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Urban Trail Development in the Monteverde Region

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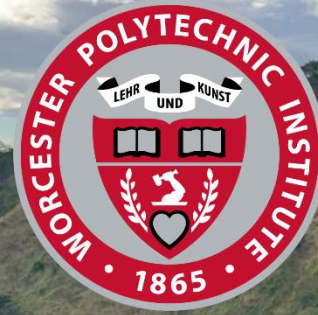
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WPI

Urban Trail development in the Monteverde Region

Increasing the visibility of the Sendero Pacífico in the Monteverde region through urban trail development



An Interactive Qualifying Project Report Submitted to the Faculty of WORCESTER POLYTECHNIC INSTITUTE in partial fulfillment of the requirements for the Degree of Bachelor of Science.

Submitted on Feb 28th, 2019. Monteverde, Costa Rica.

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This report represents the work of four WPI undergraduate students submitted to the faculty as evidence of completion of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review. For more information about the projects program at WPI, please see: <http://www.wpi.edu/Academics/Projects>

Abstract

Despite vast expanses of green space in the Monteverde Region, local reserves charge entrance fees and lack extensive hiking options. The World Trails Network is working to create a free long-distance trail system called the Sendero Pacífico to offer alternative hiking options and connect the Bellbird Biological Corridor. The goal of this project was to investigate urban trail development from Santa Elena to Monteverde and increase visibility of the Sendero Pacífico in the Monteverde region through promotional strategies. We learned about promotional strategies and techniques of local businesses and determined the physical aspects that could affect urban trail development in the area.



EXECUTIVE SUMMARY

In Costa Rica, while there is an abundance of green space, accessing this land can be difficult for some because of the costly entrance fees associated with private reserves. As a result, many hiking trails can be inaccessible for low-budget travelers looking to experience nature. Even transportation to private reserves and green spaces can have a high price, adding to the overall cost of the nature experience. Some people choose to walk to avoid the cost associated with transportation, however, they often find that walking along the road in the Monteverde region can be dangerous or difficult due to poor walkway conditions. High costs and lack of pedestrian safety add an unnecessary inconvenience when accessing the green space of the Monteverde Cloud Forest.

One way to help facilitate access to green space is through a multi-use, non-motorized path used for transportation and recreation, referred to as an urban trail (City of Austin, 2009). The function of urban trails is often to connect a town or city to parks or other rural access points, which allows residents and visitors to easily access nature (Rails to Trails, n.d.). Urban trails are also a way to promote community engagement, which can give local residents a greater voice within a project and strengthen the network of a community (Head, 2007).

The World Trails Network works to connect trail systems around the world to enhance and protect exceptional trail experiences (World Trails Network, n.d.). They support community-based trail systems, such as the Sendero Pacífico which is a network of free hiking trails currently under development in Costa Rica. When the trail network is completed it will allow its users to hike from Monteverde to the Gulf of

Nicoya. The organization has asked for our help in growing the presence of Sendero Pacífico in the Monteverde community and defining an urban trail route in the populated sections of the area.

GOAL AND PROJECT OBJECTIVES:

The goal of this project was to increase visibility of the Sendero Pacífico through the design of an urban trail system that links Santa Elena to San Luis and the Sendero Pacífico. We carried out the following objectives to complete our goal.

1. Understand the physical challenges related to urban trail development in the Monteverde region.
2. Determine the willingness of local hospitality businesses to promote the Sendero Pacífico.
3. Determine interests of individuals regarding their potential use of the Sendero Pacífico.
4. Develop a plan for the urban trail system including sign placement and improved walkway location.

METHODS:

We addressed these objectives using field observation, semi-structured interviews, and surveying. We then synthesized this information to develop a proposed plan for the urban trail.

In order to evaluate the route, we developed a walkway ranking system, based on presence of sidewalks and pedestrian visibility, allowing us to objectively assess walkway safety for pedestrians. We determined a recommended route for the urban trail as well as optimal locations for sign placement.

Through interviews with businesses and the local government we determined common policies and practices regarding promotion of local attractions and signage. We used this information to understand how the Sendero Pacífico needs to address promotion with these businesses and the town to increase their visibility.

We conducted surveys with tourists in Monteverde to determine interests and priorities of potential trail users. We asked participants of the survey to respond to questions about their hiking preferences and demographics. This information was used to make recommendations to the World Trails Network for future promotional strategies.

RESULTS:

Our key findings fall under two broad categories of marketing and development. We have found that sidewalk conditions, topography and land use need to be taken into consideration when developing an urban trail in the Monteverde region. Rural areas have fewer or poorly developed sidewalks and very steep areas lack dedicated walkways which contributes to the risks associated with walking in these areas. This could be one reason that limits people in the future from walking to rural areas like San Luis, where the Sendero Pacífico begins.

There is a lack of structured policy regarding development in the Monteverde region. Municipality employees stated that there are very few rules and regulations regarding sidewalk development and sign placement. There is an annual fund dedicated to sidewalk improvement and creation, however, there are not set procedures or long-term plans for determining priority of developments. There is currently only one formal regulation regarding sign placement, but they are working towards creating more structured policies. While a limited

amount of structure regarding development in this area is accepted as normal among local residents, there are still some aspects of formal development that could help the interaction between the Sendero Pacífico and the residents of the Monteverde area.

Non-profit initiatives, such as the Sendero Pacífico, often struggle to receive the same exposure as other tourist businesses. This is because many hostels, hotels, and tourist information centers have commission-based relationships with tourist attractions in the area. Many of the hospitality businesses we interviewed expressed willingness to publicize the Sendero Pacífico but as a secondary priority to businesses that can offer them a monetary incentive.

We found that across each demographic, the information that was most important to potential users of trail systems is the scenery they will experience. In those respondents over the age of 50, 22% ranked knowing the difficulty of a trail as their top priority. Additionally, over 90% of participants reported that they prefer a hike that can be completed in under 6 hours.

RECOMMENDATIONS:

The World Trails Network is working to increase the visibility and awareness of the Sendero Pacífico within the Monteverde community. We have identified several areas of improvement and provide recommendations for increasing the visibility of the trail system.

The World Trails Network should increase the visibility of the Sendero Pacífico both online and within the local community. We recommend increasing online presence through better use of social media, website improvements, and building a presence on travel websites. Increasing online presence is

extremely important for the trail system because many travelers plan their trips in advance using online resources. By doing this, they will be able to increase usage of the trail because more people will have better access to information about the Sendero Pacífico.

To encourage forward momentum for development, we recommend that the employees and volunteers that work with the Sendero Pacífico work closely with the community. For example, we suggest that representatives of the trail system provide the Municipal Council of the Monteverde District with our pathway condition map to guide future sidewalk development. This could potentially add structure to their long terms plans while benefiting the Sendero Pacífico.

We have also recommended a route for the urban trail in the Monteverde region as well as a plan for the location of signs and informational kiosks. We recommend that the initial urban trail development is focused on the areas with currently existing pedestrian walkways, to make pedestrian safety a top priority. This urban trail will initially connect Santa Elena to the main road to San Luis, and should be expanded in the future.

In addition, we recommend that the employees and volunteers working with the Sendero Pacífico focus on developing opportunities for day hikes near the San Luis field station. After finding that many visitors to Monteverde are more interested in short day hikes, we think that this will be a great opportunity to attract more users to the trail system and introduce the Sendero Pacífico to a broader range of demographics.

CONCLUSION:

For the World Trails Network, this new urban trail system will help to increase visibility of the main trail of the Sendero Pacífico, and is likely to cause an increase in usage of the trail over time. Combined with this recommended urban trail, new promotional strategies have the potential to increase the visibility of the trail system as well.

Our findings can be used by organizations other than the World Trails Network that focus their initiatives around bettering the community. In addition, the Municipal Council of the Monteverde District could utilize the analysis that we have completed about walkway safety of the area to develop long term improvement plans. Other non-profit organizations that are looking to advertise themselves through hospitality businesses could also use the results of our interviews and research to further their visibility. The development of this urban trail will be used to increase the visibility of the Sendero Pacífico, and help the trail system achieve one of its overall goals of making green spaces more accessible to both tourists and local residents.

The results of this project have the potential to benefit the community of the Monteverde region, as well as the World Trails Network and its current development of the Sendero Pacífico.



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1.0 INTRODUCTION & BACKGROUND

One of the many features that attracts visitors to Costa Rica is the diverse and beautiful natural landscape, as seen in Figure 1. However, while 53% of the land in Costa Rica is forest, much of it is private land in the form of nature reserves and farms (Estado Nación, 2017). A result of this private ownership is that many nature reserves charge entrance fees to access the sites and landscapes (Monteverde Travel Guide, 2018). For example, access to the Monteverde Cloud Forest Reserve is \$18 for non-residents, and a guided tour can cost up to \$70 per person (Monteverde Travel Guide, 2018). For some budget travelers, these entrance fees can be a prohibitively high price to pay to experience the abundant outdoors. While there are many options for hiking, such as the Monteverde Cloud Forest Reserve, there are very few hiking trails that do not charge an admittance fee.

Aside from recreational purposes, walking is also a primary mode of transportation for many individuals in Costa Rica. Despite the high number of pedestrians on a daily basis, some roads in Costa Rica can be unsafe for walking (Peterniak, 2015). In 2009, there were about 740 deaths from road related accidents in Costa Rica, and almost 40% of the casualties were pedestrians (World Health Organization, 2009). Specifically, in the Monteverde region, many roads are unpaved and lack sidewalks, which can make walking from place to place potentially dangerous or unpleasant, as seen in Figure 2 (Monteverde Travel Guide, 2018). One way to address these issues is an improved system of sidewalks and walkways, also known as an urban trail.



Figure 1: Vast expanses of green space in Costa Rica



Figure 2: Narrow roads and a lack of dedicated walkways can make walking dangerous for pedestrians

Our sponsor, the World Trails Network, is working with local communities in Costa Rica to develop a free, long distance trail system called the Sendero Pacífico (Sendero Pacífico, 2018). The trail will offer hikers increased and more economical access to long distance hiking. The goal of our project was to design an urban trail that connects Santa Elena to San Luis to increase visibility of a developing trail network. In the following chapter, we discuss the importance of green space and explain how urban trails can provide access to green space. In addition, we discuss methods of urban trail planning and important aspects of design such as sign placement, type, and layout. We also explain the concept of community engagement and its importance to this project. Finally, we further introduce our sponsor, the World Trails Network, and their work with the development of the Sendero Pacífico. Further in this report, we outline our methods and share the results and recommendations from our research.

1.1 THE IMPORTANCE OF GREEN SPACE

Green spaces are almost any outdoor public area, including parks, plazas, open spaces, sports fields, cemeteries, and wetlands (Wendel, 2012). Green spaces are sometimes split into categories based on their location and makeup. However, all green spaces provide the opportunity for a connection with nature, including man-made green spaces such as the gardens seen in Figure 3. Additionally, research shows that accessing green space can also reduce stress and anxiety (Suttie, 2016). One study in Japan found that participants hiking on a wooded path felt a much better connection to their environment and exhibited lower blood pressure, pulse, and reported levels of stress in comparison to those in a more urban environment (Suttie, 2016). There is also a correlation to better recovery times from surgery, higher cognitive function, and higher team

functioning as a result of being near or in nature (University of Minnesota, 2016). These correlations strongly suggest that it is important to experience nature consistently to benefit one's health.



Figure 3: Example of a green space that is not classified as natural forestry or a nature reserve

In Costa Rica, 53% of the area is forested land, which is the home for most of the wildlife in the country (Estado Nación, 2017). Costa Rica's green spaces are typically categorized into nature reserves and natural forestry. The main difference between these is that nature reserves are fee-charging conservations lands (Monteverde Travel Guide, 2018), whereas natural forestry may be the small portions of trees and greenery found right in one's backyard (Monteverde Travel Guide, 2018). The Monteverde Cloud Forest Reserve is found within the Bellbird Biological Corridor, a conservation area in Costa Rica that includes about 163 acres of land from Monteverde to the Gulf of Nicoya (Sidoti, 2014). This corridor is dedicated to protecting the Three-wattled Bellbird and its natural habitat

(Sidoti, 2014). The creation of this corridor came during a time that brought a push for the reforestation of the area and protection of the wildlife (McBay, 2014). Figure 4 shows the Corridor including its national parks, protected zones, and other reserves. This map shows that there is an abundance of green space surrounding the Monteverde region, which visitors are often eager to experience. The push for more forestry was slowed by the fact most of the land is owned by farmers who are not always willing to reforest on their property (McBay, 2014). This corridor as a whole increases the preservation of forestry in Costa Rica, which has the added benefit of providing an opportunity to access green spaces.



Figure 4: Map of the Bellbird Biological Corridor

1.2 BENEFITS OF URBAN TRAILS

In Costa Rica, visitors have many options for hiking based on their ability level and interests (Monteverde Travel Guide, 2018). However, trails, such as those found in the Monteverde Cloud Forest Reserve, are often out of the way. To access the reserve, visitors have the option to walk an hour and a half or utilize an infrequent bus system from the center of Santa Elena (Monteverde Travel Guide, 2018). An urban trail can provide an option for people to walk safely to these reserves and other green spaces.

Urban trails, sometimes referred to as greenways, are a way to help limit urbanization because they have the ability to connect green spaces (City of Austin, 2014). An urban trail is a multi-use, non-motorized path used by cyclists and pedestrians for both transportation and recreation (City of Austin, 2014). The function of urban trails is often to connect a town or city to parks or other rural access points, which allows residents and visitors to easily access nature (Rails to Trails, n.d.). Urban trails offer the chance for brief respites to see and experience nature close to where people live and work, and to provide unique ways to see and experience a city (Beatley, 2016). Ideally, greenways highlight sites in and around cities that may be largely overlooked or ignored otherwise.

Currently, there is an urban trail in the early stages of construction in San Jose, Costa Rica called Rutas Naturbanas. The goal of this trail is to connect neighborhoods in the city in a safe manner and it will be sustained by volunteers and local non-profits (Rutas Naturbanas, 2016). Aside from providing a convenient path to nature, the Ruta will link communities and promote the preservation of green space. It will provide a more

pleasant walking experience as well as potentially provide an economic benefit to the community.

In the United States, the Great Allegheny Passage is an example of a fully developed urban trail that brought economic benefit to a community (see Figure 5). The passage was established in 2007, and within two years, there was a net gain of 47 new trail-related businesses opened in the towns that it runs through (Campos, 2009). These new businesses generated 93 new jobs across their respective communities (Campos, 2009). Aside from bringing more jobs into the area, businesses have become more profitable; from 2002 to 2008, spending that came directly from trail users increased by 33.54 million dollars. Aside from businesses directly related to the trail itself, local restaurants made up 65% of businesses that had plans to expand as a result of increased revenue (Campos, 2009). Attractive trail destinations provide benefits to businesses beyond those that cater solely to trail-users. A community does not have to change its blueprint and ideals in order to reap the benefits of an urban trail.



Figure 5: Section of the Great Allegheny Passage

1.2.1 LAND USE CHALLENGES OF URBAN TRAILS

Land use generally produces a unique set of challenges for green space access, caused primarily by restricted access to private land. In Costa Rica, almost half of the total land is made up of forest, which is what attracts many visitors to the country (Mongabay, 2006). However, 76% of this total forest area is privately owned (Mongabay, 2006), which can make it inconvenient for visitors to access the landscapes for which Costa Rica is known. One main reason for such high land privatization is that in the past, there were long spans of commercial coffee and banana farming in Costa Rica (Evans, 2010). These farmers obtained the largest plots of land as possible in order to get the most economic benefit. This led to immense portions of land ownership by an individual or family (Evans, 2010). The large plots of land continue to be privately owned today and are still used for economic purposes, including logging contracts (Lutz, 1991). Additionally, a lot of the land in the Monteverde region is made up of very steep embankments which make it difficult to design a trail in the area (Marion, 2006). This makes it so that in some locations people have to walk right on the roads or on small trails that are right next to the road. These access challenges can make it inconvenient for local residents and visitors alike to enjoy the many benefits of green spaces.

1.2.2 URBAN TRAIL PLANNING

When planning an urban trail, some key factors to consider are surface type, attractions, and location. Paved areas provide a surface for biking and jogging while dirt or gravel paths are geared more towards walking and hiking (Partnership for Prevention, 2009). Different paths also provide different functions in a community. Paved trails that run along roadsides are generally used for individuals walking their typical routes,

without the risk of being struck by a vehicle (Shafer, Lee, & Turner, 2000). Alternatively, more wooded urban trails can cut across areas that would otherwise be largely inaccessible for travel because they may be too dense to walk through or the surface may not be desirable for walking (see Figure 6) (Lindsey, 1999). In addition, the possibility for multiple activities can attract a greater crowd because the target audience is not limited to one specific group. For example, in certain areas along the Rutas Naturbanas, there will be opportunities to kayak as well as to continue walking along the path (Rutas Naturbanas, 2016). Placement in centralized areas allows for urban trails to be used for daily transportation between homes, schools, and places of employment (Partnership for Prevention, 2009).



Figure 6: A comparison of a wooded portion of an urban trail versus a paved section

Most importantly, the route of an urban trail is critical to its success because users will be attracted to the specific places that it connects (Partnership for Prevention, 2009). Connecting towns and well-known locations is an effective way to gain the attention of the public as well as ensure that the trail is successful over time (Campos, 2009). Additionally, the added safety of a trail that is solely for pedestrians and cyclists can be attractive for many people (Rutas Naturbanas, 2016). It is a common

concern that walking on main roadways is too dangerous to be done regularly (Rails to Trails, 2018). Designing an urban trail that follows pre-existing roadways to a minimal extent will provide a safe alternative for pedestrian travel.

1.2.3 TRAIL SIGNAGE

Well placed signage along the trail can increase pedestrian safety and improve the general experience of trail users by reducing confusion (Rails to Trails, 2018). These signs are generally split into the categories of regulatory and ranking signs, wayfinding signs, interpretive signs, and recognition signs (CoQuitlam, 2015). Regulatory and ranking signs are generally similar to the local road signs in size and color. Wayfinding signs help ensure that users are able to locate the correct path. Interpretive signs tell more about the area and the history of the trail while recognition signs acknowledge donors and other sponsors (Rails to Trails, 2018).



Figure 7: An example of a wayfinding sign

In the early stages of a trail, wayfinding signs, as seen in Figure 7, are often the most beneficial type of sign, and can be very useful to direct users along the intended path (Rails to Trails, 2018). The placement of signs varies by trail, but should generally be a few feet from the side of the trail and at eye level (Rails to Trails, 2018). An effective wayfinding sign is visible and the direction or path should be clearly indicated. (Rails to Trails, 2018).

Effective interpretive signs are located in well populated areas where they are visible to the public and close to an important or interesting feature of the trail (Rails to Trails, 2018). Kiosks, as seen in Figure 8, generally show a full map, information about the organization, dangers of the area, and other information that is important for visitors to know (Appalachian Trail, 2012). An effective design allows for the most important points of a kiosk to be seen at a glance. Features that aid in this are a clean layout and concise formatting, to reduce clutter. Kiosks are very important at all stages of a trail for attracting potential users and as a method of advertisement (Appalachian Trail, 2012).

It is also important to avoid cluttering a trail with too many signs. A trail must have enough signs to clearly indicate direction and other relevant information. However, having too many signs will often distract users from the natural features of the trail or will present them with an excess of information (Appalachian Trail, 2012). This balance is often reached by the use of effective kiosks in central areas or junctions, allowing most of the information to be expressed in one location (Appalachian Trail, 2012). The remaining signs can be smaller, less intrusive wayfinding signs. An appropriate use of both interpretive and wayfinding signs can provide a safe and

pleasant experience for users while allowing them to make the most of the trail.



Figure 8: Example of an effective urban trail kiosk

1.3 COMMUNITY ENGAGEMENT

The use and eventual maintenance of an urban trail system provides an opportunity for community engagement and involvement. In recent years, community programs have been encouraged by politicians, policy-makers, and community-based social organizations worldwide (Head, 2007). Community

engagement takes on many forms because it works to identify and resolve a wide range of social problems (Head, 2007). The main mission is to act toward a common goal and promote local improvement while stimulating community participation (Batson, 2002). It must be understood that the motivation for participation in community initiatives ranges from the possibilities of increasing one’s own welfare to the welfare of other individuals to the welfare of a group (Batson, 2002). When participants take part in community initiatives, they feel they have a greater voice and influence on decision making, which may also drive intrinsic motivation to participate (Head, 2007). When planning an initiative that relies on community engagement, it is important to consider these types of motivations, which can encourage the community’s interest in participating.

In addition to different types of motivations, community engagement has a variety of levels and participation frameworks that depend on the type of project or initiative that is being implemented. A low level of community engagement means that the community is being educated or informed about a project or topic. Alternatively, a high level of community engagement gives a lot of control of the project to community members, who

are encouraged to make many of the decisions (Kilpatrick, 2009). Figure 9 shows one common participation framework, showcasing the various levels of engagement that can be adopted by a project or initiative. The level of community participation in a project or initiative should be determined by the community’s interests. Many times, a partnership approach between an organization and a community is beneficial where joint decision making occurs, with some delegation of tasks across all parties (Kilpatrick, 2009).

Promoting the engagement of citizens can provide many opportunities for the community and its activities (Bassler, 2008). A well-developed process for community engagement can increase the possibility that the community as a whole will accept the results of the project (Bassler, 2008). In addition, research has found that local residents participating in community-based initiatives feel a greater sense of belonging in the community and increased willingness to work toward improvements (Moore, 2006). Other benefits of community engagement include creating strong networks of community members and improving relationships between organizations, local government, and the local residents (Bassler, 2008).

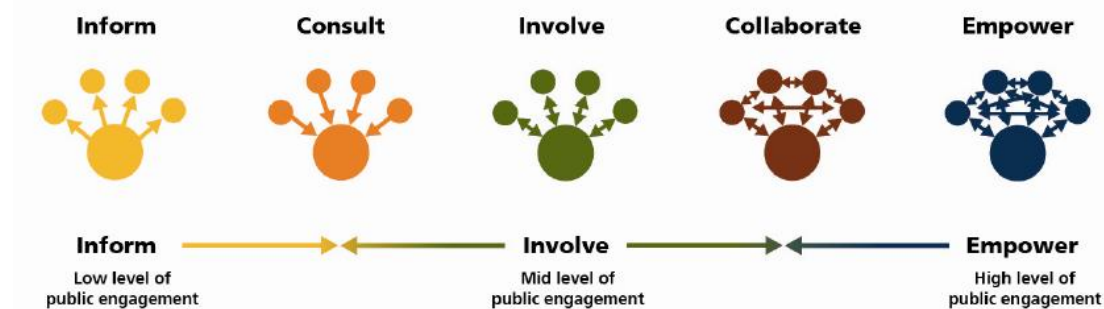


Figure 9: Levels of community engagement

1.4 THE WORLD TRAILS NETWORK



Figure 10: World Trails Network logo

This project’s sponsor, the World Trails Network (WTN), whose logo is seen in Figure 10, relies on community engagement to connect the trail systems of the world to enhance and protect exceptional trail experiences (World Trails Network, n.d.). The organization works to form an active network of diverse and environmentally sustainable trail systems and encourages collaboration among these groups to accomplish their three core objectives: to promote, preserve, and perpetuate trails (World Trails Network, n.d.). In addition, the World Trails Network has eight international task teams, as seen in Figure 11, made up of different volunteer groups that work to promote best practices among worldwide trail development (World Trails Network, n.d.). Two of the task teams that relate to this specific project are the “Trails & Tourism” and “Cities & Urban Trails” teams. In an attempt to make progress towards these objectives, they support initiatives such as the Sendero Pacífico, a developing trail system in Costa Rica. When completed, the

Sendero Pacífico will allow hikers to travel from the Monteverde Cloud Forest Reserve all the way to the Gulf of Nicoya through the Bellbird Biological Corridor (Sendero Pacífico, n.d.).

The Sendero Pacífico is developed and maintained by local communities along its path and would not be successful without their involvement (Sendero Pacífico, n.d.). Completed portions are currently maintained by five active volunteer communities, but the World Trails Network is looking to help the trail system expand even further (Sendero Pacífico, n.d.). The trail system currently begins in San Luis, which is 7.5 km from Santa Elena, and the organization would like to establish an urban trail from Santa Elena to San Luis with the goal of getting more local residents and tourists involved with the trail. The goal of this project was to connect Santa Elena to the Sendero Pacífico using an urban trail system intended to increase its visibility and accessibility. This has the potential to increase the number of local residents and tourists walking through the town safely and continuing on to the Sendero Pacífico.



Figure 11: Eight task teams of the World Trails Network

2.0 METHODOLOGY

The goal of this project was to increase visibility of the Sendero Pacífico through the design of an urban trail system that links Santa Elena to San Luis and the Sendero Pacífico. We carried out the following objectives to complete our goal.

1. Understand the physical challenges related to urban trail development in the Monteverde region.
2. Determine the willingness of local hospitality businesses to promote the Sendero Pacífico.
3. Determine interests of individuals regarding their use of the Sendero Pacífico.
4. Develop a plan for the urban trail system including sign placement and improved walkway location.

The following chapter outlines the specific methodology used to complete each of the main objectives. In addition, we explain why each of these methods were chosen and how the completion of our objectives addressed our final goal.

2.1 OBJECTIVE 1: UNDERSTAND THE PHYSICAL CHALLENGES RELATED TO URBAN TRAIL DEVELOPMENT IN THE MONTEVERDE REGION.

To achieve our goal of proposing a route for the urban trail from Santa Elena to San Luis, we first had to understand the geography of the Monteverde region to determine challenges that could affect the urban trail's development. We used unobtrusive observation to determine how road and sidewalk conditions could affect the development of the urban trail. We observed whether pedestrians were using sidewalks, dirt paths or walking directly on main roads, as well as ranking the

conditions of these walkways. Our observational studies were conducted along the routes between the center of Santa Elena, the Monteverde Cloud Forest Reserve, and San Luis, where the Sendero Pacífico currently begins, as seen in Figure 12. Conducting these observational studies helped us understand areas that are central to this zone and the challenges that pedestrians face when traveling between different locations, such as lack of sidewalks or safe pathways, which we will refer to as walkways throughout this report.

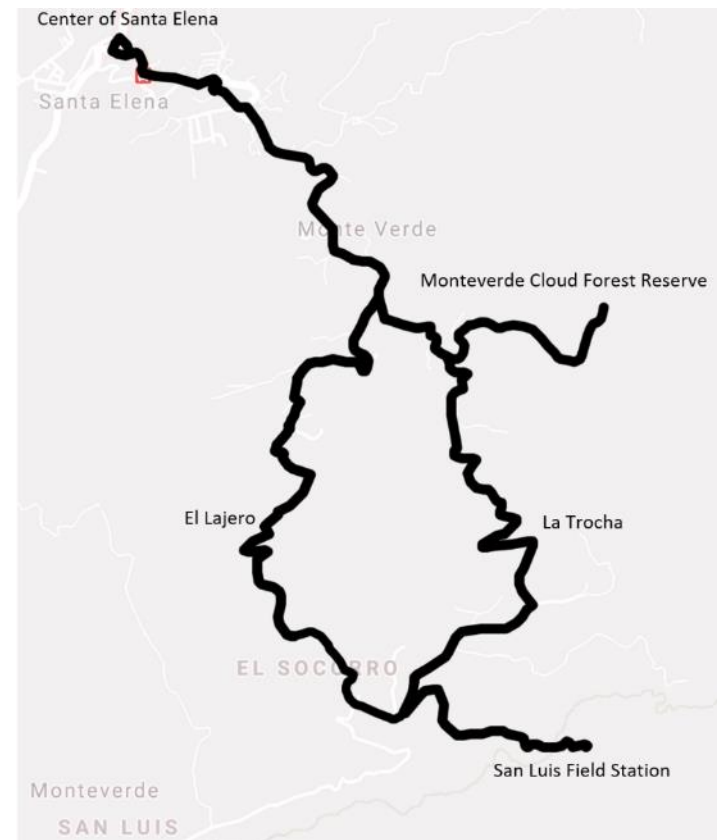


Figure 12: Map of the area of interest

To conduct these observational studies, we developed a walkway ranking system. Our system took into account the presence of dedicated walkways and the visibility of pedestrians and vehicles on roadways. Using this scale, walkways were ranked on a numerical basis from 1, being the safest, to 5, being the most dangerous (See Appendix A). We chose to use the presence of walkways as a main feature for our system because a dedicated path to walk on provides pedestrians with separation from vehicles on the road which can increase safety while walking. In addition, we chose to use visibility of pedestrians and vehicles as an indicator of walkway safety because lack of visibility in both cases can cause increased chances of a pedestrian related road accident (World Health Organization, 2004). Another feature that was taken into consideration during these observations was the terrain of the walkway. Terrain refers to the type of walking surface and the presence of large obstructions in the path, such as rocks and stumps. This feature was used in the walkway ranking system because a flat, smooth terrain with little to no obstructions or obstacles is easy to walk along and accessible for a wide range of people. Roads that are very safe and accessible with sidewalks that allow for pedestrian visibility and separation from the road are given a score of 1 and deemed excellent. A section of the road that has no dedicated

walkways or visibility for pedestrians and vehicles is given a ranking of 5 and is deemed unacceptable.

We applied this ranking system to the area of the proposed urban trail system seen in Figure 12. To carry out our observations we walked each section of the road together and had discussions during our observations to determine the ranking of each section. During the observations, we determined when the condition of the walkway changed and discussed the new ranking after we had walked on the following section. We also took photographs of many different sections of the road and used these photographs to reassess our initial results after we completed the observations. For example, there were some sections of sidewalk that we initially rated as a 2 because they were not paved but after reconsideration, we decided that this type of path should be rated as a 1 because it provided the same ease of travel as a paved sidewalk. This information was analyzed and color coded to be incorporated into a map of the area with the final goal of recommending segments that could use improvement through this urban trail. In addition, we made a table with photographic examples of each ranking seen in Figure 13.

Rank	1 - Excellent	2 - Good	3 - Fair	4 - Poor	5 - Unacceptable
Photo					

Figure 13: Visual representation of each walkway rating

Areas that are designated as a 4 or 5 on our ranking system, and therefore considered the most dangerous, are areas that could be improved by the addition of a new walkway or a side trail further from the road. The addition of walkways would require expanding the roadway onto land which may be private. To address this problem, we sought out land use maps that indicate where private land is in the region. However, after contacting many sources such as the Monteverde Institute, the local municipality, and even local realty groups, we were unable to obtain these maps. Instead, we used topographical maps to determine locations with large elevation changes which would decrease the opportunity for side trails on these sections of road (Marion, 2006).

To obtain further information about sidewalks in Santa Elena and potential improvements, we interviewed an architect at the Municipal Council of the Monteverde District. We inquired about a sidewalk program that we had heard about from local residents and our sponsor that aims to improve the sidewalk conditions in Santa Elena. The interview lasted for 15 minutes and was a semi structured interview to allow for deviation from the set questions (see Appendix B). We analyzed the information obtained from this interview to understand the policies and legislation of the area. These regulations, combined with our observations allowed us to further comprehend the process for improvement of walkways in Monteverde.

2.2 OBJECTIVE 2: DETERMINE THE WILLINGNESS OF LOCAL HOSPITALITY BUSINESSES TO PROMOTE THE SENDERO PACÍFICO.

We chose to interview different hospitality businesses about a potential promotional relationship with the Sendero Pacífico, which could increase visibility of the trail system in the area. Hospitality businesses include a broad range of businesses

primarily focused on customer satisfaction, including hostels, hotels and tourist information centers (ASUMH, n.d.). Hospitality businesses most frequently cater to tourists, who are one major target demographic for the Sendero Pacífico. This key demographic is highly centralized in hospitality businesses so we focused on learning about their promotional policies. The main goal of these interviews was to determine if these businesses would be interested in sharing information about the trail system to their clients, and in what manner. We also inquired about their advertising policies in relation to popular tourist attractions.

We used a semi-structured interview format because it helped us remain consistent and focused during interviews, while allowing for conversation and giving the respondent the ability to answer freely and include additional information (Rossman and Rallis, 2012). We conducted 15 semi-structured interviews with hospitality related businesses (See Appendix C). This gave us the perspectives of approximately 30% of the hotels and hostels in the area of interest (Google Maps, 2019). We found interview opportunities through online research, suggestions of other interviewees, or by observation during objective one. We reached out to participants in person or by email.

All of these interviews were recorded and the sections that we found most relevant to our findings were transcribed. Each interview took less than 15 minutes and if an individual did not have time when initially approached, we scheduled an interview for a later date. To analyze our findings from these interviews, we coded data to identify common ideas and perspectives among these businesses (Ryan and Weisner, 1998). This process and the data obtained from it were used to gauge interest in the trail from local businesses and determine potential

advertising relationships with various businesses around Santa Elena.

2.3 OBJECTIVE 3: DETERMINE INTERESTS OF INDIVIDUALS REGARDING THEIR POTENTIAL USE OF THE SENDERO PACÍFICO.

Tourists' and locals' perspectives were both highly valuable when determining how to attract users to the main trail of the Sendero Pacífico. In order to capture both of these opinions we chose to administer a survey with a combination of ranking and multiple-choice questions (See Appendix D). Participants of this survey were asked to compare items by placing them in order of importance (Albright, 2017). We administered the survey to 114 individuals, primarily tourists, in the Monteverde area, using Crowdsignal, a survey platform application using our smartphones. Each survey took approximately 1 to 2 minutes and were administered in the center of Santa Elena, at a local shopping plaza, and a popular intersection (See figure 14). The goal of this was to determine the potential users' ideas of what is the most important information to know for their personal use of the trail (see Figure 15). The survey also included questions about general interests in hiking along with the individual's demographics, which allowed us to have a greater depth of data analysis. This data analysis will potentially help the World Trails Network highlight the information that will draw the most people to the trail through their promotional efforts.

After all of the data was collected, we analyzed it by examining what was most often ranked as being the most important information about the trail. We then filtered the data by different demographic responses to identify trends within similar participants. For example, the data was filtered by age to determine if different attributes were more attractive to younger



Figure 14: The three heavily trafficked locations: a popular intersection, the "triangle", and the "Centro Comercial"

participants than older participants. This ability to view the data based on the participant’s background allowed for versatility in analysis and more direct promotional strategies. This allows for



Figure 15: Options for the ranking survey

the World Trails Network’s advertisement approach to change over time and appeal to a wide range of audiences, allowing for adaptability.

2.4 OBJECTIVE 4: DEVELOP A PLAN FOR THE URBAN TRAIL SYSTEM INCLUDING SIGN PLACEMENT AND IMPROVED WALKWAY LOCATION.

To determine possible locations for signs, we analyzed what we observed to be the most heavily trafficked areas that also had enough space for signs to be placed. These areas were initially identified during our observations in Objective 1 because this is where we observed the highest concentration of people. These locations were also chosen through our surveying in Objective 3, because these places were where we were most successful in getting responses. We looked for locations that had enough room to place larger signs or kiosks. These were the locations around town that appeared to be the most centralized and important areas, so we chose the best place for the urban trail to begin by considering these locations. We also chose locations for other trail kiosks in the area, with information and maps of the trail system, in order to draw more people to the trail. Along with these kiosks, we chose locations for smaller signs at other important places along the trail that denoted how to connect to the main trail and potentially supplied a small version of the map. Most of the decision making for wayfinding sign placement was conducted by observing where other signs were located around the Monteverde region. We looked for where other businesses and companies placed their signs to gain insight on effective locations for signs. We also used the information gained from the interviews from Objectives 1 and 2 to understand the rules behind sign placement and to see examples on the actual sizes of signs used in Monteverde. The

different types of signage allow for different ways to increase the visibility of the Sendero Pacífico (Rails to Trails, 2018).

After we collected and analyzed all of this data, along with the information from the walkway ranking system, we mapped out the best possible paths through the Monteverde region to help demonstrate how the urban trail will flow through the communities and surrounding areas. After we mapped the exact route of the trail and where it would start, we worked to choose locations where larger kiosks would be placed along with smaller wayfinding signs. Wayfinding signs include not only signs that pointed users in the direction of the main trail system, but also reassurance signs that are used to comfort users by showing them they are still walking on the correct path (Appalachian Trail, 2012). All of this information was used to provide recommendations to the World Trails Network regarding where the urban trail should be located and important aspects of its design.

3.0 RESULTS AND DISCUSSION

The following chapter explains our major findings from the data we collected and analyzed throughout the completion of our objectives. They fall under two broad themes, which are development and marketing. The first two, under the theme of development, discuss the physical aspects of the Monteverde region and official policies that could affect urban trail development. The two major findings under the theme of marketing focus on demographics of tourists in relation to their hiking preferences as well as advertising practices of hospitality businesses and their effects on the visibility of the Sendero Pacífico. In addition, we discuss the limitations and shortcomings of our results.

3.1 PHYSICAL CONSIDERATIONS FOR THE URBAN TRAIL

3.1.1 PEDESTRIAN WALKWAY CONDITIONS

Through the analysis of our observations from Objective 1 we have determined that rural areas have fewer or poorly developed pedestrian walkways or sidewalks. Through our observations we saw a wide range of pedestrian walkway surface types and conditions. We observed paved sidewalks in certain areas of the region as well as pedestrian paths made of smaller gravel and loose dirt. Many of these sections of sidewalk had obstructions such as tree roots and larger rocks (see Figure 16). We also observed that many locations with pedestrian walkways are extremely narrow and overgrown, as seen in Figure 17. Because these areas are so narrow, they will need to be further developed to be included in a successful urban trail.



Figure 16: Large rocks in the trail, making walking more difficult



Figure 17: Overgrown pedestrian path



Figure 18: Drainage ditch on the side of a road

In addition, we noticed that at times roads were so narrow that a vehicle would have to drive in one of the drainage ditches on the sides of the roads to avoid hitting an oncoming vehicle (see Figure 18). Some sections of these roads with drainage ditches do not have any dedicated pedestrian walkways so people must walk directly on the road, which can be directly in the path of oncoming traffic. We also found that more wooded walkways along these roads are sometimes difficult to identify and could be overlooked. During the first stages of our observations we missed some entrances to walkways that were overgrown and not well marked. This is a mistake that could cause pedestrians to walk on the road in unsafe areas if they are not able to identify the entrance. These missed walkways tended to be further away from commercialized areas, and never included paved sidewalks, making them even less visible.

Shown in Figure 19 is a map which we created after conducting our observations, displaying the varying degrees of walkway safety as outlined by the guidelines of our walkway ranking system. The dark green portions of the map correspond to the areas that were given a 1 on the ranking system, which signifies excellent walkway conditions. The red portions of the map correspond to areas that were given a 5 on the ranking system which signifies unacceptable walkway conditions. The full color code key with criteria for each category can be found in Appendix A. We also created a table that shows example photos of each category (see Figure 13). The areas of this map that are more commercialized are in and around the center of Santa Elena, which we found to also be where there are safer and more established walkways. For example, from the center of Santa Elena to the Monteverde Cloud Forest Reserve, we found that 72% of the route had dedicated pedestrian walkways. This map also shows that on roads to less commercialized areas, such as San Luis, there are less developed walkways and most areas

were given a 4 or 5 rating. This is because we determined they are unsafe for pedestrians due to many sharp curves of the road which dramatically decreases visibility.



Figure 19: Color-coded map

The area of the map with a dashed line represents a path, called El Lajero, that is a dedicated walking trail where vehicles are not allowed to travel. After discovering that this large section of the trail is solely for pedestrian use, we included this area in our observations to see if it was a safer option for an urban trail

than the other road to San Luis. Although we did include this road in our observations, we did not explicitly apply our walkway ranking system because it is based on pedestrian safety in relation to the roadway and vehicles, which were not present on El Lajero. We found that El Lajero presents its own hazards to pedestrians due to the rough, uneven terrain that includes steep inclines with large, loose rocks. In comparison to La Trocha, the other road to San Luis, the terrain of El Lajero presented greater physical hazards. Because of this, we feel that focusing development efforts on La Trocha would be a better use of time and resources for the Sendero Pacífico.

From this information, we have concluded that one possible reason why residents and visitors do not walk to San Luis or other more rural areas is that these routes lack of safe pedestrian walkways, which can make walking to these locations less appealing. The lack of safe sidewalks on the rural sections of road suggests that an urban trail would be difficult to develop in these areas.

3.1.2 TOPOGRAPHY

During our observations we found that factors such as distance or steepness of the walk may deter pedestrians from walking to the Sendero Pacífico trailhead in San Luis. Many roads in the Monteverde area are very steep and locations of interest can be far apart which makes it inconvenient for some people to walk to places such as the Sendero Pacífico. On one of the roads leading to San Luis called La Trocha, there is a 3.5 km stretch of dangerous road that has many sharp turns and is extremely steep, which makes the road very dangerous for pedestrians (see Figure 20). The steepness and sharp turns decrease visibility for both pedestrians and vehicles traveling on this road which can make it difficult for pedestrians to have a

pleasant walk in this area. Some sections of this road are also unpaved and made up of both loose gravel and dirt, which also add instability and a level of danger.



Figure 20: Steep and windy road lacking sidewalks

Due to the steep topography of the area, consistent side trails are not feasible on this road. An urban trail with walkways and sidewalks that are further away from the road would be beneficial for the sections of road that have many sharp turns because it would decrease the danger of pedestrians being struck by a vehicle. However, developing a pedestrian walkway away from the main road is not a viable option because there are many steep embankments directly next to the main road. Based on this information, the development of the urban trail through the

¹ After our research was completed, we were informed of a national data base that may contain these records.

Monteverde region for the Sendero Pacífico should be focused on the areas with less steep and extreme topography, which will provide better safety for pedestrians.

3.1.3 LAND USE AND PROPERTY OWNERSHIP

During the observation stage of our project we noted some side trails that we thought would be beneficial to include in the final urban trail route. Some of the side trails that we noticed were located on what we thought was private land so we attempted to locate land use or property ownership maps to help us determine possibilities for side trails along our urban trail route. We contacted the Municipal Council of the Monteverde District, real estate agents in the area, and a representative from the Monteverde Institute who specializes in mapping to locate land ownership maps. However, we were unsuccessful in finding maps that indicate private land ownership in the area¹. This made it very difficult for us to find trails that were publicly accessible which could be connected to the Sendero Pacífico. Also, many of the side trails are found on private land but are available for public use. We found that the trails are not typically promoted because local residents would like to minimize foot traffic to prevent overcrowding (Interviewee A, 2019). We chose not to map these trails as part of our urban trail because we do not want to encourage overcrowding or inappropriate usage.

Increasing tourism is also against the values of many residents of Monteverde, and when talking to an individual that lives and works in the area, he stated, “The history of Monteverde is they’ve [sic] never wanted tourism here” (Interviewee A, 2019). He continued to explain that many of the

trails in the area are free but pass through peoples' farms and private properties. He commented, "It would be ideal if there were places that they [tourists] knew were off limits" (Interviewee A, 2019). Based on this conversation, we feel that a map that shows which trails are free and accessible to the public may aid in the sustainable and respectful use of trails once a relationship has been formed between the land owners and the Sendero Pacífico. The fact that many side trails are through privately owned property would make it difficult to connect these trails to an urban trail that is advertised to both local residents and tourists.

3.2 OFFICIAL POLICIES THAT COULD AFFECT URBAN TRAIL DEVELOPMENT

3.2.1 SIGNAGE POLICIES

Upon conducting initial interviews, the lack of structured policies relating to advertisement signage started to become apparent. Through an interview with one local business, and interviews with hotels and hostels from Objective 2, we learned that there are few formal rules and regulations for placing advertisement signs in the Monteverde region. One interviewee said in reference to his own signs that, "for signs, you can put them wherever you want... (but) they can't be too big or too close to the road" (Local Business Owner A, 2019). From this, it became apparent that many of the local businesses are free to place signs without much regulation.

We further pursued this information by interviewing the Municipal Council of the Monteverde District. This provided insight on the actual policies and proceedings of the town structure in Monteverde. We found that there is a lack of formal planning in many of the different topics we asked about. Initially, we asked about specific advertisement strategies

including sign placement. When prompted, the employee confirmed that there is only one real regulation regarding signage: signs cannot be too large or intrusive without any exact parameters to how big the signs can be (Municipality Employee, 2019). However, we did find that the municipality is planning to create specific regulations in the near future specifically regarding the signs (Municipality Employee, 2019). This would make it clearer for the employees of the World Trails Network to understand the legality behind the signs, though it would potentially incur a fee to install new signs and kiosks after more regulations are adopted.

3.2.2 SIDEWALK POLICIES

When interviewing the Municipal Council of the Monteverde District we also inquired about a sidewalk development program that our sponsor brought to our attention. This program could greatly influence the safety and feasibility of walking from Santa Elena to San Luis because it would give people an easier, safer way to walk. When asked about the



Figure 21: Bridge under construction in Monteverde

program, the employee we interviewed explained that they raise money every year and determine which sidewalks to fix as they see fit. The interviewee was not clear about exactly where the money came from or how often they received these funds. For example, the town recently installed bridges on areas of road that washed away in Hurricane Nate during the past winter, as seen in Figure 21 (Municipality Employee, 2019). There is no current long-term plan detailing when specific sections of sidewalk will be fixed or developed. Knowing which sections of the road are going to be fixed could greatly help the Sendero Pacífico in their understanding on what parts of the route are safe to walk on.

The employee also told us that the municipality is not currently taking action against establishments that paint on the sidewalks as advertisement, but it discourages the practice because the community does not like the image it creates for the town (see Figure 22). Currently, they are conducting an investigation to see if there are any laws regarding the painting of sidewalks (Municipality Employee, 2019). We found that



Figure 22: Paint on a sidewalk advertising a business

multiple restaurants have painted on the sidewalks to draw attention to their business, without receiving explicit permission from the Municipal Council of the Monteverde District or without experiencing any repercussions. Such lack of rules makes it difficult for the Sendero Pacífico to improve its visibility in Monteverde, because methods like sidewalk painting could be an easy way to promote the Sendero Pacífico. However, without knowing the exact potential repercussions behind acts like this it is hard for employees to make decisions on behalf of the trail. While the lack of structure regarding development in this area is accepted as normal among local residents, there are still some aspects of formal development that could help the interaction between the Sendero Pacífico and the residents of the Monteverde area.

3.3 ACTIVITY PREFERENCES OF POTENTIAL USERS OF THE SENDERO PACÍFICO

3.3.1 HIKING PREFERENCES

We found that the vast majority of respondents to the tourist survey were most interested in the scenery along the route of their hiking trail, with 56% ranking it as number one in terms of importance (See Figure 23). Once this trend had been discovered, we broke down the data into two age groups, 18-49 and over 50 years old. This data revealed that while scenery was still the most important among both age groups, 22% of respondents over 50 cited level of difficulty as their top concern when choosing a trail, whereas only 9% of those under 50 were driven by this information as their top priority. This leads to the conclusion that with age, the concern about difficulty and exertion increases. Overall, 90% of respondents preferred a hike that was under six hours. Despite this overwhelming majority, the Sendero Pacífico currently only has options for hikes that

last over six hours. This fact may turn perspective users away, in favor of a shorter hike. Additionally, we determined whether travelling alone, with family, or in a group would affect the desired duration of a hike. We discovered that 58% of those travelling with family would prefer a hike that lasted under three hours, whereas only 33% of those travelling alone were interested in a hike of the same duration. This may be due to the fact that families tend to contain people of varying ages and physical abilities who may not be able to hike for long periods of time. However, we did not find a correlation between preferring a longer hike and who the respondent was travelling with. The lack of correlation between these two responses is due to the fact that only 10 out of the 93 respondents who stated that they were interested in hiking expressed interest in a hike that was over six hours. This also means that by only offering hikes that appeal to a narrow demographic, the Sendero Pacífico is isolating a majority of potential users.

While these findings may display trends, it is important to acknowledge that the given sample may not be representative of the entire population because our sample size of 114 is less than 1% of the tourists that come to Monteverde annually. Additionally, this survey was only offered in English and Spanish which leads to a nonresponse bias in those who do not speak either of these languages. The trends observed from our data may continue over a larger portion of the population, but given this sample size, the results we have gathered cannot be deemed to be statistically significant.

3.3.2 TRAVEL PREFERENCES AND PLANNING

Many travelers plan their trips in advance, and because of this it is difficult for the Sendero Pacífico to attract users that are already in the Monteverde area due to their lack of

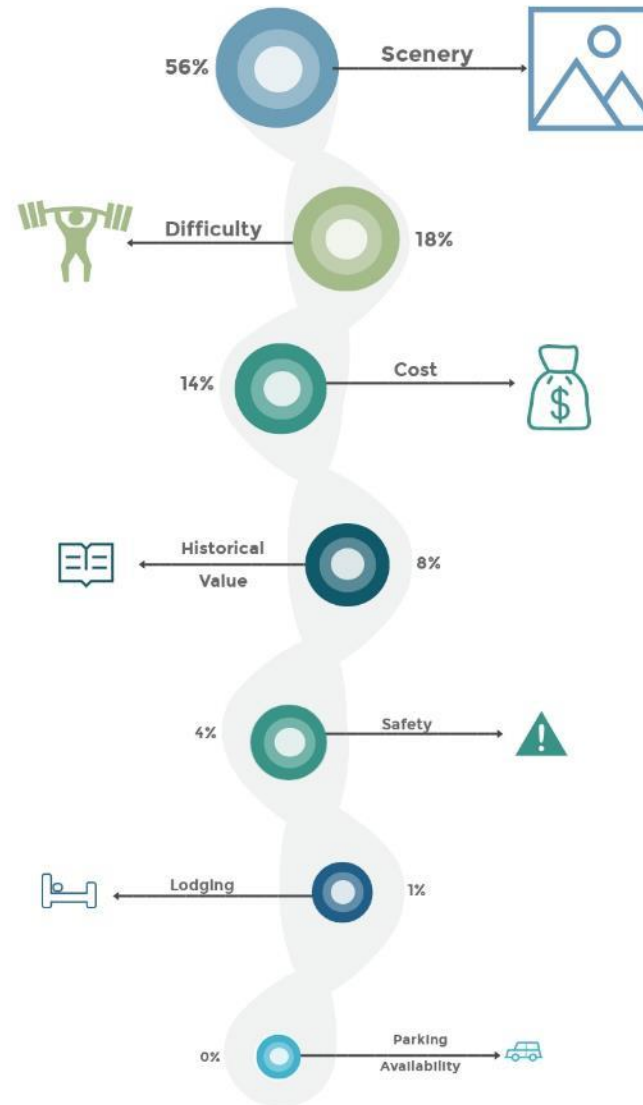


Figure 23: A visual representation of the survey results

preparedness for alternative activities. Through our interviews with local hospitality businesses, we learned that while many hotels and hostels get asked for advice on activities in the area, most travelers have the majority of their trip planned before arriving. Tickets to adventure parks and reservations for fast paced activities, such as zip lining or bungee jumping, are generally booked in advance and are some of the most popular destinations in the Monteverde area (Local Business Employee A, 2019). The travelers that ask for advice are usually not interested in excursions that take more than a few hours, as this would cut into the time that they have already planned out. Typically, tourists that are already in Monteverde do not have the time, experience, or gear for a multiple-day hike, especially if they were not able to prepare for it in advance (Local Business Employee A, 2019). This makes it difficult for the Sendero Pacífico to attract individuals that are visiting in the Monteverde area because they have not planned to walk the Sendero Pacífico ahead of time.

The number of potential users that have a lack of information about the Sendero Pacífico can be addressed by the use of online media such as a website. We have also observed that while the Sendero Pacífico has a website, it does not appear in the top results for hiking in the Monteverde region. This can lead interested individuals to choosing other locations over the Sendero Pacífico because they are easier to find. Additionally, when the Sendero Pacífico’s page is found, it does not offer information about hiking, but rather gives the option to contact a representative. The lack of immediate information can deter hikers from choosing this destination.

While the Sendero Pacífico is putting efforts towards attracting more users, they are not addressing their target audience of those who are interested in multiple day hikes. We

found that only 9.7% of the respondents from our survey were interested in a hike over six hours. This led us to the conclusion that tourists in this area are not the audience that should be focused on to increase usage of the Sendero Pacífico.

3.4 COMMON PROMOTIONAL TECHNIQUES OF LOCAL ATTRACTIONS

3.4.1 LOCAL PROMOTIONAL TECHNIQUES

Through interviews conducted in Objective 2, we found that 86% of the representatives interviewed at hotels and hostels are asked for advice on activities or locations to visit by their guests (see figure 24). Hotels and hostels located farther from tourist centers were more likely to report that they are frequently asked for advice on travel plans such as options for local activities or transportation (Local Business Owner B, 2019). Regardless of location, we found that all hospitality businesses interviewed were willing to advertise the Sendero Pacífico by



Figure 24: 87% of hospitality businesses receive commission

passing along information to guests that inquired about these types of hikes.

From several of our interviews, we found that many paid activities in the Monteverde area will offer hotels and hostels a percentage of the revenue made from selling tickets in exchange for suggesting the attraction to their clients. Most of the hospitality businesses interviewed were very open about being much more likely to promote a business if they can receive a commission in exchange for the advertisement. Because the Sendero Pacífico is a free network of trails, they cannot offer a commission in exchange for promoting the trail. As a result, it may be more difficult for the Sendero Pacífico to advertise through hospitality businesses than it is for paid activity providers. However, out of the 14 businesses interviewed, two were observed to be very interested in promoting the trail and would even consider promoting it over other locations or trails despite not receiving any commission. The remaining 12 businesses were somewhat interested in promoting the trail, meaning that they would be willing to recommend it if asked directly about free hiking, or as a lesser priority, secondary to the sites that they will receive a commission from.

3.4.2 CURRENT PROMOTIONAL TECHNIQUES OF THE SENDERO PACÍFICO

Currently, the Sendero Pacífico sends one or two trail volunteers to Santa Elena every Thursday morning to try to find backpackers in the area that would be interested in hiking the Sendero Pacífico during the following weekend. These hikes last from Thursday afternoon until Saturday afternoon. However, our survey data showed that the majority of the tourists that we surveyed are not interested in hikes lasting several days, and would instead prefer a shorter hike of 0-6 hours. As a result, this

strategy has not been very effective in drawing hikers from the demographics of tourists that are already in the Monteverde region.

While the trail volunteers are in Santa Elena to attract backpackers, they occasionally bring flyers, as seen in Figure 25, including all of the information about the full-length hike to give to local hospitality businesses, though they have not shared many of the flyers yet. The flyers do not advertise many aspects of the trail such as scenery, and are mostly seen by people who already have their vacation planned. As a result, the trail volunteers have said that the flyers have not been very successful.

Our sponsor brought to our attention that while these efforts are in progress, many of the hikers who have actually



Figure 25: Current Flyer Design

done the full length of the trail so far were found over Facebook through backpacking pages and groups. The hikers planned to meet volunteers from the Sendero Pacífico before they traveled to Monteverde, and had all of the necessary skills and equipment with them when they arrived. Online advertising has shown to be the most effective of any of the marketing strategies currently in use by the Sendero Pacífico to attract thru-hikers or long-distance hikers. This is because it allows for hikers to carefully

plan their trip in advance, including accounting for the proper time and equipment required for this multi-day hike.

Online marketing has proven to be the most effective marketing strategy for the Sendero Pacífico. After realizing the importance of online presence, we chose to analyze the current website and social media use of the trail. For example, they have a Facebook page, but posts are fairly infrequent and there is not much information included on the home page. The World Trails Network - Americas has an Instagram page that frequently posts about the Sendero Pacífico, seen in Figure 26, but there is no Instagram account specifically for the trail. Also, the trail is not yet posted on popular travel sites that many people use to plan their trips, making it less likely for people to see the trail when searching for places in Monteverde to visit. Finally, the trail’s website does not have much information. There is not much written about the current state of the trails, meaning that potential visitors may be unclear about available hiking and other options at the trail. There is also not an option to reach out to contact representatives directly, although there is a contact form on the website. Despite the fact that most through-hikers of the trail have been found online, the online presence of the Sendero Pacífico is not very strong, which could be part of the reason there have not been many backpackers interested in the full hike.



Figure 26: The World Trails Network - Americas Instagram page

4.0 RECOMMENDATIONS AND CONCLUSIONS

The World Trails Network is working continuously to increase the visibility and awareness of the Sendero Pacífico within the Monteverde community. We have found several areas of improvement related to increasing visibility of the trail system, through new advertising strategies and urban trail

development. The following chapter outlines our recommendations and explains our final conclusions.

4.1 CREATE A STRONGER PRESENCE OF THE SENDERO PACÍFICO ONLINE AND WITHIN HOSPITALITY BUSINESSES

4.1.1 INCREASE ONLINE PRESENCE

We found from our interviews that most travelers plan their trips in advance. As a result, many of the activities that take more time or effort to coordinate, including many of the recommendations from hotels or hostels, may not be feasible for many travelers to work into their schedule. In many cases, most of this planning is done by online research (Travel Weekly, 2012). Currently, the online presence of the Sendero Pacífico is not as strong or prevalent as it could be. By including more information on the website, as well as making accounts on more social media platforms and regularly posting, brand recognition would be improved. Figure 27 shows the recommendations made for each social media platform.

Our first recommendation for increasing the online presence of the Sendero Pacífico is to increase their social media activity. While there is already a Facebook page, called “The Sendero Pacífico ~ Pacific Trail Slope”, it is not very active. There is not currently an Instagram account specific to the Sendero Pacífico, but there is a WTN - Americas account (@wtnamericas) that frequently posts about the Sendero Pacífico. We recommend creating an Instagram account specific to the trail system, then linking it to the Sendero Pacífico Facebook page. This would allow posts made on the Instagram account to be automatically posted to the Facebook page, increasing the number of views without having to make separate posts. We also suggest encouraging the use of hashtags such as

“#senderopacifico” when hikers post their photos, to make them easily searchable (see Figure 28). The Sendero Pacífico could



Figure 27: Recommendations for social media usage

then feature some posts as well as tagging their location to further increase their presence on Facebook and Instagram. We also suggest creating accounts on social media sites such as Twitter for live updates of hikes, or Flickr for nature photographs taken on the trails. By including social media handles and the website on new signs or kiosks, these accounts and posts would be easily accessible to interested visitors.

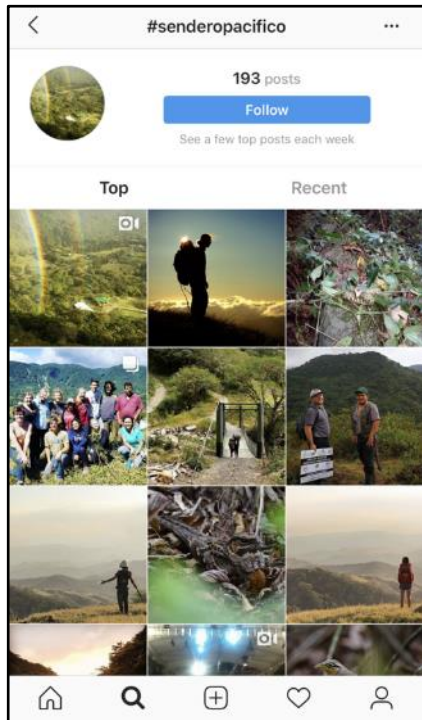


Figure 28: Search results for #senderopacifico

We suggest primarily posting photographs of the scenery and views from the lookouts along the trail because our survey results show that this is what people value most when choosing a hiking trail. We also suggest posting pictures of the field station and dormitory in San Luis as well as other features that may be interesting to potential hikers. We recommend against posting many photos featuring large groups of people, because several participants of our survey answered the open-ended question by saying that they try to avoid overcrowded trails. Although it may not be representative of the status of the trails,

if the posts show too many people, potential visitors may be turned away.

Along with social media, the online presence of the Sendero Pacífico could also be improved through their website. Currently, when the website is opened it automatically directs to a tab called “The Vision”. We recommend that a general home page is created, giving the option to pick between multiple pages on the site. An example layout is shown in Figure 29. This may allow for a more immediate understanding of the format of the site. We also suggest including more information in written form, aiming for approximately the same amount of visuals such as photos or videos as written information. Currently, there are several YouTube videos on the site without captions or



Figure 29: Suggested website homepage design

explanation, which is not an effective way of communicating information. We suggest putting videos and photos side by side with an explanation of what the graphic is depicting or explaining.

We also have recommendations related to each of the five subsections on the website. For “The Vision”, we suggest including more information about the trails, including the development process to date. This information could be very interesting to potential visitors, possibly encouraging them to volunteer some of their time. Under the section labeled “The People”, we suggest including more explanation about the fact that the Sendero Pacífico is a volunteer trail. We also suggest including a short description of each of the videos, explaining the partnership with the World Trails Network, and explaining the fellowship program. The section called “The Trails” would benefit from further explanation of the map currently featured (See Figure 30), indicating that it is a plan for the future and explaining the concept of active communities. We also suggest including the new maps that were recently completed by an intern and making it clearer where trails are accessible. Currently, it is not clear which trails are open, potentially deterring people from wanting to hike. We also suggest adding a section to this tab showing interesting sites along the trail, including photos. We recommend including information about where users of the trail would be able to stay during their hike, because our sponsor stated that they follow a hut-to-hut model. In the “Hike the Trails” section, we suggest including contact information so interested visitors have the option to reach out on their own terms as well as use the form on the website, along with including the social media handles so more information is readily accessible. This could be included into one page titled “The Trails”. Finally, for the “Volunteer” tab, we suggest explaining what the volunteers would do, along with different positions available. Similar to the “Hike the Trails” section, we suggest including several options for contacting the coordinators of the Sendero Pacífico about different ways to sign up to volunteer. With these changes, the website would be more useful

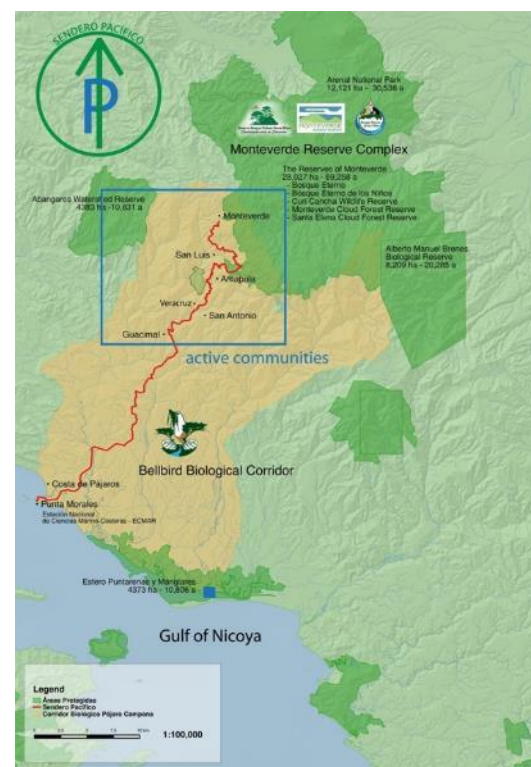


Figure 30: Map currently featured on the Sendero Pacífico website

to visitors trying to get more information, making them more likely to hike or volunteer on the Sendero Pacífico.

Finally, we suggest adding the Sendero Pacífico as a destination on popular travel websites such as TripAdvisor and Lonely Planet and backpacking websites such as Backpacking Light and BestHike. From speaking to tourists after they completed our survey, we learned that many people use these websites to help plan their trip, so travel websites could be a way to reach potential visitors that do not find the website or social

media accounts online. We recommend building a presence on these sites and linking the website and social media accounts to these pages, encouraging visitors to leave positive reviews.

People may go out of their way to make hiking all or part of the Sendero Pacífico a key part of their trip if the information is more readily available through basic online searches. For example, when you search for attractions in Costa Rica, many popular parks and attractions such as Arenal, Manuel Antonio, and the Monteverde Cloud Forest Reserve are some of the top suggestions. With enough visitors and awareness of the trail's existence, along with its eventual completion, the Sendero Pacífico could become one of the major attractions in Costa Rica.

4.1.2 INCREASE IN-PERSON NETWORKING

There is currently a new Sendero Pacífico logo in development. After the new logo is finalized, it is important to create a sense of recognition for it, both online and in person. This “brand recognition” can take an organization, group, or site from being largely unknown to commonly referenced (Rouse, 2013). In the case of the Sendero Pacífico, reassurance and wayfinding signs with the logo will spark curiosity, and people will likely either see a kiosk and be interested in reading more, or will search online for more information. Brand recognition is another reason why it is so important to create a strong online presence because those interested in learning more will want the information to be readily available. We suggest having prominent wayfinding signs and kiosks with the logo, making it very visible to the public eye. These signs should also have the website and social media handles printed on them, making finding more information easily accessible.

We also suggest creating flyers with less, but more specific information. Research shows that a clean, uncluttered design with minimal information is most likely to draw attention (Kirk, n.d.). From the results of the survey, we found that people are most interested in scenery when selecting a trail. Because of this, we suggest designing flyers with photos of the scenery and basic information about the location and contact information to draw attention. Flyers are generally most effective when accompanied by knowledgeable advice given in person (Peretson, 2012). For this reason, we also suggest that more detailed informational packets be left at the front desk of hospitality businesses, where the flyers are put up, so people can ask for more information if they are interested.

While distributing flyers to various hospitality businesses, we recommend working to build relationships with the business owners and representatives to increase the social presence of the Sendero Pacífico. Many tourists ask the employees at the hotels they stay at for advice and recommendations for activities. Because of this it is important that the employees have knowledge of the trail's existence and mission to be able to spread information to visitors about the trail. However, we found during our interviews that many of the interviewees had never heard of the Sendero Pacífico, despite working within ten kilometers of the trail head. By increasing their knowledge of the trail and its mission, they would be able to pass along more detailed information. This is important because most people are more likely to take advice if it is given in person than if they simply read about it (Warren, 2019). Even though most of the motivation for hotels and hostels to advertise one destination over another is commission, we suggest creating a positive working relationship with these businesses because this can lead to them suggesting the Sendero Pacífico more often. Word of mouth is a very powerful tool when advertising,

especially in rural locations. Many people are likely to pass information on to friends, family, or colleagues that may also be interested in hiking. This spread of information is very important to increase the number of people that are aware of and using the trail.

4.2 PROPOSE AREAS OF IMPROVEMENT TO OFFICIAL LEGISLATORS

Throughout our research we discovered specific locations along the main routes to the head of the Sendero Pacífico that were dangerous to walk on and could benefit from sidewalks or walkways. We believe that communicating with the community is the best way to develop these improvements. The World Trails Network and the employees and volunteers that work with the Sendero Pacífico cannot achieve this goal without the aid and support of the community.

As we discovered through our interviews, the process for improving and creating sidewalks through the municipality is very loosely structured. This lack of structure would make it more feasible for the municipality to accept recommendations on where sidewalks should be placed or improved. Addressing the local municipality before legislation is put into place may help to guide their efforts on how decisions are made and what areas should be focused on in coming years to add and develop sidewalks. We would recommend showing the employees the color-coded map of where the road is most dangerous as the proposed locations for improvement in the near future.

Shown in Figure 31 is a portion of our color-coded map that should be considered the initial area of improvement for sidewalk locations. These areas are the most trafficked, by both pedestrians and vehicles, based on our observations but some portions still lack safe sidewalks. The areas on this map denoted

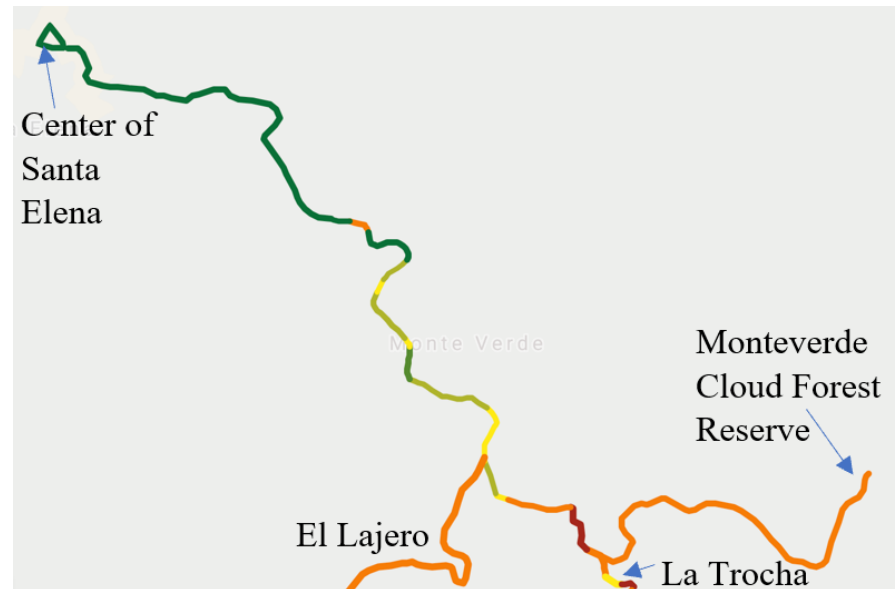


Figure 31: Color-coded map of the primary area for sidewalk improvements

by orange and red should be initially focused on for improvement, because these portions do not have any dedicated pedestrian walkways. Many people already walk this route despite the lack of sidewalks (Municipality Employee, 2019), making it a more immediate priority for improvement. When walkways are established in these areas, existing walkways should be improved to have easier terrain or even be paved. After safety is improved in these areas, later improvement should be focused on La Trocha, because this is the more common way to get to San Luis, as we found during our observations.

The proposed improvements would not only allow for easier access to the Sendero Pacífico but would aid in the pedestrian safety of walking to San Luis in general. If

accomplished, this would allow for tourists to better experience the Monteverde area because they are able to walk from place to place more easily. Additionally, improving the conditions for local residents who walk as their primary form of transportation would increase their safety and improve their experience.

4.3 FOCUS URBAN TRAIL DEVELOPMENT IN MORE TRAFFICKED AREAS

Using the results from our research and observations, we have developed a recommended route with a plan for sign and kiosk locations. Shown in Figure 32 is the map with the labeled locations for signs, kiosks, and lookouts. After analyzing the results of our field observations, we recommend that urban trail development begins in the most well trafficked, commercialized areas of the Monteverde region. This development includes not

only improving the locations that lack safe walkways, but also adding necessary signage and including the new sections of the urban trail on the overall Sendero Pacifico map. Specifically, the urban trail should be developed starting in the center of Santa Elena and connect to the Monteverde Cloud Forest Reserve, because 72% of this road already has dedicated pedestrian walkways. We believe this is the best approach to developing an urban trail that will increase visibility of the Sendero Pacífico while also making pedestrian safety a top priority. By beginning the development of the urban trail in more trafficked and commercialized areas, with currently existing sidewalks, the urban trail will provide a safer walking experience for all. It will be much more feasible to first focus on improving sidewalks and pedestrian walkways in the locations that they already exist rather than begin developing new ones during the initial development stages of the urban trail. For this reason, we recommend not initially including more dangerous roads, such as La Trocha, in the urban trail. In the future we recommend working with the local municipality and development associations to improve pedestrian walkway and sidewalk conditions in these more rural areas that are lacking. After these rural areas are improved, the urban trail should expand to include the more rural portions of the road. At the current state of the pedestrian walkways, we feel that it is unsafe to recommend a trail at the current state on the more dangerous portions of the San Luis road, which lack dedicated sidewalks and are generally less safe for pedestrians. However, when fully developed sidewalks connect Santa Elena to La Trocha, efforts should then be focused on improving the walkways on La Trocha and to the San Luis trail head, as a long-term goal. We feel that it should be a priority of the trail system’s employees and volunteers to focus on building a presence in the more highly trafficked areas, such as Santa Elena, before focusing on



Figure 32: Recommended urban trail route and sign placement

improving walkway conditions in more rural areas such as San Luis. Focusing on these areas is more likely to increase usage of the trail system than focusing on the more rural areas. To improve these walkways, we suggest making the terrain in unpaved areas smoother and leveled, possibly even paving some areas. However, to help increase the visibility of the Sendero Pacífico we do recommend including signs on the more rural roads because people may drive to the trailhead in San Luis and the signs will better direct potential users of the trail system and provide clarity. When the short and long-term urban trail improvements are fully completed, they should provide a safe, accessible, and well-marked path for walking from Santa Elena to San Luis.

We recommend including two larger kiosks in the center of Santa Elena, one located on the “triangle” (see Figure 33) and one located at the Centro Comercial Shopping Plaza near the bus station (see Figure 34). These two locations were chosen because during our observations we noticed that these areas were heavily populated with pedestrians throughout the day. However, our options for kiosk locations were limited due to a lack of open and accessible areas for larger signs that allow space for users to take time to examine the kiosk. Placing kiosks in areas that are heavily trafficked by pedestrians would likely increase the number of both local residents and tourists learning about the improved urban trail and the Sendero Pacífico as a whole. We recommend that these two larger kiosks include information about what the Sendero Pacífico is, how to hike the trails, and who to contact to get involved. The kiosks should also include a map of the entire Sendero Pacífico (see Figure 35) with an additional magnified section of just the urban trail, so users can tell more easily where they are and what is around them. The goal of these two larger kiosks is to help increase visibility of

the route to the Sendero Pacífico and the trail itself within the Santa Elena community.



Figure 33: Kiosk location recommendation by the “Triangle”



Figure 33: Kiosk location recommendation by the “Centro Comercial”



Figure 35: Most recently updated map of the Sendero Pacifico

To successfully guide users of the urban trail in the correct direction of its route and to the Sendero Pacífico trail head in San Luis, it is also necessary to have wayfinding and reassurance signs located along the route. We have suggested placements for wayfinding signs at locations that could be confusing for users of the trail to follow, such as intersections or at hidden paths, with a total of 9 recommended wayfinding sign locations (See Appendix F for a full guide of sign



Figure 36: Recommended sign placement around the "triangle"

placement). For example, we suggest locating two wayfinding signs on the North and South points of the “triangle” as seen in Figure 36. We chose these locations because the center of Santa Elena has several intersections and users of the trail that do not know the area will likely be confused on the direction of the urban trail without these indications. In addition, there are some sections of road where the urban trail will be located that can be confusing to follow. For example, there is an unmarked pedestrian walkway entrance that passes along the road near

the Monteverde Cheese Factory which we did not initially notice during our observations. This would be a great location for a wayfinding sign to draw better attention to the walkway and ensure that users of the trail are following the proper paths. In addition to the wayfinding signs we also recommend placing reassurance signs along the route of the urban trail. We recommend that the reassurance signs be located every 500 meters, to help users feel confident that they are continually walking on the correct path. These reassurance signs should have the finalized logo for the Sendero Pacífico with the distance to the San Luis trail head.

4.4 DEVELOP DAY HIKING OPTIONS WITH TRANSPORTATION

We found that 50.5% of respondents from our surveys preferred a hike that was under six hours that also showcased the scenery of the region. However, we also identified during our field observations that walking from the center of Santa Elena to the Sendero Pacífico field station in San Luis takes over two hours. For these respondents who wanted to walk for less than six hours, walking to and from the San Luis field station to go on a hike would entail spending almost the entire six hours walking on the road in preparation for the natural trail. This would also deprive them of the natural scenery that has been repeatedly ranked as extremely important because this route follows the existing roads which do not provide many opportunities to see nature.

To accommodate this, our team recommends that the Sendero Pacífico develop and promote their own day-hike trails. While this is not the overall vision of the Sendero Pacífico, these shorter options have the ability to attract more users to the trail

and increase social presence. This will create the potential of drawing in additional users through word of mouth promotion. Promotion of day-hike trails should be similar to those of the long-distance trail to create a cohesive and professional appearance. However, they should highlight the shorter distance of the trails and include information about local transportation services. While transportation would make the trails more accessible to additional users, it will also identify free hiking to the taxi and shuttle drivers who may recommend the Sendero Pacífico as an option for local hiking to others who utilize their services. For the Sendero Pacífico, catering to their audience and allowing for variation in hiking durations can increase the scope of their users and promote its use to both tourists and locals alike.

4.5 CONCLUSION

For the World Trails Network, this new urban trail system will help to increase visibility of the main trail of the Sendero Pacífico, and is likely to cause an increase in usage of the trail over time. Combined with this recommended urban trail, new promotional strategies have the potential to increase the visibility of the overall trail system as well.

Our findings can be used by organizations other than the World Trails Network that focus their initiatives around bettering the community. If the future urban trail proves to be a successful model it could help other trail systems and community groups complete similar goals. In addition, the Municipal Council of the Monteverde District could utilize the analysis that we have completed about walkway safety of the area to develop long term improvement plans. Other non-profit organizations that are looking to advertise themselves through hospitality businesses could also use the results of our interviews and research to further their visibility. Overall, our findings

could be used as a basis for further development of these areas of the Monteverde community.

The results of this project have the potential to benefit the community of the Monteverde region, as well as the World Trails Network and its current development of the Sendero Pacífico. Local communities can benefit from the increased and improved walking paths that could be provided by a future urban trail through the area. In addition, our recommended urban trail could provide tourists with better access to the rural communities of this region, which allows for more opportunities to experience local culture. This potential increase in rural tourism could also provide a boost in the local economies.

The development of this urban trail will be used to increase the visibility of the Sendero Pacífico, and help the trail system achieve one of its overall goals of making green spaces more accessible to both tourists and local residents.

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6.0 APPENDIX:

APPENDIX A: WALKWAY RANKING SYSTEM

This walkway ranking system was used to categorize sections of walkways based on their safety. These colors were then applied to a map of the area.

Level	Description	Criteria
1	Excellent	A designated walkway with separation from the road with high visibility* for pedestrians and vehicles. Well maintained terrain that is wide and flat without major obstructions**.
2	Good	A designated walkway with separation from the road with high visibility for pedestrians and vehicles. The terrain is well maintained, but the walkway may be more narrow and have some minor obstructions.
3	Fair	A designated walkway with separation from the road and with some visibility for pedestrians and vehicles. The terrain is not maintained and is narrow with some large or hazardous obstructions.
4	Poor	No dedicated walkways with limited visibility for pedestrians and vehicles. Walking directly on the road does not pose a direct threat to pedestrians.
5	Unacceptable	No dedicated walkways with little to no visibility for pedestrians and vehicles. Walking directly on any portion of this type of road is consistently hazardous.
N/A	-----	Paths dedicated to walking, with no vehicle access

* Visibility refers to the ability for cars and pedestrians to see each other with enough time to react to the oncoming traffic.

** Examples of obstructions include large rocks, tree roots, or stumps.

APPENDIX B: MUNICIPALITY INTERVIEW QUESTION SET

Goal: Determine rules and regulations about sign placement and future sidewalk improvement programs.

Preamble:

We are students from Worcester Polytechnic Institute in the United States and we are working with the World Trails Network to develop an urban trail system in Santa Elena for the Sendero Pacífico, which is a free long-distance hiking trail across Costa Rica. It currently begins in San Luis and we are working to connect it to Santa Elena. In addition, it is an entirely community-based hiking trail network.

All participation in this study is voluntary and may be ended at any time for any reason and you do not have to answer all questions. At any time, you are encouraged to ask questions about our project or for an explanation of our questions. We will not release your name or other identifying information. If you would like, we can provide you with a copy of the final results of this project, which will be published online, via email. This interview will take no longer than 30 minutes. The researchers, Ava Capuano, Matthew Mulligan, Emily McEachern, and Everest Peacock, can be reached by email at sendero-MV19@wpi.edu or you can reach the project advisors, Melissa Belz and Courtney Kurlanska at mbelz@wpi.edu and cbkurlanska@wpi.edu.

Interview questions:

1. We've heard that there is a grant to put more sidewalks in Santa Elena. Would you be able to tell us more about that?
2. Are sidewalks city owned? How have some businesses gotten permission to draw or paint on the sidewalks in front of their businesses?
3. What are the policies regarding signage? We've heard that signs have to be a certain distance from the road, but do they need permits?
4. Are there land ownership maps that are accessible to the public? If so, how would we be able to access that information?

Preámbulo:

Somos estudiantes del Instituto Politécnico de Worcester en los Estados Unidos y estamos trabajando con la World Trails Network para desarrollar un sistema de senderos urbanos en Santa Elena para Sendero Pacífico, que es una ruta de senderismo de larga distancia gratuita en todo Costa Rica. Actualmente comienza en San Luis y estamos trabajando para conectarlo con Santa Elena. Además, es una red de senderos para caminatas totalmente comunitaria.

Toda la participación en este estudio es voluntaria y se puede finalizar en cualquier momento por cualquier motivo y no tiene que responder todas las preguntas. En cualquier momento, se le recomienda hacer preguntas sobre nuestro proyecto o una explicación de nuestras preguntas. No revelaremos su nombre u otra información de identificación. Si lo desea, podemos proporcionarle una copia de los resultados finales de este proyecto, que se publicará en línea, por correo electrónico. Esta entrevista no durará más de 30 minutos. Puede comunicarse con los investigadores, Ava Capuano, Matthew Mulligan, Emily McEachern y Everest Peacock, por correo electrónico a sendero-MV19@wpi.edu o puede comunicarse con las asesoras del proyecto, Melissa Belz y Courtney Kurlanska en mbez@wpi.edu y cbkurlanska@wpi.edu.

Preguntas de entrevista:

1. Hemos escuchado que hay una subvención para poner más aceras en Santa Elena. ¿Podrías decirnos más sobre eso?
2. ¿Las aceras son propiedad de la ciudad? ¿Cómo han conseguido algunos negocios permiso para dibujar o pintar en las aceras frente a sus negocios?
3. ¿Qué son las reglas con respecto a la señalización? Hemos escuchado que las señales deben estar a cierta distancia de la carretera, pero ¿necesita permiso para poner señales?
4. ¿Hay mapas de propiedad de la tierra que sean accesibles al público? Si es así, ¿cómo podríamos acceder a esa información?

APPENDIX C: INTERVIEW QUESTIONS FOR HOSPITALITY RELATED BUSINESSES

Goal: To determine if businesses and other organizations would be interested in advertising the Sendero Pacífico or participating in other ways.

Preamble:

We are students from Worcester Polytechnic Institute in the United States and we are working with the World Trails Network to develop an urban trail system in Santa Elena for the Sendero Pacífico, which is a free long-distance hiking trail across Costa Rica. It currently begins in San Luis and we are working to connect it to Santa Elena. In addition, it is an entirely community-based hiking trail network.

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Interview Questions:

For Businesses:

1. How long has your business been in Santa Elena?
2. Who is your typical customer?
3. Do you know how they get to your business?
 - a. (Do they walk or drive or take public transportation?)
4. Can you tell us more about your business?

For hostels:

1. How long have you been in business?

2. Do you tend to have regulars (or see the same people often)?
3. Do people come to you for activity suggestions for this area?

For tourist information centers:

1. How long have you been in in operation?
2. Who typically comes here for information? E.g. Families, Backpackers, Individuals etc.
3. What are the most common activities people ask you about?
 - a. Are people often interested in hiking?

For all after introduction questions:

1. Have you ever heard of the Sendero Pacífico?
 - a. If yes, where did you hear about it?
2. Would you be willing to advertise the trail through your business (or tourist center or hostel)? In what way could the Sendero Pacífico be advertised on your property?
 - a. Eg: Flyers, posters on a bulletin board, signs on the property, etc.
3. What is your policy on advertising?
4. Would you be interested in participating in events or meetings related to the Sendero Pacífico and its development?

We have information that we can give you about the Sendero Pacífico and how to contact the local coordinators that we will leave with you. Please reach out with any questions or if you are interested in the trail and its operations. Thank you for your time.

Interview questions for hospitality related businesses - Spanish

Goal: To determine if businesses and other organizations would be interested in advertising the Sendero Pacífico or participating in other ways.

Preámbulo:

Somos estudiantes del Instituto Politécnico de Worcester en los Estados Unidos y estamos trabajando con la World Trails Network para desarrollar un sistema de senderos urbanos en Santa Elena para Sendero Pacífico, que es una ruta de senderismo de larga distancia gratuita en todo Costa Rica. Actualmente comienza en San Luis y estamos trabajando para conectarlo con Santa Elena. Además, es una red de senderos para caminatas totalmente comunitaria.

Toda la participación en este estudio es voluntaria y se puede finalizar en cualquier momento por cualquier motivo y no tiene que responder todas las preguntas. En cualquier momento, se le recomienda hacer preguntas sobre nuestro proyecto o una explicación de nuestras preguntas. No revelaremos su nombre u otra información de identificación. Si lo desea, podemos proporcionarle una copia de los resultados finales de este proyecto, que se publicará en línea, por correo electrónico. Esta entrevista no durará más de 30 minutos. Puede comunicarse con los investigadores, Ava Capuano, Matthew Mulligan, Emily McEachern y Everest Peacock, por correo electrónico a sendero-MV19@wpi.edu o puede comunicarse con las asesoras del proyecto, Melissa Belz y Courtney Kurlanska en mbez@wpi.edu y cbkurlanska@wpi.edu.

Preguntas de entrevista:

Por negocios:

1. ¿Cuánto tiempo lleva su negocio en Santa Elena?
2. ¿Quién es su cliente típico?
3. ¿Sabe cómo llegan a su negocio?
 - a. (¿Caminan o conducen o toman transporte público?)
4. ¿Nos puede contar más sobre su negocio?

Para albergues:

1. ¿Cuánto tiempo ha estado en el negocio?
2. ¿Tiende a tener clientes habituales (o ve a las mismas personas a menudo)?
3. ¿La gente acude a usted para sugerencias de actividades para esta área?

Para centros de información turística:

1. ¿Cuánto tiempo ha estado en operación?
2. ¿Quién suele venir aquí para obtener información? P.ej. Familias, mochileros, individuos, etc.
3. ¿Cuáles son las actividades más comunes que se preguntan las personas?
 - a. ¿Las personas a menudo están interesadas en el senderismo?

Para todos:

1. ¿Alguna vez has oído hablar del Sendero Pacífico?
 - a. Si es así, ¿dónde se has enterado?
2. ¿Estaría dispuesto a anunciar el sendero a través de su negocio (o centro turístico u hostel)?
 - a. ¿De qué manera se puede anunciar el Sendero Pacífico en su propiedad?
Por ejemplo: volantes, carteles en un tablón de anuncios, carteles en la propiedad, etc.
3. ¿Cuál es su política de publicidad?
4. ¿Estaría interesado en participar en eventos o reuniones relacionadas con Sendero Pacífico y su desarrollo?

Tenemos información que podemos proporcionarle sobre Sendero Pacífico y cómo contactar a los coordinadores locales que le enviaremos. Comuníquese con cualquier pregunta o si está interesado en el sendero y sus operaciones. Gracias por su tiempo.

APPENDIX D: RANKING SURVEY QUESTIONS

This survey was given to locals and tourists using the Crowdsignal application.

Goal: The goal of this survey is to identify the most attractive attributes of a hiking trail to different demographics.

1. Would you be interested in hiking in Monteverde?
 - a. Yes
 - b. No
2. Which of the following durations would be most appealing to you for a hike in this area?
 - a. 0 - 3 hours
 - b. 3 - 6 hours
 - c. 6 hours - overnight
 - d. Multiple days
3. Please rank these in order of importance when selecting a hiking trail in this area:
 - Cost
 - Difficulty level
 - Historical value
 - Lodging options
 - Parking availability
 - Safety
 - Scenery/Viewpoints
4. Was there anything missing from the previous list? (optional)
5. Do you live in the Monteverde area?
 - a. Yes
 - b. No
6. Who are you traveling with? (Check all that apply)
 - Alone
 - Family
 - Friends
 - School trip
 - Tour group
 - Other
7. Please Select your age.
 - a. Under 18
 - b. 18-24
 - c. 25-34
 - d. 35-49
 - e. 50-65
 - f. Over 65
8. What is your gender?
 - a. Male
 - b. Female
 - c. Other
 - d. Prefer not to specify

If the respondent answers “No” on question 1 they automatically moved onto question 5. If the respondent answers “Yes” to question 5 they automatically moved onto question 7.

Ranking Survey Questions - Spanish

1. ¿Te interesaría el senderismo en Monteverde?
 - a. Sí
 - b. No
2. ¿Cuál de las siguientes duraciones sería más atractiva para usted para una excursión en esta área?
 - a. 0 - 3 horas
 - b. 3 - 6 horas
 - c. 6 - un día
 - d. Días múltiples
3. Clasifique estos
 - Costo
 - Disponibilidad de estacionamiento
 - Nivel de dificultad
 - Opciones de hospedaje
 - Paisaje/Miradores
 - Seguridad
 - Valor histórico
4. ¿Faltó algo en la lista anterior? (Opcional)

5. ¿Vive en la zona de Monteverde?
 - a. Sí
 - b. No
6. ¿Con quien está viajando? (Marque todo lo que corresponda)
 - Amigos
 - Familia
 - Grupo de Tour
 - Solo
 - Viaje de Escuela
 - Otra
7. Por Favor, selecciona su edad.
 - Menor de 18
 - 18-24
 - 25-34
 - 35-49
 - 50-65
 - Mayor de 65
8. ¿Cuál es su género?
 - Hombre
 - Mojer
 - Prefiero no especificar
 - Otra

APPENDIX E: RECOMMENDED URBAN TRAIL ROUTE

Below is the map of our recommended urban trail route with suggested locations for informational kiosks, wayfinding signs, and scenery viewpoints. A legend can be found below the map for symbol information.



Map Legend:

Symbol			
Meaning	Informational Kiosk	Wayfinding Sign	Scenery viewpoint

APPENDIX F: WAYFINDING SIGNS SPECIFIC INFORMATION

Below is a map with a descriptions of each recommended wayfinding sign location and information about why each sign was needed.

The following chart was created to help explain the locations of the wayfinding signs:

Wayfinding Sign Number	Location Description
1	Across the street from the Municipal Council of the Monteverde District.
2	On the corner of the triangle next to the Camara de Turismo.
3	On the corner with the large sign across the street from the two restaurants, Charlys and Don Luis.
4	At the intersection next to Hotel Bellbird.
5	Near the signs for the Bat Jungle.
6	To help point users to the walking path that is directly after the entrance to the Cultural Center.
7	At the turn off for El Lajero.
8	To help point people to the walking path in front of the Friends School.
9	At the turn off for La Trocha.

