Problems with Paradise:
Rethinking the tourist landscape in Pupukea, Hawaii

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Supervisor: Patrick Mooney

Submitted in partial fulfillment for the Master of Landscape Architecture,
School of Architecture and Landscape Architecture, University of British Columbia.
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April 26, 2019
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School of Architecture and Landscape Architecture
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Graduate Project Title: Problems with Paradise: Rethinking the tourist landscape in Pupukea, Hawaii

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Nikko Aliasut        April 26, 2019
Name     Signature    Date
Abstract

Hawaii is noted for being geographically the most isolated group of islands in the world, yet it has grown to become a popular place to visit hosting over 8 million tourists each year. The archipelago's geographical location and tropical climate has allowed for a biodiversity of various flora and fauna species to flourish, as well as a unique culture to develop within an isolated area. With influence from western society, mass tourism has also thrived as a result. This new tourist economy has become one of the major factors that led to the urbanization of the southern shores on the island of Oahu, and has also led the industry to gradually engage with the other islands as well. As a result, issues of environmental disturbance, social conflict and economic inequality have risen within a limited area.

This thesis seeks better strategies in designing the tourist landscape on a town that is bound to face the pressures from the industry. Through the understanding of the land, a balance of the three elements and the interaction between the local and the tourist, a more sustainable relationship can be established.
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1.0 Background
1.1 Impacts of Tourism

As the most geographically isolated group of islands on Earth, Hawaii has grown to be one of the most popular places to visit in the world, yet its situation being isolated near the centre of the Pacific Ocean has led to some major environmental, social and economic issues. Tourism has developed overtime to become one of the leading contributors towards the island state’s economy.

Hawaii’s geographical isolation has allowed for a biodiversity of various flora and fauna species to flourish, as well as a unique culture to develop within an isolated area. As an unique phenomenon, it has also managed to gain attraction within the tourist industry. Being centred within the Pacific Ocean has also led the archipelago to become a strategic land resource. With America’s exploitation of the islands for resources, as well as the influence of popular media, the establishment of Hawaii as the new “exotic state” in the late 1950s led to a travel boom of tourist industries, and an influx of foreigners. This new tourist economy was one of the major factors that led to the urbanization of the southern shores on the island of Oahu, and has also led the tourist industry to gradually engage with the other islands as well.

Figure 1.1.1 - Waikiki Beach

As a result, issues of environmental disturbance, social conflict and economic inequality have arisen within a limited space, to which the state has started seeking beyond the islands and importing around 90% of resources in food and energy.\(^5\) Having tourism and isolation as major factors, it will be important to consider how the income generated can be invested in more sustainable practices for the islands. At the same time valuing the cultures and resources of this landscape in a enlightening and respectful way should aid in contributing to the local economy.

What started out as an attraction to this landscape's unique isolated situation may soon lead to a quandary for the islands, as new projects struggle to find resources and space within a limited area. The problems that this project seeks to resolve can be guided with these questions:

1) How does the factor of isolation play a role in the realm of tourism for this geographical region?

2) How can the remote island’s of Hawaii thrive sustainably from it’s tourist economy through landscape architecture?

---

Figure 1.2.1 - The Tourist Accessible Islands
1.2 The Hawaiian Islands

The Hawaiian archipelago consists of 137 islands spread over the north-western part of the Pacific Ocean. Tourists who visit the state will mostly be familiar with the south-eastern end of the archipelago where the eight major islands are situated. These islands, ordered from north-west to south-east, are: Nihau, Kauai, Oahu, Molokai, Lanai, Kahoolawe, Maui, and the Island of Hawaii. The islands are governed under two levels: by State and by County. Within the state are four counties: The City & County of Honolulu (the Island of Oahu), The Hawaii County (the Island of Hawaii), The Maui County (the Islands of Maui, Molokai, Lanai and Kahoolawe), and the Kauai County (The islands of Kauai and Nihau). Of the eight main isles, seven of them are inhabited by people. The isle of Kahoolawe has been restricted since its former days as a military test bombing site and is now being restored as a conservation area. The isle of Nihau is also restricted with access permitted only to private owners and researches who are preserving the site, leaving six of the eight islands open to the public. In relation to tourism and for the purposes of this thesis, these are the islands for which research and data will be gathered.

2.0 Literature Review
2.1 The Dimensions

Tourism has been Hawaii’s largest economic sector since the early 1960s and hosts over eight million tourists each year.\(^\text{10}\) This industry will most likely serve as Hawaii’s dominant industry for economic growth and state of living in upcoming years.\(^\text{11}\) Consequently, the industry will also play a major role in the built and natural environment, as well as the social and cultural life of the state.\(^\text{12}\)

Tourism is a dynamic industry that generates impact and affects its surroundings, however it is also influenced by the systems that surround it.\(^\text{13}\) As a result, the subject of tourism is usually analyzed through three different dimensions: The environmental, the socio-cultural and the economical.\(^\text{14}\) These dimensions will be explored within the context of Hawaii for this chapter and throughout this thesis. Exploring these dimensional impacts as well as the inter-relationships between them will be key to developing a more sustainable tourist economy and way of life for the islands.\(^\text{15}\)

\(^\text{12}\). Ibid.
\(^\text{14}\). Swarbrooke, Sustainable Tourism Management, P.47.
\(^\text{15}\). Ibid.
Tourism impacts on Hawaii

Environment

Socio-Cultural

Economy

Figure 2.1.1 - The Dimensions of Tourism
Heavily disturbed areas including agriculture and urban developments

Legend
- Heavily disturbed areas including agriculture and urban developments
- Mixed native-alien dominated plant communities
- Native dominated vegetation
- Bare lands

Figure 2.2.1 - Habitat map of Hawaii

Figure 2.2.2 - Habitat pie chart of Hawaii
2.2 Environmental Impacts

Being situated in the middle of the Pacific Ocean, the main islands of Hawaii are over 3,000 km away from any major land mass.\textsuperscript{16} This has fostered the development of unique species that are extremely sensitive to external factors. Today, Hawaii holds the title as the "Endangered Species Capital of the World".\textsuperscript{17} As an archipelago of islands isolated in the middle of the ocean, its natural organisms exist in a closely defined network and have developed little resistance to outside elements, making them very vulnerable to sudden environmental changes. Not only has this led to the development of the native Hawaiian people,\textsuperscript{18} but also to over 70% of endangered species within all of America are found in Hawaii.\textsuperscript{19}

New developments for urban growth and the tourist industry have resulted in the loss of many natural features of the islands such as their coastlines, natural ponds, and mountain sides.\textsuperscript{20} Much of this development is not only destructive to the features of the land, but also consumes them. Resources such as water and soil are relied upon by resorts, golf courses and commercial areas\textsuperscript{21}. The natural complexion of the coastal views and the lush landscape has also been scarred as a result of these developments.\textsuperscript{22} Tourists have an attraction to these developed conditions, but are unaware of how vital these damaged habitats are to the native species and the Hawaiian culture.

\begin{itemize}
\item \textsuperscript{20} Matsuoka and Kelly, “The Environmental, Economic, and Social Impacts of Resort Development and Tourism on Native Hawaiians,” P.25
\item \textsuperscript{21} Ibid.
\item \textsuperscript{22} Ibid.
\end{itemize}
2.3 Social-Cultural Impacts

With a loss in habitat, comes a loss of culture. Native Hawaiians have lost many resources such as their connection with the land and sea, the natural habitats and their sources of food. Contact with the West has caused traditional Hawaiian culture to fade overtime with the introduction of different beliefs and value systems from foreign cultures.

The establishment of new developments within the early 19th century caused disruption and confusion within Hawaiian society. More recently, this has caused a shift in their behavior from reliance on sustenance from the local environment to goods shipped from the outside. Overall, surveys of locals and residents on the islands have found that tourism has lacked a connection to the local island community and authentic Hawaiian cultural practices.

Loss of land has also attributed to the socio-physiological well-being of the native populations who depend on these natural resources. Various activities such as hunting, gathering and preparing these sources of food are integral to their way of life. With the destruction of their land for new developments, the lack of activity has contributed to various social issues such as substance abuse, economic insecurity and numerous physical and mental health problems.

With the natural land and culture of an area being strong motives in bringing tourists to a place, the consideration of these aspects should be better established as future investments and development of Hawaii’s tourist industry continue to grow.

25. Ibid, p.32
Figure 2.3.1 - Native Hawaiians with their handcrafted canoe

Figure 2.3.2 - Hawaiians on the field
Figure 2.4:1 - Aerial of Waikiki Beach

Figure 2.4:2 - Aerial of Diamond Head and its surroundings
The native Hawaiian culture developed the sustainable economic culture of Ahupua’a, (see Section 4.1) which manages the environment and land within the islands.\textsuperscript{29} As foreigners came, changes in land ownership caused massive land transformation throughout the islands as it transitioned from its former practice.\textsuperscript{30}

Today, the islands heavily rely on the tourist industry, resulting in the construction of infrastructure for it.\textsuperscript{31} Development of resorts within the limited space on the islands has contributed to a rise in land and housing costs.\textsuperscript{32} Practices in the tourist industry have also led to a misleading market that lure locals and residents to jobs that don’t contribute towards the local economy.\textsuperscript{33} This has resulted in deterring younger generations to find jobs within the islands, with demeaning views of the industry and attraction to better opportunities on the mainland.\textsuperscript{34} Average incomes have decreased, and living costs have grown significantly.\textsuperscript{35} Though there have been initiatives to change the system of land-use within Hawaii to discourage urbanization, it has resulted in higher land and housing costs.\textsuperscript{36}

With the tourist industry being a dominant economic driver in Hawaii, it will be important to understand the relationships within the economy and the interconnections it has with the ecological and socio-cultural dimensions as the industry continues to tread in future development.

\begin{thebibliography}{99}
\bibitem{31} Matsuoka and Kelly, "The Environmental, Economic, and Social Impacts of Resort Development and Tourism on Native Hawaiians.", P.36.
\bibitem{32} Ibid.
\bibitem{33} Ibid.
\bibitem{34} Ibid.
\bibitem{35} Ibid, P.37.
\end{thebibliography}
3.0 Strategy

Figure 3.0.1 - Surfboards in Waikiki
3.1 Problem Criteria

The cause and effects of tourism on ecology, society and economy can be understood through the analysis of global case studies. Long-term survival of tourism requires that the tourism sector embrace sustainability. The Hawaiian Tourism Authority defines sustainable tourism as “maximizing social and economic benefits to Hawaii’s communities and businesses while respecting, nourishing, preserving and enhancing Hawaii’s natural, cultural and human assets.” Many precedents abroad have proven successful in achieving sustainable tourism practices. Extracting these elements from global precedents can help to generate an inventory of various activities that can accommodate the environmental, socio-cultural and economic dimensions of tourism, which can then be analyzed within a typology of island landscape types.

In order to identify a set of case studies, a criteria for investigating the different dimensions of tourism on Hawaii has been established. The precedents must:

- Have goals to repair ecological damage
- Establish economic prosperity for either local or indigenous populations
- Educate tourists about the local environment and culture.

Six case studies have been selected and organized into 3 different categories: Eco-tourism, Diverse Economies tourism, and Community-Based tourism. These can relate and correspond with the three dimensions that are associated with tourism mentioned in the previous chapter in terms of trying to approach these issues: The Environment, The Economic and the Socio-cultural.

Each case study has been examined through the lens of different subjects. The noted subjects are as follows: The problem, the principles, the policies, funding, the landscape type, the affordance resource, the intervention and the administrations involved.

Upon investigation, it has been determined that the case studies can be classified further and represent different scales. Within each category are two case studies: A System-based example, and an Application-based example. Each category will summarize with a table and a list of key take-aways for both case studies.

Looking at case studies with different approaches to analyzing how tourism practices are studied provides a better understanding on how these operations function at different scales. Though the case studies aren’t of the same subject, they share similarities with each other, creating the link between them that has placed them within their category.
3.2 Case Studies and Matrixes

System-Based Case Studies

Eco-Tourism

**Case Study #1 - Costa Rica:** Can eco-tourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica

- A case study presenting the pros and cons of ecotourism through the three dimensions, of ecology, economy and society in preparation for a new airport.

Diverse Economies Tourism

**Case Study #3 - New Zealand:** Balancing Indigenous Values Through Diverse Economies: A Case Study of Māori Ecotourism

- This case study looks at how diverse economies within the tourism field of the area work together.

Community Based Tourism (CBT)

**Case Study #5 - Brazil:** A management model to assist local communities developing community-based tourism ventures: a case study from the Brazilian Amazon

- This case study investigates the pros and cons of locally managed tourist economies.
### Application-Based Case Studies

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case Study #2 - Costa Rica:</strong>&lt;br&gt; An Eco-tourism Case study: Costa-Rica - Eco-Adventure Holidays</td>
<td>This study embraces eco-tourism with the well-educated and entrepreneurial population to utilize the surrounding natural resources as a way to appeal to different tourist markets.</td>
</tr>
<tr>
<td><strong>Case Study #4 - Fiji</strong>&lt;br&gt; Jean-Michel Cousteau Fiji Island Resort - Lesiceva Point, Savusavu Bay, Vanua Levu Island, Fiji</td>
<td>A case study that observes the revitalization of an existing tourist facility with more sustainable practices.</td>
</tr>
<tr>
<td><strong>Case Study #6 - Agritourism:</strong>&lt;br&gt; Case Study - Role of Agri Tourism as a Moderated Rural-Business</td>
<td>A case study on farms as a form of local alternative tourism providing accommodation, education and retail opportunities</td>
</tr>
</tbody>
</table>
3.2.1 Eco-Tourism

In this category, two case studies from Costa Rica, a country known for being one of the top eco-tourist destinations in the world, will be looked into. The first case study observes the pros and cons of eco-tourism through the three dimensions in preparation for a new airport. The second case study embraces eco-tourism with the well-educated and entrepreneurial population to utilize the surrounding natural resources as a way to appeal to different tourist markets.

Eco-tourism practices can prove to showcase a wide range of benefits which will be highlighted for each case. These cases will also be observed through a matrix table that will list the various attributes at each subject mentioned in Section 3.1. At the end of this section, another table will re-iterate the different dimensions of tourism to identify the benefits taken from each case study and will be accompanied with a summary of key take-away points.
Eco-Tourism

System-Based Case Studies

Case Study #1 - Costa Rica: Can eco-tourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica

Application-Based Case Studies

Case Study #2 - Costa Rica: An Eco-tourism Case study: Costa-Rica - Eco-Adventure Holidays

Diverse Economies Tourism

Case Study #3 - New Zealand: Balancing Indigenous Values Through Diverse Economies: A Case Study of Māori Ecotourism

Case Study #4 - Fiji: Jean-Michel Cousteau Fiji Island Resort - Lesiceva Point, Savusavu Bay, Vanua Levu Island, Fiji

Community Based Tourism (CBT)

Case Study #5 - Brazil: A management model to assist local communities developing community-based tourism ventures: a case study from the Brazilian Amazon

Case Study #6 - Agritourism: Case Study - Role of Agri Tourism as a Moderated Rural-Business
Case Study #1 - Costa Rica: Can eco-tourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica

Costa Rica is known to be one of the top eco-tourist destinations in the world.39 In this study, data was collected comparing those who worked in the tourist industry, to those who worked regular jobs. The Osa region of the country was observed for this case study, as eco-tourism (in relation to various lodges and eco-adventures) is the major economic driver for the area. Here, the data has proven to provide many benefits within the different dimensions of tourism. Environmentally, various eco-tourism practices have contributed to the conservation and re-planting of tropical forests, protection of fauna and flora, and promoting the awareness of these ecological relations to both the local and tourist populations.40

Benefits within the local economy include: jobs in the eco-tourism field having higher incomes, better financial stability, encouragement of locals starting their own local businesses in the region, and better connecting the local community with local resources.41 Local businesses and tourism operations have developed strong community links and fostered social interaction as well. These include 42:

- Providing and encouraging the education about the environment towards local schools
- Funding the skills (e.g. Language classes) necessary to work within the eco-tourist field
- Sponsoring various community programs (e.g. Building community centres, tree-planting, developing recycling programs etc.)
- Providing better access towards tourist information.
- Strengthening the local community within each other and its connection with the tourists.

Overall, this case study shows how various eco-tourist practices can work together to provide a more sustainable system of tourism.

42. Ibid, P.351–354.
Case Study #2 - Costa Rica:
An Eco-tourism Case study: Costa-Rica - Eco-Adventure Holidays

This case study samples how eco-tourism principles can be applied within the natural landscape. Costa Rica prides itself on the use of the natural environment to create many unique and enlightening experiences. With a diverse set of natural features, this Caribbean-Pacific setting shows examples of exciting eco-adventures that need minimal interventions in close proximity to local accommodation. Some minimal adventure activities that take place within the natural landscape include: guided adventure walks, white-water rafting, zip-lining and other canopy adventures.

With a wide variety of unique operations, different types of travellers can benefit from these exciting activities as well. Owners also recognize these assets as long-term investments that need to be conserved and managed responsibly. This has allowed for local employment opportunities and the re-investment of generated income back to the community for health and educational facilities.

45. Ibid.
46. Ibid, P.4.
47. Ibid.
## Matrix Table for Case Study #1

<table>
<thead>
<tr>
<th>Problem</th>
<th>• Presenting the pros and cons of ecotourism through the three dimensions, in preparation of plans for a new airport.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle</td>
<td>• Eco-tourism as a way to benefit both local livelihoods and biodiversity conservation on the peninsula</td>
</tr>
<tr>
<td>• Encouraging biodiversity conservation, social communication, and local economic profits when starting or operating eco-tourist ventures.</td>
<td></td>
</tr>
<tr>
<td>• Eco-tourist programs promoting regenerative practices such as planting of native vegetation, and protecting breeding areas of sea turtles.</td>
<td></td>
</tr>
<tr>
<td>• Creating a sense of place and community with the site.</td>
<td></td>
</tr>
<tr>
<td>• Encouraging small but active local business within the area.</td>
<td></td>
</tr>
<tr>
<td>• Ecotourism as the leading economic contributor</td>
<td></td>
</tr>
<tr>
<td>• Ecotourism as a means of providing benefits for biodiversity conservation and community development.</td>
<td></td>
</tr>
<tr>
<td>Policies</td>
<td>• Any tourism ventures wishing to market as ecotourism must go through certification program that measure the environmental, social and economic impacts, created by the ICT and measured with a ranking system of “green leaves”</td>
</tr>
<tr>
<td>• Informing and providing access to any new important or updated eco-tourist policies and awareness of negative tourist practices.</td>
<td></td>
</tr>
<tr>
<td>• Educating and training new employees of the standards within the industry.</td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>• Government initiatives since 1987</td>
</tr>
<tr>
<td>• Income generated is brought back and distributed to the local community</td>
<td></td>
</tr>
<tr>
<td>Landscape</td>
<td>• Osa Peninsula</td>
</tr>
<tr>
<td>• Corcovado National Park</td>
<td></td>
</tr>
<tr>
<td>Affordance Resource</td>
<td>• Various activities - over 19 certified by the ICT within the Osa peninsula including adventure walks, scuba diving, canopy tours, water tours etc.</td>
</tr>
<tr>
<td>• Sustainable certified beaches, rental businesses, accommodations, tour operators and tourist attractions.</td>
<td></td>
</tr>
<tr>
<td>Landscape Intervention</td>
<td>• Eco-tourism certified related programs including sustainable certified beaches, accommodations, tour operations, etc.</td>
</tr>
<tr>
<td>• Study of various employees and eco-tour operations in preparation for airport proposals</td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>• Costa Rica Government</td>
</tr>
<tr>
<td>• Costa Rican Tourism Institute (ICT)</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.2.1:1 - Table Matrix for Case study 1
# Matrix Table for Case Study #2

<table>
<thead>
<tr>
<th>Problem</th>
<th>Embracing eco-tourism with the well-educated and entrepreneurial population to utilize the surrounding natural resources as a way to appeal to different tourist markets.</th>
</tr>
</thead>
</table>
| Principle | Attract those who are interested in active adventure  
Provide a wide variety of adventure activities  
Land-owners must actively manage their land as a long-term asset for sustainability and conservation rather than short-term exploitation  
Local community involvement  
Encouragement of low energy use  
Local energy production and management  
Use of local and natural materials for building minimal structures involved with eco-adventures |
| Policies | Conservation and protection of the land  
Protecting over a quarter of the country's land of forest, reserve and wildlife refuges.  
Incorporating the use of water sheds for hydro electric and sources of drinking water  
Regulation rules of development along sensitive areas such as the pacific coastline and tropical rainforests  
Rotation of tour sites, paths and diving areas to control area and allow for recovery  
Investing profits back in the local economy |
| Funding | Initial investments by land-owners  
Profits from visitors being reinvested back to the local community |
| Landscape | Natural rain forests  
River streams  
Plain fields  
Highlands  
Oceanic planes  
mountains |
| Affordance Resource | Accommodation  
Zip lining  
Canopy adventures  
Surfing  
Scuba diving  
Horse riding  
Kayaking  
Mountain biking  
hiking |
| Landscape Intervention | Passive design for accommodation (to maximise the utilisation of the nature's services such as sun and wind.)  
Vegetation as a means for shading, visual and acoustic barriers.  
Situation of guest units to minimize vegetation destruction and maximize natural ventilation  
Guided paths along landscapes for minimal disturbance  
Cycling of tours upon landscape to allow for recovery  
Vegetation for stabilization and prevent erosion  
Constructed wetlands (treats used water)  
Multi use structures (dining area can act as entertainment venue)  
Open air public spaces |
| Administration | Local land-owners  
National Park Service  
Costa Rican Government |
<table>
<thead>
<tr>
<th>Environmental</th>
<th>Socio-Cultural</th>
<th>Economical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case Study #1 - Costa Rica:</strong> Can eco-tourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica</td>
<td>• Eco-tourism programs for conservation and protection</td>
<td>• More jobs with higher incomes and financial stability in relation in the eco-tourism industry</td>
</tr>
<tr>
<td><strong>Case Study #2 - Costa Rica:</strong> An Eco-tourism Case study: Costa Rica - Eco-Adventure Holidays</td>
<td>• Responsible and careful management of operations on the landscape</td>
<td>• Local accommodation, guided tours and employees that provide for tourists.</td>
</tr>
</tbody>
</table>

*Table 3.2.1:3 - Table Matrix of Dimensions for Eco-tourism*
Key Take-Aways for Eco-tourism:

- A system-based approach to eco-tourism produces a balance of economic, social, and environmental benefits
- Environmental benefits of conservation and protection as well as awareness
- Local economic job provision, financial stability, and local businesses
- Social relations of educating the locals, young education community, better access to information, and developing various community programs such as recycling, tree planting etc.
- More government restrictions are necessary to protect sensitive landscapes and marine environments for eco-tourism.
3.2.2
Diverse Economies Tourism

The case studies in this category encourage and integrate local and native practices with other facilities and business to diversify economic income, and build a more resilient system. The third case study takes place in New Zealand and observes how the native Maori people work together with other operations to provide a successful system. The fourth case study observes the revitalization of an existing tourist facility with plans of better sustainable practices and connection for the local village community.

Having a diverse range of different economies can also prove to bring many benefits that will be highlighted for each case. These cases will also be observed through a matrix table that will list the various attributes at each subject mentioned in Section 3.1. At the end of this section, another table will re-iterate the different dimensions of tourism to identify the benefits taken from each case study and will be accompanied with a summary of key take-away points.
Eco-Tourism

Case Study #1 - Costa Rica: Can eco-tourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica

Application-Based Case Studies

Case Study #2 - Costa Rica: An Eco-tourism Case study: Costa-Rica - Eco-Adventure Holidays

Diverse Economies Tourism

Case Study #3 - New Zealand: Balancing Indigenous Values Through Diverse Economies: A Case Study of Māori Ecotourism

Case Study #4 - Fiji: Jean-Michel Cousteau Fiji Island Resort - Lesiceva Point, Savusavu Bay, Vanua Levu Island, Fiji

Community Based Tourism (CBT)

Case Study #5 - Brazil: A management model to assist local communities developing community-based tourism ventures: a case study from the Brazilian Amazon

Case Study #6 - Agritourism: Case Study - Role of Agri Tourism as a Moderated Rural-Business
Case Study #3 - New Zealand: Balancing Indigenous Values Through Diverse Economies: A Case Study of Māori Ecotourism

Looking at a Polynesian example, this indigenous precedent observes the practices involved with the Maori populations in New Zealand. This case observes the interaction of various operations and merges them with the local practices. These include various native trustee organizations (KK Trustee & Pukekura Trust), a small penguin tourist operation (Blue Penguin Pukekura), a local community centre (Royal Albatross Centre) and the Maori populations. 48

These different groups have come together and developed an arrangement of locally diverse economies. 49 Here the local natives have collaborated with the small tourist operation to develop plans to protect and conserve the Takiharuru Pilots Beach, while enhancing the cultural and ecological visitor experience of the area. 50 Further negotiations led to the involvement of the government and local community center to manage accommodation of visitors and control the flow of tourist populations. 51

The cooperation of these different operations have resulted in many benefits. Environmentally, profits have been strengthened and returned to trustees to fund ecological restoration projects for planting native vegetation and breeding penguins. 52 Economically, the indigenous community have been able to become more involved within the community, resulting in a more balanced system of managing the flow of tourists while still allowing the businesses to function. 53 Socially, the involvement of the native community has contributed towards better connection of the ecological and economical functions of the businesses through native practices, and taking a leadership position for the community. 54

50. Ibid, P.483-489
51. Ibid.
52. Ibid, P.487–492.
54. Ibid, P.489.
Case Study #4 - Fiji: Jean-Michel Cousteau Fiji Island Resort - Lesiceva Point, Savusavu Bay, Vanua Levu Island, Fiji

This central-Pacific Polynesian example looks at a resort on the Fijian island of Vanua Levu. Here, the resort makes use of an already existing facility and revitalizes the site to fit better with the context.\(^55\) The involvement of the Richard C Murphy consultants with the local communities has allowed for a variety of beneficial operations for the villages including: waste and water management, native habitat restoration, and ecological awareness.\(^56\) Local knowledge and employment of the villagers has also contributed towards the use of local materials to develop accommodation that is culturally, geographically and climatically appropriate for the region.\(^57\) This encouraged the employment of local artisans, minimized the use of external expertise and preserved local traditions.\(^58\)

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56. Ibid, *Eco-Resorts: Planning and Design for the Tropics*, P.146
57. Ibid, P.147–151.
58. Ibid.
### Problem
- Looking at how diverse economies within the tourism field of the area work together

### Principle
- Hybrid economic diversity
- The Maori are inherently linked with the land and resources and should manage how tours are guided within them
- The local community centre can serve as a place of accommodation and gathering
- Tourism organizations and trust funds can manage the business end of the tourist industry for the site.
- Trust between the indigenous, community centre, and tourist organizations
- A blending of indigenous enterprises with economic, social and cultural objectives to create hybrid organizational forms.
- The ecology is important, so investment in it is prioritized (if penguin population collapses, the business model collapses)

### Policies
- Limiting number of tourists
- The indigenous Maori community should be involved with any tourist ventures discussed with the area.
- Use of the community centre as a means for accommodation of tourists (this initially started as a royalty, to which both ventures now profit)
- Investing profits back to enhance ecological restoration

### Funding
- Investing profits back to enhance ecological restoration
- Investments in infrastructure and site maintenance
- Investments in careful marketing to bring in tourists.

### Landscape
- Takiharuru Pilot’s beach
- Local community village

### Affordance Resource
- Penguin tours
- Accommodation
- Nature reserve
- Other animals such as seals, sea lions

### Landscape Intervention
- Preservation of the nature reserve
- Planting of over 15,000 native trees and increasing the breeding of penguins
- Indigenous groups educating and informing the linkages of the local ecology of the place

### Administration
- Blue penguins Pukekura
- Local Maori Community
- KK Trust
- OP Trust
## Matrix Table for Case Study #4

<table>
<thead>
<tr>
<th>Problem</th>
<th>Restoring and revitalizing an existing resort facility</th>
</tr>
</thead>
</table>
| Principle | Revitalizing existing resort to meet new standards  
| | Supporting and being supported by the local community  
| | Restoring natural habitat  
| | Use of local and natural materials  
| | Minimise impact on the landscape  
| | Use materials fabricated in an environmentally responsible manner  
| | Minimise construction waste  
| | Design for flexibility to implement more environmental technologies and systems  
| | Build by locals, employing local knowledge skills and minimising external expertise  
| | Engages local artisans with employment in cultivating and preserving local traditions |
| Policies | Energy efficient lighting  
| | Solar oven cooking  
| | Waste minimization  
| | Reuse and recycling  
| | Staff education of buying procedures to reduce packaging wastes  
| | Composting all kitchen wastes  
| | Minimising new construction to avoid impairing visuals to the bay and encroachment on the land  
| | Non-chemical fertilizers  
| | Pest management program  
| | Rotation of dive sites to control diver impacts  
| | Conducting regular seminars for staff to raise moral and environmental ethic  
| | Maintain relationship with University of South Pacific |
| Funding | $5 million |
| Landscape | Island Coast  
| | Rain forests  
| | Near coral reef |
| Affordance Resource | Sea and reefs  
| | Diving sites  
| | Rainforests  
| | Villages  
| | Towns of Savusavu and Labasa |
| Landscape Intervention | Passive design for accommodation (to maximise the utilisation of the nature’s services such as sun and wind.)  
| | Vegetation as a means for shading, visual and acoustic barriers.  
| | Situation of guest units to minimize vegetation destruction and maximize natural ventilation  
| | Vegetation for stabilization and prevent erosion  
| | Constructed wetlands (treats used water)  
| | On-site power generation from renewable sources (local town operating the hydro electric and wind farms)  
| | Rotation of dive sites to control diver impacts  
| | Irrigation systems (reuse water)  
| | Develop multi-crop agricultural systems  
| | Multi use structures (dining area can act as entertainment venue)  
| | Open air public spaces |
| Administration | Local building knowledge  
<p>| | University of South Pacific (wetland and agricultural systems) |</p>
<table>
<thead>
<tr>
<th>Case Study #3 - New Zealand: Balancing Indigenous Values Through Diverse Economies: A Case Study of Māori Ecotourism</th>
<th>Environmental</th>
<th>Socio-Cultural</th>
<th>Economical</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Profits re-invested back for ecological vegetation and breeding restoration programs</td>
<td>• Stronger connection of the indigenous community to inform and manage guides of ecological and traditional systems and practices.</td>
<td>• Better involvement of the indigenous community with the economical functions for a more balanced system.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Study #4 - Fiji Jean-Michel Couseau Fiji Island Resort - Lesiceva Point, Savusavu Bay, Vanua Levu Island, FIjii</th>
<th>Environmental</th>
<th>Socio-Cultural</th>
<th>Economical</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use of native and local vegetation for habitat restoration and ecological awareness</td>
<td>• Use of local and traditional knowledge to provide education for tour guides, building structures and preserving traditions.</td>
<td>• Employment of locals and benefits of community run operations between the village and resort.</td>
<td></td>
</tr>
</tbody>
</table>

*Table 3.2.2:3 - Table Matrix of Dimensions for Diverse Economies Tourism*
Key Take-Aways for Diverse Economies Tourism:

- Having a diverse set of different economic outputs requires the involvement of various specialized stakeholders.
- Different stakeholders may have weaknesses in certain aspects and strengths in others that can be realized through this cooperation to work out a better system.
- Cooperation and balance between the various stakeholders is key for success.
- Involvement of native communities provides better acknowledgement of the surrounding context, since their ancestors have been living off the land for many generations.
- Knowledge of native practices provides many benefits ecologically, socially and economically, within the tourist industry.
3.2.3 Community Based Tourism (CBT)

The last two case studies put an emphasis on the involvement of local community in terms of getting involved within various activities and positions in the tourist industry. The fifth case study analyzes a Brazilian community and investigates the pros and cons of locally managed tourist economies. The sixth case study overlooks the idea of farms as a form of local alternative tourism with opportunities for accommodation, education and retail. Involvement of the local community with the tourist industry aids in several benefits and will be highlighted for each case. These cases will also be observed through a matrix table that will list the various attributes at each subject mentioned in Section 3.1. At the end of this section, another table will re-iterate the different dimensions of tourism to identify the benefits taken from each case study and will be accompanied with a summary of key take-away points.
**System-Based Case Studies**

- **Eco-Tourism**
  - Case Study #1 - Costa Rica: Can eco-tourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica

- **Diverse Economies**
  - Case Study #3 - New Zealand: Balancing Indigenous Values Through Diverse Economies: A Case Study of Māori Ecotourism

- **Community Based Tourism (CBT)**
  - Case Study #5 - Brazil: A management model to assist local communities developing community-based tourism ventures: a case study from the Brazilian Amazon

**Application-Based Case Studies**

- **Eco-Tourism**
  - Case Study #2 - Costa Rica: An Eco-tourism Case study: Costa-Rica - Eco-Adventure Holidays

- **Diverse Economies**
  - Case Study #4 - Fiji: Jean-Michel Cousteau Fiji Island Resort - Lesiceva Point, Savusavu Bay, Vanua Levu Island, Fiji

- **Community Based Tourism (CBT)**
  - Case Study #6 - Agritourism: Case Study - Role of Agri Tourism as a Moderated Rural-Business
Case Study #5 - Brazil:
A management model to assist local communities developing community-based tourism ventures: a case study from the Brazilian Amazon

This case study looks at a Brazilian Community, the Pesqueiro Village, that has utilized community-based tourism as model for structuring their local tourist industry. The study observed the different factors involved in associating the local community with tourist-related activities. Tour companies that have been working with the village had interests in helping to improve the community as well as achieving better environmental outcomes for the Amazon region.61

Research found that the community has been able to get involved in interacting with tourists by acting as guides, preparing and serving food, as well as hosting and providing accommodation.60 This has resulted in many benefits for the local community. Economically, locals have been able to find jobs which have allowed for them to gain a stable income, encourage the younger community to get more involved and remain within the community as a result of finding jobs locally, and direct generated income to local projects.61 Socially, locals have been able to develop the skills necessary to build and maintain guest/host relationships, gain access to tourist and hospitality information, and participate in finding solutions for their community.62

Not much has been mentioned about how this project has been beneficial ecologically, but informing the local community about more sustainable tourist practices can contribute to better environmental outcomes.63 Other issues that have been raised about the project include the locals not being confident in taking responsibility for the operational and management aspect of the industry, requiring the involvement of a private/higher system with skills in that realm to communicate and be involved with the community.64

60. Rodrigues and Prideaux, “A Management Model to Assist Local Communities Developing Community-Based Tourism Ventures: A Case Study from the Brazilian Amazon,” P.11–12.
61. Ibid, P.10–12.
63. Ibid, P.15.
64. Ibid, P.13.
Case Study #6 - Agri-tourism:
Case Study - Role of Agri Tourism as a Moderated Rural-Business

This case study observes how various functions at an Agri-tourism based operation can be applied to provide benefits for the tourist industry. Opportunities for a farming community to provide accommodation, local produce, local goods marketing and farming tours demonstrate a high demand for an authentic experience within the tourist industry. Not only do these opportunities provide economic benefits, they also aid in social connection with the surrounding community as well as an educational awareness to where and how local food and produce is produced.

Many Agri-tourism operations have already started to emerge throughout the islands of Hawaii. In addition to Hawaii’s unique landscape, Agri-tourism as an operation provides valuable opportunities that help to engage the local community strongly with visiting tourists.

Figure 3.2.3:1 - Waihuena Farm

<table>
<thead>
<tr>
<th>Problem</th>
<th>• Investigating the pros and cons of locally managed tourist economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle</td>
<td>• Involvement of the broad community</td>
</tr>
<tr>
<td></td>
<td>• Benefits distributed with the destination community</td>
</tr>
<tr>
<td></td>
<td>• Care financial management</td>
</tr>
<tr>
<td></td>
<td>• Develop strong partnerships</td>
</tr>
<tr>
<td></td>
<td>• Support from within and outside the community</td>
</tr>
<tr>
<td></td>
<td>• Valuing local Culture and traditions</td>
</tr>
<tr>
<td></td>
<td>• Not all communities in a given geographical area are culturally similar, so each place is unique</td>
</tr>
<tr>
<td></td>
<td>• Community participation is required.</td>
</tr>
<tr>
<td></td>
<td>• Encourage more jobs locally so that the young community isn’t discouraged to leave.</td>
</tr>
<tr>
<td>Policies</td>
<td>• Those interested in the VEM project were Trained by SEBRAE</td>
</tr>
<tr>
<td></td>
<td>• Income generated is brought back and distributed to the local community</td>
</tr>
<tr>
<td></td>
<td>• Tourism located, owned and managed by the local community</td>
</tr>
<tr>
<td></td>
<td>• Policy framework at a federal and state level</td>
</tr>
<tr>
<td></td>
<td>• Community actions are the core, which is why their voice is important in meetings.</td>
</tr>
<tr>
<td></td>
<td>• Use the CBT management system to create a roadmap of actions</td>
</tr>
<tr>
<td>Funding</td>
<td>• Income generated is brought back and distributed to the local community</td>
</tr>
<tr>
<td>Landscape</td>
<td>• Marajo Island,</td>
</tr>
<tr>
<td></td>
<td>• Brazilian Amazon</td>
</tr>
<tr>
<td></td>
<td>• Small fishing village (Pesqueiro)</td>
</tr>
<tr>
<td>Affordance Resource</td>
<td>• Traditional fishing</td>
</tr>
<tr>
<td></td>
<td>• Accommodation</td>
</tr>
<tr>
<td></td>
<td>• Local village tours (fishing, canoeing)</td>
</tr>
<tr>
<td></td>
<td>• Local food preparation</td>
</tr>
<tr>
<td></td>
<td>• Local service provision</td>
</tr>
<tr>
<td></td>
<td>• Performances and tours</td>
</tr>
<tr>
<td>Landscape Intervention</td>
<td>• Home stay accommodation</td>
</tr>
<tr>
<td></td>
<td>• Involvement of locals with restaurants and other services related to tourism</td>
</tr>
<tr>
<td></td>
<td>• Locals act as guides to educate guests about preserving and protecting the</td>
</tr>
<tr>
<td></td>
<td>• Any problems raised on maintenance of the land/building are discussed by locals and fixed by locals.</td>
</tr>
<tr>
<td>Administration</td>
<td>• Pesqueiro Village</td>
</tr>
<tr>
<td></td>
<td>• Brazilian tour company</td>
</tr>
<tr>
<td></td>
<td>• Instituto Peabiru</td>
</tr>
</tbody>
</table>

Table 3.2.3:1 - Table Matrix for Case study 5
## Matrix Table for Case Study #6

<table>
<thead>
<tr>
<th>Problem</th>
<th>Farms as a form of local alternative tourism providing accommodation, education and retail opportunities</th>
</tr>
</thead>
</table>
| Principle | Growth and distribution of local food  
Provide economic opportunity in rural areas, while also contributing at the macrolevel of a site  
Diversify their economies beyond their farmed products, and investing in home-stay accommodations, touring education, local products and community involvement  
Provide satisfying services to visitors with local products and guided tours |
| Policies | Distribute income between farm-owners, local people and the local community with various goods, services, tours and guides.  
Connect with other farms at a micro and macro scale to establish goods demands and which goods are best grown in different places  
Establish and contribute towards the green industry with waste management and energy saving practices |
| Funding | Initial investments by land-owners  
Profits being reinvested back to the local community |
| Landscape | Farm lands  
Surrounding landscapes |
| Affordance Resource | Homestay accommodation  
Farm tours  
Local products and goods  
Retail of goods to the local economy |
| Landscape Intervention | Situation of guest units to minimize vegetation destruction and maximize natural ventilation  
Guided paths along landscapes for minimal disturbance  
Cycling of tours upon landscape to allow for recovery  
Multi use structures (dining area can act as entertainment venue, guest reception, rural hospitality, community gathering) |
| Administration | Local land-owners  
Local community  
Local Governments |
<table>
<thead>
<tr>
<th>Environmental</th>
<th>Socio-Cultural</th>
<th>Economical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case Study #5 - Brazil:</strong> A management model to assist local communities developing community-based tourism ventures: a case study from the Brazilian Amazon</td>
<td>• Better awareness of sustainable tourist practices that can contribute to environmental outcomes</td>
<td>• Development of the skills necessary for the locally employed to be better connected with tourists and guests.</td>
</tr>
<tr>
<td><strong>Case Study #6 - Agritourism:</strong> Case Study - Role of Agri Tourism as a Moderated Rural-Business</td>
<td>• Awareness of locally grown foods and products</td>
<td>• Local jobs with stable incomes, and re-investment of generated income back into the community.</td>
</tr>
<tr>
<td></td>
<td>• Stronger connection of the local farms with the surrounding community</td>
<td>• Various opportunities on the farm for generating income locally</td>
</tr>
</tbody>
</table>

*Table 3.2.3:3 - Table Matrix of Dimensions for Community Based Tourism (CBT)*
Key Take-Aways for Community Based Tourism (CBT):

- Having the local community involved with the tourist industry can provide many economic, social and ecological benefits.

- Better jobs of local provision, goods and services, and better knowledge of the tourist industry for those working within it.

- More socially aware of the local people to be informed the issues relating to tourism and importance of maintaining local practices and traditions.

- Stronger connection and awareness of the local community with their surrounding environment and the motivation to protect it.

- The authenticity of local culture provides high demand within the tourist industry.
3.3 Case Study Analysis

The observation of the different case studies has led to a wide range of benefits that can be attributed with the different dimensions of tourism. Though the case studies have been organized into different categories, similar points can be associated for each dimension.

Environmentally, all the case studies highlight the aspect of bringing an educational awareness to the community, with some case studies applying them by either integrating knowledge gathered into various conservation and habitat restoration programs with the tourist operations. Socio-culturally, the subject of involving the local / indigenous populations with various tourist operations creates a stronger relationship between the different stakeholders which allow better communication which lead to more developed solutions that can help the entire community both local and foreign. Economically, the selected case studies also showcase the provision of diverse and local business opportunities which encourages reinvesting back into the community to help fund other new and innovative projects.

Though the elements gathered from the case studies will be useful to utilize upon a proposal for establishing an intervention, it is important to realize how the attributes associated with the dimensions respond at different scales. From analyzing the selected case studies, it is identified that the case studies function with different systems, and at varying scales. Consideration of the dynamic influences that take place on a site and its context will also be important. Once a site is identified, further analysis should be done to better understand the site in relation to its surroundings.
<table>
<thead>
<tr>
<th>Environmental</th>
<th>Socio-Cultural</th>
<th>Economical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case Study #1 - Costa Rica:</strong> Can eco-tourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica</td>
<td>• Eco-tourism programs for conservation and protection</td>
<td>• More jobs with higher incomes and financial stability in relation in the eco-tourism industry</td>
</tr>
<tr>
<td><strong>Case Study #2 - Costa Rica:</strong> An Eco-tourism Case study: Costa-Rica - Eco-Adventure Holidays</td>
<td>• Responsible and careful management of operations on the landscape</td>
<td>Local accommodation, • guided tours and employees that provide for tourists.</td>
</tr>
<tr>
<td><strong>Case Study #3 - New Zealand:</strong> Balancing Indigenous Values Through Diverse Economies: A Case Study of Māori Ecotourism</td>
<td>• Profits re-invested back for ecological vegetation and breeding restoration programs</td>
<td>• Stronger connection of the indigenous community to inform and manage guides of ecological and traditional systems and practices.</td>
</tr>
<tr>
<td><strong>Case Study #4 - Fiji:</strong> Jean-Michel Cousteau Fiji Island Resort - Lesiceva Point, Savusavu Bay, Vanua Levu Island, Fiji</td>
<td>• Use of native and local vegetation for habitat restoration and ecological awareness</td>
<td>• Use of local and traditional knowledge to provide education for tour guides, building structures and preserving traditions.</td>
</tr>
<tr>
<td><strong>Case Study #5 - Brazil:</strong> A management model to assist local communities developing community-based tourism ventures: a case study from the Brazilian Amazon</td>
<td>• Better awareness of sustainable tourist practices that can contribute to environmental outcomes</td>
<td>• Development of the skills necessary for the locally employed to be better connected with tourists and guests.</td>
</tr>
<tr>
<td><strong>Case Study #6 - Agritourism:</strong> Case Study - Role of Agri Tourism as a Moderated Rural-Business</td>
<td>• Awareness of locally grown foods and products</td>
<td>• Stronger connection of the local farms with the surrounding community</td>
</tr>
</tbody>
</table>

*Table 3.3.1 - Table Matrix of Dimensions for all categories*
Ahupua'a is an old system that the Hawaiian's used to organize their land. The term defines the large traditional socioeconomic, geologic, and climatic subdivision of land. Here the levels of the system are:

- Mokupuni - Island (eg. Hawaii, Kaua‘i, Lāna‘i, Maui (with Kaho'olawe), Moloka‘i, Ni‘ihau, O‘ahu)
- Moku - Divisions (largest subdivisions through watersheds)
- Ahupua’a - Sub-Division (smaller subdivisions)
- Ili - Section

Watersheds have created natural divisions throughout the islands, which have been distributed amongst the native population based on their status.

These divisions vary in scale, and have diverse systems that correspond with different sources of fauna, flora and other phenomena flows. From receiving the land, Hawaiians have taught themselves to understand, manage, measure, and record the many resources that come from the lands.

It is important to understand effects at variable scales when designing and planning landscapes. Having an awareness of these different systems helps to bring an understanding of how an intervention at a small scale can influence the bigger picture and vice versa. Understanding the meanings behind the ahupua’a can build a stronger relationship between the community and the land as well.

68. Connely, “Hawai‘i Futures.”
69. Ibid.
70. Ibid.
Figure 3.4.1 - The levels of Ahupua'a
4.0
Island and Site Context

Figure 4.0.1 - Oahu and the Islands
4.1 Travel to the Islands

Overall, travel to the Hawaiian Islands is mostly conducted by plane and by cruise. Here is a map focusing on the direct flights to Hawaii. Though six of the islands are accessible by tourists, the island of Oahu continues to be the most populated and visited island. This is mainly due to the state capital Honolulu being situated on Oahu and also established as a major port for Hawaii. Visitors mainly come from the mainland of the United States of America, as well other Pacific-bordered countries such as Canada, Japan, China, Australia and New Zealand to name a few.

Tourism will continue to thrive as Hawaii’s economic driver, and each Island has individual plans to handle the pressures from new development and the tourist industry. However, impacts from the industry have been more disturbing on Oahu than the rest of the islands.

Oahu has been nicknamed the “gathering Isle,” with Honolulu as the capital and central port for the islands, resulting in most of the urban development to occur on the south portion of this Island. As visitors come and go, the pressures from the tourist industry will continue to grow.


73. Fischer, “Airlines That Fly to Hawaii.”

74. Ibid.


Legend

Number of islands with direct flights from a country
- 1 Island (Oahu)
- 2 Islands
- 3 Islands
- 4 Islands

Number of cities connecting to island airports
- 1 City
- 2 Cities
- 3 Cities
- 4 Cities
- 5 Cities

Figure 4.1:1 - Direct Flight map to Hawaii
Urban Development
Preserved
Federally Preserved
Agriculture
Streams
Roadways
Main Route to North Shore
Notable Communities
Development Pressures

Figure 4.2.1 - Oahu Island Context
4.2
Island Context - Oahu

The more scenic and unique activities in the north will be more desired as opposed to the typical and crowding urban areas in the south. Strategies for the north shore have been an ongoing process to develop ways of mitigating further impacts as new development continues. In reference to the latest North Shore sustainability plan, goals have been listed with emphasis to establish the rural community, engage more with the agriculture industry, enhance recreational and educational potentials retain traditional and historic resources and adapt the Ahupua’a Concept.  

There are a variety of attractions that have gained popularity by tourists. These include calmer scenic beaches, recreational attractions, the Polynesian cultural Centre, Turtle Bay Resort, and the small rural towns. The towns attract various types of tourists, which has led development to slowly expand around economic areas. Sub-urban development hasn’t grown around Turtle Bay as it hosts more towards visitor accommodations as well as golf club. Haleiwa-Waialua has industrial roots, and acts as a bridge of processing agricultural produce from the north shores to the south. Laie is where the Polynesian Cultural Centre is situated, creating commerce with smaller conveniences in neighboring towns. Pupukea is one of the smaller economic areas within the north shore and is more unique in development.
4.3 Town Context - Pupukea

For the purpose of this project, Pupukea has been chosen as the site to focus on for an intervention due to the town facing pressures of tourism in the context of the North shore and having familiarity of the area from doing a work-exchange program. Historically the town grew as a fishing area around a lava rock cove which has since then become a popular snorkeling area. From this led the growth of the suburban countryside and town center across from the cove. The town's odd shape is due to former development being proposed on the ahupua'a of Paumalu and Kaunala, but petitions from the locals in the town led to the state government to purchase the land back and preserve it as a forest reserve and a satellite research area.

**Existing Features**

- **Existing Trails**
  - 1 Kaunala Loop Trail
  - 2 Pupukea Reserve Trails
  - 3 Pu‘u o Mahuka Heiau

- **Main Commute**
  - Kamehameha Highway
  - Existing Bike trail

- **Agriculture Related**
  - Eg. Farm tours, Farm Activities, Accommodation etc.

- **Food Related**
  - Eg. Local Food Specialty food and drinks, Food Truck etc.

- **Teaching Related**
  - Eg. Surfing, Snorkelling tour, Hiking, Culture etc.

- **Craft Related**
  - Eg. Lei making, Surf board, accessory related, etc.

- **Protected Areas**
  - Research area

- **Forest Reserve**

**Ahupua’a Related**

- **Ahupua’a within the town of Pupukea**
  - Pupukea
  - Kaunala
  - Paumalu

- **Ahupua’a outside of the town of Pupukea**
  - Waimea
  - Waiael’o

**Existing Streams**

- Stream (Dividing the ahupua’a)
- Other Notable Streams
- Disconnected Streams
The major roads that connect the town includes the Kamehameha Highway, which is the main route that runs around the Island, as well as some arterial roads that run up the suburban country side. There is also a bike path that connects from one end to the other side of town with a scenic route.

Other popular attractions that are connected within the area include Waimea Valley – a state park, a historic worship site, Sunset Beach which has become a popular surfing spot recreational trails that run within the forest reserve, but also lead to pillboxes aka former military bunker sites that have become popular spots to get a view of the town and ocean. These trails have mostly been tracked with smart apps like “All Trails” and is shared by locals to the community.\(^\text{84}\)

Other notable services within the town include: a fire station and public court, a community center with vacant land beside it, a skate park, an elementary school, a gas station with a popular snack spot, and a small bakery/ice cream shop.

In terms of access to the coast, there are three main beach spots with facilities and formal parking. Smaller beach access points can be taken from the bike path as well. There are also streams that run through the town. The one by the town center has been heavily disrupted being controlled by a water main station and forced to run beneath the center through a storm drain. Another stream has been disrupted by farm land. The rest are bridged and seem to be connected to the coastal edge.

Figure 4.3:2 - Images taken during site visit to Pupukea

Pu‘u o Mahuka Heiau Worship Site
Sunset Beach
Bike Trail Scenery
Recreational Trails in Forest Reserve
Pupukea Town Fire Station
Pupukea Community Centre

Figure 4.3:2 - Images taken during site visit to Pupukea
5.0 Site Proposal
5.1 Town Proposal

In terms of a town strategy, the proposal to enhance and connect the commute, trail and stream systems throughout the town as a way to create balance between the three aspects of sustainability. The existing bike path that spans throughout the town can be a local commute system that can be used by both locals and tourists as an eco-friendly commute method to various attractions around the area. However, bike rentals are only at the town center.
and there is no formal bike share program. Using trail tracking apps creates an opportunity for locals to guide visitors on unique adventures. Opportunity can also be made to connect trails with existing streams, expanding the trail system. Overall the streams have been degraded over time as development occurred but integration with local commute and trail network can serve as an opportunity to reconnect the streams with the coast and town in a beneficial way.
Making investments to enhance the stream along with the commute and trail systems can lead to a wide range of benefits such as: the re-establishment of native/appropriate vegetation to increase habitat and aesthetic value, providing recreational activity for both locals and tourists, and bring jobs and educational opportunities for locals that benefit both the town and tourist community.

This strategy should be done in 3 phases: First by initiating the overall development of the local town commute network, then connecting the existing trails with the streams, and lastly revitalizing and enhancing the stream along with the network. Upon the development of the proposal for this thesis, focus on Phase 1 to initiate the town’s commute network will be put into emphasis.
Phase 1: Initiation by enhancing the local town commute.

Phase 2: Connection of the existing trails with the stream

Phase 3: Revitalization of the streams
5.2 Focus - Phase 1

For phase 1, the proposal to make the existing bike path an attractable feature for the town will be enhanced and can be imagined through a scheduling plan.

With the incorporation of the earlier analysis of the town, other various activities have been identified and categorized as additional features throughout. From this, the idea of the “Island Hopping” concept was formed and pertains to the idea of selecting certain public spots along the bike path and developing them as imageable nodes or “island nodes” to which the general public can hop between through with the new integrated commute system. This concept proposes to enhance 4 spots along the road and bike trail to form nodes that will be beneficial for both the locals and tourists. These nodes are identified 2 beach front parks, a community centre space, and a snorkelling cove that has developed as Pupukea’s town centre.

Phase 1 to improve the local commute system will involve two stages: Stage 1 improving the public commute, and Stage 2 the enhancement of the nodes.

Stage 1: Improving local Commute

Stage 2: Enhancing the Nodes

Figure 5.2.1 - The Two Stages of Phase One
5.2.1

Phase 1: Stage 1 - Commute

The first stage involves encouraging the use of public transit in the town. First, we scale back out to the island scale see how people commute to Pupukea. Sources of people may mostly come from Honolulu, as well as the neighbouring communities of Haleiwa and the Turtle Bay resort. The north shore is mostly commuted to by vehicle, rental cars and tour buses which roughly takes about a half hour from the south, and about 10 minutes from it's neighbouring communities. An alternative method is the use of public transit, which takes about an hour longer from the South but frequents every half hour or so. The upside to this is that you get to enjoy scenic views without distraction in looking for directions, a cheaper commute in transit fare vs renting, and a potentially more convenient and local experience.

Referring back to Pupukea, any tourists coming by vehicle or tour bus should be focused on the end nodes for better parking arrangements to reduce congestion that has started to occur in the town. Alongside with the island wide public transit, two smaller transit systems are proposed to help improve local commute within the town: A bike share program and an electric golf cart shuttle system.

Commuting To Pupukea:

Most common sources of people:
• Honolulu (locals and tourists)
• Haleiwa-Wailua (locals and tourists)
• Turtle Bay resort (tourists)

Tour Buses

Duration from:
• Honolulu - 45 min. - 1 hr.
• Turtle Bay Resort - 5 min. - 10 min.
• Haleiwa - Wailua - 5 min. - 10 min.

Personal Vehicle

Public Transit

Duration from:
• Honolulu - 45 min. - 1 hr.
• Turtle Bay Resort - 5 min. - 10 min.
• Haleiwa - Wailua - 5 min. - 10 min.

Figure 5.2.1:1 - Commute to Pupukea: Island Scale
The bike share (with existing precedent from Honolulu)\(^{86}\) is accessible at any time and can be used to easily commute within the town through the already existing bike path tucked in beside the highway to reach from one end to another in about 10-15 minutes.

For those not fond or familiar in using the bike as a

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commute, the free shuttle can be a more inviting method. With options of accessibility and expanded space, the system can be used to cycle between the nodes in about 20 minutes or so, with various attachments that not only accommodate people but can help alongside the management of the bike share system.

Figure 5.2.1:8 - Diagrammatic sections of the bike path with integration of the shuttle cart system
Shuttle stops with charging stations and bike parking can be implemented in all 4 of the nodes, whereas the end nodes will be better suited to situate the maintenance and storage for the bikes, golf cart and other attachments during the off hours.

Improvements to the existing conditions of the road and bike paths can accommodate the new shuttle system through mostly the shoulder of the road and in the back alleys, while also making them pedestrian friendly and bring aesthetic value. Proposals to gain initial funding from the state government can help to start the program, which can then be sustained by the local town community once it has established

By integrating this system, many sustainable benefits can occur which include the encouragement of using green commute methods, the use of the systems by both locals and tourists, and provision of jobs and educational opportunities in terms of having tour guides, drivers and maintenance for these systems that can be managed by the locals in the town.
5.2.2
Phase 1: Stage 2 - Nodes

Now we move to the second stage: the enhancement of the nodes. Through the Island hopping Concept, each “islands node” has been developed with unique elements that differ in design depending on the context of the public node. Here these nodes are selected throughout the town with various activities that have led to each node being uniquely identified as the following: Leisure, Active, Education and Commercial.

Uniqueness in each node will allow for a variety of activities to be
available throughout the town that can engage to a range of various tourist types within a short commute. A diversity of activities is set into the town through each unique space.

Design for each node should also be beneficial for both the locals and the tourist. Creating more engagement between the local and foreign communities will help to bring a more respectable culture between those who visit and those who share the practices within the town and build a stronger relationship between the two identities.

*Figure 5.2.2.1 - Stage 2: Enhancement of the Nodes*
In addition to the context of each node, the concept of the Ahupua’a will also be portrayed. The Ahupua’a was a traditional Hawaiian system that helped to divide the land among the native people. The Ahupua’a also represents the story of the land by realizing “the interrelationships of the everyday activities and “extending the elements of Hawaiian spirituality in the natural landscapes.” The Ahupua’a is shaped by the island’s geography, though which they follow the natural watersheds. Here, the town of Pupukea lies within three Ahupua’a: Kaunala, Paumalu, and Pupukea. Though the town is named after one of the Ahupua’a - Pupukea, the extents of the town continue in the other Ahupua’as, from which they have lost their meaning. This is an example of how overtime, the names of these places have been mis-used as colonization occurred, losing the unique traditional stories that brought meaning to the landscape. Reconnecting the origins of the ahupua’a titles that the nodes fall in can help bring back the stories of the land while also providing special elements in designing a unique identity for each node.

90. Connely, “Hawai’i Futures.”
91. Ingersoll, Waves of Knowing: A Seascape Epistemology, p. 65
Figure 3.2.3.1 - Identification of each Node

Figure 5.2.2.3- Meaning of Each Ahupua’a

Kaunala

Paumalu

Pupukea

“Plait/Weave”

“Taken by Surprise”
Wave

“Shell”
Starting with the node with the Town Centre, the main attractions in this space are the snorkelling cove, the food trucks and the grocery store. Other elements include change rooms, a sports court and a fire station. However, proposals have already been made to improve the waterfront and develop new retail over the existing food truck space. As an already dense spot in the town, this area will be good to establish as the commercial node, but changes can be made with the first stage of encouraging the public commute system in mind. Parking can be re-designated to better suit the pedestrian scale, and establish bike parking and shuttle stops. The Fire station is where maintenance for both the shuttle and bike systems can occur.

With the ahupua’a in mind, this node lies within the ahupua’a of Pupukea which means shell. Shells have been collected by Hawaiians for use in bracelets and leis, but also as inspiration in design patterns for various arts, quilts and tattoos. There are two kinds of shell molluscs: Gastropod and Bivalvia. For this node, the Bivalvia shells has been explored. Shells can be easily identified with the programming with the proposed retail and eating spaces for accessories and seafood.

The overall design of the node can also consider the form of the shell as well. Rather than just the proposed solar canopy that covers the parking lot, re-arrangement of the panels can be designed with the shell in mind, to not only continue providing shade over parking space, but expand into a larger pop-up market space for retail and other events for when the lot is not fully used. The proposed central green, can instead be a more interactive space with a performance stage that can accommodate buskers and lively performances with the form of the shell in mind. The design of the proposed viewing platform, can be redesigned with the form of a shell to direct the views at different angles, for better viewing experience.

Though proposals are under way to redevelop the town center, incorporation with the ideas in phase one can help to connect the space better with the community.
Legend

Key Features

1. Viewing Deck
2. Performance Stage
3. Solar Pop-up Market space

Other Elements

4. Information Hub
5. Grocery Store
6. Local Restaurant
7. Local Retail store
8. Pharmacy
9. Surf Shop
10. Change Rooms
11. Fire station

Town Commute

- Main Highway
- Cart Shuttle path
- Bike path
- Cart Shuttle Stop
- Bike Parking

Figure 5.2.1.2 - Axonometric map of the Commercial Node
Ahupua’a:
Pupukea - “Shell”

Figure 5.2.2.1:3 - Symbol for Commercial Node

Figure 5.2.2.1:4 - Perspective and Section Reference for Commercial Node

Figure 5.2.2.1:5 - Design inspiration for Commercial Node

Clam

Mussel

Scallop
P1.1 - Viewing Deck

P1.2 - Performance Stage

P1.3 - Solar Pop-up Market

Figure 5.2.2.1:6 - Renders for Commercial Node
Section Elevation: Commercial Node

S 1.1 Viewing Deck

S 1.2 Performance Stage

S 1.3 Pop-up Canopy

Figure 5.2.2.1:7 - Sections for Key Features in Commercial Node
The other node that falls within the Ahupua’a of Pupukea, is the education node. In this node there is existing vegetation, a small stream and a community center that is underused. With this community centre, being directly connected with a stream, there is much opportunity to develop educational programs with new trails and stream that can be developed in phase 2 and 3.

With Pupukea or “shell” in mind, the gastropod shell this time can be used here. A canopy and stage can be implemented again, however the design of the stage has been changed with a different shell to create a more direct and intimate space for story telling and traditional performances. A new community garden space can also be integrated here with another shell form used to create spaces for garden plots, seating and a garden shed. These garden plots can be used to grow vegetables, herbs and other produce to be sold in the pop-up market space, where as these plots can be more aesthetic with showy flowers, as they are situated by the main road and bridge entrance. Seating is implemented by the center along the stream as well as along side a board walk in the gardens to bring a more communitive space through which tourists and locals can better interact.

The education space also be extended across the road. Here, coconut trees with netting can be planted beyond the existing vegetation to help better stabilize the mouth of the stream. It also provides a unique and educational space which involves the coconut tree to show traditional practices such as coconut husking, shelling and leaf weaving. Placing one-anchored hammocks beneath the existing vegetation can also add to the unique experience. Accommodation for the shuttle and bike parking can be situated in these spaces.

Legends

Key Features
1. Coconut Learning Grove
2. Community Garden
3. Intimate Stage

Other Elements
a. Community Centre
b. Stream Trails
b. Seating
d. Solar Pop-up Market

town Commute

- Main Highway
- Cart Shuttle path
- Bike path

Figure 5.2.2.2:2 - Axonometric map of the Education Node
Ahupua‘a: Pupukea - “Shell”

Reference

Figure 5.2.2.3: Symbol for Education Node

Figure 5.2.2.4: Perspective and Section Education Node

Figure 5.2.2.5 Design inspiration for Education Node

Opihi

Conch

Cowrie
Figure 5.2.2.2.6 - Renders for Education Node

P2.1 - Solar Pop-up Canopy

P2.2 - Community Garden

P2.3 - Intimate Stage
Section Elevation: Education Node

S 2.1
Coconut Grove

Proposal - Extended Vegetation stabilization with "coconut teaching" grove

S 2.2
Community Garden

Existing - Highway
Proposal - Aesthetic Gardens By Highway

Existing - Vegetation
Existing - Green Space
Proposal - "Shell Form" Story telling Stage

S 2.3
Intimate Stage & Path by stream

Figure 5.2.2.2:7 - Sections for Key Features in Education Node
5.2.2.3
The Active Node

The next node is adjacent to lively activities such as popular surfing area and a hiking trail making to the identification of this node as the Active node.

This node is situated under the Ahupua’a Paumalu which means to be “taken by surprise.” Many stories are associated the ocean waves of this area such as surfers being engulfed and drowning due to the waves being tough to surf, and a squid catcher being punished by the gods for catching more than she needed leading to her being bit by a shark and swept away by the rough tides. Here, the wave form has been identified as a element of design.

Currently within the node, there is a change facility, parking space and vegetation that exist. The proposal to place three different mounds will be added here with the wave form in mind. Waves have different ways of breaking, to which depending on the conditions, they can either spill, plunge or surge.

Spill waves break further out in the waters, but do not break as drastically, through which it foams slightly – for the mound it is situated further back in the space with a higher elevation to provide views for both the ocean and mountain side, with the foam acting as a sitting space.

Plunge waves break closer to the shore, but topple as the water curves over – here this form can be used as a new play space across from the school which actually doesn’t have a playground. Where the plunge occurs, climbing activity can be mounted, while the other side can have slides that portrays the story of the squid.

The surge wave, is the smallest of the waves and breaks closest to the shore through which it foams as the wave stumbles. This mound is smaller than the other two, through which the foam acts as the parking space for the bike share. Other seating space can be situated under existing vegetation for eating and meeting, as well as by the beach to accommodate for surf watching as well. A canopy for shade and a shuttle stop can also be situated in these spaces.

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104. Ibid.
105. Ibid.
Figure 5.2.2.3:2 - Axonometric map of the Active Node
Ahupua’a: Paumalu- “Taken by Surprise”
- Wave

Figure 5.2.2.3:3 - Symbol for Active Node

Reference

Figure 5.2.2.3:4 - Perspective and Section Active Node

Surge

Closest to shore
Foam

Figure 5.2.2.3:5 - Design inspiration for Active Node

Plunge

Mid-way to shore
Tumble

Spill

Further from shore
Foam
Section Elevation: Active Node

S 3.1
Surge Mound
-Bike Parking

S 3.2
Plunge Mound
-Play area

S 3.3
Spill Mound
-Viewing Area
5.2.2.4
The Leisure Node

The final node is situated at the calmer side of town by the end this beach assigning it as the leisure node. A change facility, parking lot, off side parking and vegetation currently exist here. The proposal to move the former food truck space from the commercial node can be situated here, as eating and gathering is a great way to build community in a leisure convenience.

This node lies under the Ahupua’a Kuanala, which means to “plait or weave.”*106 Weaving has been an essential activity within Hawaiian culture in creating many fabrics and woven containers, with the patterns of the weave portrayed in many arts, quilts and tattoos as well.*107 Here the weave can be integrated with the leisure experience.

Another solar canopy with a different layout of the solar panels, can aid to shade a parking or recreational market space. With the existing vegetation of palms and other deciduous trees, new plantings with similar vegetation can be planted in certain patterns and symmetries to shade the new seating and eating spots. The patterning also creates variation at elevation view.

In addition to the existing palms along the beach shores, a similar pattern of palms can be added to provide better stabilization by the beach front while also providing a comforting space with two-anchored hammocks hooked in a certain formation to portray a braided look. To relate back to the first stage of improving the public commute storage for the shuttle and bike share system can be situated behind the solar canopy, whereas room for a shuttle stop and bike parking can be placed here.

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107. Ingersoll, Waves of Knowing: A Seascape Epistemology, 62-64.
*Legend*

**Key Features**

1. Solar Pop-up Market Space
2. Eating Grove
3. Braid of Hammocks

**Other Elements**

4. Food Trucks
5. Change Rooms
6. Off Street Vehicle Parking

**Town Commute**

- **Main Highway**
- **Cart Shuttle path**
- **Bike path**

*Figure 5.2.2.4:2 - Axonometric map of the Leisure Node*
Ahupua’a: Kaunala - “Plait/Weave”

Patch

Freize

Braid

Figure 5.2.2.4.3 - Symbol for Leisure Node

Figure 5.2.2.4.4 - Perspective and Section Reference for Leisure Node

Figure 5.2.2.4.5 - Design inspiration for Leisure Node
Section Elevation: Leisure Node

S 4.1
Pop-up Canopy / Eating Area

S 4.2
Food Truck / Eating Area

S 4.3
Hammock Braid

Figure 5.2.2.3:7 - Sections for Key Features in Leisure Node
Exisiting - Green Space
Proposal - Bike Share Parking

Exisiting - Vehicular Parking
Proposal - Patterned Solar Canopy / Pop-Up Market

Exisiting - Vehicular Parking
Proposal - Food Truck Space

Exisiting - Beach Front
Stabilization with two Anchored Hammocks in “braided” pattern

Exisiting - Highway and walkway
Proposal - Integrated Bike share and shuttle system
5.3 Summary

Overall, enhancing these nodes in stage two help to provide many sustainable benefits for the town:
- Environmental benefits include incorporating the nodes with the proposed local commute system, adding vegetated stabilization along the shore and educating the overall community of sustainable practices
- Socio-cultural benefits include: relating the nodes with the origins of the ahupua’a that the town lies in, connecting the locals and the tourists and providing a unique local and cultural experience
- Lastly, economical benefits include new sustainable attraction features for the town, the provision of more jobs and education opportunities for locals, and an increase in the overall revenue for the town’s local economy.

Through the initiation of the first phase, generated income from the new attractions in the town should be reinvested back to develop further plans for the second and third phases.

To summarize my proposal for Phase One, the layout of the boards portray an interpretive map through which they can be visualized as being set up on each node, which vary depending on which node you are currently in.

In conclusion, by initiating the first phase through the two stages of improving the local commute system and enhancing the public nodes, a more sustainable balance of environmental, social-cultural, and economic activity can be established for the next phases as the town of Pupukea ventures forward with Hawaii’s tourist industry.
Figure 5.3.1 - Balance of the three elements

Figure 5.3.2 - Interpretive Map layouts visualized in each node
6.0 Bibliography and References


Bibliography (Figures)

Front Cover – Surfing at Waikiki


Figure 1.0:1 - Satellite Aerial of the main Hawaiian Islands


Figure 1.1:1 - Waikiki Beach


Figure 1.1:2 - Haunama Bay


Figure 1.2:1 - The “Tourist Accessible” Islands

Aliasut, Nikko. *The Tourist Accessible Islands*. Photograph. November 30, 2018

Figure 2.0:1 - Nonou Forest Reserve, Kapa’a, Hawaii


Figure 2.1:1 - The Dimensions of Tourism


Figure 2.2:1 - Habitat map of Hawaii


Figure 2.2:2 - Habitat pie chart of Hawaii


Figure 2.3:1 - Native Hawaiians with their handcrafted canoe


Figure 2.3:2 - Hawaiians on the field

Figure 2.4:1 - Aerial of Waikiki Beach

Figure 2.4:2 - Aerial of Diamond Head and its surroundings

Figure 3.0:1 - Surfboards in Waikiki

Figure 3.2.1:1 - Zip lining through the canopies

Figure 3.2.1:2 - White water rafting

Figure 2.2.2:1 - View of Jean-Michel Cousteau Fiji Island resort

Figure 3.2.2:2- Traditional structures made of local material

Figure 3.3.1:1 - Waihuena Farm

Figure 3.4:1 - The levels of Ahupua’a

Figure 4.0:1 - Oahu and the Islands

Figure 4.1:1 - Direct Flight map to Hawaii

Figure 4.2:1 - Oahu Island Context

Figure 4.3:1 - Town Context
Figure 4.3:2 - Images taken during site visit to Pupukea


Figure 5.0:1 - Perspective of Pupukea Town Centre and Country side


Figure 5.1:1 - Town Proposal through Three Phases - Phase One highlighted


Figure 5.1:2 - Balance of the three elements


Figure 5.1:3 - The Three Phases proposed


Figure 5.2:1 - The Two Stages of Phase One


Figure 5.2:2 - Schedule Iteration for Phase One


Figure 5.2.1:1 - Commute to Pupukea: Island Scale


Figure 5.2.1:2 - Biki in Honolulu


Figure 5.2.1:3 - Cart Attachments


Figure 5.2.1:4 - Various Cart types


Figure 5.2.1:5 - Cart Attachments


Figure 5.2.1:6 - Stage 1: Commute in Pupukea

Figure 5.2.1:8 - Diagrammatic sections of the bike path with integration of the shuttle cart system

Figure 5.2.1:7 - Typical Shuttle stop and Bike parking stations

Figure 5.2.2:1 - Stage 2: Enhancement of the Nodes

Figure 5.2.2:2 - Ahupua’a Divisions with town of Pupukea highlighted

Figure 3.2.3.1 - Identification of each Node

Figure 5.2.2:3- Meaning of Each Ahupua’a

Figure 5.2.2.1:1 - Commercial Node

Figure 5.2.2.1:2 - Axonometric map of the Commercial Node

Figure 5.2.2.1:3 - Symbol for Commercial Node

Figure 5.2.2.1:4 - Perspective and Section Reference for Commercial Node

Figure 5.2.2.1:5 - Design inspiration for Commercial Node

Figure 5.2.2.1:6 - Renders for Commercial Node

Figure 5.2.2.1:7 - Sections for Key Features in Commercial Node
Figure 5.2.2.2:1 - Education Node

Figure 5.2.2.2:2 - Axonometric map of the Education Node

Figure 5.2.2.2:3 - Symbol for Education Node

Figure 5.2.2.2:4 - Perspective and Section Reference for Education Node

Figure 5.2.2.2:5 - Design inspiration for Education Node

Figure 5.2.2.2:6 - Renders for Education Node

Figure 5.2.2.2:7 - Sections for Key Features in Education Node

Figure 5.2.2.3:1 - Active Node

Figure 5.2.2.3:2 - Axonometric map of the Active Node

Figure 5.2.2.3:3 - Symbol for Active Node

Figure 5.2.2.3:4 - Perspective and Section Reference for Active Node

Figure 5.2.2.3:5 - Design inspiration for Active Node

Figure 5.2.2.3:6 - Renders for Active Node

Figure 5.2.2.3:7 - Sections for Key Features in Active Node
Figure 5.2.2.4:1 - Leisure Node

Figure 5.2.2.4:2 - Axonometric map of the Leisure Node

Figure 5.2.2.4:3 - Symbol for Leisure Node

Figure 5.2.2.4:4 - Perspective and Section Reference for Leisure Node

Figure 5.2.2.4:5 - Design inspiration for Leisure Node


Figure 5.2.2.4:6 - Renders for Leisure Node

Figure 5.2.2.4:7 - Sections for Key Features in Leisure Node

Figure 5.3:1 - Balance of the three elements

Figure 5.3:2 - Interpretive Map layouts visualized in each node