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## Introduction

This report addresses issues surrounding development of a conceptual Mauna Loa Mauka Trail System on the Big Island of Hawaii. This trail system would partially or totally encircle Mauna Loa – the biggest volcano in the world. Rationales for the potential types of uses and conceptual levels of developments along the trails in this system are included. These rationales will help those charged with trail planning and design to select a feasible mix of uses which in-turn will guide further design and development.

An approximately 120 mile loop trail system around Mauna Loa – or a Mauka Trail of less distance -- could provide numerous opportunities for visitor experiences. For some, it would simply be a place to walk or backpack with their own equipment and food. For others it could be a lodge to lodge hike where all lodging, food, and transportation to and from roadsides are provided for a fee. Or it could even be a place for a round-the-mountain competitive run – the “The Mauna Loa Man?”

The report is based upon a literature review, and my professional and personal experience. My professional outdoor recreation design and implementation experience has spanned the last 40 years. Web sites for a number of similar trails were examined. (See Bibliography.) I have backpacked several hundred miles on similar trails and have day-hiked on hundreds of miles of trails also.

## Why create a trail system?

Visitors come to the Big Island of Hawaii to see or experience something different from their home.<sup>2</sup> They may come with the image of sun, sea and surf. Or perhaps they saw an advertisement for a hotel that offered something they haven't found elsewhere – swim with the dolphins. If it is only sun, sea and surf they seek, those can easily be found elsewhere in the world and for less money.<sup>2</sup> The next time they book a vacation they could go somewhere else unless there is something that uniquely draws them to the Big

Island. We know the island is unique. But, many of those unique features and experiences may not be known or available to residents and visitors.

Although there are a number of inland trails on the Big Island, many are in a marginal state of repair. Some do not have a safe, well designed parking area at the trail head. Many don't even have parking facilities or even identification or entrance signs. Restrooms are scarce and trails are overgrown with weeds. Interpretive signs or numbered posts along some trails are in disrepair. Some of the features identified on signs have died (trees) or have otherwise been destroyed. Trail surfaces are poorly maintained, being interrupted by mud holes, roots and washouts. This situation is not very inspiring for Big Island residents and hardly an attraction for off-island visitors to return.

What unique things does the big island have to offer? There are many. Mauna Loa for one: – an almost 14,000 foot active volcano and the largest volcano by mass of any in the world. Its flora and fauna from mountains to sea is unique compared to anywhere in the mainland US and most other areas of the world. And, mountain flora and fauna on the middle slopes of Mauna Loa differ considerably from those at sea level. The recent and ancient cultural histories of the Island are also unique.

A Mauna Loa Mauka Trail would add yet another reason for visitors to stay longer. A 60 to 70 mile trail on the south and west sides of the mountain at about 5,000 feet elevation would show great examples of the geological history, biodiversity and cultural history. Better yet, a 120 to 130 mile long round-the-mountain trail or Mauna Loa Loop Trail would display the diversity of flora and fauna found in habitats from the rain forest and cloud forest to considerably drier, higher elevation sites. Visitors returning from any portion of the trail would undoubtedly want more. Thus, they would return for future installments and perhaps even longer stays on the Big Island. This could, of course, support the hotel and other tourist trades but also would support the conservation of these unique big island habitats and cultures. Building more hotels wouldn't accomplish this alone. – just as the song goes; *“don't it always seem to go that you don't know what you've got till its gone; they paved paradise and put up a parking lot.”* (Woody Guthrie)

## Three types of trails proposed for the trail system

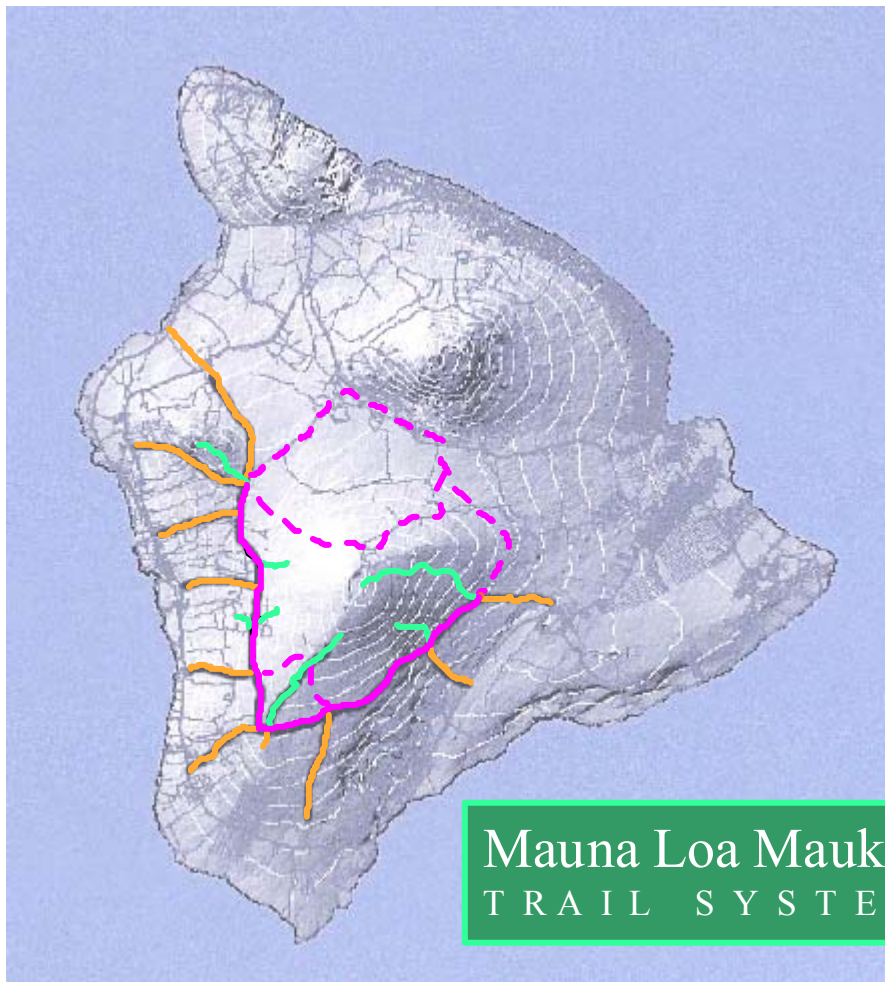
Much of the land where the primary trail could go is privately owned or otherwise quite inaccessible from the paved island roads. A primary round-the-mountain trail, if public easements can be created, could be primarily constructed on existing dirt roads. Numerous natural and cultural features are found along this potential primary trail alignment. Many other natural and cultural features are located a short distance from the primary trail. Island roads do connect with the potential primary trail at a few spots. But, more secondary trail connections would make accessing specific sections of the primary trail more convenient.

A trail system including three general types of trails could solve the challenges presented in the preceding paragraph. The three types would be; 1. Primary trail, 2. Feature trails and 3. Connection trails. (See diagram on the next page).

The *primary trail* would give the trail system a clear identity or signature. It would be tied to a known geographic feature Mauna Loa. Thus, it might be called Mauna Loa Loop Trail or Mauna Loa Mauka Trail. Similar trails, the Wonderland Trail (around Mt. Ranier) and the Mt. Hood Loop Trail in Washington and Oregon respectively are quite popular. Trail names are frequently tied to a prominent geographic feature. (Even though the Wonderland Trail is not named after a peak it is in a park so named). The San Francisco Bay Trail celebrates and derives its name from a known feature. The Ala Kahakai Coastal Trail being planned by the National Park Service along the west and south coasts of the Big Island relates to known geographic feature – the shoreline of the Big Island – even though you have to understand Hawaiian to know that. (A number of people at public hearings for the Ala Kahakai Trail have suggested that that trail should encircle the entire island at near sea level.) Visitors would also be given a choice of several **alternative primary** trails to see different features and perhaps avoid seasonal or periodic closures.

The *feature trails* would offer enhancements or alternatives to the primary trail. Some would simply be spur trails to natural or cultural features or scenic view spots not found right on the primary trail. A feature trail might leave the primary trail at the southwest rift zone and climb to 8,000 feet up Mauna Loa to see some unique geologic features. Another example feature trail might leave the primary trail then end in a forest bird rich, ohia forest. Visitors would backtrack to return to the primary trail. Some of these would not be on existing dirt roads. The geologic “trail” example might consist of following rock cairns across the lava slope.

*Connection trails*, as the name implies, connect the primary trail to Hawaii paved roads. Some of these connections might simply consist of a 300 yard trail from a parking lot where the paved roads are close to the primary trail. In many other places the connections will be several miles long and climb 4,000 feet in elevation. Most of these connections could occur on existing dirt roads.



Trail Class Legend	
	Primary Trail and alternates
	Feature Trails
	Connection Trails

Note: The trails depicted are conceptual only

## What range of uses could be allowed on the various trails in the system while minimizing inter-user conflicts?

Recreational activities can be categorized as uses or experiences. Some basic **recreational uses** which could occur along the trails are:

- Day hiking
- Backpacking (multiple day hiking)
- Destination lodges – with day hikes
- Full-service lodge to lodge hiking
- Simple hut to hut hiking (with prepared meals)
- Simple platform camping (bring own food)
- Tent camping
- Horse camping
- Horseback riding
- Round-the-mountain run (or other extreme sports events)
- Mountain biking
- 4WD and ATV riding
- Hunting
- Guided Trips

All of the above uses are primarily categories of lodging or transportation. **Recreational experiences** focus on reasons for doing the preceding activities.

- Nature photography
- Wildlife observation
- Birding
- Outdoor education
- Nature study
- Archaeological study
- Geological study
- Historical study—ranching, forestry, land use, Hawaiian culture
- Botanical study – native and/or introduced plants and their habitats
- Forestry Study
- Physical exercise – plus extreme sports
- Spiritual renewal
- Adventure seeking
- Physical and mental well being

Any of the above potential myriad of combinations could be self-guided or guided experiences. The guided or self-guided experiences could be supplemented with site specific interpretive exhibits, or site specific, thematic guidebooks (birds, geology etc.). Thematic guidebooks are recommended because they are easier to update and cost less than fixed interpretive panels to develop and maintain.

Selecting appropriate uses of the trails in the system should consider potential conflicts among users.<sup>3</sup> Certain uses allowed along the trail could affect the quality of other uses. Some hikers and backpackers may object to encountering horseback riders, mountain bikers, or hunters in all-terrain vehicles (ATV's). Others might only object to encountering one of these types of uses. Some may object to the other uses along the primary and feature trails, but not be concerned about these uses taking place on connection trails. The following table outlines some possible recreational uses on the three types of trails in the system.

		Hiking	Backpacking	Guided Nature Studies*	Horseback riding	Camping	Overnight lodging	Guided cultural site studies**	Mountain biking	4WD/ATV riding	Hunting	Extreme sports/athletic events
Types of trails	Primary Trail and Alternatives	X	X	X	X	X	X	X	X			X
	Feature Trails	X	X	X	X			X	X		X	X
	<i>Connection Trails</i>	X	X	X	X	X	X	X	X	X	X	X

Potential connection trails traverse some of the same natural and historical features as the primary trail. However many of the potential connection trails are too steep or too long to attract some hikers and backpackers. There are easier, alternative entry points to the primary trail. So, 4-wheeled drive or ATVs and mountain bikes might be appropriate on

connection trails to accommodate a wider range of visitor capabilities and interests. This could also allow vehicles necessary to restock and service lodges and campgrounds. The potential for conflict between mechanized and non-mechanized users would be less here.

Let's examine a number of recreational uses and experiences to define conditions which potentially conflict with each other.

1. DAY HIKING and BACKPACKING versus 4WDs, ATVs, TRUCKS, and HELICOPTERS – experiences can be acceptable along any of the trails depending upon the goals of the particular hike. If it's a hike to go bird watching, then noise and interruption by 4WDs, ATVs, horses, helicopters and the like could be potential conflicts. If hikers are looking at botany or geology or even history, since the subject isn't going to be scared away, there may be less conflict. The only conflict might be their assumed "ownership" of the trail. *"I got here by walking so everyone should."* The degree of conflict can be greater if the hiker didn't anticipate seeing these other users, especially in large numbers. Communicating an ethic of peaceful coexistence among users can go along way toward lowering perceived conflict. But to the extent that the primary and feature trails can be free of motorized transport, the day hikers' experiences will generally be enhanced. Letting visitors know that vehicles will definitely be allowed on at least certain of the connection trails would allow them to decide for themselves whether that is acceptable before they start their hike.
2. DAY HIKING, BACKPACKING AND MOST OTHER USES versus HUNTING--If you are a hunter day-hiking into an area, then you wouldn't be upset at seeing another hunter. But, the non-hunting day hiker, camper, lodge guest, etc., might be very worried about allowing hunters anywhere near the trail. As long as non hunters are separated from the hunting activity, and they are informed of that fact, there should be less potential conflict or fear. Hunting might be allowed along either a connection trail or feature trail if signs forewarned non hunters that that was the case. Hunters would benefit, too, from being separated from the interference of non hunters. Hunting should not be allowed along sections of the primary trail. The primary trail is the through route of the whole trail system. Hikers, backpackers and horseback riders encountering an unanticipated section of the primary trail closed to them because of hunting would be very unhappy.
3. OVERNIGHT LODGES versus BACKPACKERS, DAY HIKERS, AND CAMPERS –"wilderness" or "nature" purists who backpack, simply camp, or even day hike could be offended by the lodges' presence. They simply associate loop or distance hikes with areas that at least appear wild. Separating lodges from the primary trail by several hundred feet and screening them to the extent possible, might mitigate

this perceived conflict. Other backpackers may relish an occasional night stay or at least a dinner in the lodge if the opportunity was presented. To many, the chance to hike from lodge to lodge could be a great combination with hiking. The recreationists would get a semi-wild trail experience, some exercise AND a warm bed and good food. Once again advance communication and no surprises are the keys toward managing potential conflict.

4. DOGS versus PEOPLE - Some people wouldn't go for a hike without their dog. They can't imagine that **their** dog could do any harm or scare anyone. Others hate to see dogs at all. This conflict will never be totally resolved. Requiring that dogs be leashed can somewhat mitigate the non dog owners concerns.
5. HORSEBACK RIDING versus HIKING – Most hikers don't enjoy encountering horse manure along trails. They may reluctantly accept horses' presence along trails because that's tradition. But, long strings of horseback riders or pack horses which temporarily force hikers and backpackers off of the trail will definitely not enhance the hikers' experience. Certain feature and connection trails might exclude horses to give hikers a choice. Wider road/trails can allow for safe passing.
6. CULTURAL SITES versus ANY OTHER USES – cultural sites, be they traces of an ancient trail, or paniolo cabins are usually quite vulnerable to public impact. Once they are overused or over loved, they are gone. They are non renewable except as reconstructions. Building trails to any cultural site may simply invite potential destruction unless visitors are aware of and manage their affairs in a responsible manner. It may be better not to call attention to cultural sites along any of the types of trails unless the activity is guided by someone with the proper credentials. But, in the latter case, the resources are identified for visitors' possible return.
7. MOUNTAIN BIKING versus HIKING AND BACKPACKING – While mountain biking may be objectionable to some hikers and backpackers, bikes are better than noisy motorized vehicles. Some mainland trails allow mountain bikes and other bicycles and some with a more wild theme do not. From the literature it appears that hikers can learn to peacefully coexist with mountain bikers if they stay on the trails, the trails are wide enough for passing, and bikers let hikers know when they are approaching.<sup>3</sup> Bikers pass by faster compared to horseback riders and they don't usually leave piles of manure!
8. EXTREME SPORTS versus DAILY USES – Extreme sports events could definitely disrupt a peaceful backpacking trip, especially if a large group of participants were there. Backpackers and hikers should be warned several months ahead of time on the TRAIL WEB SITE, when these sports events are scheduled. They can then do their advanced purchase of airline tickets to avoid the event if they wished.
9. PRIVATE LAND versus PUBLIC ACCESS – Ideally, the **primary** trail should be open to everyone under consistent rules for free or a modest

charge. This would require at least a long term easement across the private land portions of the primary trail. Toll gates and individual sets of rules, at different landowners' boundaries would not be well received by most recreationists. The important thing here is that recreationists should be able to get information on using the primary trail from one source because it is the signature trail which gives the system its identity and ties everything together. Most **connection trails** and **feature** trails would occur on either private or public land – not a mixture. Thus, there would be less confusion. However it would be most convenient for recreationists to be able to get information on which opportunities, costs, and restrictions apply to all elements of the trail system from one WEB site source.

NOTE: Additional conflicts and opportunities will no doubt surface when the final trail alignments are determined.

## Minimal trail infrastructure and management efforts are necessary to support recreational activities.

Trail management and infrastructure are conceptual at this point. However, without consideration of what is involved, it is difficult to anticipate the level of commitment necessary to achieve various levels of recreational activities. Certain infrastructure and management will probably be necessary no matter what uses or how many visitors will be accommodated.<sup>3</sup> Knowing whether the campgrounds will have some sort of restrooms and water and knowing about some of these other items may determine whether someone wants to participate or not. Also the cost of these items if passed on to the user, may influence who and how many would use the trails. These include:

1. A continuous trail surface (this can utilize existing roads if they are in fairly smooth condition). A ten foot wide road with turnouts, can allow passing space for various visitors (horseback riders, hikers, emergency vehicles, or even possibly, lodge supply vehicles.)
2. Directional signage, off-site, from at least major highways to the various entrances of the connection trails and primary trail
3. An entrance sign at each of the trail entrances.
4. Rules and hazards posting (few as possible) or ethics interpretation at each entrance and probably at each camp, lodge site or trail intersection.
5. Information on what facilities and other activities (hunting, cattle grazing, etc) to expect at various parts of the trail system.
6. Directional signage in all appropriate directions from the entrances.
7. A safe and defined parking area at each of the entrances
8. Directional signage at all intersections along the trail.
9. Feature interpretive exhibits or booklets and directional signage on a feature trails.

10. Lodging or a defined camp about every 10 miles of primary trail
11. Safe water sources associated with the lodging or camps
12. Sanitary toilets associated with the lodging or camps.
13. Corrals, if overnight horse facilities are needed
14. Safety and law enforcement patrols.
15. A trail map and brochure to give desirable publicity to the trail and help guide visitors in the event signs are missing.
16. A fire prevention and suppression plan and team on the ready.
17. An emergency action plan and team
18. An observation or monitoring and action plan for resolving any resources damages associated with the trail
19. Establishment of an entity to give quality oversight to the entire trail infrastructure uses, communications and contracts.

In addition, consistent policy is needed to detail the appropriate behavior, qualifications, and bonding of commercial guides and other contractors who would perform their services along all or a part of the trail on government and/or private land. This would also describe the appropriate interface with self-guiding trail users.

## Enhanced trail infrastructure and the visitors' own background can influence the quality of trail experiences.

More than physical trail surfaces, signs and outhouses; **experiences need to be memorable.** Attention to detail is paramount. Following are discussions on how enhanced facilities or conditions influence the quality of various recreational experiences. Some hypothetical experiences are included to give the flavor of the trails' benefits.

### **Full Service Hut to Hut --**

Let's look at one "high end" experience from a visitor's point of view. *Sam and Mary have been to Hawaii several times before. They always stayed at a coastal resort. They thoroughly enjoyed beach activities but wondered how they might branch out and explore other parts of the island. Then they saw an article in "Outside Magazine" which described several 10 to 100 mile hikes near timberline on Mauna Loa—the largest volcano in the world. As they read on, they discovered that they could walk about 10 miles a day, and then stay in some outstanding conservation lodges. There they could mingle with other visitors who share similar interests from birding to geology or just see new colorful environments. What's more – on Hawaii they could hike anytime of the year in contrast to only the summer season on many similar round-the-mountain trails on the mainland.*

*Sam and Mary were enthused. They wrote for more information and also accessed a web site. They discovered they had many choices of trips. They could visit all ten lodges on the trail and walk the loop for a total of 100 miles or they could make reservations for*

*smaller links. They would only have ten days for vacation so they decided to reserve a five day package. For the first and last days of their vacation they would enjoy beach activities.*

*Their reservation is for six months in advance in April, and they can hardly wait. But it is a good time until then to study the brochures on native bird natural history, island geology and paniolo history.*

*So the day finally arrived. TOUR-IT Company arrived bright and early at their beach resort. And off then went to the start of their first day hike starting at the top of the Ocean Vistas Estates. TOUR-IT packed them a lunch and they were left to start their first day hike. Their packs were relatively light. They only needed to carry layers of clothing and their toiletries. The rest of their luggage would be safely stored by Tour-it. And the lodge would provide everything else.*

*Sam and Mary's destination for the first day was Kipuka Lodge at 6000 feet elevation. So they had about 10 miles to hike to the north. They started about 5000 feet elevation so the trail was fairly level with some modest elevation changes. The air temperatures at these elevations were mild to cool – easy hiking temperatures. They decided to take it easy and hike 5 miles before and after lunch. As they began the sun was rising over Mauna Loa. Red cinder cones and fissures were highlighted in the early light. Pumice-like hills and flats were fairly recent volcanic events. The lack of vegetation created a moon-like landscape. Three miles out they came to the upper section of M State Park. Small birds rapidly moving from flower to flower in the ohia trees made them grab for binoculars and their bird identification book. A lava rock made a convenient seat from which to view the birds for a while. As they proceeded down the trail they had occasional distant ocean views. These view openings occurred where lava had flowed in the past couple of centuries.*

*It was a sunny day and the temperature had risen to the mid 70's. They found a shady spot to eat their gourmet lunch under a native koa tree. As they proceeded down the trail they decided to add a half-mile side trip to the edge of a lava tube full of rare plants and insects. Later in the afternoon they arrived at Kipuka Lodge and settled in before dinner. They enjoyed meeting other guests and sharing their trail experiences. One group came from the next lodge to the north and described seeing a rare bird. This built great anticipation for the guests who would be traveling north the next day. This particular lodge had a tree-top observation lanai on the edge of a Kipuka, to aid visitors seeing and identifying the native birds in the treetops. It was also an exciting place to view the "green flash" at sunset. The cold beer and pupus made it even better.*

*After their ten mile hike they had worked up quite an appetite. The scents of dinner being prepared from the kitchen were very enticing. The chef—a recent graduate of the Hawaii Culinary School-- promised hungry hikers a gourmet dinner. The dining room was warmed by its unique rock fireplace and the wild turkey dinner lived up to all expectations. The days exercise, a full stomach, a warm shower, and comfortable bed produced an excellent night's sleep.*

*The next day after a hot breakfast and an optional guided bird walk, the hike north began again. They picked up their lunch and headed eleven miles to “Paniolo Lodge. This section of trail and this lodge featured the history of Hawaii ranching. Many corrals and other ranch relics were encountered and interpreted along the trail. They were amazed at the extent of the cattle industry on the big island. Of course, they also had many opportunities to view rare native Hawaiian birds and plants as well as examples of volcanic geology along this section of trail.*

*Once at Paniolo Lodge the low ranch style buildings reinforced the theme of this section of the Mauna Loa Loop Trail. They enjoyed the historic photos on the walls of the warm rustic lodge. A barbeque of local prime meat with all the trimmings was certainly a highlight of the second energizing day.*

*The third day was a nine-mile hike to Koa Lodge. The trail went up and down a little more than the previous sections passing through several distinct habitats. They saw many iiwi birds in the koa-ohia forest habitat. The ohia forest with it’s understory of native tree ferns was most impressive. They took over 75 photos on the third day. The afternoon clouds encircling the Koa Lodge gave them an idea of why the trees and other vegetation were so lush in this area. They found the interpretation of the koa and ohia forest industries surrounding the lodge quite fascinating. A warm lodge, hot pupus and a great dinner added the extra spark to a great day.*

*Their final day began again with a welcome hot breakfast complete with superior Kona coffee. This day the hike would be a bit different. Their destination would be the Belt-Road pick-up point. The hike would be twelve miles including a side trip up a small mountain before proceeding down-hill to 1500 feet elevation. The top of the peak provided distant coastal views on that beautiful sunny day. What a place to eat their last gourmet lunch. A cell-phone call to Tour-it at trail-post 7E would have them reunited with their luggage and a ride to the beach resort for the last coastal part of their vacation. This was a memorable, educational, and unique vacation. Sam and Mary have already booked another trail section for next year.*

The preceding type of experience is feasible IF facilities, services and marketing are creatively designed and adequately funded. This raises a number of questions:

- (1) *How many lodges would be needed around the Mauna Loa Loop Trail? Assuming that the total length of the trail is about 120 miles then the number of lodges would be about 10 or 12. They need to be spaced apart by a reasonable length of daily hikes – about 10 miles. Ten miles around at least most parts of this trail would not drastically change in elevation. And, the 5,000 to 7,000 feet elevations along the trail would have moderate weather conducive to hiking year around. Some of the Mauka-makai connector trails would be very much steeper but shorter. Some of the connector trails could climb 4,000 feet to a lodge within less than five miles.*

- (2) *Would all of the lodges around the entire Mauna Loa Loop Trail need to be completed at the same time?* No. But, three, as in the above example, or at least enough to focus on the bigger idea of the whole loop trail would help marketing. Visitors would have something to look forward to in later years.
- (3) *Could each lodge be partially completed – i.e. leaving out some of the “extras” to save money?* If a shell of a lodge is what is being marketed then this might be acceptable; however marketing usually focuses on the amenities and the total experience. The quality of the total experience depends upon the quality and maintenance of all of the features and activities of the lodges.
- (4) *Would all of the lodges be of the same design?* They could be, and this might save money. But more compelling might be for each lodge to have a different theme as in the above experience example. Then, the buildings could maximize the specific themes. For example, a lodge and windows built at a tree-top level would emphasize views of the native forest bird theme. Or, a flat ranch style with distant views across the range fit in with the paniolo theme. These themes would be further enhanced by interpretive exhibits, murals, photos and paintings as an integral part of the lodges and even in visitors’ rooms.
- (5) *Does the idea of a “lodge” imply a single building?* Not necessarily. The eating, mingling, and educational functions might be in one building and the sleeping rooms be in another or even in several separated yurts. Cues for these designs might be taken from the topography, habitat and climate of each site. For example, in a rainy forest site it might be good to connect the sleeping rooms and the dining room at least by covered walkways or porches. Having a collection of buildings rather than one large lodge might facilitate aesthetically fitting the lodges into the environment and avoiding an over built look.
- (6) *How large a guest capacity should each lodge have?* It depends upon how much income needs to be generated and how much guests are willing to pay. This is somewhat of a chicken and egg proposition. How much income will be needed to amortize the annualized construction cost of lodge (and perhaps the trail infrastructure), the maintenance and operation of the lodge and a portion of the trails and any profit or reserve would need to be determined. Then, the amount of funds guests would be willing to pay for the experiences needs to be figured from comparables elsewhere. The first is divided by the latter and that gives a hint at the capacity. The total capacity must also consider the occupancy rate, and the amount of marketing. Plus there could be a lag at first until word-of-mouth and other advertising achieves a consistent occupancy.
- (7) *What qualities of trails and roads would be necessary to support the lodges and marketing?* The qualities of trails and trail signage have to be comparable to that of the lodges. The trails and lodges are an

integral part of the whole experience. Getting lost at intersections of the trail, wash-outs, or downed trees across the trail could affect the total visitor experience. The trails would also likely be alternatively used as roads for vehicles bringing supplies and employees to the lodges, as fire fighting routes and for emergency vehicle access. (Lodge supply might be done at night when most hikers are off of the trails).

- (8) *Would other uses and users of the trail affect the experience of lodge users?* This depends upon the nature of the other uses but more importantly upon the anticipations of the lodge/trail users. If these users expect to see horseback riders it can be less objectionable than if they are surprised by them. The same goes for backpackers, ranchers and others. The wide road-trails can allow various users to easily pass each other. Interpretation and signage, in addition to natural history and historical themes, can foster an ethic of peaceful coexistence. Some lodges can be designed to accommodate users arriving on horseback, mountain bike, ATVs, 4WD or even helicopters. Separate campsites and pastures could be developed. Both lodges and campgrounds could be located a short distance off of the main trail so that the relative privacy of both could be maintained. (also see section on pages 7-9 on potential conflicts)

### **Day Hikes --**

Numerous day hikes would be possible on the primary, feature and connection trails. One feature trail starting at the top of Ocean View Estates would quickly cross the Primary Trail and head up the Southwest Rift Zone. One could walk up the exposed lava for over 20 miles before reaching the top of Mauna Loa.

*For example; Tim and Mona are real hiking and fitness addicts and they also have a budding interest in geology. They studied the "feature trail guide" and decided to take a day hike toward 'Umi Caverns. This would be about eight miles up and a 2500 foot elevation climb on the southwest rift zone. But they think that they can do it. If going got too tough they could simply turn around about noon at whatever elevation they had reached and return to their car. They started out on an old road which ended about one half mile out. From the end of this road they trudged through cinder for about one-quarter mile toward the first rock cairn. The remainder of this rift zone route crosses lava rather than a road or traditional trail. Thus, numbered, painted, rock cairns were placed every several hundred feet in sight of each other to guide hikers through the easiest and safest walking areas. As they continued, the smooth, hard surface of the pahoehoe lava made the going easy for the next couple of miles.*

*It was a very clear day and views down the southwest slopes were magnificent. Tim and Mona could frequently see the ocean some 20 miles away. No trees were present to block their view. While the sun was bright, a gentle breeze kept them cool.*

*The numbered cairns were keyed to Tim's' geology guidebook revealing interesting facts about the formation and history of this rift zone. The photos in the book helped them identify the different types of lava and figure out under what conditions they were created. They also identified the ages of the lava flows. They passed flows which happened in 1916, 1926 and 1950. In ancient times the land on the east side of the rift zone slipped down forming cracks or fractures in the rock and into the volcano creating the sources of some of the recent flows.*

*About 5 miles out they reached some interesting lava tubes. But these tubes weren't openings in some eroded ends of tubes which are common. Here the tubes were mostly underground with occasional collapsed roofs. Tim and Mona cautiously inched up to the edge of one of these openings and peered into the tube. It seemed to go on forever. Next time they wouldn't forget their flashlight.*

*It was noon and they were only a little over 5 miles out. So they decided to eat their lunch. After eating and relaxing for about an hour they decided to return to their car. They could probably make their earlier goal but they didn't want to chance being out on the rough trail without a flashlight. So, they took their time and leisurely examined some of the same rocks they saw on the way up. There were so many fascinating things to learn from their guide book. Just a short distance from their cars they were treated to an amazing sunset.*

*They can't wait to take this hike again. Perhaps next time they could hike the 20 mile loop which would go to their previous destination of 'Umi Caverns then go south and connect with the primary Mauna Loa Loop Trail for their return to their car. They must remember to start early the next time!*

As trail planning progresses many day hike, feature trail possibilities will be defined. And, any of the connection trails would be good candidates for day hikes. The primary trail comes close to roads or trailheads in several places making a number day hikes possible. These hikes would yield a small sample of what the whole trail system would offer, but they none-the-less could be great experiences. They would serve visitors who would rather not stay in lodges or hadn't planned the time for a longer excursion. Island residents with limited time could also benefit from these day hike possibilities. And, of course these quality hiking experiences could be enticements for later longer trips.

### **Backpacking --**

Backpacking is a popular activity on the mainland but is limited by lack of opportunity on the Big Island. There are few long trails. A Mauna Loa Loop trail could be an instant draw for backpackers. So let's zoom forward several years and see how the trail might be viewed by a couple of backpackers. *Bob and Sally have been out of college for seven years now. They are busy establishing themselves in their careers. They have backpacked on several one-way trails close to home and have lately taken some loop trails. The one-way trails were interesting but more difficult. Logistically they had to take two cars and shuttle one or arrange other transportation. The loop trails simplified*

*this. One of the big attractions to backpacking was to be self-reliant and go back to a simpler life in contrast to the busy, structured life they experience in the city throughout the year. They are keeping in physical shape, but the treadmill at the gym is simply not a wilderness experience.*

*So, Bob and Sally heard about the MLT (Mauna Loa Trail) and decided to learn more. Here they could fly to Kona, and take a bus to near the start of the trail. What could be simpler!*

*They enjoyed reading the Primary Trail Guidebook they had ordered on the MLT web site. It described the great diversity of things to see surrounding the trail and also described various trailheads and campsites. Planning and anticipation is half the fun of taking a vacation. So they decided to take 10 days of their 14 day vacation to backpack the entire loop trail. After subtracting travel days; this left them with 2 days for a stay at a beach resort at the end of the backpack to rest up or relax. They obtained their trail permit on the web and confirmation was issued almost instantly on their e-mail. The modest fee was OK with them as they understood that it was an access fee across the portion of the trail which was on private lands.*

*Bob and Sally checked the MLT web site once more to see the latest trail conditions, and then they were off. They had obtained their dated permit six months ago when they reserved their flight. And, conditions on the trail could have changed. They arrived in Kona and took the bus to Pahala. From the bus stop they hiked to the trail head 3 miles away. They could have contracted for someone to transport them to the trailhead directly from the airport, but they wanted to maintain their self-reliance. Plus an extra 3 miles of walking was easy. After all, they were young and in quite good shape. They brought half of their provisions, consisting mostly of light weight, freeze-dried foods from home. The other half of their food was shipped ahead of time to be picked up at the Hualalai Saddle Lodge about half-way around the mountain. They also had their tent, camp stove and sleeping bags so they were completely self-contained.*

*It was a beautiful morning when they started to hike toward Volcano. They had decided to go counterclockwise on the trail. The lush tropical rainforest vegetation was a real contrast to their normal desert environment in Phoenix. They frequently checked their waterproof trail guide they had purchased to learn about fascinating forest birds and native trees they were seeing for the first time. The rain in the afternoon didn't slow them down. They had hiked in the Pacific Northwest before, so they understood rain. Their first camp near Volcano was great.*

*They were pleased that a water collection systems and storage tanks were available here and at each camp around the mountain. And, they had their own water filter to assure that the water they drank was pure. Warm and dry in their tent they chatted with two other backpackers they had met in camp. These other backpackers had come around the trail from the other direction and were enthusiastically suggesting "things not to miss" along the trail ahead.*

*Filtered sunlight coming through the forest and afternoon showers greeted them the next two days as they walked and camped on the east side of the mountain. Then, on the fourth day they emerged from the forest to the area near the saddle between Mauna Loa and Mauna Kea. Here the heavy forest gave way to groups of trees surrounded by lava flows. The guidebook called them kipukas! As the spectacular sunset lingered, watching iiwi drink nectar from a beautiful red ohia blossom capped their exciting day.*

*Bob and Sally filled their canteens for the sixth day of their walk along an alternate to the primary trail to a camp near the weather station at 11,000 feet elevation. The elevation gain of 3,000 feet on this alternate feature link of the trail was strenuous but certainly possible. They had made an even greater elevation gain when they hiked around Mt Ranier. The part of it which was on the paved road, while not a “wilderness experience,” was little used by cars. The smooth surface road actually made hiking on an otherwise lava trail, much easier. They enjoyed the endless shapes of the pahoehoe lava along the road/trail. And the unique views of Mauna Kea, the Kohala Range, and even Haleakala (on Maui) were truly spectacular. At night, views of the stars at this higher elevation were amazing.*

*On the seventh day they descended rapidly toward the Saddle between Mt. Hualalai and Mauna Loa. Along the way they stopped several times to review their guide book points of interest descriptions. They could almost relive the ranching history of the area. They picked up their other provisions at the Hualalai Saddle Lodge and set up their camp a small distance away. At the urging of lodge personnel, they decided to come back over to the lodge to treat themselves to a shower and a nice dinner. Sharing their trail adventures with lodge guests over pupus and dinner was more fun than they thought it was going to be. They like wilderness, but they also like people. The less-in-shape lodge guests amazement on the backpackers’ accomplishments steeled Bob and Susan’s resolve to finish the trail.*

*They slept a little later the next morning. Sunrise was later at this camp, having to clear the top of the 13,677 foot Mauna Loa. They started off down the trail, intermittently passing through open pasture and small forests. Bob and Sally marveled on how fast the time was passing – only three more days to go before they would complete the loop. The habitats were becoming more and more familiar. They had learned to identify many of the native birds, trees, and types of geologic features. They could even identify the vintages of the ranch fences from their design. And, getting over the fences on cattle-proof steps meant they didn’t have to remember to close the gates. A nice touch!*

*Hiking got easier as Bob and Sally progressively rounded the mountain. They were getting in even better shape—so much so that they decided to take the southwest rift zone alternate feature trail. This alternate primary trail climbs about 2,500 feet and then drops again to rejoin the primary loop trail. It was indeed a workout but was worth every moment. The shapes and kinds of lava were truly diverse. And, the collapsed tops of lava tubes, in an otherwise slightly sloping landscape, were something they had never seen elsewhere.*

*Camping that night was at the edge of a rain forest on the southeast side of the mountain. The hikes the next two days to their start point took them to some of the most spectacular topography of the entire trip. Little mountains on the southeastern flank of Mauna Loa, with almost vertical sides rose up out of a dense forest. These were covered with beautiful tree ferns and an incredible array of native tree species. They looked down over one cliff to see a group of silverswords. This was an endangered plant they thought was only found on Maui.*

*Bob and Sally reflected as they neared the end of their loop that the diversity and magnificence of the natural and cultural resources of the mountain that they experienced were many times what they had imagined from the guidebook alone. They would most certainly come back and hike this trail again.*

Many visitors would seek a “wilderness” backpacking experience on the primary and feature trails. They might prefer to have no lodges, fences, or even campgrounds along the primary trail. Of course, these other facilities need to be present if a range of users is to be accommodated. The compromise for the backpackers, and for the day hikers, would be, as mentioned earlier, to separate or screen these facilities as much as possible from view from the primary trail.

The availability of water at appropriate, say every 10 mile intervals would be the limiting factor here for where backpackers would camp. Simple campgrounds with water and sanitary facilities would probably be viewed as an acceptable compromise by the backpackers who were aware of the water limitations. Once again, anticipations are a big part of a quality experience. Backpackers and hikers will be more accepting of lodges, fences, or even cattle grazing if they know about it ahead of time. They can decide whether or not to take the trip if they know about these potential “wilderness” intrusions ahead of time.

### **Spartan Lodges or Hut to Hut --**

Of course there are many alternatives to up-scale lodges spaced along the entire primary trail. One option is to scale down the lodge complexes so that there are still small main lodges every 10 miles or so, with meal service and an interpretive theme but the sleeping facilities might be simpler. Sleeping facilities might be in a bunk house, or in yurts, or simple bungalows or a combination thereof. Some might have in-house plumbing and others might have separate showers and bathrooms.

### **Destination Lodges --**

Another option is to have one or more upscale, full service destination lodges. (This option would have to rely on the down-scale lodges described in the previous paragraph and/or campgrounds to serve the round-the-mountain travelers.) For example, one of these destination lodges could be located near the saddle between Mauna Loa and Mt. Hualalai. Such a location could support many day hike possibilities. One could hike to the spectacular summit of Mt. Hualalai. What a place for a gourmet lunch! Easy connection to the *primary* trail could take visitors around Mauna Loa in either direction as far as they wished to go. *Feature* trails off of the primary trail could even take visitors

to the top of Mauna Loa if they have the energy. Other feature trails near the destination lodge could highlight ranching history, native forest birds and the geology. A **connection** trail might take visitors all the way to a coastal resort and the coastal Ala Kahakai trail. This trail might run the entire length of an ahupua'a with a number of interpretive and view stops along the way. Visitors might be transported by a guided tram or ATV service. Or, they might hike the ahupua'a connection trail and have their baggage delivered to the lodge. Thus, the connection trail would be an experience in itself. A several day stay for visitors or island residents could easily hold their interest.

### **Nature Study –**

Nature study can take many forms from the study of everything present at a particular site to focusing only on a particular topic – e.g., seeing forest bird species not on someone's "life list." As mentioned earlier the easiest and least expensive reinforcement of the activity of nature study is to make available specialized booklets covering specific specialties pertinent to the specific trails. Recreationists would simply purchase the books covering their interests. Numbered, and color-coded, featured posts along the various trails could tie hard to find features to descriptions in the various guide books.

Information and interpretive exhibits at lodges could further support nature study. Thematic interpretive exhibits would be easier to maintain at lodges rather than out on trails, because of the greater security present. Still some popular sites along trails could have interpretive exhibits. In fact, they might be included as part of an overlook, or a wildlife observation blind.

Guided activities could also be popular. These could be focused upon a specific area or on a particular nature study specialty. These activities could be especially valuable for the recreationists who are interested in learning something but whom don't want to extend the effort to extract information from guide books. Skilled guides can adjust to the levels of understanding of the participants and thus not overwhelm them.

Guided trips can also include transportation, morning coffee, snacks, lunches, rain gear, souvenir hats and t-shirts, and more – in-other-words a packaged experience. Such an experience is easy for the person who doesn't mind paying.

### **Guided Cultural Site Interpretation –**

Guided cultural interpretation might be more of an activity at lodges or campgrounds rather than at actual cultural sites. Once a cultural site is visited its location can be passed on by word or mouth and thus become vulnerable to vandalism. Whenever possible artifacts, like hunting cabins, paniolo cabins, logging sites might be restored enough to be resistant to site interpretation or the onslaught of recreationists.

### **Horseback Riding and Packing –**

Horseback riding is a very important tradition on many mainland trails. It is also quite popular in Hawaii. Horseback riding can be a means to participate in nature and cultural studies, or to reach various view points just as are hiking, backpacking, and mountain bike riding. Horseback riding can also be an end in itself.

Multiple day trips or pack trips are possible on horseback with the appropriate facilities. Corals near campsites or lodges, and water sources or food sources would be desirable. Horses' food can be packed in if necessary. If the campgrounds are shared with non-horseback people, then corals need to be separated or down-wind enough to mitigate the potential smells.

#### **4WD/ATV Riding –**

4WD/ATV riding can be a thrill ride or a means to reaching a lodge or feature site. The thrill ride is associated with speed and climbing on and off the trails. It can cause much erosion and scaring of the land, which is objectionable to almost all other recreationists. Even the presence of these vehicles is objectionable to some because of the potential for, or history of, damage to trails. And more importantly, they are not traditional uses of trails versus roads. Patrol, firefighting, or trail construction vehicles, sometimes found on wilderness trails, are more accepted.

Four-wheel drive and all terrain vehicles can be a convenient way of taking visitors to a lodge or feature if they remain on a connection trail where they are the designated only means of transportation. Or, at least recreationists would be informed if they preferred to hike these specific routes that they could encounter vehicles. Anticipating them gives hikers or others a chance to choose another connection trail if they so choose. These vehicles can be very useful in allowing disabled visitors to reach and enjoy lodges.

#### **Mountain Biking –**

Mountain bikes can go farther faster than hikers, backpackers or horseback riders. And some of these other recreationists hold that against them. But they don't necessarily create any more damage to the trail than these other uses.<sup>3</sup> On other trails the main concern has been that bikes scare hikers by coming up fast behind them unannounced. In fact some jurisdictions are suggesting that all bikes should have and use loud bells to announce their presence some distance from actual contact. As mentioned earlier a ten foot wide trail can easily allow bikes to pass.

Full bench trail or dirt road construction is recommended for bike use and all other uses as well. This is the type of construction where the road or trail is built on the flat or on cut areas only. The cut areas are less likely to erode than fill areas. Ample drainage structures can also avoid washouts.

#### **Retreats and spiritual renewal –**

Many hike or backpack to wild, heroic mountains or environments to regain perspective or gain spiritual renewal. In this activity the individual is small in comparison to the intact wilderness or wild habitats. Day to day distractions are far away.

Retreats might also be held in wild areas or at "wilderness" lodges which are also separated from many of the day to day distractions.

#### **Extreme Sports/athletic events –**

It could be quite an accomplishment to say you ran around Mauna Loa – the largest volcano in the world – in ONE DAY. By comparison, backpackers might take 10 or more days. It would be even more of an accomplishment if the race started and ended at the Kona Airport.

Whether the extreme sports events are easy to support depends mostly upon the trail infrastructure that is ultimately decided on for other recreational experiences. Because extreme sports would probably occur infrequently, it wouldn't be economical to set up special facilities for them. But, if, for example, hut to hut lodges were constructed surrounding the mountain they could be the bases for race support services – drinks, first aid, etc.

## Costs to the visitors will affect their participation and expectations.

How much it will cost for a similar activity elsewhere may determine whether visitors would come to the Big Island. But, just being on the Big Island of Hawaii might allow a higher trail fee before scaring away potential visitors. Visitors might purchase a moderately priced trail license from the trail web site.

None of the mainland trails nor the one in New Zealand charged a fee for use of the trail.<sup>1, 4, 5, 6, 7, 8, 9</sup> An entrance fee was required for some parks which included all or a part of some similar mainland trails. But the fees were not specific to trail use.

Fees for specialized services – guides, horseback trips, lodge stays, food, etc., are expected by most recreationists (especially those who are willing to buy a ticket to fly here in the first place.)

Some private landowners may give free easements to portions of the trail on their land. Other landowners may wish to charge a fee for use of their land or for services they offer. The initial investments would probably be paid back by the trail users over time. Fewer will contract for the services if costs to the users are high. Also, high costs for services will build the expectations of the visitor. The lodge steak would have to be more than two ounces!

The construction and some maintenance expenses of similar trails on the mainland were covered by Federal Highway funds. The trails were considered an extension of the public transportation system. Trails, parking lots, overlooks, restrooms, bridges, signage and kiosks were all included in this funding. These funds came from gasoline taxes and did not need to be paid back or amortized by trail fees. Any trails constructed or maintained by the Federal Highway funds needed to be on a public easement or right-of-way (need to check current legislation to see if this requirement might change).

Donations from foundations and individuals, and trail association dues and volunteer help were valuable sources for construction and maintenance of similar mainland trails. And these funds and donations aren't usually paid back by the user.

## Long term continuity of the development and management of this trail system will influence the qualities of visitor experiences.

The continual success of the trail system depends upon the visitors having quality experiences and telling others about them. And, the word will get out if the facilities were never completed and/or the services were to decline over time. So, it is simple. We create quality facilities and then maintain them that way! (If only it were so easy!)

Creation of many trails on the mainland took years, even decades of fund raising, volunteer work, paid staff, donations, federal funds, state funds, county funds, and the like. Many are still not complete.<sup>1, 4, 5, 6, 7, 8, 9</sup> Maintenance and operation of the Mauna Loa trails would take comparable efforts. .

Gaining ongoing and evolving consensus among private, state and federal partners will require a large ongoing effort. This could initially be led by one paid or volunteer director position and the establishment of a legal trail management association to give the director clout and authority. This would quickly grow to a multi-person staff to handle the entire myriad of activities this enterprise will present.

The board of directors and/or staff will need to be knowledgeable in several specialties including;<sup>1</sup>

1. Conservation of resources
2. Trail infrastructure design and construction and maintenance
3. Fundraising, contracting and development coordination
4. Administration and personnel (including volunteers)
5. Communications

This may require one person for each of the above specialties or even larger staffs depending upon the desired deadline for trail completion and goals for level of quality management.

An independent, trail system ASSOCIATION would also be desirable **in addition to** the paid or volunteer staff described above.<sup>1, 5, 6, 7, 9</sup> This association of public members can help raise funds for construction and maintenance of facilities, and can be inspiration for the board of directors and staff when they are overwhelmed. The association can also help advertise the trail system and help defend its existence. A very long term perspective is necessary for any such trail system to survive and be profitable.

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## Addendum –Lessons learned or reconfirmed from some national and regional trails on the World Wide Web

Seven trails on the web were examined for insight into planning a Mauna Loa Mauka or Loop Trail. A table at the end of this addendum summarizes key characteristics. .

The comparisons from these web sites are more general than specific as can be seen in answers to the following questions;

1. *Why were trails started in the first place?* To preserve or rescue a geographic or cultural treasure seems to be the overall message. There doesn't appear to be any criteria on the degree of geographic significance needed to initiate a trail. It all starts when one person has a big idea and then works as a catalyst to fulfill it. For example, one person involved the YMCA to explore the creation of the Pacific Crest Trail a trail which would end up 2650 miles long. The big idea was that a trail would run from Canada to Mexico along the tops of mountain ranges. Another trail, around the San Francisco Bay, seeks to foster a sense of regionalism or to bring people together to rescue the bay and its shoreline as the common treasure it could be. Numerous towns and developments have chopped up the shoreline and in some instances made the bay edges an industrial area or a dumping ground. The creation of this trail becomes a rallying cry to gently use and preserve this unique environment that all of the communities can have in common. Another example, the Otago Central Rail Trail in New Zealand, is built upon an abandoned rail line that connected a number of towns during their gold rush. It conveys the fascinating history of the area as well as views which would otherwise not be visible from nearby roads. And, the Wonderland Trail was created to promote visitation in what was then, an otherwise remote part of the west. Finally, the Olympic Discovery Trail was apparently based upon recognition that there needed to be some entity in the area that tied area features to attract visitors and protect the area character.
2. *When were these trails started?* While many trails (Wonderland Trail, Appalachian Trail, and Pacific Crest Trail) were created in the early 1900's, many more have been created recently (Otago Central Rail Trail and Olympic Discovery Trail). Sections of some of these trails-- Pacific Northwest Trail, San Francisco Bay Trail, and the Olympic Discovery Trail--are still being completed. Identifying a local or regional image and capturing it in the design of a trail can be the catalyst for attracting visitors to area hotels and other commercial visitor services. Thus the idea of more trails seems likely to continue.
3. *How was the initial establishment of the trails funded?* Sometimes state laws were needed to legitimize spending governmental funds on the trail. For instance the San Francisco Bay trail is administered by the Association of Bay Area Governments. They can spend some

governmental funds and they also coordinate links between other landowners along the trail who in turn spend their funds in creation of the total. They can also apply for grants and administer donated funds. In other cases the initial construction funds came from a single agency like the National Park Service for the Wonderland Trail which is within Mt. Ranier National Park. In still another example, a trust funded the trail establishment along the Otago Central Rail right-of-way in New Zealand. It is now managed by the New Zealand Department of Conservation and Parks. (The ISTEA and NEXT TEA programs of the US Federal Highways have been available for creation, upgrading and even maintaining some US trails. The original ISTEA (Intermodal Surface Transportation Efficiency Act) like the follow-up NEXT-TEA recognized that the federal highways couldn't simply dump tourists onto poorly designed and maintained state or local jurisdiction highways and expect these other agencies to pay for needed improvements and this included trails as well as roads. Though these programs have expired; a similar program is pending in Congress.)

4. *How is ongoing maintenance and operation funded?* Here, just as in initial construction there are many answers. The Association of Bay Area Governments (ABAG) has a staff of 4 full time and several part time employees to coordinate maintenance and operation of the San Francisco Bay Trail. But, in addition to this central staff, each of the entities connected by the trail also spend staff time on maintaining and expanding the trail. And volunteer efforts are used as are donated funds. So there are several sources of funds for a single trail. The Wonderland trail competes for funds along with many other public facilities in the National Park Service. The Central Rail Trail is maintained with New Zealand governmental funds. The Pacific Crest Trail maintenance is partially (apparently inadequately) funded by the jurisdictions through which it passes...US Forest Service, National Park Service, State of California, State of Oregon, State of Washington...etc. The Pacific Crest Trail Association headquartered in Sacramento, California, coordinates memberships, volunteer efforts toward maintenance along this trails' considerable length. They even sell t-shirts and other items to raise maintenance funds. Volunteer efforts play a critical part of maintaining the Appalachian National Scenic Trail even though 99 percent of the trail is within federal or state ownership. The board of the Appalachian Trail Conference is currently negotiating to better focus their maintenance and operation efforts. So the lesson here is that there are many different ways to fund the maintenance and operation of these trails. The local strategy rather than a consensus among trails seems to rule.
5. *Do users pay to use these trails?* None of the eight trails examined had a direct fee for using their trail. Users pay for the Wonderland Trail indirectly as part of the entrance fee or alternative federal passes for Mt. Ranier National Park. Of course users pay indirectly through income

taxes and sometimes gas taxes. And they pay in terms of donations, and in-kind services as volunteers.

6. *Are activities along the trails regulated?* There was little information on this in the web sites. However, camping along the Appalachian Trail was highly regulated. Stays were limited at individual campgrounds to 1 to 3 consecutive nights or 7 nights per 12 months. Sections of this trail are frequently closed due to high fire danger. Reservations were needed for the 1 to 8 sites within 18 campgrounds located along the Wonderland Trail in Mt. Ranier National Park. All of the trails had regulations on what uses were allowed – hiking, horseback riding, mountain biking...etc. To what extent these regulations are enforced is unknown.
7. *What recreational uses are allowed along these trails?* One universal prohibition seems to be that all motorized use is precluded, although administrative use of construction equipment is usually allowed. Many of the earlier trails have traditionally had hiking (and backpacking) and horseback riding as traditional uses. When mountain biking came along it was difficult to prohibit it, even though some would have liked to (The Pacific Northwest Trail for one) It was mentioned that studies demonstrated that mountain bikes if used responsibly, were less damaging to the trails than horses. (I couldn't find any formal studies on the relative impact of various kinds of uses, including mountain bikes.) To be fair, any such studies would need to be done on similarly designed trails under controlled conditions. Perhaps this is why such studies are not emerging). Commuting to work by bicycle on the San Francisco Bay Trail is listed as one of the uses as were skating and jogging. Commercial packing was listed for the Wonderland Trail. Federal Highway contracted studies emphasize how to design trails to accommodate (allow room to pass) a variety of users rather than exclude certain non-motorized uses. They also emphasized that efforts (ethics interpretation, rules) need to be made toward having users peacefully coexist. This is simply a practical matter. One use is probably not more inherently pure than the other uses, even though some would place their use at the top of the heap! And, most importantly, there are probably limited funds available to create separated, matching trails for the various competing users.

WWW Based Characteristics of Selected Trails						
Trail name	Purpose/when established	Length	Use Season	Uses	Cabins or lodges	campgrounds
Wonderland Trail (around Mt. Ranier)	Promote visitation in early 1900's	93 miles (10-14 days)	Mostly summer	Hiking, backpacking, commercial packers	Some 1915 cabins still used	18 – 3 to 7 miles apart, (1 to 8 sites each)
Pacific NW Trail (Mont. To Olympic Peninsula)	Mostly to create primitive experiences, still being established	Approx. 1,100 miles	Mostly summer	Hiking, backpacking entire trail, horseback riding and mtn. biking in sections	No	Informal, still being planned
Appalachian National Scenic Trail	Create scenic hiking experience in 1937	2174 miles, Maine to Georgia	Mostly spring through fall, trailhead parking restricted Nov. to Apr.	Hiking, backpacking	No	Numerous sites limited to 1 to 3 consecutive nights
Pacific Crest Trail	Hiking along the backbone of 3 states mtn. ranges, began in 1930's	2650 miles from Mexico to Canada	Mostly summer	Hiking, backpacking, horseback riding	One listed Mt. Ashland Inn in Oregon	Many sites with little regulation
San Francisco Bay Trail	Fosters sense of regionalism, brings people together, began in 1989	400 miles when complete, 240 miles now	Year around	Hiking, jogging, bicycling, skating, wildlife viewing, commuting	None, but many hotels, motels nearby	None
Olympic Discovery Trail	Connects points of interests near Port Angeles,	Ultimately about 100 miles	Year around	Hiking, jogging, biking, horseback	Hotels, B & B's	none
Otago Central Rail Trail (New Zeland)	Preserve Otagos' rail heritage, and off-road views	150 km, open in 2000	Year around	Hiking, biking, horseback riding	Commercial hotels and B & B's in towns	no

