
National Parks in
Hawai’i in Many
Categories**

In order to understand typical park reservation processes, we reviewed the procedures and informational policies of other State and National parks in the State of Hawai’i and compared them to Hanauma Bay’s reservation processes. We found that there were many differences in policies, some of which overlapped with the complaint and survey responses discussed above. Exhibit 2.8 shows this comparison.

⁴ Total percent does not add up to 100, as visitors could list more than one suggestion on their survey.

Exhibit 2.8
Hanauma Bay in Comparison to State and National Parks in Hawai'i

	<i>Hanauma Bay</i>	<i>Diamond Head State Monument</i>	<i>Wai'anapanapa State Park</i>	<i>Ha'ena State Park</i>	<i>Haleakala Park - Sunrise</i>
	<i>City Park</i>	<i>State Park</i>	<i>State Park</i>	<i>State Park</i>	<i>National Park</i>
<i>Reservation based?</i>	Yes	Yes	Yes	Yes	Yes
<i>Advance reservation window?</i>	2 Days	30 Days	30 Days	30 Days	60 Days (open for a week) then 2 Days
<i>Hold time to input personal information?</i>	No (10-minute window begins <u>after</u> input of personal information)	Yes (15-minute window begins <u>before</u> input of personal information)	Yes (15-minute window begins <u>before</u> input of personal information)	Yes (15-minute window begins <u>before</u> input of personal information)	Yes (15-minute window begins <u>before</u> input of personal information)
<i>Home page is labeled well & easy to digest?</i>	No (labeling & organization could be improved)	Yes	Yes	Yes	Yes
<i>Visitor experience tips? (activities, facilities/convenience, prohibited items)</i>	No	Yes	Yes	Yes	Yes
<i>Online payment for parking?</i>	No	Yes	Yes	Yes	Yes
<i>Parking time slots?</i>	No	Yes	Yes	Yes	No
<i>Feedback system?</i>	No	No	No	No	Yes
<i>Cancellation or rescheduling allowed?</i>	No	Yes (With \$5 fee)	No	Yes (Cancellations allowed with potential for refund)	No

Source: Office of the City Auditor

Hanauma Bay's reservation policies differ in comparison to other National and State parks in Hawai'i in most of the categories that we reviewed:

- Hanauma Bay is the only park that starts its temporary ticket hold time after visitors input their identifying information to secure their reservation. This means that it is not guaranteed that there are a sufficient amount of tickets available even as visitors are typing in their information. In comparison, every other park begins their ticket holding time right after selecting the amount of tickets they would like to reserve. Then, visitors have a 15-minute window to input their personal information and complete their payment for the transaction. This earlier holding period would benefit Hanauma Bay by increasing the accuracy in reservation information, potentially mitigating the risk of lost revenue, as well as decreasing the amount of time visitors spend inputting information if tickets are no longer available.
- Hanauma Bay is the only park that does not have a *Frequently Asked Questions* page to detail helpful visitor tips such as the types of activities and facilities visitors can expect, what items are prohibited, and tips for transportation to and from Hanauma Bay. It does have an *Information and Fees* page that details general entry procedures and operating hours for the bay, gift shop, and concessions. However, most of the information that is presented on this page is also presented on the homepage, making this information somewhat redundant.
- Although Hanauma Bay and the State parks reviewed do not have official visitor feedback systems, Haleakala National Park does have this feature.
- We found that Hanauma Bay's website needs improvement, as it is not well organized making readability difficult. The home page of the Hanauma Bay website includes a link to reservations and links to other documents and stats related to the bay, as well as a wall of text that is inadequately labeled lining the edge of the page. All of the State and National parks in the comparison have well designed websites with sections of information that are clearly labeled, helping the reader easily identify what type of information is in each section, as well as

increasing readability. According to web design best practices⁴ released by the U.S. Department of Health and Human Services, headings are key to establishing order and visual hierarchy on text heavy pages. Clear headings alert readers to what information they can expect and help direct them to the information that they are either searching for or need to know. White space is an important part of your layout strategy incorporating space into a design helps reduce noise, increase readability, and/or create illusion.

Prior to March 2023, the Hanauma Bay home page lacked adequate headings and could have optimized its use of spacing in its text. In March 2023, it appears DPR updated the page; however we found that it could still be improved. Exhibit 2.9 shows the comparison.

**Exhibit 2.9
Hanauma Bay Homepage Before and After the March 2023 Update**

Original Webpage

March 2023 Update

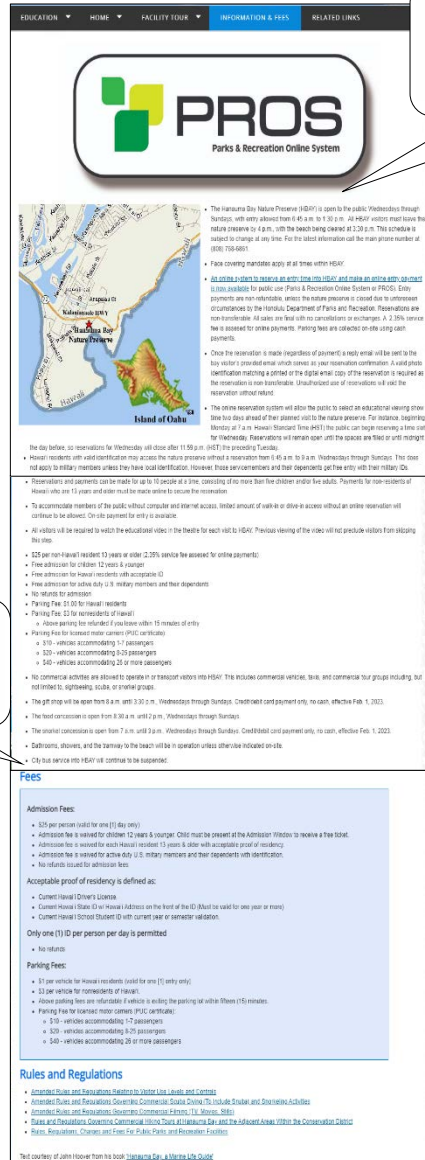
Source: Department of Parks and Recreation

⁴ See Appendix D for general web design best practices.

The wall of text on the homepage should be labeled to let the reader recognize what information they are looking for and should utilize better spacing to increase readability. Most users spend a considerable amount of time scanning rather than reading information on websites, and well-designed headings help to facilitate both scanning and reading written material. Designs that are mindful of density and adequate use of white space can ensure that a webpage does not confuse users by looking too busy. Ensuring that pages are not too crowded with information can make it easier for users to quickly scan for wanted information.

Finally, DPR does utilize some headings on its Information and Fees page; however, it is inconsistently used. Exhibit 2.10 shows an image of this webpage.

Exhibit 2.10
Inconsistent Use of Headings on the Hanauma Bay Information and Fees Webpage



No heading or prompt to indicate what information is being presented

Headings help identify what information will be conveyed

Source: Department of Parks and Recreation

Exhibit 2.11 shows how the Diamond Head State Monument Park webpage optimizes its use of headings and spacing to convey clear messaging on its page.

Exhibit 2.11 Diamond Head State Monument Webpage

The screenshot shows the official website for Diamond Head State Monument. The page is organized into several distinct sections:


- Header:** 'Diamond Head State Monument' with a photo credit to Hawaii State Archives.
- Breadcrumbs:** Home » Parks » Island of O'ahu » Diamond Head State Monument.
- Main Content Area:**
 - DIAMOND HEAD STATE MONUMENT:** Includes three images of the monument.
 - Reservations:** A section with a 'Click Here' button and a note: 'NOTE: Entry & Parking reservations required for non-residents'.
 - PUC Reservations:** A section with a 'Click Here' button and a note: 'NOTE: Reservations required'.
 - Hours:** Lists 'OPEN DAILY' from 6:00 am to 4:00 pm, with 'Last entry at 4:00pm. Gates Close at 6:00 pm' and 'Closed Christmas and New Years'.
 - Entrance & Parking Fee:** Lists entry rules, including '*CREDIT CARD ONLY*', and parking fees for residents and non-residents.
 - DESCRIPTION:** A paragraph describing the unique profile of Diamond Head (Lēahi) and its history.
 - RESERVATIONS REQUIRED:** A heading for the reservation section.
- Japanese - 日本語 - ダイアモンドヘッド州立記念碑 - Click Here:** A link for Japanese language content.
- Right Sidebar:**
 - ACTIVITIES:** Hiking, Sightseeing, Entry/Parking Fees.
 - FACILITIES:** ADA Accessible, Picnic Pavilion, Restroom, Water Fountain, Scenic Viewpoint, Food Concession, Picnic table, Trash Cans, Gift Shop.
 - HAZARDS:** Falling Rocks.
 - PROHIBITED:** No Bicycles, No Animals/Pets, No Alcoholic Beverages, No Camping, No Rock Climbing, No Smoking, No Commercial Activities.
 - Map:** A map of O'ahu showing the location of Diamond Head.
 - Get Directions:** A button to get directions.
 - Check out the trail in Google Street View:** A link to view the trail via Google Street View.
 - Park Rules:** A link to view park rules.

Overall organization and use of headings to separate different sections of information increases understanding and readability of conveyed information

Source: Diamond Head State Monument Park

Wai'anapanapa State Park's FAQ page is a good example of utilizing headings, prompts, and spacing to allow easy reading and understanding of information being presented.

Exhibit 2.12 Wai'anapanapa State Park FAQ Page



Aloha,

Thank you for you for making a reservation to visit Wai'anapanapa State Park! For detailed information of the park, please visit: <https://dlnr.hawaii.gov/dsp/parks/maui/waianapanapa-state-park/>.

Frequently Asked Questions:

What time are reservations released?
Reservations are released 30 days in advance, one day at a time, at midnight HST.

Does my Parking reservation provide Entry to ALL passengers within the vehicle?
You must select the number of passengers in your vehicle with the vehicle parking reservation. On the Start Order page, select parking, select the date/time you wish to make the reservation for, select the number of passengers from the select quantity drop down menu. Children 3 years and younger do not need an entry.
If you wish to reserve more than one time slot for a given day, enter all the times you wish a parking voucher for and then select the number of passengers from the select quantity drop down menu. You will only be charged for the entries once and parking will be charged at \$10.00 per time slot.

I ordered the incorrect date/time; my trip was delayed; the Road to Hana was closed; may I get a refund or change the date/time of my visit?
As stated on the Start Order page of our reservation's website: **All sales are final**, no modifications or refunds will be considered for parking or entry reservations regardless of COVID-19 proclamations or any combination of tropical weather occurrences, travel plan changes and road closures.

Does my cabin reservation include parking and entry into the park?
Yes, your cabin reservation includes parking for your vehicle and entry for all members listed on the cabin reservation for the duration of your stay. Therefore, separate parking and entry reservations are not needed.

Does my Camper Van reservation include parking and entry into the park?
Yes, your Camper Van reservation includes parking for your vehicle and entry for all members listed on the reservation for the duration of your stay. Therefore, separate parking and entry reservations are not needed.

If we purchased the 7:00AM to 10:00AM do we need to purchase another voucher to stay until 12:00PM?
Yes, multiple time slots can be purchased to stay at the Park for an extended period. In this situation a voucher for 7:00AM to 10AM and a voucher for 10:00AM to 12:30PM will be needed.

My reservation states the valid time is 10:00AM-12:30PM. Does that mean I have to leave the Park by 12:30?
Yes, you may enter the park anytime within your reservation valid time but must leave the park once the reservation valid time has ended.

We hope you enjoy your visit to Wai'anapanapa State Park!

Mahalo!

For further assistance, please email our Maui office at maui-sp@reefparking.com. If you have a reservation, please include your name, voucher number and date/time of the reservation. Emails are answered in the order they are received and within 24 business hours. Our informational phone number, [1.808.437.8900](tel:18084378900), does not accept voice messages.

Optimal use of headings and spacing increase convenience, readability, and understanding

Source: Wai'anapanapa State Park

Aside from our parks comparison, we found 12 complaints that were essentially inquiries about information that could have been explained on the Hanauma Bay website. The informational practices and design flaws may have prevented those users from readily finding or understanding the information that they were seeking. Optimizing the website for informational digestibility could reduce the number of inquiries that staff have to take the time to respond to.

Recommendations

We recommend that DPR should:

1. Implement an earlier ticketing holding period so that visitors do not have to rush to select and then input their reservation information;
2. Implement a solution to disallow *non-resident* visitors from reserving as *residents*;
3. Explore other methods to prevent hoarding and re-sale of reservation slots to allow more flexibility for increased advanced reservation periods;
4. Establish an official visitor feedback monitoring and improvement system to support its mission to provide an exceptional interactive marine life conservation experience; and
5. Improve the organization, readability, and design of their website to improve convenience and understanding of important information for visitors.

Chapter 3

DPR Does Not Have Formal Goals or Benchmarks to Define and Measure the Outcomes of Conservation Efforts at Hanauma Bay

We found that the Department of Parks and Recreation (DPR) does not have formal goals or measures to define conservation success or to evaluate its efforts in accordance with its mission and the purposes of the reservation system. The mission for Hanauma Bay (HB) is to provide an exceptional, interactive marine life conservation experience that also perpetuates the protection of the Hanauma Bay Nature Preserve's historical, cultural, and natural resources for future generations. The Hanauma Bay reservation system is intended to improve efforts to balance conservation and visitor experience in the bay while also supporting social distancing guidelines in the midst of the pandemic. The Commission for Accreditation of Park and Recreation Agencies' (CAPRA) National Accreditation Standards encourage the establishment of measurable goals and objectives to guide the strategic direction in accomplishing an organization's mission. DPR contracted with the University of Hawai'i to conduct a capacity study to determine the acceptable limits to marine life disturbances at the bay. The study concluded that managing visitors may be DPR's most effective conservation tool. Despite this recommendation, DPR currently has no method to evaluate what the impact of increasing visitor numbers has on the ecosystem of HB. Without clearly defined goals or metrics, the department is unable to definitively say whether its policies are effective nor if the resulting effects are desirable.

Since 2020, Visitor Capacity Has Been Determined Primarily by Covid-19 Mandates and Budgetary Concerns, While Conservation Considerations Seem Secondary

Prior to the COVID-19 pandemic, DPR and other stakeholders had considered creating a reservation system to control visitor numbers into Hanauma Bay. Those talks were cemented when City Council Resolution 20-207 called for the creation of the Hanauma Bay reservation system in August of 2020 to limit the number of visitors in accordance with social distancing guidelines and to protect HB from unchecked use.¹ The reservation system was intended to balance the upkeep of the bay as a unique educational and recreational resource with conservation efforts to protect and restore the bay's marine ecosystem. When HB first reopened, it did so with a daily visitor limit of 720 people per day. This number was chosen because it represented the amount of people that could fit into the facility's theater to view the mandatory educational video prior to entering the bay, while being socially distanced according to pandemic guidelines at the time. At the launch of the reservation system, daily visitor capacity was raised to 900 people per day. As pandemic mandates eased and budgetary concerns arose, DPR raised the daily visitor capacity to the current 1,400 people per day. We concluded that the increase was based on business concerns and decreased social distancing guidelines because DPR did not conduct any formal assessments pertaining to marine life conservation. DPR did not formally assess the impacts to marine life conservation at the new capacity level. The cap of 1,400 visitors per day is still lower than the daily pre-pandemic average of about 3,000 visitors, but DPR has not assessed whether the lowered capacity of 1,400 visitors is still viable for its conservation mission because it had not established measurable benchmarks in the first place. The capacity studies measured the changes in levels of water clarity, sedimentation, coral coverage, and fish population density and diversity. However the department does not indicate at what level of deterioration or change would be deemed acceptable, nor does it indicate how else it would otherwise determine that conservation efforts are effective.

Overall, ongoing conservation efforts are difficult to measure as DPR has no official goals or benchmarks with which to evaluate them. CAPRA National Accreditation Standards state that an organization's mission establishes its purpose while goals and

¹ Resolution 20-207 can be found at: <https://hnlldoc.hawaii.gov/hnlldoc/measure/browse/1541>.

objectives determine strategic direction.² Measurable goals and objectives should be established for the agency and for each organizational component within the agency, and those goals/objectives should be directed toward accomplishing the agency mission, reviewed periodically, and distributed to all appropriate personnel. The department does not have a formal method to measure if its increase in daily visitor capacity is aligned with its conservation goals because it does not have any specified goals or objectives that can be evaluated.

During interviews with departmental staff, we asked if the visitor capacity limits would change in the future and how this determination would be made. Staff mentioned that there could potentially be an increase in the visitors allowed to account for the high demand and number of complaints regarding not being able to obtain reservations. However, they were not sure by how much capacity could be increased and said that it would be up to the director. Any potential increase in visitor capacity could be detrimental for preservation efforts if DPR has no method to assess the impacts of acute increases in visitor numbers on marine life at the bay.

DPR is currently meeting its requirement to conduct capacity studies of the bay, but needs to do more to specifically monitor and assess conservation efforts

Since 2001, the city has been required to conduct annual carrying capacity studies to measure the impact that visitors had on the bay. During the construction of the Visitor Center at HB in 2001, the city needed to obtain a Conservation District Use Permit from the State Department of Land and Natural Resources to build the center's infrastructure. As a condition of the permit, the city was required to conduct the aforementioned annual carrying capacity studies. These carrying capacity studies have also been included in the approved expenditures of the Hanauma Bay Special Fund since its establishment in 1996. However, the city failed to comply with this requirement for 17 years until DPR finally contracted with the University of Hawai'i, Institute of Marine Biology (UHIMB) in May 2018 to perform a five-year carrying capacity study. The studies are being conducted, but it seems DPR is not fully utilizing the information from the studies to assess and monitor its policies' effectiveness in regards to conservation nor to establish formal benchmarks or goals to ensure that such policies are sufficient to lead to desired outcomes for HB.

² CAPRA's National Accreditation Standards can be found at: <https://www.nrpa.org/contentassets/30f03182dc3343e7800380a1211d889a/capra-national-accreditation-standards-master-document-12-8-2020.pdf?communitykey=2d7ebdfa-73f2-4b7c-930f-7ff32663f0d9&tab=librarydocuments>.

The carrying capacity of a region is the amount of human use an ecosystem can withstand while assuring sustainability of the resource. The carrying capacity study was designed to determine the acceptable limits of human disturbance to the marine resources of HB by investigating physical, social, environmental, and biological variables relating to the current usage of marine resources by visitors. The first three years of the study focused on the biological carrying capacity of the marine environment at HB, while the fourth year focused on the social aspect of the study, conducting surveys to understand visitors' experience at the bay. The second and third years of the study took advantage of examining the before and after effects of the bay's closure due to the pandemic.

Carrying capacity studies show that marine ecosystems are complex with various different factors, however there is evidence of change due to human disturbances

Because of the complexity of coastal marine ecosystems and spatial and temporal variation, the studies found that it is difficult to isolate specific cause and effect impacts and that there is not sufficient evidence to support the belief that the declines in coral cover and resource fish density are the exclusive result of visitor presence at HB. However, there is evidence that human use is a contributing factor. Exhibit 3.1 lists the evidence.

Exhibit 3.1

Years 1-3 Biological Carrying Capacity Study (2018-2021)—Evidence of Human Disturbance

Year 1 – Biological Capacity

- Water clarity increased an average of 30% on the days HB is closed to the public. Human use explains part of the decreased visibility.
- The breakage rate of coral was strongly related to the level of swimmers and waders in each sector; the greater the number of visitors in the water the lower the percent of coral coverage.
- The reef flats in the sectors with low coral coverage also have low spatial complexity, reducing available substrate for coral growth and recruitment.
- Sedimentation levels were clearly related to the number of visitors in the water in each sector, this increases the chance of smothering and scour for corals and recruits.
- The spatial distribution and abundance of corals on the shallow reef flat reflect the historical chronic impact from human use:
 - Coral coverage is low in high use regions;
 - Coral coverage is high in areas beyond depths that can be accessed by snorkelers and waders;
 - Species of corals in exposed areas exhibit stronger skeletal strengths;
 - Coral coverage is higher in cracks and crevices and on vertical surfaces inaccessible to trampling impacts.

Year 2 – Biological Capacity

- Water clarity increased an average of 27.5% on COVID-19 closure days when compared to normal days closed to the public and 49.4% on COVID-19 closure days when compared to days open to the public.
- The greater the number of visitors in the water the greater the reduction in mean coral colony size.

Year 3 – Biological Capacity

- Fish:
 - Significant increases in fish density and biomass have been observed in the most popular snorkeling sector (Keyhole sector) during the closure of HB to the public.
 - Smaller sized classes of fish were not present in surveys after the reintroduction of visitors to HB, suggesting human avoidance behavior of smaller fish in response to humans.
 - As the number of visitors to HB increased, the density and biomass of snappers, butterflyfishes, and wrasses significantly decreased.
 - Diversity of fish was significantly lower in the two most popular snorkeling sectors (Keyhole and Channel) after the reopening of HB to the public at 25% capacity.
- Megafauna:
 - Presence of monk seals increased by 44% during the COVID-19 closure to visitors and decreased by 87% following the reopening of the Bay to visitors, suggesting visitors may be changing natural behaviors and habitat usage for monk seals at HB, but data collection should continue.
- Other environmental factors that contribute to low coral coverage, sedimentation, and low water clarity:
 - Wind direction, speed, and tide are strongly correlated with water visibility and sediment accumulation.
 - Wave height is correlated with changes in water clarity.
 - Corallivorous fishes and parrotfishes appear to be contributing to breakage, evidenced by feeding scars on corals within HB during the Covid closure.

Source: University of Hawai'i, Institute of Marine Biology

The fourth year of the contract included a social carrying capacity study. The National Park Service defines social carrying capacity as the type and level of visitor use that can be accommodated while sustaining acceptable resources and social conditions that complement the purpose of the park. According to UHIMB, surveys include multiple components like demographics, visitor satisfaction, and overall experiences; the outcomes of these studies are based solely on perceived visitor experience from an

individual perspective; and expectations may or may not be met for a variety of reasons, including prior bias of users, weather, or expected marine life. UHIMB developed surveys consisting of 28 questions, intended to determine the social carrying capacity of Hanauma Bay and visitor perceived experience. Exhibit 3.2 lists some of the highlights from the surveys.

Exhibit 3.2 Year 4 Social Carrying Capacity Study (2022) – Highlights

Year 4 – Social Capacity

- Respondent demographic: 13% of respondents were from Hawai'i, 80% from the U.S. mainland, and 7% were international travelers.
- 83% of visitors indicated they were either *satisfied* or *very satisfied* with the marine life they experienced.
- 87% of visitors indicated that the quality of Hanauma Bay's natural resources was either *ideal* or *mostly ideal*.
- When visitors were asked if they felt the admission fee was appropriate:
 - 75% of visitors agreed in some way that the fee was appropriate, this was an open-ended question so visitors could elaborate, eliciting a wide variety of responses.
- When visitors were queried if Hanauma Bay could accommodate more visitors:
 - 49% either *disagreed* or *strongly disagreed* that the bay could accommodate more visitors;
 - 26% either *agreed* or *strongly agreed*;
 - 25% had a *neutral* response.
- When visitors were asked how effective the educational video was at providing useful information:
 - 84% of visitors either *agreed* or *strongly agreed* that the educational video was effective at providing useful information;
 - 5% either *disagreed* or *strongly disagreed*;
 - 11% were *neutral*;
 - *Even though most people said the video was effective, there were still 74% of visitors that said they saw someone touch the reef one or more times.
- When asked about witnessing other visitors touching, standing on, or bumping the reef:
 - 44% responded that they noticed others contacting the reef between 1-4 times;
 - 17% observed people contacting the reef 5-9 times;
 - 6% observed people contacting the reef 10-14 times;
 - 7% observed people contacting the reef 15 or more times;
 - 26% responded that they never saw anyone touch the reef.

Source: University of Hawai'i, Institute of Marine Biology

The results from the carrying capacity studies thus far show that the marine ecosystem of HB is a dynamic environment that cannot be easily altered by a single variable, such as visitor capacity. However, it also shows that there is a correlation between human disturbance or frequent use and the degradation of marine resources. There is clearly lots of complexity in determining cause and effect in conservation, as well as challenges in quantifying conservation. Despite these challenges, the studies have still recommended that DPR's best tool for conservation is managing

the number of visitors. This suggests a need for a dynamic methodology for assessing the ongoing impacts of visitor use on the ecosystem at HB. UHIMB and the FOHB advocacy group both recommend that DPR continue annual studies to monitor changes to the ecosystem at the bay and to serve as a benchmark to assess implemented management strategies.

Currently, DPR is not utilizing the capacity studies as a data rich resource to aid in planning and ensuring that conservation efforts—including visitor capacity limits—are effective. In interviews with DPR staff, we asked about the end goal for the studies. Staff were unclear about how the capacity studies' results would be utilized moving forward or how it would otherwise influence the department's decision making when making changes to the reservation process. The results from these studies should have been used when making changes to visitor capacity, as it has been shown that the number of visitors has an inverse relationship with preservation results. The capacity study is set to end after its fifth year, in May 2023, however DPR has stated that they plan to renew the contract for the continuation of the capacity studies moving forward.

Overall, DPR still needs to define its goals for conservation, as well as what successful conservation means. The carrying capacity studies cite a prior study conducted in 2001, which reviewed the impact of human use on coral at Kahalu'u Bay on Hawai'i Island, when the site saw 350,000 visitors per year. The results showed that after eight months, the site had no remaining coral. The study concluded that a reduction in the level of visitors would not relate to an increase in coral coverage at any level above 200,000 annual visitors. In FY 2022, HB had about 330,000 visitors. The study went on to say that at levels of up to 50,000 visitors per year, coral growth was affected, but mortality was low. This information provides evidence that a dramatic reduction in visitor capacity might be needed to guarantee a level of coral survival. However, DPR first needs to define what its goals for conservation are so that it can determine at what level they should set visitor capacity to balance it with marine ecosystem preservation. We do acknowledge the difficulty in quantifying conservation, but without any definition, goals, or specified guidelines, DPR would be making changes to visitor capacity without truly knowing if the effects are aligned with the intended future of HB.

In its August 2022 update of its strategic plan, DPR included plans to create a Science Advisory Group to assist the department in evaluating requests to do scientific research and to determine how to disseminate any research data from HB. The group would be comprised of members such as the FOHB; State Division of

Aquatic Resources; local science community groups; and an advisor versed in Hawaiian culture. Establishing this group could be beneficial not only for overseeing research requests at the bay, but also in providing expertise to create methods and/or strategies to evaluate the current conservation efforts at the bay, mainly the impacts of visitor capacity limits. The expertise of the group could also be utilized to define what successful conservation is for HB and to devise measurable goals to be utilized for long-term planning and assessment of the bay's programs. We commend the department for proactively pursuing such an avenue which could enhance its scientific knowledge and research capabilities. In June 2023, DPR stated that they are currently putting the Hanauma Bay Education Program out to bid; once that process is complete, they will be able to form the Science Advisory Group.

Recommendations

The Department of Parks and Recreation should:

6. Collaborate with experts, departmental staff, and other stakeholders to:
 - a. Define what successful conservation is for HB regarding of goals, benchmarks, or specific guidelines that can be used for current program assessment and planning for future program changes;
 - b. Establish a plan for how it will utilize the information provided in the carrying capacity studies to aid in current program assessment and planning for future program changes;
 - c. Establish a plan for how it will proactively monitor and assess changing marine ecosystem conditions at HB in the future;
7. Continue annual carrying capacity studies as required by conditions under the Conservation District Use Permit granted by the State Department of Land and Natural Resources; and
8. Ensure that they follow-through with plans in a timely manner to establish a Science Advisory Group consisting of various subject matter expert stakeholders.

Chapter 4

Conclusion and Recommendations

Conclusion

In the wake of the COVID-19 pandemic, the Honolulu City Council called for the creation of the Hanauma Bay (HB) reservation system to limit visitor entry in accordance with social-distancing mandates and to preserve the natural environment of Hanauma Bay. The reservation system has successfully facilitated the new entry procedures for HB, placing daily limits on the number of visitors allowed and with new admission fees has facilitated an increase in admission revenues surpassing previous levels. While the reservation system technically fulfills its purpose, we found that there are improvements that Department of Parks and Recreation (DPR) could implement to improve the reservation process and experience for visitors.

We found that DPR does not have an official feedback mechanism to track, respond to, or resolve complaints and issues in an efficient manner. Complaints are the only feedback that is gathered, leading to an inefficient and informal improvement process that does not proactively identify areas needing improvement nor solutions to increase the quality of experience for visitors to Hanauma Bay. We found that the reservation process has procedural issues that may disadvantage certain populations, particularly those who are not as adept at technology, leading to potential discrimination and equity issues. The process also creates room for mistakes in reservation ticketing choices allowing non-resident visitors to secure reservations without upfront payment, leading to a risk of up to \$234,575 in potential admission revenue losses. In comparison to other State and National parks in the State of Hawai'i, the reservation policies and informational practices for Hanauma Bay could improve to match standard practices.

DPR's mission for HB is to provide an exceptional, interactive marine life conservation experience that perpetuates the protection of the Hanauma Bay Nature Preserve's historical, cultural, and natural resources for this and future generations. The Hanauma Bay reservation system was intended to improve efforts to balance conservation and visitor experience in the bay. However, we found that DPR does not have formal goals or measures to not only define conservation success but also evaluate it in accordance with its mission and the purposes of the reservation system. Without these measures, they are unable to definitively say that the programs at the bay are doing well to champion the bay's conservation and sustainability for the future.

Currently, the University of Hawai'i is conducting a five-year carrying capacity study to determine the acceptable limits to marine life disturbances at the bay. The study is in its 5th year and has found that there are correlations between the number of visitors and the degraded state of coral coverage, density and diversity of fish, and water clarity. There are other environmental factors such as the wind, wave and tide levels, and fish behavior that create a complex and nuanced environment that is difficult to quantify for the purposes of conservation. As a result, the study has stated that managing visitors may be the most important and effective tool DPR has for conservation. Despite this recommendation, DPR has no method to evaluate specific impacts that increasing visitor numbers has on the ecosystem of HB. We also found that budgetary concerns and easing pandemic restrictions seem to have been the primary driver of visitor capacity increases, not conservation planning. According to the capacity studies, a previous study conducted in 2001 stated that coral could not survive when annual visitor numbers exceed 200,000 annual visitors. Hanauma Bay is currently on pace to exceed this number annually with current policies allowing more than 300,000 annual visitors.

DPR is currently unsure of how it will utilize the wealth of information provided in the capacity studies to evaluate the impacts of its programs on conservation or to benchmark its efforts for the long-term preservation of HB. DPR should ensure that it utilizes the data collected in the capacity studies and consults with subject matter experts when establishing measurable goals for conservation and establishing methods to measure the effects of programming decisions, mainly visitor capacity decisions. We commend the department for its efforts to adapt and implement a new system amidst the COVID-19 pandemic. Nevertheless, now improvements can be made.

Recommendations

We recommend that the Department of Parks and Recreation should:

1. Implement an earlier reservation ticket holding period so that visitors do not have to rush to select and then input their reservation information;
2. Implement a solution to disallow *non-resident* visitors from reserving as *residents*;

3. Explore other methods to prevent hoarding and re-sale of reservation slots to allow more flexibility for increased advanced reservation periods;
4. Establish an official visitor feedback monitoring and improvement system to support its mission to provide an exceptional interactive marine life conservation experience;
5. Improve the organization, readability, and design of their website to improve convenience and understanding of important information for visitors;
6. Collaborate with experts, departmental staff, and other stakeholders to:
 - a. Define what successful conservation is for HB regarding of goals, benchmarks, or specific guidelines that can be used for current program assessment and planning for future program changes;
 - b. Establish a plan for how it will utilize the information provided in the carrying capacity studies to aid in current program assessment and planning for future program changes;
 - c. Establish a plan for how it will proactively monitor and assess changing marine ecosystem conditions at HB in the future;
7. Continue annual carrying capacity studies as required by conditions under the Conservation District Use Permit granted by the State Department of Land and Natural Resources; and
8. Ensure that they follow-through with plans to establish a Science Advisory Group consisting of various subject matter expert stakeholders in a timely manner.

Management Response

In response to a draft of this audit report, the Department of Parks and Recreation and Managing Director expressed general agreement with the report's findings and recommendations. The department indicated that they have either started or plan to implement initiatives that will address the challenges identified in the audit report. We are encouraged by the department's initiative and hope they will result in meaningful improvements

to the reservation process and to the long-term preservation of the natural resources at Hanauma Bay. We did not make any significant amendments to the audit report as a result of management's response, but we made technical non-substantive changes for the purposes of accuracy, clarity, and style. A copy of the management's full response can be found on page 45.

DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707
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RICK BLANGIARDI
MAYOR

LAURA H. THIELEN
DIRECTOR

KĒHAULANI PU'U
DEPUTY DIRECTOR

June 28, 2023

Ms. Arushi Kumar, City Auditor
Office of the City Auditor
1001 Kamokila Blvd., Suite 216
Kapolei, Hawaii 96707

Dear Ms. Kumar:

**SUBJECT: Response to the Audit of the Hanauma Bay
Online Reservation System**

Thank you for your letter dated June 3, 2023, to Managing Director Michael D. Formby regarding the Hanauma Bay Online Reservation System audit. The Department of Parks and Recreation (DPR) appreciates the impartial assessment of the online reservation system.

The audit was self-initiated pursuant to the authority of the OCA as provided by Section 3-502.1(c) in the Revised Charter of Honolulu. The objectives of the audit were to determine if the DPR took full advantage of the online reservation, which was introduced to address the COVID-19 social distancing guidelines that limited the number of visitors to Hanauma Bay Nature Preserve (HBNP), and to provide recommendations, where necessary.

In general, we found the audit to be comprehensive and reasonable. The following responses to the recommendations are the corrective measure that the DPR has either started or will implement. For the responses where DPR felt the audit did not appropriately convey relevant information in their findings, we further clarified our reasons for the current procedures.

Arushi Kumar, City Auditor
June 28, 2023
Page 2

Audit recommendation 1

Implement an earlier reservation ticket holding period so that visitors do not have to rush to select and then input their reservation information.

Response: The DPR concurs with the audit and will work with Department of Information and Technology (DIT) to improve the reservation ticket holding time.

Audit recommendation 2

Implement a solution to disallow non-resident visitors from reserving as residents.

Response: Effective July 1, 2023, all Hawaii Residents with valid Hawaii identification will no longer need online reservations to enter HBNP. The DPR will work with the DIT to remove the resident option from the online reservation ticket selection. This will prevent non-residents from making reservations as residents.

Audit recommendation 3

Explore other methods to prevent hoarding and re-sale of reservation slots to allow more flexibility for increased advanced reservation periods.

Response: The DPR developed the policies for the reservation system with hoarding in mind. The current limit of five (5) adults and five (5) children is in place to prevent hoarding. The online reservation system does not allow the re-sale of reservation slots. The DPR is currently working with the Department of Enterprise Services (DES) to reserve a limited amount of slots and create a concession package to include admission fee, transportation, etc. The concessionaire could allow visitors the flexibility to make reservations prior to two (2) days in advance.

Audit recommendation 4

Establish an official visitor feedback monitoring and improvement system to support its mission to provide an exceptional interactive marine life conservation experience.

Response: The DPR concurs with the audit and will work on creating a feedback survey which visitors can access using a survey link. The survey link will be attached to customer receipts (online and in-person) and on the HBNP websites. Surveys will also be available onsite for customers who do not have internet access.

Arushi Kumar, City Auditor
June 28, 2023
Page 3

Audit recommendation 5

Improve the organization, readability, and design of their website to improve convenience and understanding of important information for visitors.

Response: The DPR concurs with the audit and there are plans for the entire DPR website to be updated. The City and County of Honolulu is currently working with other agencies to update their website and the DPR is anxiously awaiting their turn.

Audit recommendation 6

Collaborate with experts, departmental staff, and other stakeholders to:

- a. *Define what successful conservation is for HB regarding of goals, benchmarks, or specific guidelines that can be used for current program assessment and planning for future program changes.*

Response: The DPR will establish a Science Advisory Group (Group) with experts, department staff, and other stakeholders. With the Group's assistance, the DPR can define what a successful conservation is for HBNP and set goals, benchmarks and/or guidelines for program assessment and planning for future program changes.

- b. *Establish a plan for how it will utilize the information provided in the carrying capacity studies to aid in current program assessment and planning for future program changes.*

Response: With the assistance of the Group, the DPR will formulate a plan using the Carrying Capacity Studies to aid in current program assessment and planning for future program changes.

- c. *Establish a plan for how it will proactively monitor and assess changing marine ecosystem conditions at HB in the future*

Response: The DPR conducts an annual Carrying Capacity Study and will continue to incorporate the monitoring and assessment of the changing marine ecosystem as part of the study.

Arushi Kumar, City Auditor
June 28, 2023
Page 4

Audit recommendation 7

Continue annual carrying capacity studies as required by conditions under the Conservation District Use Permit granted by the State Department of Land and Natural Resources.

Response: The DPR concurs with the audit and is committed to the continuation of the Carrying Capacity Studies.

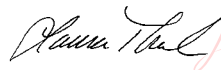
Audit recommendation 8

Ensure that they follow-through with plans to establish a Science Advisory Group consisting of various subject matter expert stakeholders in a timely manner.

Response: The DPR will establish a Science Advisory Group once the HBNP Education Program contract is executed. The DPR is hopeful that the new Education Program contract will be executed by June 2024.

Your favorable consideration is appreciated. Should you have any questions, please contact Tara Hirohata, District 1 Manager, at (808) 768-8944 or via email at thirohata@honolulu.gov

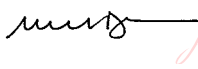
Sincerely,



Digitally signed by Thielen,
Laura H
Date: 2023.06.26 14:49:59
-10'00'

Laura H. Thielen
Director

APPROVED:



Digitally signed by Formby,
Michael
Date: 2023.06.26 15:57:15
-10'00'

Michael D. Formby
Managing Director

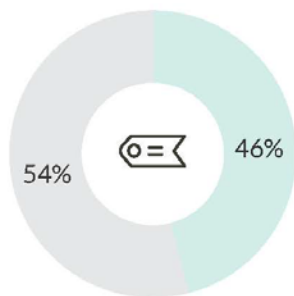
Appendix A

How Quickly Do Hanauma Bay Reservation Tickets Sellout?

Hanauma Bay is a popular tourist destination with over 3,000 people visiting per day and ~800,000 visitors per year prior to the COVID-19 pandemic. Currently, only 1,400 visitors are allowed per day with 1,050 tickets available for reservation per day. The demand for reservation tickets outweighs the available supply of tickets, which can be seen in how quickly tickets are sold. The Office of the City Auditor reviewed the sale of reservation tickets on different days during the busy summer period in June, comparing tickets sold on a Wednesday and a Saturday to compare variances in demand for tickets between a weekday and weekend.

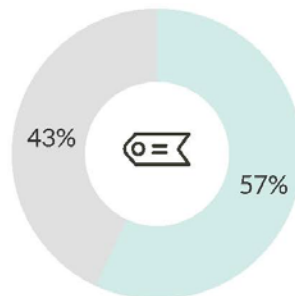
On Wednesday, June 8, 2022, we found that 46% (484 tickets) of the total allotted tickets for the day were sold within the first three minutes, 57% (602 tickets) were sold within the first five minutes, and 74% (778 tickets) were sold within the first ten minutes after reservations were opened to the public.

Wednesday 6/8/22 - Ticket Sales



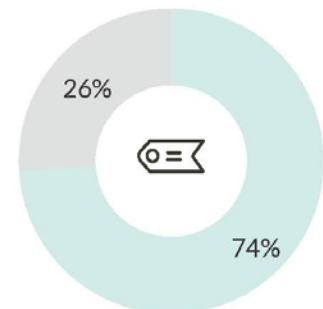
46%

of Tickets Sold Within
the First 3 Minutes



57%

of Tickets Sold Within
the First 5 Minutes



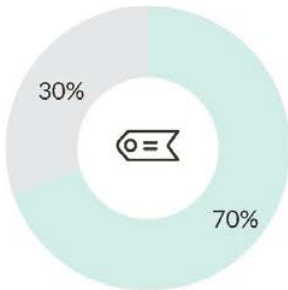
74%

of Tickets Sold Within
the First 10 Minutes

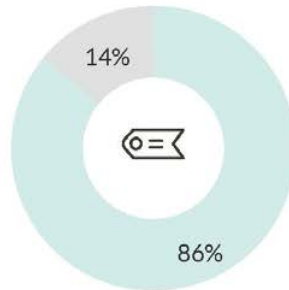
Source: Office of the City Auditor, Department of Information Technology Data

On Saturday, June 18, 2022, we found that considerably more tickets were sold within the first minutes than compared to the Wednesday we reviewed. Within the first three minutes 70% (733 tickets) of the total allotted tickets for the day were sold, within the first five minutes 86% (904 tickets) were sold, and within the first ten minutes after reservations were opened to the public 91% (957 tickets) were sold.

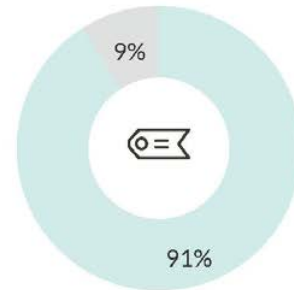
Saturday 6/18/22 - Ticket Sales



70%
of Tickets Sold Within
the First 3 Minutes



86%
of Tickets Sold Within
the First 5 Minutes

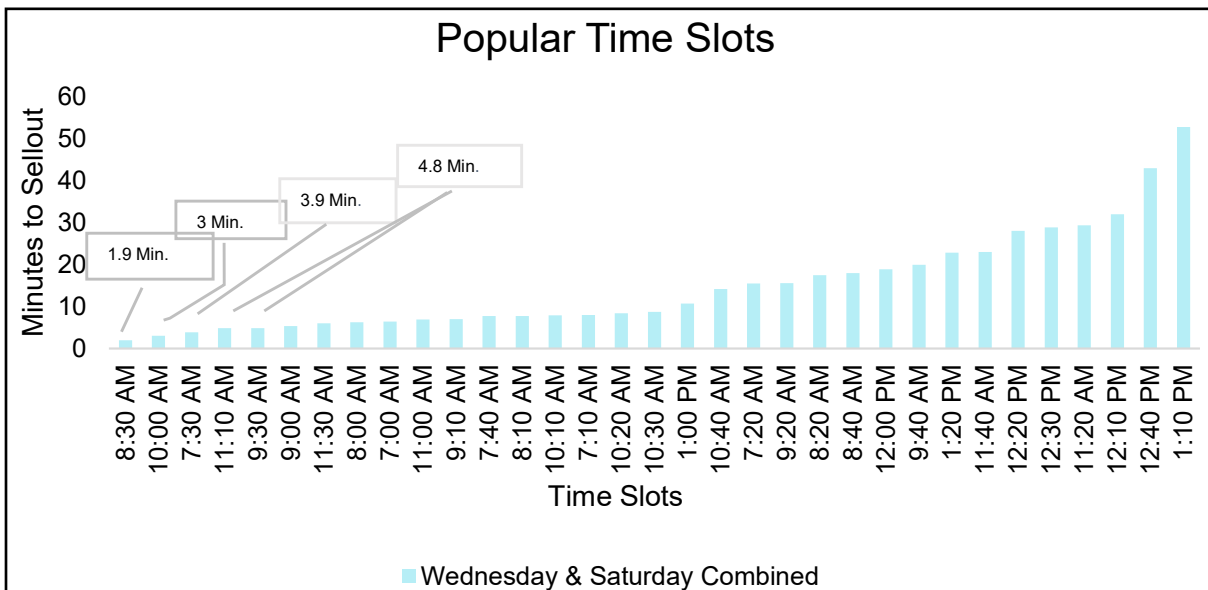


91%
of Tickets Sold Within
the First 10 Minutes

Source: Office of the City Auditor, Department of Information Technology Data

When reviewing the data, we found that the top five desired time slots between the two days each sold out within five minutes after reservations opened, with the top time slot (8:30 am) selling out in just under two minutes after opening. The second (10 am) and third (7:30 am) quickest time slots to sell were sold out in under four minutes, with the fourth (11:10 am) and fifth (9:30 am) time slots selling out in just under five minutes after reservations were opened to the public.

Review of How Quickly Each Time Slot is Soldout



Source: Office of the City Auditor, Department of Information Technology Data

The minutes it took to sellout of tickets for each of the time slots is listed in the table below:

<i>Time Slots</i>	<i>Wednesday (6/8/2022) Minutes to Sellout</i>	<i>Saturday (6/18/2022) Minutes to Sellout</i>
7:00 AM	9.6	2.2
7:10 AM	13.2	1.7
7:20 AM	23.8	5.6
7:30 AM	3.2	4.7
7:40 AM	7.3	8.2
8:00 AM	7.8	4.7
8:10 AM	9.4	5.2
8:20 AM	23.0	10.9
8:30 AM	2.3	1.6
8:40 AM	27.7	4.3
9:00 AM	8.2	2.5
9:10 AM	4.1	9.7
9:20 AM	28.8	2.3
9:30 AM	7.5	1.7
9:40 AM	30.5	1.7
10:00 AM	2.2	3.8
10:10 AM	10.5	4.8
10:20 AM	13.0	2.0
10:30 AM	13.3	2.1
10:40 AM	23.2	3.6
11:00 AM	6.3	7.4
11:10 AM	6.7	3.0
11:20 AM	51.6	2.9
11:30 AM	7.1	5.1
11:40 AM	36.7	6.1
12:00 PM	32.2	4.0
12:10 PM	53.2	3.7
12:20 PM	48.7	4.7
12:30 PM	50.5	5.3
12:40 PM	66.1	6.8
1:00 PM	17.7	3.0
1:10 PM	89.8	8.3
1:20 PM	43.6	4.0

Source: Office of the City Auditor, Department of Information Technology Data

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Appendix B

Hanauma Bay Online Reservation Error Occurrences

There are two types of validations that will generally cause an error message:


1. Failed Payment Validation –

- At first, foreign credit cards weren't universally accepted resulting in system errors; however this feature has since been updated.
- Billing address disparities would also cause a system error; however changes have been made to make this more lenient to foreign addresses.

Example of an Error Message Due to Address Discrepancies

Order Summary

Description	Hanauma Bay payment.	Total	\$	25.59
Invoice Number	HB-0898-400793-6943			
PO Number	HB-8010-588619-7472			

Card Number #  4242 4242 4242 4242 Exp. Date # 04/24 Card Code # 242

Billing Address

First Name #	Last Name #
Billing Country # USA	Zip # 46201
Street Address # 650 S. King Street	City # Honolulu
State # HI	Phone Number
Email #	

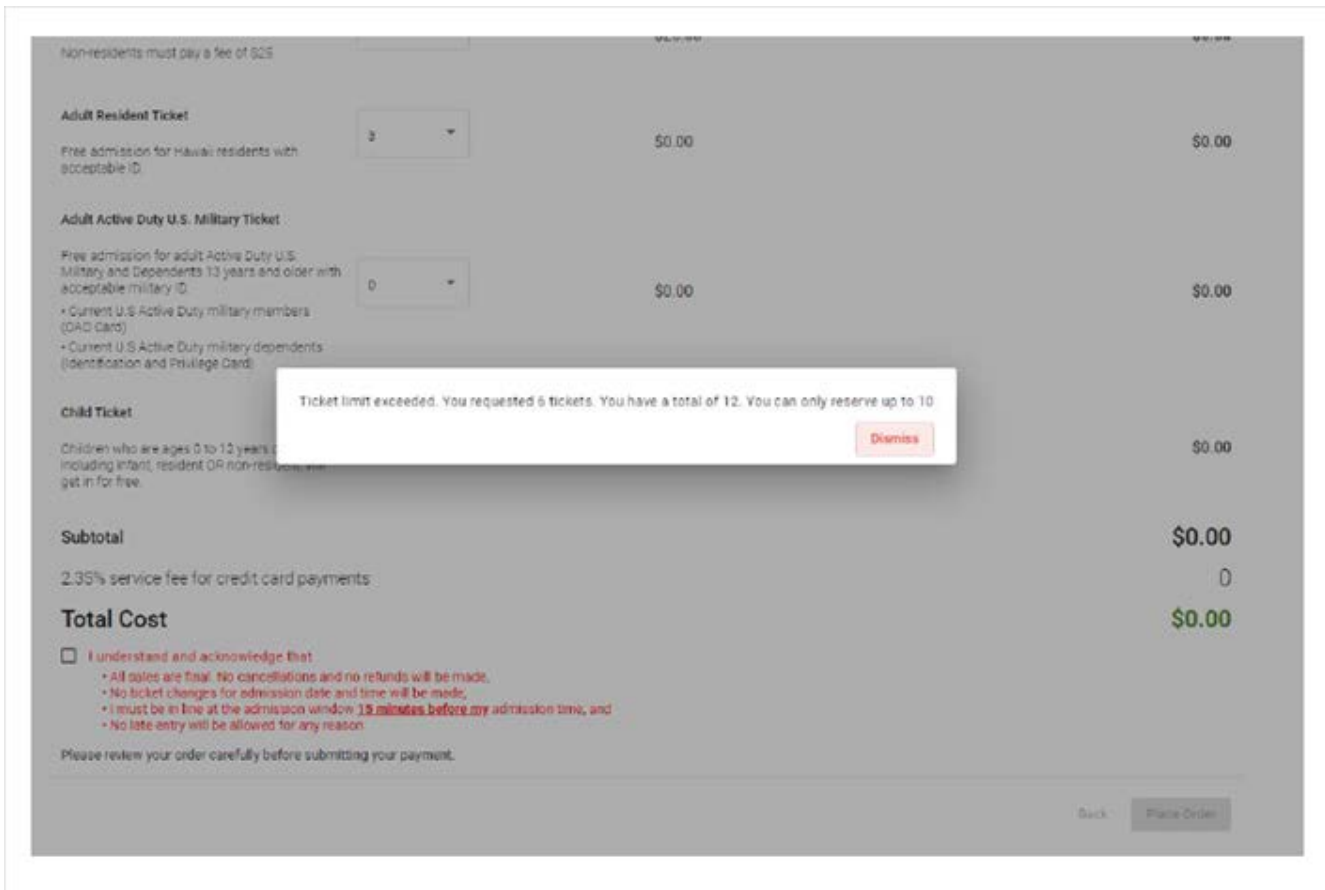
The transaction has been declined because of an AVS mismatch. The address provided does not match billing address of cardholder.

Source: Department of Information Technology

2. Ticketing Rules & Availabilities – Error messages occur when ticketing rules are violated or tickets are sold out:

- Visitors are only allowed to book ten tickets per reservation
- Visitors are only allowed to book five adults and five children maximum per reservation
- Reservation exceeds the amount of available tickets
 - o Sometimes tickets will sell out while visitors are in the process of completing their reservation

Example of Reservations Exceeding the Ten Ticket Maximum



Source: Department of Information Technology

Example of Reservations Exceeding the Amount of Currently Available Tickets

Wednesday, February 15, 2023 7:10 AM
This reservation is non-transferable. Must present ID at Admission Window.

Current tickets available: 8 You can only buy a maximum of 5 ADULT TICKETS and 5 CHILD TICKETS per day.

Item	Quantity	Price	Cost
Adult Non Resident Ticket <small>Non-residents must pay a fee of \$25</small>	5	\$25.00	\$125.00
Adult Resident Ticket <small>Free admission for Hawaii residents with acceptable ID.</small>	0	\$0.00	\$0.00
Adult Active Duty U.S. Military Ticket <small>Free admission for adult Active Duty U.S. Military and Dependents 13 years and older with acceptable military ID.</small> <small>* Current U.S Active Duty military members (DAC Card)</small> <small>* Current U.S Active Duty military dependents (Identification and Privilege Card)</small>	10	\$0.00	\$0.00
Child Ticket <small>Children who are ages 0 to 12 years old, including infant, resident OR non-resident, will get in for free.</small>	5	\$0.00	\$0.00
Subtotal			\$125.00
2.95% service fee for credit card payments			2.94
Total Cost			\$127.94

I understand and acknowledge that:

- All sales are final. No cancellations and no refunds will be made.
- No ticket changes for admission date and time will be made.
- I must be in line at the admission window **15 minutes before my** admission time, and
- No late entry will be allowed for any reason.

Please review your order carefully before submitting your payment.

Back
Place Order

Source: Department of Information Technology

Example of Tickets Selling Out While Visitors Are in the Process of Completing Their Reservation

Wednesday, February 15, 2023 7:10 AM This reservation is non-transferrable. Must present ID at Admission Window

Current tickets available: **0** You can only buy a maximum of 5 ADULT TICKETS and 5 CHILD TICKETS per day.

Item	Quantity	Price	Cost
Adult Non Resident Ticket <small>Non-residents must pay a fee of \$25</small>	2	\$25.00	\$50.00
Adult Resident Ticket <small>Free admission for Hawaii residents with acceptable ID</small>	0	\$0.00	\$0.00
Adult Active Duty U.S. Military Ticket <small>Free admission for adult Active Duty U.S. Military and Dependents 13 years and older with acceptable military ID. • Current U.S. Active Duty military members (CAC Card) • Current U.S. Active Duty military dependents (Identification and Privilege Card)</small>	0	\$0.00	\$0.00
Child Ticket <small>Children who are ages 0 to 12 years old, including infant, resident OR non-resident, will get in for free.</small>	0	\$0.00	\$0.00
Subtotal			\$50.00
2.35% service fee for credit card payments			1.18
Total Cost			\$51.18

I understand and acknowledge that:
• All sales are final. No cancellations and no refunds will be made,
• No ticket changes for admission date and time will be made,
• I must be in line at the admission window **15 minutes before my** admission time, and
• No late entry will be allowed for any reason

Please review your order carefully before submitting your payment.

Go Back Place Order

Source: Department of Information Technology

Appendix C

Hanauma Bay Reservation Survey

Hanauma Bay Reservation Survey

Please select your place of residency:

Hawaii / Out of State

Please rate your experience using the Hanauma Bay Online Reservation System (1 = Poor, 5 = Excellent):

1 2 3 4 5

Do you think the fees are fair?

Yes / No

Did the "How-To" guide explain the process clearly?

Yes / No

Did you experience any issues while using the reservation system?

Yes / No

If so, please briefly describe the issues:

- 1.
- 2.
- 3.

Please list any suggestions to improve the reservation process:



Survey prepared by the City and County of Honolulu - Office of the City Auditor. All responses are anonymous and responses will be incorporated into our audit findings.

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Appendix D

Website Design Best Practices

Website visual design focuses on the aesthetic of a site and how it conveys information by strategically utilizing images, colors, fonts, and other elements. Successful website design enhances the website's content, function, and user experience.

Usability.gov Research-Based Web Design & Usability Guidelines¹

A successful visual design applies the following principles and effectively brings the webpage together in a way that makes sense. Consider these principles:

- **Unity**— all elements on a page visually or conceptually appear to belong together. Visual design must strike a balance between unity and variety to avoid a dull or overwhelming design.
- **Gestalt**— helps users perceive the overall design as opposed to individual elements. If the design elements are arranged properly, the organization of the overall design will be very clear.
- **Space**— incorporating space into a design helps reduce noise, increase readability, and/or create illusion. White space is an important part of your layout strategy.
- **Hierarchy**— shows the difference in significance between items. Designers often create hierarchies through different font sizes, colors, and placement on the page. Usually, items at the top are perceived as most important.
- **Contrast**— focuses on making items stand out by emphasizing differences in size, color, direction, and other characteristics.
- **Dominance**— focuses on having one element as the focal point and others being subordinate. This is often done through scaling and contrasting based on size, color, position, shape, etc.
- **Similarity**— refers to creating continuity throughout a design without direct duplication. Similarity is used to make pieces work together over an interface and help users learn the interface quicker.

¹ Website design principles can be found at: <https://www.usability.gov/what-and-why/visual-design.html> & https://www.usability.gov/sites/default/files/documents/guidelines_book.pdf

Other helpful tips include:

- **White Space & Density**— Designs that are mindful of density and adequate use of white space can ensure that a webpage does not confuse users by looking *too busy*. Ensuring that pages are not too crowded with information can make it easier for users to quickly scan for wanted information.
- **Headings**— Most users spend a considerable amount of time scanning rather than reading information on websites. Well-designed headings help to facilitate both scanning and reading written material. Designers should strive to use unique and descriptive headings, and to use as many headings as necessary to enable users to find what they are looking for—it is usually better to use more rather than fewer headings, and it is generally a good idea not to skip heading levels.